



Monitoring state-level uninsurance, 1996-2006

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May 16, 2008

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Project objectives

Document changes in the measurement of health insurance in the Current Population Survey Annual Social and Economic Supplement (CPS) since 1996.

Compare two available options for making a consistent time series in the CPS. Each option corrects for the introduction of a health insurance verification question in 2000.

Determine the extent that conclusions about SCHIP success is dependent on the harmonization method chosen.

- By state and socioeconomic subpopulations



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Background

The State Children's Health Insurance Program (SCHIP) passed in 1997.

- Expanded insurance coverage to low-income children.
- State flexibility in program implementation.
- Emphasis on outreach to potentially eligible children.

To determine what state decisions and outreach strategies are most effective, and the success of SCHIP generally, consistent measurement of insurance coverage is needed.



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Background, cont.

Need insurance estimates at appropriate level of:

- Geography: State and nationally representative
- Time: Annual and consistent
- Population Coverage: Children

The CPS is the only survey that comes close to meeting these criteria.

The CPS is the data source most often used for health policy evaluation and simulation, but it does not have a consistent measure of coverage over this time period.

Background, changes to insurance measurement 1997-2007 CPS

Year	Change	Type of Change	Motivation	Impact on Estimates of Uninsurance Rates	Fix(es)	Residual Effect?
1998	Indian Health Service alone no longer health insurance coverage	Conceptual definition	Debate as to if IHS functions as insurance. In consultation with Bureau of Indian Affairs	More uninsured (only see big impact in states with large American Indian or Alaskan Native Populations)	Edit years prior to 1998 to be consistent with new definition	No
2001	Health insurance verification question introduced	Survey design	CPS produced consistently higher estimates than other health insurance surveys	Fewer individuals uninsured	Option 1: "Unverify" 2000 and following years	Understating the number without insurance
					Option 2: Impute verification question 1999 and earlier	??
2005	Health insurance household imputation fix introduced	Methodological - missing data processing	Many mistakenly left uninsured when a value was supposed to be applied to an entire family	Fewer individuals uninsured	Edit earlier years to be consistent with 2005 and forward	No

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Data

1997-2007 CPS

- Conducted by the U.S. Census Bureau
- Study universe: Children potentially eligible for public health insurance
 - under 19 and at or below 200 percent of the Federal Poverty Level).
- In 2007 CPS:
 - n= ~24,500
 - ~30.5 million children

Data, verification question

An additional question asked for those responding “no” to the entire series of health insurance questions.

“I have recorded that (name(s)) were not covered by a health plan at any point in (year). Is that correct?”

Methods

Produce two weighted estimates of uninsurance by year

- “Unverified”: 1997-1999 as measured. After 1999, “undo” the verification question manually.
- “Verified”: 2000-2007 as measured. 1997-1999, impute the verification question simulating what would have happened had the question been asked.

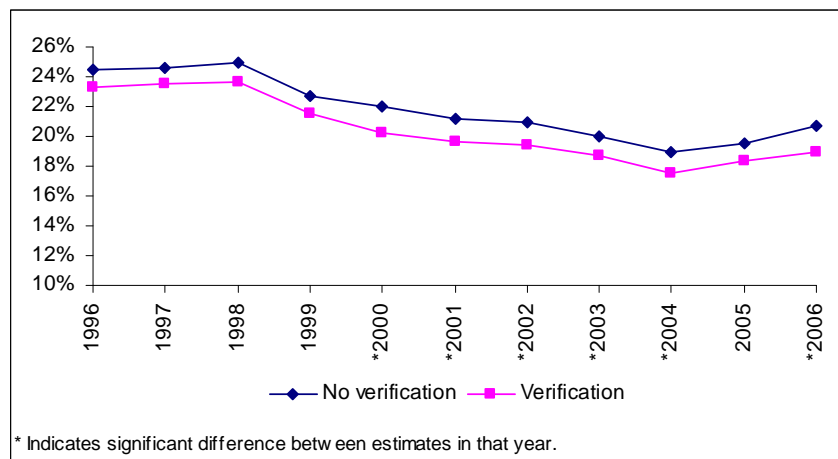
Imputation:

- Hotdeck imputation in StataSE 10.
- CPS 1997-1999 are matched to donors from 2000-2001 CPS
- Matches based on race, age, gender, region, FPL, education, household structure, and employment status.

Methods, cont.

- Present time trends
- Examine coverage changes between two time periods:
 - pre-SCHIP (1996-1997)
 - post-SCHIP (2005-2006)
 - by state and demographic subpopulation
 - use independent sample t-tests to determine significant change over time.

Results: Percent uninsured, children (0-18) living at or below 200% FPL, U.S.



Results: Percent uninsured (unverified and verified), children (0-18) living at or below 200% FPL for select states, 2005/2006 and change from 1996/1997

	Unverified		Verified	
	2005/2006	Difference from	2005/2006	Difference from
		1996/1997		1996/1997
Alabama	11.7%	-11.0% **	11.1%	-9.7% *
Alaska	14.6%	-15.6% *	12.9%	-15.5% **
Arizona	27.6%	-12.0% **	25.8%	-13.3% ***
Arkansas	15.3%	-16.2% ***	14.7%	-15.3% ***
California	21.9%	-5.0% **	20.6%	-5.5% **
Iowa	9.1%	-7.0%	8.0%	-7.8% *
Kentucky	14.8%	-8.7% *	12.9%	-8.9% *
Louisiana	19.0%	-12.7% **	18.0%	-12.1% **
Maine	12.3%	-9.9% *	11.4%	-8.4%
Michigan	10.4%	-3.9%	8.2%	-5.4% *
New York	13.9%	-8.5% ***	11.8%	-9.6% ***
North Carolina	20.4%	-9.3% *	19.6%	-8.2% *
Ohio	14.0%	-3.3%	11.3%	-5.6% *
Oklahoma	17.4%	-12.0% **	16.5%	-11.4% **
South Carolina	14.5%	-19.1% ***	12.8%	-19.2% ***
Texas	30.8%	-4.8% *	29.7%	-4.6% *
United States	20.2%	-4.4% ***	18.7%	-4.8% ***



* indicates significant difference between 1996/1997 and 2005/2006, p<0.05, **p<0.01, ***p<0.001

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Maine	12.3%	-9.9% *	11.4%	-8.4%
Michigan	10.4%	-3.9%	8.2%	-5.4% *
New York	13.9%	-8.5% ***	11.8%	-9.6% ***
North Carolina	20.4%	-9.3% *	19.6%	-8.2% *
Ohio	14.0%	-3.3%	11.3%	-5.6% *
Oklahoma	17.4%	-12.0% **	16.5%	-11.4% **
South Carolina	14.5%	-19.1% ***	12.8%	-19.2% ***
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Results: Difference in verified and unverified uninsurance rate by demographic subpopulation.

With both methods, we see no difference in
evidence of decreased uninsurance by:

- age
- race/ethnic subpopulations with exception of
American Indian
- gender
- In families that are:
 - non-U.S. born and non-U.S. citizen adults
 - all incomes (below 200% FPL)
 - full and part-time workers
 - many different household structures
 - lower educational attainment

Results: Difference in verified and unverified uninsurance rate by demographic subpopulation, cont.

Only different conclusion between methods is
that using verified data we would conclude
that there was a reduction for non-U.S.
citizens, using unverified data there was no
significant change over time.

Conclusions

- National trends in uninsurance among low-income children consistent across methods.
- State changes over the period of SCHIP implementation robust across methods with few exceptions (Iowa, Maine, Michigan, and Ohio minimally significant).
- Changes by demographic subpopulation robust across methods with the exception of Non-U.S. citizens.

Discussion

- Regardless of method, same story would be told: after SCHIP implementation, a smaller percent of low-income children were uninsured than before SCHIP implementation.
- However, the actual percent of children without health insurance is dependent on the method chosen.
 - For example, using the verification method 18.7 percent of low-income children are without health insurance. This compares to 20.2 percent using the method of undoing the verification question.

Discussion, cont.

- So what? Which method produces more accurate measures of health insurance coverage.
 - Unverifying responses to the uninsurance questions more reliable.
 - Imputing verification question more valid, but:
 - imputing past cases may introduce error.
 - Could be something unique to the years that were used as donors in the imputation that was not the case in the recipient years, resulting in biased estimates of uninsurance for the imputed cases.

Future Research

- Determine which individuals are picked up by the verification question – do they differ by state or over time?
- Perform sensitivity analyses on the imputation procedure.

Contact information

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Appendix

	Unverified		Verified	
	2005/2006	Difference from 1996/ 1997	2005/2006	Difference from 1996/ 1997
Individual Characteristics				
Age				
0-5 Years Old	17.6%	-2.6%**	16.2%	-3.2%***
6-11 Years Old	18.5%	-4.6%***	17.0%	-5.1%***
12-18 Years Old	25.0%	-6.4%***	23.4%	-6.5%***
Race/Ethnicity				
American Indian	30.4%	1.9%	28.4%	1.0%
Hispanic/Latino	22.2%	-11.7%***	20.7%	-12.4%***
Asian Pacific Islander	17.3%	-8.2%**	15.7%	-9.2%**
Black	15.2%	-6.8%***	13.5%	-7.4%***
White	28.2%	7.6%***	27.0%	7.8%***
Birthplace/Citizenship				
Not US Born	46.2%	-2.2%	44.2%	-3.1%
Not US Citizen	48.1%	-4.4%	46.0%	-5.3%*
Health Status				
Good Health	20.3%	-4.5%***	18.8%	-4.9%***
Gender				
Male	20.6%	-4.1%***	19.1%	-4.4%***
Female	19.7%	-4.6%***	18.1%	-5.2%***

* indicates significant difference between 1996/1997 and 2005/2006, p<0.05, **p<0.01, ***p<0.001



Appendix, cont.

	Unverified		Verified	
	2005/2006	Difference from 1996/ 1997	2005/2006	Difference from 1996/ 1997
Family Characteristics				
Marital Status				
Married/Separated	21.0%	-4.6%***	19.7%	-4.9%***
Birthplace/Citizenship				
Family Over 18 - Not US Born	28.6%	-7.0%***	27.2%	-7.4%***
Family Over 18 - Not US Citizen	29.1%	-7.0%***	27.8%	-7.4%***
Income				
Income <= 100% FPL	21.6%	-3.3%***	20.0%	-3.9%***
Income 101-200% FPL	18.9%	-5.3%***	17.5%	-5.5%***
Employment				
No one in Family Employed	16.8%	0.0%	15.4%	-0.6%
Someone Employed Parttime	16.9%	-5.5%***	14.8%	-6.6%***
Someone Employed Fulltime	21.6%	-5.9%***	20.2%	-6.1%***
Household Structure				
Male-Female	20.8%	-5.8%***	19.5%	-6.0%***
Male	29.7%	-6.5%**	26.8%	-7.1%***
Female	17.7%	-2.5%**	16.3%	-3.1%***
1 Child Family	25.4%	-5.2%***	23.0%	-6.0%***
2 Child Family	19.6%	-5.0%***	18.3%	-5.1%***
3 Child Family	18.5%	-3.5%***	17.2%	-3.8%***
4 Child Family	18.8%	-5.9%***	17.7%	-6.5%***
5 or More Child Family	17.5%	-1.9%	16.1%	-2.4%
Educational Attainment				
Less than HS	25.8%	-4.0%***	24.7%	-4.3%***
HS Graduate/GED	19.8%	-4.9%***	18.4%	-5.2%***
Some College/AA Degree	17.2%	-2.6%***	15.5%	-3.4%***
College Graduate	16.1%	-3.2%	14.7%	-2.0%
Advanced Education	17.5%	-3.0%	14.7%	-4.4%
Metro/Non-Metro				
Metropolitan Area	20.4%	-4.2%***	19.0%	-4.6%***

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