

# Updating Uninsured Estimates for Current Economic Conditions:

## State Specific Estimates

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**Summary: Previous research has shown that one percentage point growth in unemployment is associated with a nationwide increase in the uninsured of approximately one million people. However, this relationship varies by state. States with larger increases in the unemployment rate have larger percentage increases in the number of uninsured. Medicaid and other state-level factors influence the relationship between unemployment and uninsurance. North Carolina, Rhode Island, Indiana and Nevada are projected to have the highest proportional increases in the uninsured. Based on the results, the national number of uninsured is estimated to be approximately 52 million in January 2009 – up from 46 million in 2007.**

One of the goals of the movement toward national health reform is to improve access to healthcare by ensuring that all Americans have access to affordable health insurance coverage. In order to design and implement policies of the size and scope necessary to achieve this goal, it is critical to understand how many people currently lack insurance coverage. Further, the costs of covering the uninsured will depend on how many there are.

Unfortunately, the most recent estimate of the number of uninsured—45 million—is from 2007, well before the economic downturn reached its current proportions. Most estimates of the number of uninsured lag behind the real numbers due to time-intensive process of collecting and reporting the data. For example, Current Population Survey (CPS) estimates – often used as the definitive estimate – are collected in a survey that asks respondents about their health insurance coverage in the previous year and are released in August of the following year. Thus, CPS estimates that are being used in early

2009, like the 46 million figure above, are from 2007. This lag in reporting makes it challenging to understand the problem and right-size the solution, especially in the rapidly changing current economic circumstances.

However, it is possible to develop more current estimates of the number of uninsured by using a measure of economic health that is reported on a timely basis and is known to affect insurance coverage. One such measure is unemployment. By using historical patterns of the relationship between unemployment and uninsurance, it is possible to estimate current coverage and project future patterns. This was the general approach used by Holahan and Garrett to document that a one percentage point growth in unemployment is expected to lead to an increase of one million in the number of uninsured in the nation as a whole.<sup>1</sup>

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<sup>1</sup> Holahan, John and A. Bowen Garrett. Rising Unemployment, Medicaid and the Uninsured. Kaiser Commission on Medicaid and the Uninsured. January 2009. Available at <http://www.kff.org/uninsured/upload/7850.pdf>

It is likely that the impact of the economic downturn on uninsurance will vary considerably from state to state. States are experiencing vastly different circumstances in this recession. Five states currently (January 2009) have an unemployment rate below 5 percent, while nine states have a rate greater than 9 percent. Further, state-level factors such as eligibility levels for public insurance programs and costs of private health insurance may affect the relationship between unemployment and uninsurance. This report explores those differences to generate current state-level estimates of uninsurance.

### Approach

The estimates are generated using four key state-level variables from multiple sources:

- Rates of uninsurance for 1999 to 2007, as well as standard errors of those estimates, are obtained from the U.S. Census Bureau's Health insurance Tables based on the Current Population Survey.<sup>2</sup>
- Unemployment rates are obtained from the Bureau of Labor Statistics. For 1999 through 2007, we use annual estimates. We use month-specific rates for November 2008 and January 2009.
- We characterize the generosity of states' Medicaid coverage based on the maximum Federal Poverty Guidelines coverage levels for unemployed parents in 2009, obtained from Kaiser Family Foundation's State Health Facts

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<sup>2</sup> Tables HIA-5 and HIA-6 from <http://www.census.gov/hhes/www/hlthins/historic/index.html>

web site.<sup>3</sup> States are categorized as having coverage levels above or below the coverage level for the median state. We interact this dichotomous variable with the unemployment rate to allow unemployment to have different effects on uninsurance in states with relatively generous Medicaid coverage and states with less generous Medicaid coverage.

- We also obtain a measure of state-specific healthcare costs trends between 1998 and 2004 (as a proxy for health insurance premiums) from Martin *et al.*<sup>4</sup> Including this variable has a practical effect of allowing states with larger increases in healthcare costs to experience a different trend in the uninsured rate than states with smaller increases in healthcare costs.

We regress the uninsured rate on unemployment, unemployment interacted with Medicaid generosity, time trend, and the health care cost trend. We also include a state fixed effect to account for time-invariant factors affecting state-level coverage; this captures the state-specific policy "climates" and idiosyncrasies of health systems. Observations are weighted by the inverse of the standard error of the state-specific uninsured rate. Standard errors are clustered by state, which accounts for correlation in intrastate time-specific unobserved factors.

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<sup>3</sup>

<http://www.statehealthfacts.org/comparetable.jsp?ind=205&cat=4>

<sup>4</sup> Martin AB, Whittle L, Heffler S, Barron MC, Sisko A, Washington B. Health spending by state of residence, 1991-2004. *Health Aff.* 2007 Nov-Dec;26(6):w651-63. Epub 2007 Sep 18.

**Table 1: Ordinary Least Squares Regression of State Uninsurance Rates, 1999-2007**

	<i>Adults</i>		<i>Children</i>	
	Coef.	Std. Err.	Coef.	Std. Err.
Unemployment rate	0.721**	0.175	0.059	0.133
Interacted with generous Medicaid	-0.233	0.213		
Year	0.312**	0.051	-0.751*	0.335
Cost			8.161*	4.137
Constant	-610.477**	101.781	1503.551*	664.904
N	459		459	
R-squared	0.9114		0.8175	

We estimated the relationship between children (0-18) and non-elderly adults (19-64) separately to allow for different effects among children and adults. Net predicted values from the two models were nearly identical to those obtained from a model for all non-elderly individuals combined. However, different elements of the model had slightly different predictive power and results for children and adults. Therefore, we estimate the models separately. Because the cost index and time trend are collinear, and the cost index did not independently predict coverage in a statistically significant manner, we omit this variable from the adult model.

### Results

For adults, every percentage point increase in the unemployment rate translates to an increase of approximately 0.72 percentage points in the uninsured rate. (See Table 1). Although statistically insignificant, the decrease is smaller (as expected) in states with more generous Medicaid coverage. On average, the uninsured rate for adults has experienced an annual increase of approximately 0.31 percentage points between 1999 and 2007.

For children, the unemployment rate does not predict the state-level uninsured rate; the time trend and cost index variables are associated with changes in the uninsured rate. While there has been an annual decrease of about 0.75 percentage points in the percent of children uninsured between 1999 and 2007, this is mitigated by increases in uninsurance due to cost. In most states the secular downward trend in the uninsured rate for children outweighs the impact of increased costs. For example, in a state with the cost increases of 7.2 percent per year (75 percent of states had cost increases below this value) there would have been an annual net decrease in the children's uninsurance rate of about 0.16 percentage points. In fact, only one state – Vermont, with a 9.4 annual percent increase in cost – has costs increasing at a rate sufficient to result in an increasing uninsurance rate for children.

These results can be used to project state-level insurance coverage as a function of the most recent unemployment data (January 2009, as of the release of this report), time trend, and the other state characteristics included in the model.

We calculate the estimated growth in the uninsured by calculating the difference in predicted values in 2007 and January 2009. We then express this as a percent of the *predicted* (not CPS-reported) number of uninsured as of 2007. States with larger increases in the unemployment rate have larger percentage increase in the number of uninsured. (See Figure 1). The relationship is nonlinear due to the differing effects of unemployment on uninsurance based on the generosity of Medicaid coverage, the relative magnitudes of the adult and children populations, and the different cost trends.

The states with the largest percentage increases in the number uninsured are those with the largest increases in the unemployment rate since 2007 – Rhode

Island and North Carolina, in particular. (See Figure 2 and Table 2).

### Limitations

There are a number of limitations of the analysis. First, the model assumes that past relationships between unemployment and uninsurance persist in 2009 and for the short term. Given the depth of this economic recession, the predictions are out-of-sample—that is, they are based on trends that have not been observed in reality in the sense that most states are experiencing unemployment rates not seen in quite some time. Specifically, 44 of the 51 states (and DC) have experienced their highest contemporary unemployment rate in 2009. In addition, state-specific changes in eligibility are not included. For example, there is no control for the expansion of coverage in Massachusetts.

Figure 1

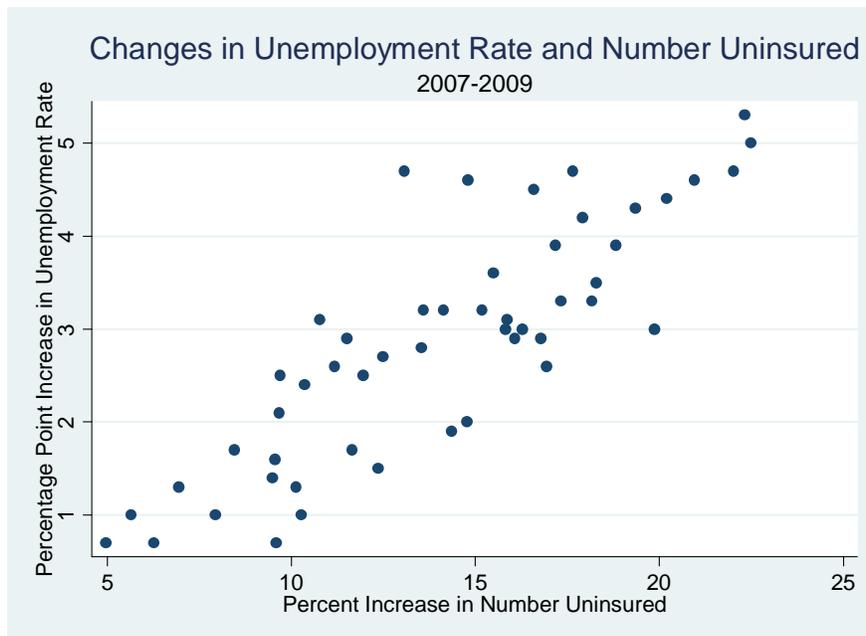


Figure 2

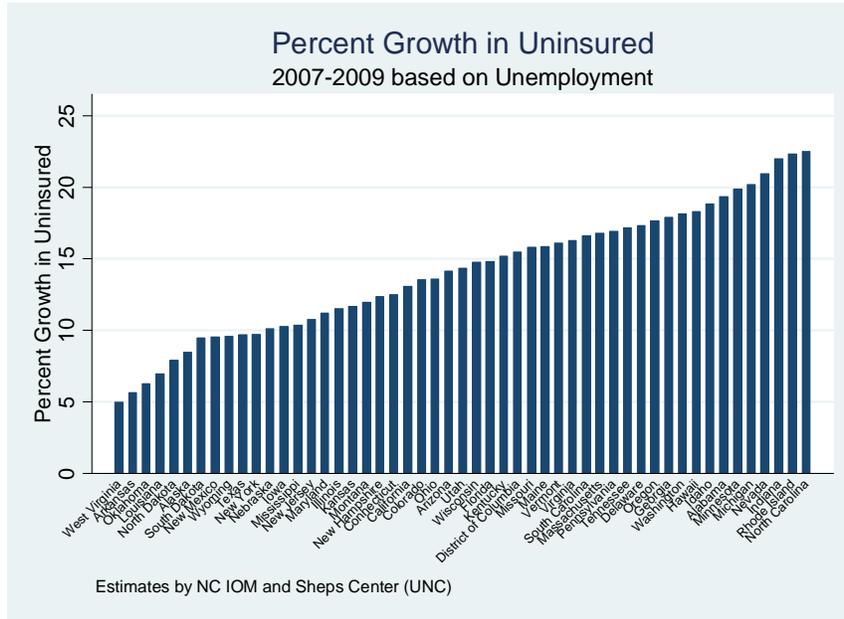


Table 2: Estimated Increase in the Number of Uninsured (in thousands)

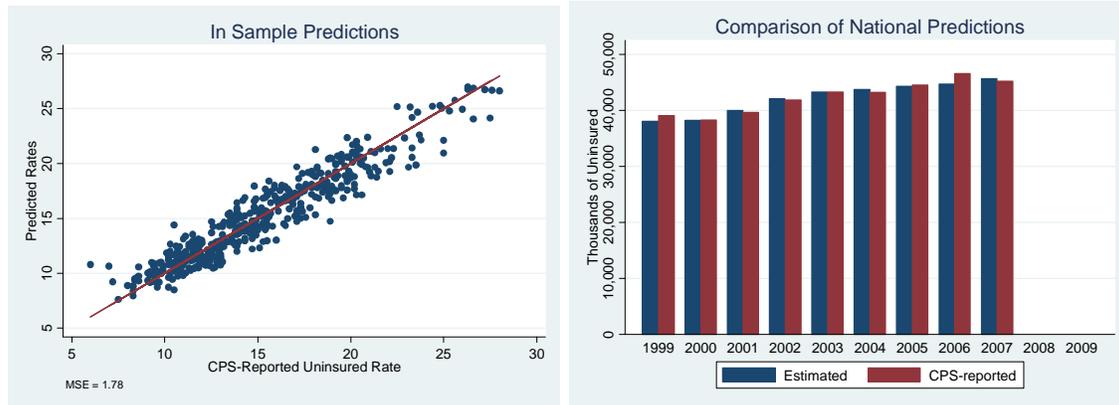
State	Increase Between 2007 and 2008	Increase Between 2008 and 2009	Increase Between 2007 and 2009
Alabama	63	54	117
Alaska	5	6	11
Arizona	95	65	160
Arkansas	5	22	27
California	508	382	890
Colorado	60	45	105
Connecticut	28	18	46
Delaware	9	8	17
District of Columbia	8	4	12
Florida	338	168	506
Georgia	171	114	285
Hawaii	14	7	21
Idaho	27	17	44
Illinois	120	83	203
Indiana	87	86	173
Iowa	10	19	29
Kansas	16	20	36
Kentucky	34	54	88
Louisiana	37	17	54
Maine	11	12	23
Maryland	44	37	81
Massachusetts	40	62	102
Michigan	101	129	230
Minnesota	43	48	91

Mississippi	14	38	52
Missouri	53	53	106
Montana	12	7	19
Nebraska	8	11	19
Nevada	58	42	100
New Hampshire	7	10	17
New Jersey	65	64	129
New Mexico	18	23	41
New York	145	128	273
North Carolina	182	140	322
North Dakota	1	5	6
Ohio	81	98	179
Oklahoma	18	24	42
Oregon	52	47	99
Pennsylvania	114	94	208
Rhode Island	14	8	22
South Carolina	54	54	108
South Dakota	3	6	9
Tennessee	70	62	132
Texas	297	254	551
Utah	23	28	51
Vermont	6	5	11
Virginia	83	78	161
Washington	80	73	153
West Virginia	1	12	13
Wisconsin	24	56	80
Wyoming	3	5	8
United States	3,362	2,901	6,263

### Appendix: Reliability of Results

In-sample prediction suggests that the model is stable, and there is strong correlation between estimated and reported rates. The predicted rates and CPS-reported rates are correlated at 0.95 and the mean squared error is 1.78. (See Figure 3). The implied number of uninsured nationally also compares very well with the CPS-reported estimates; other than 1999 and 2006, the model-estimated number of uninsured nationally is within one percent of the CPS-reported estimate. Given that year-specific indicators were not used, this is a powerful result and suggests the model performs well.

Figure 3: Comparisons between Predicted Results and CPS-Reported Results



The model correlates well with the results reported by Holahan and Garrett; a one percentage point increase in unemployment nationwide implies an increase of approximately 1.09 million using 2009 population estimates. Likewise, Holahan and Garret also find no effect on uninsurance for children and find that a one percentage point increase in unemployment is associated with a 0.59 percentage point increase in the uninsurance rate for adults. This effect for adults is similar to the average of the effects for adults in generous and non-generous states from our model.

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