

Validating Self-Reported Health Insurance Coverage: Preliminary Results on the CPS and ACS

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Motivation for Research

- Accuracy of self-reports of health coverage:
 - Insured/uninsured → ok
 - Type of coverage → not ok
- Limited data on reporting accuracy by coverage type
 - Medicaid undercount
 - Employer-sponsored insurance
- Uninsured measure is derived indirectly from reports on individual types of coverage
- Unknown how uninsured measure is affected by misreporting of individual coverage types
- Accuracy and reporting issues vary by survey
- Limited data on reporting accuracy pre- and post-ACA

CHIME Validation Study Design

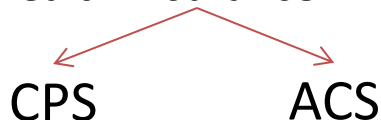
- Start with enrollment records from a private health plan that offers multiple coverage types
 - Medica Health Plan in Minnesota
- Use records as sample and randomly assign to different survey treatments
 - Current Population Survey ASEC (CPS)
 - American Community Survey (ACS)
- Compare estimates/indicators of coverage type:
 - Survey estimates versus enrollment records
 - Difference in surveys and records across CPS and ACS

Target Completed HH Interviews within Each Coverage Type

Coverage Type (Strata)	Households
Medicaid	2,165
MinnesotaCare	541
Employer-Sponsored Insurance (ESI)	662
NonGroup thru Marketplace	306
NonGroup outside Marketplace	1,122
Transitioned (ESI/Medicaid/MinnesotaCare)	204
TOTAL	5,000

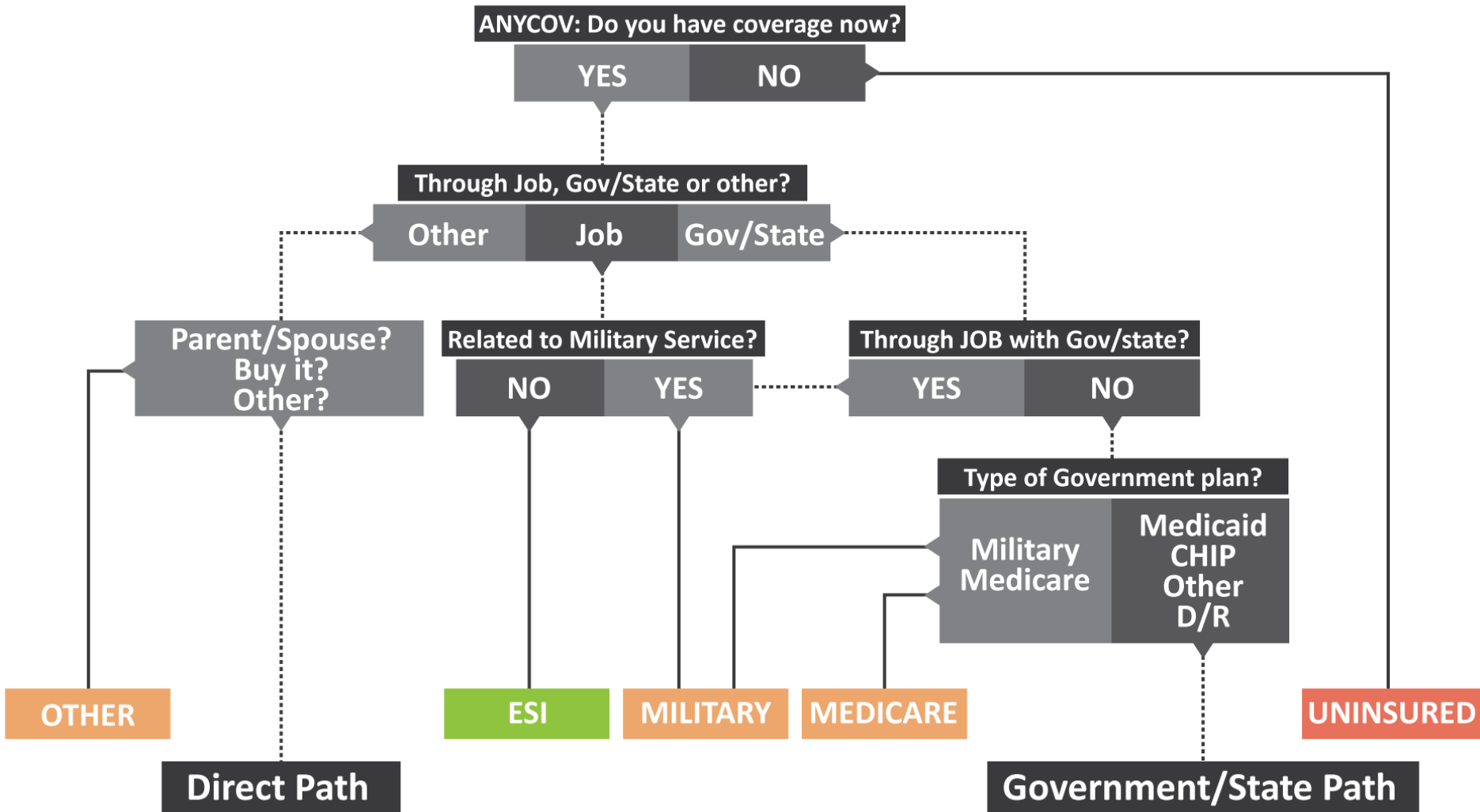
CHIME Survey Methods

- 15-minute phone survey conducted in Spring, 2015
- Content: questions from both CPS and ACS:
 - Demographics
 - Labor force
 - Government program participation (Food Stamps, WIC, etc.)
 - Health insurance



- Data collected on all household members
- Response rate: 22 percent (AAPOR RR4)
- Medica enrollment file sent post-data collection
- Records matched to survey at person-level
- At least one person matched in 87% of households
- Final matched dataset: 3,823 people

CPS Questionnaire Flow



CPS Government/State Path

Government/State Path

GOVPLAN: What do you call the program?

Market

Medicaid/MnCare/Other/D/R

MARKETPLACE: Is coverage through MNsure, also known as healthcare.gov?

YES

NO or D/R

PREMIUM: Is there a premium?

YES

NO or D/R

PREMIUM: Is there a premium?

YES

NO or D/R

PREMIUM: Is there a premium?

YES

NO or D/R

SUB: Is the premium subsidized?

YES or D/R

NO

SUB: Is the premium subsidized?

YES or D/R

NO

SUB: Is the premium subsidized?

YES or D/R

NO

CPS Direct Path

Direct Path

MARKETPLACE: Is coverage through MNsure, also known as healthcare.gov?

YES

NO or D/R

PREMIUM: Is there a premium?

PREMIUM: Is there a premium?

YES

NO or D/R

YES

NO or D/R

SUB: Is the premium subsidized?

SUB: Is the premium subsidized?

YES or D/R

NO

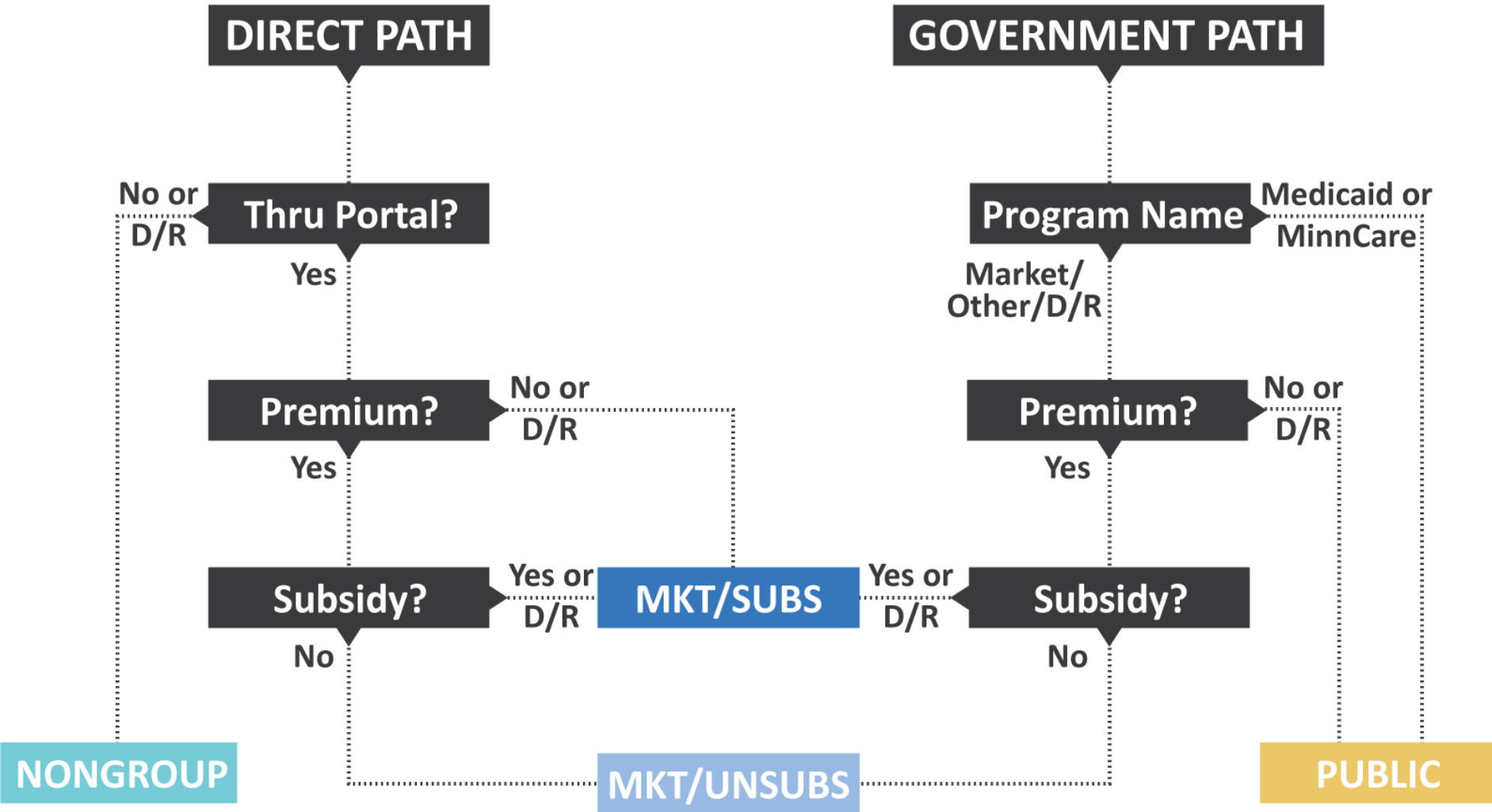
YES or D/R

NO

Blurry Line between Public and Private Coverage

- Some states have public programs with premium
 - Some low income families qualify for marketplace (aka: private) coverage with \$0 premium
 - ‘No wrong door’ portal to screen for eligibility and enrollment in public AND private programs
- ➔ No single data point identifies coverage type
- ➔ Need multiple data points (on source, program name, premium, subsidy) and an algorithm

Conceptual Algorithm (V1)



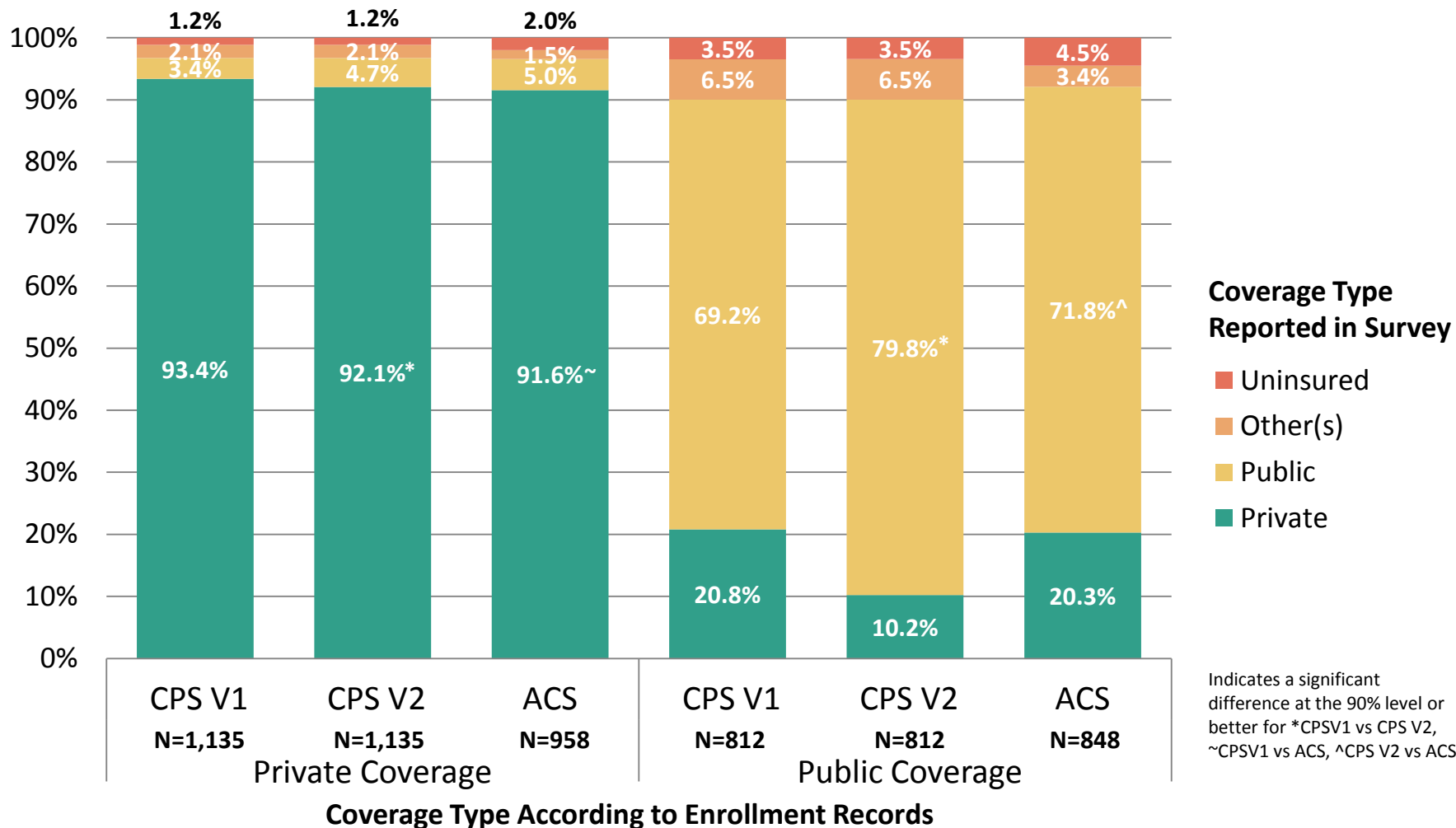
Machine Learning Algorithm (V2): Create Permutations

Path	Program Name	Marketplace	Premium	Subsidy	Permutations	
					Possible	Actual
Govt/State	1. Medicaid 2. MinnesotaCare 3. Marketplace 4. Other/D/R	1. Yes 2. No 3. D/R	1. Yes 2. No 3. D/R	1. Yes 2. No 3. D/R	68	35
Direct	n/a	1. Yes 2. No 3. D/R	1. Yes 2. No 3. D/R	1. Yes 2. No 3. D/R	21	12

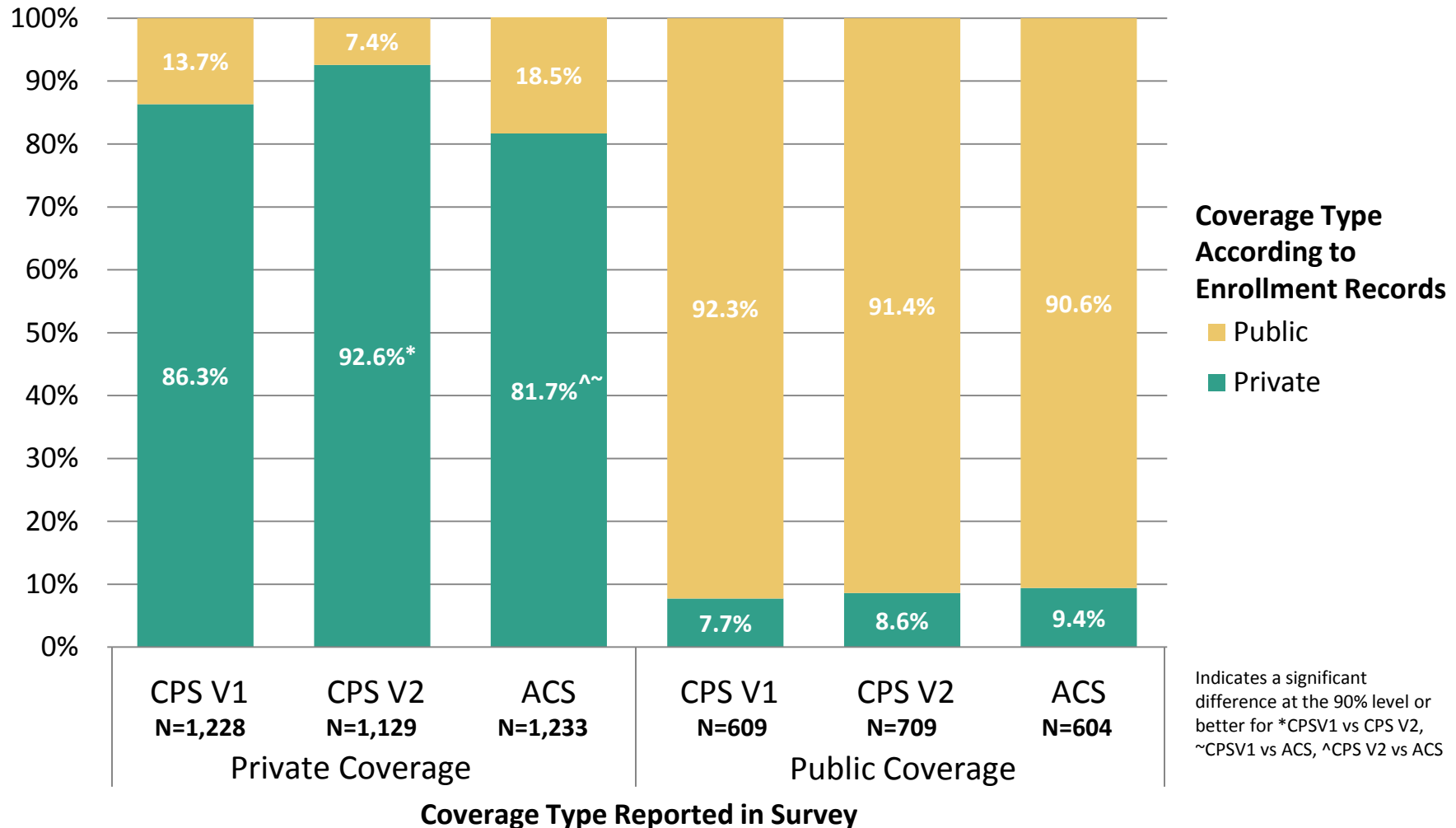
Machine Learning Algorithm (V2): Assign Coverage Type Based on Preponderance of Evidence

Permutation		Coverage According to Records				Assigned Coverage Type	Correct		Incorrect	
Code	n	ESI	Non Group	Market	Public		n	%	n	%
A	182	2	8	3	169	Public	169	93%	13	7%
B	68	14	1	40	13	Market	40	59%	28	41%
C	19	0	0	2	17	Public	17	89%	2	11%
(etc.)										
All	1,395						1,225	88%	170	12%

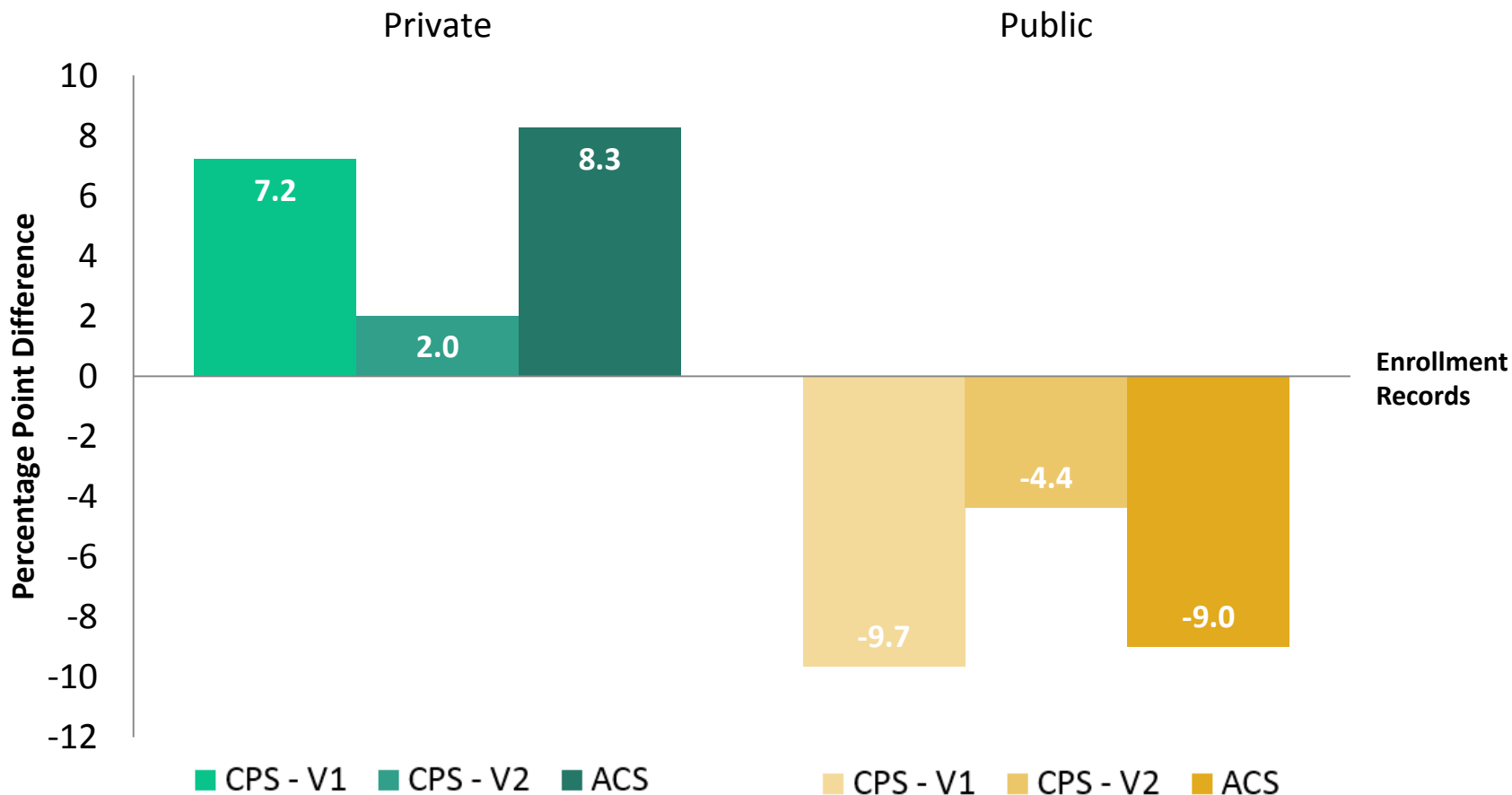
Coverage Reported in the Survey Among Those Public or Private Enrollees



Coverage Validated in the Records Among Those with Reported Public or Private Coverage



Percentage Point Difference Between Prevalence in Records and Survey



Next Steps

- Obtain benchmarks from administrative records and state survey
- Recalculate CHIME estimates taking into account:
 - Relative proportions of enrollees in each coverage type
 - Magnitude and direction of misreporting across coverage types
- Decompose estimate for each coverage type:
 - Accurate (records=survey report)
 - False positives (survey=yes; records=no)
 - False negatives (survey=no; records=yes)
- Explore utility of experimental Premium/Subsidy questions in ACS
- Examine characteristics of accurate and inaccurate reporters
- Conduct similar analysis on calendar year estimates for CPS
- Examine transitions within and across coverage types for CPS

Thank you!

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General Source of Coverage Reported within Strata from Records

General Source Reported in Survey	Coverage Type According to Medica Records				
	Non Group	Market/ Unsubs	Market/ Subs	Medicaid	Minn Care
ESI	17%	22%	5%	6%	6%
Direct	78%	45%	39%	2%	10%
Govt/State	6%	27%	48%	83%	80%
Other	6%	8%	13%	14%	8%
Uninsured	1%	0%	2%	5%	1%

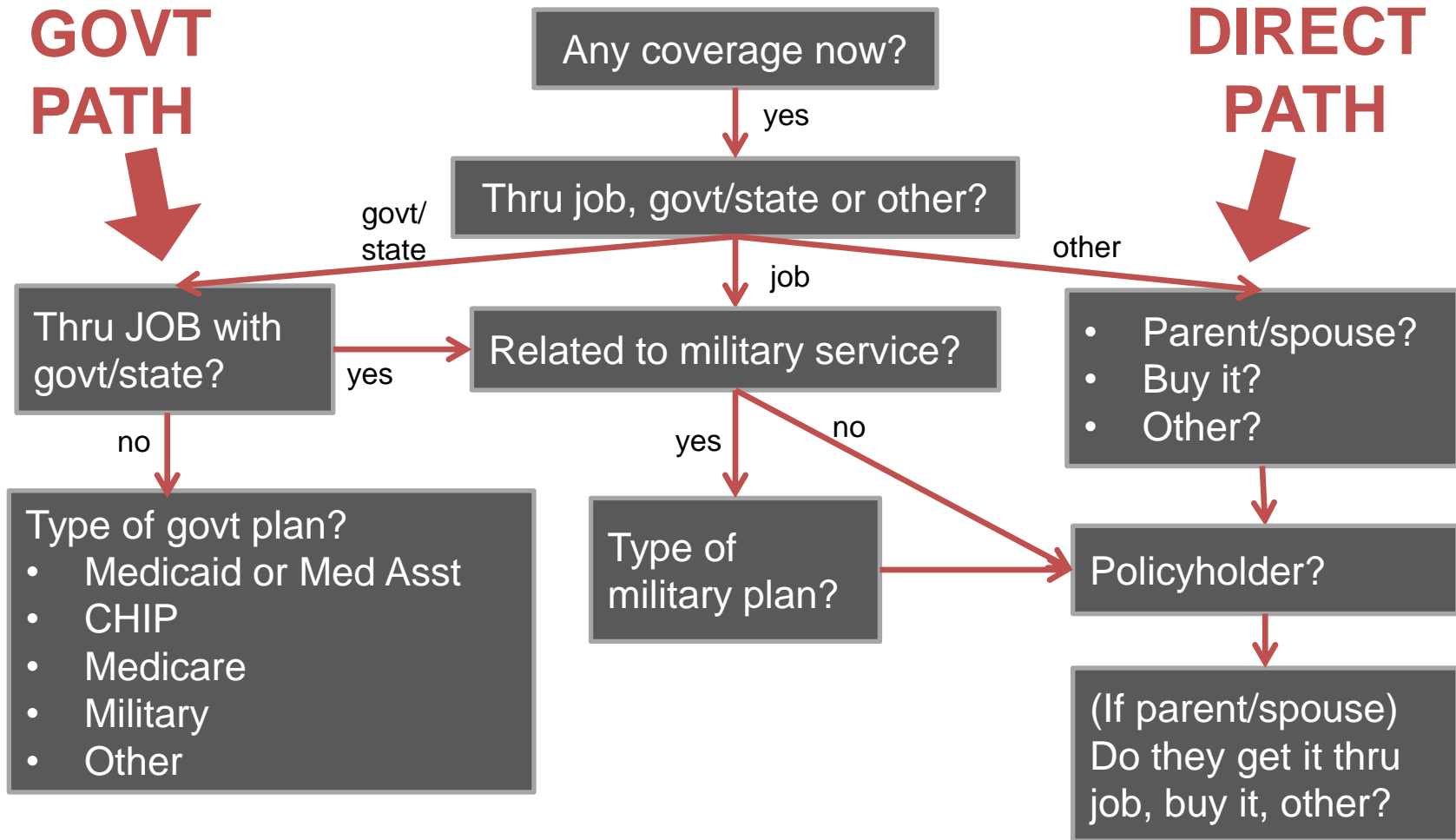
Program Name Reported within Strata (Govt/State source only)

Program Name Reported in Survey	Coverage Type According to Medica Records				
	Non Group	Market/ Unsubs	Market/ Subs	Medicaid	Minn Care
Medicaid	22%	14%	5%	39%	5%
MinnCare	25%	7%	18%	25%	56%
Marketplace	19%	36%	67%	15%	30%
Other	33%	43%	10%	21%	9%

Features of Coverage Type Reported within Strata

Reported in Survey		Coverage Type According to Medica Records				
		NonGroup	Market/Unsub	Market/Subs	Medicaid	Minn Care
Market place	Yes	9%	89%	87%	64%	88%
	No	91%	11%	9%	22%	8%
	D/R	2%	0%	4%	14%	5%
Premium	Yes	97%	95%	95%	12%	78%
	No	4%	5%	3%	87%	21%
	D/R	2%	0%	3%	1%	3%
Subsidy	Yes	5%	9%	90%	87%	85%
	No	91%	86%	9%	13%	7%
	D/R	4%	6%	1%	0%	7%

CPS General Flow



Govt and Direct Path Verbatim Marketplace/Portal Questions

GOVT PATH



(If type of govt plan was Medicaid/Other/D/R):
GOVPLAN: What do you call the program?

- Medicaid
- Medical Assistance
- Indian Health Service
- MinnesotaCare
- MCHA
- PMAP
- Healthcare.gov
- Plan thru Mnsure
- Other govt plan
- Other/specify

DIRECT PATH



(If “buy it”)
Is that coverage thru Mnsure, which may also be known as healthcare.gov?

All responses but
Healthcare.gov
and MNsure



What do you call it –
Mnsure or
healthcare.gov?

Premium and Subsidy Verbatim Questions

Is there a monthly premium for this plan?

READ IF NECESSARY: A monthly premium is a fixed amount of money people pay each month to have health coverage. It does not include copays or other expenses such as prescription costs.

Yes

Is the cost of the premium subsidized based on family income?

READ IF NECESSARY: A monthly premium is a fixed amount of money people pay each month to have health coverage. It does not include copays or other expenses such as prescription costs.

READ IF NECESSARY: Subsidized health coverage is insurance with a reduced premium. Low and middle income families are eligible to receive tax credits that allow them to pay lower premiums for insurance bought through healthcare exchanges or marketplaces.