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Accuracy in Self-Reported Health Insurance Coverage and Bias to Survey Estimates of Uninsurance

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2

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What is the Medicaid Undercount? What is assumed?

- Surveys produce lower counts of people on Medicaid than administrative records indicate are enrolled
- Assumed that Medicaid recipients do not report Medicaid coverage in surveys
  - Either do not understand they are enrolled or are embarrassed to report enrollment
- Instead report they have no coverage
  - Result is undercount of Medicaid and overcount of uninsurance

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3

Our Research Questions

1. Do Medicaid enrollees say they are uninsured?
2. What factors are associated with accurate and inaccurate reports of coverage?
3. How much do misreports of a lack coverage bias estimates of uninsurance in health surveys?

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4

Answering Our Questions

- Experimental studies in three states — California, Florida and Pennsylvania:
  - Using administrative enrollment records, sampled known Medicaid enrollees who completed a health survey
    - "Medicaid undercount experiment" or MUE
  - MUE surveys of known enrollees were conducted at the same time, using the same survey, and the same vendor as statewide general population survey that provide state estimates of health insurance coverage

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5

Medicaid Undercount Experiment (MUE) Surveys

State MUE:	Number of Completes (Response Rate-AAPOR RR4)	Analytic Sample Size
California: Medicaid adults	1,423 (41.7%)	1,316
Florida: Medicaid adults (<65) & children	1,087 (29.8%)	940
Pennsylvania: Medicaid adults and children	1,582 (55.9%)	1,392

Analytic sample exclusions: Those in institutional settings (e.g., nursing homes, group quarters); missing coverage or health status data; **not enrolled in Medicaid at time of survey.**

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6

Q1: Do Medicaid Enrollees say they are Uninsured

Insurance	California	Florida	Penn-sylvania
Any Medicaid	83.1%	87.0%	79.9%
Other Public	1.7%	2.7%	9.2%
Other Private	4.7%	5.4%	7.5%
Uninsured	10.4%	4.9%	3.4%

Q2: Factors Associated with Correctly Reporting Medicaid (= 1)

Variables	California		Florida		Pennsylvania	
Survey data	Odds ratio		Odds ratio		Odds ratio	
Male	0.88		0.93		**0.72**	*
Non-Hispanic Black	0.87		**0.45**	***	0.72	
Hispanic	0.66		1.15		0.89	
Non-Hispanic Other	1.17		2.13		4.60	
Income < 100% FPL	**3.39**	***	**2.23**	**	**2.68**	***
Income 100 to 199% FPL	**2.26**	**	1.03		1.42	
Less than High School (adult or parent)	0.70		1.17		**1.86**	**
High School Degree (adult or parent)	0.97		1.01		1.37	
Unemployed (adult or parent)	**2.60**	***	**1.83**	*	**1.84**	***
Survey in English language			0.50			
Survey in Spanish language	1.11					
Survey in other non-English language#	0.67					
US born	1.18					
Self-reported poor/fair health	**2.17**	***	0.79		1.29	
Age less than 18~			**4.42**	***	1.12	
Age 65 and over	1.56				**0.20**	***
Administrative data						
Medicaid managed care enrollment	**1.73**	*	**4.01**	***		
Non-elderly Dual eligibles	1.12		**9.78**	***	3.06	
Social Security Income (SSI)	**10.69**	***	**24.44**	***	1.12	
Temparory Assistance for Needy Families (TA	**18.31**	***	**8.26**	***	**3.16**	**
Full medical benefits, no cash benefits	**3.61**	***	**7.15**	***	**1.94**	*

Q2: Factors Associated with Falsely Reporting Being Uninsured (= 1)

Variables	California Odds ratio		Florida Odds ratio		Pennsylvania Odds ratio	
Survey data						
Male	1.44		0.82		**2.71**	**
Non-Hispanic Black	0.38		0.80		**2.57**	*
Hispanic	2.00		0.50		1.00	
Non-Hispanic Other	1.42		0.36		0.84	
Income < 100% FPL	2.31		1.23		1.32	
Income 100 to 199% FPL	2.52		1.23		1.20	
Less than High School (adult or parent)	1.40		1.52		1.27	
High School Degree (adult or parent)	0.72		1.87		0.57	
Unemployed (adult or parent)	0.72		**0.43**	*	0.68	
Survey in English language			0.73			
Survey in Spanish language	0.85					
Survey in other non-English language#	0.44					
US born	1.12					
Self-reported poor/fair health	**0.57**	*	1.26		0.47	
Age less than 18~			**0.21**	***	**0.11**	***
Age 65 and over	**0.09**	***			a	
Administrative data						
Medicaid managed care enrollment	**0.36**	**	**0.22**	***		
Non-elderly Dual eligibles	**0.16**	*	**0.07**	***	**0.04**	***
Social Security Income	**0.05**	***	0.25		a	
Temporary Assistance for Needy Families (TA	**0.06**	***	0.68		a	
Full medical benefits, no cash benefits	**0.34**	***	0.82		**0.34**	**

Summary of Logistic Results

- Some characteristics of recipients are associated with accurate reports of Medicaid participation; few are predictive of misreports of uninsurance

- Characteristics of Medicaid programs and receipt of other public benefits are highly predictive and consistent across states in their impact on accurate reports of Medicaid participation and misreports of a lack of insurance

10

Q3: Do Misreports of Uninsurance Bias Estimates of Coverage in Health Surveys

	Bias in Percent Uninsured	Statewide Survey Estimates of the Percent Uninsured	Bias in Percent Uninsured as Percent of State Uninsured
California	1.3%	16.5%	8.8%
Florida	0.7%	18.9%	3.9%
Pennsylvania	0.5%	7.5%	6.6%

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11

Summary of Results

- Contrary to long held assumptions, Medicaid enrollees are reasonably accurate reporters of insurance status; few falsely report being uninsured
- Results point to role of measurement error
  - Respondents are reasonably good at reporting if they do or do not have coverage
  - Respondents are somewhat less accurate reporters of specific types of coverage
- Misreports of lacking coverage lead to modest bias in estimates of uninsurance
- Ability to generalize to other surveys may be limited
  - Attend to scope of questionnaire—health survey
  - Question placement—early or late in survey
  - Reference period for health insurance questions—current insurance or insurance in prior year (CPS)

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12

Conclusions

- Cumulative evidence suggests modest bias to uninsurance estimates due to Medicaid enrollees misreporting uninsurance
  - Possible to have undercount without bias to estimate of unisurance and vice versa
  - Possible for bias in estimates of uninsurance (both upward and downward) from sources other than Medicaid enrollees misreports of coverage
- Primarily an issue of measurement error
  - Attend to reference period, survey context and question placement
  - Consider inclusion of questions about program characteristics or program participation to improve Medicaid reporting
  - Possible that surveys count some uninsured as insured
- Results should reduce uncertainty about using survey estimates of coverage to inform policy

13

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14

7

- Backup material

15

Analytic Strategy

- Present weighted results of self-reported health insurance coverage for three states
- Logistic regressions to examine factors associated with
  - accurate reports of Medicaid coverage (true positives)
  - misreports of uninsurance (false negatives)
- Calculate the extent to which misreports of uninsurance in the MUE bias population estimates of insurance coverage.

16

Medicaid Undercount Experiment (MUE) Surveys

State MUE:	MUE Sample Frame* (Survey Administration Period)	Number of Completes** (Response Rate***)	Sample Exclusions	Analytic Sample Size
California	Medicaid adults enrolled December 2003 (February - May 2004)	1,423 (41.7%)	8 group setting; 24 missing coverage data; 66 not enrolled at time of survey; 7 missing health status; 2 missing country of birth	1,316
Florida	Medicaid adults (<65) & children enrolled August 2004 (September, November 2004)	1,087 (29.8%)	1 missing coverage data; 1 unsure of coverage; 58 not enrolled at time of survey; 81 non-representative cases over age 65; 4 missing health status	940
Pennsylvania	Medicaid adults and children enrolled April 2004 (June - September 2004)	1,582 (55.9%)	39 missing coverage data; 4 unsure of coverage; 104 not enrolled at time of survey; 42 not eligible; 1 missing health status	1,392

* Sample frame excludes those in institutional settings (e.g., nursing homes, group quarters).

** The number of completes reported are those for whom a match in the adminstrative data was possible.

*** Reported response rates are based on an AAPOR RR4 calculation. The response rate is calculated for all cases completing a survey including those for whom a no match in the administrative data was possible and those no longer enrolled at the time of th

NOTE: MUEs administered in conjunction with statewide RDD surveys.

17

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Health Insurance Questions

- Design of Questions
  - CA MUE: sampled individual only; CHIS: person level loop for sampled individuals (adults, adolescent, child versions)
  - FL surveys: household level loop
  - PA surveys: person level loop
- Exhaustive list of questions about current sources of insurance (multiple responses allowed)
  - CA surveys: list of public insurance followed by private
  - FL and PA surveys: list of private insurance followed by public
- Series Location
  - CA surveys: omnibus health survey with questions in 8th section
  - FL and PA surveys: immediately following introduction and household enumeration

18

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Issues to consider

- Unit non-response and implications for bias to health insurance coverage estimates
    - Falling response rates
    - Rise of cell phone only households
- Validation of CPS-ASEC responses necessary additional step
- Not enough is known about potential for "overcounts" in administrative records
    - Adminstrative data should be audited for their ability to enumerate people just as survey data are
- Need to acknowledge that survey data and administrative data are collected to serve different purposes

19