

February 2011

MEDICAID AND CHIP

Given the Association between Parent and Child Insurance Status, New Expansions May Benefit Families



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Why GAO Did This Study

The 2010 Patient Protection and Affordable Care Act (PPACA) expands health insurance to millions of individuals, including many parents. New insurance options for parents raise a question about whether providing health insurance to parents benefits their children. The Children's Health Insurance Program Reauthorization Act of 2009 (CHIPRA) asked GAO to assess (1) the extent a parent's health insurance status is associated with a child's health insurance status, use of services, and parental satisfaction with their child's care; and (2) how selected states' parent coverage under Medicaid and CHIP may change given upcoming expansions. To examine the association between a parent's and a child's health insurance status, GAO analyzed data from 3 years of the Medical Expenditure Panel Survey (2005–2007), a nationally representative survey. GAO categorized parent and child health insurance status as private, public, or uninsured, and analyzed nine parent/child insurance combinations. GAO also analyzed relevant, peer-reviewed literature. To examine how states may change their Medicaid- and CHIP-funded parent coverage, GAO reviewed CHIPRA and PPACA, and interviewed officials from the Centers for Medicare & Medicaid Services (CMS) within the Department of Health and Human Services (HHS) and eight states with authority to cover parents in their Medicaid and CHIP programs as of CHIPRA's enactment. HHS provided technical comments, which GAO incorporated as appropriate.

View [GAO-11-264](#) or key components. For more information, contact Carolyn L. Yocom at (202) 512-7114 or yocomc@gao.gov.

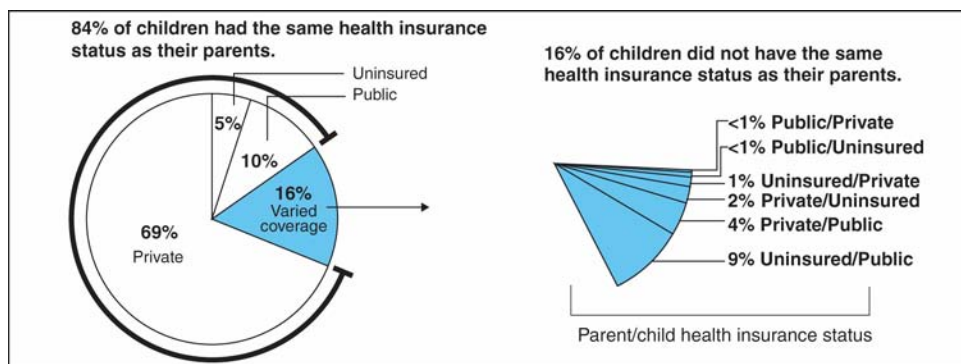
MEDICAID AND CHIP

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What GAO Found

GAO's analysis of Medical Expenditure Panel Survey results found that children were more likely to have insurance if their parents had insurance and were more likely to be uninsured if their parents were uninsured. GAO's analyses further identified a strong association between a parent's health insurance status, defined as privately insured, publicly insured, or uninsured, and a child's health insurance status. Specifically, 84 percent of the children in GAO's analysis had the same insurance status as their parents, while 16 percent of children did not. (See figure below.) The association GAO identified remained despite variation in factors such as age and family income. However, a parent's insurance status was not consistently associated with a child's use of services or parental satisfaction with their child's care. In most cases, a child was equally likely to have used services, or to have received satisfactory care, regardless of the parent's insurance status.

Distribution of Parent/Child Health Insurance Combinations



Source: GAO analysis of 2005-2007 MEPS data.

Health insurance coverage expansions required under PPACA will prompt states to change parental coverage in Medicaid- and CHIP-funded programs, but the extent of state changes will vary. By 2014, PPACA requires states to extend Medicaid eligibility to most adults under 65, including parents, with incomes up to 133 percent of the federal poverty level (FPL); PPACA also requires the establishment of exchanges in each state through which parents and others who are not eligible for Medicaid can purchase health insurance. States' implementation of PPACA will depend on their unique circumstances, including the extent of the expansion of coverage necessary. However, the association between parents' and children's health insurance status could result in newly eligible parents enrolling their children in Medicaid. Similar expansions of parental coverage through the exchanges could also increase the number of insured children. CMS guidance will be critical to facilitate states' efforts to comply with these requirements.

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Abbreviations

CAHPS	Consumer Assessment of Healthcare Providers and Systems
CHIP	state Children's Health Insurance Program
CHIPRA	Children's Health Insurance Program Reauthorization Act of 2009
CMS	Centers for Medicare & Medicaid Services
FPL	federal poverty level
HHS	Department of Health and Human Services
MEPS	Medical Expenditure Panel Survey
PPACA	Patient Protection and Affordable Care Act

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United States Government Accountability Office
Washington, DC 20548

February 4, 2011

The Honorable Max Baucus
Chairman
The Honorable Orrin G. Hatch
Ranking Member
Committee on Finance
United States Senate

The Honorable Fred Upton
Chairman
The Honorable Henry A. Waxman
Ranking Member
Committee on Energy and Commerce
House of Representatives

Medicaid and the state Children's Health Insurance Program (CHIP), joint federal-state programs that covered over 55 million enrollees in 2009, have been important sources of health insurance for low income individuals, particularly children.¹ Federal policies providing health insurance through these programs have focused largely on children, but not necessarily their parents. The 2010 Patient Protection and Affordable Care Act (PPACA), however, includes provisions to expand health insurance coverage to an estimated 32 million individuals, many of whom are parents.² PPACA extends Medicaid eligibility to include most individuals with incomes at or below 133 percent of the federal poverty level (FPL) by 2014.³ Additionally, by 2014, PPACA requires the establishment of American Health Benefit Exchanges in each state, through which certain individuals

¹In addition to parents and children, the over 55 million enrollment figure includes all populations covered in both programs, including aged and disabled Medicaid enrollees.

²See Pub. L. No. 111-148, 124 Stat. 119. PPACA was signed into law on March 23, 2010, and was amended by the Health Care and Education Reconciliation Act of 2010, Pub. L. No. 111-152, 124 Stat. 1029. The Congressional Budget Office and staff on the Joint Committee on Taxation estimate that these pieces of legislation will reduce the number of non-elderly people who are uninsured by about 32 million. See <http://www.cbo.gov/publications/collections/health.cfm> accessed November 19, 2010.

³See Pub. L. No. 111-148, § 2001, as modified § 10201; Pub. L. No. 111-152, §1004 and §1201. However, PPACA does not alter existing Medicaid rules regarding coverage for non-citizens.

can purchase health insurance—thus creating another avenue that could expand coverage of parents.⁴

The possibility of new health insurance options for parents raises a much-debated question about whether providing health insurance to parents offers any benefit for their children, particularly since research indicates that millions of children and parents remain uninsured.⁵ The Children’s Health Insurance Program Reauthorization Act of 2009 (CHIPRA) directed us to examine parental health insurance in CHIP as it relates to children’s enrollment and quality of care.⁶ Specifically, we assessed (1) the extent to which a parent’s health insurance status is associated with a child’s health insurance status, a child’s use of services, and parental satisfaction with their child’s care;⁷ and (2) how selected states’ coverage of parents under Medicaid and CHIP may change given upcoming coverage expansions.

To examine the association between a parent’s health insurance status and a child’s health insurance status, a child’s use of services, and a parent’s satisfaction with his or her child’s care, we used national-level data in our analysis and conducted a literature review. To assess whether a parent’s

⁴In this report, we refer to an American Health Benefit Exchange as an “exchange.” Through each state’s exchange, individuals can compare and select insurance coverage from among participating health insurance plans. Premium tax credits and cost sharing reductions for these plans will be available for eligible individuals or families with income from 100 to 400 percent of the FPL. In addition, if a state does not elect to operate an exchange, the Secretary of the Department of Health and Human Services (HHS), either directly or through an agreement with a non-profit entity, will establish and operate an exchange within that state. See Pub. L. No.111-148, §§1311, 1321, 1401, 1402, as amended.

⁵A recent study estimated that of the 7.3 million uninsured children in 2008, 4.7 million or 65 percent were eligible for Medicaid or CHIP, but were not enrolled. See Kenney, Genevieve, Victoria Lynch, Allison Cook, and Samantha Phong. “Who and Where Are the Children Yet to Enroll In Medicaid and the Children’s Health Insurance Program?” *Health Affairs*, vol. 29 (2010): 1920-1929. Another study estimated that of the 43.9 million individuals who were uninsured in the United States in 2007, 11.0 million were parents. See Allison Cook, Lisa Dubay, Bowen Garrett, “How Will the Uninsured Be Affected by Health Reform? Parents, Timely Analysis of Immediate Health Policy Issues” *Urban Institute* (August 2009).

⁶See Pub. L. No. 111-3, §112. The mandated study refers to both parents and caretakers of children; in this report we generally refer to both groups as “parents” unless otherwise noted.

⁷By health insurance status, we mean whether an individual is insured or uninsured and if insured, the source through which the individual obtains health insurance. We categorized parent and child health insurance status in one of three ways: (1) having private insurance, which includes employer-sponsored insurance; (2) having public insurance, which includes Medicaid and CHIP-funded health insurance; or (3) being uninsured.

insurance status was associated with a child's insurance status and use of health services, we conducted multivariate analyses using data from 3 years (2005–2007) of the Medical Expenditure Panel Survey (MEPS), a nationally representative survey that collects data from a sample of Americans on their health insurance status and service utilization, among other factors.⁸ Based on parents' health insurance status reported by survey respondents, we identified nine possible parent and child health insurance combinations—one being a parent with private insurance whose child had private insurance—and further analyzed each combination with respect to a child's insurance status and use of services.^{9,10} To measure parental satisfaction with their child's care, we used the Consumer Assessment of Healthcare Providers and Systems (CAHPS) measures included in the MEPS survey to create three index measures to identify a parent's perception of their child's quality of care: (1) family centeredness, which included whether the doctor spent enough time with the family and showed respect; (2) timeliness, which included how often a child received care when his or her parent requested it; and (3) realized access, which included problems with receiving routine care or referrals to specialists. For additional information about our MEPS analysis, see appendix I. Additionally, from over 270 peer-reviewed articles published between January 1998 and August 2010, we identified 19 articles which examined the association between the parents' health insurance status and either their child's health insurance status or use of services for further review. However, we did not find any articles that specifically examined the association between the parents' insurance and quality of care. For additional information on our literature review, see appendix III.

⁸MEPS is a set of large-scale surveys of families and individuals, their medical providers and their employers across the United States. MEPS collects data on the specific health services that Americans use, how frequently they use them, their experiences in accessing care, and other factors. We examined data from the surveys conducted from 2005 through 2007, the 3 years for which results were most recently available in March 2010 and focused on survey responses that related to demographic and health coverage information. Our analysis of MEPS data was cross-sectional, and therefore, our results do not imply causation.

⁹The nine parent/child health insurance combinations we identified were: (1) private parent/private child; (2) private parent/public child; (3) private parent/uninsured child; (4) public parent/private child; (5) public parent/public child; (6) public parent/uninsured child; (7) uninsured parent/private child; (8) uninsured parent/public child; and (9) uninsured parent/uninsured child. Survey participants that reported a change to their health insurance status in a given year were not assigned to any of the nine combinations.

¹⁰Using MEPS insurance coverage indicators, GAO defined public coverage as having CHIP, Medicaid, Medicare, or TRICARE.

To examine how selected states may change their Medicaid and CHIP coverage for parents in light of upcoming coverage expansions, we interviewed Medicaid and CHIP officials from eight states that had authority to cover parents in both their Medicaid- and CHIP-funded programs on the date CHIPRA was enacted.¹¹ In these interviews, we collected information on approaches for covering parents, including the income eligibility levels and the type of coverage offered, and reviewed relevant state documents.¹² We also collected Medicaid and CHIP enrollment data from state officials and the Centers for Medicare & Medicaid Services (CMS), the federal agency within the Department of Health and Human Services (HHS) that oversees states' Medicaid and CHIP programs. Additionally, we reviewed relevant federal legislation, including CHIPRA and PPACA, and interviewed CMS officials regarding their priorities in terms of issuing clarifying guidance to the states. We conducted our work from August 2009 to December 2010 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Low income parents of dependent children may have access to health insurance through their states' Medicaid- and CHIP-funded programs. Parents are eligible for Medicaid primarily through sections 1902(a)(10) and 1931 of the Social Security Act. Under these sections, states must, at a minimum, cover parents who meet the state's 1996 Aid to Families with Dependent Children eligibility criteria.¹³ To varying degrees, states have expanded eligibility to cover additional parents, either through a state plan

¹¹CHIPRA was enacted on February 4, 2009. The eight states are Arizona, Arkansas, Idaho, Minnesota, Nevada, New Jersey, New Mexico, and Wisconsin. Additional states had obtained approval to cover parents using CHIP funds prior to this point, but no longer had authority to do so as of the effective date of CHIPRA.

¹²We collected information on whether the state Medicaid or CHIP program offered direct coverage (where the state provides coverage through contract or agreements with managed care organizations or providers), or premium assistance (where the state pays for a portion of premium costs of employer-sponsored or privately purchased insurance).

¹³Aid to Families with Dependent Children eligibility criteria vary among states and include both financial and categorical components.

amendment or an approved section 1115 waiver.¹⁴ In addition, CHIP was established to reduce the number of uninsured, low income children who are not eligible for Medicaid and provided states with considerable flexibility in designing their CHIP programs.¹⁵ While the CHIP programs targeted children, states also could seek approval to cover certain parents of children eligible for CHIP. In addition, as with Medicaid, states could cover parents using CHIP funding through an approved section 1115 waiver; such waivers are the primary method states use to cover parents through CHIP.

In the eight states that covered parents in Medicaid and also had approval to cover them in CHIP as of February 2009, the total number of parents enrolled in states' Medicaid and CHIP programs ranged from around 12,000 parents in Idaho to over 200,000 parents in Arizona and Wisconsin. Additionally, in these eight states, parents comprised approximately 2 to 20 percent of the combined program populations. (See table 1.)

¹⁴A state that wants to make significant changes to its Medicaid program generally must submit those changes to CMS for review and approval in the form of a proposed state plan amendment. States may also seek approval to alter their programs through the use of Section 1115 waivers. Section 1115 of the Social Security Act allows the Secretary of HHS to waive certain statutory requirements or approve expenditures that would not otherwise be allowable, for demonstrations that are likely to assist in promoting program objectives.

¹⁵States have the choice of three design approaches for their CHIP programs: (1) a Medicaid expansion program, (2) a separate child health program with more flexible rules, or (3) a combination program, which has both a Medicaid expansion program and a separate child health program.

Table 1: Parent Enrollment in Medicaid and CHIP, as of February 2009

State	Parent enrollment in Medicaid	Parent enrollment in CHIP	Parents as a percentage of states' total Medicaid and CHIP enrollment
Arizona	228,673	8,640 ^a	19
Arkansas	11,936	2,500	2
Idaho	11,481	270	6
Minnesota	117,502	0 ^b	19
Nevada	18,677	3	8
New Jersey	60,696	124,307	18
New Mexico	35,836	11,054	10
Wisconsin	204,705	0 ^b	20

Source: State-reported Medicaid and CHIP enrollment data.

Note: Percentages are rounded to the nearest whole number.

^aArizona eliminated its CHIP-funded parent coverage as of October 2009; these parents were not transferred to the Medicaid program.

^bCHIP-funded parents in Minnesota and Wisconsin were transitioned to Medicaid funding as of February 2009 and April 2008, respectively. Prior to the transition, the states' CHIP eligibility levels were 100 to 200 percent of the FPL in Minnesota and 130 to 200 percent of the FPL in Wisconsin.

Both PPACA and CHIPRA include provisions that affect parent coverage funded through states' Medicaid and CHIP programs. For example, PPACA, which was enacted in March 2010, included a provision that requires state Medicaid programs to expand eligibility to include most individuals under 65 with incomes at or below 133 percent of the FPL by 2014.¹⁶ Individuals—including parents—who are not eligible for Medicaid may be able to purchase coverage through the exchanges that must be established by 2014.¹⁷ Individuals and families who purchase coverage through these exchanges may be eligible for premium tax credits and cost-sharing reductions if their income is between 100 and 400 percent of the

¹⁶See Pub. L. No. 111-148, §2001(a), 124 Stat. 119, 271 (2010), as amended by Pub. L. No. 111-152.

¹⁷See Pub. L. No. 111-148, §1311.

FPL.¹⁸ PPACA also includes a provision that prohibits states from applying Medicaid eligibility standards that are more restrictive for adults than those in effect on the date of the law's enactment until the date the Secretary determines that an exchange in that state is fully operational.¹⁹ In contrast, CHIPRA included provisions that introduced new limits to parent coverage. For instance, although CHIPRA authorized CHIP funding for parents through 2013, it also specified that HHS will not approve new waivers to cover parents, and that states with existing waivers that expire before October 1, 2011 may apply for an extension to continue coverage of parents through September 30, 2011.²⁰ Also, states are not permitted to increase their eligibility levels for parents covered under existing waivers and beginning in fiscal year 2012, the funding mechanism for these waivers will change.²¹ While PPACA also prohibits states from applying more restrictive eligibility standards for CHIP children, CMS has not yet issued guidance on the applicability of this prohibition to parent coverage under CHIP.²²

¹⁸Exchanges may be state-based government or non-profit entities that will have additional responsibilities as well, such as certifying plans and identifying individuals eligible for Medicaid, CHIP, and premium tax credits and cost sharing reductions. An exchange may not be an insurer, but will provide eligible individuals with access to insurers' plans in a comparable way. For additional information on exchanges, see Congressional Research Service, *Private Health Insurance Provisions in the Patient Protection and Affordable Care Act (PPACA)* Washington, D.C. (Sept. 21, 2010).

¹⁹This prohibition applies to children from the date of PPACA's enactment until October 1, 2019. In addition, from January 1, 2011, through December 31, 2013, the prohibition on changing eligibility for adults may have limited applicability if a state certifies to the Secretary that it has a budget deficit or projects to have a budget deficit in the following year. See. Pub. L. No. 111-148, § 2001(b)(2).

²⁰See 42 U.S.C. §1397kk(b)(1)(B).

²¹For fiscal years 2012 and 2013, CHIP-funded parent coverage will be financed through separate capped allotments that are based on 110 percent of a state's projected expenditures under its waiver, and states will only receive an enhanced federal matching rate if they meet certain outreach and enrollment targets for children in CHIP.

²²Under PPACA, as amended, states are essentially required to maintain at least the same level of CHIP eligibility for children from the date of the law's enactment until October 1, 2019.

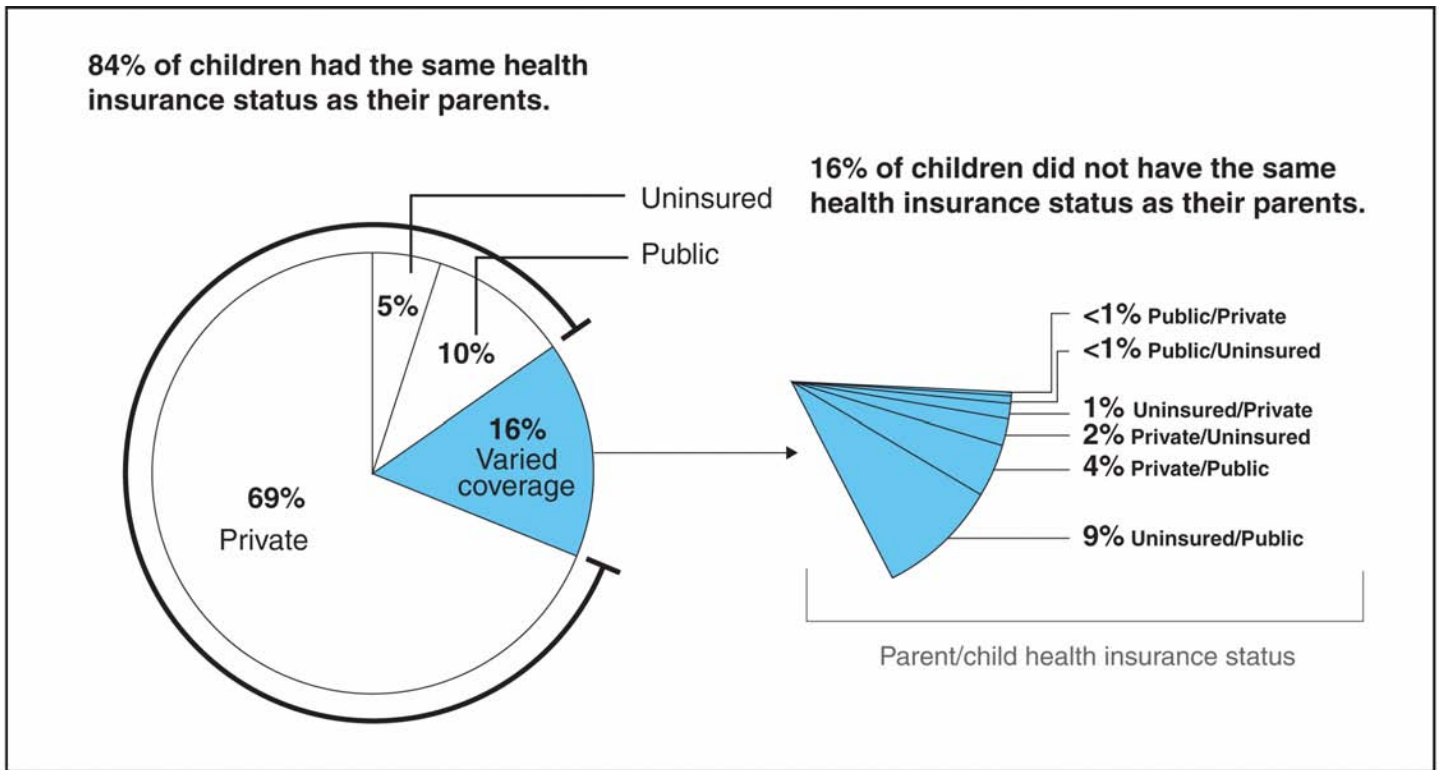
Parent Health Insurance Status Is Strongly Associated with a Child's Health Insurance Status, but Inconsistently Associated with Other Factors

Our analysis of MEPS data found that a parent's health insurance status is strongly associated with a child's health insurance status. However, a parent's insurance status is not consistently associated to a child's use of services or parental satisfaction with a child's care. Our review of relevant literature supports these findings.

We determined that children were more likely to have insurance if their parents had insurance and were more likely to be uninsured if their parents were uninsured. Further, our analyses indicated that among insured children, a parent's health insurance status was strongly associated with a child's health insurance status. Specifically, the vast majority of children in the sample (over 84 percent) had the same health insurance status as their parents. The most common insurance combination—about 69 percent of the sample—was privately insured parents with privately insured children, while 10 percent of the sample consisted of publicly insured parents with publicly insured children. Those without coverage—uninsured parents with uninsured children—made up another 5 percent of the sample. Parents and children who did not have the same health insurance status represented the remaining 16 percent of the sample and were divided among the other 6 insurance combinations. While most of the other 6 combinations each represented less than 2 percent of the sample, the combination of uninsured parents/publicly insured children and privately insured parents/publicly insured children represented about 9 and 4 percent of the sample, respectively.²³ (See fig. 1.) See Appendix I for more information on our analyses.

²³Private parent/uninsured child comprised 1.7 percent of the sample, and the remaining three insurance combinations each represented less than 1 percent of the sample.

Figure 1: Distribution of Parent/Child Health Insurance Combinations



Source: GAO analysis of 2005-2007 MEPS data.

Note: Analysis did not control for other relevant factors, such as child's age or family income.

To determine whether the association we identified between a parent's and a child's health insurance status remained despite variation in factors, such as age and family income, we also used multivariate analysis. After controlling for a number of relevant factors,²⁴ we determined that a parent's insurance status was almost always associated with a child's insurance status. Specifically, a child was about 8 times more likely to have public insurance if his or her parent had public insurance, and about

²⁴We used multivariate analysis to take into account family income level, parental employment status, highest family education level, whether families were single or dual parent, number of children in the household, child's age, child's health status, and parent's health insurance status.

87 times more likely to have private insurance if his or her parent had private insurance, compared to a child whose parent was uninsured.²⁵

These results—which show that a parent’s insurance status was strongly associated with his or her child’s insurance status—are consistent with the findings of our literature review. All 13 articles we reviewed that examined a parent’s and a child’s insurance status identified significant associations. In particular, among the articles that focused on states’ coverage policies:

- Two articles found that children in states that offered CHIP-funded insurance to parents were approximately 10 percent more likely to enroll in CHIP.²⁶
- Using data from the Current Population Survey, one article found that the availability of family insurance in a state’s CHIP program was associated with a 7 percentage point increase in the likelihood that eligible children would enroll in the program.²⁷
- One article found that states that had expanded Medicaid coverage to parents beyond federal minimum requirements had higher Medicaid participation among children. This particular study also examined data from both before and after Massachusetts’ expansion of public insurance for parents and found an association between offering public insurance to parents and a subsequent increase of child enrollment in public insurance.²⁸

²⁵These results are statistically significant at the .05 level.

²⁶See Cynthia Bansak and Christopher McLaren, “Parental Eligibility for Public Health Insurance: A Study of the State Children’s Health Insurance Program and Child Coverage Rates,” *Applied Economics Letters*, vol. 16 (2009): 359-363; and Cynthia Bansak and Steven Raphael, “The Effects of State Policy Design Features on Take-up and Crowd-out Rates for the State Children’s Health Insurance Program,” *Journal of Policy Analysis and Management*, vol. 26 (2006): 149-175.

²⁷Barbara Wolfe and Scott Scrivner, “The Devil May be in the Details: How the Characteristics of SCHIP Programs Affect Take-up,” *Journal of Policy Analysis and Management*, vol. 24 (2005): 499-522.

²⁸Lisa Dubay and Genevieve Kenney, “Expanding Public Health Insurance to Parents: Effects on Children’s Coverage under Medicaid,” *HSR: Health Services Research*, vol. 38 (2003): 1283-1302.

Beyond states' coverage policies, other articles we reviewed also identified associations between parental insurance status and child insurance status. For example, one article used Current Population Survey data to conclude that having a parent with public insurance reduced the number of children losing their public insurance coverage by nearly 76 percent.²⁹ Using different variables from the MEPS data, another article concluded that insured children with uninsured parents were more likely to experience a gap in coverage when compared to insured children with insured parents.³⁰ (See appendix III for an additional discussion of our literature review.)

We also used MEPS data to examine whether a parent's health insurance status was associated with (1) a child's use of services and (2) parent satisfaction with care, and found that a parent's insurance status was generally not associated with either circumstance.³¹ For most of our sample, a child was equally likely to have used services, or to have received satisfactory care, regardless of the parent's insurance status.³² (See appendix II for additional results.) While our review of the literature did not identify any studies that explored the association between parents' insurance status and satisfaction with their child's care, it did identify several studies that were consistent with our finding that a parent's insurance status was not consistently associated with a child's use of

²⁹Benjamin D. Sommers, "Insuring Children or Insuring Families: Do Parental and Sibling Coverage Lead to Improved Retention of Children in Medicaid and CHIP?" *Journal of Health Economics*, vol. 25 (2006): 1154-1169.

³⁰Jennifer E. DeVoe, Carrie J. Tillotson and Lorraine S. Wallace, "Children's Receipt of Health Care Services and Family Health Insurance Patterns," *Annals of Family Medicine*, vol. 7 (2009): 406-413.

³¹For the use of services analysis, the three services we explored were office-based visits, outpatient hospital visits, and emergency room visits. For the parent satisfaction analysis, the three measures we explored were family-centeredness, realized access, and timeliness. For both analyses, we used multivariate analysis to control for relevant factors that can be associated with use of services or parent satisfaction with child health care. See appendix I for additional information on the methods of analysis we used.

³²We did identify significant associations for use of services and parent satisfaction of care among various parent/child insurance combinations that represented a very small percentage of the sample. For example, when compared to an uninsured child with an uninsured parent, an uninsured child with a privately insured parent—an combination that represented less than 1 percent of the sample—was more likely to have an office-based visit and less likely to have an emergency room visit. Regarding a parent's satisfaction with his or her child's health care, we also identified significant associations among four parent/child insurance combinations, which in each case represented less than 2 percent of the sample. For the details of these exceptions, see appendix II.

health care services. For example, one study that also used MEPS data found that a child's emergency room use was not significantly associated with a mother's insurance status.³³ Another study found that insured children with insured parents in California were equally likely to have had a physician visit, compared to insured children with uninsured parents.³⁴ In contrast, two studies did identify an association between a parent's insurance status and a child's use of certain services; however, those studies were not directly comparable because they examined services, such as well-child visits, that we did not include in our analysis.³⁵

New Expansions Will Prompt Changes to States' Coverage of Parents

The expansion of health insurance coverage required under PPACA will prompt states to change parental coverage in Medicaid- and CHIP-funded programs, but the extent of state changes will vary. PPACA, as amended, requires states to extend Medicaid eligibility to most adults under age 65, including parents, with incomes up to 133 percent of the FPL by 2014.³⁶ Parents and families not eligible for Medicaid may be able to purchase coverage through exchanges, which must be established in each state by 2014, and may be eligible for premium tax credits and cost-sharing reductions.³⁷ Because of the association between parents' and children's health insurance status, expanded coverage to parents could have positive

³³Rakesh D. Mistry, Raymond G. Hoffmann, Jennifer S. Yauck, and David C. Brousseau, "Association Between Parental and Childhood Emergency Department Utilization," *Pediatrics*, vol. 115 (2005): e147-e151.

³⁴Sylvia Guendelman, Megan Wier, Veronica Angulo, and Doug Oman, "The Effects of Child-Only Insurance Coverage and Family Coverage on Health Care Access and Use: Recent Findings among Low-Income Children in California," *Health Services Research*, vol. 41 (2006): 125-147.

³⁵Amy Davidoff, Lisa Dubay, Genevieve Kenney, and Alshadye Yemane, "The Effect of Parents' Insurance Coverage on Access to Care for Low-income Children," *Inquiry* 40 (2003): 254-268 and Elizabeth J. Gifford, Robert Weech-Maldonado, and Pamela Farley Short, "Low-income Children's Preventive Services Use: Implications of Parents' Medicaid Status," *Health Care Financing Review*, vol. 26 (2005): 81-94.

³⁶See Pub. L. No. 111-148, §2001(a)(1) as modified by §10201; Pub. L. No. 111-152, §1004 and §1201. PPACA, as amended, creates a new mandatory Medicaid eligibility category for all non-elderly, non-disabled, and non-pregnant individuals, including parents up to 133 percent of the FPL, which was about \$29,000 annual income for a family of four in 2010.

³⁷PPACA requires the establishment of exchanges through which eligible individuals and families can purchase coverage, with premium tax credits and cost sharing reductions available for eligible individuals and families between 100 and 400 percent of the FPL. Pub. L. No. 111-148 §§ 1311, 1321, 1401, 1402, as amended.

implications for their families. With regard to the Medicaid expansion under PPACA, one study estimated that in 2008, there were 3 million uninsured children who were in families with incomes below 133 percent of the FPL.³⁸ To the extent that parents in these families become newly eligible for Medicaid, their children could benefit, based on the association between parent and child health insurance status. Similar expansions of parental coverage through the exchanges could also increase the number of children who are insured.

States' implementation of PPACA will depend on their unique circumstances, including the extent of the expansion of coverage necessary. For example, five of the eight states we reviewed must expand Medicaid coverage to additional parents to varying degrees. While Arkansas will need to expand its Medicaid eligibility for parents from 17 percent of the FPL to 133 percent of the FPL, Arizona will need to expand by a lesser degree, from 100 percent of the FPL to 133 percent of the FPL. Three states—Minnesota, New Jersey, and Wisconsin—have already expanded parental coverage to 133 percent FPL or higher. (See table 2.)

³⁸See Kenney, Genevieve, Victoria Lynch, Allison Cook, and Samantha Phong. "Who and Where Are the Children Yet to Enroll In Medicaid and the Children's Health Insurance Program?" *Health Affairs*, vol. 29 (2010): 1920-1929.

Table 2: Medicaid and CHIP Upper Income Eligibility for Parents in Eight States, as of 2010

State	Upper income eligibility as a percentage of the federal poverty level	
	Medicaid	CHIP
Arizona	100	0 ^a
Arkansas	17	200
Idaho	27	185
Minnesota	275	0 ^b
Nevada	75	200
New Jersey	133	200
New Mexico	30	200
Wisconsin	200	0 ^b

Source: State-reported data.

Notes: Upper eligibility levels were reported by state officials in March and April 2010 and pertain to either the Medicaid or CHIP state plan or the level for the state's Section 1115 demonstration waiver.

The scope of Medicaid and CHIP funded coverage for parents varied among states—thus, states that provided such coverage to parents did not necessarily offer them the full benefit package provided under the Medicaid or CHIP state plan.

^aArizona eliminated its CHIP-funded parent coverage as of October 2009. Prior to the transition, the state's CHIP eligibility level was 100 to 200 percent of the FPL.

^bCHIP-funded parents in Minnesota and Wisconsin were transitioned to Medicaid funding as of February 2009 and April 2008, respectively. Prior to the transition, the states' CHIP eligibility levels were 100 to 200 percent of the FPL in Minnesota and 130 to 200 percent of the FPL in Wisconsin.

In addition to expansions of coverage, states will need to ensure the proper placement of parents in CHIP, Medicaid, or an exchange, as PPACA also includes enrollment simplification and coordination requirements, which require states to coordinate placement of parents in CHIP, Medicaid, or an exchange.³⁹ Although coordination with exchanges will be new, previous coordination experiences in two states we reviewed suggest that states with closely aligned Medicaid and CHIP programs for parents were able to avoid any disruptions in their coverage despite changes in funding. For example, Minnesota transferred its CHIP-funded parents to Medicaid funding in February 2009 due to concerns that the state could

³⁹See Pub. L. No. 111-148, §2201. PPACA requires that, after January 1, 2014, states that receive Medicaid funding must establish procedures for simplifying enrollment and coordinating with the exchanges. For example, states must ensure that individuals who apply for Medicaid or CHIP, but are determined ineligible for either program, are screened for eligibility for plans offered through the exchanges, and if applicable, obtain premium tax credits or cost sharing reductions without having to submit an additional application.

not temporarily transfer parents to Medicaid if CHIP funding for children ran low. Because the state's Medicaid and CHIP-funded programs for parents had the same benefit and cost-sharing structure, state officials explained that this shift from CHIP to Medicaid was a "behind-the-scenes" funding change that did not affect the continuity of coverage for parents. Similarly, Wisconsin shifted parents from its CHIP program to its Medicaid program in April 2008 due, in part, to concerns that CHIP would not be reauthorized. As with Minnesota, Wisconsin officials indicated that the shift from CHIP to Medicaid was seamless for parents because the benefit structure was the same for both programs.

To facilitate state efforts to comply with PPACA requirements, CMS guidance will be critical. The agency has issued guidance related to the new Medicaid eligibility group, which says that beginning April 1, 2010, states may phase-in coverage for the new eligibility group; Connecticut and the District of Columbia have already received approval to do so.⁴⁰ More recently, CMS issued guidance to assist states with developing information technology systems that will support their efforts to expand Medicaid coverage and operate the exchanges and issued a proposed rule relating to federal funding for state Medicaid eligibility determination and enrollment activities.^{41,42} Recently, HHS also issued initial guidance to assist states with the establishment of their exchanges.⁴³ CMS is in the process of developing further guidance for states, and agency officials said that their highest priority is to provide states with guidance on how to enact the mandated coverage expansions, including additional guidance regarding the establishment of exchanges and the development of program eligibility requirements.

⁴⁰See <http://www.cms.gov/SMDL/SMD/itemdetail.asp?filterType=none&filterByDID=-99&sortByDID=1&sortOrder=descending&itemID=CMS1234610&intNumPerPage=10>. Connecticut received approval in April 2010 and the District of Columbia received approval in May 2010.


⁴¹See <https://www.cms.gov/apps/docs/Joint-IT-Guidance-11-3-10-FINAL.pdf>.

⁴²See <http://edocket.access.gpo.gov/2010/pdf/2010-27971.pdf>.

⁴³See http://www.hhs.gov/ociio/regulations/guidance_to_states_on_exchanges.html.

We provided a draft of this report to HHS for its review and comment. HHS provided technical comments, which we incorporated as appropriate. We are sending copies of this report to the Administrator of CMS and other interested parties. In addition, the report is available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-7114 or yocomc@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix IV.



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Appendix I: Scope and Methodology of MEPS Analysis

Our first objective was to assess the extent to which a parent's health insurance status was associated with a child's health insurance status, a child's use of services, and parental satisfaction with his or her child's care. We identified the Medical Expenditure Panel Survey (MEPS), a nationally representative survey, as the most useful for our purposes because it (1) differentiated health insurance status among survey participants, (2) included information about relevant demographic and economic factors needed for our analyses, (3) had a large sample size, and (4) had been used in comparable analyses in previous studies.¹ We analyzed data from three MEPS surveys (2005, 2006, and 2007), choosing to use 3 years of data in order to improve the precision of our analyses. To determine the reliability of the MEPS data, we reviewed related documentation, conducted electronic testing for missing data, outliers, and obvious errors, and identified other studies that used MEPS to address similar research questions. We determined that the MEPS data were sufficiently reliable for the purposes of our engagement.

Analysis Variables

From the MEPS data, we identified variables for our analysis. Our key independent variable was a parent's health insurance status, while our key dependent variables were a child's health insurance status, a child's use of services, and parental satisfaction with his or her child's care. For the health insurance status analysis, we classified individuals who reported no change in their health insurance status for 12 consecutive months into one of three categories: publicly insured, privately insured, or uninsured. This led to nine possible parent and child insurance combinations—one being a parent with private insurance whose child also had private insurance.² Individuals were considered as having public insurance if they were enrolled in Medicaid, Medicare, TRICARE, or the state Children's Health Insurance Program (CHIP). For the use of services analysis, we focused on

¹MEPS is a set of large-scale surveys of families and individuals, their medical providers and their employers across the United States. MEPS collects data on the specific health services that Americans use, how frequently they use them, their experiences in accessing care, and other factors. We examined data from the surveys conducted from 2005 through 2007, and focused on survey responses that related to demographic and health coverage information.

²The nine parent/child insurance combinations we identified were: (1) private parent/private child; (2) private parent/public child; (3) private parent/uninsured child; (4) public parent/private child; (5) public parent/public child; (6) public parent/uninsured child; (7) uninsured parent/private child; (8) uninsured parent/public child; and (9) uninsured parent/uninsured child. Survey participants that reported a change in their health insurance status in a given year were not assigned to any of the nine combinations.

three services—office-based visits, outpatient hospital visits, and emergency room visits—and categorized children in one of two ways: (1) children who had not used a service in the past 12 months and (2) children who used a service at least once in the past 12 months. For the parental satisfaction analysis, we used eight questions from the Consumer Assessment of Healthcare Providers and Systems within MEPS to develop three composite measures of parent satisfaction—family centeredness, timeliness, and realized access.³ We averaged the scores for each of the three composite measures and then classified parents as either indicating that their child received satisfactory or unsatisfactory care. For the family-centeredness measure we used responses to the following four questions:⁴

- In the last 12 months, how often did (CHILD’s) doctors or other health care providers listen carefully to you?
- In the last 12 months, how often did (CHILD’s) doctors or other health providers explain things in a way you could understand?
- In the last 12 months, how often did (CHILD’s) doctors or other health providers show respect for what you had to say?
- In the last 12 months, how often did doctors or other health providers spend enough time with (CHILD)?

For the timeliness measure, we used responses to the following two questions:⁵

- In the last 12 months, when (CHILD) needed care right away for an illness, injury, or condition, how often did (CHILD) get care as soon as you wanted?
- In the last 12 months, not counting times (CHILD) needed health care right away, how often did (CHILD) get an appointment for health care as soon as you wanted?

³This approach was based on methods used in prior research. See David C. Brousseau, Raymond G. Hoffmann, Ann B. Nattinger, Glenn Flores, Yinghua Zhang, and Marc Gorelick, “Quality Of Primary Care and Subsequent Pediatric Emergency Department Utilization,” *Pediatrics*, vol. 119 (2007): 1131-1138.

⁴Possible answers to these four questions were never, sometimes, usually, or always.

⁵Possible answers to these two questions were never, sometimes, usually, or always.

For the realized access measure, we used responses to the following two questions:⁶

- In the last 12 months, how much of a problem, if any, was it to get the care, tests, or treatments you or a doctor believed necessary?
- In the last 12 months, how much of a problem, if any, was it to see a specialist that (CHILD) needed to see?

Through our literature review and stakeholder discussions, we also identified other independent variables within the MEPS data for further analysis of our dependent variables. For example, in analyzing a child's health insurance status, we included family income level, parental employment status, highest family education level, family status (single parent or dual parent), number of children in the household, child's age, child's health status, and parent's health insurance status as independent variables. For the use of services and parental satisfaction with care analyses, we included family income level, highest family education level, family status (single parent, dual parent, or guardian), number of children in the household, child's age, child's health status, parent's health insurance status, and region of residence as independent variables. For the parental satisfaction with care analysis, we also included a parent's employment status variable. Incorporating these independent variables, we used logistic regression models to estimate the likelihood of a child having a particular health insurance status, use of three health services, and parental satisfaction with his or her child's care. Logistic regression is a widely accepted method for analyzing dichotomous outcomes (for example, analyzing the likelihood of a person being either publicly insured or not publicly insured, or having had one or more physician visits, versus no physician visits) when the interest is in determining the effects of multiple factors that may be related to one another.

Methodology

We used multivariate analysis to estimate the likelihood that a parent's health insurance status was associated with a child's health insurance status, a child's use of services, and parental satisfaction with his or her child's care. There were three steps to each of these analyses:

⁶Possible answers to these two questions were "a big problem," "a small problem," or "not a problem."

- For the first step, we used univariate analysis to explore the distributions of the various independent and dependent variables. This allowed us to identify necessary recoding of variables and overall demographics of our data. For example, it allowed us to identify the number of children with public insurance in the sample.
- For the second step, we used bivariate cross-tabulations to determine the association between our various independent and dependent variables. In this step, each cross-tabulation included only a single independent variable, rather than controlling for multiple independent variables at the same time. For example, one cross-tabulation allowed us to identify how many children with public coverage also had a parent with public coverage. We used chi-square analyses in order to test for any statistically significant associations at this level.
- For the third step, we used logistic regression to explore the association between our independent variables and each of our dependent variables. In this analysis, our independent variables were analyzed together (to control for multiple independent variables simultaneously) in separate models for each of our dependent variables.⁷ For the use of services and parent satisfaction analyses, we analyzed sub-populations of children, based on their health insurance status (public, private, uninsured) to differentiate a child's health insurance status from a parent's health insurance status.⁸ We then used statistical tests for goodness of fit, multicollinearity, and interaction effects to identify whether our models were valid.⁹ Based on the results of these tests, we removed some independent variables from the models, such as urban/rural status and child's race/ethnicity. Lastly, we ran the finalized models, excluding

⁷Thus, the number of models developed varied, depending on the number of dependent variables analyzed. Our analysis of health insurance status resulted in three models, while our analysis of the use of services and parent satisfaction with care each used nine models.

⁸Other studies have used subpopulation analyses to highlight differences among categories of key independent variables. For our analyses of a child's use of services and parent satisfaction with a child's care, our subpopulations were by child's health insurance status (public, private, and uninsured).

⁹To test for goodness of fit, we used the Hosmer and Lemeshow goodness of fit statistic. To test for multicollinearity, we assessed the correlations of our independent variables to make sure they were not too closely related, along with looking closely at the standard errors of our models to make sure they were not atypical. We also ran interaction terms to test for possible interactions in potentially related variables (for example, between child's age and perceived health status). We reviewed the results of the interaction terms but did not find consistent patterns that indicated a need to run any independent variables together as opposed to separately.

variables that did not contribute to our model.¹⁰ We also re-ran the tests for goodness of fit, multicollinearity, and interaction effects, to ensure the soundness of the models. All models were calculated using sampling weights to account for the sampling methodology used in MEPS.

In our analyses, we expressed differences in likelihood using odds ratios.¹¹ An odds ratio conveys the odds of an event occurring in one group compared to the odds of the event occurring in another group—the reference or comparison group. In our analysis, we explored nine events of interest.¹² An odds ratio greater than 1.0 signifies that the dependent variable is more likely to occur. For example, an odds ratio of 1.74 would be interpreted as the dependent variable being 1.74 times more likely to occur in a certain group, compared to the comparison group. Odds ratios less than 1.0 signify that the dependent variable is less likely to occur. For example, an odds ratio of 0.74 would be interpreted as the dependent variable being 0.74 times as likely to occur in a certain group, compared to the comparison group. This can also be phrased as being 26 percent less likely to occur in a certain group, compared to the comparison group. An odds ratio equal to 1 signifies that the dependent variable is equally likely to occur in a certain group, compared to the comparison group.¹³

¹⁰For child health insurance status, urban or rural residence, region of residence, and child's race/ethnicity were removed from the optimized model. For use of services and parent satisfaction with care, child's race/ethnicity, urban or rural residence, child's gender, and a measure for co-payments/deductibles for services were removed from the optimized models. In addition, for use of services, parental employment status was also removed, whereas it was retained in the parent satisfaction analysis.

¹¹We used odds ratios rather than percentages because they are more appropriate for statistical modeling and multivariate analysis.

¹²The nine events are: (1) public coverage or not, (2) private coverage or not, (3) uninsured or not, (4) use of an office-based visit or not, (5) use of an outpatient hospital visit or not, (6) use of an emergency room visit or not, (7) child perceived as receiving family-centered care or not, (8) child perceived as receiving timely care or not, and (9) child perceived as being able to realize access to care or not.

¹³A confidence interval, which is expressed as a numeric range, indicates the statistical significance of an odds ratio. Specifically, when both numbers in the confidence interval are either above or below 1, the odds ratio, which falls within the range, is considered statistically significant.

Appendix II: Additional Results from Our Analysis of MEPS

This appendix presents an in-depth look at the bivariate and multivariate results we describe in the report for health insurance status, use of services, and parent satisfaction with his or her child's care.¹ (Details on our scope, methodology, and MEPS analysis are presented in appendix I.)

Health Insurance Status

In the health insurance status analysis we present the likelihood of a child having a particular health insurance status (public, private, or uninsured), our dependent variable, by various independent variables, the key one being a parent's health insurance status.

Table 3 lists the distribution of parent and child health insurance status before controlling for other factors and indicates that a child's health insurance status is closely associated with his or her parent's health insurance status.

Table 3: Percentage of Children in Each Parent/Child Insurance Combination in GAO's MEPS Analysis, before Controlling for Other Factors

	Parent's health insurance status			Total
	Public	Private	Uninsured	
Child's health insurance status				
Public	10.2	4.1	8.8	23.1
Private	0.1	68.7	0.9	69.7
Uninsured	0.3	1.7	5.2	7.2
Total for all percentages	10.6	74.5	14.9	100.0

Source: GAO analysis of 2005-2007 MEPS data.

Notes: Chi-square was used to measure statistical significance. Results are statistically significant at the .05 level.

Sample size for the analysis was 23,794.

Table 4 presents the cross-tabulation of children's health insurance status by parent's health insurance status, before controlling for other factors and indicates a close association between parent health insurance status and children's health insurance status.

¹For this report, we analyzed Medical Expenditure Panel Survey (MEPS) data from the three most recently available surveys in March 2010 (2005, 2006, and 2007). Using univariate, bivariate, and multivariate logistic regression models, we estimated the likelihood that a parent's health insurance status was associated with a child's health insurance status, child's use of services, and parental satisfaction with his or her child's care.

Table 4: Percentage of Children That Had a Particular Health Insurance Status by Parent's Health Insurance Status, before Controlling for Other Factors

	Parent's health insurance status		
	Public	Private	Uninsured
Child's health insurance status			
Public	96.3	5.5	59.1
Private	1.4	92.2	5.7
Uninsured	2.4	2.3	35.1
Total^a	100.0	100.0	100.0

Source: GAO analysis of 2005-2007 MEPS data.

Notes: Chi-square was used to measure statistical significance. Results are statistically significant at the .05 level.

Sample size for the analysis was 23,794.

^aTotal percentages may not add up to 100 percent due to rounding.

Table 5 summarizes the results from the three logistic regression models that examined the association between a child's health insurance status and a parent's health insurance status. After controlling for other factors, we determined that a child is significantly more likely to have the same health insurance status as his or her parent, when compared to an uninsured parent. For example, a child was 8.12 times more likely to have public insurance if their parent had public insurance, when compared to child whose parent was uninsured.

Table 5: Likelihood of a Child Having a Particular Health Insurance Status, after Controlling for Other Factors

	Child's health insurance status		
	Public	Private	Uninsured
Parent's health insurance status			
Uninsured ^a	1.00	1.00	1.00
Public	8.12 (5.87-11.24)	0.58 (0.30-1.13)	0.08 (0.05-0.12)
Private	0.14 (0.11-0.17)	87.04 (58.2-130.2)	0.03 (0.02-0.04)

Source: GAO logistic regression of 2005-2007 MEPS data.

Notes: Bolded results are statistically significant at the .05 level.

Table represents a summary of results from three models. Sample size for each of the three models was 23,183 respondents.

The models control for family income level, parental employment status, highest family education level, whether families were single or dual parent, number of children in the household, child's age, and child's health status. We expressed differences in likelihood using odds ratios, which convey the odds of an event occurring in one group compared to the odds of the event occurring in another group—the reference or comparison group. The numeric range next to each odds ratio is the confidence interval, within which the odds ratio falls. When both numbers in this confidence interval are either above or below 1, the odds ratio is considered statistically significant.

^aDenotes the reference (or comparison) group.

Use of Services

In the use of services analysis, we present the likelihood of a child using a particular service (physician visits, emergency room visits, and outpatient hospital visits), our dependent variable, by various independent variables, the key one being a parent's health insurance status.

Table 6 lists the percentage of children who used specific health care services in the past year, by a parent's health insurance status, before controlling for other factors. These data indicate that when compared to children with uninsured or publicly insured parents, children with privately insured parents were the most likely to have had office-based or outpatient hospital visits and were the least likely to have had emergency room visits in the past year.

Table 6: Percentage of Children That Used Specific Health Services in the Past Year by Parent’s Health Insurance Status, before Controlling for Other Factors

	Office-based visit	Outpatient hospital visit	Emergency room visit
Parent’s health insurance status			
Public	68.8	6.4	15.5
Private	77.1	7.3	10.7
Uninsured	59.4	4.8	12.7

Source: GAO analysis of 2005-2007 MEPS data.

Notes: Chi-square was used to measure statistical significance. Results are statistically significant at the .05 level.

Sample size for each of the three analyses was 24,652.

Tables 7 through 9 summarize the results of models examining the relationship between a parent’s insurance status and a child’s use of three health care services—office-based visits, outpatient hospital visits, and emergency room visits. After controlling for other factors, a parent’s health insurance status was generally not an indicator of whether a child used these health services. In most cases, a child was equally likely to have used these services, regardless of a parent’s health insurance status. We did, however, identify two significant associations within one parent/child insurance combination. Specifically, an uninsured child with a privately insured parent—although a small portion of the sample—was 65 percent more likely to have had an office-based visit and 69 percent (or 0.31 times) less likely to have had an emergency room visit, compared to an uninsured child whose parent was uninsured (See tables 7 and 9, respectively).

Table 7: Likelihood of a Child Having an Office-Based Visit in the Past Year, after Controlling for Other Factors

	Child's health insurance status		
	Public	Private	Uninsured
Parent's health insurance status			
Uninsured ^a	1.00	1.00	1.00
Public	1.10 (0.93-1.31)	0.52 (0.24-1.14)	0.98 (0.53-1.81)
Private	1.09 (0.84-1.41)	1.40 (0.86-2.27)	1.65 (1.17-2.32)

Source: GAO logistic regression of 2005-2007 MEPS data.

Notes: Bolded result is statistically significant at the .05 level.

Table represents a summary of results from three models. Sample size for the publicly insured child model was 9,063 respondents. Sample size for the privately insurance child model was 10,037 respondents. Sample size for the uninsured child model was 1,986.

The models control for family income level, region of residence, highest family education level, whether families were single parent, dual parent, or guardian, number of children in the household, child's age, and child's health status. We expressed differences in likelihood using odds ratios, which convey the odds of an event occurring in one group compared to the odds of the event occurring in another group—the reference or comparison group. The numeric range next to each odds ratio is the confidence interval, within which the odds ratio falls. When both numbers in this confidence interval are either above or below 1, the odds ratio is considered statistically significant.

^aDenotes the reference (or comparison) group.

Table 8: Likelihood of a Child Having Had an Outpatient Hospital Visit in the Past Year, after Controlling for Other Factors

	Child's health insurance status		
	Public	Private	Uninsured
Parent's health insurance status			
Uninsured ^a	1.00	1.00	1.00
Public	1.08 (0.77-1.20)	0.55 (0.07-4.65)	1.90 (0.34-10.62)
Private	1.08 (0.72-1.61)	1.12 (0.46-2.70)	1.87 (0.90-3.89)

Source: GAO logistic regression of 2005-2007 MEPS data.

Notes: Table represents a summary of results from three models. Sample size for the publicly insured child model was 9,063 respondents. Sample size for the privately insurance child model was 10,037 respondents. Sample size for the uninsured child model was 1,986.

The models control for family income level, region of residence, highest family education level, whether families were single parent, dual parent, or guardian, number of children in the household, child's age, and child's health status. We expressed differences in likelihood using odds ratios, which convey the odds of an event occurring in one group compared to the odds of the event occurring in another group—the reference or comparison group. The numeric range next to each odds ratio is the confidence interval, within which the odds ratio falls. When both numbers in this confidence interval are either above or below 1, the odds ratio is considered statistically significant.

^aDenotes the reference (or comparison) group.

Table 9: Likelihood of a Child Having Had an Emergency Room Visit in the Past Year, after Controlling for Other Factors

Parent's health insurance status	Child's health insurance status		
	Public	Private	Uninsured
Uninsured ^a	1.00	1.00	1.00
Public	1.06 (0.86-1.29)	1.68 (0.40-7.07)	0.50 (0.18-1.39)
Private	0.76 (0.58-1.01)	1.26 (0.58-2.75)	0.31 (0.16-0.62)

Source: GAO logistic regression of 2005-2007 MEPS data.

Notes: Bolded result is statistically significant at the .05 level.

Table represents a summary of results from three models. Sample size for the publicly insured child model was 9,063 respondents. Sample size for the privately insurance child model was 10,037 respondents. Sample size for the uninsured child model was 1,986.

The models control for family income level, region of residence, highest family education level, whether families were single parent, dual parent, or guardian, number of children in the household, child's age, and child's health status. We expressed differences in likelihood using odds ratios, which convey the odds of an event occurring in one group compared to the odds of the event occurring in another group—the reference or comparison group. The numeric range next to each odds ratio is the confidence interval, within which the odds ratio falls. When both numbers in this confidence interval are either above or below 1, the odds ratio is considered statistically significant.

^aDenotes the reference (or comparison) group.

Parent Satisfaction with Care

In the parent satisfaction analysis, we present the likelihood of a parent reporting his or her child's care as satisfactory, using composite measures based on prior research that illustrate three aspects of satisfaction: family-centeredness, timeliness, and realized access. Parent satisfaction is our dependent variable, which is analyzed in conjunction with various independent variables, the key one being a parent's health insurance status.

Table 10 lists the percentage of children whose parents reported that they had received satisfactory care for the three composite measures, by parent health insurance status, before controlling for other factors. These results indicate that when compared to children with uninsured or publicly insured parents, more privately insured parents rated their child's care as satisfactory.

Table 10: Percentage of Children Whose Parents Reported They Received Satisfactory Care, before Controlling for Other Factors

	Highly family-centered care	Timely care	Easier realized access to care
Parent's health insurance status			
Public	69.2	66.3	79.5
Private	75.0	71.6	88.2
Uninsured	67.5	64.4	80.3

Source: GAO analysis of 2005-2007 MEPS data.

Notes: Chi-square was used to measure statistical significance. Results are statistically significant at the .05 level.

Sample size for the family-centeredness analysis was 17,729. Sample size for the timeliness analysis was 16,207. Sample size for the realized access analysis was 9,311.

Tables 11 through 13 summarize the results of models examining the relationship between a parent's insurance status and a parent's satisfaction with his or her child's care, defined by three aspects of satisfaction: family-centeredness, timeliness, and realized access. After controlling for other factors, a parent's health insurance status was generally not an indicator of whether a parent reported satisfaction with the care a child received. In most cases, parents were equally likely to have rated their child's care as satisfactory, regardless of their health insurance status. We did, however, identify significant associations among four parent/child insurance combinations, which in each case represented less than 2 percent of the sample. Specifically, an uninsured child was 2.33 and 1.76 times more likely to have been rated as receiving timely care if his or her parent was either publicly or privately insured, respectively, compared to an uninsured child whose parent was uninsured. (See table 12.) In addition, compared to an uninsured parent, a publicly insured parent with a privately insured child was 5.36 times more likely to have rated his or her child's care as timely. (See table 12.) Further, a publicly insured parent with an uninsured child was 56 percent less likely to have rated his or her child's realized access as highly satisfactory, compared to an uninsured parent with an uninsured child. (See table 13.)

Table 11: Likelihood That a Parent Reported His or Her Child’s Care as Highly Family Centered, after Controlling for Other Factors

	Child’s health insurance status		
	Public	Private	Uninsured
Parent’s health insurance status			
Uninsured ^a	1.00	1.00	1.00
Public	0.85 (0.67-1.07)	2.62 (0.75-9.11)	0.93 (0.48-1.83)
Private	1.07 (0.78-1.47)	1.46 (0.75-2.82)	1.00 (0.65-1.53)

Source: GAO logistic regression of 2005-2007 MEPS data.

Note: Table represents a summary of results from three models. Sample size for the publicly insured child model was 6,600 respondents. Sample size for the privately insurance child model was 7,824 respondents. Sample size for the uninsured child model was 933.

The models control for family income level, parental employment status, highest family education level, whether families were single parent, dual parent, or guardian, number of children in the household, child’s age, region of residence, and child’s health status. We expressed differences in likelihood using odds ratios, which convey the odds of an event occurring in one group compared to the odds of the event occurring in another group—the reference or comparison group. The numeric range next to each odds ratio is the confidence interval, within which the odds ratio falls. When both numbers in this confidence interval are either above or below 1, the odds ratio is considered statistically significant.

^aDenotes the reference (or comparison) group.

Table 12: Likelihood That a Parent Reported His or Her Child’s Care as Timely, after Controlling for Other Factors

	Child health insurance status		
	Public	Private	Uninsured
Parent’s health insurance status			
Uninsured ^a	1.00	1.00	1.00
Public	0.89 (0.70-1.14)	5.36 (1.29-22.34)	2.33 (1.23-4.42)
Private	1.09 (0.79-1.50)	0.88 (0.46-1.71)	1.76 (1.08-2.87)

Source: GAO logistic regression of 2005-2007 MEPS data.

Notes: Bolded results are statistically significant at the .05 level.

Table represents a summary of results from three models. Sample size for the publicly insured child model was 5,886 respondents. Sample size for the privately insured child model was 7,368 respondents. Sample size for the uninsured child model was 810.

The models control for family income level, parental employment status, highest family education level, whether families were single parent, dual parent, or guardian, number of children in the household, child’s age, region of residence, and child’s health status. We expressed differences in likelihood using odds ratios, which convey the odds of an event occurring in one group compared to the odds of the event occurring in another group—the reference or comparison group. The numeric range next to each odds ratio is the confidence interval, within which the odds ratio falls. When both numbers in this confidence interval are either above or below 1, the odds ratio is considered statistically significant.

^aDenotes the reference (or comparison) group.

Table 13: Likelihood That a Parent Reported His or Her Child’s Care as High for Realized Access, after Controlling for Other Factors

Parent’s health insurance status	Child’s health insurance status		
	Public	Private	Uninsured
Uninsured ^a	1.00	1.00	1.00
Public	1.01 (0.75-1.35)	0.42 (0.50-3.46)	0.44 (0.26-0.77)
Private	1.35 (0.87-2.09)	0.71 (0.26-1.92)	1.26 (0.78-2.02)

Source: GAO logistic regression of 2005-2007 MEPS data.

Notes: Bolded result is statistically significant at the .05 level. Table represents a summary of results from three models. Sample size for the publicly insured child model was 3,152 respondents. Sample size for the privately insurance child model was 4,565 respondents. Sample size for the uninsured child model was 411.

The models control for family income level, parental employment status, highest family education level, whether families were single parent, dual parent, or guardian, number of children in the household, child’s age, region of residence, and child’s health status. We expressed differences in likelihood using odds ratios, which convey the odds of an event occurring in one group compared to the odds of the event occurring in another group—the reference or comparison group. The numeric range next to each odds ratio is the confidence interval, within which the odds ratio falls. When both numbers in this confidence interval are either above or below 1, the odds ratio is considered statistically significant.

^aDenotes the reference (or comparison) group.

Appendix III: Literature Review

Our literature review included articles published between January 1, 1998, and August 31, 2010. We conducted a structured search of various databases for relevant peer reviewed articles, including PubMed, Sociological Abstracts, ProQuest Health and Medical Complete, ABI/INFORM, and MEDLINE. Key terms used to search for articles included various combinations of “health,” “parent,” “child,” “coverage,” “insurance,” “enrollment,” “utilization,” “access,” and “quality.” The bibliographies of articles found to be relevant were examined for additional articles. Articles were then coded by their data sources, type of analysis, overall findings, and whether they found that parental coverage had a statistically significant effect on child coverage, use of services, or quality of care.

From all sources, we identified over 270 articles. We then identified articles that were published outside of the United States, reported on subject or data outside of the United States, or were unrelated to the relationship between parent coverage and children’s coverage, use of services, or quality of care, and excluded them from our review. After excluding these articles, 19 articles remained: 10 examined the association between parents’ coverage and children’s coverage, 6 examined the association between parents’ coverage and children’s use of services, and 3 examined both of these issues. Our review did not find any articles that specifically examined the association between parents’ coverage and quality of care, or parent satisfaction with the care their child received.

Articles Relating to Coverage

Despite methodological differences, all 13 articles we reviewed that examined the association between a parent’s and a child’s insurance coverage identified significant associations:

Bansak, Cynthia, and Christopher McLaren. “Parental Eligibility for Public Health Insurance: A Study of the State Children’s Health Insurance Program and Child Coverage Rates” *Applied Economics Letters*, vol. 16 (2009): 359-363.

Bansak, Cynthia, and Steven Raphael. “The Effects of State Policy Design Features on Take-up and Crowd-out Rates for the State Children’s Health Insurance Program” *Journal of Policy Analysis and Management*, vol. 26 (2006): 149-175.

DeVoe, Jennifer E., Lisa Krois, Tina Edlund, Jeanene Smith, and Nichole E. Carlson. "Uninsurance Among Children Whose Parents are Losing Medicaid Coverage: Results from a Statewide Survey of Oregon Families" *HSR: Health Services Research*, vol. 43 (2008): 401-418.

DeVoe, Jennifer E., Lisa Krois, Christine Edlund, Jeanene Smith, and Nichole E. Carlson. "Uninsured but Eligible Children - Are Their Parents Insured? Recent Findings from Oregon" *Medical Care*, vol. 48 (2008): 3-8.

DeVoe, Jennifer E., Carrie J. Tillotson, and Lorraine S. Wallace. "Children's Receipt of Health Care Services and Family Health Insurance Patterns" *Annals of Family Medicine*, vol. 7 (2009): 406-413.

DeVoe, Jennifer E., Carrie Tillotson, and Lorraine S. Wallace. "Uninsured Children and Adolescents with Insured Parents" *JAMA*, vol. 16 (2008): 1904-1913.

Dubay, Lisa, and Genevieve Kenney. "Expanding Public Health Insurance to Parents: Effects on Children's Coverage under Medicaid" *HSR: Health Services Research*, vol. 38 (2003): 1283-1302.

Guendelman, Sylvia, and Michelle Pearl. "Children's Ability to Access and Use Health Care" *Health Affairs*, vol. 23 (2004): 235-244.

Hanson, Karla L., "Is Insurance for Children Enough? The Link Between Parents' and Children's Health Care Use Revisited" *Inquiry*, vol. 35 (1998): 294-302.

Kenney, Genevieve, Jamie Rubenstein, Anna Sommers, Stephen Zuckerman, and Frederic Blavin. "Medicaid and SCHIP Coverage: Findings from California and North Carolina" *Health Care Financing Review*, vol. 29 (2007): 71-85.

Sommers, Benjamin D. "Insuring Children or Insuring Families: Do Parental and Sibling Coverage Lead to Improved Retention of Children in Medicaid and CHIP?" *Journal of Health Economics*, vol. 25 (2006): 1154-1169.

Thorpe, Kenneth E., and Curtis S. Florence. "Health Insurance Among Children: The Role of Expanded Medicaid Coverage" *Inquiry*, vol. 35 (1998): 369-379.

Wolfe, Barbara, and Scott Scrivner. "The Devil May be in the Details: How the Characteristics of SCHIP Programs Affect Take-up" *Journal of Policy Analysis and Management*, vol. 24 (2005): 499-522.

Articles Relating to Use of Services

The 9 articles we identified that examined the association between a parent's health insurance status and a child's use of services had mixed results. Two articles identified consistent, significant associations between a parent's health insurance status and a child's use of health care services:

Davidoff, Amy, Lisa Dubay, Genevieve Kenney, and Alshadye Yemane. "The Effect of Parents' Insurance Coverage on Access to Care for Low-income Children" *Inquiry*, vol. 40 (2003): 254-268.

Gifford, Elizabeth J., Robert Weech-Maldonado, and Pamela Farley Short. "Low-income Children's Preventive Services Use: Implications of Parents' Medicaid Status" *Health Care Financing Review*, vol. 26 (2005): 81-94.

Two articles identified some significant associations between a parent's source of coverage and a child's use of health care services:

DeVoe, Jennifer E., Carrie J. Tillotson, and Lorraine S. Wallace. "Children's Receipt of Health Care Services and Family Health Insurance Patterns" *Annals of Family Medicine*, vol. 7 (2009): 406-413.

Zimmerman, Frederick J. "Social and Economic Determinants of Disparities in Professional Help-seeking for Child Mental Health Problems: Evidence from a National Sample" *HSR: Health Services Research*, vol. 40 (2005): 1514-1533.

Five articles found no significant associations between a parent's health insurance status and a child's use of health care services:

DeVoe, Jennifer E., Alia Baez, Heather Angier, Lisa Krois, Christine Edlund, Patricia A. Carney. "Insurance+Access≠Health care: Typology of Barriers to Health Care Access for Low-Income Families" *Annals of Family Medicine*, vol. 5 (2007): 511-518.

Guendelman, Sylvia and Michelle Pearl. "Children's Ability to Access and Use Health Care" *Health Affairs*, vol. 23 (2004): 235-244.

Guendelman, Sylvia, Megan Wier, Veronica Angulo, and Doug Oman. "The Effects of Child-only Insurance Coverage and Family Coverage on Health Care Access and Use: Recent Findings among Low-income Children in California" *HSR: Health Services Research*, vol. 41 (2006): 125-147.

Hanson, Karla L. "Is Insurance for Children Enough? The Link Between Parents' and Children's Health Care Use Revisited" *Inquiry*, vol. 35 (1998): 294-302.

Mistry, Rakesh D., Raymond G. Hoffman, Jennifer S. Yauck, and David C. Brousseau. "Association between Parental and Childhood Emergency Department Utilization" *Pediatrics*, vol. 115 (2005): e147-e151.

Articles Relating to Quality of Care

We did not identify any articles that specifically addressed the association between a parent's health insurance status and any quality of care measures, including parent satisfaction with the care his or her child received.

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

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Acknowledgments

In addition to the contact named above, Susan T. Anthony, Assistant Director; Suzanne Worth, Assistant Director; Eagan Kemp; Drew Long; JoAnn Martinez-Shriver; Kevin Milne; Daniel Ries; and Priyanka Sethi made key contributions to this report.

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