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Correlates of Nonresponse in the 2012 and 2014 Medical Expenditure Panel Survey

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MEPS Key Features

- U.S. civilian noninstitutionalized population
- In-person interviews of 14,000 families per year
- Average Round 1 interview length ~80 minutes per family
- Panel Survey – new panel introduced each year
 - ▶ 5 in-person interviews covering 2 calendar years for each person in sampled families
 - ▶ Data from 1st year of new panel combined with data from 2nd year of previous panel



MEPS Key Features (Cont.)

- Each annual MEPS panel of households is a subsample of responding households (from prior year) of the National Health Interview Survey (NHIS)
- MEPS conducted by AHRQ using contractors
 - ▶ Household Component (HC)—Westat
 - ▶ Medical Provider Component (MPC) –RTI
 - ▶ Insurance Component (IC)—Census
- Used to estimate access to care, medical care utilization, and expenses
- Useful for informing policymakers, providers, and consumers

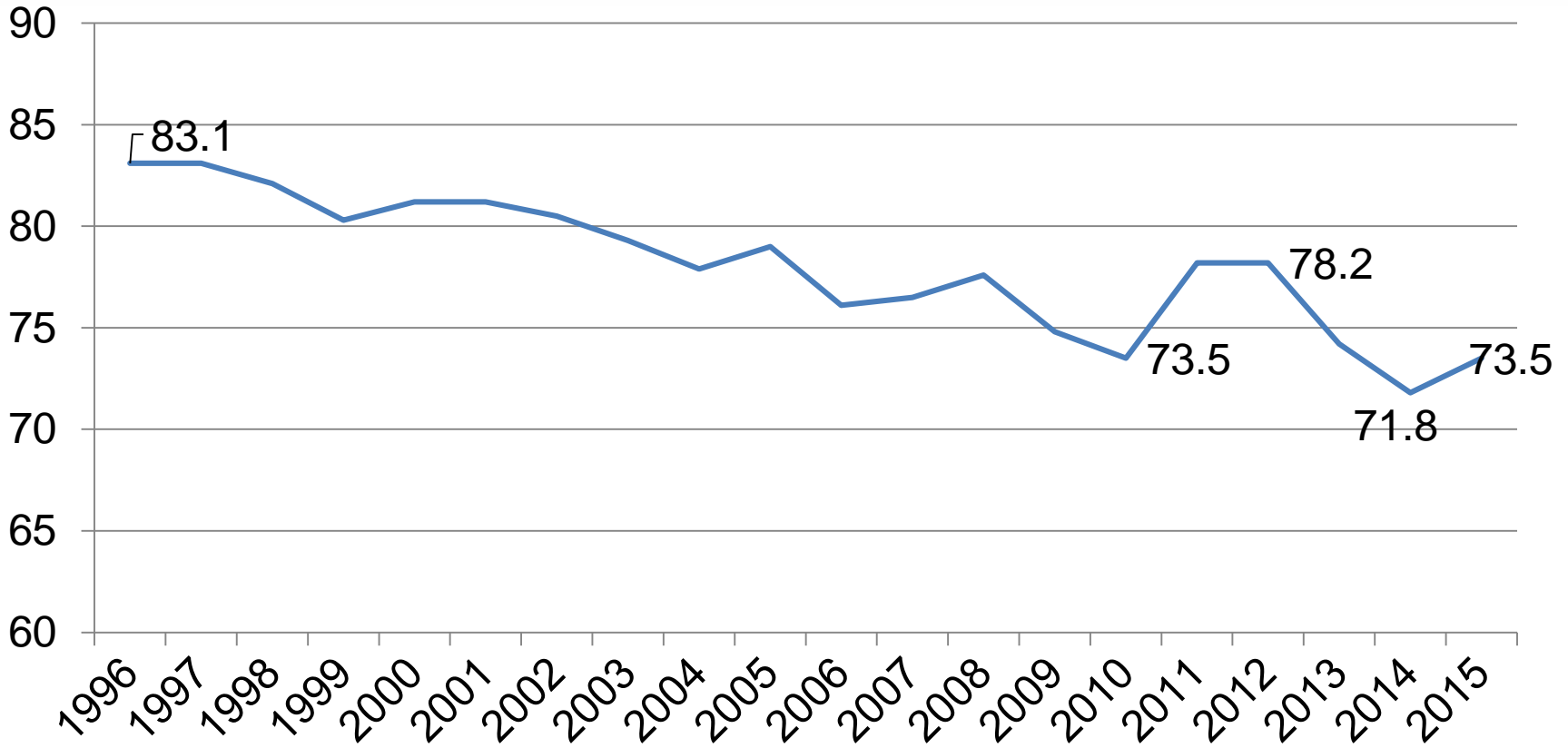


Background: HC Response rates by data collection year, 2009-2015

		Round 1	Round 2	Round 3	Round 4	Round 5
2015	Panel 20	73.5	93.4			
	Panel 19			94.7	96.7	
	Panel 18					98.4
2014	Panel 19	71.8	93.6			
	Panel 18			94.5	97.1	
	Panel 17					98.5
2013	Panel 18	74.2	92.9			
	Panel 17			95.2	95.5	
	Panel 16					97.6
2012	Panel 17	78.2	94.2			
	Panel 16			96.1	97.3	
	Panel 15					98.2
2011	Panel 16	78.2	94.7			
	Panel 15			95.4	97	
	Panel 14					98.3
2010	Panel 15	73.5	92.2			
	Panel 14			94.9	96.8	
	Panel 13					97.9
2009	Panel 14	74.8	91.8			
	Panel 13			96.2	97	
	Panel 12					97.8



Background: MEPS Round 1 conditional response rates: 1996-2015





Background

- Declining R 1 response rates 1996 to 2010
 - ▶ General problem in many surveys
- Improving R 1 response rates 2011-2012
 - ▶ Focus on improving response rates
 - Increased incentives in 2011 (P16) to \$50 (from \$30)
 - Longer R1 field period in 2011 and 2012
 - 26 weeks (from 23 weeks)
- R 1 response rates lower in 2013-2014
 - Shift in focus on a quality initiative, shorter field periods and cost consideration stopping rules



Background: Number of Weeks in Field for MEPS Round 1, 2010-2015

	Weeks in field		Conditional response rate
2010 and earlier	23	Feb1-Jul 16	73.5*
2011, Panel 16	26	Jan 10-Jul 16	78.2**
2012, Panel 17	26	Jan 10-Jul 16	78.2
2013, Panel 18	24	Jan 10-June 30	74.2
2014, Panel 19	24	Jan 24-Jul 14	71.8
2015, Panel 20	24	Jan 24-Jul 14	73.5

* 2010 conditional response rate

** Weighted estimate. An interim nonresponse subsampling procedure was implemented.



Research Question

- What are variables that Field Managers can control that affect non-response rates?
 - ▶ 2017 JSM presentation-- 2010 and 2012 R1 non-response rates
 - Compare effects of incentive and length of field period
 - ▶ **2018 FCSM ANALYSIS**—2012 and 2014 R1 non-response rates
 - compare effects of length of field periods and quality initiative and cost consideration stopping rules



Methods_Data

- NHIS public use file merged with MEPS Point in Time File (PIT) file
- PIT file has Round 1 data of current panel and Round 3 data of previous panel
- Round 1 nonresponse=sampled persons who were not MEPS PIT Round 1 responders



2018 FCSM Analysis

- Examine Round 1 non-response rates for 2011NHIS/**2012MEPS** and 2013NHIS/**2014MEPS**
 - ▶ **Bivariate descriptive analysis** for 2012 & 2014 MEPS
 - SUDAAN Proc crosstab
 - ▶ **Multivariate logistic regression model** for 2013NHIS/**2014MEPS**
 - Dependent variable: MEPS R1 non-responder
 - Independent variables: explanatory variables from NHIS
 - SUDAAN Proc rlogist



Research Variables Used

NHIS		MEPS
Age	Health Insurance Coverage	PIT responder: response vs. non-response
Sex	Health status	
Region	Family poverty ratio	
Education	Health Care Spending/Yr	
Race/Ethnicity	NHIS completes vs. partials	
Marital Status		
Number of Children		
Number of adults		
U.S. Born		
Citizenship		



Bivariate descriptive analysis

2012 and 2014 non-response rates

- NR rates increased for all persons from 25.9% in 2012 to 32.9% in 2014 (7 percentage point increase)
- NR rates increased or remained the same for all identified subgroups (NHIS variables previous yr)
- Largest percentage point increases
 - ▶ GE 2000 to LT 3000 HC spending (10.1)
 - ▶ Poverty ratio GE 300 to LT 400 (9.4)
 - ▶ 4-yr college grads (9.0)
 - ▶ Widowed/Divorced/Separated (8.9)
 - ▶ Not Covered by health insurance (8.9)
 - ▶ GE 3000 HC spending (8.8)
 - ▶ West region (8.6)

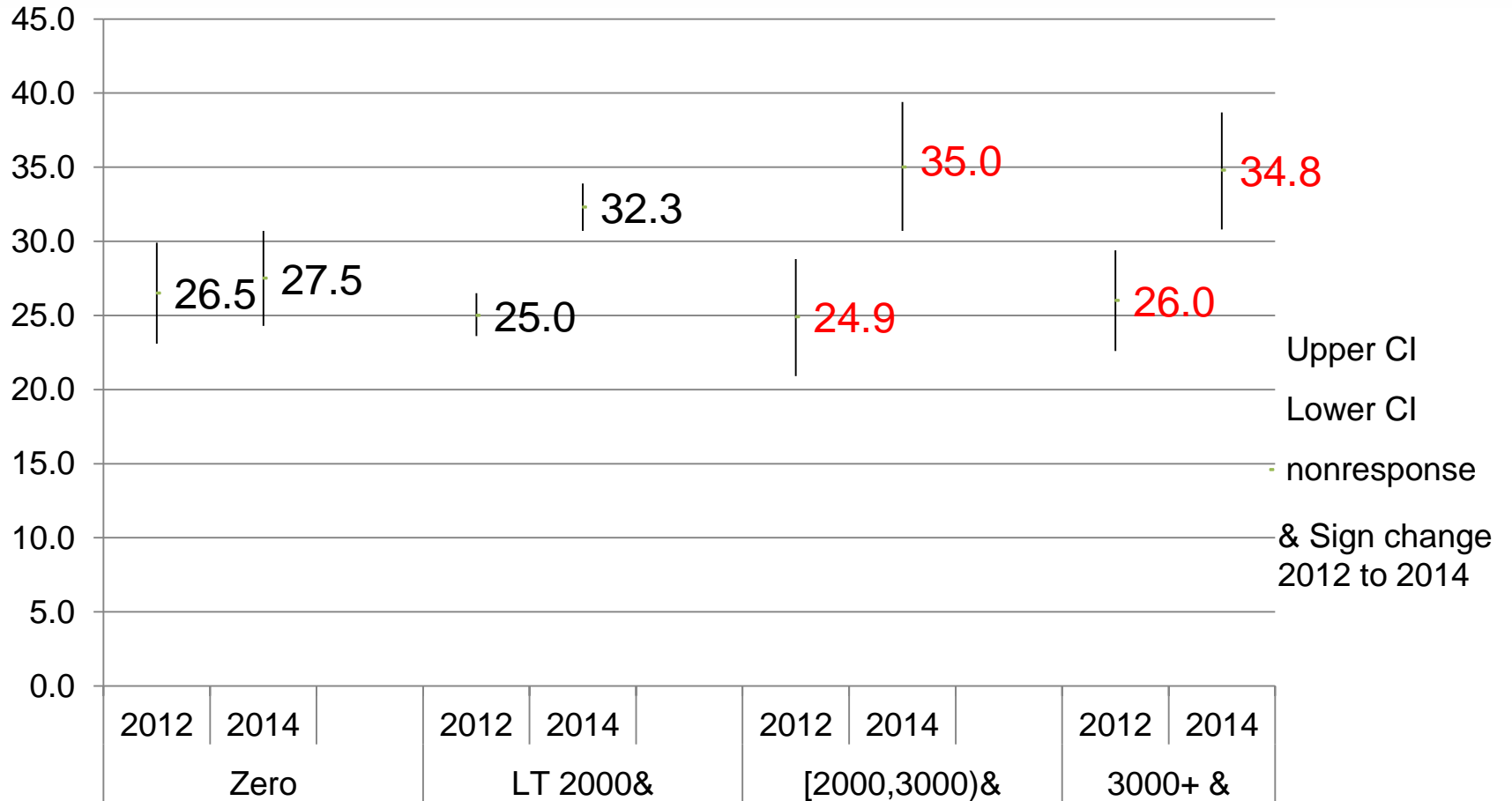


Bivariate descriptive analysis 2012 and 2014 nonresponse rates

- No significant increases for (NHIS variables):
 - ▶ Non-citizens
 - ▶ Zero healthcare spending

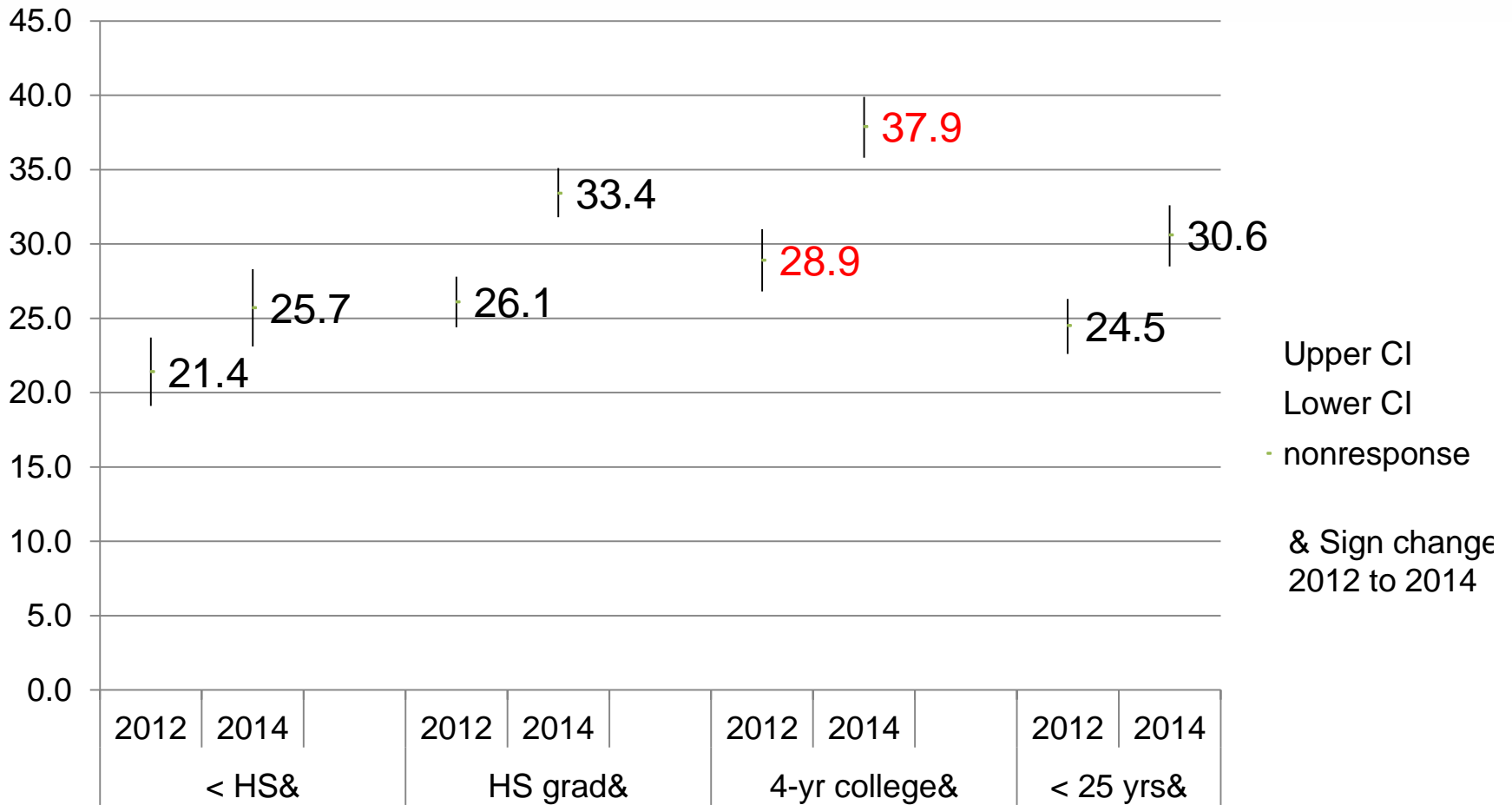


2012 and 2014 Nonresponse by HC Spending: rates & confidence intervals



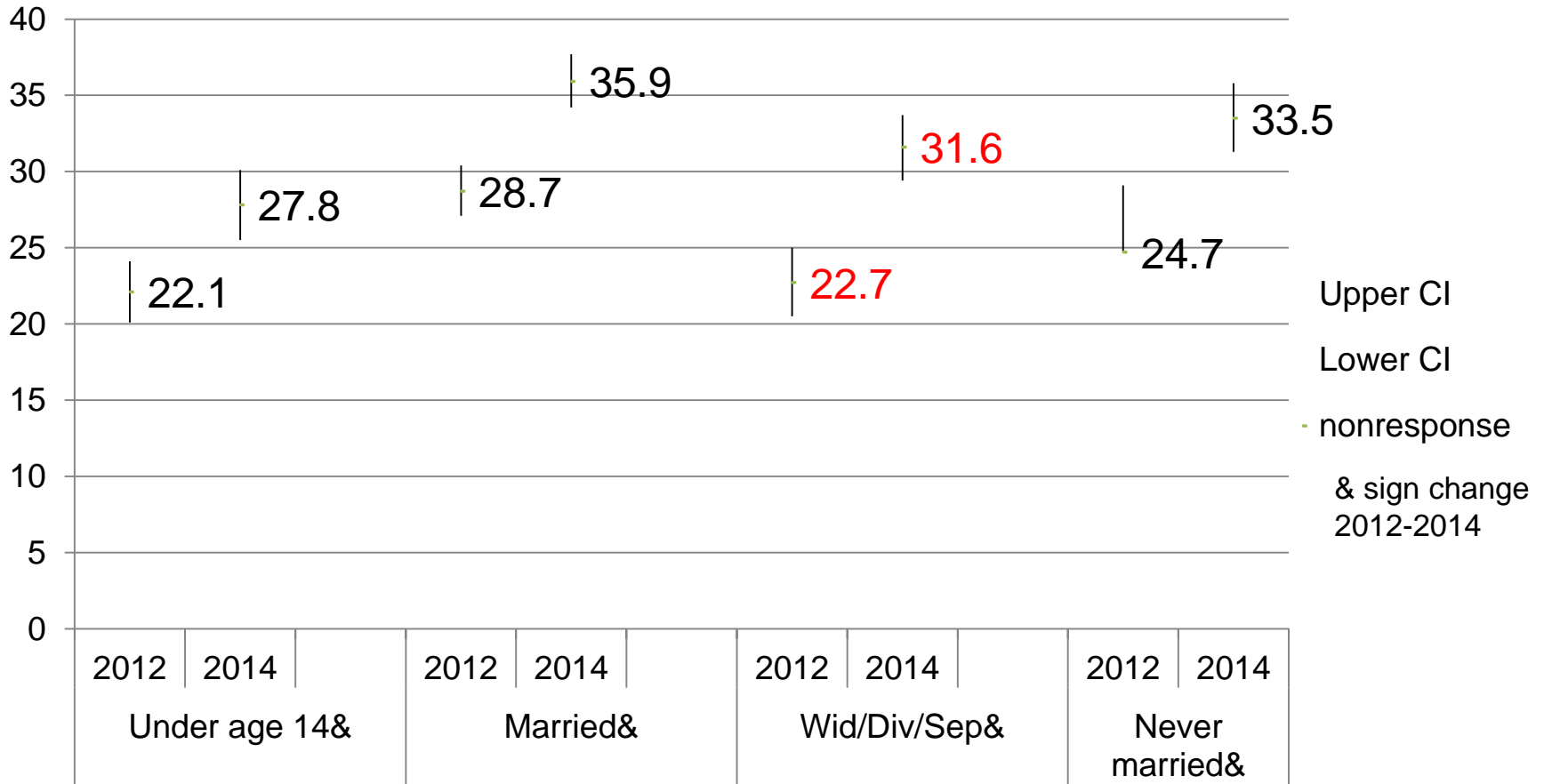


2012 and 2014 Nonresponse by Education: rates & confidence intervals



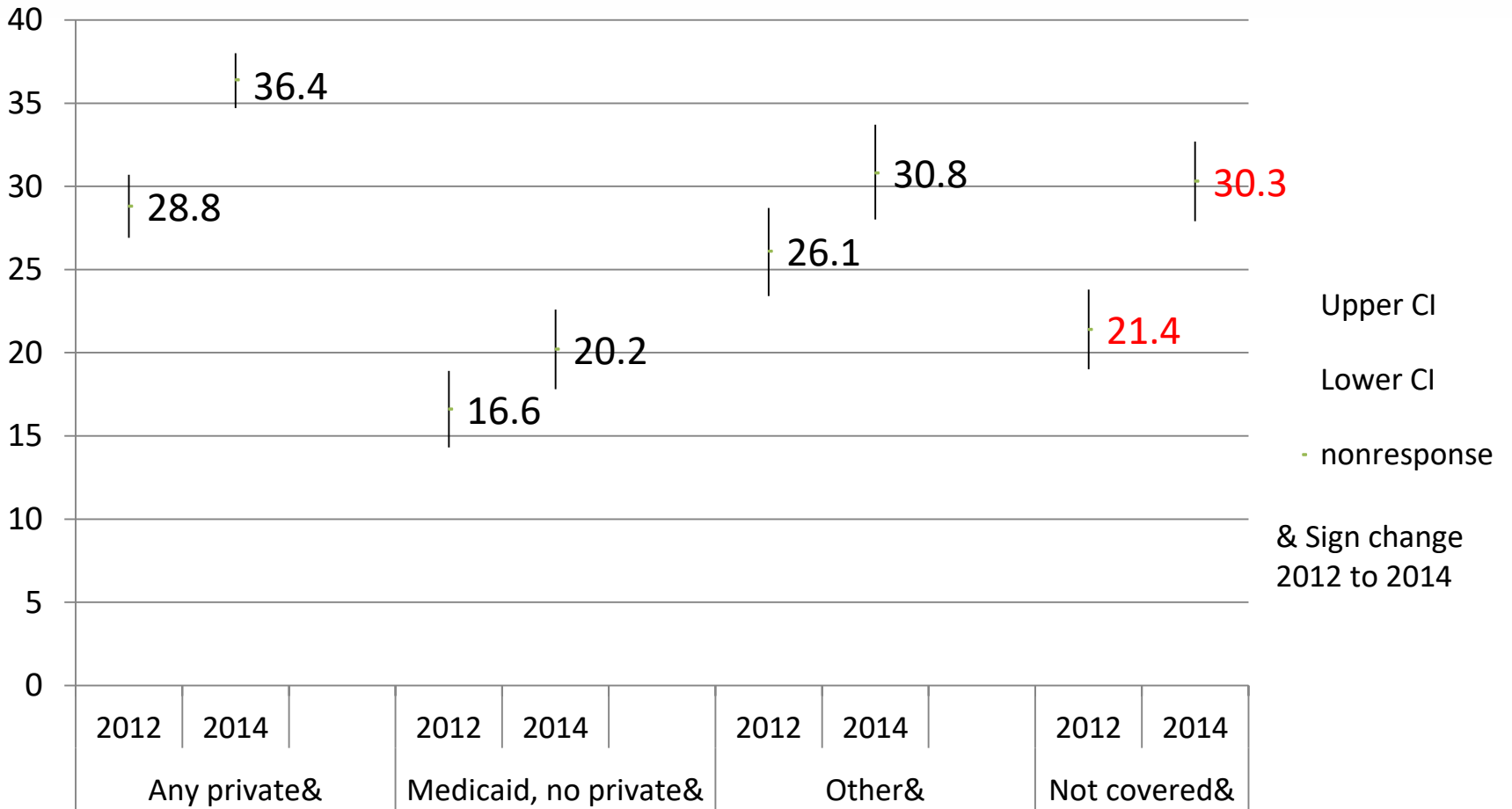


2012 and 2014 Nonresponse by Marital Status: rates & confidence intervals



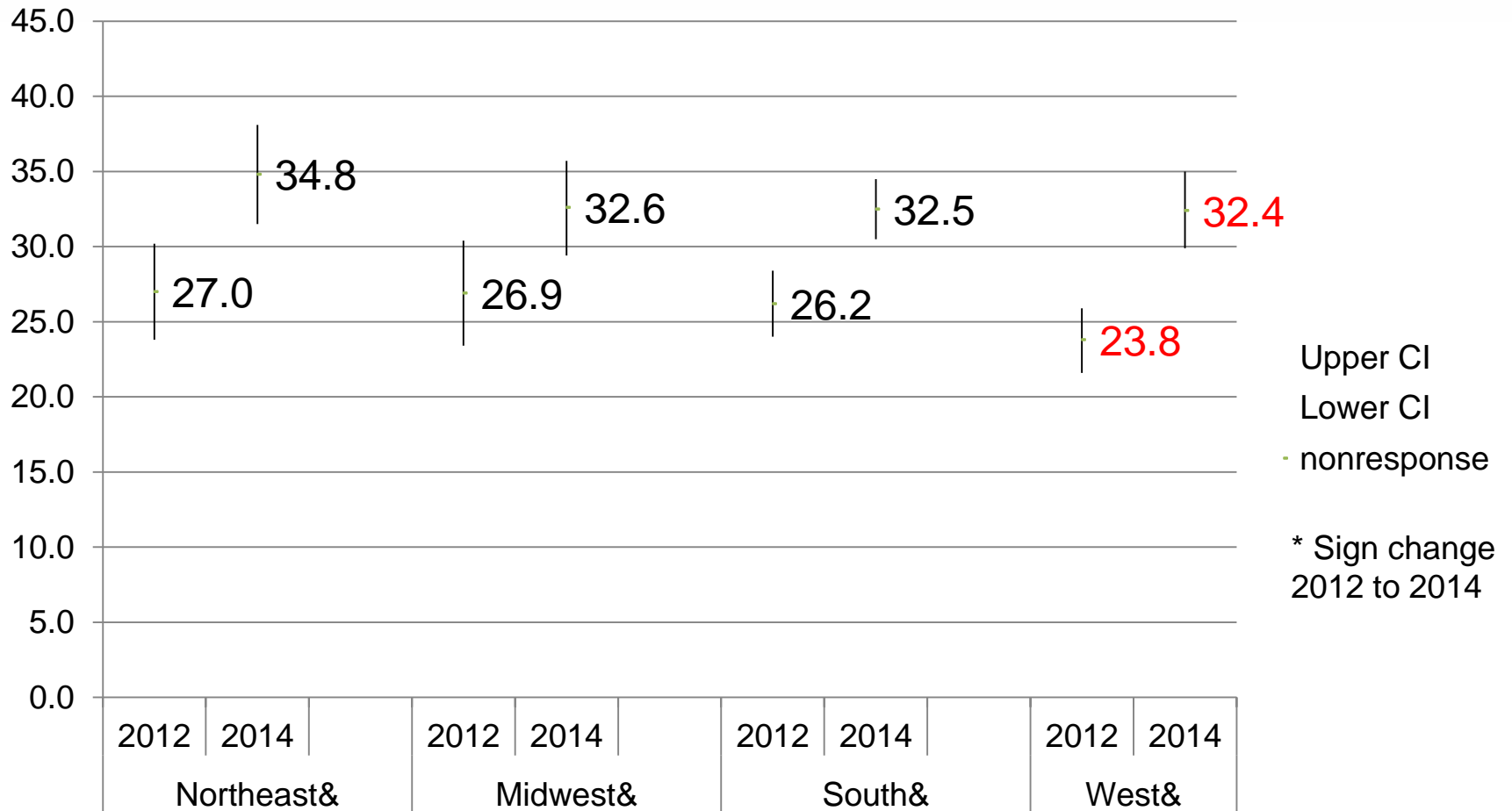


2012 and 2014 Nonresponse by Health Insurance: rates & confidence intervals



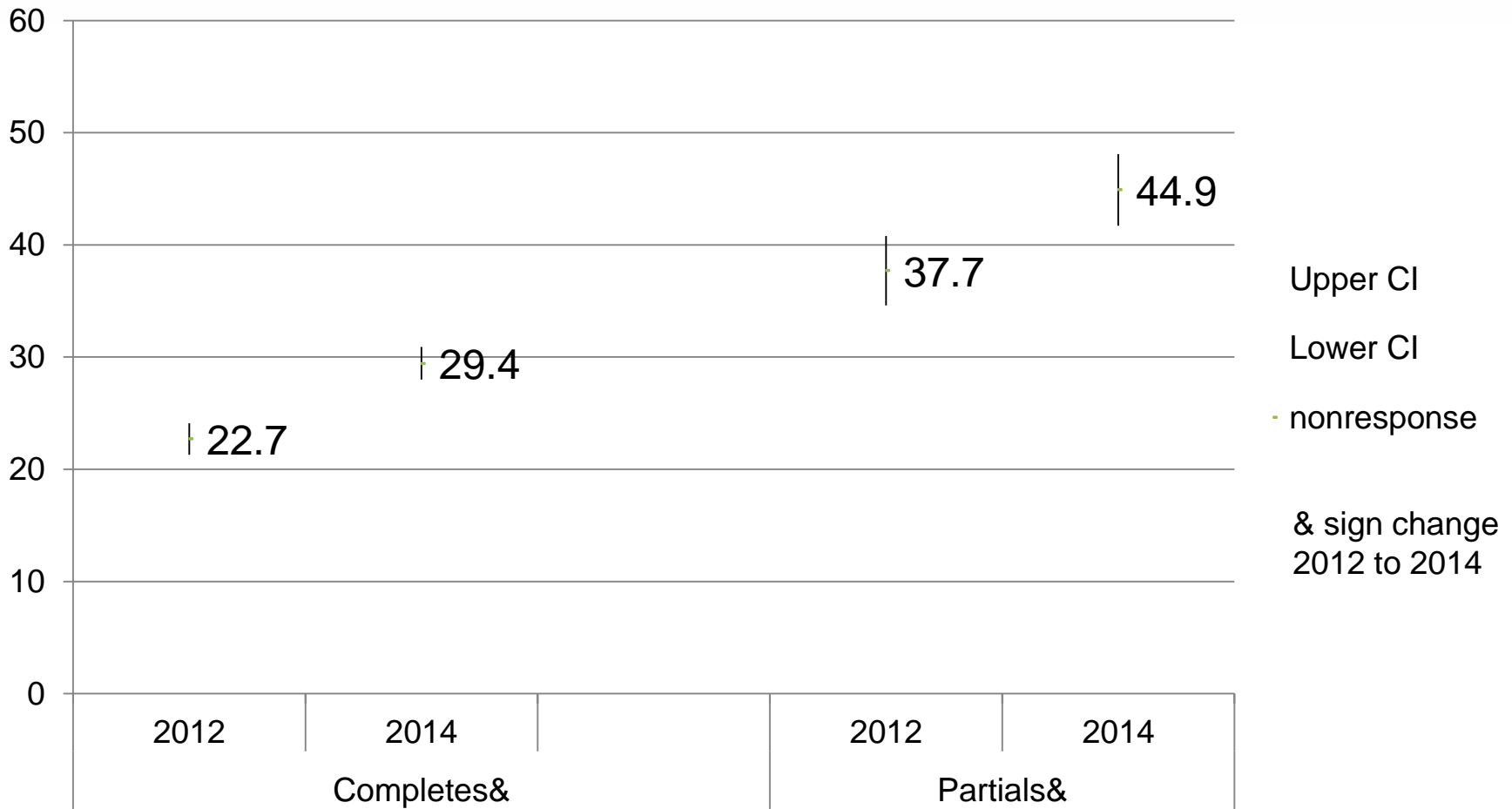


2010, 2012 and 2014 Nonresponse by Region: rates & confidence intervals





2012 and 2014 Nonresponse for NHIS Completes and Partials: rates & confidence intervals





Logistic regression model NHIS2013/2014MEPS

- Predict MEPS nonresponse
- Included NHIS variables with significant chi-square values in 2012NHIS/2014MEPS binary analysis



Research Variables Included in the Model (Identified with *)

NHIS		MEPS
Age*	Health Insurance Coverage*	PIT responder: response vs. non-response
Sex	Health status*	
Region	Family poverty ratio*	
Education*	Health Care Spending*	
Race/Ethnicity*	NHIS completes vs. partials*	
Marital Status*		
Number of Children*		
Number of adults		
U.S. Born		
Citizenship*		



Logistic Regression Results

- Nonresponse did not vary by:
 - ▶ Marital status
 - ▶ Citizenship
 - ▶ Health care spending

- Nonresponse did vary by:
 - ▶ Age
 - ▶ Race/Ethnicity
 - ▶ Education
 - ▶ Number of Children
 - ▶ Health insurance coverage
 - ▶ Poverty ratio
 - ▶ Health status
 - ▶ NHIS completeness status



Logistic Regression Results adjusted odds ratios

- **NHIS Partial (vs. Completes)**
 - ▶ **Partial** **1.91***
- **Poverty Ratio (vs. GE 0 and LT 200)**
 - ▶ **GE 200 and LT 300** **1.21**
 - ▶ **GE 300 and LT 400** **1.44***
 - ▶ **GE 400** **1.55***
- **Health Insurance (vs. Medicaid no private)**
 - ▶ **Any Private** **1.43***
 - ▶ **MCARE no Priv/MCAID** **1.23***
 - ▶ **Not covered** **1.49***
- **Race/Ethnicity (vs NH Black)**
 - ▶ **Hispanic** **1.23***
 - ▶ **NH White/Other** **1.46***

* Denotes significance of coefficient β



Logistic Regression Results

odds ratios

- **Number of children (vs. 1+)**
 - ▶ **No children** **1.31***
- **Reported health status (vs. Fair, Poor)**
 - ▶ **Exc, VG, G** **1.25***
- **Education (vs. < HS)**
 - ▶ **HS grad** **1.08**
 - ▶ **College grad** **1.08**
 - ▶ **Under age 25** **0.70***
- **Age (vs. 0-17))**
 - ▶ **18-24 yrs** **1.11**
 - ▶ **25-64 yrs** **0.51***
 - ▶ **65+ yrs** **0.60***

* Denotes significance of coefficient β



Usefulness to Field Managers

- Knowing characteristics of sample persons and which ones are more likely to respond may help the Field Managers tailor field operations
 - ▶ Field Managers may tell Interviewers to contact specific cases first (w/o identifying the reason) depending on the NHIS characteristics of the cases
- Interviewers having basic information about cases may help field efficiency
 - ▶ Field Managers may want to restrict certain information because of the Interviewer tendency to want to do the easiest cases first which is not the best way to maximize response.



Usefulness to Field Managers

- **IMPLICATIONS:** the shorter field period and stable incentive suggests the inability to LOCATE (contact) may be a problem for some cases (Something to look into)
- **IMPORTANCE:** Non-response does not vary by amount of spending on medical care



Thank you!

**MEPS Website:
<http://MEPS.AHRQ.gov/>**

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