

# Effects of Sequential Prepaid Incentives to Increase Participation and Data Quality in a Mail Survey of Pediatricians

John Stevenson<sup>1</sup>, Jennifer Dykema<sup>1</sup>, Chad Kniss<sup>1</sup>,  
Nadia Assad<sup>1</sup> and Catherine A Taylor<sup>2</sup>

<sup>1</sup>University of Wisconsin Survey Center

<sup>2</sup>Tulane University

IFD&TC

New Orleans, LA

May 23, 2017



# Outline of Topics

- Background
- Research Questions
- Methods
- Results
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# Background

- Researchers look to use incentives to increase response rates in most effective manner
  - Singer (2002); Singer and Ye (2013)
- Recent recommendations regarding incentives advise researchers to include a second cash incentive in a follow-up contact for mail surveys
  - Dillman, Smyth and Christian 2014
- Little research examining
  - Amount
  - Timing
  - Relative amount – Increase, decrease, stay the same

# Background

- Some researchers beginning to experiment with **sequential, prepaid incentives**
- Messer & Dillman (2011) and Moore and An (2001) found benefit to a second incentive in two studies (both used same amount & priority mail)
- Dykema et al. (2015) found some evidence that increasing amounts is effective
- Physicians are a particularly difficult population to survey
  - Heavily surveyed
  - Often require larger incentives

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# Research Questions

- Response rates
  - Q1: Keeping total amount a respondent might receive flat, Is it better to give all upfront or divide up into two sequential incentives
  - Q2: With sequential incentives, does the relative amount affect participation
    - E.g., Same, smaller first-larger second, larger first-smaller second

# Research Questions

- Costs
  - Q3: Which options are most cost effective?
  - Q4: How will cost per complete be affected if second amount is
    - Larger
    - Smaller
    - The same amount
  - Q5: What will best maximize yield and response rate



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# Methods

- 8 Page mail survey booklet
- 4 Contacts
- Field Period: March -June, 2016
- Nationwide Sample of Pediatricians
- Overall AAPOR RR1 53%
  
- Study of pediatricians' opinions, training and professional practices regarding child discipline and related parenting issues.

# Study Design

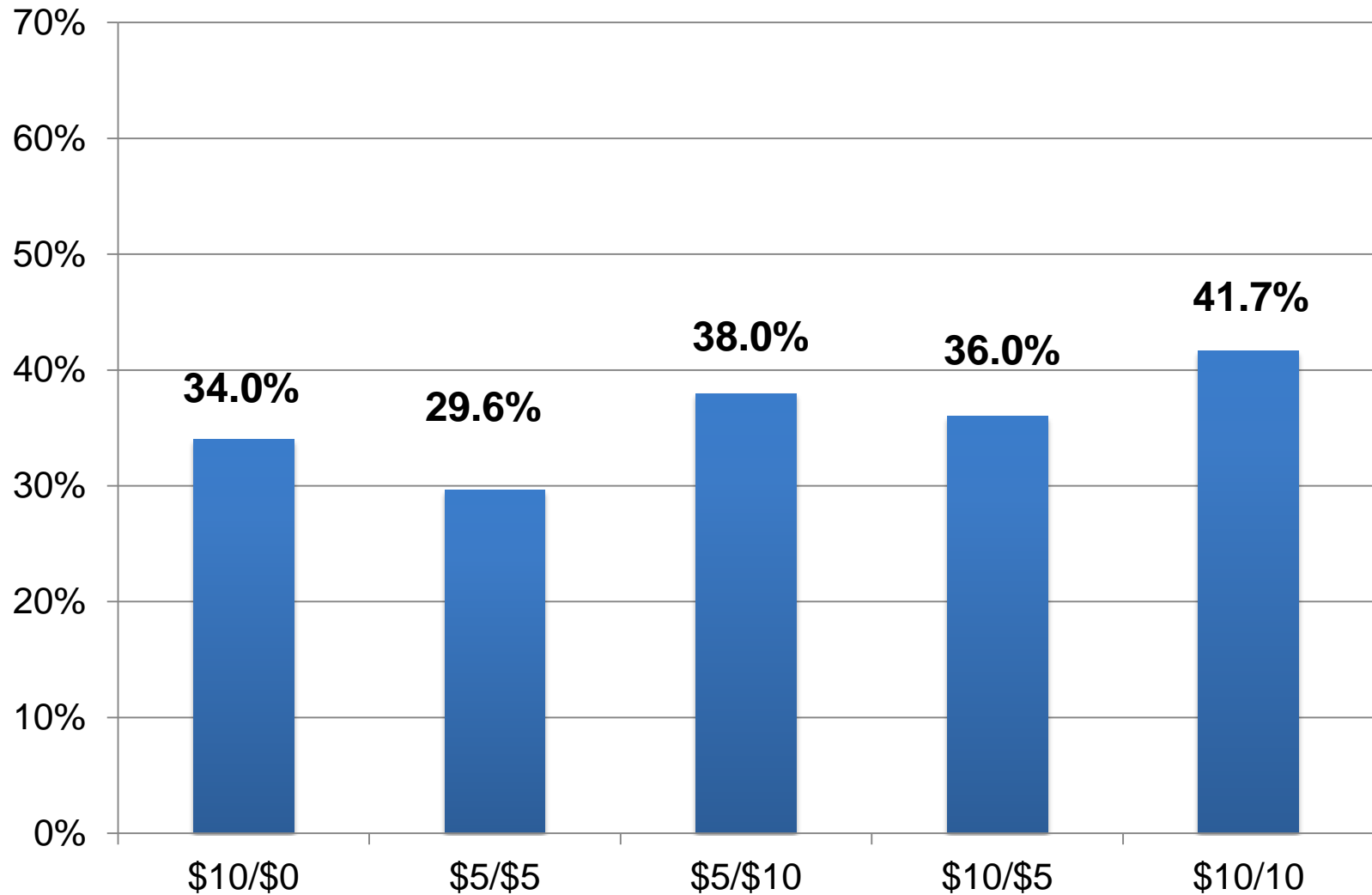
Treatment Groups	First Full Mailing Incentive	Postcard Reminder	Second Full Mailing Incentive	Third Full Mailing
<b>Group 1: \$10/\$0</b>	\$10	-	\$0	-
<b>Group 2: \$5/\$5</b>	\$5	-	\$5	-
<b>Group 3: \$5/\$10</b>	\$5	-	\$10	-
<b>Group 4: \$10/\$5</b>	\$10	-	\$5	-
<b>Group 5: \$10/\$10</b>	\$10	-	\$10	-

(N of 300 per group)

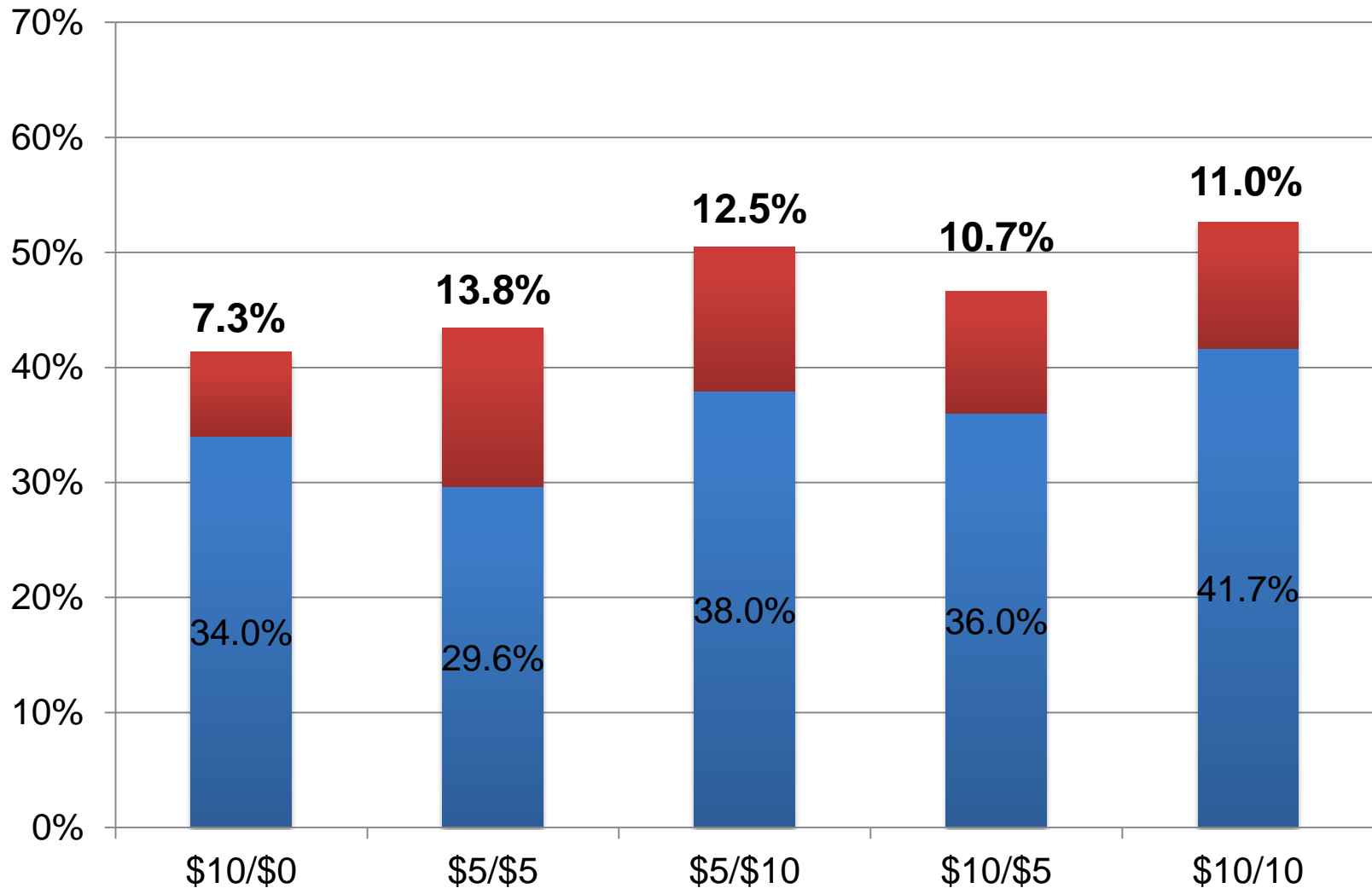
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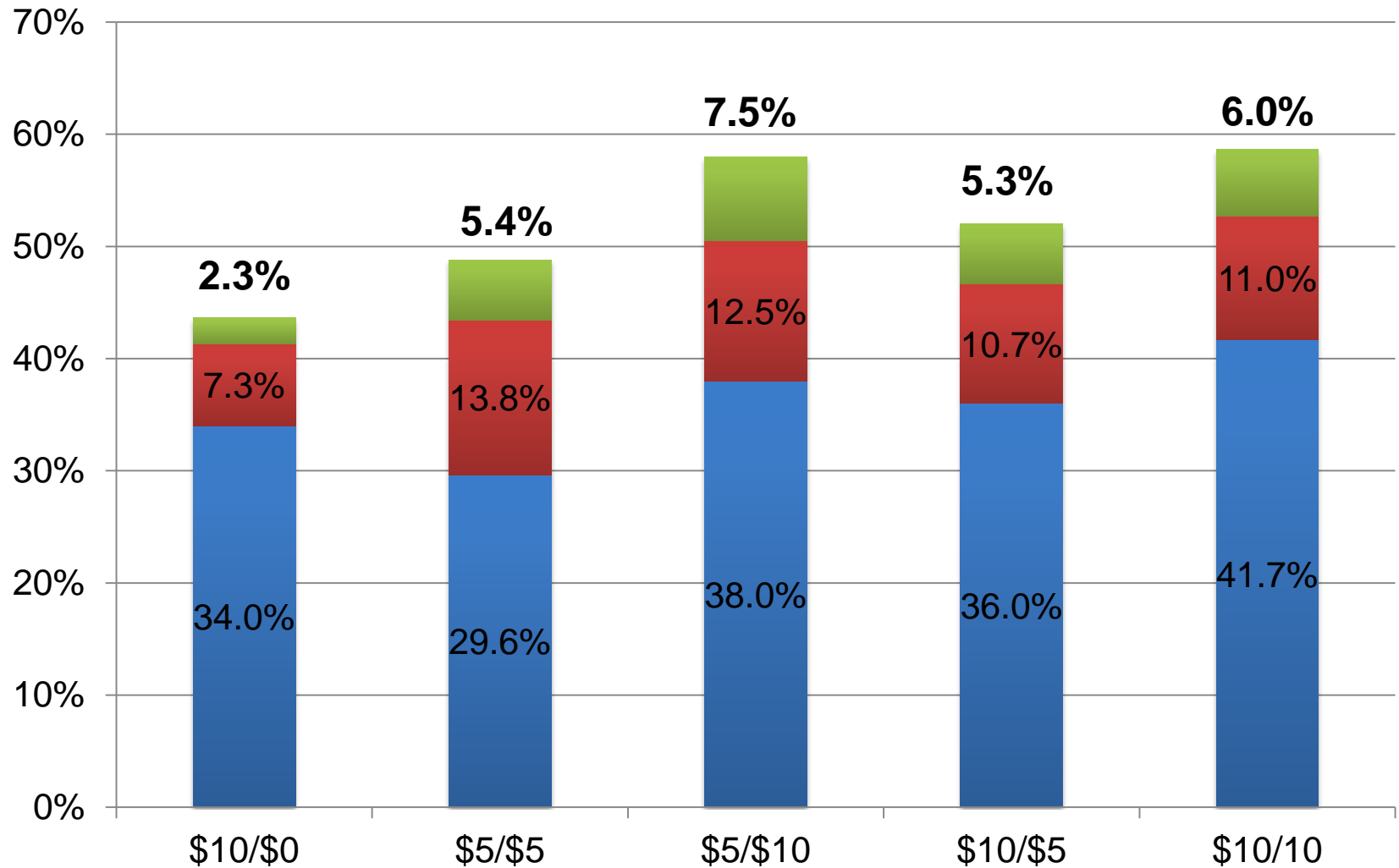
# Response rates: After 1<sup>st</sup> full mailing & 1<sup>st</sup> incentive



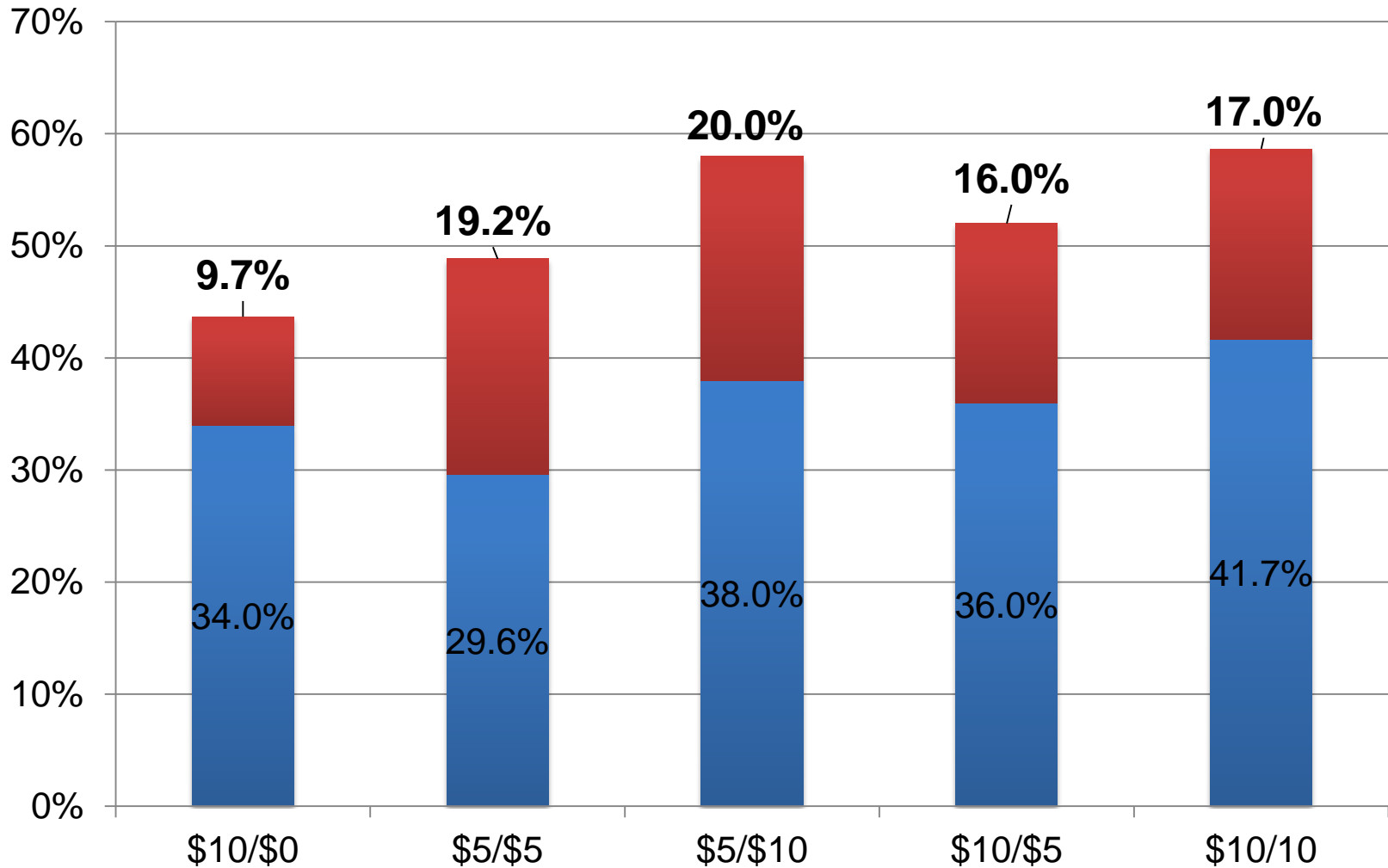
# Response rates: After 2<sup>nd</sup> full mailing & 2<sup>nd</sup> incentive



# Response rates: After 3<sup>rd</sup> full mailing

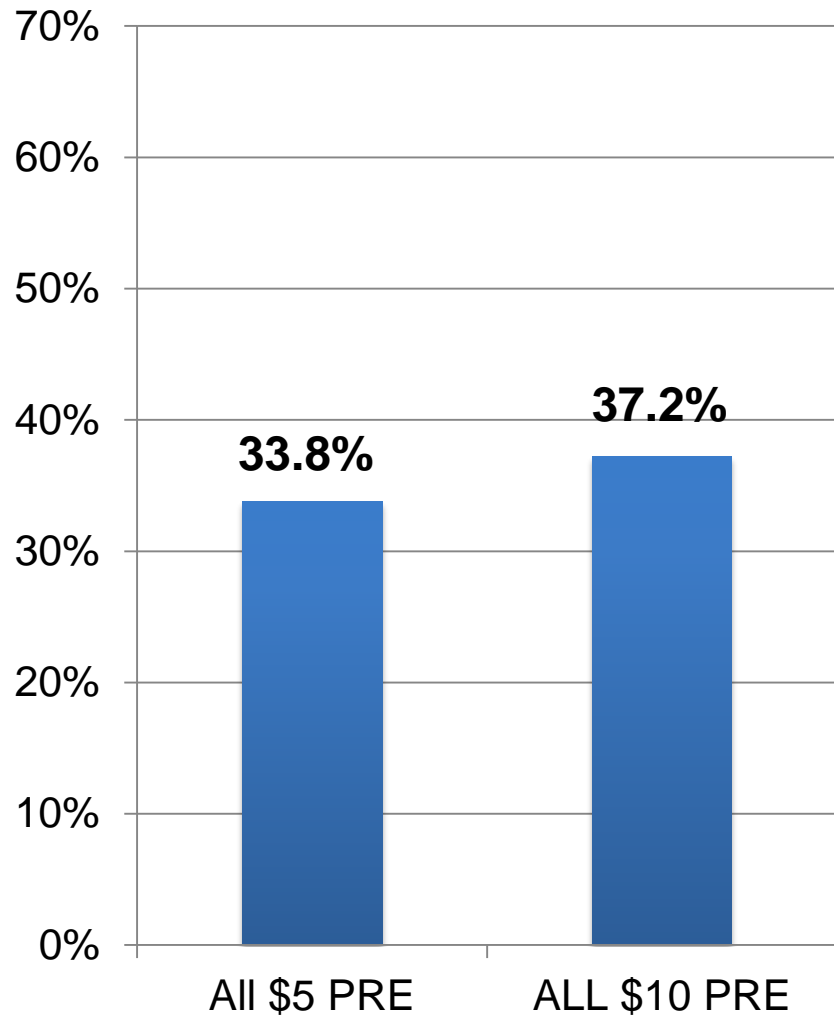


# Response rates: After 2<sup>nd</sup> (w/2<sup>nd</sup> incentive) & 3<sup>rd</sup> full mailing

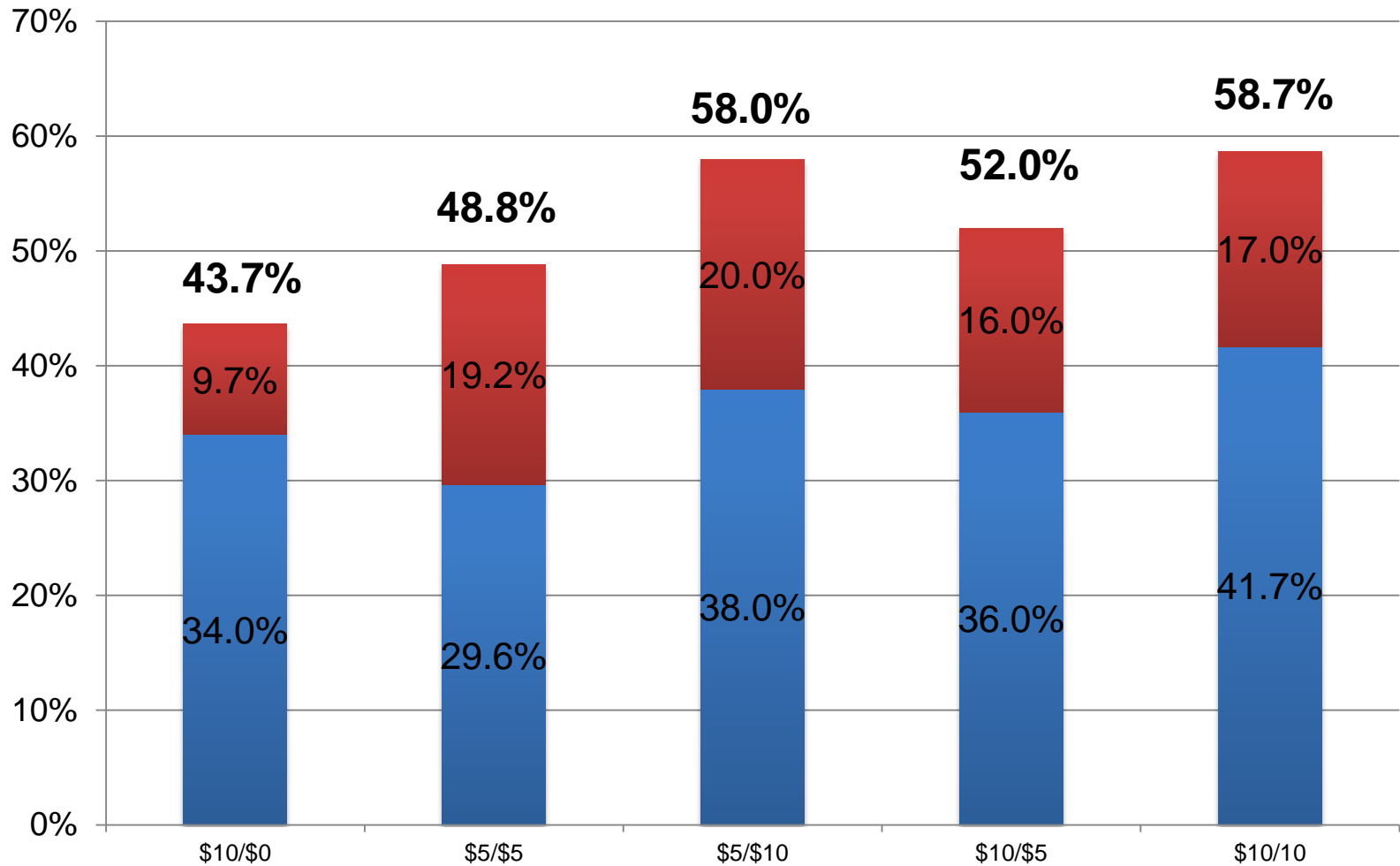




# Response rates: After initial incentive \$5 vs. \$10



# Response rates: After 2<sup>nd</sup> (w/incentive) & 3<sup>rd</sup> full mailing



# Cost

- When we think about costs
  - What gain are we getting, and at what cost?
  - How does this affect data quality
- Expenses vary in several ways
  - Incentives themselves cost more or less
  - Increasing participation to early contacts reduces the cost of sending subsequent mailings

# Costs – included variable costs only

- Supplies:
  - postage (first class both directions)
  - printing (envelopes, surveys, letters)
  - cash incentives
- Labor:
  - Prep for assembly
  - Stuffing and mailing
  - Logging returns
  - Data entry

# Costs per complete by treatment

	\$10/\$0 (N=300)	\$5/\$5 (N=300)	\$5/\$10 (N=300)	\$10/\$5 (N=300)	\$10/10 (N=300)
<b>Cost</b>					
Total Costs of Pre-Incentives	\$3,000	\$2,540	\$3,350	\$3,950	\$4,690
Total Variable Costs	\$6,105	\$5,705	\$6,363	\$6,988	\$7,601

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<b>Cost Per Complete</b>	<b>\$46.61</b>	<b>\$39.34</b>	<b>\$37.21</b>	<b>\$44.80</b>	<b>\$43.19</b>

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# Costs per complete by incentive treatment

	<b>\$10/\$0 (N=300)</b>	<b>\$5/\$5 (N=300)</b>	<b>\$5/\$10 (N=300)</b>	<b>\$10/\$5 (N=300)</b>	<b>\$10/10 (N=300)</b>
<b>Cost Per Complete For First Pre-Incentive</b>	\$44.27	\$34.00	\$27.07	\$41.90	\$36.43
<b>Cost Per Complete For Second Pre-Incentive</b>	\$54.84	\$47.59	\$56.46	\$51.33	\$59.76
<b>TOTAL Cost Per Complete</b>	<b>\$46.61</b>	<b>\$39.34</b>	<b>\$37.21</b>	<b>\$44.80</b>	<b>\$43.19</b>
<b>AAPOR 1 RR Mail</b>	43.7%	48.8%	58.0%	52.0%	58.7%

# Costs per complete by incentive treatment

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# Costs per complete by treatment

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<b>AAPOR 1 RR Mail</b>	43.7%	48.8%	58.0%	52.0%	58.7%
<b>Total Number of Completes</b>	131	145	171	156	176

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# Discussion

- Use of second “sequential” incentive appears effective
  - Cost
  - Response rates
- Increasing amount of second incentive appears more effective

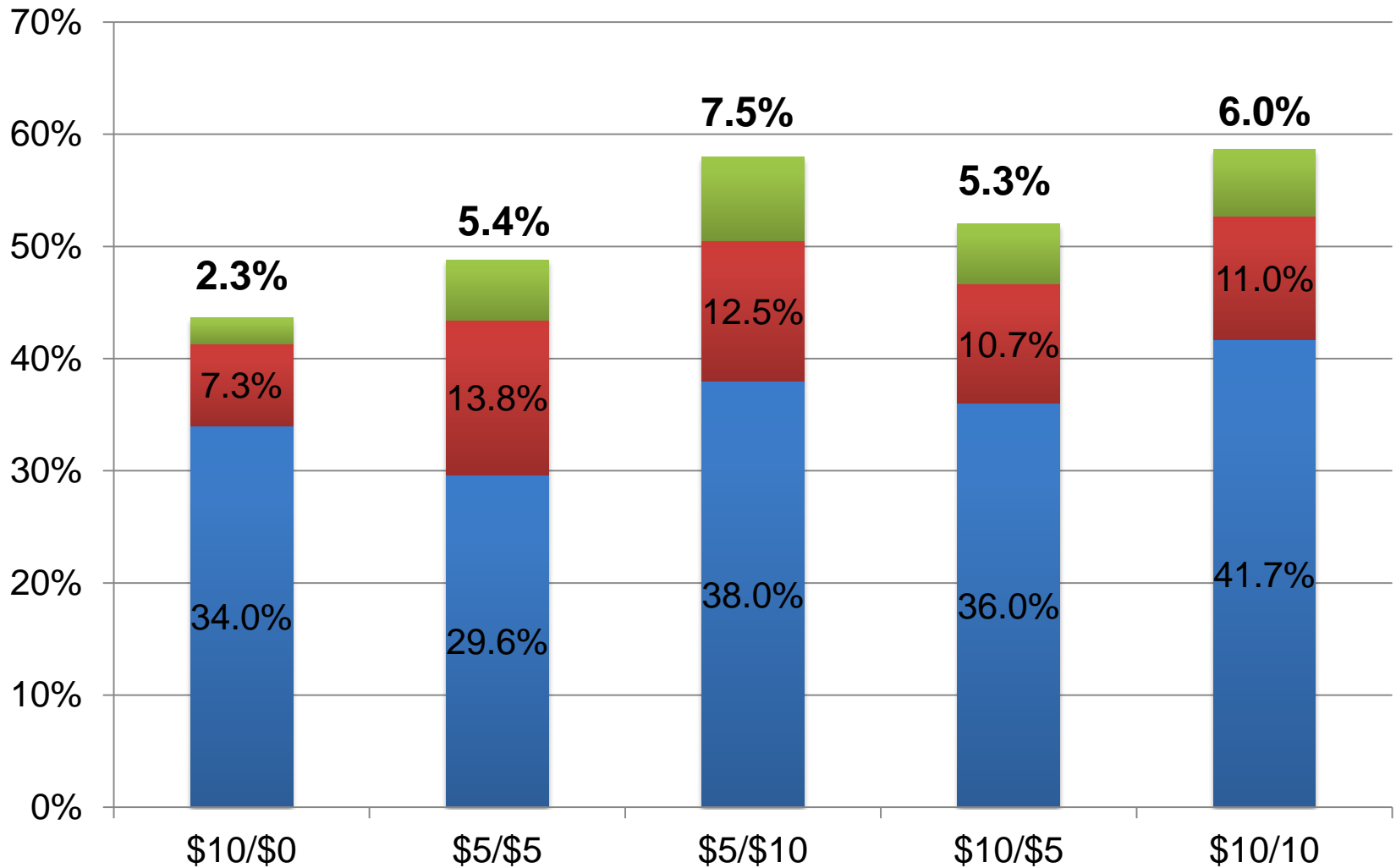
# Discussion

Nagging thoughts...

*"What's behind envelope #2?"*

- Are we in danger of training respondents to hold out for a bigger prize?
- Are doctors different? Docs vs. gen pop
- What about that 3rd full mailing...

# Response rates: After 3rd full mailing





# Costs per complete by treatment

<b>Cost Per Complete By Contact</b>	<b>\$10/\$0 (N=300)</b>	<b>\$5/\$5 (N=300)</b>	<b>\$5/\$10 (N=300)</b>	<b>\$10/\$5 (N=300)</b>	<b>\$10/10 (N=300)</b>
<b>Contacts 1 &amp; 2</b>	\$44.26	\$33.63	\$26.84	\$41.90	\$36.42
<b>Contact 3</b>	\$38.38	\$48.03	\$72.36	\$55.93	\$74.08
<b>Contact 4</b>	\$106.52	\$46.45	\$29.69	\$42.11	\$33.51
<b>TOTAL Cost Per Complete</b>	<b>\$46.60</b>	<b>\$39.08</b>	<b>\$37.00</b>	<b>\$44.80</b>	<b>\$43.19</b>

# Discussion

- Then it hit me!
- Middle of the night stroke of genius:

Any great idea needs a great name to market itself.

Any great idea needs a name.

You heard it here first:

- **The “DSIDM”**

**DSIDM=**

- **The “Dykema Stevenson Incentive Design System”**
- **© 2017**

# Discussion

Analysis yet to come:

- Does it affect data
- Missing data  
(Item missing data rates)
- Differential response looking at
  - Region
  - Age of physician
  - Type of practice
  - Gender (no difference in preliminary results)

**Thank you!**

**John Stevenson**

University of Wisconsin Survey Center

stevens@ssc.wisc.edu



# Findings – Relative efficiency

- Cost-effectiveness measure E
- Ratio of incremental response rate/ incremental cost
- Allows for comparing the relative benefits of the different incentive treatments.

# Relative Efficiency

Treatments	Total Cost	Response Rate	Incremental RR	Incremental Cost	E=IRR/ IC
\$10 Pre \$0 Second	\$6,105.59	43.7%	-	1.0	
\$5 Pre \$5 Second	\$5,704.86	48.8%	11.8	-6.6	-1.80
\$5 Pre \$10 Second	\$6,362.99	58.0%	32.7	4.2	7.77
\$10 Pre \$5 Second	\$6,989.14	52.0%	19.1	14.5	1.32
\$10 Pre \$10 Second	\$7,601.63	58.7%	34.4	24.5	1.40

**Table: Final Response Rates, Costs & Cost Effectiveness by Incentives (Reordered )**

Treatments	Total Cost	Response Rate	Incremental RR	Incremental Cost	E=IRR/ IC
\$5 Pre \$5 Second	\$5,704.86	48.8%	-		
\$10 Pre \$0 Second	\$6,105.59	43.7%	-10.6	7.0	-1.50
\$5 Pre \$10 Second	\$6,362.99	58.0%	18.7	11.5	1.62
\$10 Pre \$5 Second	\$6,989.14	52.0%	6.5	22.5	0.29
\$10 Pre \$10 Second	\$7,601.63	58.7%	20.2	33.2	0.61