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Public insurance expansions and the health of immigrant and native children☆,☆☆

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ABSTRACT

The costs of public insurance expansions are ordinarily justified by the claim that increased eligibility causes gains in insurance coverage, which translate into improved health care and health. This paper studies dramatic changes in public health insurance eligibility for immigrant and native children from 1998 to 2009 and finds that children's nativity status is crucial to understanding the impacts of recent eligibility expansions. I document a significantly higher degree of take-up (and less crowding out of private insurance) among first- and second-generation immigrant children than among children of U.S. natives. Eligibility expansions increased immigrant children's use of preventive and ambulatory care and decreased emergency care in hospitals, while estimated effects for children of natives are negligible. My results also suggest improvements in some health measures that would be expected to respond to preventive and ambulatory care.

1. Introduction

Children in immigrant families comprise one of the most rapidly growing segments of the U.S. population. These children, who are either foreign-born or have at least one immigrant parent, now account for 1 in 4 children in the U.S. (Fortuny et al., 2010) and are disproportionately represented among the poor and uninsured (Ku, 2007). Indeed, despite dramatic expansions in children's eligibility for public health insurance over the past fifteen years, and a nearly 50% reduction in the overall rate of uninsurance among low-income children, disparities in coverage by nativity status are striking. Over half of first-generation immigrant children and nearly one-quarter of second-generation immigrant children lack health insurance, while only one in seven children of U.S. natives is uninsured.[1]

Differences in health insurance coverage are due, in part, to severe restrictions that welfare reform legislation imposed on immigrants' eligibility for public programs.[2] Reflecting growing concern about the fiscal burden immigrants placed on the U.S. social safety net, the 1996 Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) banned recent legal immigrants from federal Medicaid coverage until they had been in the U.S. for at least 5 years. In the years that followed, along with the introduction and expansion of the State Children's Health Insurance Program (SCHIP), many states used their own funds to restore eligibility for recent immigrant children. But states did so at different times and to different extents, and substantial cross-state differences in immigrant children's eligibility for public insurance persisted. In 2009 the CHIP Reauthorization Act (CHIPRA) reversed this decision, again allowing states to use federal funds to cover recent legal immigrants. The years between PRWORA and CHIPRA thus represent a markedly different policy environment, characterized by enormous cross-state variation in children's eligibility for public insurance.

Existing research has reached mixed conclusions on the effects of these eligibility changes on immigrant children's health insurance coverage, and provides little to no evidence regarding impacts on their health care utilization and health.[3] Evidence from the more extensive literature studying impacts of Medicaid and SCHIP expansions on the *overall* population of children cannot be assumed to generalize to

☆ The primary data in this study include restricted-access state identifiers from the National Health Interview Survey (NHIS), which must be used on-site at the Centers for Disease Control National Center for Health Statistics (CDC-NCHS) Research Data Center (RDC). Interested users should contact Peter Meyer at rdca@cdc.gov. The findings and conclusions in this paper are those of the author and do not necessarily represent the views of the RDC, the NCHS, or the CDC.

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[1] Author's calculations from the National Health Interview Survey (NHIS) sample used in this paper, for children in families with incomes less than 200% of the federal poverty line.

[2] While 1st-generation immigrants were directly impacted by PRWORA, reduced coverage among 2nd-generation immigrants may be due to "chilling effects" of the legislation (Watson, 2014).

[3] See Borjas (2003); Kaestner and Kaushal (2003); Lurie (2008); Buchmueller et al. (2008) for studies of post-welfare reform changes in eligibility and insurance coverage.

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children in immigrant families (Currie, 2000; Buchmueller et al., 2008).[4] On one hand, because these children have lower baseline rates of insurance coverage, and more limited opportunities for private insurance, Medicaid/SCHIP eligibility may cause greater increases in coverage (and less crowd-out) than for children of natives, and thus, larger improvements in health care access and health outcomes. On the other hand, if eligibility expansions are met by lower take-up among children in immigrant families, because of higher transaction costs to enrollment (Currie, 2000; Sommers, 2010), language or other barriers (Aizer, 2007), or immigrant parents' concerns about immigration enforcement (e.g., Watson, 2014), then any positive impacts on health care utilization and health for this population may be small.

This paper directly examines the impacts of recent changes in public insurance eligibility on health insurance coverage, health care utilization, and health outcomes for children in immigrant families, and children of U.S. natives. I study a nationally representative sample of more than 140,000 children from the National Health Interview Survey (NHIS) for the years between welfare reform and CHIPRA (1998–2009), and incorporate all available information on children's eligibility for Medicaid and SCHIP, including nativity status and years since immigration. I rely on a simulated instrumental variables (IV) approach that uses cross-state variation in the timing and extent of changes in eligibility rules to identify the effects of legislated changes in public insurance eligibility.[5]

The study contributes to the growing body of evidence on the costs and benefits of public insurance expansions in two ways. First, I provide new evidence that SCHIP-era expansions were associated with a significantly *higher* degree of take-up, and less crowding out of private insurance, among children in immigrant families than among children of natives. My results indicate that eligibility increases Medicaid/SCHIP enrollment among children in immigrant families by 23 percentage points (relative to a mean of 42%), with three-quarters of this change accounted for by a reduction in uninsurance. For children of natives, the estimated effects of eligibility on take-up and overall coverage are less than half as large.

This finding is in contrast to evidence from prior research on earlier changes in public insurance eligibility. For example, a well-known study by Borjas (2003) found that PRWORA-related eligibility reductions for immigrants caused a decrease in public insurance coverage but a completely offsetting increase in private insurance, implying 100% crowd-out among the immigrant population (not restricted to children). For *children* in immigrant families, however, Kaushal and Kaestner (2005) and Lurie (2008) both show that many children lost coverage due to these eligibility restrictions, suggesting less substitution between public and private coverage. Studying the 1989–1992 Medicaid expansions, Currie (2000) finds eligibility increased enrollment among children of natives but had no significant effect on enrollment among children of immigrants. In contrast, Buchmueller et al. (2008) demonstrate that initial SCHIP expansions increased insurance coverage for children of immigrants, with take-up rates among children of immigrants equal to those for children of U.S. natives. My research differs in that I explicitly incorporate state-level differences in eligibility by nativity status, and I study a longer period (1998–2009) that includes both general SCHIP expansions and state-level decisions to restore eligibility for recent immigrants.

Second, I demonstrate that for children in immigrant families, post-welfare reform expansions in eligibility for public health insurance increased utilization of health care and beneficially impacted health. While there is a well-established literature showing that Medicaid expansions increased access and utilization among the general population, the prior evidence for SCHIP-era expansions is more mixed and has not typically distinguished between those of different nativity statuses.[6] The few papers that have analyzed health care utilization among children of immigrants include Kaushal and Kaestner (2007), which finds little effect of PRWORA-induced eligibility reductions on health care access, and Currie (2000), which studies earlier Medicaid expansions and finds that eligibility decreases the likelihood that children of immigrants go without a doctor's visit. In terms of health outcomes, results for the overall population of children generally suggest limited effects of public insurance on health.[7] To my knowledge, Royer (2005) is unique in examining health effects for immigrants; she finds that PRWORA-induced reductions in eligibility for pregnant immigrant mothers caused decreased prenatal care but did not impact birth outcomes.

My estimates indicate that eligibility for public insurance reduces the likelihood that a child in an immigrant family goes more than 12 months without a doctor's visit by 7 to 12 percentage points,[8] raises the probability he has a usual place for care by 5–8 percentage points, and decreases the probability of an emergency room (ER) visit in the past year by 4–6 percentage points. Taken together, these findings suggest public insurance eligibility causes an increase in utilization of more efficient (preventive and ambulatory) health care, and a decrease in costly ER care, for children in immigrant families.

The results also indicate that eligibility may cause modest improvements in some child health outcomes that could be expected to respond to ambulatory or preventive care, including the likelihood of an asthma attack in the past 12 months and the probability of being reported (by one's parent) to be in excellent health. The latter result should be interpreted cautiously given evidence in Finkelstein et al. (2012), of improvements in self-reported health status among adults randomly assigned to Medicaid, prior to any increase in their health care utilization. Nonetheless, the estimated increases in access and utilization for these children suggest mechanisms whereby public insurance could have improved their objective health.

Despite some convergence over the post-welfare reform era, immigrant-native disparities in health insurance coverage, health care, and health remain striking. Even at the end of my study period in 2009, children in low-income, immigrant families had lower reported health, were more likely to lack a usual place of care, and were more likely to have gone 12 months without a doctor's visit, than children of natives. The findings in this paper indicate that further expanding eligibility for Medicaid/SCHIP to this population is likely to reduce such disparities. By providing evidence on the benefits of expanding eligibility to children in immigrant families, my results can help inform

[4] Some prominent studies on the effects of Medicaid/SCHIP eligibility on insurance coverage for the overall population include: Currie and Gruber (1996a, b); Dubay and Kenney (1996); LoSasso and Buchmueller (2004); Ham and Shore-Sheppard (2005); Hudson et al. (2005); Shore-Sheppard (2008); and Gruber and Simon (2008). Additional studies on health care utilization and health for the general population are mentioned below.

[5] This approach estimates the intention-to-treat (ITT) effect of eligibility expansions, but I also evaluate the plausibility of my results for health care utilization and health outcomes by calculating average effects of the treatment (insurance *coverage*) on the treated (those who enroll).

[6] The broader literature on insurance and utilization dates back to the RAND Health Insurance Experiment (Newhouse, 1993), which found that cost-sharing reduced consumption of health services. Finkelstein et al. (2012) similarly find increases in health care utilization among low-income adults randomly assigned to Medicaid. For evidence on positive impacts of earlier Medicaid expansions on children's access and utilization, see Currie and Gruber (1996b), Dafny and Gruber (2005), or a review by Buchmueller et al. (2005). For SCHIP-era expansions, Lurie (2009) and Joyce and Racine (2005) document increases in physician visits and recommended vaccinations, respectively. However, White (2012) finds no net increase in utilization and access to physician services, and Garthwaite (2012) shows that SCHIP expansions caused pediatricians to reduce their labor supply.

[7] Currie and Gruber (1996b) show that expanding Medicaid eligibility to pregnant women in the late 1980s reduced infant mortality and low birth weight; Levine and Schanzenbach (2009) obtain similar results for SCHIP. Kaestner et al. (1999) find that Medicaid expansions improved maternal reports of child health among blacks and Hispanics, but not whites, and find no impact on morbidity. In short, "the extent to which medical care has a positive effect on health is not clear" (Gruber, 2000).

[8] This ITT estimate is similar in magnitude to that in Currie (2000) for earlier Medicaid expansions; however, I also find a larger increase in insurance coverage among the newly eligible, putting my estimate of the average effect of treatment on the treated in a plausible range.

cost–benefit analyses of immigration reform proposals, which would increase projected spending on these programs (CBO, 2013).

More broadly, the results consistently indicate more pronounced impacts of public insurance on health care and health outcomes for children in immigrant families than for children of natives, substantiating the expectation that eligibility expansions will be particularly impactful among groups with low baseline rates of insurance coverage and higher rates of take-up. The Patient Protection and Affordable Care Act (PPACA) and associated Medicaid expansions have generated renewed interest in the effects of expanding public insurance to such groups. My results suggest that PPACA expansions could also help to reduce disparities between immigrant and native *adults*, as well as children. But with a 5-year bar on Medicaid eligibility for non-native adults and evidence that exchange enrollment is lagging among Latinos,[9] any optimism should be cautious.

The paper proceeds as follows: The next section provides background information on the changes in Medicaid and SCHIP laws in the years from PRWORA to CHIPRA. Section 3 describes the NHIS sample used in this paper and the main empirical methods. Section 4 lays out the key findings and discusses the results of several robustness checks. Section 5 concludes.

2. Background

2.1. Changes in public insurance eligibility for children in immigrant families

The 5-year bar imposed by welfare reform legislation disqualified legal immigrants who came to the United States after August 1996 from federal Medicaid coverage until they had been in the U.S. for more than five years.[10] Prior to 1996, legal immigrants had been eligible for Medicaid on the same basis as natives (i.e., under criteria based on age, family size, and family income). While recent immigrant children could still receive emergency care services after PRWORA was enacted, standard Medicaid coverage for preventive and routine care was no longer available to them (Ellwood and Ku, 1998).

Some states quickly used their own funds (without federal matching) to insure these children. Table 1 shows, for a representative set of states, Medicaid and SCHIP eligibility criteria for citizen children and for recent legal immigrant children in 1998 and 2009. Many of the initially generous states were those with large immigrant populations or high inflows, like California and New York. Over the next several years, with the introduction and expansion of SCHIP, many other states used state funds to restore coverage to recent immigrant children; by 2004, 21 states had established such replacement programs. Of course, states differed in the timing of these changes and in the income cutoffs they used to determine eligibility, many states chose not to change their policies, and some states (e.g., Florida and Washington) introduced but later cut coverage for immigrant children due to budget shortfalls.

As illustrated in Table 1, substantial cross-state differences in immigrants' eligibility for public insurance remained as recently as 2009. For example, New York's CHIP program treated its recent immigrant children equally to native-born children, covering children in families with incomes up to 400% of the federal poverty line. New Jersey, Illinois, and California also covered recent immigrant children under both Medicaid and SCHIP. But many states, including "new destination states" like North Carolina, Arizona, and Florida, did not provide Medicaid or CHIP coverage to recent immigrant children as of 2009.

CHIPRA, signed into law by President Obama in February 2009, included the Legal Immigrant Children's Health Improvement Act (ICHIA). This legislation ended the mandatory five-year waiting period for legal immigrant children, giving states the option to enroll and cover recent immigrant children with federal funds. My findings shed light on whether this legislation is likely to have lived up to its name.

2.2. Trends in eligibility and coverage

Fig. 1 illustrates increases in children's eligibility for public health insurance over the post-welfare reform period. The figure displays the proportion of low-income children (those in families with income less than 200% of the federal poverty line) who are eligible for either Medicaid or SCHIP in each year. In 1998, only about 60% of low-income, first-generation immigrant children were eligible for public health insurance, compared to 78% of children of immigrants and 82% of low-income children of natives. After the initial wave of SCHIP expansions, nearly 100% of low-income, U.S.-born children were eligible for public health insurance. For first-generation immigrants, these SCHIP expansions and the restoration of Medicaid coverage by some states meant large increases in the fraction eligible. This fraction declines somewhat after 2005 due to changes in states like Florida, which reversed its earlier decision to provide eligibility for recent legal immigrant children.[11]

Fig. 1 also displays the percentage eligible among the subgroup of *recent* immigrant children, who have been in the U.S. for fewer than five years. In 1998, only about 40% of these children were eligible for public health insurance. This share increases to approximately 80% in the mid 2000s and then falls in the late 2000s. The decline is due in part to states like Florida and Washington cutting eligibility for recent immigrant children, but is also explained by increased inflows to new destination states (e.g., North Carolina and Arizona), which still did not provide coverage to these children.

Figs. 2 and 3 display declining rates of uninsurance, and increasing rates of take-up among eligible children, over this period. The upward trend in enrollment for children in immigrant families began after 2000; prior to that, take-up was low and essentially flat even among citizen children of immigrants, consistent with post-welfare reform chilling effects (Borjas, 2003; Kaushal and Kaestner, 2005; Watson, 2014). The increase in take-up after 2000 is consistent with improved outreach efforts in SCHIP programs (Aizer, 2007), and/or a less "icy" policy environment for immigrant families. It also suggests that estimates from studies of the years immediately following welfare reform (e.g., Buchmueller et al., 2008) may understate the current degree of take-up among eligible children in immigrant families, and updated estimates are warranted. Finally, this period was associated with a more dramatic decline in uninsurance for children in immigrant families than for children in natives. Thus, impacts of the expansions on the health care utilization and health of children in immigrant families may be large, but would be missed in a study of the overall population because take-up was lower among children of natives.

3. Data and empirical methods

3.1. National Health Interview Survey (NHIS), 1998–2009

This study uses restricted-access micro data from the National Health Interview Surveys (NHIS) for the years from 1998 through 2009.[12] The sample spans the years from PRWORA to CHIPRA, which

[9] See "States Struggle to Add Latinos to Health Rolls," *The New York Times*, February 13, 2014.

[10] This 5-year bar was used to qualify legal immigrants for federal coverage under most large means-tested programs, including Medicaid, TANF, Food Stamps, and SSI (Capps et al., 2002).

[11] In the early 2000s, Florida's SCHIP program faced budgetary pressures causing it to freeze enrollments and resulting in a waiting list of over 100,000 eligible children. Before it instituted an across-the-board enrollment cap, however, Florida implemented a targeted freeze on enrollment of immigrant children. Tens of thousands of such children remained on waiting lists after that time, effectively eliminating eligibility for recent legal immigrant children (Ku and Nimalendran, 2003).

[12] This study relies on state identifiers, and geocodes are not released with the public-use NHIS data. Interested users must analyze the restricted data at the NCHS-CDC research data center and should contact Peter Meyer, RDC Director, at rdca@cdc.gov.

Table 1
Eligibility criteria for Medicaid and SCHIP for selected states, 1998 and 2009.
Sources: National Immigration Law Center (www.nilc.org), Kaiser Family Foundation (www.kff.org), National Governors' Association (www.nga.org), and National Academy for State Health Policy (www.nashp.org).

		1998			2009		
State	Age	Medicaid % of FPL	SCHIP % of FPL	Recent immigrants eligible?	Medicaid % of FPL	SCHIP % of FPL	Recent immigrants eligible?
Arizona	0–1	140	N/A	No	140	200	No
	1–5	133			133	200	
	6+	100			100	200	
California	0–1	200	N/A	Medicaid only	200	250	Yes (both)
	1–5	133			133	250	
	6+	100			100	250	
Florida	0–1	185	185	SCHIP only	200	200	No
	1–5	133	185		133	200	
	6+	100	185		100	200	
Georgia	0–1	185	200	No	235	200	No
	1–5	133	200		133	235	
	6+	100	200		100	235	
Illinois	0–1	133	200	Yes (both)	200	No limit	Yes (both)
	1–5	133	200		133	No limit	
	6+	100	200		133	No limit	
Maine	0–1	185	N/A	Medicaid only	250	200	Yes (Both)
	1–5	133			150	200	
	6+	125			150	200	
Maryland	0–1	185	200	Medicaid only	300	N/A	Yes
	1–5	185	200		300		
	6+	185	200		300		
Massachusetts	0–1	185	200	Yes (both)	200	400	Yes (both)
	1–5	133	200		150	400	
	6+	133	200		150	400	
New Jersey	0–1	185	200	Limited coverage	200	350	Yes (both)
	1–5	133	200		133	350	
	6+	100	200		133	350	
New York	0–1	185	222	SCHIP only	200	400	Yes (both)
	1–5	133	222		133	400	
	6+	100	222		100	400	
North Carolina	0–1	185	N/A	No	185	200	No
	1–5	133			133	200	
	6+	100			100	200	
Texas	0–1	185	N/A	No	185	200	SCHIP only
	1–5	133			133	200	
	6+	100			100	200	
Virginia	0–1	133	185	No	133	200	Medicaid only
	1–5	133	185		133	200	
	6+	100	185		133	200	

were marked by substantial cross-state variation in both immigrant and native children's eligibility for public health insurance. The NHIS is one of the only large, nationally representative data sets that include detailed records on children's health and information regarding nativity and immigration for both children and their parents. It surveys approximately 35,000 households per year.

Since 1997, the NHIS has selected one child at random from each household with children to construct the NHIS sample child files. For each of these children, a parental respondent (usually the mother) provides detailed information regarding the child's health and use of health care, which can then be linked to other household-level, family-level, and person-level data. The NHIS also records whether the individual

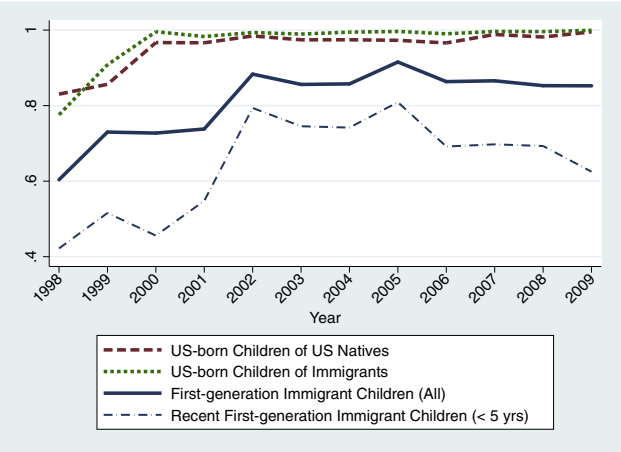

Fig. 1. Percent of low-income children eligible for public health insurance, by nativity.

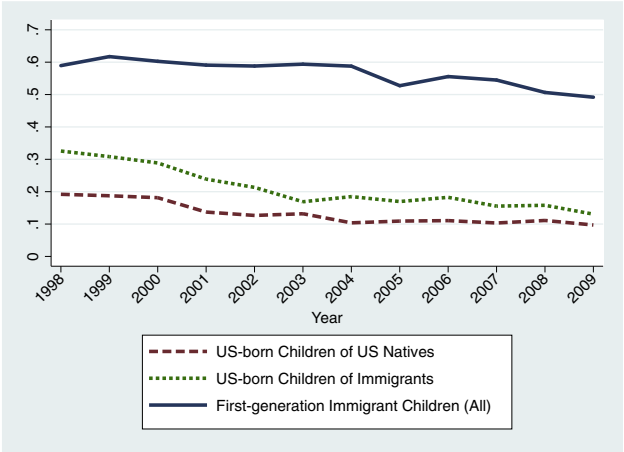

Fig. 2. Percent of low-income children without health insurance, by nativity.

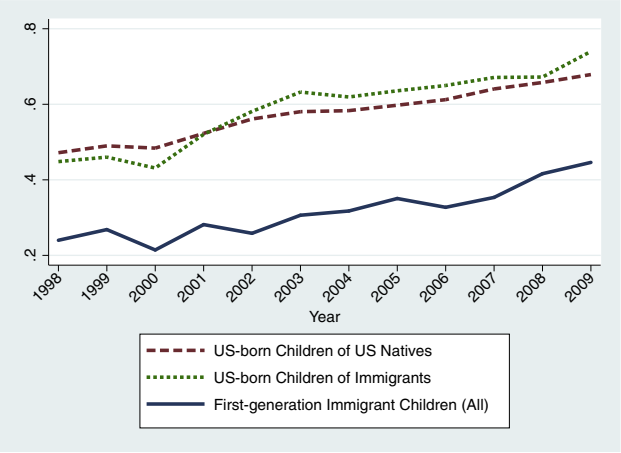

Fig. 3. Take-up of Medicaid/SCHIP among eligible low-income children, by nativity.

was born in the U.S., his years in the U.S. if foreign-born, his citizenship status, and his country of origin (beginning in 2000). From 1998 on, children can be matched to their mothers' and fathers' records (and thus to their parents' nativity status, demographic characteristics, employment, and health).[13]

My sample is limited to children ages 17 and under, who live with at least one of their parents. There are 140,797 children in the sample, with children in immigrant families accounting for 41,026 of the respondents. Of these, 6064 are first-generation immigrants (approximately half of whom have been in the U.S. for fewer than five years), and the remaining 34,942 are U.S.-born children of immigrants. Table 2 displays descriptive statistics for these children by nativity status. First-generation immigrant children in the sample are older, on average, than children of immigrants or U.S.-born children of natives. Immigrant families are of larger size and have lower incomes than native families, but are less likely to have an absent father. More than two-thirds of children in these families are Hispanic.[14]

3.2. Measuring health care utilization and health

The primary measure of health care utilization is an indicator for whether the child has gone without a doctor's visit for the past 12 months, as in Currie (2000). Guidelines from the American Academy of Pediatrics (AAP) recommend 6–7 preventive visits in infancy, 3 visits for 1-year olds, 2 visits for 2-year olds, and at least one visit per year for children ages 3 to 17 (AAP, 2010). Therefore, even a healthy child should not go for 12 months without a doctor's visit if access to care is not a problem. I also examine measures that may reflect utilization of preventive and ambulatory care at the intensive margin, including the number of doctor's visits (conditional on having one), and whether the child has a usual place for care. Having a usual provider correlates with preventive care and monitoring, and is distinct, in my sample, from whether a child goes without a doctor's visit. Over 20% of immigrant children who *have* seen a doctor in the past year lack a usual place for care.

Next, I examine outcomes related to care in the hospital: whether the child has been hospitalized overnight in the past year, and whether the child has visited an ER in the past year. Public insurance may have offsetting effects on the likelihood of hospitalization. Increases in ambulatory and preventive care should reduce the likelihood a standard childhood illness leads to hospitalization, but insurance may allow parents of newly eligible children greater access to the hospital (and admissions) when seriously ill.[15] Finally, if eligibility for public insurance increases utilization of preventive/ambulatory care, we would expect a negative effect on the use of ER care.

Much of the existing literature on health effects of Medicaid/SCHIP expansions has focused on mortality or birth outcomes as measures of child health.[16] The NHIS provides an opportunity to estimate impacts of public insurance on several less extreme measures of health for children of all ages, but admittedly, these measures are not perfect (i.e., they are parent-reported and/or subjective measures). I study several outcomes that one might expect to respond to preventive or ambulatory care, including parental reports of the child's health status (a 5-point scale: 1 — excellent, 2 — very good, 3 — good, 4 — fair, 5 — poor) and an indicator for excellent health;[17] the number of school days missed in the past 12 months due to illness; and whether the child has had an asthma episode in the past 12 months.[18]

Mean differences in insurance coverage, health care utilization, and health outcomes are presented in Table 3. Because they are more likely to be poor, children in immigrant families are far more likely to be eligible for public health insurance than children of natives. However, the rate of uninsurance for these children is also much higher than for children of natives; 60% of poor, first-generation immigrant children have no health insurance. U.S.-born children of immigrants are citizens and are eligible for public insurance according to the same criteria as children of natives, but 15–20% of these children report having no coverage.

There are striking inequalities in health care utilization by nativity status, as well. The fraction of first-generation immigrant children who have gone without a physician visit in the past 12 months is 50 to 60%.[19] U.S.-born children of immigrants, however, are only slightly more likely (29%) to have gone without a visit than children of natives (26%). Children of natives have had more doctor's visits in the past 12 months (conditional on at least one visit) than children in immigrant families, are more likely to have a usual place for care, and are more likely to be seen in a doctor's office for that care. Children of natives appear to utilize ERs more often than children in immigrant families, which may suggest that the latter are unable or unwilling to access emergency care when it is needed, or may be due to differences in age composition of the samples.

Average differences in health outcomes among these populations are difficult to interpret. Parental reports of children's health status are worse for first-generation immigrant children and U.S.-born children of immigrants than for children of natives. But children of natives of miss more school days, and have higher rates of asthma and hospitalization. Of course, it is impossible to determine to what extent these health disparities are related to health care access or eligibility for public health insurance without further causal analysis.

[13] 1998 is also the first survey year for which I can observe post-PRWORA outcomes related to health and health care utilization, many of which are reported "over the past 12 months."

[14] Starting in 2000, the surveys provide the region of origin of children and their parents. The vast majority of these immigrant families originate from Mexico, Central America and the Caribbean.

[15] Currie (2000) finds that eligibility increases hospitalizations for children of U.S. natives, but not for children of immigrants. Dafny and Gruber (2005) also find that the access effect dominates, with Medicaid expansions increasing hospitalizations for the general population of low-income children.

[16] See, e.g., Currie and Gruber (1996a, b), Royer (2005), Meyer and Wherry (2013).

[17] Case et al. (2002) show that parental and doctors' reports of children's health status are highly correlated in the National Health and Nutrition Examination Survey (NHANES).

[18] Asthma is one of the leading causes of pediatric ER visits, hospitalizations, and school absences (Currie et al., 2008). Fletcher et al. (2010) find significant, negative long-term effects of childhood asthma on adult health outcomes. However, asthma outcomes respond to care, and properly controlled asthma has few detrimental effects.

[19] While the difference in the rate at which children go without a doctor's visit is surely due, in part, to an access problem among immigrant children, some of the disparity is probably explained by the age composition of these samples. The sample of immigrant children contains more older children.

Table 2
Descriptive statistics for children in the NHIS, by nativity status (unweighted sample means; standard deviations in parentheses).

	All children			Poor children (income < FPL)		
	Immigrant children	Children of immigrants	Children of natives	Immigrant children	Children of immigrants	Children of natives
Male	0.51	0.51	0.51	0.51	0.51	0.51
	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)
Age < 1	0.01	0.07	0.06	0.01	0.09	0.07
	(0.07)	(0.26)	(0.23)	(0.07)	(0.29)	(0.25)
Age 1 to 5	0.15	0.33	0.27	0.17	0.37	0.32
	(.35)	(0.47)	(0.45)	(0.37)	(0.48)	(0.47)
Age 6 and up	0.85	0.60	0.67	0.83	0.54	0.62
	(0.36)	(0.49)	(0.47)	(0.38)	(0.50)	(0.49)
Black	0.06	0.07	0.16	0.06	0.06	0.31
	(0.24)	(0.25)	(0.36)	(0.23)	(0.23)	(0.46)
White	0.77	0.75	0.80	0.82	0.82	0.62
	(0.42)	(0.43)	(0.40)	(0.39)	(0.38)	(0.48)
Other	0.35	0.34	0.24	0.31	0.30	0.27
	(0.48)	(0.47)	(0.43)	(0.46)	(0.46)	(0.44)
Family income (2009 $)	41,328	57,617	67,797	13,943	13,909	11,766
	(37,066)	(46,143)	(48,557)	(7796)	(7406)	(6982)
Family size	4.50	4.31	3.87	4.73	4.49	3.88
	(1.56)	(1.42)	(1.23)	(1.66)	(1.60)	(1.54)
Father absent	0.21	0.18	0.31	0.28	0.35	0.67
	(0.41)	(0.39)	(0.46)	(0.45)	(0.48)	(0.47)
Recent immigrant (< 5 years)	0.48			0.51		
	(0.50)			(0.50)		
Parent is recent immigrant		0.08			0.11	
		(0.26)			(0.32)	
Both parents are foreign-born		0.72			0.87	
		(0.45)			(0.33)	
Region of birth (or parent's birth region)						
Mexico, Central Amer., or Caribbean	0.64	0.65		0.80	0.85	
	(0.48)	(0.48)		(0.40)	(0.36)	
South America	0.09	0.06		0.06	0.04	
	(0.29)	(0.48)		(0.24)	(0.19)	
Asia and SE Asia	0.08	0.11		0.04	0.05	
	(0.27)	(0.32)		(0.20)	(0.21)	
Europe and Russia	0.06	0.08		0.02	0.02	
	(0.24)	(0.27)		(0.15)	(0.15)	
Africa, Middle East, or India	0.08	0.07		0.06	0.04	
	(0.27)	(0.26)		(0.23)	(0.19)	
Elsewhere or unknown	0.04	0.03		0.02	0.01	
	(0.19)	(0.16)		(0.11)	(0.11)	
Number of observations (N)	6084	34,942	99,771	2309	8380	16,296

Notes: "Immigrant children" are first-generation immigrants; "Children of Immigrants" are U.S.-born children living with at least one foreign-born parent; "Children of Natives" are U.S.-born children of U.S.-born parents. Region of birth is only available from 2000 on, so reported frequencies are for 2000–2009 subsamples. If both parents are foreign-born, mother's region of birth is reported.

3.3. Estimation methods

I estimate the causal impact of public health insurance (Medicaid or SCHIP) eligibility on measures of child health and health care utilization for children in immigrant families and U.S.-born children of U.S. natives. Throughout, the models take the following form:

$$HEALTH_{ist} = \beta_0 + \beta_1 PUBINS\_ELIG_{ist} + \beta_2 IMM_{ist} + \beta_3 X_{ist} + \gamma_s + \tau_t + \varepsilon_{ist} \quad (1)$$

where $HEALTH_{ist}$ is the health or health care outcome of interest, $PUBINS\_ELIG_{ist}$ is an indicator for child i's eligibility for Medicaid or SCHIP, X_{ist} is a vector of controls for known determinants of child health, γ_s is a set of dummies for the child's state of residence, and τ_t is a vector of dummies for the survey year. I estimate Eq. (1) using linear probability models when the dependent variable is dichotomous.[20]

In regressions for children in immigrant families, the vector IMM_{ist} includes an indicator for whether the child is a first-generation immigrant, an interaction between first-generation immigrant status and whether the child has lived in the U.S. fewer than 5 years, and interactions that distinguish, for second-generation immigrants, whether it is the child's mother or father (or both) who is foreign-born. The vector X_{ist} includes controls for other child-specific characteristics that may determine health and utilization of care, including the child's age (dummies for year of age), birth weight (a proxy for health stock), gender, race, Hispanic ethnicity, family size, family income, an indicator for family income below the federal poverty line, and interactions between whether the mother (father) is present in the household and mother's (father's) education, age, employment, and self-reported health status.

The independent variable of interest is $PUBINS\_ELIG_{ist}$. I impute eligibility for public insurance (Medicaid and/or SCHIP) by using the child's age and family income,[21] the federal poverty line (calculated for each child based on his/her family size and year), and the length of time the child (if foreign-born) has lived in the U.S., using state–year Medicaid and SCHIP laws for 1998 through 2009.[22]

[20] I also compared these to probit estimates, but found no qualitative differences in the key results.

[21] Family income is imputed in the NHIS, which could lead to measurement error in the imputed eligibility variable. This is one reason for relying on the simulated IV method, which instruments imputed eligibility with the simulated fraction eligible in a child's state/year/age/nativity cell calculated from Current Population Survey data, which has better measures of income. Thus, while I use an imputed measure of family income from the NHIS as a control variable in the regression, the NHIS income measures do not factor in elsewhere in the analysis.

[22] Information on Medicaid and SCHIP eligibility, especially rules for immigrant children, came from multiple sources, including the Kaiser Family Foundation, the National Immigration Law Center, and the National Academy for State Health Policy, and the National Governors' Association.

Table 3
Mean coverage, utilization, and health outcomes, by nativity status (unweighted sample means; standard deviations in parentheses).

	All children			Poor children (income < FPL)		
	Immigrant children	Children of immigrants	Children of natives	Immigrant children	Children of immigrants	Children of natives
Insurance coverage						
Eligible for Medicaid or SCHIP	0.617	0.571	0.398	0.839	1.000	1.000
	(0.486)	(0.495)	(0.489)	(0.368)	–	–
Has Medicaid or SCHIP coverage	0.231	0.371	0.261	0.313	0.706	0.718
	(0.421)	(0.483)	(0.439)	(0.464)	(0.456)	(0.450)
Private health insurance	0.292	0.479	0.665	0.083	0.100	0.171
	(0.455)	(0.500)	(0.472)	(0.276)	(0.300)	(0.377)
No health insurance coverage	0.478	0.154	0.0830	0.605	0.199	0.128
	(0.500)	(0.361)	(0.276)	(0.489)	(0.400)	(0.334)
Health care utilization						
No doctor's visits in past 12 months	0.338	0.143	0.104	0.405	0.171	0.125
	(0.473)	(0.350)	(0.305)	(0.491)	(0.376)	(0.331)
Number of doctor's visits	1.206	1.826	2.019	1.080	1.815	1.991
	(1.135)	(1.171)	(1.184)	(1.146)	(1.230)	(1.243)
Has a usual place for care	0.680	0.917	0.952	0.612	0.887	0.924
	(0.467)	(0.276)	(0.215)	(0.488)	(0.317)	(0.266)
Usual place is doctor's office	0.344	0.614	0.761	0.204	0.406	0.595
	(0.475)	(0.487)	(0.426)	(0.403)	(0.491)	(0.491)
Admitted to hospital, past 12 months	0.017	0.068	0.068	0.018	0.083	0.080
	(0.128)	(0.252)	(0.251)	(0.134)	(0.275)	(0.271)
Has visited ER in past 12 months	0.120	0.189	0.223	0.118	0.221	0.300
	(0.326)	(0.391)	(0.416)	(0.323)	(0.415)	(0.458)
Health outcomes						
Health status (1 — excellent, 5 — poor)	1.825	1.754	1.623	1.992	1.991	1.911
	(0.852)	(0.859)	(0.804)	(0.885)	(0.924)	(0.942)
Excellent health	0.445	0.493	0.560	0.361	0.380	0.433
	(0.497)	(0.500)	(0.496)	(0.480)	(0.485)	(0.496)
School days missed due to illness	2.184	2.872	3.909	2.380	3.289	4.983
	(5.851)	(5.415)	(6.911)	(7.827)	(7.002)	(9.445)
Asthma episode in past 12 months	0.0166	0.0388	0.0619	0.0130	0.0455	0.0832
	(0.128)	(0.193)	(0.241)	(0.113)	(0.208)	(0.276)
ER for asthma in past 12 months	0.005	0.016	0.021	0.003	0.023	0.037
	(0.072)	(0.126)	(0.142)	(0.0588)	(0.151)	(0.190)
Number of observations (N)	6084	34,942	99,771	2309	8380	16,296

Notes: "Immigrant children" are first-generation immigrants; "Children of Immigrants" are U.S.-born children living with at least one foreign-born parent; "Children of Natives" are U.S.-born children of U.S.-born parents.

I use a child's Medicaid/SCHIP *eligibility* as the key independent variable, rather than an indicator for whether the child is *enrolled* in Medicaid/SCHIP, for three reasons. First, it avoids measurement error problems associated with noisy reporting of insurance coverage (e.g., an enrollee in a Medicaid plan, many of which have names that sound similar to private plans, reporting that he has private insurance).[23] Second, enrollment is likely to be endogenous with respect to health. If parents of unhealthy or high-risk children are more likely to enroll their children in public insurance, or if parents cycle their children on and off of public insurance coverage in response to changes in their health, estimates of Eq. (1) using Medicaid/SCHIP enrollment cannot be used to predict the impacts of future changes to Medicaid/SCHIP laws. Third, β_1 in Eq. (1) gives an estimate of the average intention-to-treat (ITT) effect, a highly relevant policy parameter when policy makers can directly impact legislated eligibility rules but may not have much influence over decisions about take-up (Manski, 1996; Angrist et al., 1996). My estimates measure the effects of the treatment – public health insurance expansions – on eligible subjects, regardless of whether or not they comply (i.e., enroll in the program). To evaluate the plausibility of the ITT effects, Section 4.4 also presents upper-bound estimates of the average effects of the treatment on the treated (ToT), which reflect the impact of insurance *coverage* for those who choose to enroll.

3.4. Simulated instrumental variables

OLS regressions of health and health care outcomes on the public insurance eligibility indicator described above would be subject to potential endogeneity and measurement error problems. For example, poor child health may affect family income (e.g., through reduced parental labor supply), making an unhealthy child more likely to be eligible for public insurance. Eligible children may also have other unobservable characteristics that make them more or less likely to take up coverage, utilize care, or have health problems. Measurement error may arise from the use of NHIS imputed family incomes or in computing eligibility for undocumented immigrant children, who are ineligible for coverage of non-emergency care and cannot be identified in the NHIS. In light of these problems, this paper relies on a simulated IV strategy that is prevalent in the literature on Medicaid and SCHIP expansions.[24] Put simply, I generate a simulated measure of eligibility by applying the eligibility criteria in each state–year to nationally representative samples of children for each year in my sample, and then use the simulated measure as an instrument for $PUBINS\_ELIG_{ist}$.

The instrument is constructed by drawing random samples of 300 first- and second-generation immigrant children of each age (0–17), from each wave of the March Current Population Survey (CPS) from 1998 to 2009. The 18 random samples for each year are run through a

[23] See LoSasso and Buchmueller (2004) for evidence of this type of mis-reporting in the CPS, and Card et al. (2004) for similar evidence for the SIPP.

[24] See, e.g., Currie and Gruber (1996), Cutler and Gruber (1996), Ham and Shore-Sheppard (2005), LoSasso and Buchmueller (2004), Hudson et al. (2005), and Buchmueller et al. (2008).

simulation program, which uses state eligibility criteria to calculate the fraction of the sample that would be eligible in each state. I use the simulated fraction eligible in a child's state–year–age cell to instrument for imputed individual eligibility. When I estimate the models for natives, I construct the instrument based on random samples of U.S.-born children of natives in the CPS; similarly, the instrument for children below 400% of the poverty line is based on random samples of children with family incomes below that threshold.[25] The instrument is strongly correlated with whether a child is eligible for Medicaid/SCHIP. For children in immigrant families, for example, the first-stage coefficient on simulated eligibility is 0.93, and the F-statistic is over 500 (see Table 4).

Of course, relying on state laws for identifying variation assumes that these policy changes can be treated as exogenous with respect to child health and health care utilization. For earlier Medicaid expansions and the initial rollout of SCHIP, policy endogeneity may be less of a concern because these expansions were federally mandated. But with later SCHIP-era expansions occurring at the state level, the potential for endogenous policies is greater. I include state fixed effects in all models, which capture time-invariant differences across states in the treatment of recent immigrant children and in the generosity of Medicaid/SCHIP eligibility criteria for the general population. In later robustness checks, I add controls to capture age-specific time trends; state-specific age trends; state-level changes in immigration enforcement and attitudes toward immigrants, Medicaid/SCHIP enrollment rules, and economic conditions; and a full set of state–year interactions.

4. Results

4.1. Estimated effects of eligibility on insurance coverage

Table 4 revisits the question of how expansions in public insurance eligibility affect public insurance *coverage* for children in immigrant and native families. Doing so is important for two reasons: First, while the literature on Medicaid/SCHIP expansions and insurance coverage is long, the existing evidence on take-up and crowd-out among this population has reached disparate conclusions (Currie, 2000; Borjas, 2003; Kaushal and Kaestner, 2005; Lurie, 2008; Buchmueller et al., 2008). Second, population-specific estimates of the effects of recent eligibility changes on insurance coverage make it possible to evaluate the plausibility of estimated effects of eligibility on health care utilization and health for these children (i.e., ITT effects).[26] Estimating large impacts of eligibility expansions on children's health and health care use, but small impacts on their overall insurance coverage, would call into question what mechanisms were at play. I return to this issue below.

I document a strong positive effect of public insurance eligibility on the likelihood of Medicaid or SCHIP coverage for children in immigrant families (an increase of 19.2 percentage points). Note that underreporting of Medicaid/SCHIP receipt would bias this estimate downward. For low-income children, Card et al. (2004) find that the probability that Medicaid coverage is correctly reported in a given month is around 85–90%; the extent of underreporting may be even greater among the non-native population due to language barriers or unfamiliarity with the system. The reduction in uninsurance (15.9-percentage points) accounts for more than three-quarters of the increase in enrollment, while the decline in private coverage is much smaller.

For children of natives, the estimated impact of eligibility on public insurance coverage is less than half as large, with eligibility causing an increase in the likelihood of coverage of 7.4 percentage points. This is not surprising given that children of natives who gained eligibility in the SCHIP era had higher average incomes and were more likely to already have private insurance. The 3.5-percentage point reduction in uninsurance is smaller than the corresponding estimate for children in immigrant families, and the degree of crowding out of private insurance implied by the estimates is larger.[27]

Hereafter I focus on the population of children with family incomes below 400% of the federal poverty line because nearly all of the variation in Medicaid/SCHIP eligibility occurs for these families. Regardless of nativity status, the effects of eligibility on insurance coverage are more pronounced among these children, but the estimates remain substantially larger for children in immigrant families than for children of natives (p-values are reported in the bottom row of Table 4). Eligibility increases the likelihood of public insurance coverage by 22.6 percentage points (and increases overall insurance coverage by 16.9 percentage points) for children in immigrant families, but increases Medicaid/SCHIP by only 9.3 percentage points (and reduces uninsurance by 5.8 percentage points) for children of natives.[28]

These findings are in contrast to Currie (2000), who found that earlier Medicaid eligibility expansions increased Medicaid enrollment among children of natives but had no significant effect among children of immigrants, and to those in Buchmueller et al. (2008), which documented similar take-up of early SCHIP eligibility expansions for children of non-natives and children of natives. In Appendix Table 1, I address several possible explanations for the difference in my results. First, I show that the difference does not appear to be driven by different income distributions for immigrant and native families; regardless of the income threshold that defines the sample, the estimated take-up effects are larger for children in immigrant families than for natives.

Another way in which my analysis differs from previous studies, and in which differential income distributions could matter, is that I incorporate immigration status into the simulated eligibility instrument, whereas prior studies do not. When I run the insurance coverage regressions using an instrument that does not take into account immigration status and reflects merely the generosity of states to children of different ages and incomes, I indeed find a somewhat lower (and less precise) estimated take-up rate for children in immigrant families: the coefficient is reduced 0.172, and the standard error nearly doubles. Not surprisingly, there is no change in the magnitude or precision of the estimated coverage effects for natives. Note that while the estimated effect of eligibility on public insurance coverage is still larger in magnitude for children of immigrants than for natives, the difference is no longer statistically significant at the 10% level. This methodological difference may partly explain the divergence between my findings and those of Buchmueller et al. (2008), who also estimate effects for non-natives that are larger in magnitude, but not statistically different, than those for natives.

Finally, my results may differ from those for earlier SCHIP expansions if later SCHIP expansions were associated with increased outreach efforts (Aizer, 2007) or changes in state policies regarding Medicaid/SCHIP enrollment (Bansak and Raphael, 2007) that differentially impacted immigrants, or if the policy environment for immigrant

[25] The instrument takes a different value for children in immigrant families and native-born children, even when they are of the same age–state–year cell. This is in contrast to the methods in Buchmueller et al. (2008) and Currie (2000), but has the advantage of using more of the available information.

[26] They represent the first-stage effect in a 2SLS model that estimates the impact of *having* Medicaid/SCHIP coverage on the health care utilization and health of newly eligible enrollees (i.e., the effect of treatment on the treated, or ToT).

[27] The extent of crowding out of private insurance is bounded by two ratios, $\frac{|\beta_{1priv}|}{\beta_{1pub}}$ and $\frac{\beta_{1pub}-|\beta_{1state}|}{\beta_{1pub}}$.

[28] Appendix Table 2 presents estimates for first- and second-generation immigrant children separately. Take-up rates are smaller among first-generation immigrants, but the increase in enrollment is fully accounted for by decreased uninsurance, suggesting no crowding out for this population.

Table 4
Effect of public insurance eligibility on health insurance coverage (unweighted simulated IV results; robust standard errors in parentheses).

	All children			Children with incomes <400% FPL		
A. Children in immigrant families	(1) Has public insurance	(2) Has private insurance	(3) Has no insurance	(4) Has public insurance	(5) Has private insurance	(6) Has no insurance
Eligible for public insurance	0.192***	−0.028	−0.159***	0.226***	−0.051	−0.169***
	(0.038)	(0.050)	(0.044)	(0.054)	(0.047)	(0.046)
First–generation immigrant	−0.162***	−0.075***	0.234***	−0.178***	−0.070***	0.245***
	(0.025)	(0.009)	(0.023)	(0.026)	(0.008)	(0.025)
× In U.S. for < 5 years	−0.006	−0.034**	0.041*	0.001	−0.040***	0.040
	(0.018)	(0.013)	(0.021)	(0.026)	(0.014)	(0.025)
Mean of dep. variable	0.350	0.451	0.202	0.417	0.350	0.238
N	41,026	41,026	41,026	99,771	99,771	99,771
R^2	0.289	0.405	0.156	0.364	0.391	0.046
First–stage coefficient:	0.905			0.931		
	(0.021)			(0.021)		
F–statistic from first stage:	600.5			510.0		
Estimated degree of crowding out:	14–17%			22–25%		
	All children			Children with incomes < 400% FPL		
B. US–Born children of natives	(1) Has public insurance	(2) Has private insurance	(3) Has no insurance	(4) Has public insurance	(5) Has private insurance	(6) Has no insurance
Eligible for public insurance	0.074***	−0.031**	−0.035***	0.093***	−0.022	−0.058***
	(0.019)	(0.015)	(0.012)	(0.031)	(0.024)	(0.015)
Mean of dep. variable	0.261	0.665	0.083	0.353	0.552	0.107
N	33,331	33,331	33,331	69,909	69,909	69,909
R^2	0.245	0.317	0.151	0.332	0.353	0.041
First–stage coefficient:	0.883			0.915		
	(0.015)			(0.012)		
F–statistic from first stage:	1496.4			1438.6		
Estimated degree of crowding out:	42–53%			24–38%		
p–value, coef. equal across samples	0.001	0.966	0.004	0.002	0.436	0.010

Notes: Standard errors are corrected for clustering at the state level; ***p < 0.01, **p < 0.05, *p < 0.10. Instrument is the fraction of a national random sample of children in respondent's age/nativity group who would be eligible for public insurance (Medicaid or SCHIP) in the child's state and year. See text for further detail. All regressions include controls for child's immigrant status, year-of-age dummies, gender, race, Hispanic ethnicity, family income (2009 $), a dummy for family income below the federal poverty line, indicators for the presence of the mother and/or father, interactions between the indicators for mother's and father's presence with mother's and/or father's foreign-born status, age education, health, and employment, and full sets of state and year fixed effects. Test statistics obtained from running analogous regression with full set of interactions on pooled sample.

families became less intimidating over time, so that immigrant parents were more likely to take up public insurance when their children became eligible (Watson, 2014).[29] I return to this issue in Section 4.3.

4.2. ITT effects of eligibility on health care utilization and health

Whether public insurance coverage is likely to improve children's health, and the overall costs of providing such insurance, depend on the extent to which insurance increases their utilization of health care, particularly preventive and ambulatory care. The results in the Panel A of Table 5 indicate that Medicaid/SCHIP eligibility reduces the likelihood that a child in an immigrant family goes 12 months without a doctor's visit by 11.5 percentage points. This represents a 60% reduction relative to the mean of 19%.[30] According to my estimates, Medicaid/SCHIP eligibility also increases the probability that a child in an immigrant family has a usual place for care by 7.7 percentage points (from a sample mean of 86%). I find no statistically significant impact on the likelihood of hospitalization in the past year; this estimate may incorporate offsetting effects as described in Section 3 (Dafny and Gruber, 2005). Finally, the estimated impact of eligibility on ER use is negative and statistically significant at the 5% level.

Regardless of the measure of health care utilization that I employ, my estimates are larger in magnitude for children in immigrant families than for children of natives; these differences are statistically significant for several of the outcomes. Estimated effects for natives take the expected sign but are small in magnitude and often not statistically different from zero. That the ITT impacts are small for natives is sensible, given that their baseline rate of health insurance coverage was high

[29] I also estimated these models for different sub-periods and noticed somewhat larger take-up effects for later years of my study, compared to earlier years; however, the differences are not statistically significant. The finding of larger increases in public insurance coverage and larger decreases in un-insurance for children in immigrant families than children of natives was upheld across periods.

[30] I find no evidence to suggest eligibility impacts the number of office visits a child has, conditional on having at least one. These results are available upon request.

Table 5
Effects of public insurance eligibility on health care utilization and health (unweighted IV estimates of intent-to-treat effects; robust standard errors in parentheses).

	Health care utilization				Health outcomes			
A. Children in immigrant families (Incomes < 400% FPL)	(1) No visit (12 months)	(2) Usual place for care	(3) Any hosp. (12 months)	(4) ER visit (12 months)	(5) Health status (1–ex., 5–poor)	(6) Excellent health	(7) School days missed	(8) Asthma attack
Eligible for pub. ins.	−0.115**	0.077***	0.030	−0.062**	−0.077	0.073*	−0.207	−0.020*
	(0.047)	(0.027)	(0.026)	(0.030)	(0.082)	(0.042)	(0.354)	(0.011)
First–generation immigrant	0.116***	−0.141***	−0.009***	−0.033***	−0.031**	0.005	−0.576***	−0.020***
	(0.009)	(0.015)	(0.002)	(0.009)	(0.014)	(0.009)	(0.144)	(0.004)
× In U.S. < 5 years	0.011	−0.109***	0.003	−0.036***	0.008	−0.006	−0.131	−0.010*
	(0.015)	(0.009)	(0.006)	(0.012)	(0.036)	(0.022)	(0.200)	(0.005)
Birth weight (1000s of grams)					−0.034***	0.015***	−0.130**	−0.004**
					(0.006)	(0.003)	(0.061)	(0.002)
Mean of dep. variable	0.191	0.863	0.061	0.182	1.828	0.453	2.758	0.034
% of mean (dep. var.)	−60.2%***	8.9%**	49.2%	34.1%**	–	16.1%**	−7.5%	−58.8%*
R^2	0.103	0.120	0.352	0.041	0.046	0.032	0.383	0.041
N	33,331	33,331	33,331	33,331	33,331	33,331	22,293	33,331
B. US–born children of natives (Incomes < 400% FPL)	(1) No visit (12 months)	(2) Usual place for care	(3) Any hosp. (12 months)	(4) ER visit (12 months)	(5) Health status (1–ex., 5–poor)	(6) Excellent health	(7) School days missed	(8) Asthma attack
Eligible for public insurance	−0.011	0.021*	0.012	−0.008	−0.044	0.034	−0.030	−0.025***
	(0.023)	(0.012)	(0.009)	(0.022)	(0.059)	(0.026)	(0.357)	(0.009)
Birth weight (1000s of grams)					−0.049***	0.018***	0.034	−0.008***
					(0.004)	(0.002)	(0.044)	(0.002)
Mean of dep. variable	0.117	0.941	0.070	0.244	1.712	0.512	4.163	0.066
% of mean (dep. var.)	−9.4%	2.2%*	71.1%	−3.3%	–	6.6%	−0.7%	−37.9%**
R^2	0.356	0.280	0.027	0.023	0.273	0.215	0.040	0.018
N	69,909	69,909	69,909	69,909	69,909	69,909	48,090	69,909
p–value, coef. equal across samples	0.027	0.065	0.402	0.217	0.583	0.003	0.717	0.199

Standard errors are corrected for clustering at the state level; ***p < 0.01, **p < 0.05, *p < 0.10. First-stage instrument is the fraction of children in a national random sample of children in respondent's year/age/nativity group who would be eligible for public insurance (Medicaid or SCHIP) in the child's state and year. See text for further detail. All regressions include controls for child's immigrant status, year-of-age dummies, gender, race, Hispanic ethnicity, family income (2009 $), a dummy for family income below the federal poverty line, indicators for the presence of the mother and/or father, interactions between the indicators for mother's and father's presence with mother's and/or father's foreign-born status, age education, health, and employment, and full sets of state and year fixed effects.

(89% had coverage in 1998), and the first-stage effect of eligibility on insurance coverage was small. Moreover, this heterogeneity in the effects of public insurance eligibility expansions would be entirely missed by an analysis of the overall population that did not account for nativity status; one would draw the conclusion that SCHIP-era expansions had little impact on children's access to, or utilization of, health care.

These results provide the first direct evidence on the impacts of recent changes in public health insurance eligibility on health care utilization for children in immigrant families. Taken together, they imply that expansions in public health insurance have the intended effect of increasing cost-effective preventive and ambulatory care for children in immigrant families, and reducing their use of higher-cost emergency room care.

The results in Panel B of Table 5 are suggestive that public insurance eligibility may have modest beneficial effects on the health of children in immigrant families. First, the estimated effect on the likelihood the child is reported to be in excellent health is positive (7.3 percentage points) and statistically significant ($p < 0.02$).[31] I find no evidence that eligibility causes a reduction in the number of school days missed due to illness. This is consistent with evidence in Kaestner et al. (1999), who find no statistically significant effect of earlier Medicaid expansions on number of "bed days" (i.e., morbidity) for the general population of children. My results also suggest that eligibility for public insurance reduces the likelihood of an asthma attack in the past 12 months, by 2 percentage points, but this coefficient is less precisely estimated. Increased utilization of routine care might reduce asthma episodes by leading to prompt diagnosis and management of this condition, including taking the appropriate maintenance drugs.

While the point estimates indicate positive impacts of eligibility on children's health status and asthma outcomes, one must interpret these results cautiously. On one hand, the improvement in health status for children of immigrants may be caused by the increase in preventive and ambulatory care documented in Panel A, by increased access to prescription medications owing to decreased cost-sharing, or by substitution from out-of-pocket spending on health care to increased spending on other items that might improve health (e.g., nutritious foods). On the other hand, evidence from the Oregon Medicaid experiment (Finkelstein et al., 2012) indicates that gaining insurance increases self-reported health even before patients visit the doctor, suggesting that people simply feel better once they gain insurance. I cannot directly distinguish between these two alternative explanations. Nonetheless, the weight of the evidence in Table 5 indicates that public insurance increases utilization of health care (particularly preventive and ambulatory care) among children in immigrant families, and provides suggestive evidence of improvements in health, itself.

4.3. Robustness checks

The ITT estimates in Tables 4 and 5 reveal sizable, beneficial effects of public insurance eligibility on insurance coverage, health care utilization, and health outcomes for children in immigrant families.[32] It is

[31] The estimate in column (**2**) is preferred over those in (**1**) given the right skewness in the health status variable and given that among children in immigrant families, 45% are in excellent health (*health status* = 1), with another 51% reported in good or very good health.

[32] Even with state fixed effects, if the same variables that predict insurance coverage (or health care use or health) also predict the simulated fraction eligible variable, there is potential for a spurious correlation to bias my estimates. I display results of the models with various sets of controls in Appendix Table 3. Removing demographic, nativity, and health controls from the model leaves the main results mostly unchanged.

worth considering whether the magnitudes of these estimates are plausible.

To explore the possibility that omitted factors are biasing the baseline estimates upward, Table 6 adds further controls to the regressions for children in immigrant families, including those health care utilization and health outcomes for which the Table 5 estimates were statistically significant.[33] Model 2 adds controls for age-specific time trends in these outcomes. Shore-Sheppard (2008) finds that previous estimates of take-up and crowd-out are very sensitive to the inclusion of such controls; in particular, controlling for differential time trends by age of child lowers her crowd-out estimate to zero. Next, model 3 adds controls for state-specific year-of-age trends, as in Shore-Sheppard (2008) and Gruber and Simon (2008). The estimated impacts of eligibility on insurance coverage are robust to the addition of these trends, while the estimated effects on most health care utilization and health outcomes attenuate slightly.

In model 4 of Table 6, I investigate the importance of other changes at the state level that may be correlated both with eligibility expansions and also with take-up decisions and health care utilization among immigrant families.[34] For example, I control for state–year variation in immigration enforcement and sentiment toward immigrants, specifically, the (log) number of deportations per 1000 foreign-born people and the census-division share that would like to see immigration decreased, similar to Watson (2014).[35] Heightened enforcement is associated with greater uninsurance among children in immigrant families, a lower likelihood of having a usual place for care, and increased usage of ER care, while living in an area with more negative attitudes toward immigrants lowers the likelihood of public insurance coverage and, interestingly, is associated with a lower likelihood of reporting excellent health. Similarly, state-level changes in policies related to Medicaid/SCHIP enrollment may also confound the estimated effects of eligibility expansions, and may impact immigrants and natives differently. I include controls for whether the state has a non-zero waiting period (during which the child must be uninsured before enrolling) and an indicator for whether the state requires an in-person interview as part of the application/verification process. I add the state–year unemployment rate to control for the possibility that states expand eligibility for Medicaid/SCHIP in prosperous times, during which health care access and utilization may improve, regardless of the policy change. While these controls have predictive power for some of the models, the estimated effects of eligibility on key outcomes are largely unaffected.

Finally, the model in row 5 of Table 6 includes a full, flexible set of state-by-year effects. This test places substantial demands on the data.[36] The inclusion of these interactions nets out any statewide impacts of the laws, or any statewide phenomenon associated with the passage of eligibility expansions, and identifying variation comes only from within-state changes over time in the *relative* treatment of children of different ages. I find a similar pattern of coefficients (with the exception of a very large estimated ITT for no visits), but the standard errors are two to eight times as large as in the baseline model, as the most substantial source of policy variation is ignored. In what follows, I use the specification in model 4 to evaluate the plausibility of my ITT estimates.

4.4. LATE estimates and effects of treatment on the treated

While the ITT may best reflect the policy parameter of interest, whether the ITT estimates are plausible can be evaluated by examining the impact of *gaining* insurance coverage, or the average effect of the treatment on the treated (ToT). With one-sided non-compliance (i.e., the state–year simulated fraction eligible instrument affects public insurance coverage in one direction only), and no impacts of the instrument on outcomes other than through its impact on insurance coverage, the ToT is equivalent to the LATE (Angrist et al., 1996). These assumptions are non-trivial in this context, so we must proceed with caution in viewing the LATE estimates in Table 7 as reflecting the effects of public insurance, per se, on health care utilization and health.[37] Nonetheless, they can provide a back-of-the-envelope check of the plausibility of the results in Section 4. I estimate the LATE with 2SLS, using the simulated fraction eligible to instrument for insurance coverage in the first stage.

$$HEALTH_{ist} = \beta_0 + \beta_1 INSURANCE_{ist} + \beta_2 IMM_{ist} + \beta_3 X_{ist} + \gamma_s + \tau_t + \varepsilon_{ist} \quad (2)$$

It is well understood that the LATE does not give the average effect of the treatment (ATE) when take-up is less than 100%, because enrollees are likely to be different (sicker, more likely to use care) than non-enrollees. But the LATE can also overstate the ToT for several reasons. First, underreporting of Medicaid/SCHIP coverage (Card et al., 2004) would bias the first-stage estimate downward and may be more common among immigrant families. Indeed, many of the SCHIP plans have names that sound like private insurance. Second, there may be impacts on health care utilization of Medicaid/SCHIP *eligibility*, per se, even among non-enrollees, if eligibility provides option value in that newly eligible non-enrollees no longer delay ambulatory care because they know they can enroll in Medicaid/SCHIP ex post (Currie and Gruber, 1996b).[38] Eligibility, itself, could likewise impact health if it is correlated with receipt of other benefits like TANF or SSI (Finkelstein et al., 2012), or if it increases disposable income (Leininger et al., 2010).[39]

Table 7 presents LATE estimates. I use model (4) in Table 6 to compute first-stage effects, and adjust the first stage by a factor of 0.9 to account for underreporting of children's Medicaid/SCHIP receipt in survey data (Card et al., 2004). Results in the first row of each panel are from 2SLS estimation of Eq. (2) using whether the child has *any* insurance coverage in the first stage. These estimates should be interpreted as an upper bound on the effect of public insurance coverage because they scale up the ITT by the reciprocal of the reduction in uninsurance, and assume that no categorically eligible Medicaid/SCHIP recipients dropped private insurance coverage. In the second row of each panel, I use whether the child has any *public* insurance (Medicaid or SCHIP). The figures in row 2 give the appropriate LATE estimate if the kinds of private insurance plans held by these children prevent them from getting care, perhaps because they involve high cost-

[33] Results for natives are available upon request. The only change when additional controls are added to the regressions for natives is that the estimated effect of eligibility on having a usual place for care shrinks in magnitude and is no longer statistically significant.

[34] A related check is to estimate the models for a "placebo" sample that should not have been directly affected by the SCHIP expansions, like children in families with incomes above 400% of the poverty line. I do so in the final row of Table 6; key coefficients are never statistically different from zero.

[35] Extending the INS data in Watson (2014) through 2009 is not possible because of a substantial change in recording of enforcement in 2003. Instead, I construct the enforcement variable for 1998–2009 using data from the Transactional Records Access Clearinghouse (TRAC) Immigration Reports. I calculate the number of deportations per 1000 foreign-born in each of the 25 INS clusters from 1998 through 2009. I also computed the number of immigration court cases per 1000 foreign-born, but that variable had less predictive power. I use the American National Election Study (ANES) to capture state-year variation in negative attitudes toward immigration. The ANES asks respondents whether they would like to see immigration increased, unchanged, or decreased in the years 1992, 1994, 1996, 1998, 2000, and 2004. I include the census-division-year share of respondents who would like to see immigration decreased (interpolating linearly for missing years) because sample sizes are too small to calculate this share at the state level.

[36] Adding state-specific linear time trends a common check. However, because I do not have data for several periods before the SCHIP expansions began, including state-specific time trends here is likely to confound the dynamic response to the eligibility expansions with the effects of pre-trends in the outcomes of interest, as in Wolfers (2003).

[37] The first assumption is referred to as monotonicity, while the second is the exclusion restriction.

[38] Currie and Gruber, 1996b, refer to this as "conditional coverage."

[39] For the LATE of gaining *any* insurance coverage, the latter effect would have to work through parents of newly-eligible children dropping private coverage and not enrolling in Medicaid/SCHIP but using it as conditional coverage, which seems unlikely given the estimates in Tables 4 and 6. For the impact of gaining *public* coverage, this effect could work through decreased cost-sharing.

Table 6
Robustness of ITT effects of eligibility on coverage, utilization, and health (unweighted simulated IV estimates; robust standard errors in parentheses).

Children in immigrant families, incomes <400% of FPL (N = 33,331)	(1) Public insurance	(2) Private insurance	(3) Has no insurance	(4) No visit (12 months)	(5) Usual place	(6) ER visit (12 months)	(7) Excellent health	(8) Asthma attack
1. Baseline (model in Tables 4 and 5)	0.226***	−0.051	−0.169***	−0.115**	0.077***	−0.062**	0.073*	−0.020*
	(0.054)	(0.047)	(0.046)	(0.047)	(0.027)	(0.030)	(0.042)	(0.011)
2. Model (1) plus age-specific time trends	0.247***	−0.054	−0.187***	−0.109**	0.066**	−0.051*	0.077*	−0.019
	(0.054)	(0.047)	(0.051)	(0.042)	(0.026)	(0.030)	(0.042)	(0.012)
3. Model (2) plus state-specific age trends	0.236***	−0.056	−0.174***	−0.085**	0.042	−0.051	0.081*	−0.019*
	(0.056)	(0.049)	(0.049)	(0.042)	(0.032)	(0.031)	(0.042)	(0.011)
4. Model (3) plus state–year controls	0.225***	−0.070	−0.151***	−0.072*	0.046	−0.042	0.094**	−0.019
	(0.056)	(0.044)	(0.041)	(0.038)	(0.036)	(0.034)	(0.038)	(0.012)
Log (deportations per 1000 foreign-born)	0.000	−0.013**	0.014***	−0.005	−0.012**	0.014**	0.002	0.003
	(0.006)	(0.006)	(0.005)	(0.007)	(0.005)	(0.006)	(0.012)	(0.002)
Share who want immigration decreased	−0.325*	0.086	0.255**	0.131	−0.109*	−0.013	−0.310***	0.014
	(0.177)	(0.101)	(0.107)	(0.084)	(0.065)	(0.077)	(0.059)	(0.024)
In-person interview required	−0.020	−0.036***	0.059***	0.036	0.001	0.017**	0.033***	−0.001
	(0.014)	(0.009)	(0.016)	(0.022)	(0.020)	(0.008)	(0.010)	(0.002)
State has waiting period	−0.012	−0.004	0.010	0.003	0.009	−0.001	−0.013	−0.001
	(0.018)	(0.017)	(0.012)	(0.012)	(0.008)	(0.007)	(0.013)	(0.004)
State–year unemployment rate	−0.007	0.003	0.003	0.005	−0.001	0.001	0.003	0.000
	(0.004)	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)	(0.007)	(0.002)
p-Value, state–year variables jointly significant:	0.011	< 0.001	< 0.001	0.316	0.039	0.014	< 0.001	0.255
5. Model (3) plus state × year interactions	0.368*	−0.013	−0.313	−0.408***	0.048	−0.187	0.112	−0.082
	(0.199)	(0.215)	(0.291)	(0.110)	(0.161)	(0.252)	(0.116)	(0.051)
6. Placebo: Model (1) for children with incomes >400% of FPL	−0.013	0.030	−0.015	0.058	0.008	−0.024	0.287	−0.062
	(0.044)	(0.057)	(0.058)	(0.077)	(0.036)	(0.076)	(0.225)	(0.045)

Standard errors are corrected for clustering at the state level; ***p < 0.01, **p < 0.05, *p < 0.10. First-stage instrument is the fraction of children in a national random sample of children in respondent's age/nativity group who would be eligible for public insurance (Medicaid or SCHIP) in the child's state and year. See text for further detail. Baseline ITT regressions include same controls as in Tables 4 and 5. State–year controls include the (log) number of deportations per 1000 foreign-born in the state's INS cluster, the share in the census division who would like to see immigration decreased, whether an in-person interview is required as part of the Medicaid/SCHIP application process, whether the state has a non-zero waiting period, and the unemployment rate. Analogous results for natives available upon request. These variables are rarely significant in the regressions for natives. When they are (e.g., in column (2) and column (8)), they are economically small and have the expected sign.

sharing or catastrophic coverage only. Hereafter, I refer to estimates in the second row because they reflect the treatment effect on the treated, where the treatment is not *any* insurance, but Medicaid/SCHIP insurance.

For newly-eligible enrollees, public insurance coverage appears to lower the probability a child goes without a doctor's visit by 28.7 percentage points. This reflects a decrease of 77% relative to the mean for the uninsured, a large but still plausible effect. The magnitude of the LATE estimate for having a usual place for care, though imprecisely estimated, suggests that public insurance coverage raises that probability by about 16 percentage points, an increase of 27 percent relative to the mean among the uninsured.

I find a large impact of Medicaid/SCHIP coverage on the likelihood a child is in excellent health (an increase of 37.4 percentage points). While this estimate is plausible at face value (in that it does not imply a mean outcome for the uninsured over 100%), it is quite large compared to the means of this variable for insured children. Thus, it seems likely that some of the estimated impact of eligibility expansions on health status is working through channels other than insurance coverage. These might include channels described above (increased benefits from other programs or increased disposable income), or a direct effect of gaining eligibility on how parents perceive their children's health. Such effects violate the exclusion restriction for interpreting the LATE estimate as the effect of insurance, per se. Similarly, the LATE estimates suggests that insurance decreases the probability an immigrant child visits the ER of 16.9 percentage points, a more than 100% reduction, relative to the mean among uninsured immigrant children (13.3%). ER usage may be one outcome for which the option value of eligibility is especially relevant. That is, newly eligible non-enrollees, knowing they can enroll at the point of service, may use ambulatory care sooner (e.g., at a public clinic) and reduce use of ER services. Among the poor, *uninsured* children in my sample, those who are Medicaid/SCHIP-eligible are about half as likely the ineligible to use the ER for sick care, consistent with this explanation.

The LATE estimates for natives are less precisely estimated, but if we take the coefficients literally, they suggest that gaining insurance has positive effects on having a usual place for care and on the likelihood of reporting excellent health, effects which are of similar magnitude to those for immigrant children.[40] Small ITT estimates for natives are therefore likely a result of the fact that expansions caused little increase in coverage among this population.

In short, the LATE estimates suggest that the substantial impacts of eligibility on immigrant children's health care and health outcomes (e.g., no doctor's visit, usual place for care, and excellent health status) are within a plausible range, but that ITT effects on health status and ER usage might owe, in part, to mechanisms other than increased insurance coverage. Nonetheless, given the literature showing large effects of eligibility expansions on mortality, an extreme outcome (see Gruber and Currie, 1996a, b; Sommers et al., 2012; Goodman-Bacon, 2013), it is not unreasonable that eligibility for public insurance could have substantial impacts on less extreme measures of health, particularly for a population of children with low baseline rates of insurance coverage.

5. Conclusions

Economists and policy makers have long been concerned with the costs associated with expanding eligibility for public health insurance to new children. Indeed, the vast majority of papers in this literature study the extent to which increases in eligibility for Medicaid and SCHIP cause the crowding out of already-insured children onto the public insurance rolls. The literature provides less evidence on the potentially beneficial impacts of eligibility expansions on health care and health.

[40] One notable difference is the LATE estimate for having no doctor's visit in the past 12 months. This estimate is consistent with native children who gained insurance coverage through SCHIP expansions already having at least an annual doctor's visit.

Table 7
LATE Estimates of effect of insurance on utilization and health (unweighted simulated IV estimates; robust standard errors in parentheses).

A. Children in immigrant families (Incomes < 400% of FPL)

	(1) No visits (12 months)	(2) Usual place for care	(3) ER visit (12 months)	(4) Excellent health	(5) Asthma (12 months)
1. LATE–has any insurance	−0.426**	0.276	−0.251	0.559**	−0.113
First–stage F–statistic: 39.50	(0.196)	(0.209)	(0.220)	(0.271)	(0.083)
First–stage coefficient: 0.157***	[0.034]	[0.192]	[0.261]	[0.044]	[0.176]
2. LATE–has public insurance	−0.287†	0.160	−0.169	0.374**	−0.076
First–stageF–statistic: 66.07	(0.173)	(0.128)	(0.139)	(0.159)	(0.059)
First–stagecoefficient: 0.232***	[0.103]	[0.220]	[0.228]	[0.022]	[0.203]
Mean: Uninsured	0.372	0.603	0.133	0.421	0.019
Mean: Private insurance (non–group)	0.172	0.934	0.152	0.524	0.037
Mean: Private insurance (employer)	0.141	0.951	0.161	0.526	0.035

B. US–born children of natives (Incomes < 400% of FPL)

	(1) No visits (past 12 months)	(2) Usual place for care	(3) ER visit (past 12 months)	(4) Excellent health	(5) Asthma (past 12 months)
1. LATE (any insurance)	0.017	0.248	−0.190	0.522	−0.475*
First–stage F–statistic: 20.98	(0.322)	(0.188)	(0.423)	(0.400)	(0.254)
First–stage coefficient: 0.049***	[0.959]	[0.195]	[0.654]	[0.197]	[0.067]
2. LATE (public insurance)	0.010	0.152	−0.117	0.341	−0.311**
First–stage F–statistic: 201.41	(0.197)	(0.147)	(0.250)	(0.254)	(0.145)
First–stage coefficient: 0.078***	[0.959]	[0.304]	[0.641]	[0.184]	[0.037]
Mean: Uninsured	0.270	0.765	0.226	0.473	0.050
Mean: Private insurance (non–group)	0.121	0.947	0.209	0.557	0.056
Mean: Private insurance (employer)	0.103	0.970	0.203	0.558	0.057

Standard errors are corrected for clustering at the state level; ***p < 0.01, **p < 0.05, *p < 0.10, †p < 0.15. First-stage instrument is the fraction of children in a national random sample of children in respondent's year/age/nativity group who would be eligible for public insurance (Medicaid or SCHIP) in the child's state and year. See text for further detail. Models include same controls as in row 4 of Table 6 (i.e., age-specific time trends, state-specific age trends, and state–year controls for enforcement, attitudes, whether the state has a waiting period or interview requirement, and economic conditions). 2SLS model in row 1 estimates LATE using whether the child has any insurance coverage for $INSURANCE_{ist}$ in the first stage (see Eq. (2)). Model in row 2 uses whether the child has public insurance coverage (Medicaid or SCHIP) for $INSURANCE_{ist}$ in the first stage. Coverage effect is adjusted by a factor of 0.9, for underreporting of children's Medicaid/SCHIP receipt in survey data (see Card et al., 2004).

The evidence in this paper indicates that for children in immigrant families, post-welfare reform expansions in eligibility for public health insurance increased insurance coverage, improved utilization of health care, and positively impacted health. I find that eligibility causes meaningful improvements in preventive/ambulatory care for first- and second-generation immigrant children and a decline in the use of emergency care in hospitals. I also document suggestive evidence of improvements in health outcomes that may be expected to respond to ambulatory or preventive care, including asthma attacks and the child's overall health status.

My results can help to reconcile some of the disparate conclusions in the literature on SCHIP expansions and their impacts on health care utilization and health. For demographic groups like immigrant children, who have low baseline rates of private insurance (only 69% had any insurance in 1998), my estimates indicate that gaining eligibility caused a meaningful increase in coverage, which led to improved utilization, and perhaps, health. Yet for native children, particularly those in higher income families, the crowd-out effect dominated, causing little change in overall coverage or utilization. This interpretation would be consistent with evidence that eligibility increased utilization and/or health among groups like blacks and Hispanics (Joyce and Racine, 2005), or older children (Currie et al., 2008; Lurie, 2009), but also with studies of the general population that fail to document significant increases in utilization (White, 2012). It may also shed light on the expected impacts of further public insurance expansions, including PPACA and the associated Medicaid expansions to low-income adults. In particular, public health benefits may be large, and cost-effectiveness high, when such expansions are accompanied by targeted outreach efforts to encourage take-up among immigrant families and other groups with low baseline rates of coverage.

My findings of beneficial impacts of eligibility expansions on health outcomes for this population are suggestive, and should be explored further. For example, my results imply that the 2009 CHIPRA legislation, which allowed states to use federal funds to provide coverage to recent immigrant children, may have had important public health impacts, at least in states that elected to take this option. While outside the scope of this paper, a direct examination of the impacts of CHIPRA, now five years old, would be a useful avenue for future research. Studying the impacts of eligibility expansions on other, more objective, health measures would also be worthwhile, but data limitations make this difficult. For instance, the National Health and Nutrition Examination Survey (NHANES) would permit the examination of several additional health

outcomes, including a child's health status as reported by a doctor, measures related to obesity, and more detailed measures of childhood illnesses and health conditions. Unfortunately, the sample size (5000 respondents per year) is likely too small to study the role of nativity status.

Finally, the ITT and LATE estimates of eligibility's impact on health status suggest that gaining eligibility for public health insurance may also benefit a child's health and well-being in other ways, beyond simply increasing insurance coverage and health care utilization. Further investigation of what mechanisms underlie these effects is warranted. If gaining eligibility for public insurance allows parents to decrease out-of-pocket spending on health care for their children, families may substitute into increased spending on other goods, reflecting an improvement in their material well-being and possibly their health (e.g., if households increase spending on nutritious foods). Such substitution reflects a potential benefit of eligibility expansions even when some households are crowded out from private to public health insurance, since public insurance requires much less cost-sharing than private plans. A better understanding of these effects may be important when accounting for benefits and costs of proposed expansions in Medicaid and SCHIP.

Appendix A

Appendix Table 1
Sensitivity Analysis: effects of public insurance eligibility on insurance coverage (IV coefficients from regressions of Eq. (1)).

	Children in immigrant families			U.S.-born children of natives		
	(1)	(2)	(3)	(4)	(5)	(6)
	Public Insurance	Private Insurance	No Insurance	Public Insurance	Private Insurance	No Insurance
A. Different income levels						
All children	0.192***	−0.028	−0.159***	0.074***	−0.031*	−0.035***
	(0.038)	(0.050)	(0.044)	(0.019)	(0.015)	(0.012)
Income <400% of FPL	0.226***	−0.051	−0.169***	0.093***	−0.022	−0.058***
	(0.054)	(0.047)	(0.046)	(0.031)	(0.024)	(0.015)
Income <300% of FPL	0.255***	−0.064	−0.187***	0.121***	−0.032	−0.077***
	(0.080)	(0.065)	(0.048)	(0.043)	(0.029)	(0.020)
Income <200% of FPL	0.322**	−0.073	−0.249**	0.221*	−0.031	−0.167***
	(0.147)	(0.083)	(0.098)	(0.112)	(0.054)	(0.057)
Income <150% of FPL	0.501*	−0.202	−0.290*	0.378*	0.008	−0.353**
	(0.271)	(0.181)	(0.154)	(0.196)	(0.086)	(0.136)
B. Alternative IV method						
IV ignores nativity and immigration status	0.172**	−0.043	−0.123***	0.096***	−0.026	−0.060***
	(0.070)	(0.062)	(0.034)	(0.026)	(0.020)	(0.017)
p-Value, coef equal across samples:	0.179	0.751	0.068	0.179	0.751	0.068
First-stage coefficient:	0.838			0.952		
	(0.020)			(0.013)		
F-statistic from first stage:	504.5			1444.8		
C. Placebo test						
Children with incomes >400% of FPL	−0.013	0.030	−0.015	0.021	−0.019	−0.003
	(0.044)	(0.057)	(0.058)	(0.016)	(0.017)	(0.009)

Robust standard errors in parentheses, ***p < 0.01, **p < 0.05, *p < 0.1, †p < 0.15.

Appendix Table 2
Effects of eligibility for 1st- and 2nd-generation immigrant children (unweighted simulated IV estimates; robust standard errors in parentheses).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Public insurance	Private insurance	Has no insurance	No visit (12 months)	Usual place	ER visit (12 months)	Excellent health	Asthma attack
1st-generation immigrant children (<400% FPL)								
Elig. for public insurance	0.122	−0.006	−0.126	−0.149	0.177	−0.134***	0.174*	0.010
	(0.124)	(0.073)	(0.077)	(0.096)	(0.123)	(0.048)	(0.097)	(0.030)
N	5492	5492	5492	5492	5492	5492	4369	4369
R^2	0.165	0.273	0.203	0.121	0.100	0.011	0.287	0.023
2nd-generation immigrant children (<400% FPL)								
Elig. for public insurance	0.236***	−0.062	−0.166***	−0.097**	0.046*	−0.049	0.057	−0.026
	(0.051)	(0.045)	(0.052)	(0.044)	(0.025)	(0.032)	(0.050)	(0.016)
N	27,839	27,839	27,839	27,839	27,839	27,839	25,703	25,703
R^2	0.258	0.320	0.055	0.063	0.044	0.042	0.280	0.022

Standard errors are corrected for clustering at the state level; ***p < 0.01, **p < 0.05, *p < 0.10. 1st-generation immigrant children were born outside of the U.S.; 2nd-generation immigrant children live with at least one parent born outside the U.S. First-stage instrument is the fraction of children in a national random sample of children in respondent's age/nativity group who would be eligible for public insurance (Medicaid or SCHIP) in the child's state and year. See text for further detail. Regressions include same controls as in Tables 4 and 5.

Appendix Table 3
ITT estimates of effects of eligibility for children in immigrant families (models with and without controls; robust standard errors in parentheses).

	(1)	(2)	(3)	(4)
	No controls	Year FE state FE	Age controls	Demographic controls and health
Has public insurance	0.623***	0.602***	0.236***	0.226***
	(0.087)	(0.087)	(0.058)	(0.054)
Has private insurance	−0.020	−0.189***	−0.042	−0.051
	(0.098)	(0.042)	(0.079)	(0.047)
Has no insurance	−0.598***	−0.407***	−0.189***	−0.169***
	(0.132)	(0.107)	(0.058)	(0.046)
No doctor's visit	−0.484***	−0.503***	−0.126**	−0.115**
(past 12 months)	(0.069)	(0.182)	(0.060)	(0.047)
Has a usual place	0.390***	0.356***	0.090**	0.077***
for care	(0.045)	(0.110)	(0.034)	(0.027)
Any ER visit	0.151***	0.166**	−0.059**	−0.062**
(past 12 months)	(0.049)	(0.070)	(0.029)	(0.030)
Excellent health	0.012	0.123**	0.011	0.073*
	(0.061)	(0.052)	(0.051)	(0.042)
Asthma attack	0.021	−0.015*	−0.017	−0.020*
(past 12 months)	(0.017)	(0.008)	(0.011)	(0.011)

Standard errors are corrected for clustering at the state level; ***p < 0.01, **p < 0.05, *p < 0.10. First-stage instrument is the fraction of children in a national random sample of children in respondent's age/nativity group who would be eligible for public insurance (Medicaid or SCHIP) in the child's state and year. See text for further detail. Baseline ITT regressions include same controls as in Tables 4 and 5.

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