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Characteristics Of Children Eligible For Public Health Insurance But Not Enrolled: Data from the 2007 National Survey of Children's Health

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Abstract

Objectives—To describe the state variation, demographic and family characteristics of children eligible for public health insurance but uninsured.

Methods—Using data from the National Survey of Children's Health we selected a subset of children living in households with incomes < 200% of the FPL. The primary outcome of interest was the odds of being uninsured among those eligible for Medicaid or CHIP. We used multiple logistic regression to test for an association between insurance status among this group of children and certain demographic factors, family characteristics, and state of residence.

Results—In adjusted models children aged 6–11 and 12–17 years were more likely to be eligible but uninsured compared to those aged 0 – 5 years (AOR 1.57; 95% CI 1.15–2.16 and AOR 1.93; 95% CI 1.41–2.64). Children who received school lunch (AOR 0.67; 95% CI 0.52–0.86) and SNAP (AOR 0.33; 95% CI 0.24–0.46) were less likely to be eligible but uninsured compared to those children not receiving those needs based services. Five states (Texas, California, Florida, Georgia, New York) accounted for 46% of the eligible uninsured children. Vermont had the lowest adjusted estimate of eligible uninsured children (3.6%) and Nevada had the highest adjusted estimate (35.5%).

Conclusions—Using nationally representative data we have identified specific state differences, demographic and household characteristics that could help guide federal and local initiatives to improve public health insurance enrollment for children who are eligible but uninsured.

Keywords

National Survey of Children's Health; uninsured; income eligibility; predisposing factors; enabling resources

It is estimated that in 2007 nearly 11 million children in the U.S. lacked health insurance for all or part of that year[1]. An adverse consequence of this problem is that uninsured children are much less likely to receive any medical care or have an identifiable primary care provider in any given year[2]. Having health insurance is positively associated with improved access and quality of care for children. Szilagyi demonstrated that a child's usual source of care increased and unmet health care needs decreased after enrollment in New York's State Children's Health Insurance Program (CHIP)[3]. Children that develop long term relationships with a medical provider may receive more accurate diagnoses, be hospitalized less, and incur lower health care costs[4]. Other research has demonstrated children covered under the CHIP program are more likely to receive well child care, see a dentist and other specialty providers, and be up to date on their immunizations compared to uninsured children[5]. This data offers hope that initiatives that increase and maintain insurance enrollment have the potential to significantly impact the health of children both in the short and long term.

An important step in the development of initiatives that increase and maintain both Medicaid and CHIP enrollment is to explore the individual, socioeconomic, and health characteristics of eligible but uninsured children. Data from the 2008 American Community Survey revealed that on an average day 7.3 million children were uninsured and among this group 4.7 million (65%) were eligible for Medicaid/CHIP but not enrolled[6]. Kenney and colleagues found that participation rates for Medicaid/CHIP were lower for adolescents and children whose parents were not citizens nor spoke English[6]. They also found significant variability in participation rates across states[6]. It is estimated that the number of children who are eligible but uninsured range from 4.7 to 6 million with 89% – 93% of these families living with incomes below 200% of the Federal Poverty Level (FPL) and 70% living in working families[6,7]. Using data from the National Survey of Children's Health (NSCH) the objectives of the current study were to expand on previous work done in this content area to describe additional demographic and family characteristics of uninsured children living in households with incomes < 200% of the FPL. Additionally, we sought to examine the state variability in uninsured status among this vulnerable group of children using models adjusted for sociodemographic characteristics.

METHODS

Study Population

The National Survey of Children's Health (NSCH) is a random-digit-dialed sample of households with children 0 – 17 years of age; details of the design and methods of this survey are described elsewhere[8]. We selected a subset of children who lived in households < 200% of the Federal Poverty Level (FPL; N=16,753) determined using the U.S. Department of Health and Human Services (DHHS) Federal Poverty Guidelines (http://aspe.hhs.gov/

poverty). For the NSCH, household poverty status was determined by the total household income during the prior year and the number of people residing in a household[8]. Based on July 2007 state income eligibility guidelines for Medicaid, children's CHIP – funded expansions, and separate CHIP programs, 9 states had a maximum eligibility range up to 140% – 185% FPL, 25 states up to 200% FPL, and 17 states up to 220% – 350% FPL[9]. In 2007 the poverty threshold for a household of 4 was $20,650. We chose up to 200% FPL as our study population because approximately 90% of eligible but uninsured children reside within this income range[6]. Children born outside of the U.S. were excluded from the analysis because they would not be eligible for Medicaid or CHIP. We also excluded children with private insurance as these children would not have been eligible for public health insurance. The primary outcome of interest was the odds of being uninsured among those eligible for Medicaid or CHIP in this subset of children (reference category was odds of being eligible and insured).

Conceptual Framework and Study Variables

We used the Behavioral Model of Health Services Use developed by Andersen and Aday to conceptualize factors which may influence health insurance enrollment[10]. Their model suggests that certain characteristics of at risk populations guide health care utilization. These include predisposing factors, enabling resources, and need. Predisposing factors included in our analysis were child age, child sex, child race, family structure, parent/guardian education level, poverty level, parental stress index (Never to Always), and parental coping (Very well to Not Very Well at All). The parental stress index variable was a continuous summary measure of three questions derived from the Parental Stress Index and the Parental Attitudes about Childrearing Scale[8] asking how often the parent felt caring for the child was much harder than others of the same age, bothered a lot by the child, and angry with the child over the last month (alpha= 0.68). The parental coping variable was a continuous measure of how well the parent was coping with the day to day demands of parenthood. Enabling resources included index parent employed for at least 50 weeks (Y/N), enrollment in needs based social programs - Welfare (Y/N), Supplemental Nutrition Assistance Program (SNAP;Y/N), and School lunch (Y/N). For need we included presence of a special health care need (Y/N).

Statistical Analysis

Statistical analysis was performed using STATA (version 11, College Station, Texas). The data set is a nationally representative sample and thus variance estimation was performed utilizing the STATA svy command accounting for state clustering. Missing data for poverty level was accounted for by using a single imputation poverty variable provided by NSCH. The amount of missing data for other study variables of interest was minimal, with an average overall missing data rate of 0.8% and the largest missing data occurring for the school lunch variable at 6.6%. Given the minimal amount of missing data, missing responses were coded as such and an additional variable was included in all analyses to indicate whether participants were missing on at least one study variable. Preliminary data analysis included examining descriptive statistics of means, proportions, and variance estimates for all study variables, as well as bivariate associations of all independent variables with the main outcome of interest (eligible but not receiving public insurance). This analysis identifies sociodemographic factors related to being eligible but uninsured

which may be important targets for intervention. Multivariable analysis was also conducted to evaluate independent risk factors that could improve our understanding of reasons for lack of insurance and inform interventions. Examination of state-level variation after adjustment for sociodemographic factors also shows the variation that may be attributable to state-specific characteristics, policies, and practices rather than their sociodemographic composition.

Collinearity among the independent variables in the final model was checked utilizing variance inflation factors (VIF) and tolerance values. The mean VIF was 1.187 (range 1.013 – 1.474) and the mean tolerance value was .853 (range .712 – .987) suggesting collinearity among independent variables was not a concern. As an additional diagnostic check of collinearity, bivariate correlations among all independent variables were examined. These correlations ranged in strength from .01 to .33, suggesting only small correlations among independent variables and providing additional support for a lack of multicollinearity. Multiple logistic regression analyses examined the odds of being uninsured among those children eligible for state assisted health insurance but not enrolled. To adjust for population-based estimates, all regression models were weighted using the sampling weight variable provided by NSCH. State of residence was included in regression models as an additional covariate and post-hoc analyses examined the marginal means for predicted prevalence estimates of participants in each state who are eligible and receiving public insurance versus those who are eligible and not insured. For all analyses, results were deemed statistically significant based on a p-value < .05.

Results

Drawing from the larger dataset of 16,753 children born in the U.S. living in households < 200% of the FPL, 2,701 children (16%) were without health insurance at the time of the survey. Prevalence estimates and distribution of children eligible but uninsured are shown in Table 1. The prevalence of being uninsured was higher among older children, those of white race, Hispanic ethnicity, children living at the higher end of the FPL range and in 2 parent biological/adopted households. The prevalence of being uninsured was also higher among children whose parents were experiencing high stress and poor coping. Among those who were uninsured, the majority (> 50%) of children were non-Hispanic or white, participating in the school lunch program, and living with parents with a high school education or greater and who were employed for at least 50 weeks. Table 2 presents the unadjusted findings for each predictor of insurance status. Children aged 6 to 11 and 12 to 17 were more likely to be uninsured compared to children aged 0 to 5 (OR 1.33; 95% CI 1.03–1.72 and OR 1.69; 95% CI 1.33–2.16). Compared to white children, black and multi-racial children were less likely to be uninsured (OR 0.61; 95% CI 0.48–0.78 and OR 0.57; 95% CI 0.39–0.84). Children of Hispanic ethnicity were more likely to be uninsured compared to non-Hispanic children (OR 1.56; 95% CI 1.25–1.94). Children living in two parent biological/adopted households (OR 1.80; 95% CI 1.41–2.29) were more likely to be uninsured compared to single mother households. Those children at a higher federal poverty level and those living in households where the index parent was employed for at least 50 weeks were more likely to be uninsured (OR 1.23; 95% CI 1.14–1.33 and OR 1.49; 95% CI 1.19–1.87). Children living in households that were enrolled in welfare, SNAP, or school lunch were less likely to

uninsured (OR 0.32; 95% CI 0.23–0.46 and OR 0.25; 95% CI 0.20–0.32 and OR 0.67; 95% CI 0.54–0.82). Also, children with a special health care need were less likely to be uninsured (OR 0.51; 95% CI 0.39–0.66).

Adjusting for all of the covariates, Table 2 also presents the multiple logistic regression results. Compared to children aged 0 – 5 years, those aged 6 to 11 and 12 to 17 were more likely to be uninsured (AOR 1.57; 95% CI 1.15–2.16 and AOR 1.93; 95% CI 1.41–2.64). Children with a special health care need (AOR 0.53; 95% CI 0.39–0.72) and those enrolled in SNAP (AOR 0.33; 95% CI 0.24–0.46) and School Lunch (AOR 0.67; 95% CI 0.52–0.86) were less likely to be uninsured (Table 2). Of note, the findings for age, SNAP, school lunch, and special health care need were robust in that they were significant predictors of insurance status in both the unadjusted and adjusted models accounting for other salient behavioral risk factors.

Five states (Texas, California, Florida, Georgia, and New York) accounted for 46% of the uninsured children in this national survey (Table 3). This corresponds with a weighted estimate of 1.5 million children. The weighted but unadjusted state estimates for being eligible but uninsured ranged from 3.7% in the District of Columbia to 44.3% in Nevada. Generally states in the West had higher estimates of eligible uninsured children and states in the North East had lower estimates. After adjusting for the demographic and family characteristic covariates the estimates decreased in most states however the change was small. The mean change in the adjusted state estimates was 2.20% (95% CI 1.57% –2.82%). After adjustment the order changed slightly however the five top states remained the same. For the five bottom states Alaska replaced Texas after adjustment. The states with the lowest adjusted estimate of eligible uninsured children were Vermont (3.6%), District of Columbia (3.8%), Arkansas (6.3 %), Maine (6.5%), and Louisiana (6.8%). The states with the highest adjusted estimate were Nevada (35.5%), Oregon (27.8%), Utah (27.7%), Montana (25.1%), and Alaska (23.7%).

Discussion

Analysis of this data set has revealed that approximately 3 million U.S. children living in households < 200% FPL are eligible for public health insurance but not currently enrolled. In the adjusted model the demographic and family characteristics associated with uninsured status are older age children (6 – 17 years). This confirms the findings of others using different datasets that older school aged children and adolescents are more likely to be uninsured and have lower Medicaid/CHIP participation rates[6,7,11]. This may be due to the fact that older children visit health providers less often than their younger counterparts which is likely related to the greater number of recommended routine health maintenance visits for pre-school aged children and state mandates on immunization of children to enter day care and school. One study examining enrollment in the Oregon Health Plan (Medicaid/CHIP program) revealed that a significant percentage of parents are confused about their child's eligibility status leading to an underutilization of health insurance[12]. Furthermore, children in the Oregon study were more likely to be uninsured if they were older than four, living in a household earning > $1,500/month, and have a parent working outside of the home[12]. Parents of older children eligible for Medicaid/CHIP may not be as aggressive in

seeking or maintaining enrollment if their children are healthy and their primary vaccination schedule is complete. Initiatives to encourage annual health maintenance visits prior to each school year may have a positive effect on Medicaid/CHIP enrollment for older children.

Children living in families receiving food stamps (now called the Supplemental Nutrition Assistance Program (SNAP) were 67% less likely and those participating in the school lunch program were 33% less likely to be uninsured. A promising initiative that has been explored by some states is express lane eligibility[14,15]. This initiative allows states to directly enroll children into Medicaid or CHIP after they have applied and been accepted into other means tested public programs. Analogies to this type of strategy include Medicare part B and 401 (k) retirement plans where a large percentage of individuals who are auto enrolled in these programs participate compared to those who have to apply for a different component of the Medicare program or separate retirement account. Other studies have shown that interventions to enroll children based on eligibility for free or reduced school lunch, Women, Infants, and Children supplemental nutrition program and SNAP would capture 70% of those children who are eligible but are not otherwise currently enrolled in Medicaid or CHIP which is in line with results from our analysis.[13,16] In this sample of eligible uninsured children 6.8 % were enrolled in welfare, 21.7% in SNAP, and 58.7% in the school lunch program. Although we found that children participating in SNAP and the school lunch program were less likely to be uninsured more work is needed to streamline the enrollment process to capture a significant proportion of these uninsured children who remain connected to the needs based programs. Regarding the data presented above concerning employment status, it is estimated that 90% of children who are eligible but not insured live in families who file tax returns. The ability to use tax returns to identify or automatically enroll eligible children may be another effective way to increase enrollment.[15] Federal action is needed to improve information technology systems and grant states the flexibility to use determinations from other public programs to auto enroll children in Medicaid or CHIP[13]. Recently, the Children's Health Insurance Program Reauthorization Act (CHIPRA) signed by president Obama gives states the option to use data from other programs such as the SNAP and income tax records to facilitate Medicaid/SCHIP enrollment[18]. These efforts may remove barriers that may be particularly problematic for parents of children living in high-risk environments.

We found that in households < 200% FPL there is wide state variability in adjusted estimates of eligible uninsured children. The range was 3.6% (Vermont) to 35.5% (Nevada). All states have substantial numbers of eligible uninsured children requiring outreach. Consistent with other research we found that California, Florida, Georgia, Texas, and New York account for approximately 46% of the eligible uninsured children in the U.S.[6] Targeted efforts focusing on risk factors identified in all states, but especially those with the poorest enrollment and highest numbers of uninsured, offers the potential to insure thousands of children. The Secretary of Health and Human Services has encouraged states to capitalize on technology, expand opportunities for enrollment, stop the churning (gaps in coverage), and forge partnerships with other federal agencies to increase the number of children gaining insurance[18]. It is critical that state and national policy makers closely examine factors that influence high performing states to capture a large percentage of insurance eligible children

and examine the barriers and challenges faced by low performing states which negatively impact enrollment for these vulnerable children.

Limitations

Limitations of this study include the cross-sectional, self-report telephone methodology. Though data were collected from telephone interviews and would exclude families without landlines, survey weights took into account non-coverage of cell phone-only families[8]. Our findings were consistent with those of Kenney and colleagues who used the 2008 American Community Survey which was a mailed survey[6].

Given that our income inclusion criteria was < 200% of the FPL the number of children eligible for Medicaid/CHIP is both over represented and under-represented in some states. Nine states (AK, ID, MT, ND, NE, OK, OR, SC, WI) had a maximum eligibility range up to 140% – 185% FPL therefore this study may have overestimated the prevalence of children eligible but not enrolled since families between 185% – 200% whould not be eligible in these states. Seventeen states have income eligibility requirements between 200% – 350% of the FPL and therefore children living in households within that income range were not considered eligible but uninsured. However, previous studies have estimated that 90% of eligible but uninsured children live in households < 200% FPL[6].

Implications

This study provides demographic/family factors and state data on children eligible for public health insurance but uninsured with implications for the types of targeted interventions that may be effective. The Secretary for Health and Human Services and others have called on all states and departments to redouble their efforts to increase enrollment of eligible children into Medicaid and CHIP programs[16,18]. To achieve these goals, targeted intervention is needed in all states and especially in those with poor enrollment or large numbers of uninsured children. States could also employ strategies that target particular groups that are more likely to be eligible but uninsured such as older children. Additionally, nearly 60% of the uninsured children in this sample participated in the school lunch program and we found that children enrolled in the needs based program were less likely to be eligible but uninsured. This suggests that increasing enrollment in needs based programs and express lane eligibility efforts could identify children eligible but uninsured. xxxxReducing barriers to enrollment has been a clarion call among individuals and institutions exploring such issues[15]. Some studies have found that lack of knowledge about programs is a central barrier in enrollment[12,17] and that interventions to reach families and streamline enrollment and renewal processes can be effective[14].

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Table 1

Prevalence of Uninsured U.S. Children Among Those Eligible for Medicaid/CHIP and the Distribution of Eligible Uninsured Children Living in Households < 200% FPL

Variable	Prevalence of Eligible Uninsured N = 16,753		Distribution of Eligible Uninsured (95% CI) n = 2,701	
Child Age (years)	p < .001			
0 to 5	13.4		30.5	(25.6–35.3)
6 to 11	16.5		30.4	(26.1–34.7)
12 to 17	19.9		39.1	(34.5–43.8)
Child Gender	p < .05			
Male	16.0		53.8	(48.9–58.7)
Female	16.4		46.2	(41.3–51.1)
Child Race	p < .001			
White	18.5		65.2	(60.4–70.1)
Black	11.6		24.2	(19.6–28.9)
Multi-racial	11.2		5.3	(3.5–7.2)
Other	15.6		5.2	(2.9–7.5)
Child Ethnic Group	p < .001			
Non-Hispanic	13.9		74.4	(70.1–78.8)
Hispanic	20.7		25.6	(21.2–29.9)
Family Structure	p < .001			
Single mother, no father present	12.2		28.6	(24.0–33.2)
Two parent biological/adopted	20.3		56.3	(51.5–61.1)
Two parent step family	14.0		7.7	(5.6–9.9)
Other	14.3		7.4	(5.4–9.4)
Parent Education Level	p < .001			
< High School	17.4		18.1	(14.3–21.9)
≥ High School	15.9		81.9	(78.1–85.7)
Parental Coping	p < .001			
Very Well	16.0		58.7	(53.8–63.5)
Somewhat Well	15.7		36.0	(31.4–40.5)
Not Very Well	25.1		5.4	(1.8–9.0)
Parental Stress Index	p < .001			
Never Feeling Stress	15.2		45.4	(40.7–50.2)
Rarely Feeling Stress	16.9		34.0	(30.0–38.3)
Sometimes Feeling Stress	15.4		16.8	(12.6–21.1)
Usually/Always Feeling Stress	17.7		3.8	(1.5–6.0)
Poverty Level	p < .001			
0–100%	13.1		40.9	(36.2–45.7)
100–133%	17.3		20.1	(16.4–23.9)
133–150%	19.5		11.3	(8.4–14.1)

Variable	Prevalence of Eligible Uninsured N = 16,753		Distribution of Eligible Uninsured (95% CI) n = 2,701	
150–185%	22.3		18.5	(14.3–22.7)
185–200%	24.2		9.1	(6.6–11.7)
Welfare		p < .001		
No	18.1		93.2	(90.9–95.5)
Yes	6.6		6.8	(4.5–9.1)
SNAP		p < .001		
No	24.3		78.3	(73.8–82.8)
Yes	7.4		21.7	(17.2–26.2)
School Lunch		p < .01		
No	20.4		41.3	(36.6–46.0)
Yes	14.3		58.7	(54.0–63.4)
Employed at least 50 weeks		p < .001		
No	12.9		20.7	(17.0–24.4)
Yes	17.6		79.3	(75.6–83.0)
Presence of a Special Health Care Need		p < .001		
No	18.0		82.5	(78.5–86.6)
Yes	9.8		17.5	(13.4–21.5)

Table 2

Multiple Logistic Regression Model for Uninsured Children Living In Households < 200% FPL by Predisposing Factors, Enabling Resources, and Need (N=16,753)

Variable	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Predisposing Factor		
Child Age (years)		
0 to 5	Reference	Reference
6 to 11	1.33 (1.03, 1.72)	1.57 (1.15, 2.16)
12 to 17	1.69 (1.33, 2.16)	1.93 (1.41, 2.64)
Child Gender		
Male	Reference	Reference
Female	0.97 (0.79, 1.18)	0.98 (0.79, 1.22)
Child Race		
White	Reference	Reference
Black	0.61 (0.48, 0.78)	0.87 (0.64, 1.20)
Multi-racial	0.57 (0.39, 0.84)	0.79 (0.52, 1.20)
Other	0.86 (0.53, 1.37)	0.80 (0.46, 1.40)
Child Ethnic Group		
Non-Hispanic	Reference	Reference
Hispanic	1.56 (1.25, 1.94)	1.14 (0.79, 1.65)
Family Structure		
Single mother, no father present	Reference	Reference
Two parent biological/adopted	1.80 (1.41, 2.29)	1.19 (0.88, 1.62)
Two parent step family	1.19 (0.84, 1.69)	0.84 (0.58, 1.22)
Other	1.22 (0.80, 1.87)	0.95 (0.60, 1.51)
Parent Education Level		
< High School	Reference	Reference
≥ High School	0.94 (0.74, 1.20)	0.98 (0.73, 1.32)
Parental Coping[1]	1.11 (0.91, 1.35)	1.09 (0.86, 1.37)
Parental Stress Index[1]	1.01 (0.88, 1.13)	1.10 (0.95, 1.27)
Poverty Level[1]	1.23 (1.14, 1.33)	1.07 (0.97, 1.17)
Enabling Resources		
Needs Based Social Programs		
Welfare		
No	Reference	Reference
Yes	0.32 (0.23, 0.46)	0.75 (0.49, 1.16)
SNAP		
No	Reference	Reference
Yes	0.25 (0.20, 0.32)	0.33 (0.24, 0.46)
School Lunch		

Variable	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
No	Reference	Reference
Yes	0.67 (0.54, 0.82)	0.67 (0.52, 0.86)
Employed for at least 50 weeks		
No	Reference	Reference
Yes	1.49 (1.19, 1.87)	1.16 (0.89, 1.52)
Need		
Presence of a Special Health Care Need		
No	Reference	Reference
Yes	0.51 (0.39, 0.66)	0.53 (0.39, 0.72)

Model includes state of residence as a covariate.

[1] Continuous variables – no reference group

Table 3

Observed and Adjusted Estimates of Eligible Uninsured Children Living In Households < 200% FPL in the United States by State, 2007

State	Weighted, n	Observed Estimates, % (95% CI)	State Rank	Adjusted Estimates, % (95% CI)	State Rank
United States	3157240				
Alabama	53590	14.1 (8.7, 19.5)	26	13.8 (7.4, 20.1)	32
Alaska	13416	26.7 (20.3, 33.0)	46	23.7 (16.3, 31.1)	47
Arizona	114559	25.7 (19.0, 32.3)	45	20.9 (14.2, 27.6)	44
Arkansas	19741	7.3 (4.8, 9.7)	4	6.3 (4.0, 8.6)	3
California	372487	14.8 (8.5, 21.1)	29	9.4 (4.1, 14.7)	18
Colorado	62677	24.2 (15.9, 32.5)	43	19.3 (11.4, 27.2)	43
Connecticut	13631	9.8 (4.7, 14.9)	13	7.6 (3.5, 11.7)	7
Delaware	4180	9.3 (5.6, 13.1)	10	8.6 (5.0, 12.2)	14
District of Columbia	1533	3.7 (1.4, 5.9)	1	3.8 (1.3, 6.3)	2
Florida	208864	19.8 (12.7, 26.9)	41	14.3 (8.6, 20.1)	34
Georgia	129531	17.4 (11.5, 23.3)	34	15.3 (9.3, 21.3)	38
Hawaii	4926	9.8 (5.1, 14.6)	12	8.3 (3.4, 13.3)	13
Idaho	24323	22.8 (17.1, 28.4)	42	17.6 (13.0, 22.1)	41
Illinois	69315	9.8 (5.5, 14.2)	14	8.1 (4.4, 11.7)	12
Indiana	64008	15.2 (10.0, 20.3)	31	14.8 (9.8, 19.8)	35
Iowa	21532	15.0 (8.7, 21.3)	30	12.9 (6.9, 19.0)	28
Kansas	33784	19.8 (14.2, 25.5)	40	16.5 (11.3, 21.7)	39
Kentucky	34893	11.0 (7.4, 14.7)	17	12.1 (7.9, 16.3)	24
Louisiana	31379	7.3 (4.2, 10.4)	5	6.8 (3.8, 9.9)	5
Maine	5477	7.3 (4.1, 10.4)	3	6.5 (3.5, 9.5)	4
Maryland	30811	13.4 (6.7, 20.2)	24	12.2 (5.3, 19.0)	25
Massachusetts	22595	8.5 (2.5, 14.6)	9	8.9 (2.0, 15.8)	16
Michigan	51893	8.1 (3.9, 12.2)	7	7.8 (3.9, 11.7)	8
Minnesota	30230	12.7 (6.5, 18.9)	22	10.9 (4.9, 16.9)	21
Mississippi	43946	13.6 (10.3, 16.8)	25	12.2 (8.8, 15.7)	26
Missouri	33638	8.1 (4.5, 11.8)	6	7.9 (4.3, 11.4)	9

State	Weighted, n	Observed Estimates, % (95% CI)	State Rank	Adjusted Estimates, % (95% CI)	State Rank
Montana	15892	26.9 (20.9, 32.8)	47	25.1 (18.3, 31.8)	48
Nebraska	19116	18.2 (11.7, 24.7)	37	15.2 (9.3, 21.1)	37
Nevada	57563	44.3 (35.6, 53.0)	51	35.5 (26.3, 44.7)	51
New Hampshire	5094	10.4 (4.9, 15.9)	16	7.6 (3.2, 11.9)	6
New Jersey	62265	17.5 (10.6, 24.4)	35	12.5 (7.1, 17.9)	27
New Mexico	27448	14.7 (10.0, 19.3)	28	11.0 (6.7, 15.4)	22
New York	116854	11.3 (6.2, 16.4)	18	9.0 (4.4, 13.5)	17
North Carolina	77245	11.7 (7.6, 15.7)	19	10.1 (6.4, 13.8)	19
North Dakota	5949	24.5 (17.8, 31.2)	44	23.0 (15.9, 30.2)	46
Ohio	107136	15.2 (9.1, 21.2)	32	14.9 (9.0, 20.8)	36
Oklahoma	45231	13.3 (9.4, 17.1)	23	12.9 (9.0, 16.8)	29
Oregon	53771	27.1 (20.7, 33.5)	48	27.8 (20.5, 35.1)	50
Pennsylvania	94275	14.3 (7.5, 21.2)	27	12.9 (6.7, 19.0)	30
Rhode Island	4741	9.4 (4.4, 14.5)	11	8.1 (3.3, 12.9)	11
South Carolina	57602	18.2 (13.5, 22.8)	38	17.6 (12.6, 22.5)	42
South Dakota	4929	10.3 (6.0, 14.6)	15	8.7 (4.6, 12.8)	15
Tennessee	59321	11.9 (7.9, 15.9)	20	13.2 (8.9, 17.6)	31
Texas	626771	28.0 (22.0, 34.0)	49	21.9 (16.0, 27.7)	45
Utah	44473	36.0 (26.6, 45.3)	50	27.7 (18.7, 36.7)	49
Vermont	1975	5.4 (2.0, 8.8)	2	3.6 (1.1, 6.1)	1
Virginia	69947	19.7 (12.3, 27.1)	39	17.4 (10.4, 24.4)	40
Washington State	55512	15.8 (9.7, 22.0)	33	11.8 (6.6, 17.0)	23
West Virginia	10997	8.4 (5.4, 11.5)	8	8.0 (4.9, 11.1)	10
Wisconsin	30801	12.5 (7.7, 17.3)	21	10.2 (6.1, 14.3)	20
Wyoming	5375	17.9 (12.2, 23.6)	36	13.9 (9.0, 18.8)	33