

Using Administrative Records to Evaluate Reporting Accuracy in Surveys

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Motivation

- Surveys = only data source for estimates of uninsured
- Most surveys ask about discrete coverage types:
 1. Do you have coverage through an employer?
 2. Do you have coverage from Medicaid (low income)?
 3. Do you have coverage from Medicare (elderly)?
 4. Etc...

→ no to all → uninsured
- Problems:
 1. Limited research on:
 - Reporting accuracy by coverage type
 - How misreporting of one coverage type affects:
 - Estimates of other coverage types
 - Final estimate of uninsured
 - How the ACA may have affected reporting accuracy
 2. Methods, accuracy and reporting issues vary by survey

Research Objective

- Conduct a study starting with enrollment records as sample so coverage type is “known”
- Include sample from multiple coverage types, including private, public and marketplace
- Randomly assign sample to health insurance modules from different surveys; conduct survey
- Measure reporting accuracy:
 - Across coverage types
 - Across surveys

CHIME Validation Study Design

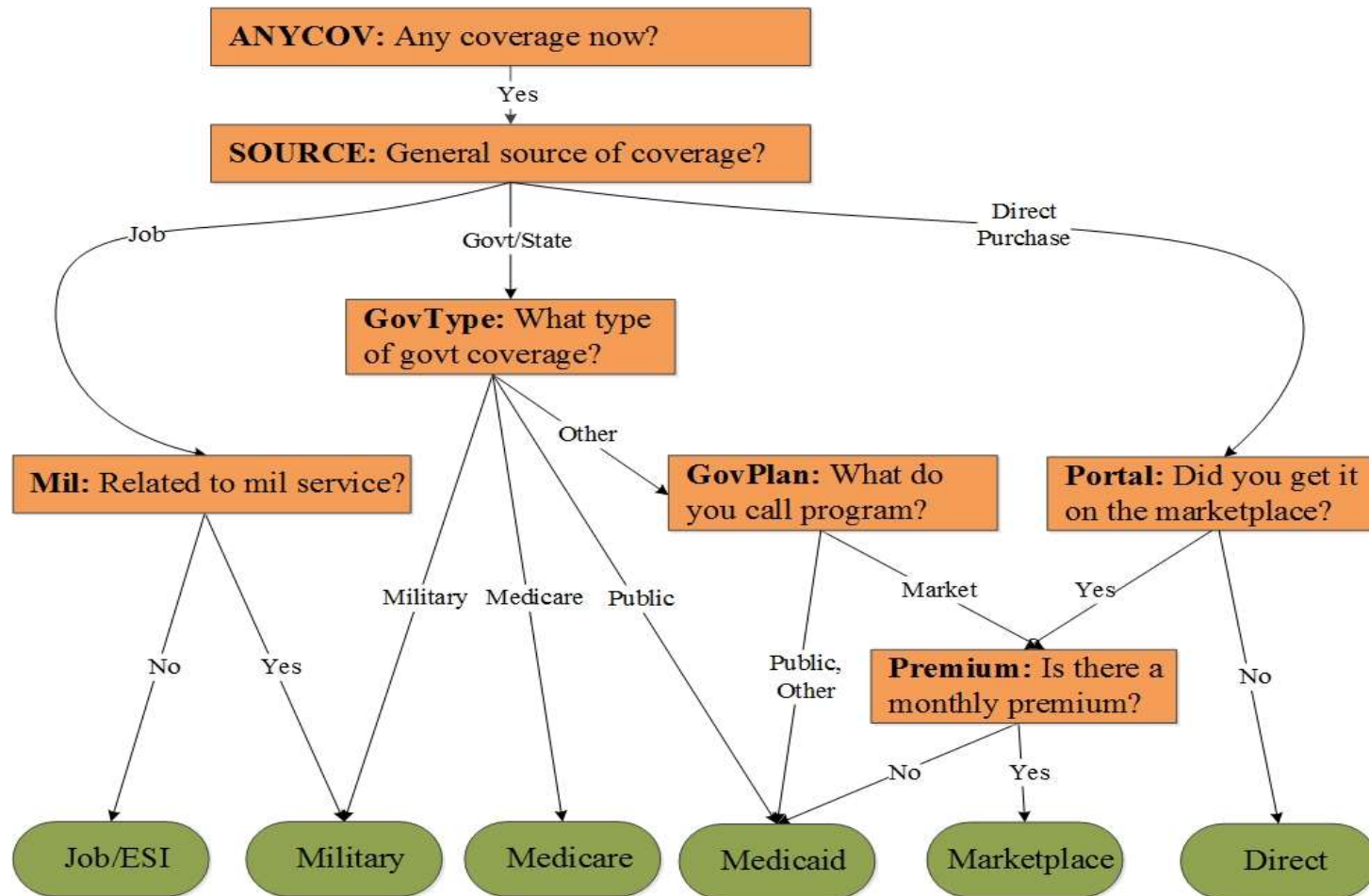
- Partnered with a private health plan in Midwest
- Health plan provided enrollment records randomly sampled from multiple “strata” including:
 - Employer-Sponsored Insurance (ESI)
 - Direct Purchase
 - Marketplace
 - Medicaid
- Randomly assigned sample to survey modules:
 - Current Population Survey ASEC (CPS)
 - American Community Survey (ACS)
- Conduct phone survey; compare survey reports on coverage type to enrollment records

ACS Health Insurance Question

15 Is this person **CURRENTLY** covered by any of the following types of health insurance or health coverage plans? Mark "Yes" or "No" for EACH type of coverage in items a – h.

- | | Yes | No |
|---|--------------------------|--------------------------|
| a. Insurance through a current or former employer or union (of this person or another family member) | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Insurance purchased directly from an insurance company (by this person or another family member) | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Medicare, for people 65 and older, or people with certain disabilities | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Medicaid, Medical Assistance, or any kind of government-assistance plan for those with low incomes or a disability | <input type="checkbox"/> | <input type="checkbox"/> |
| e. TRICARE or other military health care | <input type="checkbox"/> | <input type="checkbox"/> |
| f. VA (including those who have ever used or enrolled for VA health care) | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Indian Health Service | <input type="checkbox"/> | <input type="checkbox"/> |
| h. Any other type of health insurance or health coverage plan – <i>Specify</i> ↘ | <input type="checkbox"/> | <input type="checkbox"/> |

CPS Health Insurance Questions

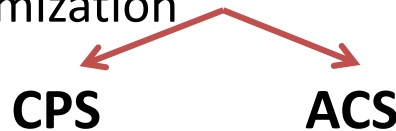


Private Health Insurer Sample

- ~ 175,000 eligible policyholders across strata
- Conducted power analysis to determine how to allocate sample across strata, given budget
- Randomly selected sample from each strata
- Mailed advance letter with opt-out option
- Culled opt-outs and bad addresses → delivered 16,000 phone numbers to Census

CHIME Survey Methods

- 17-minute phone survey conducted in Spring, 2015
- Content: subset of questions from both CPS and ACS:
 - Demographics
 - Labor force
 - Government program participation (food stamps, WIC, etc.)
 - Health insurance randomization



- Stratified sample: oversampled Medicaid, undersampled ESI
→ weighted data to health insurance population totals
- 22% response rate (AAPOR RR4)
- Data collected on all household members
- Individuals in surveys matched to enrollment records: at least one person matched in 87% of households
- Final matched dataset: 3,823 people
 - 1,989 received CPS
 - 1,834 received ACS

Sample Distribution by Survey Treatment

STRATA	Person-Level Sample Distribution (Individuals < 65)	
	CPS	ACS
ESI	313	248
Direct Purchase	640	538
Marketplace	178	152
Medicaid	432	476

Results

- Sample demographics
- Accuracy metrics
 - Sensitivity: Among those with Coverage Type X according to the records, how many report Coverage Type X in the survey?
 - Predictive Power: Among those who report Coverage Type X in the survey, how many could be validated to have Coverage Type X in the records?
 - Prevalence: How does the insurer population prevalence compare to the survey estimate?

ACS & CPS sample similarities & differences

SIMILARITIES

- Gender
- Employment status
- Employer size
- Relationship to respondent
- Education
- Marital status

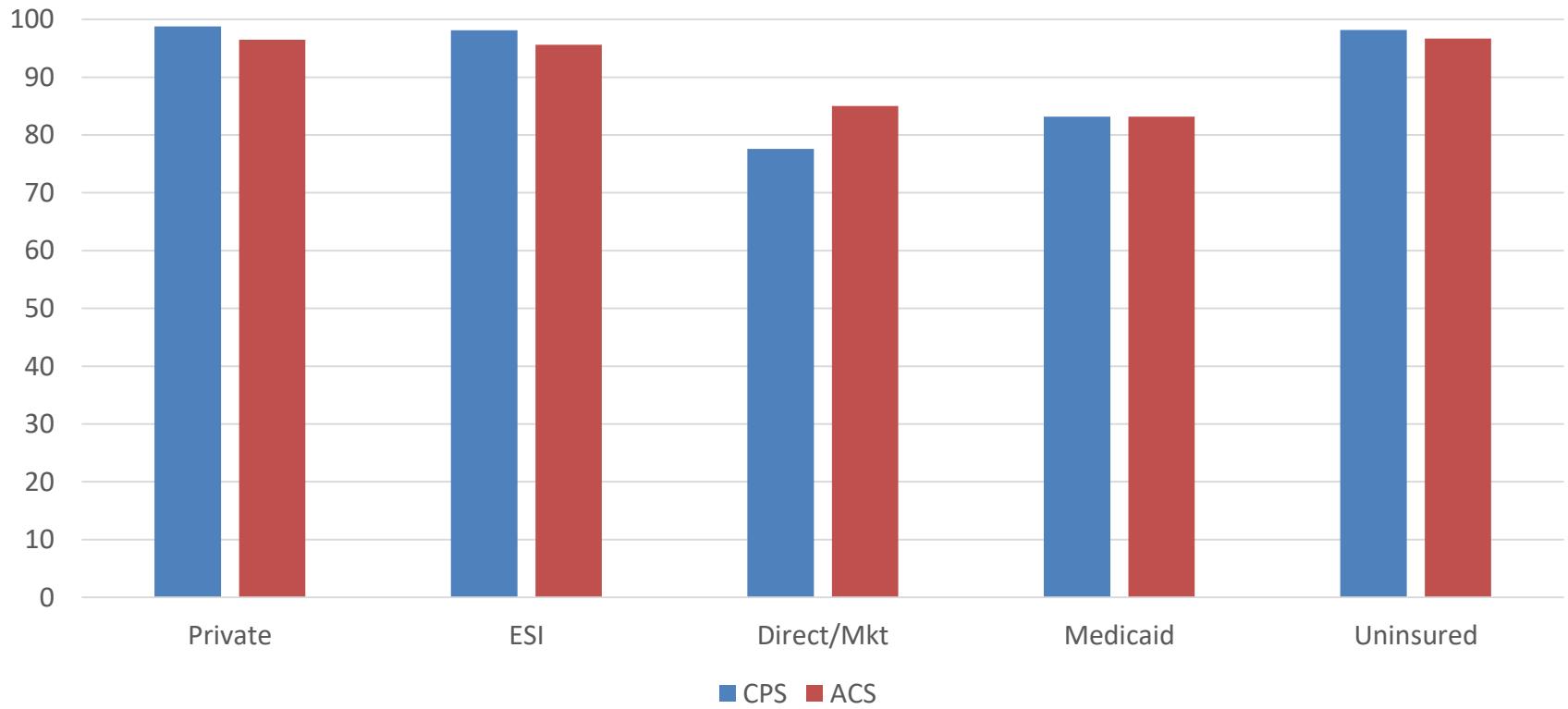
DIFFERENCES

- Household size
- Family income
- Race

Adjust for differences in characteristics with regression models and predicted probabilities assuming same characteristics.

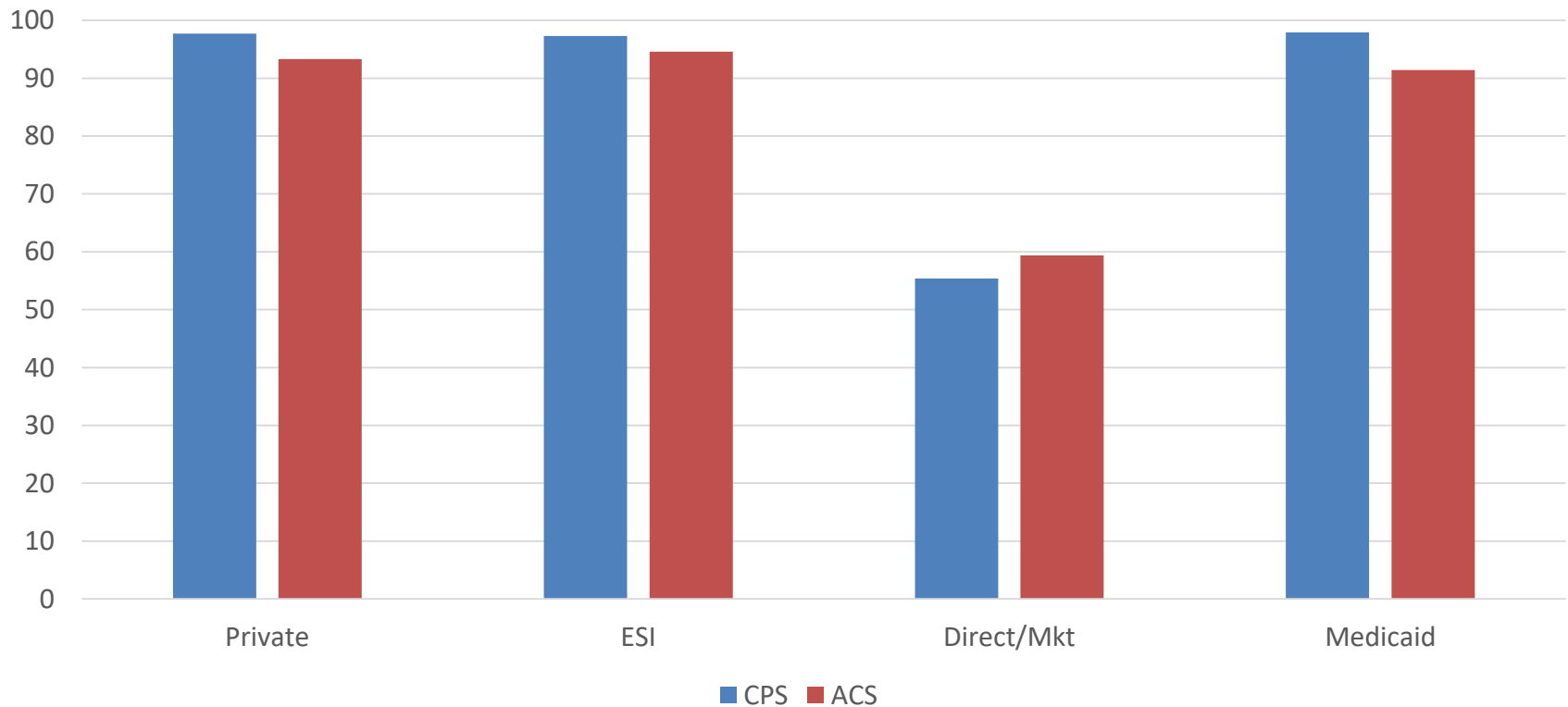
Sensitivity (Under-reporting)

Among those with CovType X According to Records,
How Many Reported CovType X in the Survey?

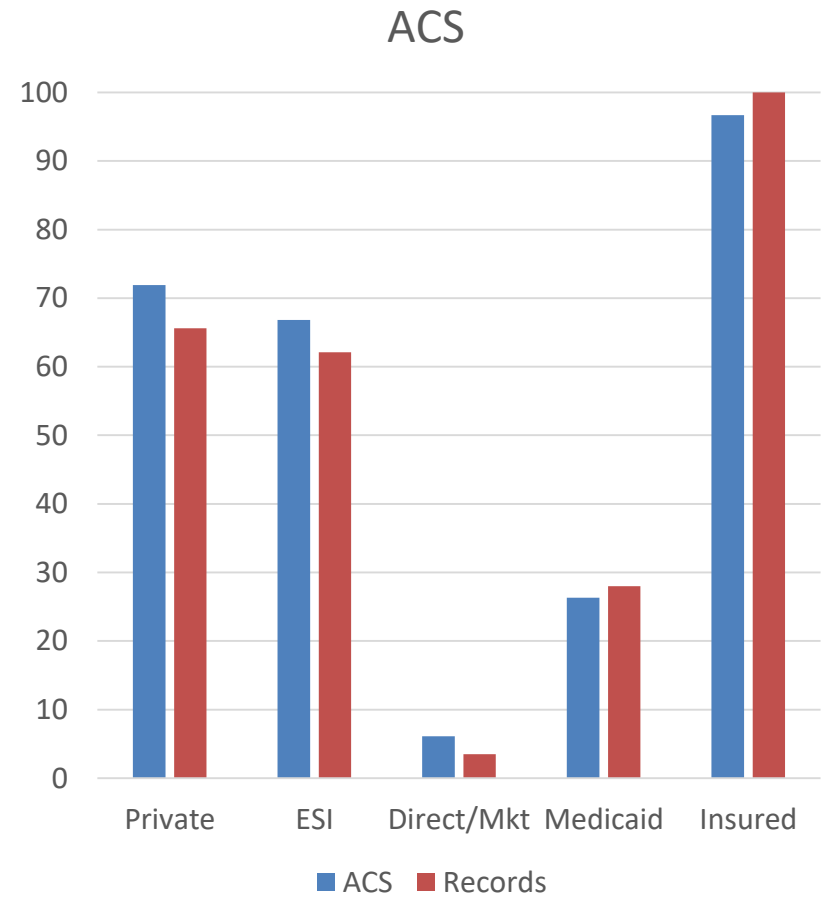
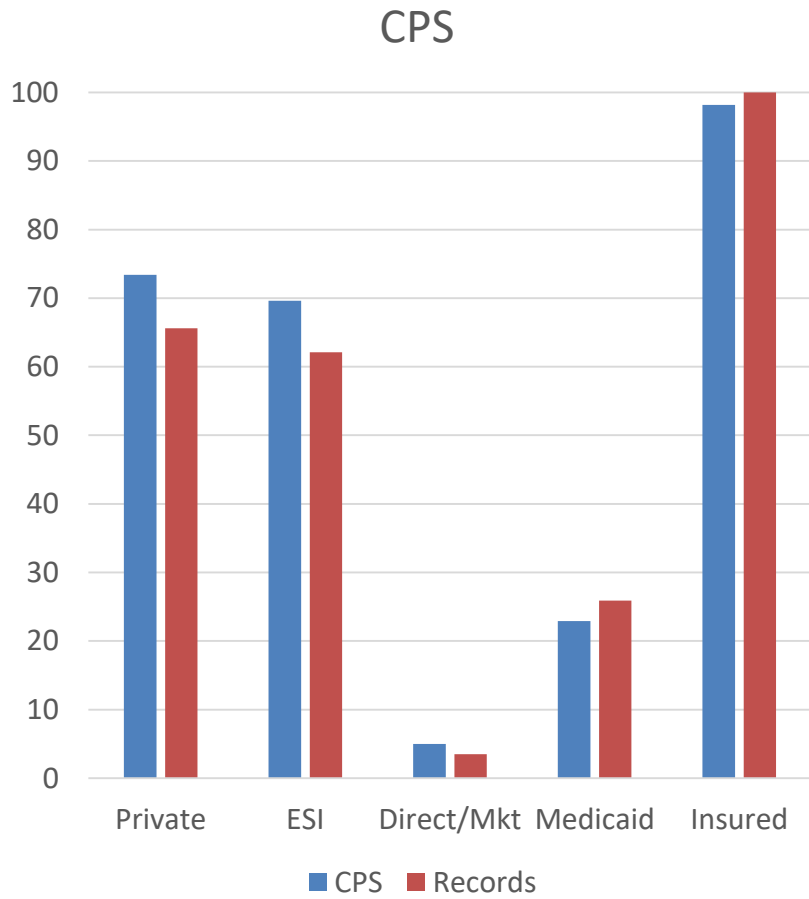


Predictive Power (Over-reporting)

Among those reported to have CovType X in the Survey,
How Many Were Validated to Have CovType X in the Records?



Prevalence: Survey vs Records



Summary

Coverage Type	Sensitivity				Predictive Power			
	CPS	ACS	Diff	p	CPS	ACS	Diff	p
Private	98.8	96.5	2.3	***	97.7	93.3	4.3	***
Public	83.2	83.2	0.0		97.9	91.4	6.5	***
Insured	98.2	96.7	1.5	***				

Coverage Type	Prevalence							
	Recs	CPS	Diff	p	Recs	ACS	Diff	p
Private	65.6	73.4	7.9	***	65.6	71.9	6.3	***
Public	25.9	22.9	- 3.1	***	28.0	26.3	- 1.7	***
Uninsured	0	1.8	1.8	***	0	3.3	3.3	***

Next Steps

- Compare demographic profile of enrollees in records to those reported in survey, by coverage type
- Examine experimental questions on ACS:
 - **ACS_MKT**: Was this plan obtained through a State or Federal Marketplace, Healthcare.gov, or a similar state website?
 - **ACS_PREM**: Do you or another family member pay a premium for this health insurance plan? A premium is a fixed amount of money paid on a regular basis for health coverage. It does not include copays, deductibles, or other expenses such as prescription costs.
 - **ACS_SUBS**: Based on family income, do you or another family member receive financial assistance through a subsidy or tax credit to help pay part or all of the cost of the premium for this plan?

Thank you!

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