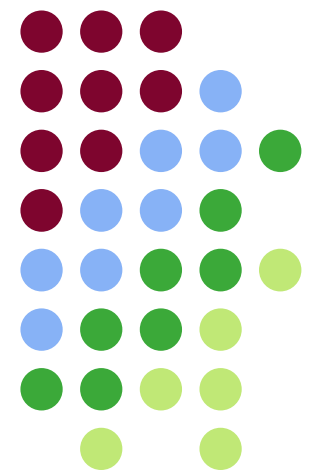


# Comparing Random Digit Dial (RDD) and United States Postal Service (USPS) Address-Based Sample Designs for a General Population Survey: The 2008 Massachusetts Health Insurance Survey

64th Annual AAPOR Conference  
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Social Science Research Solutions



# Agenda



1. **About the Mass Health Insurance Survey (HIS)**
2. **Comparisons of RDD to Address based Sample (ABS)**
  - a) Cost
  - b) Demographics
  - c) Non-Response
  - d) Item Non-Response
  - e) Population Estimates





# Key Facts: The MASS HIS

- Prior MASS HIS studies have been done using only RDD, and coverage concerns lead to the new sample design
- Part RDD, Part ABS
- Both samples run against listed databases to get addresses for RDD and phone numbers for ABS
- ABS and RDD with listed address: advance letter + 2 reminders
- ABS with listed phone: proactively called
- Modes: internet, call-In, call-out, and mail

	RDD with Listed Address	RDD without Listed Address	ABS with Listed Phone	ABS without Listed Phone
Mailed Invites / Reminders	X		X	X
Call Outs	X	X	X	

# Sample Release and Completed Interviews



	RDD w/ Address	RDD w/o Address	Total RDD	ABS w/ Phone	ABS w/o Phone	Total ABS	Total Sample
<b>Total Sample Released</b>	5,434	4,565	9,999	6,593	7,386	13,979	23,978
<b>Total Completed Interviews</b>	1,479	140	1,619	2,102	1,189	3,291	4,910
<b>Survey mode:</b>							
<b>Phone-Outbound</b>	840	140	980	1,211	0	1,211	2,191
<b>Phone-Inbound</b>	76	0	76	96	242	338	414
<b>Internet</b>	554	0	554	779	940	1,719	2,273
<b>Mail</b>	9	0	9	16	7	23	32

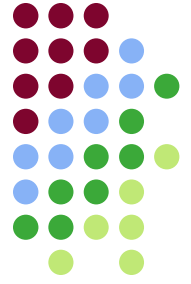


# Relative Costs / Performance

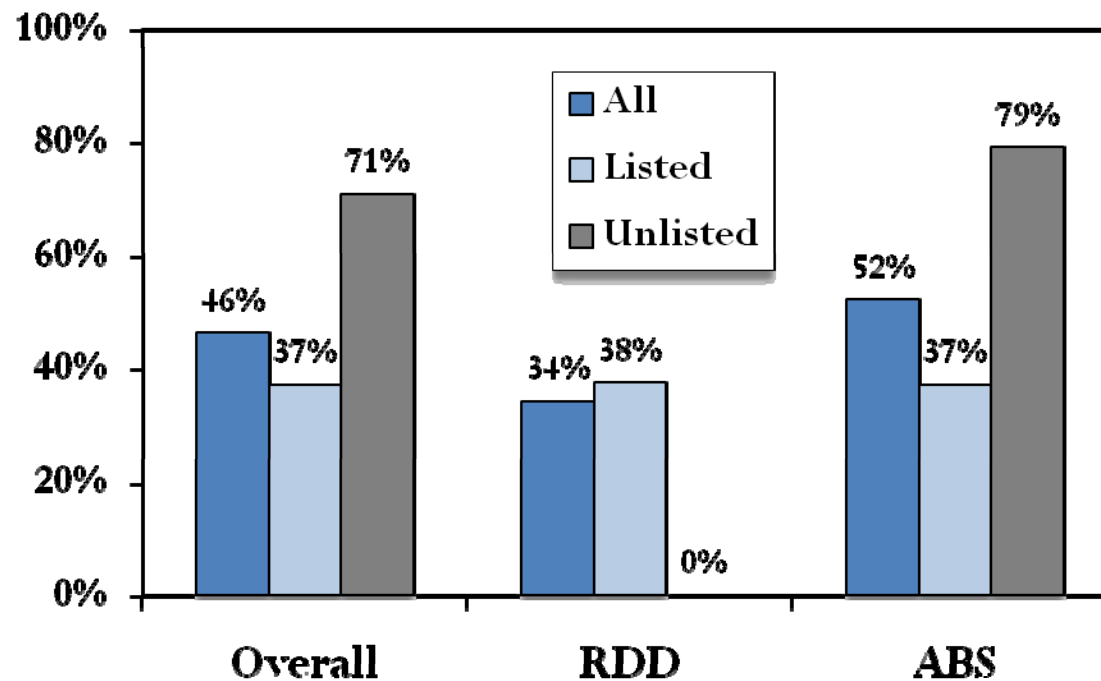
- Sample yield more efficient in ABS
- Cost per interview (CPI) lower in ABS
- Calling effort same for ABS with phones vs. RDD with Addresses
- Response rate lower in ABS

	RDD w/ Address	RDD w/o Address	Total RDD	ABS w/ Phone	ABS w/o Phone	Total ABS
Sample Yield	3.7	32.6	6.2	3.1	6.2	4.2
CPI	\$72.10	\$75.76	\$72.42	\$69.64	\$67.60	\$68.90
Average Calls	6.7	4.1	5.5	7.2	0	3.4
Response Rate	49.1%	37.2	42.0%	49.5%	18.3%	34.7%

# Percentage Web Completes by Frame



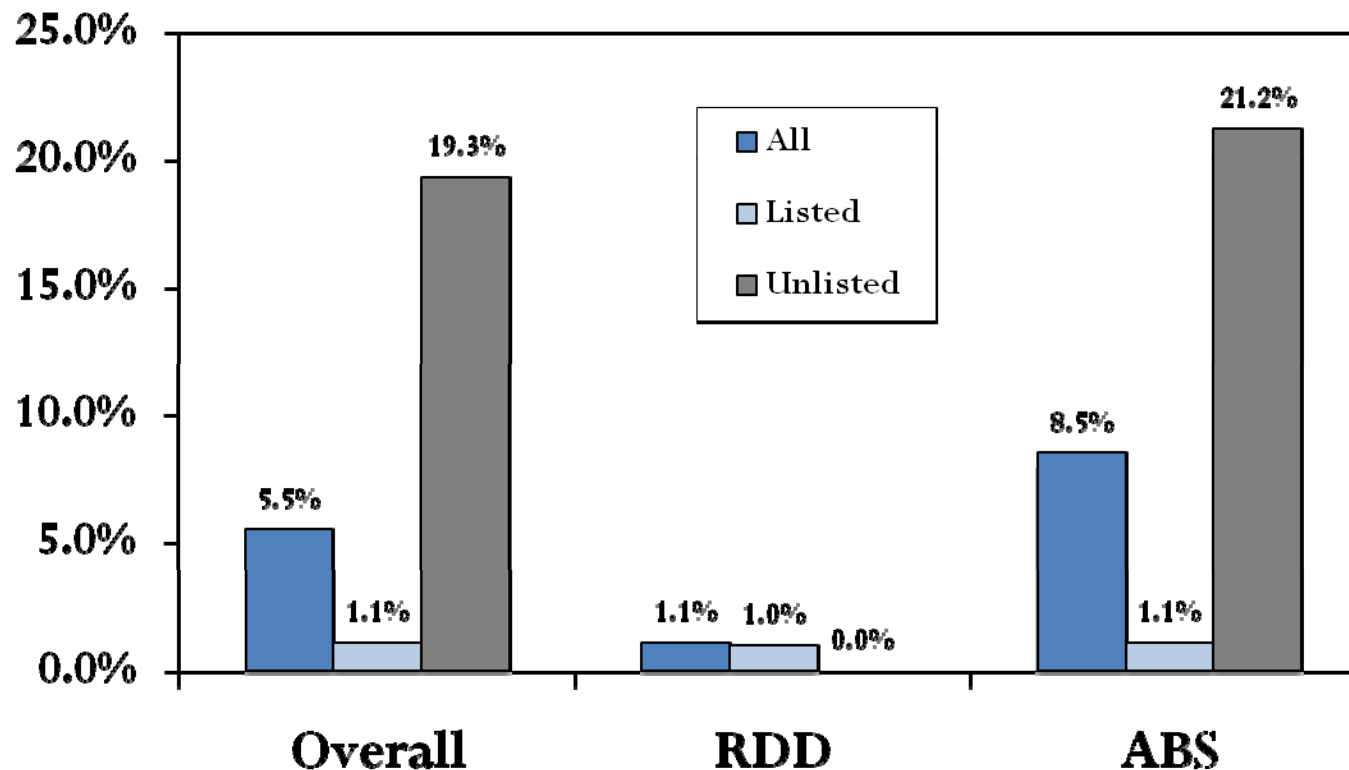
- ABS more efficient/less cost due to higher proportion of web interviews



# Cell Only Households by Frame



- Proportion of cell-phone only interviews from the ABS sample is close to the NIH Massachusetts estimate



# Demographic Comparisons

- ABS unweighted statistics closer to ACS population counts
- Suggests reduction in coverage bias, but looks like there is still nonresponse bias



	ACS	Total RDD	Total ABS
Region: Boston Area	10.6%	6.9%	<b>8.6%</b>
Two Adult Household	30.2%	35.5%	34.7%
Female	51.8%	57.1%	<b>55.1%</b>
Black	6.9%	3.5%	<b>4.1%</b>
Hispanic	6.9%	5.9%	5.6%
Less Than High School	9.4%	<b>9.4%</b>	7.3%
Under 18	22.6%	13.0%	13.7%
Age 65 and Older	13.3%	26.3%	<b>21.9%</b>
Rented Home	27.3%	20.5%	<b>25.0%</b>
Employed	66.3%	57.6%	<b>61.7%</b>
Under 150% FPL	20.5%	18.1%	18.3%

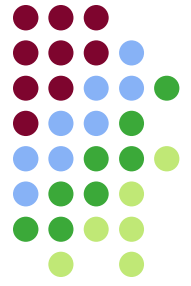
# Survey Comparisons

- Weighted ABS exhibits less change from unweighted ABS, compared to RDD

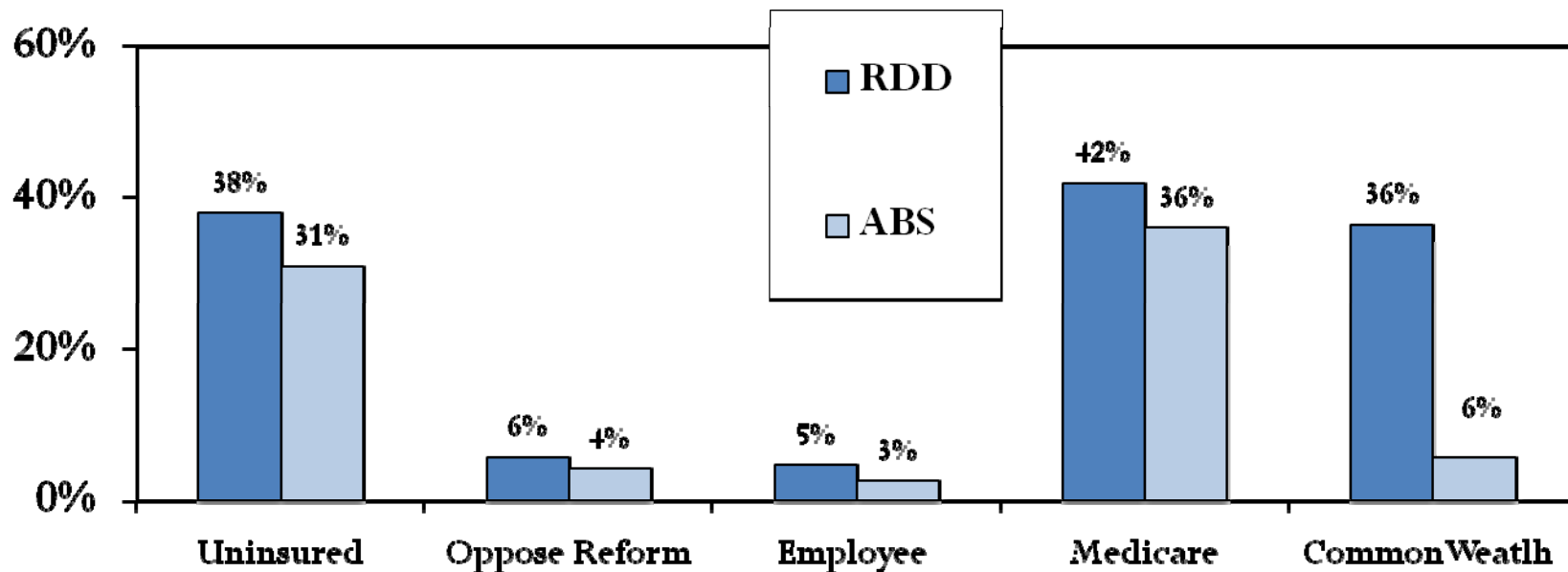


	RDD Weighted	RDD Unweighted	% Change	ABS Weighted	ABS Unweighted	% Change
Anyone in HH uninsured HH	6.2%	4.5%	37.8%	5.1%	3.9%	30.8%
Oppose mandate	17.1%	16.2%	5.6%	15.3%	14.7%	4.1%
Employee or union coverage	71.5%	68.4%	4.5%	72.6%	70.8%	2.5%
Medicare	16.4%	28.2%	-41.8%	15.2%	23.7%	-35.9%

# Percent change in estimate due to weights



- ABS & RDD estimates rely on the survey weights, but the affect of the weights is somewhat smaller for the ABS





# Non-Response: Break Offs

- No significant difference in survey break offs which was a concern for the ABS by mode

	RDD w/ Address	RDD w/o Address	Total RDD	ABS w/ Phone	ABS w/o Phone	Total ABS
Part of Screener Only	4.2%	8.5%	4.6%	3.2%	4.3%	3.6%
About 1/3 of QN	1.0%	0.0%	0.9%	0.7%	1.0%	0.8%
About 2/3 of QN	0.9%	0.0%	0.8%	1.1%	1.3%	1.1%
Full QN	93.9%	91.5%	93.7%	95.1%	93.4%	94.5%

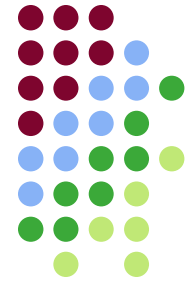


# Non-Response: Item

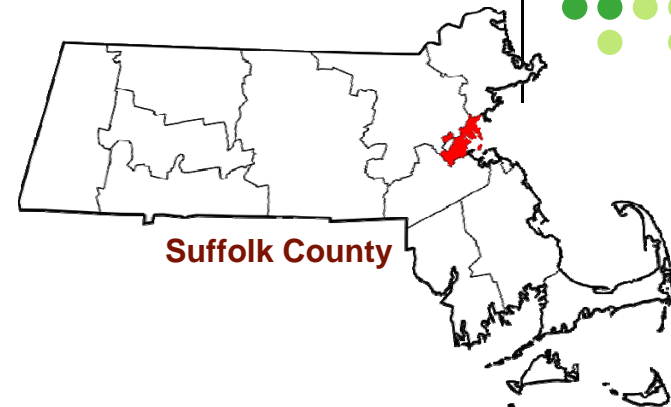
- No significant difference in item non-response by mode

	RDD w/ Address	RDD w/o Address	Total RDD	ABS w/ Phone	ABS w/o Phone	Total ABS
Income	6.3%	1.4%	5.9%	6.0%	5.6%	5.9%
Age	1.8%	1.8%	1.8%	1.5%	2.3%	1.8%
Ethnicity	1.1%	0.0%	1.0%	1.3%	2.6%	1.8%

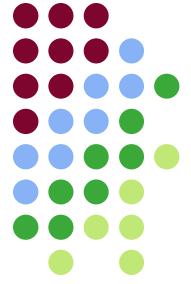
# Non-Response: Response Rates



	RDD	ABS	Difference	Urban
Barnstable	46%	33%	13%	
Berkshire	53%	35%	18%	
Bristol	41%	34%	7%	
Dukes	--	--	--	
Essex	47%	32%	15%	
Franklin	--	--	--	
Hampden	40%	29%	11%	
Hampshire	--	--	--	
Middlesex	47%	36%	11%	*
Nantucket	--	--		
Norfolk	50%	35%	15%	**
Plymouth	44%	31%	13%	*
Suffolk	39%	28%	11%	**
Worcester	47%	33%	14%	



- Insignificant difference in SD of county cooperation rate by sample type



# Summary

- Arguments for ABS:
  - Picks up Cell-Only Interviews
  - Unweighted estimates closer to Census estimates
  - Better Sample Yields
  - Lower CPI
  - Estimates less reliant on the survey weights
  - Slightly higher questionnaire completion rate
  - Flatter nonresponse distribution
- Arguments for RDD:
  - Better Response Rate

# Thanks and Contact



## Thanks:

The Survey and some of this analysis was funded by the Massachusetts Division of Health Care Finance and Policy.

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