



Explanations of the Medicaid Undercount and the Factors Associated with Measurement Error in the CPS

Federal Committee on Statistical Methodology
Research Meeting
November 6th, 2007

Michael Davern, Ph.D.
Kathleen Thiede Call, Ph.D.
SHADAC, Health Policy & Management
University of Minnesota

Supported by a grant from The Robert Wood Johnson Foundation and the Office of the Assistant Secretary for Planning and Evaluation

“SNACC” Project collaborators and co-authors

- Collaborators:
 - Office of the Assistant Secretary for Planning and Evaluation:
 - Rob Stewart
 - George Greenberg
 - Kate Bloniarz
 - US Census Bureau Collaborators:
 - Sally Obenski
 - Ron Prevost
 - Dean Resnick
 - Marc Roemer
- Coauthors:
 - RAND
 - Jacob Klerman
 - Centers for Medicare and Medicaid Services
 - Dave Baugh
 - Gary Ciborowski
 - State Health Access Data Assistance Center
 - Kathleen Thiede Call
 - Gestur Davidson
 - Lynn Blewett



Extent of the Medicaid undercount ?

- In the present study we compare the Medicaid Statistical Information System (MSIS) to the Current Population Survey (CPS).
- Raw Undercount numbers:
 - Calendar Year 2001 MSIS has 48.6 million records and CPS counts 27.8 million Medicaid enrollees (43% undercount)



3

Why do we care?

- CPS estimates of health insurance are important to US health policy research
 - Used for policy simulations by federal and state governments
 - Surveys like the CPS are the only sources for population estimates on the uninsured
 - Surveys are also the only source of the Medicaid/SCHIP eligible, but uninsured population
 - CPS is used in the SCHIP funding formula
 - CPS is often used to evaluate federal programs and state initiatives
- The magnitude of the undercount calls the validity of CPS survey insurance estimates into question

4

What could explain the undercount?

- Explanations I have some data on today:
 - Universe differences between MSIS and CPS survey data
 - Paying special attention to sample loss (those cases with missing IDs that cannot be linked)
 - The data are linked through use of the Social Security Number (SSN).
 - This is replaced by a protected identification key or (PIK)
 - Survey Measurement error



5

The Basic Table

Table 1: Counts from the MSIS, CPS and Linked Data Files: 2000, 2001
 [Numbers in Thousands]

MSIS Data Counts	Calendar Year	
	2001	2000
A.1. All People In MSIS	48,556	45,039
A.2. Minus All SCHIP Only Enrollees	46,717	43,655
A.3. Minus Non-Full Medicaid Benefit Enrollees	42,184	39,736
A.4. Minus Those in Inst. Group Quarters	42,059	39,577
A.5. Minus Duplicate Enrollees	40,461	38,170
A.6. Minus Those Without PIKs (SSNs)	38,213	36,216
CPS Counts		
B.1. All People in the CPS	279,588	277,497
B.2. Recorded as Having Medicaid in CPS	27,749	26,170
Linked Data File Counts		
C.1. Raw Number of Linked Cases	24	22
C.2. Weighted Number of Linked Cases*	35,988	33,439

Source: 2000 and 2001 MSIS Calendar Year files
 * Weighted using the adjusted CPS person weight



6

Fitting the MSIS and CPS records into the “linkable universe”

- Line A.6. shows how many cases from MSIS had Medicaid and were linkable to the survey data
 - 38.2 and 36.2 million in 2001 and 2000
 - Linking IDs were not missing at random
- In the CPS 24% of records are not linkable as they are missing linking IDs (i.e., SSN or PIKs).
 - Most of these refused to provide the linking data in the survey
 - We assumed IDs were missing at random and to fix this problem we simply re-weighted the remaining 76% of cases to equal the full 100% of cases using common post-stratification adjustment cells
- The re-weighted number of CPS survey cases in row C.2 was slightly below the row A.6 totals
 - 6% under in 2001 and 8% in 2000



7

Universe Issues Explain Part of the Undercount but not all

- The original crude undercount was 43% in 2001
- After universe adjustments it is down to 31% (comparing line A.5 to B.2)

8

The linked Survey and Medicaid data for Survey Response Error

- Focusing on only those with reported health insurance data
 - 58.9%** Respond Medicaid
 - 14.6%** Respond some other type of public
 - 9.5%** Respond some type of private coverage
 - 16.9%** Respond they were uninsured
 - 99.9%**
- 41% of the linked respondents report something other than Medicaid
 - This is major cause of the remaining undercount



9

What factors are associated with measurement accuracy/error?

- Length of time enrolled in Medicaid
- Recency of enrollment in Medicaid
- Poverty status impacts Medicaid reporting but does not impact the percent reporting they are uninsured
- Adults 18-44 are less likely to report Medicaid enrollment
- Adults 18-44 more likely to report being uninsured



10

How does the CPS compare to other studies of Medicaid reporting error?

Experimental and Matching Studies Reports of Insurance Coverage

Studies and Target Population	Percent of Medicaid Population Answering Correct Insurance Type	Percent of Medicaid Population Answering Some Other Insurance Type	Percent of Medicaid Population Answering They are Uninsured
Experimental Studies			
Adults on Medicaid in CA 2004	83.1%	6.5%	10.4%
Non-Elderly (<65) Persons on Medicaid in FL 2004	87.0%	8.1%	4.9%
Persons on Medicaid in PA 2004	79.9%	16.7%	3.4%
Children on Medicaid in MN 1999 ^a	79.5%	16.0%	4.5%
*Persons on Medicaid in MN 1999 ^b	54.0%	41.9%	4.1%
Adults on Medicaid and MNCare in Blue Cross in MN 2003 ^c	86.8%	12.8%	0.4%
Persons on Medicaid in MD 2004 ^d	87.5%	8.0%	4.5%
CPS Matching Studies			
Adults (age 15-64) on Medicaid in CA (pooled 1990-2000 data) ^e	72.3%	6.0%	21.7%
Persons on Medicaid/SCHIP in the US 2000	58.9%	24.1%	16.9%

11

Conclusions about the CPS estimates

- Overall CPS rate of those with Medicaid reporting that they are uninsured is much higher than other studies
- Overall CPS rate of those with Medicaid reporting Medicaid is much lower than other studies
- Why?
 - My opinion: Most of it has to do with the poor question design of the CPS
 - 17 month recall period leads people to forget spells of insurance coverage including Medicaid
 - Household level looping versus person level question design

12

Policy relevant issues raised by this research in need of further study

- Many people on Medicaid do not report having coverage
 - People who had Medicaid last year report that they are uninsured in the CPS
 - Roughly 6 million weighted cases
 - Why do they not report coverage?
 - Is it stigma?
 - Or a lack of knowledge of coverage?
 - Is it due to complex households (multiple family) not knowing who has what?
 - Is not reporting coverage associated with acting more like being uninsured?
 - President's 95% coverage for SCHIP policy

13

Policy relevant issues raised by this research in need of further study

- From this work we only have information on those people with Medicaid reporting incorrectly
 - Would be nice to know about other types of coverage (SCHIP and private)
 - We also need to know whether people without coverage report having it

14

SHADAC contact information

www.shadac.org

State Health Access Data Assistance Center

University of Minnesota

2221 University Avenue, Suite 345

Minneapolis Minnesota 55414

(612) 624-4802

shadac@umn.edu

