By Ian M. Goldstein, Deliana Kostova, Jennifer L. Foltz, and Genevieve M. Kenney

The Impact Of Recent CHIP Eligibility Expansions On Children's Insurance Coverage, 2008–12

DOI: 10.1377/hlthaff.2014.0208
HEALTH AFFAIRS 33,
NO. 10 (2014): 1861–1867

ABSTRACT **Following the reauthorization of the Children's Health Insurance Program (CHIP) in 2009, fifteen states raised their CHIP income eligibility thresholds to further reduce uninsurance among children. We examined the impact of these expansions on uninsurance, public insurance, and private insurance among children who became newly eligible for CHIP after the expansions. Using a difference-in-differences approach, we estimated that the expansions reduced uninsurance by 1.1 percentage points among the newly eligible, cutting their uninsurance rate by nearly 15 percent. Public coverage increased by 2.9 percentage points, with variations in take-up among the states. A better understanding of these state-level differences in take-up could inform efforts to enroll children who remain uninsured but are eligible for CHIP. CHIP is up for reauthorization in 2015, and further funding will be needed to maintain the program, which provides insurance to children who might not have access to affordable private coverage.**

Ian M. Goldstein (iangoldstein1@gmail.com) is a resident physician at the University of Colorado, in Denver.

Deliana Kostova is an economist at the Centers for Disease Control and Prevention (CDC), in Atlanta, Georgia.

Jennifer L. Foltz is a medical epidemiologist at the CDC.

Genevieve M. Kenney is codirector of and a senior fellow at the Health Policy Center, Urban Institute, in Washington, D.C.

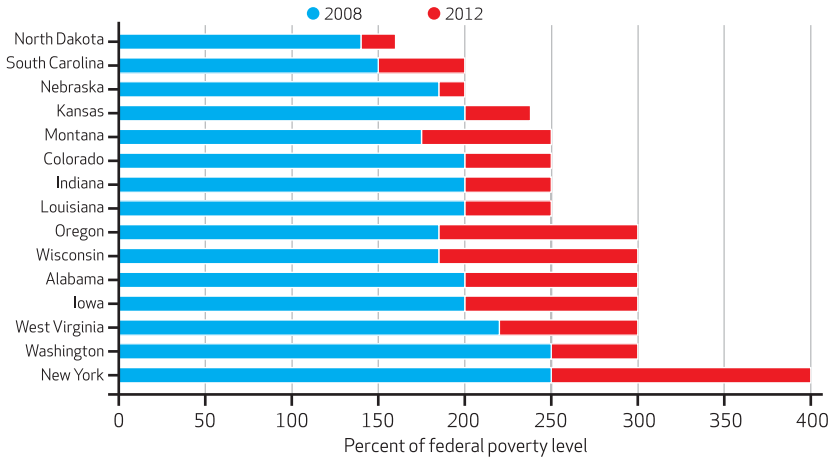
In 2008 over seven million children in the United States lacked health insurance. Lack of insurance has been associated with decreased access to health care, unmet health needs, inappropriate use of health services, and poorer health outcomes.[1–3] Following the reauthorization of the Children's Health Insurance Program (CHIP) in 2009, states were given additional resources and options to help reduce the uninsurance rate in children. These include expanding CHIP eligibility to new populations, simplifying enrollment and renewal procedures for Medicaid and CHIP to make it easier for families to sign up for coverage, and funding outreach grants to help enroll eligible children. Despite the potential of these recent policy changes to reduce uninsurance in children, few studies have examined their impact.[4,5]

In this study we analyzed the impact of one approach used by states to reduce uninsurance: increasing income eligibility thresholds to allow more children to qualify for CHIP. Fifteen states increased their thresholds between 2008 and 2012 (Exhibit 1). One novel feature of these expansions is that many states targeted higher-income children than in previous years. Eligibility was expanded to families with incomes at 200 percent of the federal poverty level or below in three states, but it was expanded to approximately 250 percent of poverty in five states, to 300 percent of poverty in six states, and to 400 percent of poverty (an income of $94,000 for a family of four) in one state.[6] In 2012 the median upper limit in all states for CHIP coverage was 250 percent of poverty. This was higher than at any time since CHIP's inception in 1997.[6]

Expanding CHIP eligibility thresholds has previously been shown to lead to many improvements for children, such as reductions in uninsurance, increased access to care, and reductions in avoidable hospitalizations and child mortality,[7] as well as to higher educational attainment.[8] Yet to our knowledge, no in-depth

EXHIBIT 1

Upper-Income Eligibility Thresholds For Children In The Children's Health Insurance Program (CHIP) And Medicaid In The Fifteen Expansion States, 2008 And 2012



SOURCE Author's analysis of data from Kaiser Commission on Medicaid and the Uninsured, Performing under pressure: annual findings of a 50-state survey of eligibility, enrollment, renewal, and cost-sharing policies in Medicaid and CHIP, 2011–2012 (see Note 6 in text), and other years. **NOTES** Blue bars denote the states' eligibility thresholds for 2008. Red bars denote the additional percentage of poverty level to which states expanded eligibility in 2012; added to the blue bars, they denote the total eligibility thresholds for 2012.

analysis has been conducted of the impact of these recent CHIP expansions to higher-income children on insurance coverage at the national or state level. Federal CHIP funding is authorized through fiscal year 2015. Knowledge about the effect of these expansions could help inform decisions to maintain or expand eligibility for the program.

This study seeks to fill these gaps by estimating the impact of recent CHIP eligibility expansions on changes in uninsurance, public insurance, and private insurance in both the group of expansion states and each state in the group.

Study Data And Methods

DATA SOURCE Study data were taken from the 2008–12 American Community Survey (ACS). The ACS is an annual mixed-mode survey conducted by the Census Bureau that samples approximately three million households.[9] Our data were from a public use sample of the ACS at the University of Minnesota Population Center.[10]

STUDY DESIGN To assess the impact of CHIP income eligibility expansions on children's insurance coverage, we used a difference-in-differences framework.[11] In this approach, we analyzed two groups of children: those who became newly eligible for CHIP (the treatment group) and similar children who were not eligible for CHIP (the comparison group, described further below).[12]

The comparison group served as a stand-in, allowing us to estimate changes in insurance coverage that would have occurred among the treatment group had they not become eligible for CHIP. Changes in coverage in the comparison group were subtracted from changes in coverage in the treatment group, with characteristics of the study population between states and over time controlled for. This generated estimates of the impact of the CHIP expansions on the treatment group independent of secular trends in insurance coverage that occurred during the study period.

TREATMENT AND COMPARISON GROUPS Our analysis focused on children ages 0–18 who lived in the fifteen states that expanded CHIP income eligibility thresholds during the period 2008–12. The treatment group consisted of all children who were made newly eligible for CHIP by their state's expansion.[13]

A comparison group in a difference-in-differences model commonly includes people who are similar to those in the treatment group but who did not receive the treatment.[11] Many previous studies[7] of CHIP and Medicaid expansions have used as a comparison group children with slightly higher incomes than those in the treatment group—children who were thus ineligible to benefit from the expansion. These children act as a within-state control group.

Following the work of Lisa Dubay and Genevieve Kenney,[14] we also chose a comparison group of children with slightly higher incomes. In our case, the comparison group consisted of children whose family incomes were 50–100 percentage points higher than their state's post-expansion eligibility threshold.

SENSITIVITY ANALYSES Because difference-in-differences estimates can vary depending on the composition of the comparison group, we used sensitivity analyses with different comparison groups to test the consistency of our results. In one sensitivity analysis we used a comparison group of children who were from nonexpansion states and who had an income range similar to that of children in the treatment group.[15] In other analyses we varied the income levels in the comparison group and excluded noncitizens, many of whom were not eligible for CHIP even with the expansions.

HEALTH INSURANCE DEFINITIONS Following the Census Bureau's definitions of *insurance coverage* in the ACS, we categorized health insurance as either public (Medicaid, Medical Assistance, or any kind of government assistance plan for people with low incomes or a disability; Medicare; and Veterans Affairs) or private (insurance from a current or former employer or union; insurance purchased directly; and TRICARE or

other military health care).[16] People who did not report any type of insurance and those who reported insurance only from the Indian Health Service, which is not always comprehensive, were considered uninsured. As has been done in previous studies, we assumed that people reporting both public and private coverage had only public coverage.[14]

PRE- AND POST-EXPANSION PERIODS The state expansions included in this study occurred at different times, so the pre- and post-expansion periods varied by state. We defined the *post-expansion period* for each state as beginning the year after the expansion occurred. We included states that expanded their programs after the temporary reauthorization of CHIP at the end of 2007 as well as states that expanded after the Children's Health Insurance Program Reauthorization Act (CHIPRA) in early 2009.

OUTCOMES EVALUATED AND DESCRIPTION OF MODEL We first analyzed unadjusted changes in the three types of insurance coverage (public, private, and uninsured) by calculating the raw change in each type for the treatment and comparison groups between 2008 and 2012. We then calculated difference-in-differences estimates for each type of insurance coverage. The estimates were performed both for the entire group of expansion states and for each expansion state individually.

These estimates controlled for child, family, and state characteristics that could affect enrollment in CHIP. For children, these characteristics were sex, age, race or ethnicity, citizenship status, and presence of functional limitations. Family characteristics were parents' highest level of education, citizenship status, marital status, and employment status; household income as a percentage of poverty; and the availability in the household of a vehicle and a phone. State-level characteristics, gathered from secondary data sources, were unemployment rate, per capita income, and the enactment of policies to simplify enrollment and renewal procedures in CHIP and to eliminate enrollment waiting periods for children of legal immigrants.[6,17–19]

Next, we estimated the relative change in the uninsurance rate attributable to the expansions. This was accomplished by calculating the ratio of the difference-in-differences estimate for uninsurance to the 2008 uninsurance rate. We performed a similar estimation for the relative change in the private insurance rate.

Finally, we assessed the degree of crowd-out—that is, the share of gains in public coverage from the expansions that was a result of decreases in private coverage. This was estimated by calculating the ratio of the difference-in-differences estimates for the decrease in private insurance coverage to the increase in public coverage.

All estimates were weighted using survey weights that reflected the complex survey design of the ACS. A further description of the models and variables used in this analysis is available in online Appendix A.[20]

LIMITATIONS There are limitations to the analytic approach used here. First, we included the year of the expansion's passage in our pre-expansion period, which could bias our change estimates downward. Second, measurement error could arise from our use of the ACS, which does not provide state-specific program names for CHIP, does not include a verification question for uninsurance, and may overestimate non-group coverage.[21,22] Third, it is unknown whether the changes reported here could be generalized to the remaining thirty-five states if they also chose to expand eligibility.

Study Results

UNADJUSTED DIFFERENCES OVER TIME In unadjusted analyses, uninsurance decreased by 1.7 percentage points in the newly eligible and by 1.8 percentage points in the comparison group (Exhibit 2). Public coverage increased by 4.5 percentage points in the newly eligible and by 2.3 percentage points in the comparison group. Private coverage decreased by 2.9 points in the newly eligible and by 0.4 points in the comparison group. Among the newly eligible, 6.3 percent remained uninsured in 2012.

IMPACTS OF EXPANSIONS The difference-in-differences models, which controlled for secular trends in insurance coverage during this time, revealed that the CHIP expansions produced significant changes in coverage rates (Exhibit 3). In newly eligible children, we estimated that uninsurance decreased by 1.1 percentage points,

EXHIBIT 2

Insurance Coverage In Children Newly Eligible For The Children's Health Insurance Program (CHIP) And The Comparison Group, 2008 And 2012

Coverage	2008 (%)	2012 (%)	Unadjusted change (percentage points)
NEWLY ELIGIBLE			
Uninsured	8.0	6.3	−1.7
Public coverage	15.5	20.0	4.5
Private coverage	76.5	73.6	−2.9
COMPARISON GROUP			
Uninsured	5.6	3.8	−1.8
Public coverage	6.2	8.5	2.3
Private coverage	88.2	87.8	−0.4

SOURCE Authors' analysis of data from the American Community Survey, 2008–12. **NOTES** Inclusion criteria for both groups are explained in the text. $N = 170,311$.

EXHIBIT 3

Difference-In-Differences Estimates Of The Effects Of Children's Health Insurance Program (CHIP) Income Eligibility Expansions On Coverage In Newly Eligible Children

Coverage	Change (percentage points)	Standard error
Uninsured	−1.1**	(0.5)
Public coverage	2.9***	(0.6)
Private coverage	−1.8***	(0.7)

SOURCE Authors' analysis of data from the American Community Survey, 2008–12. **NOTE** These are regression-based estimates that account for the child, family, and state characteristics listed in the text. **$p < 0.05$ ***$p < 0.01$

public coverage increased by 2.9 percentage points, and private insurance decreased by 1.8 percentage points because of the expansions.

These models show that take-up of CHIP coverage after the expansions seemed to vary by state (Appendix Exhibit B.1).[20] There was significant state variability in the extent of the expansions, as noted above, with some states expanding eligibility to 200 percent of poverty or below and others expanding it to 300 percent of poverty or above (Exhibit 1). Nonetheless, all but one expansion state experienced an increase in public coverage that was attributable to the expansions. Six states experienced statistically significant increases, and four states had increases of nearly 5 percentage points or greater.

We also found that there were greater relative reductions in the uninsurance rate than there were in the private insurance rate (Exhibit 4). The 1.1-percentage-point decrease in uninsurance corresponded to a 13.3 percent drop in the uninsurance rate. In contrast, the 1.8-percentage-point decrease in private coverage corresponded to a 2.4 percent drop in the rate of private coverage among newly eligible children.

Crowd-out was estimated to be 63.0 percent in the core model (Exhibit 4). Because the estimate for private coverage varied in our sensitivity analyses (as discussed further below), we also calculated alternative crowd-out estimates based on these analyses. This produced a range of crowd-out estimates of 43.8–70.0 percent.

SENSITIVITY ANALYSES In our first sensitivity analysis—which used as the comparison group similar-income children from nonexpansion states—our findings for uninsurance (a 1.1-percentage-point decrease), public insurance (a 3.7-percentage-point increase), and private insurance (a 2.6-percentage-point decrease) remained similar in magnitude, direction, and significance (Appendix Exhibit A.3).[20]

Similar findings for uninsurance and public insurance were also seen in the remaining sensitivity analyses. However, our estimate for private insurance showed greater variation and was not significant in one model.

EXHIBIT 4

Estimates Of The Effects Of Children's Health Insurance Program Income Eligibility Expansions On Crowd-Out And Relative Declines In The Private Insurance And Uninsurance Rates In Newly Eligible Children

	Estimated effect (%)	Standard error
Decline attributable to the expansions in:		
Private insurance rate	2.4***	(0.9)
Uninsurance rate	13.3**	(5.8)
Crowd-out		
Core model	63.0***	(16.8)
Sensitivity analyses	43.8** to 70.0***	(15.1 to 20.9)

SOURCE Authors' analysis of data from the American Community Survey, 2008–12. **NOTES** Crowd-out is the share of gains in public coverage from the expansions that occurred due to decreases in private coverage. Further descriptions of these calculations are available in the text. **$p < 0.05$ ***$p < 0.01$

Discussion

Our analysis found that the recent CHIP expansions, focused primarily on higher-income families, resulted in a 1.1-percentage-point reduction in uninsurance in newly eligible children, which cut the uninsurance rate by close to 15 percent in this population. After the expansions took place, 6.3 percent of newly eligible children remained uninsured. At the same time, public coverage increased by 2.9 percentage points, with all but one state experiencing gains and four states having gains of nearly 5 percentage points or more.

The analysis also suggested that some of the children who gained public coverage from these expansions would otherwise have had private coverage. However, the 2.4 percent decline in private coverage was very small compared to the percentage of children with private coverage at baseline.

The 2.9-percentage-point increase in public coverage seen in our analysis is smaller than the increases of 5.5–14.1 percentage points seen during the 1997–2002 CHIP expansions.[23] One factor that likely contributes to this difference is the fact that the more recent CHIP expansions included children with higher family incomes than was the case in earlier study periods, and uninsurance rates are lower at these higher income levels.[1]

Another contributing factor may be that eleven states—Alabama, Colorado, Indiana, Iowa, Kansas, Louisiana, New York, Oregon, Washington, West Virginia, and Wisconsin—require premium and enrollment fees from higher-income families, which has been shown to be associated with decreased take-up of public coverage.[6,24–26] Another study that examined

CHIP has reduced uninsurance among children relative to what would have happened without the program.

CHIP expansions in 2002–09 and that focused on children with family incomes of 200–400 percent of poverty reported an increase in public coverage (4.1 percentage points) that was not statistically different from ours.[27,28]

It is important to highlight the fact that 6.3 percent of children in the treatment group remained uninsured after the expansions took place, despite the fact that they were eligible for coverage through CHIP. This finding—that uninsured children eligible for CHIP and Medicaid children are not enrolled in public coverage—has also been documented in earlier studies.[29]

The expansions that we examined occurred during a time when many states simplified enrollment and renewal procedures for Medicaid and CHIP to promote take-up of coverage among eligible but uninsured children—policies that were implemented to varying degrees in the fifteen expansion states.[6] Across the expansion states, we observed large differences in take-up of public coverage.

For example, both Alabama and Iowa expanded eligibility from 200 percent of poverty to 300 percent. However, Alabama saw an increase in public coverage of 3.0 percentage points, while Iowa saw an increase of 9.7 percentage points—a difference of more than 300 percent.

A better understanding of these state-level differences could help inform future state efforts to enroll children and adults who are eligible for coverage but are still uninsured. The time frame for observing effects in this study (1–4 years) was relatively short. Thus, greater take-up of coverage may occur over time.

A number of previous studies have shown that one side effect of CHIP and Medicaid expansions is crowd-out.[30] Crowd-out was also seen in our analysis. We estimated crowd-out at 63.0 percent using our core model, though the magnitude of this estimate varied in our sensitivity analyses between 43.8 percent and 70.0 percent. This compares to a crowd-out range of 3–43 percent in the most recent study examining CHIP expansions.[27]

However, these estimates of crowd-out do not appear large when viewed in the context of pre-expansion insurance rates (roughly three-quarters of children reported private coverage in 2008; see Exhibit 2). Indeed, under the estimate of crowd-out from our core model, the relative reduction in the private insurance rate (2.4 percent) was low and led to a larger decrease in the uninsurance rate (13.3 percent).

Moreover, our analysis does not identify the reasons why families dropped private coverage. Families may have chosen to do so because their private plans were less affordable or of poorer quality than coverage through CHIP.[31] Overall, crowd-out of private coverage may be an unavoidable consequence of public insurance expansions at these income levels. Some research suggests that strategies to reduce crowd-out (such as imposing waiting periods and cost sharing) may have reduced take-up of coverage among the uninsured more than they have deterred crowd-out.[30]

Despite CHIP's successes in providing health insurance to children,[7] the future of the program is uncertain beyond next year. The Affordable Care Act (ACA) provided federal funding for CHIP through fiscal year 2015, and extending CHIP for more years has been proposed. However, further congressional action will be required for additional federal funds to be allocated. (The ACA also required states to maintain eligibility levels for Medicaid and CHIP until 2019 for children, but it did not extend federal funding past 2015.)

If CHIP funding is not extended, families with children enrolled in the program could turn instead to a health insurance Marketplace to purchase subsidized coverage. It is important to note, however, that many of these families would not be eligible for such subsidized coverage.[32] This is because affordability, as defined in the ACA, is based on the cost of premiums for employee-only coverage, which ignores the cost to the family of covering dependents. Thus, even if the cost for full family coverage were unaffordable, a worker's family could not receive Marketplace subsidies if he or she were offered affordable employee-only coverage. This would leave some children without either CHIP coverage or access to affordable private insurance.

In this context, our findings suggest that CHIP provides coverage to even higher-income children who, without the program, might otherwise not have access to affordable coverage and would be at increased risk of being uninsured. This study, combined with the accumulated body of evidence on the impacts of initial CHIP expan-

sions to lower-income children,[7] indicates that CHIP has reduced uninsurance among children relative to what would have happened without the program.

Projections of children's coverage under the ACA have found that as many as 1.8–2.4 million children could lose coverage if CHIP funding is not continued.[33] In this light, CHIP appears to serve as a backstop for many families, covering children who do not qualify for Medicaid yet do not have access to affordable private insurance through employers or a health insurance Marketplace.

1.8–2.4

Million children

As many as 1.8–2.4 million children could lose coverage if CHIP funding is not continued.

Conclusion

Our analysis showed that recent CHIP expansions produced significant reductions in uninsurance among newly eligible children. Over time, these effects could be amplified with the continued implementation of provisions in the ACA.[33] These include the Medicaid expansions occurring in some states, under which parents cannot be enrolled in Medicaid unless their children are also enrolled in CHIP, Medicaid, or some other program that provides minimum essential coverage;[34] the automatic identification of Medicaid and CHIP eligibility in the health insurance Marketplaces, which guides Marketplace applicants to these coverage programs; and the shared responsibility payment, which requires most Americans to have health insurance or make a payment through their federal tax filings.

Despite these provisions, many children in this study could lose insurance coverage if CHIP funding is not reauthorized, or if barriers to employer-sponsored family coverage and Marketplace subsidies are not addressed. Policy options such as these are important tools to encourage take-up of affordable coverage, improve access to care, and promote the health and well-being of children in the United States. ■

Ian Goldstein received funding from the CDC Experience, a one-year fellowship in applied epidemiology at the Centers for Disease Control and Prevention (CDC) made possible by a public-private partnership supported by a grant to the CDC Foundation from External Medical Affairs, Pfizer Inc. The authors acknowledge Brook Belay and Heidi Blanck for their help in the development of this project, as well as Jared Fox for additional insights on the manuscript. Jennifer Foltz and Genevieve Kenney are co-senior authors for this project. The findings and conclusions in this report are those of the authors and do not necessarily reflect the official position of the CDC. [*Published online September 24, 2014.*]

NOTES

1 DeNavas-Walt C, Proctor BD, Smith JC. Income, poverty, and health insurance coverage in the United States: 2008 [Internet]. Washington (DC): Census Bureau; 2009 Sep [cited 2014 Aug 7]. Available from: http://www.census.gov/prod/2009pubs/p60-236.pdf

2 Institute of Medicine. America's uninsured crisis: consequences for health and health care. Washington (DC): National Academies Press; 2009.

3 Institute of Medicine. Health insurance is a family matter. Washington (DC): National Academies Press; 2002.

4 Saloner B, Koyawala N, Kenney GM. Coverage for low-income immigrant children increased 24.5 percent in states that expanded CHIPRA eligibility. Health Aff (Millwood). 2014; 33(5):832–9.

5 Blavin F, Kenney GM, Huntress M. The effects of express lane eligibility on Medicaid and CHIP enrollment among children. Health Serv Res. 2014;49(4):1268–89.

6 Kaiser Commission on Medicaid and the Uninsured. Performing under pressure: annual findings of a 50-state survey of eligibility, enrollment, renewal, and cost-sharing policies in Medicaid and CHIP, 2011–2012 [Internet]. Washington (DC): The Commission; 2012 Jan 1 [cited 2014 Aug 6]. Available from: http://kff.org/medicaid/report/performing-under-pressure-annual-findings-of-a/. This is an annual publication from which we also gathered eligibility thresholds for prior years.

7 Howell EM, Kenney GM. The impact of the Medicaid/CHIP expansions on children: a synthesis of the evidence. Med Care Res Rev. 2012;69(4): 372–96.

8 Cohodes S, Kleiner S, Lovenheim MF, Grossman D. The effect of child health insurance access on schooling: evidence from public insurance expansions. Cambridge (MA): National Bureau of Economic Research. 2014 May. (NBER Working Paper No. 20178).

9 Census Bureau. Design and methodology: American Community Survey [Internet]. Washington (DC): Census Bureau; 2009 Apr [cited 2014 Aug 6]. Available from: http://www.census.gov/acs/www/Downloads/survey_methodology/acs_design_methodology.pdf

10 Ruggles S, Alexander JT, Genadek K, Goeken R, Schroeder MB, Sobek M. Integrated Public Use Microdata Series: version 5.0. Minneapolis (MN): University of Minnesota; 2010.

11 Dubay L, Kenney G. Assessing SCHIP effects using household survey data: promises and pitfalls. Health Serv Res. 2000;35(5 Pt 3):112–27.

12 CHIP eligibility was also expanded to other populations, such as children of legal immigrants and pregnant women. Here, however, *expansions* refers only to income eligibility expansions.

13 We simulated children's eligibility for CHIP based on family income and state eligibility rules. Details are available in the online Appendix (see Note 20).

14 Dubay L, Kenney G. The impact of CHIP on children's insurance coverage: an analysis using the National Survey of America's Families. Health Serv Res. 2009;44(6):2040–59.

15 We included nineteen of the thirty-five nonexpansion states: those whose upper income threshold did not exceed 200 percent of poverty. Including the remaining nonexpansion states, which had higher thresholds, would have put children eligible for CHIP in the comparison group.

16 CHIP is listed under public coverage because states have different names for their CHIP programs, and the

ACS does not mention these state-specific names. The vast majority of children with public insurance in our study reported "government assistance plan" as their coverage.
17 Bureau of Labor Statistics. Local Area Unemployment Statistics [Internet]. Washington (DC): BLS; [cited 2014 Aug 6]. Available from: http://www.bls.gov/lau/home.htm
18 Bureau of Economic Analysis. Regional data: GDP and personal income [Internet]. Washington (DC): BEA; [cited 2014 Aug 6]. Available from: http://www.bea.gov/iTable/index_regional.cfm
19 We included data on seven of the eight criteria used to evaluate states for CHIPRA performance bonuses (data on premium assistance subsidies, the eighth criterion, were not available).
20 To access the Appendix, click on the Appendix link in the box to the right of the article online.
21 Davern M, Quinn BC, Kenney GM, Blewett LA. The American Community Survey and health insurance coverage estimates: possibilities and challenges for health policy researchers. Health Serv Res. 2009; 44(2 Pt 1):593–605.
22 Mach A, O'Hara B. Do people really have multiple health insurance plans? Estimates of nongroup health insurance in the American Community Survey [Internet]. Washington (DC): Census Bureau; 2011 [cited 2014 Aug 6]. (SEHSD Working Paper No. 2011-28). Available from: http://www.census.gov/hhes/www/hlthins/publications/Multiple_Coverage.pdf
23 Based on our analysis of Howell and Kenney, The impact of the Medicaid/CHIP expansions on children (see Note 7). Our analysis of that article included only CHIP expansions.
24 Gresenz CR, Edgington SE, Laugesen MJ, Escarce JJ. Income eligibility thresholds, premium contributions, and children's coverage outcomes: a study of CHIP expansions. Health Serv Res. 2013; 48(2 Pt 2):884–904.
25 Hadley J, Reschovsky JD, Cunningham P, Kenney G, Dubay L. Insurance premiums and insurance coverage of near-poor children. Inquiry. 2006–07;43(4):362–77.
26 Kenney G, Hadley J, Blavin F. Effects of public premiums on children's health insurance coverage: evidence from 1999 to 2003. Inquiry. 2006–07;43(4):345–61.
27 Gresenz CR, Edgington SE, Laugesen M, Escarce JJ. Take-up of public insurance and crowd-out of private insurance under recent CHIP expansions to higher income children. Health Serv Res. 2012;47(5): 1999–2011.
28 Some state expansions in our study were also included in the study in Note 27. However, that study included these states at the very early stages (within one year) of their expansions.
29 Kenney GM, Lynch V, Cook A, Phong S. Who and where are the children yet to enroll in Medicaid and the Children's Health Insurance Program? Health Aff (Millwood). 2010; 29(10):1920–9.
30 Gruber J, Simon K. Crowd-out 10 years later: have recent public insurance expansions crowded out private health insurance? J Health Econ. 2008;27(2):201–17.
31 Shaefer HL, Grogan CM, Pollack HA. Transitions from private to public health coverage among children: estimating effects on out-of-pocket medical costs and health insurance premium costs. Health Serv Res. 2011;46(3):840–58.
32 Medicaid and CHIP Payment and Access Commission. Report to the Congress on Medicaid and CHIP [Internet]. Washington (DC): MACPAC; 2014 Mar [cited 2014 Aug 13]. Available from: http://www.macpac.gov/reports/2014-03-14_Macpac_Report.pdf?attredirects=0
33 Kenney GM, Buettgens M, Guyer J, Heberlein M. Improving coverage for children under health reform will require maintaining current eligibility standards for Medicaid and CHIP. Health Aff (Millwood). 2011;30(12):2371–81.
34 42 C.F.R., Sect. 435.119(c) (2010).