

**Clinical Trial  
Recruitment Lab**

**FIND<sup>AD</sup>**  
Financial Incentives to Promote Diverse Participation in Alzheimer's Research



## Financial Incentives to Promote Diverse Participation in Alzheimer's Disease Research

Mireille Jacobson, PhD

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for Health Policy & Economics

Keck School of  
Medicine of **USC**  
**Alzheimer's Therapeutic  
Research Institute**

# Discuss Results of Recent Study

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**JAMA Health Forum.**



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Original Investigation

## **Financial Incentives to Increase Diversity of Older Participants in a Memory Concerns Registry A Randomized Clinical Trial**

Mireille Jacobson, PhD; Doris Molina-Henry, PhD; Tom Y. Chang, PhD; Gustavo A. Jimenez-Maggiola, PhD, MBA; Rajiv Pramanik, MD;  
Samir B. Shah, MD; Paul S. Alsen, MD

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## Acknowledgements

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- **Collaborators:**
- USC: Doris Molina-Henry, PhD; Tom Y. Chang, PhD; Gustavo A. Jimenez-Maggiora, PhD, MBA; Paul Aisen, MD
- CCHS: Rajiv Pramanik, MD; Samir B. Shah, MD

# USC's Clinical Trial Recruitment Lab (CTRL)

## Mission

Support, evaluate and disseminate innovative recruitment strategies to improve access and representation in clinical trials

## Partnership

**USC Schaeffer**  
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Keck School of  
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## Support

 **Gates  
Ventures**



# Why focus on diversity in clinical research?

1. Generalizability and Heterogeneity in Treatment Effects
2. Trust in research and the medical establishment
3. Equitable access to innovation

GUIDANCE DOCUMENT

## Enhancing Participation in Clinical Trials — Eligibility Criteria, Enrollment Practices, and Trial Designs

*Guidance for Industry*

DECEMBER 2025

[Download the Final Guidance Document](#)

[Read the Federal Register Notice](#)

Final

Docket Number: [FDA-2019-D-1264](#)

Issued by: Center for Drug Evaluation and Research  
Center for Biologics Evaluation and Research

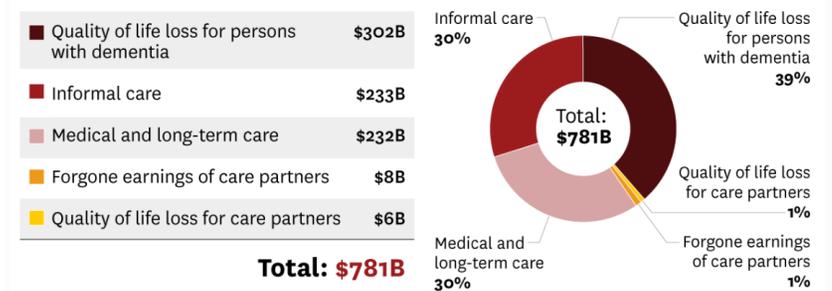
This guidance recommends approaches that sponsors of clinical trials intended to support a new drug application or a biologics license application can take to increase enrollment of a representative population in their clinical trials. This guidance considers both demographic characteristics of study populations (e.g., sex, race, ethnicity, age, location of residency) and non-demographic characteristics of populations (e.g., patients with organ dysfunction, comorbid conditions, disabilities, those at the extremes of the weight range, and populations with diseases or conditions with low prevalence). Enrolling

# Alzheimer's Disease Focus

- Nearly 6 million people living with AD/ADRD in the US
  - Annual costs of \$781 billion
- Number of people living with AD/ADRD projected to double by 2060
- Significant progress in disease modifying therapies but DMTs
  - don't work for everyone
  - can have significant side effects
  - not a cure even when they work

Total cost of dementia is \$781 billion (2025 dollars).

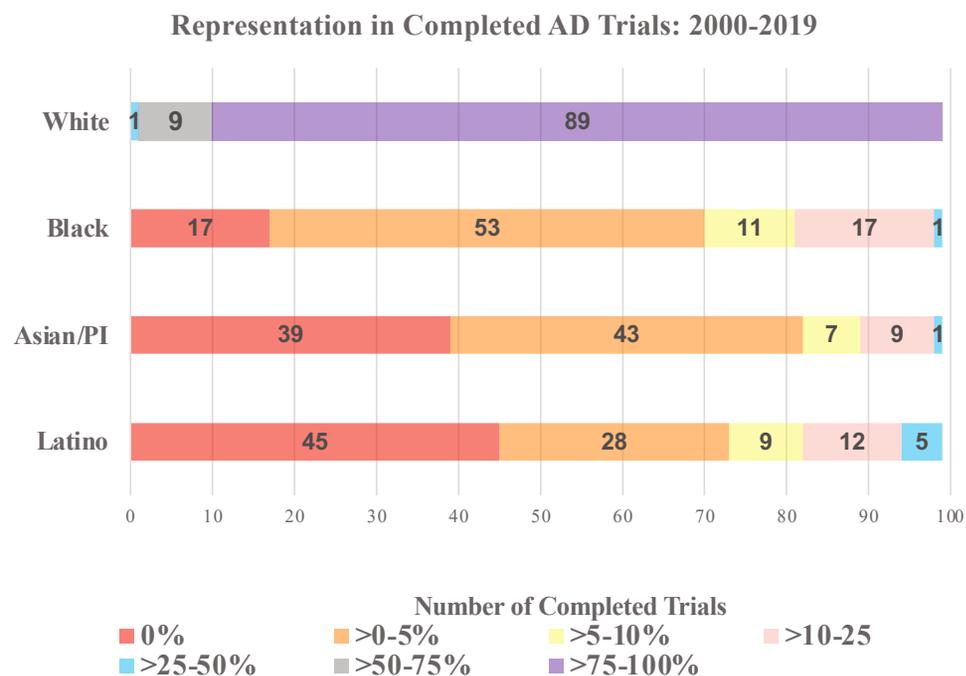
**Figure 1: Total Cost of Dementia by Cost Category**



**Source: *The United States Cost of Dementia Project***

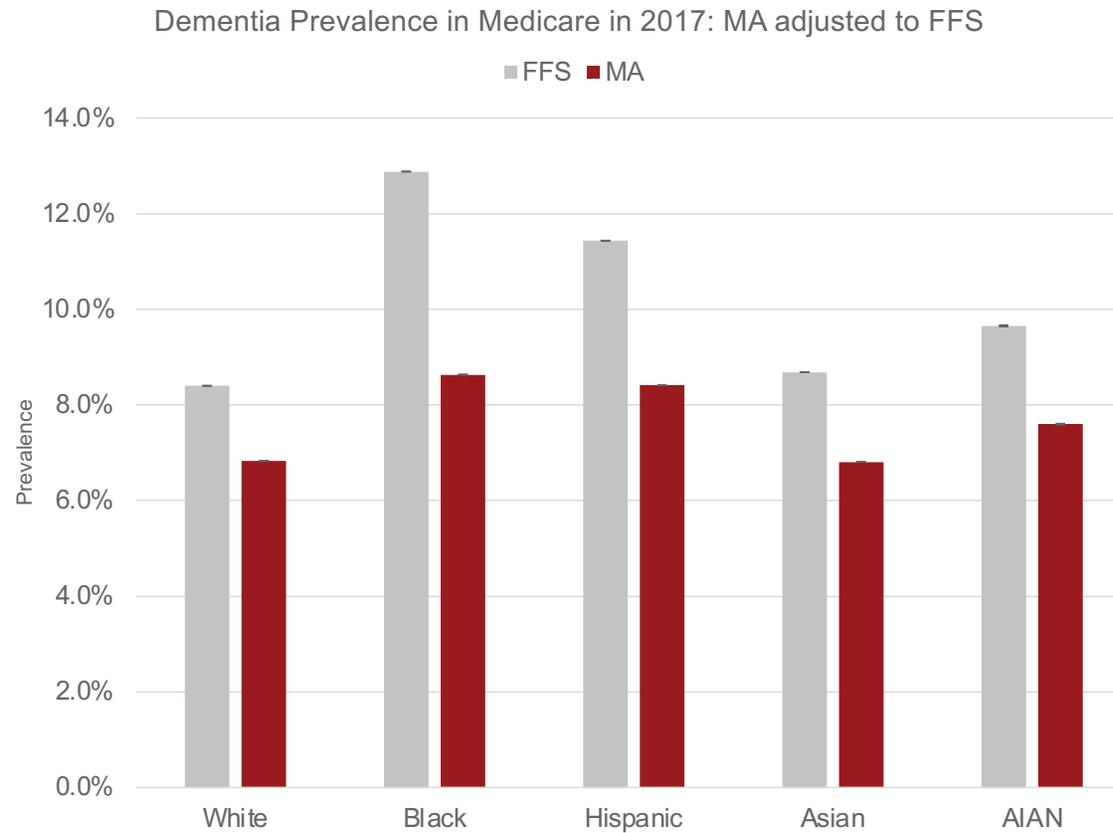
# Diversity in Alzheimer's Trials is Limited

- Limited racial/ethnic diversity in trials
  - Phase 3 donanemab study: 97.4% of US participants were White; 5% Latino
  - Phase 3 lecanemab study: 95% of US participants were White; 22% Latino!
- Data from ClinicalTrials.gov for 2000-2019 indicate:
  - 90% of completed trials had 75-100% non-Hispanic White participants
  - 71% had 5% Black participants or less;
  - 75% had 5% Latino participants or less;



Arellanes et al. (2024) J American Geriatrics Society, 72 (9): 2868-70

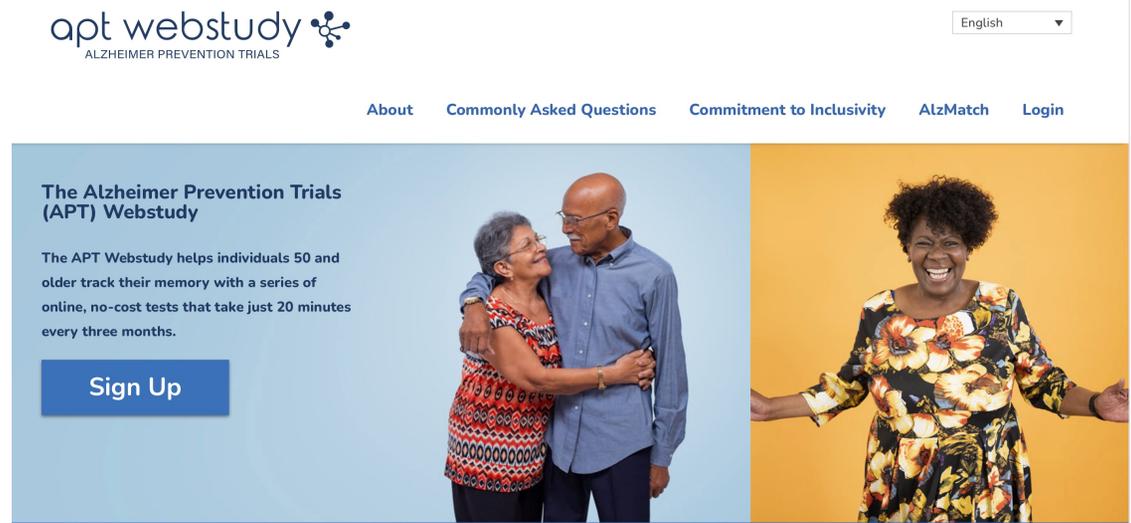
# Unequal Burden of AD/ADRD



Medicare claims and Encounter data  
Haye et al. (2023)

# Registries to Accelerate AD Trials

- **Alzheimer's Prevention Webstudy**
- Remote registry
- Participants are ages 50+
- Register + take memory tests
- Sent quarterly assessments
- Sponsored by NIA
- Led by researchers at USC, Brigham and Women's, Cleveland Clinic



The screenshot shows the homepage of the apt webstudy website. At the top left is the logo "apt webstudy" with "ALZHEIMER PREVENTION TRIALS" underneath. To the right is a language dropdown menu set to "English". Below the logo is a navigation bar with links for "About", "Commonly Asked Questions", "Commitment to Inclusivity", "AlzMatch", and "Login". The main content area features a blue background on the left with the heading "The Alzheimer Prevention Trials (APT) Webstudy" and a description: "The APT Webstudy helps individuals 50 and older track their memory with a series of online, no-cost tests that take just 20 minutes every three months." Below this is a blue "Sign Up" button. To the right of the text are two images: one of an elderly couple embracing and another of a smiling woman in a floral dress.

# APT Webstudy Representation

	APT Webstudy (Dec 2021) N=44,598	2022 CPS, Ages 50+
Age (mean, SD)	64.7 (8.60)	65.0 (9.73)
Female (%)	73.5	52.8
Race and ethnicity		
Asian (non-Hispanic)	2.8	5.4
Black (non-Hispanic)	1.8	10.7
Hispanic	3.6	12.3
White (non-Hispanic)	90.4	69.7
Education		
High School	14.5	54.7
College	45.2	31.3
Advanced Degree	39.4	14

## Projects on Increasing Diversity of APT Webstudy

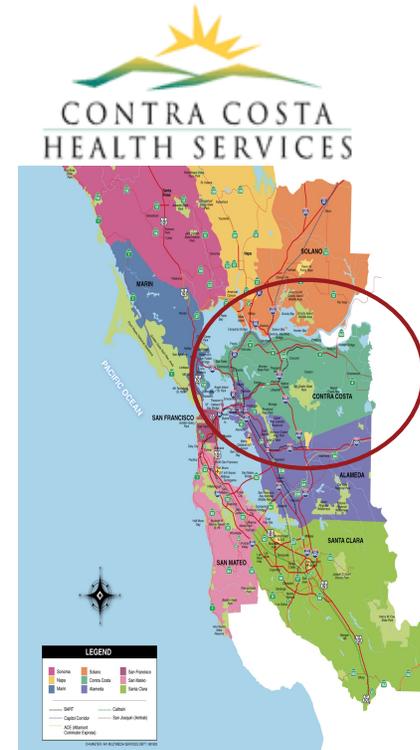
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- Test whether financial incentives can increase diversity of a memory concerns registry designed to accelerate clinical trials
  - Connect people to research through trusted community partners
  - Use remote messaging in one study and in-person recruitment in the other
  - In both, test whether financial incentives increase participation
- Provide some rigorous evidence on approaches to increasing diversity



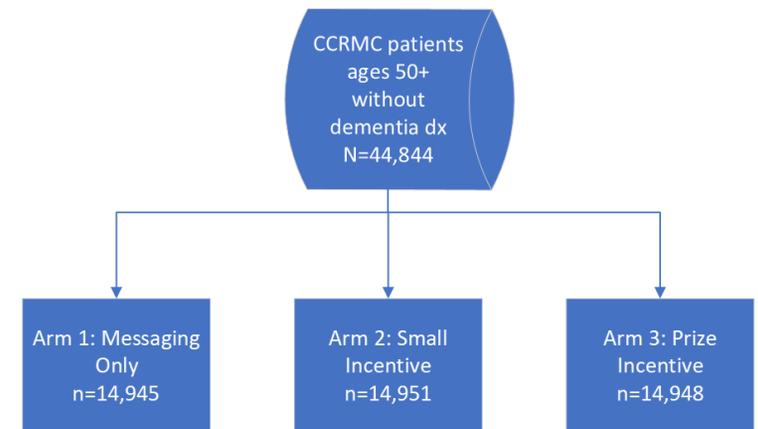
# Financial Incentives and Remote Messaging

- Partnered with an integrated Medicaid managed care health system in Northern CA
  - Primarily economically disadvantaged patients
  - Racially and ethnically diverse
- Health system expanding geriatric services



# Design of Remote Messaging Study

- Invited 44,844 patients from a county health system to enroll in the APT Webstudy
- Randomized ~15,000 per arm to
  - Message only
  - Small \$25 incentive
  - Prize incentive of \$2500
- Randomization stratified by age-group, race/ethnicity and message modality.



## Study Messages

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Subject: You are invited to participate in a brain health program

[First Name]

Contra Costa Health Services invites you to participate in an online research study to monitor brain health, the Alzheimer Prevention Trials (APT) Webstudy. By participating you can learn more about your brain health and help researchers learn more about how we can prevent dementias that cause severe memory loss, like Alzheimer's disease dementia. You can join the Webstudy from the comfort of your home by completing a 5 min registration and two brief cognitive tests.

This invitation is intended only for you as a member of Contra Costa Health Services and should not be shared with others. If you have any questions regarding this invitation, please email us at [info@aptwebstudy.org](mailto:info@aptwebstudy.org), or call us at 1-858-877-3135.

To sign up click here: [INSERT LINK HERE]

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**If you sign up and complete the first memory test within 7 days, you will receive a 25 USD Amazon reward.**

This invitation is intended only for you as a member of Contra Costa Health Services and should not be shared with others. If you have any questions regarding this invitation, please email us at [info@aptwebstudy.org](mailto:info@aptwebstudy.org), or call us at 1-858-877-3135.

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If you sign up and complete the first memory test within 7 days, you will be entered into a drawing for a 2500 USD Amazon reward. The selected winners will be notified within 90 days.

This invitation is intended only for you as a member of Contra Costa Health Services and should not be shared with others. If you have any questions regarding this invitation, please email us at [info@aptwebstudy.org](mailto:info@aptwebstudy.org), or call us at 1-858-877-3135.

To sign up click here: [INSERT LINK HERE]

## Study Outcomes

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- Primary outcome: APT Webstudy registration and completion of at least 1 of 2 cognitive screeners
- Secondary outcome: Completion of both cognitive screeners
  - Cognitive Function Instrument (CFI)
  - CogState

## Pre-specified Primary Analysis

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- Multivariate logistic regressions controlling for stratification variables – age group (50-64, 65 and over), race and ethnicity groups (Latino (a)/Hispanic, White, Black, Asian, Other) and message modality (email, SMS).
- Report odds ratios
- Test two hypotheses:
  - H1: Small incentive increases enrollment more than message only
  - H2: Prize incentive increases enrollment more than message only
- Use significance level of  $p < 0.025$  to adjust for 2 primary comparisons

## Secondary Analysis

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- Test another hypothesis:
  - H3: Prize incentive increases enrollment more than small incentive
- Sub-group analyses based on stratification variables, sex, insurance
- Estimate OLS regressions

## Data Sources

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- Patient demographics, health insurance: Electronic medical record
  - Anonymized for study team
- APT Webstudy enrollment: APT Webstudy team
  - Data shared using anonymous unique identifiers that were passed through the sign-up URLs

## Characteristics of the Study Sample I

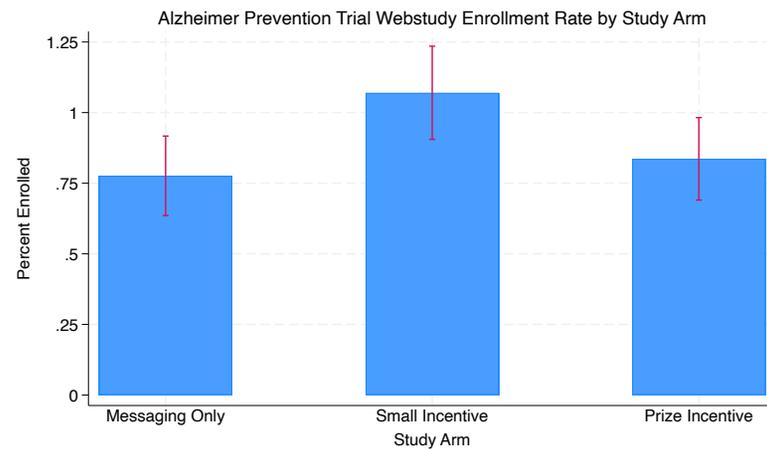
	Message Only N=14,945	Small Incentive N=14,951	Lottery Incentive N=14,948
Race and Ethnicity (%)			
Asian, non-Hispanic	21.2	21.2	21.3
Black, non-Hispanic	13.5	13.5	13.5
Hispanic/Latino(a)	25.3	25.3	25.3
White, non-Hispanic	27.0	27.0	27.0
Other, non-Hispanic	13.0	13.0	13.0

## Characteristics of the Study Sample II

	Message Only N=14,945	Small Incentive N=14,951	Lottery Incentive N=14,948
Age in Years N (sd)	64.7(10.1)	64.7(10.1)	64.7(10.1)
Percent 50-64	54.7	54.7	54.7
Sent Email Message (%)	60.6	60.6	60.6
Female	56.8	56.2	57.2
Medicaid	55.7	56.0	55.7
Medicare	28.1	28.4	27.8
Commercial	6.2	5.9	6.0
Other	10.1	9.7	10.5

# Basic Findings

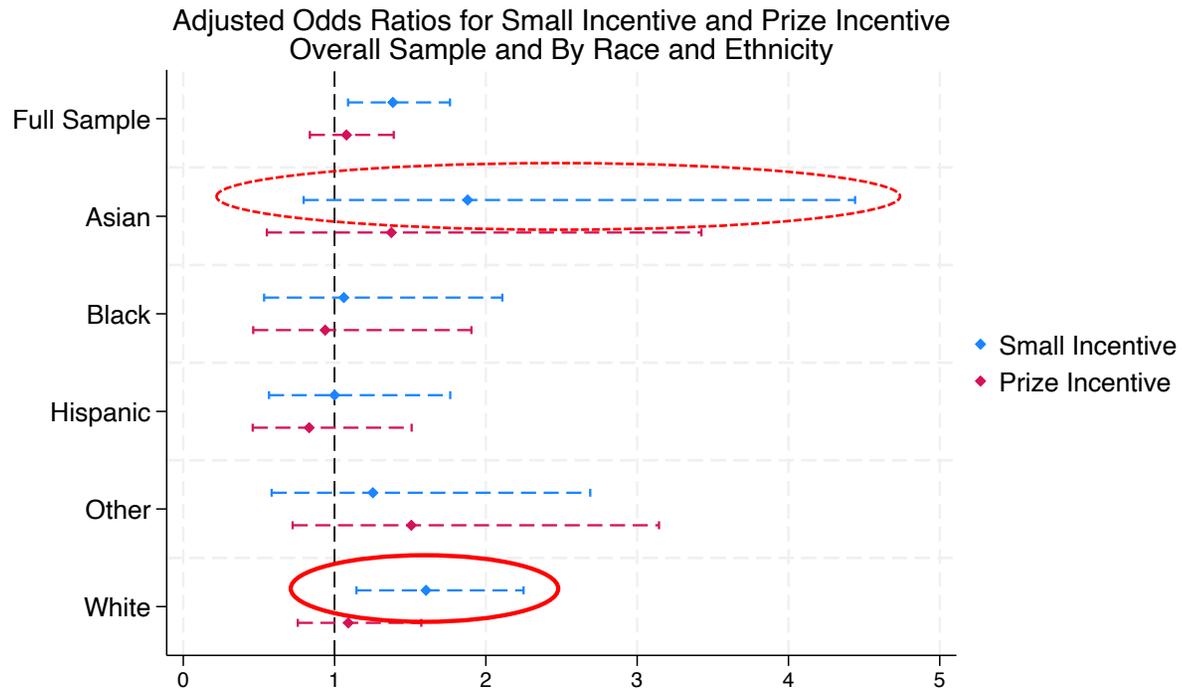
- **Relative to message alone:**
  - Small financial incentive increases enrollment
  - Prize incentive does not increase enrollment



Number of		Estimate OR (95% CI)	Unadj.P Value	Adj.P Value
Event	Total			
Small Incentive vs Messaging Only	160 / 14951	1.39 [1.09 – 1.77]	0.0079	0.0158
Prize Incentive vs Messaging Only	125 / 14948	1.08 [0.84 – 1.39]	0.5594	> 0.999

← Less Likely to Enroll      More Likely to Enroll →

# Small Incentive Most Impactful for White Patients

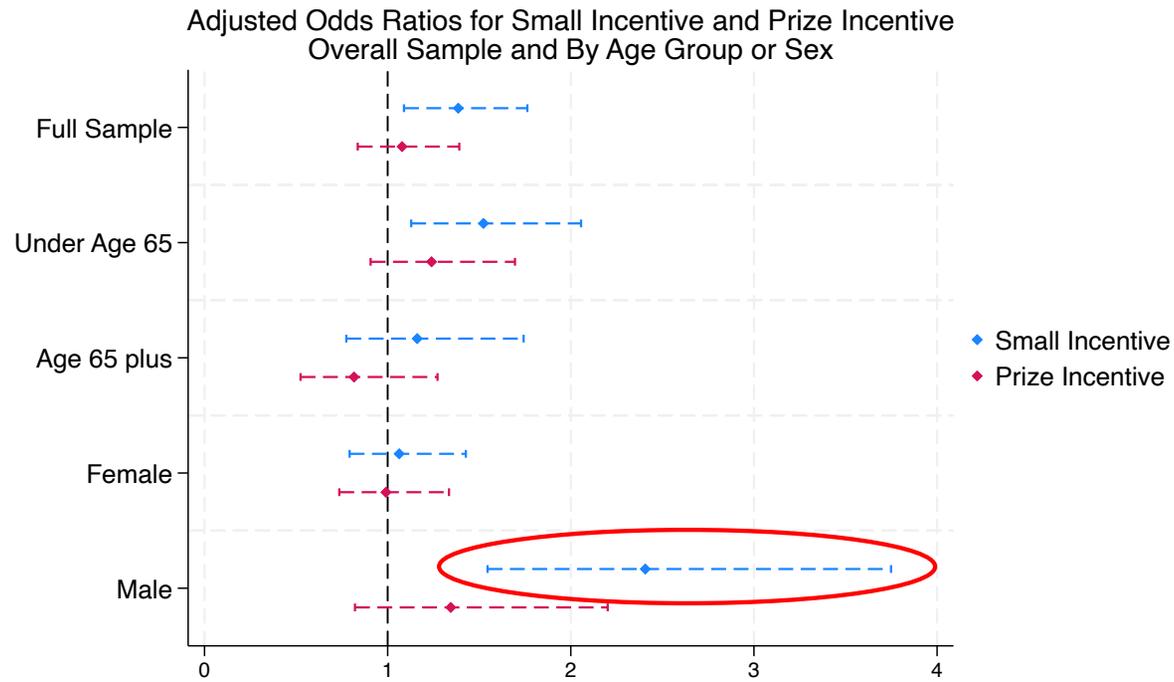


## Adjusted Odds Ratios Overall and by Subgroup

	Adjusted Odds Ratios [95% CI]				
	Full Sample	Asian	Black	Hispanic	White
Small Incentive	1.39** [1.1, 1.8]	1.88 [0.8, 4.4]	1.06 [0.5, 2.1]	1.0 [0.6, 1.8]	1.61** [1.1, 2.2]
Prize Incentive	1.08 [0.8, 1.4]	1.38 [0.6, 3.4]	0.938 [0.5, 1.9]	0.832 [0.5, 1.5]	1.09 [0.8, 1.6]
Message Arm Enrollment rate	0.78%	0.25%	0.79%	0.63%	1.39%

\*\* signifies  $p \leq 0.01$

# Small Incentive Also Impactful for Male Patients



## Adjusted Odds Ratios for Other Subgroups

	Adjusted Odds Ratios [95% CI]			
	Full Sample	Males	Ages 50-64	Medi-Cal
Small Incentive	1.39** [1.1, 1.8]	2.41** [1.55, 3.75]	1.52** [1.1, 2.1]	1.54** [1.11, 2.13]
Prize Incentive	1.08 [0.8, 1.4]	1.35 [0.82, 2.20]	1.24 [0.9, 1.7]	1.18 [0.836, 1.67]
Message Arm Enrollment rate	0.78%	0.43%	0.88%	0.72%

\*\* signifies  $p \leq 0.01$

## What about the Costs?

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### Marginal Costs:

- Message costs
  - Email: ~ 0 marginal cost to 60% of patients
  - Text – \$0.05 per message to 40% of patients
- Small and prize incentive costs:
  - Pay \$25 per new enrollee (in expected value)

## Comparing Costs Per Additional Enrollee

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- **Message Arm: \$2.56 per additional enrollee**
  - For every 100 messages, got 0.78 enrolled
  - Marginal Cost:  $(0.4*0.05 + 0.6*0)*100/0.78 = \$2.56$
- **Small \$25 incentive arm: \$26.82 per additional enrollee**
  - For every 100 messages, got 1.1 enrolled but also paid each \$25
  - Marginal Cost:  $\$25 + (0.4*0.05 + 0.6*0)*100/1.1 = \$25 + \$1.82 = \$26.82$
- **Prize incentive arm: \$27.38 per additional enrollee**
  - For every 100 messages, got 0.84 enrolled but also paid \$25 each in expected value
  - Marginal Cost:  $\$25 + (0.4*0.05 + 0.6*0)*100/0.84 = \$25 + \$2.38 = \$27.38$

## Conclusions When Factoring Costs

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- Small guaranteed incentives increased enrollment more but...
- Messages alone are more cost-effective.
  - At a cost of less than \$3 per person, enrolled 117 primarily economically disadvantaged people into the registry
- Need to do more to invite people of diverse backgrounds to join.

## New Enrollees Diverse Relative to Baseline

	APT Webstudy (Dec 2021) N=44,598	New CCHS Enrollees N=401
Age (mean, SD)	64.7 (8.60)	61.4 (7.78)
Female (%)	73.5	67.1
Race and ethnicity (%)		
Asian (non-Hisp)	2.8	8.5
Black (non-Hisp)	1.8	12.0
Hispanic	3.6	17.0
White (non-Hisp)	90.4	51.4
Insurance (Primary)		
Medicaid		55.6
Medicare		21.7
Commercial		15.7

# Some Study Lessons

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- **Lessons learned**

- Need to invite the “right” people
- Lotteries are not necessarily better than guaranteed \$ amount, depends on the people and circumstance
- Amazon gift cards may not be valued equally

- **Scalability**

- With right partners, this is a cheap and scalable intervention to increase enrollment of low SES individuals and can work with or without incentives

**Thank You!**

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**FIND**  **AD**

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