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*Explanations of the Medicaid  
Undercount and the Factors  
Associated with Measurement  
Error*

Department of Health and Human Services

July 17th, 2007

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

- Summarize who is not in the theoretical ‘linkable universe’ as well as who is missing from the actual ‘linked universe’
- Examine the reporting errors among the linked cases
- Compare to other work that has examined measurement error among Medicaid enrollees
- Discuss conclusions and implications

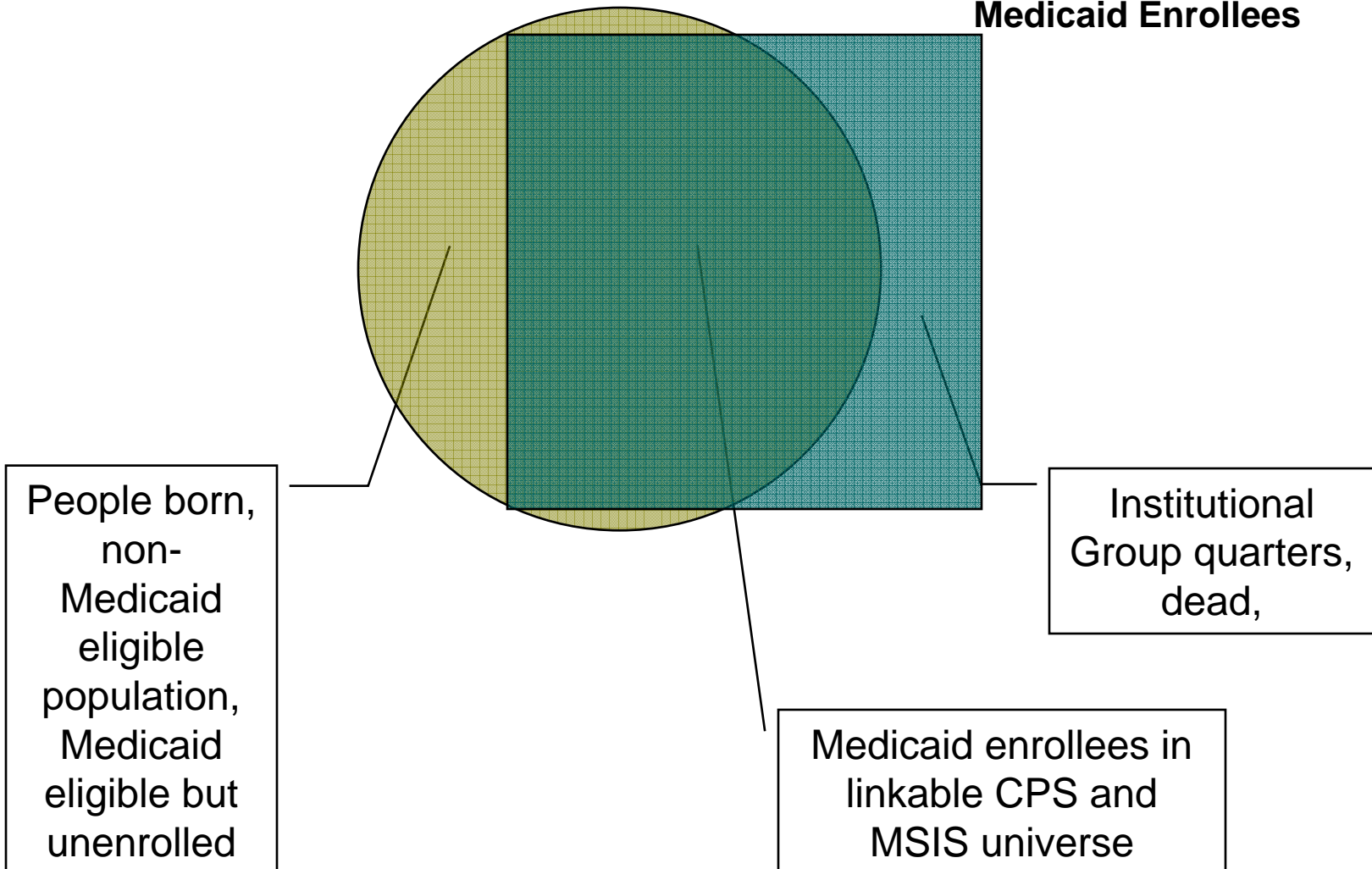
# Explanations of the undercount

- Aligning administrative data and survey data concepts
  - Building a common ‘linkable universe’ (reviewed by Marc and Dean’s presentations)
- Administrative data problems
  - Duplicate records and missing linking keys (reviewed by Dave and Dean’s presentations)
- Survey Non-response error
  - Missing linking keys and general nonresponse (reviewed by Marc and Dean as well)
- Measurement error (or response error)
  - Introduced by Dean and I will elaborate
  - First we need to construct a linked data set...

# Building a common 'linkable universe'

**CPS Sample Frame**

**MSIS  
Medicaid Enrollees**



# Differences between the 'linkable universe' and the actual linked cases

- Medicaid enrollees missing linking keys on administrative data
  - Further examination of these cases is needed
- Medicaid enrollees with missing linking keys on survey data
- Medicaid enrollees not sampled in the CPS survey
- Medicaid enrollees sampled but who did not respond
  - These last three are partially handled through weighting adjustments made to the survey
  - Dean's slides show that there is still some mismatch here but not much as linked cases represented 92% of the 'linkable universe'

# Research questions and methods for examination of linked data

- Questions of interest are:
  - How often do Medicaid enrollees report being on Medicaid in the CPS?
  - How often do Medicaid enrollees report being uninsured in the CPS?
  - How does the CPS compare to other surveys on these dimensions?
  - What are the covariates of incorrectly reporting Medicaid and being uninsured in the CPS
- To examine these questions we look at bivariate distributions from 2001 and logistic regressions combining 2000 and 2001 data
  - Only examine the linked data that were not imputed or edited by Census
    - 21,119 cases in 2001, and 18,269 in 2000

# How well is the CPS classifying Medicaid enrollees?

- 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 a major contributor to the undercount

# 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
<b>Experimental Studies</b>			
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 <sup>a</sup>	79.5%	16.0%	4.5%
*Persons on Medicaid in MN 1999 <sup>b</sup>	54.0%	41.9%	4.1%
Adults on Medicaid and MNCare in Blue Cross in MN 2003 <sup>c</sup>	86.8%	12.8%	0.4%
Persons on Medicaid in MD 2004 <sup>d</sup>	87.5%	8.0%	4.5%
<b>CPS Matching Studies</b>			
Adults (age 15-64) on Medicaid in CA (pooled 1990-2000 data) <sup>e</sup>	72.3%	6.0%	21.7%
<b>Persons on Medicaid/SCHIP in the US 2000</b>	<b>58.9%</b>	<b>24.1%</b>	<b>16.9%</b>



# 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

# What are the factors associated with measurement accuracy/error?

Selected Logistic Regression Odds Ratios for Not Reporting Enrolled in Medicaid and Reporting Uninsured Among Those CPS Cases With Reported Data that were Linked to the MSIS (**Reference Categories is the Linked Data File Average**): 2000-2001

Variable	Odds Ratio for Not Reporting Medicaid	Odds Ratio for Reporting Uninsured
<b>Length of Time Enrolled and Recency</b>		
Enrolled at time of Survey	0.7	0.7
Enrolled all of last year	0.4	0.5
<b>Race/Ethnicity</b>		
Hispanic	1.3	1.7
Black	N/S	N/S
White	0.6	0.5
<b>Selected Age</b>		
Age 0-5	0.6	0.4
Age 6-14	0.8	3.7
Age 15-17	0.8	0.6
Age 18-44	1.4	6.1

# Additional Covariates

Variable	Odds Ratio for Not Reporting Medicaid	Odds Ratio for Reporting Uninsured
<b>Income</b>		
No Income Reported	3.1	3.3
Poverty Ratio 0-49	0.2	N/S
Poverty Ratio 50-74	0.4	N/S
Poverty Ratio 75-99	0.7	1.4
Poverty Ratio 100-124	N/S	N/S
Poverty Ratio 125-149	1.4	N/S
Poverty Ratio 150-174	1.5	0.7
Poverty Ratio 175-199	2.2	N/S
Poverty Ratio 200+	3.9	N/S
<b>Utilization and Managed Care</b>		
Utilization Noted but No Managed Care	0.6	0.6
Utilization Noted, Managed Care	0.5	0.5
No Utilization Noted, Not on Managed Care	2.9	N/S
No utilization Noted, on Managed Care	1.4	N/S
<b>Other Program Participation</b>		
SSI Recipient indicated on MSIS	2.0	2.4
TANF indicated on MSIS	0.8	0.8
Dual eligible indicated on MSIS	0.7	0.3

# State Odds Ratios

Variable	Odds Ratio for Not Reporting Medicaid	Odds Ratio for Reporting Uninsured
<b>Selected States</b>		
AL	N/S	1.7
AR	1.3	1.4
CA	1.5	N/S
CO	1.5	0.7
DE	1.9	0.5
FL	N/S	1.3
HA	1.9	0.5
LA	1.5	1.5
MD	2.0	N/S
MA	0.6	0.5
MN	N/S	0.6
NH	0.5	0.6
NJ	1.4	N/S
ND	N/S	1.7
OK	1.5	2.1
PA	1.7	N/S
RI	0.5	0.5
SD	N/S	2.5
TX	N/S	1.7
VT	0.5	0.7
WA	1.6	1.5

All Reported Odds Ratio Significant at  $p < .05$  level

# 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
    - Jacob Klerman will work through the issues on how to use this information to create a new estimate of the uninsured
  - 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?

# 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
- Why does reporting quality vary so greatly by state?
  - How does it impact SCHIP allocations which uses the CPS to allocate funds to states based on the estimate of poor uninsured kids
  - How does this impact simulation models and policy evaluation studies when Medicaid reporting quality varies by state?

# Conclusions

- Survey measurement error is playing the most significant role in producing the undercount
  - Some Medicaid enrollees answer that they have other types of coverage and some answer that they are uninsured
- ‘Linkable universe’ issues play a role as well
- Administrative data problems also play a role
- This research raises many policy relevant issues in need of further investigation

# SHADAC contact information

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