



**PRAMS Survey Fatigue:  
The Effects on Response Rates of a 100%  
Non-Hispanic Black Oversample in Three  
Wisconsin Counties**

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CSTE Conference 2016

June 20, 2016

## What is PRAMS?

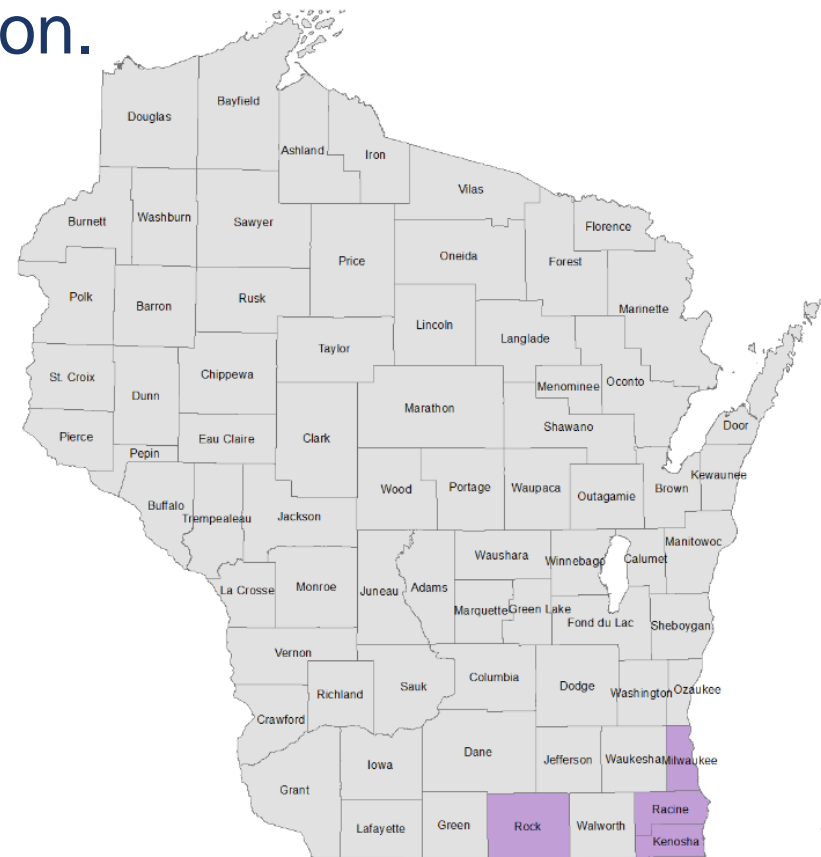
**Pregnancy  
Risk  
Assessment  
Monitoring  
System**



Centers for Disease Control and Prevention (CDC) surveillance system started in 1987.

## Background

- Wisconsin has one of the worst black-white infant mortality ratios in the nation.
- Four counties are home to 85% of African American (AA) live births and 89% of African American infant deaths in Wisconsin.





## Background

- In 2011, the University of Wisconsin's Wisconsin Partnership Program and DPH funded a PRAMS non-Hispanic black oversample in four counties with community collaboratives working to reduce black infant mortality.
- In three of these counties, WI PRAMS samples 100% of non-Hispanic black mothers.



## Study Question

Are 2012 response rates lower among non-Hispanic black mothers in Kenosha, Racine, and Rock counties who also received the survey in 2011 compared to mothers who received the survey in 2012 but not 2011?



## Linkage Methods

- Data sets:
  - PRAMS, 2011–2012
  - Vital records linked deliveries, 2011–2012
- PRAMS and vital records linked using birth certificate numbers
- Repeatedly sampled moms identified through duplicate unique IDs from linked deliveries set
- Second PRAMS records then linked to mother's first PRAMS record using delivery set unique ID



## Analysis Methods

- Inclusion:
  - Multiparous women
  - Resident in 100% oversample counties for either birth
- Covariates: maternal age, education, marital status
- Fisher's exact tests and log binomial regression used to assess differences in 2012 response
- Data linked and analyzed using SAS 9.4

## Results

### Characteristics of Multiparous Non-Hispanic Black Mothers Resident in Oversample Counties in the 2012 Wisconsin PRAMS Sample

	Repeat (n=49)	Non-repeat (n=391)
<b>2012 Response*</b>		
Respondent	24.5%	50.1%
Non-respondent	75.5%	49.9%
<b>Age*</b>		
<20	10.2%	4.9%
20–24	65.3%	36.6%
25–34	22.5%	49.1%
35+	2.0%	9.5%
<b>Education</b>		
Less than high school	32.7%	22.3%
High school	34.7%	32.5%
At least some college	32.7%	45.3%
<b>Marital status</b>		
Married	10.2%	17.9%
Other	89.8%	82.1%

\*Fisher's Exact p-value < 0.05





## Results

### Crude and Adjusted Log Binomial Regression Models Predicting 2012 Wisconsin PRAMS Non-Response Among Multiparous Non-Hispanic Black Mothers Resident in Oversample Counties

	Crude Prevalence Ratios (PR) and 95% Confidence Interval (CI)	Model 1 <sup>†</sup> Adjusted PRs and 95% CI	Model 2 <sup>‡</sup> Adjusted PRs and 95% CI
<b>Repeatedly Sampled</b>	<b>1.51 (1.25–1.83)*</b>	<b>1.27 (1.05–1.54)*</b>	<b>1.19 (0.98–1.43)</b>
<b>Age</b>			
<20 years	1.37 (0.80–2.35)	1.29 (0.75–2.21)	1.14 (0.66–1.96)
20–24 years	1.68 (1.12–2.52)*	1.58 (1.05–2.40)*	1.39 (0.92–2.12)
25–34 years	1.10 (0.72–1.68)	1.24 (0.71–1.67)	1.02 (0.67–1.56)
35+ years	Reference	Reference	Reference
<b>Education</b>			
Less than high school	1.54 (1.23–1.93)*	--	1.33 (1.06–1.68)*
High school	1.49 (1.21–1.85)*	--	1.33 (1.08–1.67)*
At least some college	Reference	--	Reference
<b>Marital Status</b>			
Married	Reference	--	Reference
Other	1.38 (1.03–1.85)	--	1.12 (0.83–1.51)

<sup>†</sup> Model 1 includes repeat sampling and age

<sup>‡</sup> Model 2 includes repeat sampling, age, education, and marital status



## Conclusions

- The PRAMS census of non-Hispanic black mothers in the three LIHF counties may negatively affect response rates without additional outreach to these mothers.
- More highly powered and nuanced investigation of the effects of repeated sampling on response rates is needed.



## Limitations

- Repeat birth over the short time frame of 2 calendar years is associated with many risk factors for non-response. Residual confounding is likely.
- These results currently reflect only 2 data years of the oversample. More data years are needed to fully investigate the relationship between repeat sampling and declining response rates.
- Although the oversample did not begin until 2011, there are likely some moms who were sampled prior to 2011 who were sampled in 2011 and/or 2012.



## Acknowledgements

Funding for PRAMS is provided by the Cooperative Agreement 5U01DP003123 from the **U.S. Centers for Disease Control and Prevention (CDC)**.

Additional support is provided by the **Title V Maternal and Child Health Block Grant Program**.

The **Wisconsin Partnership Program**, University of Wisconsin School of Medicine and Public Health, provides invaluable support for PRAMS by funding an oversample of non-Hispanic black mothers in key counties with community collaboratives supported by the **UW Lifecourse Initiative for Healthy Families**.



# Questions?





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