

# Accuracy of ACS Health Insurance Estimates: Survey Reports versus Enrollment Records

Joanne Pascale, US Census Bureau

Kathleen Call, State Health Access Data Assistance Center

Angela Fertig, Medica Research Institute

Don Oellerich, Office of the Assistant Secretary for Planning and Evaluation, HHS

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*Any views expressed are those of the author and not necessarily those of the U.S. Census Bureau.*



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# Motivation for Research

- Accuracy of survey reports of health coverage:
  - Insured/uninsured = ok
  - Type of coverage (employer-sponsored, Medicaid, etc.) = not ok
- Limited research on reporting accuracy by coverage type
  - Medicaid is under-reported, but some other type of coverage is often reported instead
    - Medicaid under-count; small overestimate of uninsured
- Reporting accuracy for coverage type useful:
  - As a component of the uninsured measure
  - In and of themselves to examine shifts from public to private; vice versa
- Limited data on reporting accuracy pre- and post-ACA
- Objectives: expand literature beyond Medicaid and:
  - examine levels and patterns of misreporting for range of coverage types
  - explore how over- and under-reporting offset each other

# CHIME Study

- “Comparing Health Insurance Measurement Error”
- Partnered with Medica Health Plans (MHP) based in Minnesota
- MHP offers several types of coverage:
  - Employer-sponsored insurance (ESI)
  - Direct purchase (on and off marketplace)
  - Medicaid
  - MinnesotaCare (state-sponsored public plan)

# CHIME Basic Study Design

- Start with enrollment records from MHP
- Use records as sample for household phone number
- Administer much-abbreviated ACS survey, including full series on health insurance
- Compare survey estimates to enrollment records on:
  - Status (covered/not covered)
  - Coverage type

# CHIME Survey Methods

- 15-minute phone survey conducted in Spring, 2015
- Content:
  - Demographics
  - Labor force
  - Government program participation (food stamps, WIC, etc.)
  - Health insurance
- Stratified sample: oversampled public, undersampled ESI
- Data collected on all household members
- Household-level response rate: 22% (conducted non-response analysis)
- MHP enrollment file sent post-data collection
- Records matched to survey data at person-level
- Analysis file restricted to those under 65
- Weighted data to MHP population totals

# MHP Population, HH Sample and Person-level Matched Cases Across Strata

Coverage Type according to MHP Records	MHP Population when Sampled (December 2014)		Sample Phone Numbers	ACS Matched Sample		
	N	%		HH	Person	
			n	n	n	%
ESI	463,000	67%	2,496	124	246	16%
NonGroup	22,000	3%	4,187	274	538	36%
Marketplace	1,700	0.2%	1,124	102	152	10%
Medicaid	181,000	26%	4,989	177	450	30%
MinnesotaCare	26,000	4%	2,447	4	31	2%
ESI/Public trans	3,000	0.4%	757	37	90	6%
<b>TOTAL</b>	<b>696,700</b>	<b>100%</b>	<b>16,000</b>	<b>718</b>	<b>1,507</b>	<b>100%</b>

# 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"/> |

# Reporting Accuracy Metrics

- Sensitivity: among those enrolled in Cov Type X, how many reported Cov Type X?
- Predictive Power: among those reporting Cov Type X, how many were enrolled in Cov Type X?
- Prevalence: how does prevalence of Cov Type X compare between records and survey?



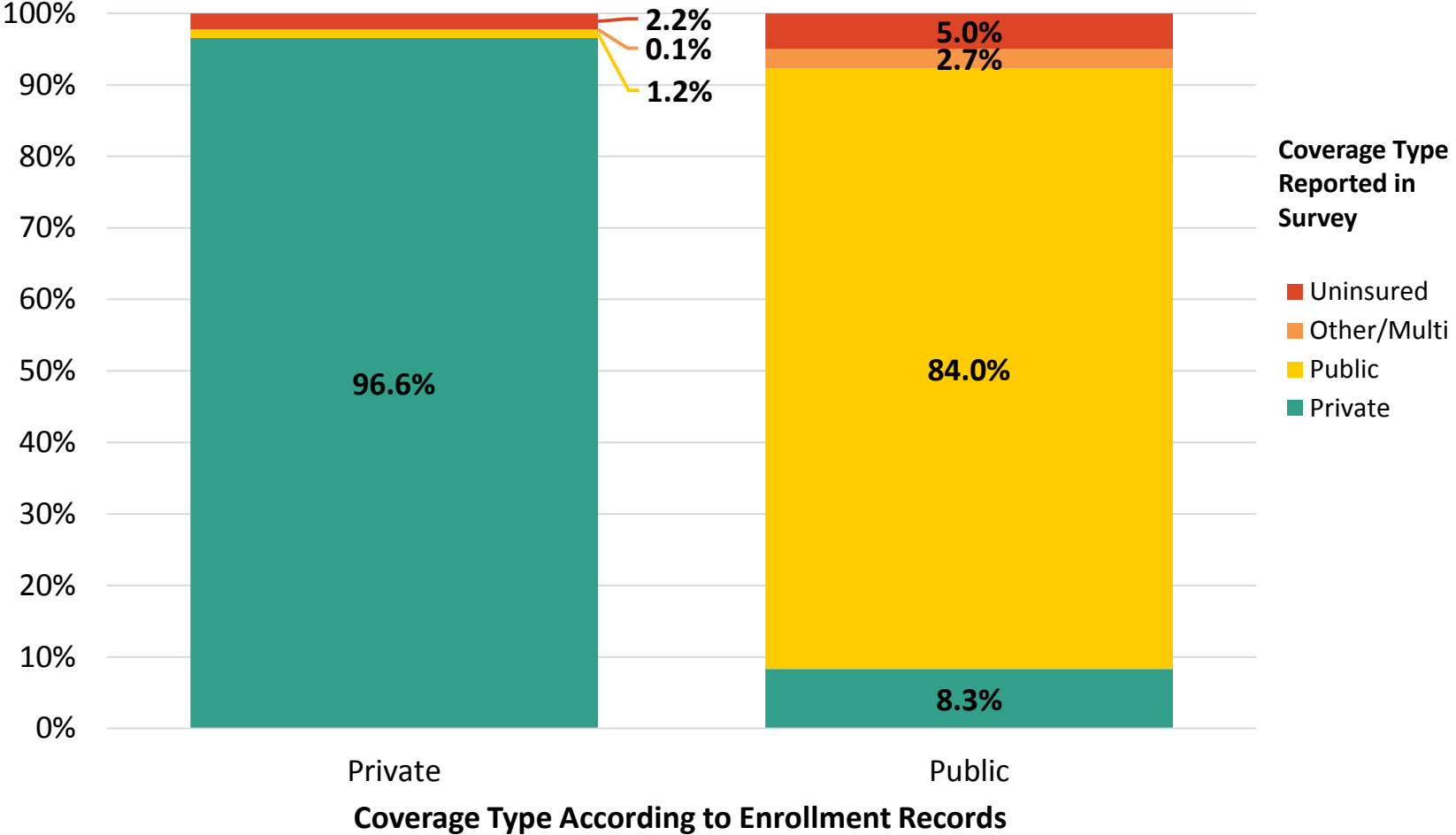
# Summary Results

	Sensitivity	Predict Power	Prevalence Estimates			
			MHP	ACS	ACS-MHP	
Private	96.6	95.6	67.1	73.9	6.8	***
Public	84.0	92.8	25.7	24.2	-1.6	**
ESI	95.1	96.7	63.6	68.6	5.0	***
Direct	84.4	47.0	3.5	6.4	2.9	***
Insured	97.1	n/a	100	97.1	-2.9	***

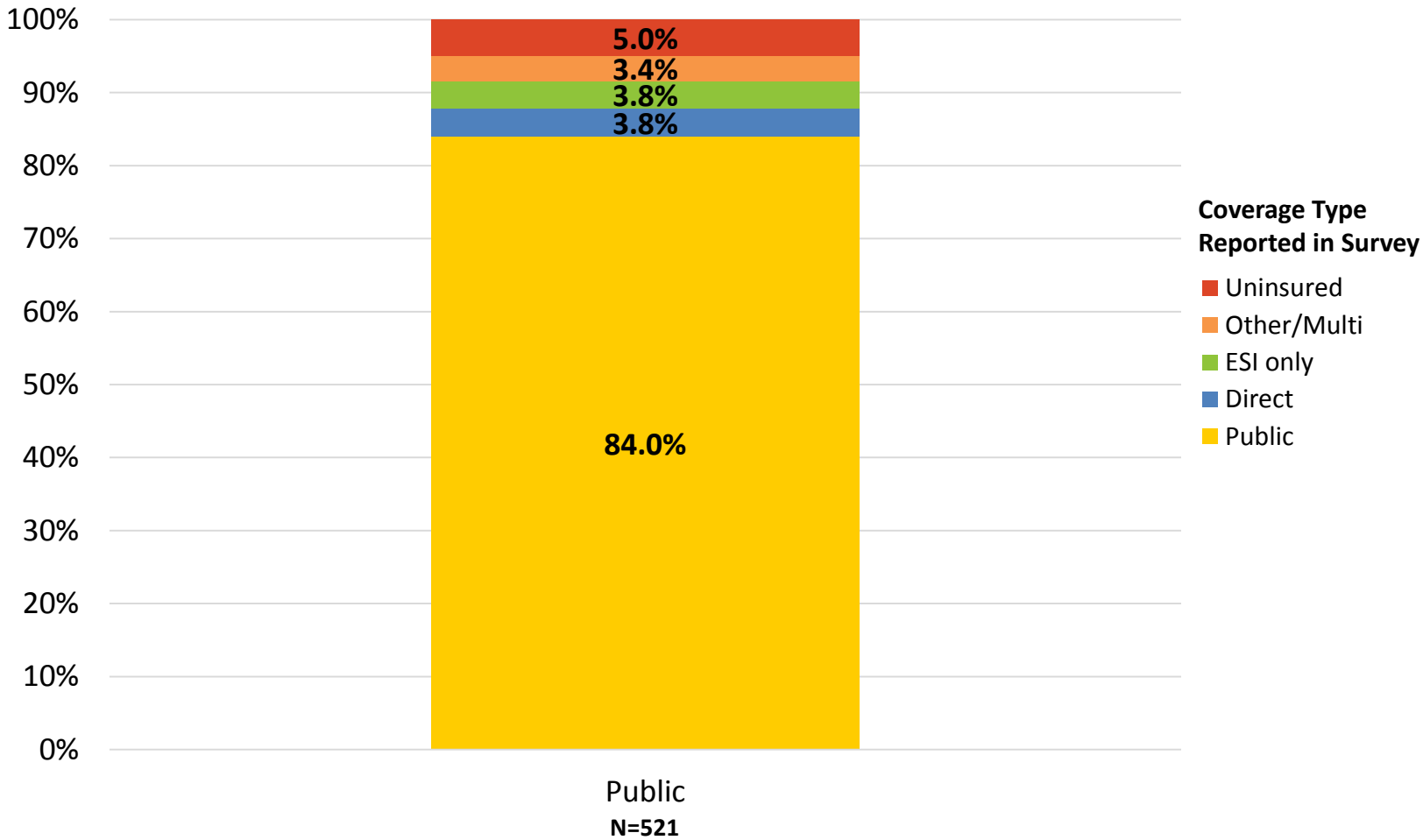
\*\*\*  $p < .01$

\*\*  $p < .05$

# Sensitivity: Coverage Type Reported among Private and Public Enrollees

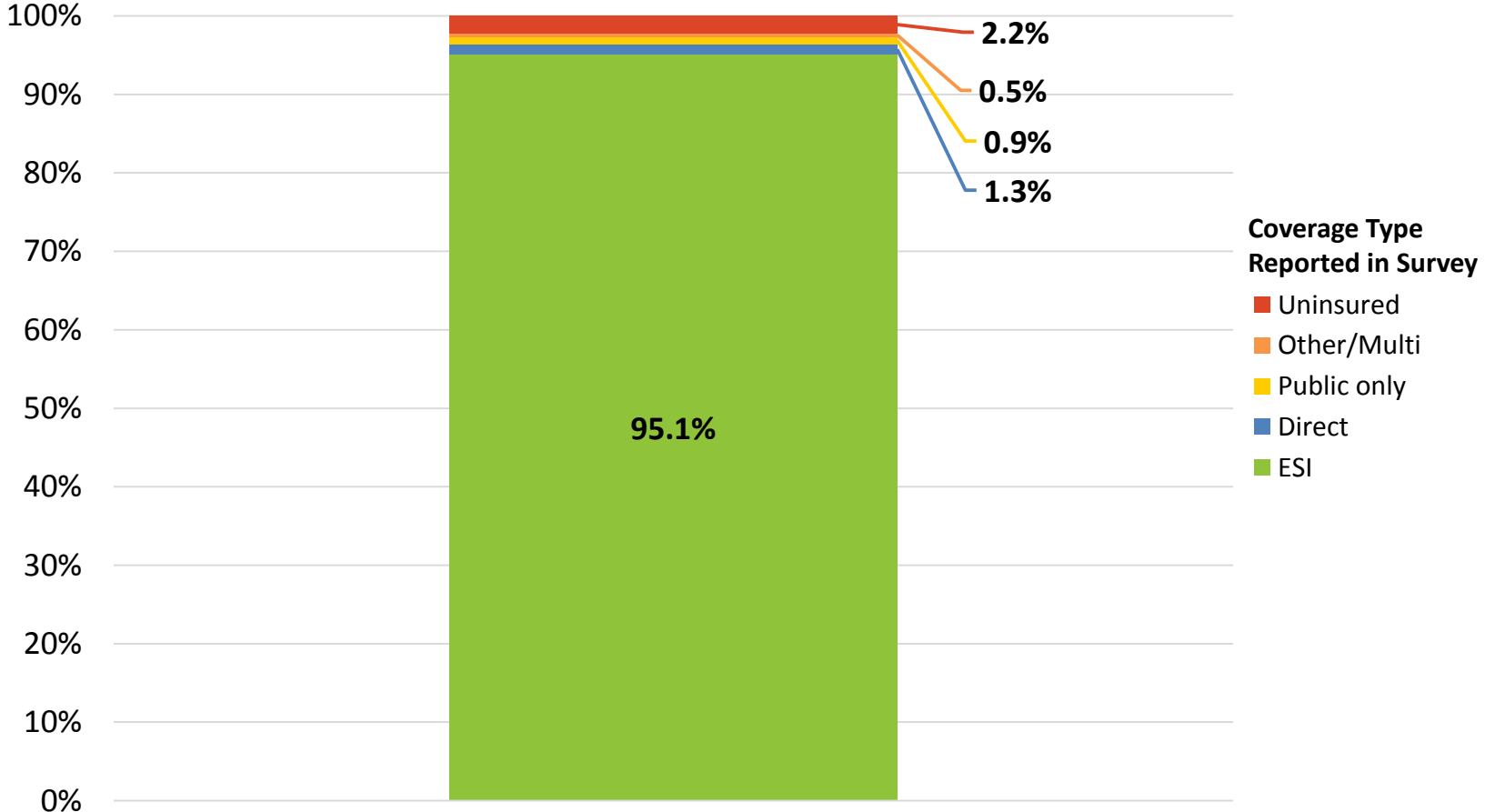


# Sensitivity: Detailed Coverage Type Reported among Public Enrollees



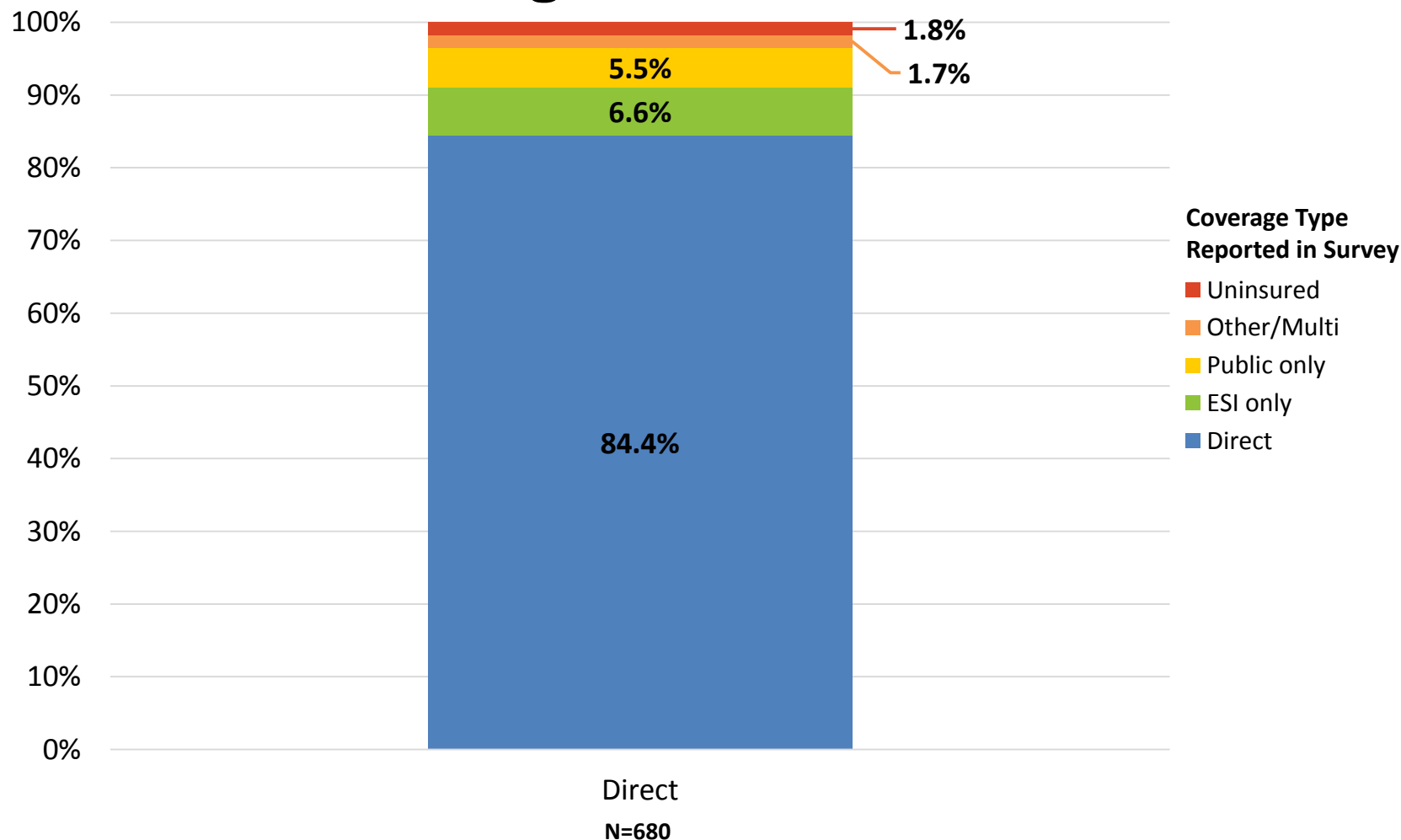
Public Insurance Coverage According to Enrollment Records

# Sensitivity: Detailed Coverage Type Reported among ESI Enrollees



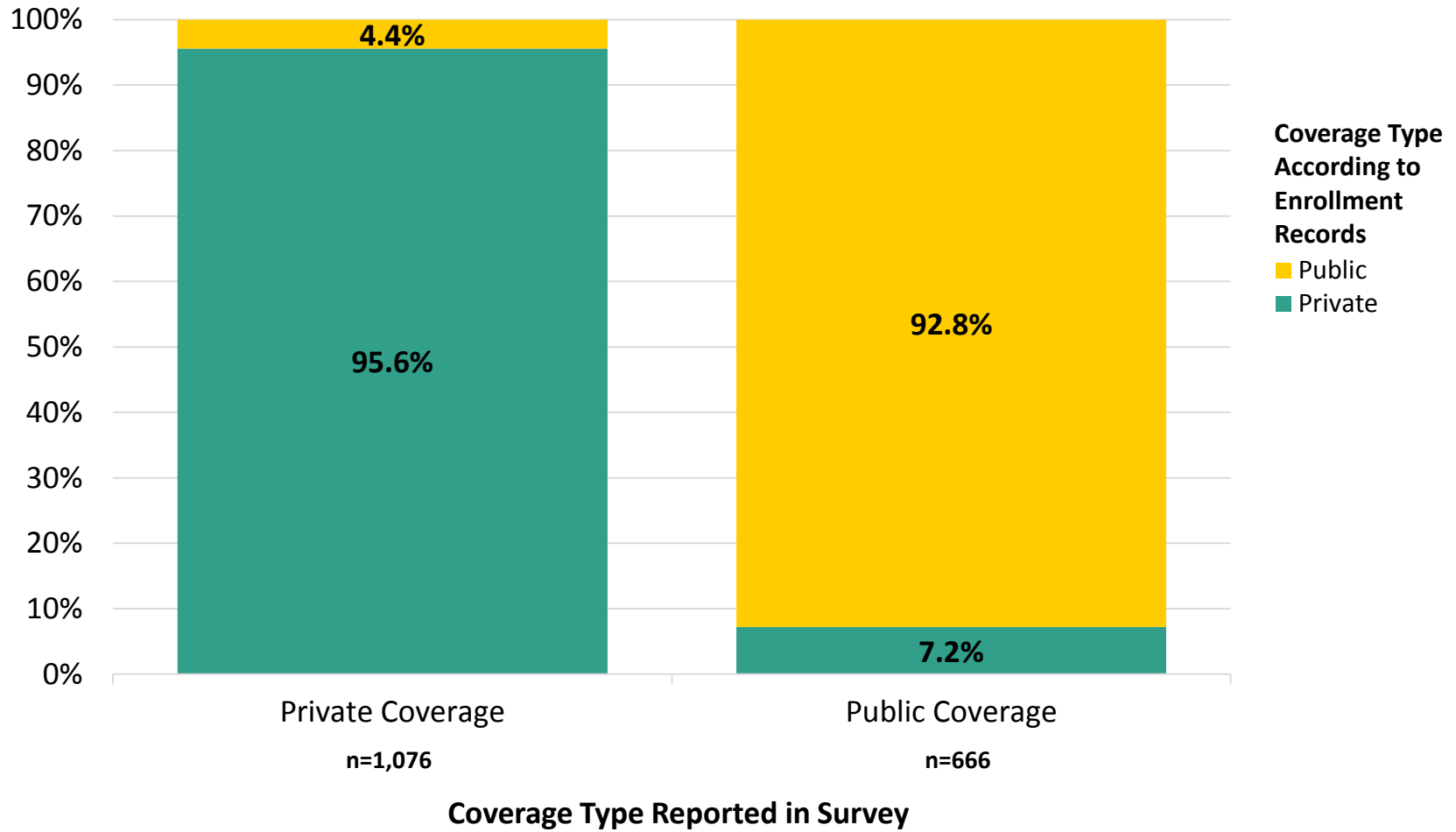
ESI  
N=278  
ESI Coverage Type According to Enrollment Records

# Sensitivity: Detailed Coverage Type Reported among Direct Enrollees

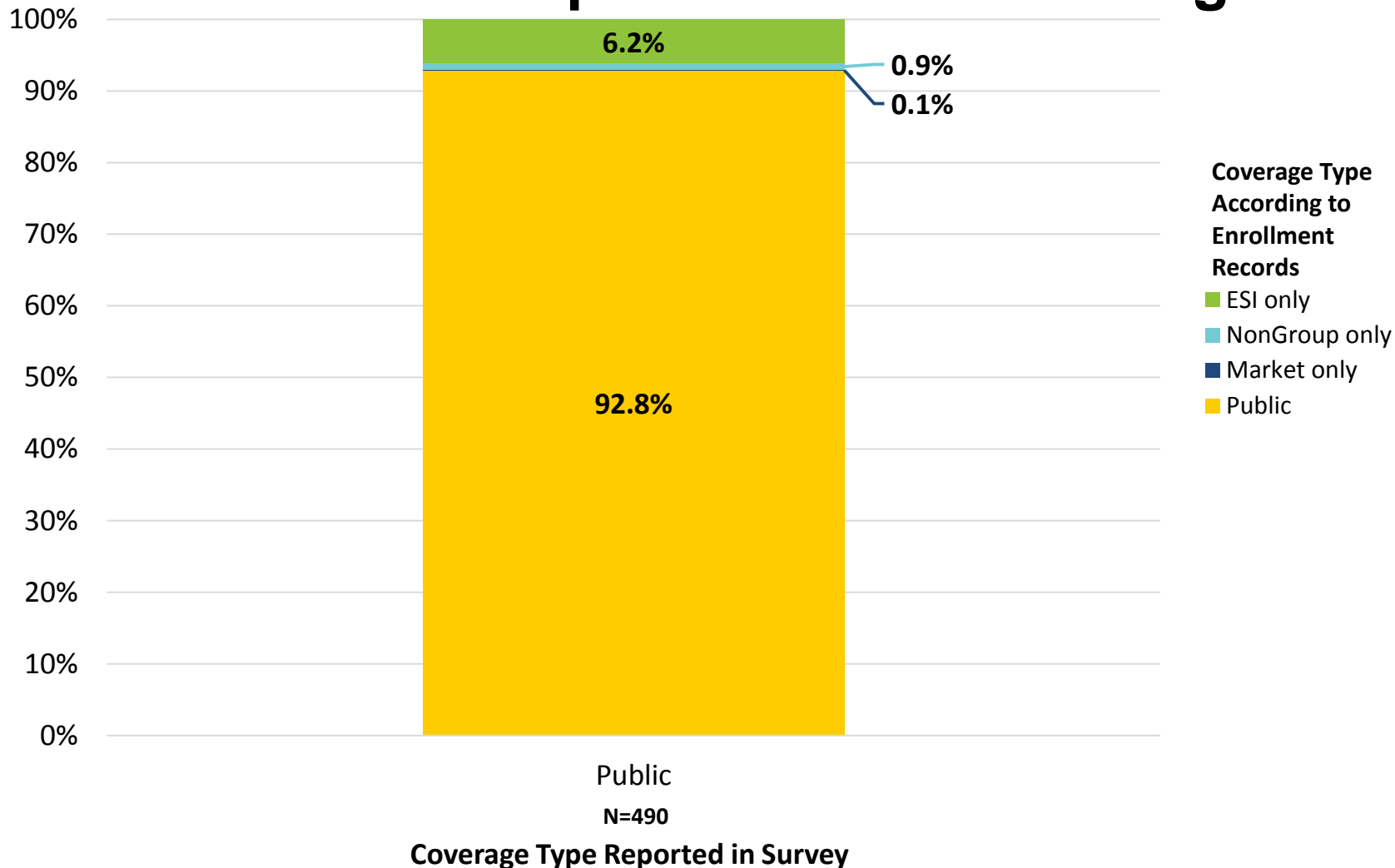


Direct Coverage According to Enrollment Records

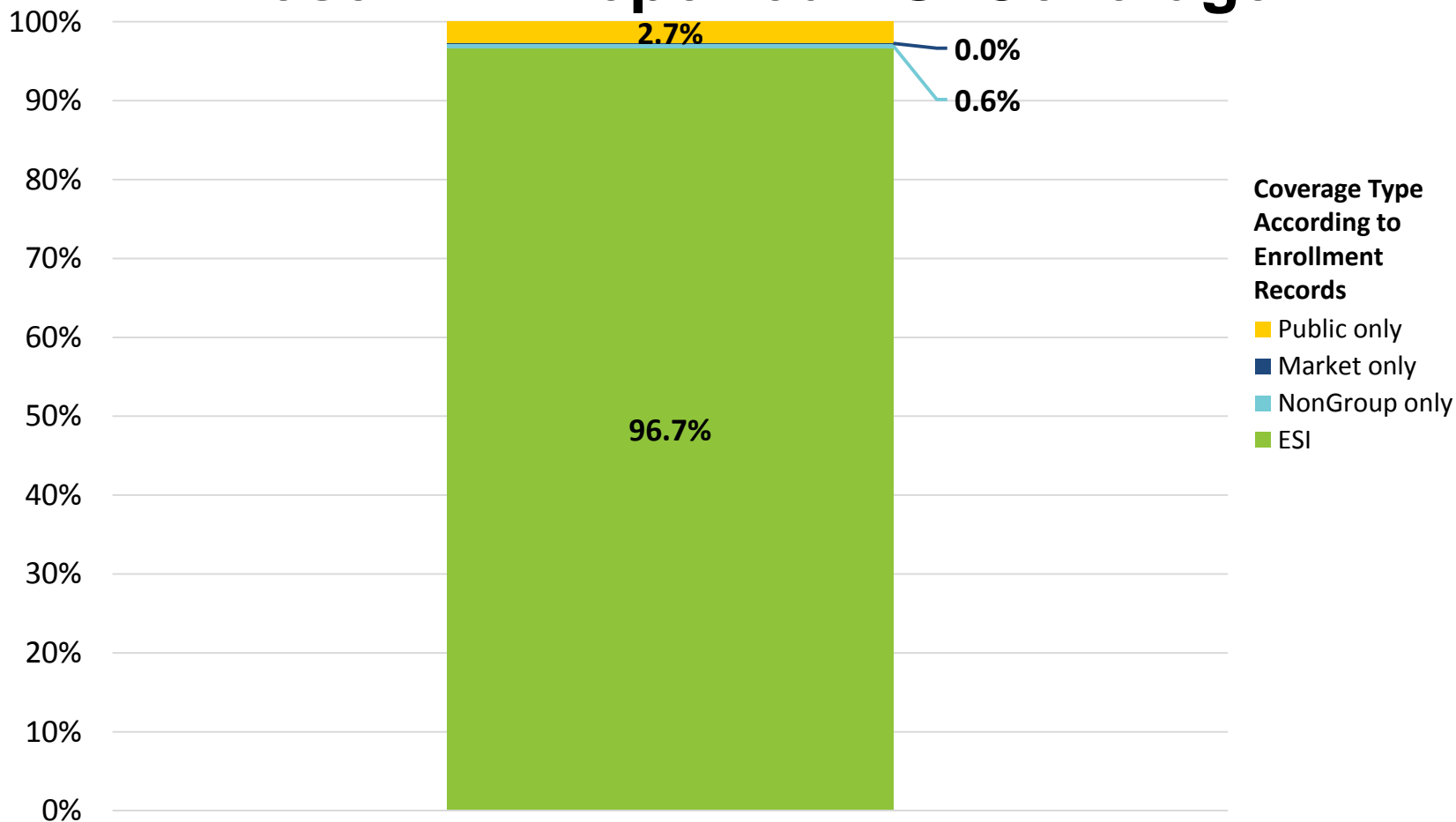
# Predictive Power: Enrollment among those with Reported Private and Public Coverage



# Predictive Power: Detailed Enrollment among those with Reported Public Coverage



# Predictive Power: Detailed Enrollment among those with Reported ESI Coverage

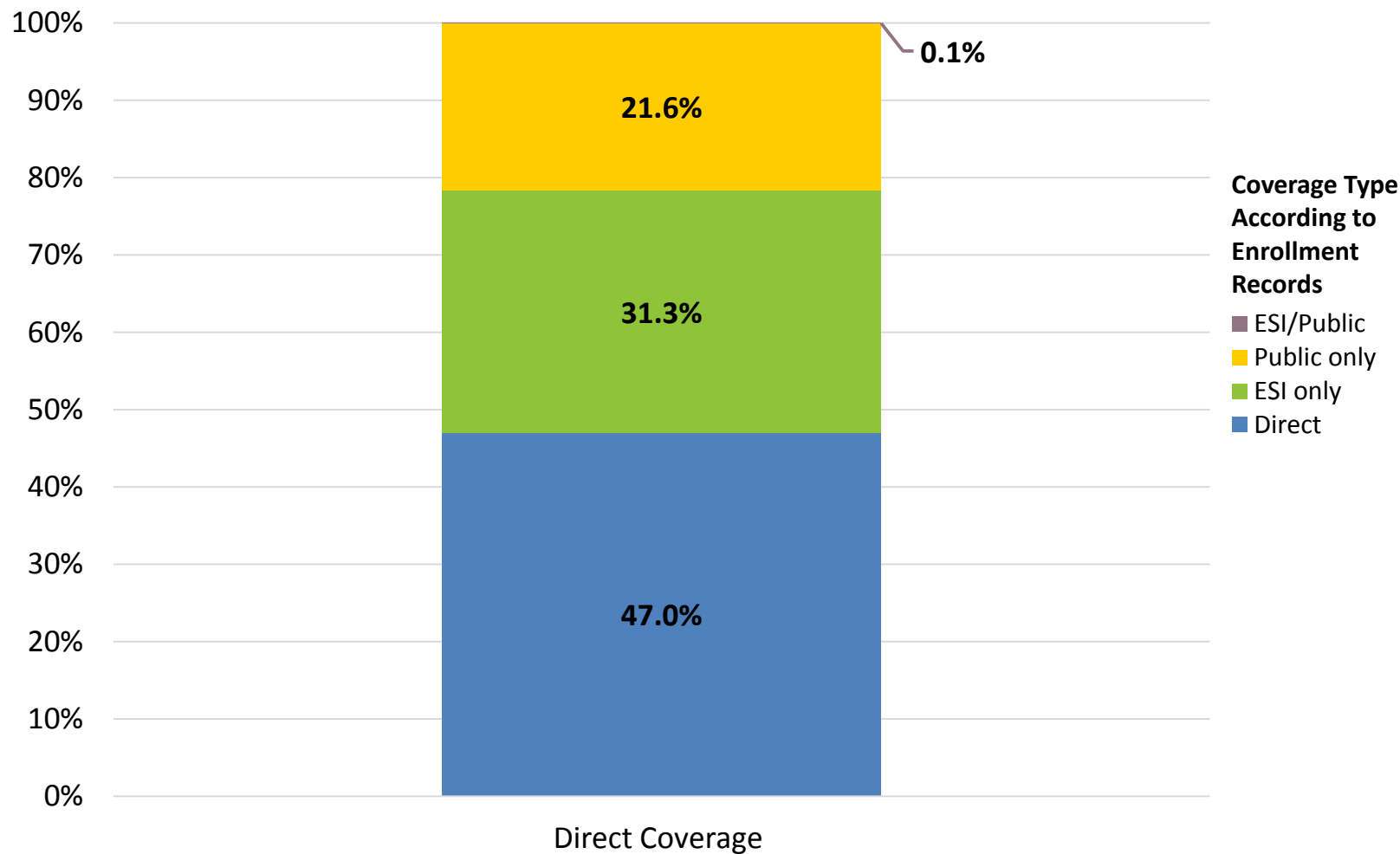


ESI Coverage  
N=399

Coverage Type Reported in Survey



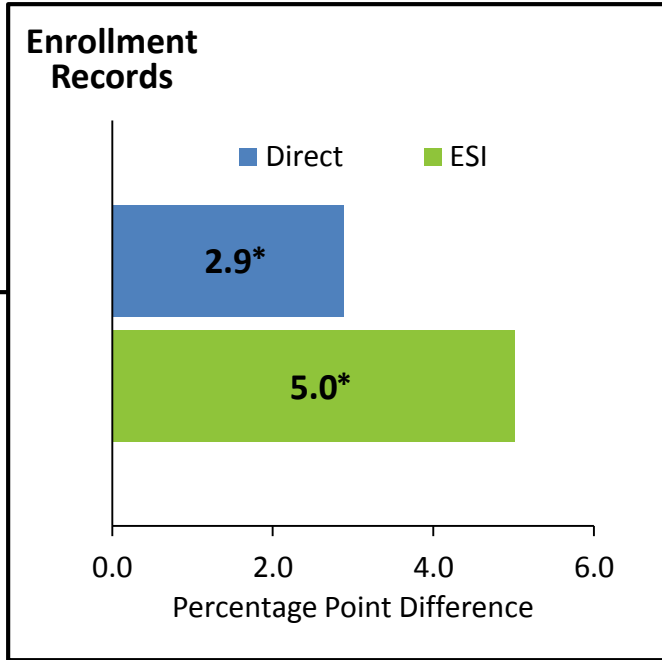
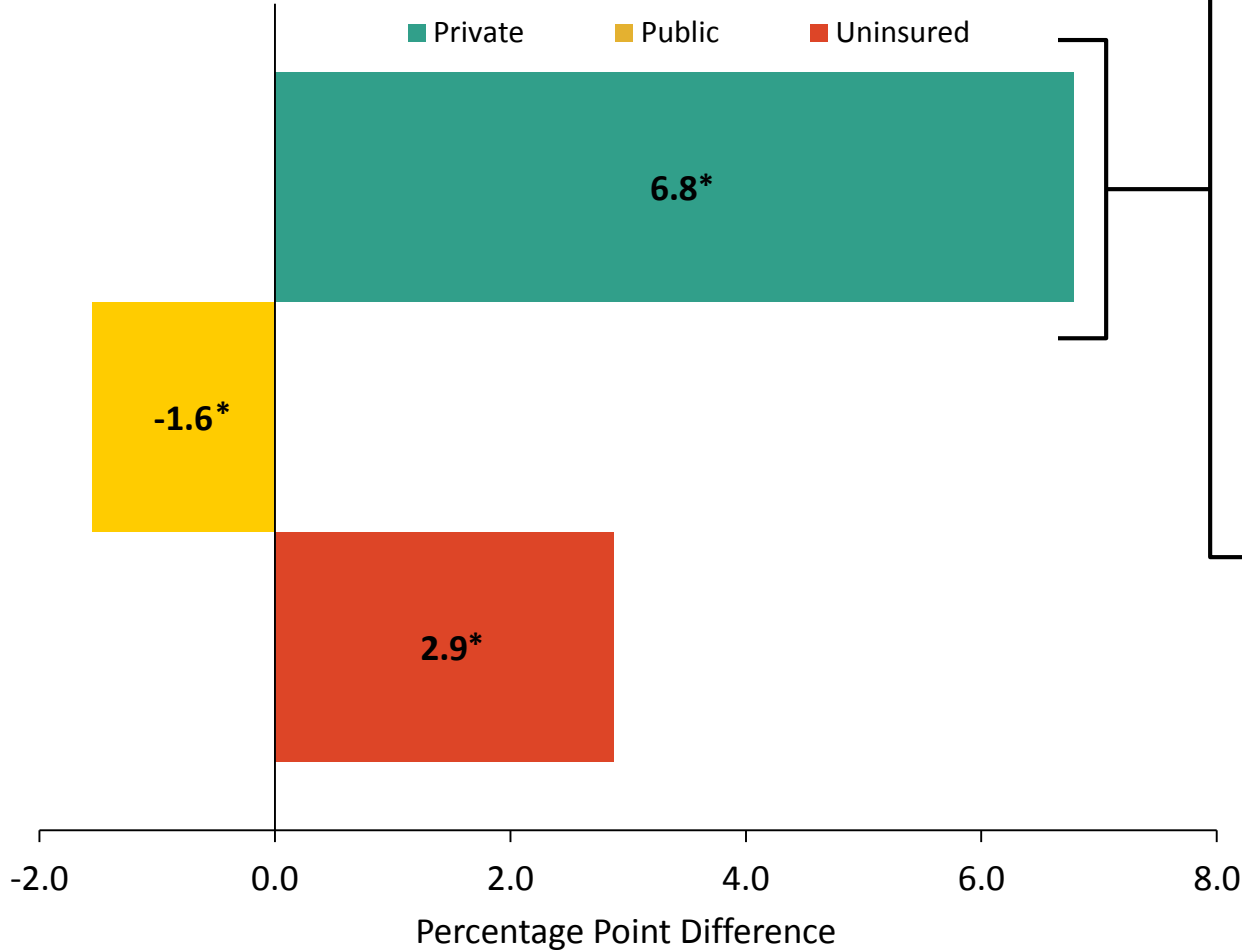
# Predictive Power: Detailed Enrollment among those with Reported Direct Coverage



Direct Coverage  
n=712  
Coverage Type Reported in Survey

# Prevalence: MHP Population minus Survey Estimates

Enrollment Records



\*Indicates significant differences at the 95% level or better between Medica records and the ACS

# Take-Away: Baseline Accuracy Metrics

	Sensitivity	Predict Power	Prevalence Estimates			
			MHP	ACS	ACS-MHP	
Private	96.6	95.6	67.1	73.9	6.8	***
Public	84.0	92.8	25.7	24.2	-1.6	**
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# Next Steps

- Examine characteristics of accurate and inaccurate reporters
- Compare to CPS reporting accuracy metrics
- Explore utility of experimental Portal/Premium/Subsidy questions in ACS to categorize public, marketplace, and non-group coverage

# Portal, Premium and Subsidy Verbatim Questions

**PORTAL:** Was this plan obtained through a State or Federal Marketplace, Healthcare.gov, or a similar state website?

**PREMIUM:** 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.

**SUBSIDY:** 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.

# Thank you!

Contact Information:

Joanne Pascale

[Joanne.Pascale@census.gov](mailto:Joanne.Pascale@census.gov)

Kathleen Call

[callx001@umn.edu](mailto:callx001@umn.edu)

Angela Fertig

[Angela.Fertig@Medica.com](mailto:Angela.Fertig@Medica.com)