Smoking Cessation Leadership Center

UCSF

University of California San Francisco

Advancing Smoking Cessation in California's Medicaid Population: The Medi-Cal Incentives to Quit Smoking (MIQS) Project

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3/12/19

Moderator

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truth initiative
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SAMHSA
Substance Abuse and Mental Health Services Administration

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Visit CABHWI.ucsf.edu for more information.

Presenter

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CALIFORNIA
SMOKERS' HELPLINE
1-800-NO-BUTTS

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Medicaid Incentives to Quit Summary

Introduction: California, Pioneer in Tobacco Control

Steven A. Schroeder, MD
Distinguished Professor of Health and Health Care
Department of Medicine, UCSF
Director, Smoking Cessation Leadership Center

3/12/2019

Low Smoking Rates in California

- Adult smoking prevalence 10.5%, trailing only Utah, which has 50% Mormon population
- But because of huge population (almost 40 million), still largest # of smokers of any state—3.2 million
- Affordable Care Act expanded the # of Medicaid (Medi-Cal in CA) smokers from 738,000 in 2011-2012 to 1,448,000 smokers by 2016
- This means that 41.5% of CA smokers are Medicaid recipients

CA's Pioneering Tobacco Control Efforts

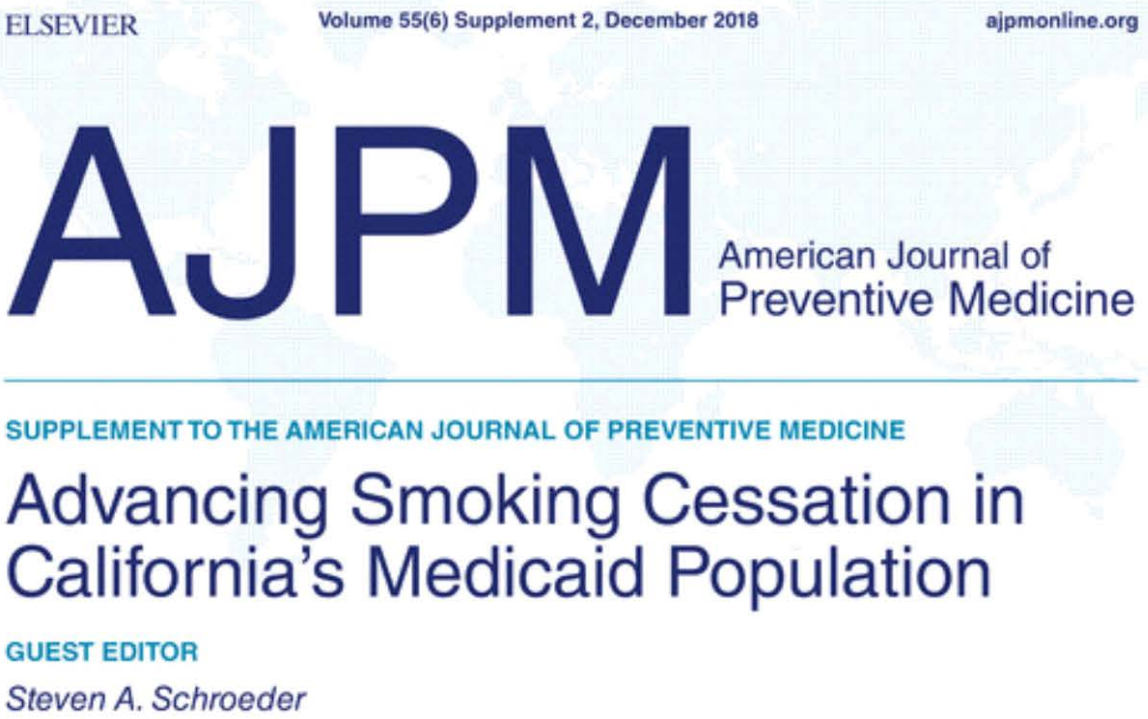
- 1989—First state wide comprehensive tobacco control program
- 1993—First statewide toll-free telephone Quitline
- 1994—First statewide clean indoor air law
- 2007—City of Belmont prohibited smoking in all multi-unit housing. 51 additional jurisdictions followed suit over next decade
- 2008—San Francisco banned tobacco sales in pharmacies; legal challenge failed to overthrow the ban
- Tobacco free campuses in state universities (2014), state colleges (2017) and community colleges (2018)

Pioneering CA efforts (2)

- 2015—San Francisco bans tobacco use in baseball parks. Other major league teams in state followed suit
- 2016—Second state (after HI) to restrict tobacco sales to ages 21 and over
- 2017—Several cities restricted or banned the sale of menthol-flavored tobacco products
- 2017—Several municipalities banned smoking on public beaches
- 2017—San Francisco followed two other counties in banning all flavored tobacco products. Decision ratified in 2018 public referendum
- All the actions supported by strong grassroots and agency advocacy pressures

Reasons for Not Helping Patients Quit

1. Too busy
2. Lack of expertise
3. No financial incentive
4. Lack of available treatments and/or coverage
5. Most smokers can’t/won’t quit
6. Stigmatizing smokers
7. Respect for privacy
8. Negative message might scare away patients
9. I smoke myself
10. Electronic medical record system problems (e.g. EPIC)



- Impact on priority populations
- Effect of incentives on direct-to-member demand
- Direct-to-member mailing methodology
- Building CA Quits

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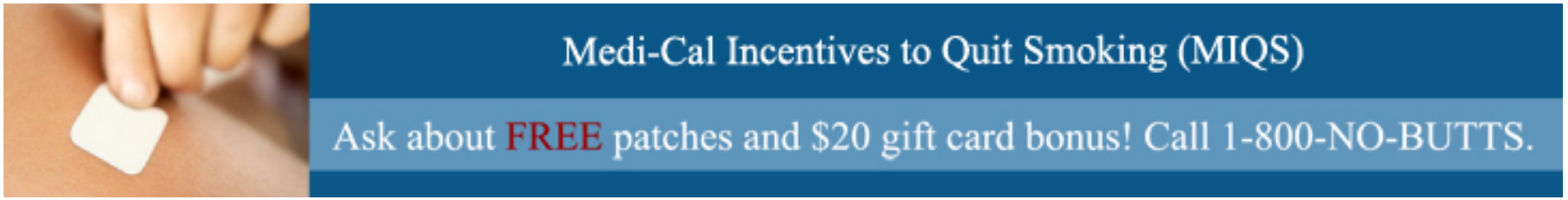


Medi-Cal Incentives to Quit Smoking Project:

Impact of Statewide Outreach through Health Channels

Elisa Tong, MD, MA
Associate Professor of Medicine
University of California, Davis Health

The project described was supported by Funding Opportunity Number 1B1CMS330901 from the Centers for Medicare & Medicaid Services. The contents provided are solely the responsibility of the authors and do not necessarily represent the official views of the Department of Health and Human Services or any of its agencies.. The results presented have not been verified by the independent evaluation contract.

Objectives

- MIQS Project background
- Statewide outreach
- Quitline caller trends
  - Total calls and incentives
  - Caller characteristics
  - Expected calls for Medi-Cal growth
  - Compare Non-Medi-Cal: Reach & Referral Source
- Discussion

Medi-Cal: High Smoking Rates

Smoking prevalence

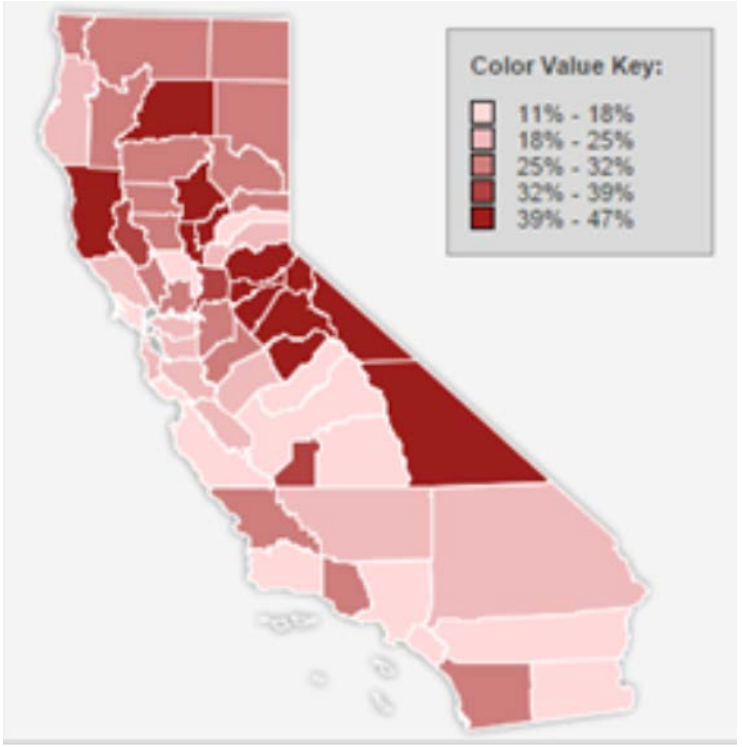
- 3.8 M smokers in CA
- 18.7% Medi-Cal vs. 11.5% private insurance (CHIS 2011-2012)

Variation across counties

- Sacramento: 31.3%
- Rural counties: 40-45%

Medi-Cal expansion

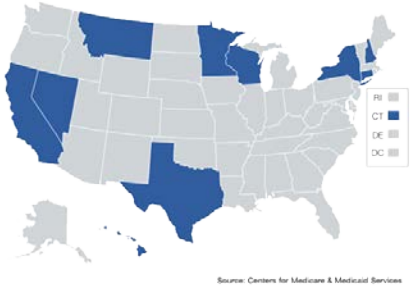
- 1 in 3 people in CA
  - Now 40% of CA smokers



Medicaid Incentives to Prevent Chronic Disease Program

Funded by Centers for Medicare and Medicaid (CMS)

- 10 states awarded funding through ACA
- 2011-2016
- Priorities: Tobacco, Obesity, Diabetes



Economic incentives work **73%** of the time on changing consumers' preventive behavior (Kane AJPM 2004)

- Reviewed 47 randomized controlled trials
- Best with short-term, well-defined goals
- Little evidence for Medicaid

Medi-Cal Incentives to Quit Smoking (MIQS) Project Team

GOAL: Increase Medi-Cal calls to the California Smokers' Helpline to 75,000 (50% increase) with 25,000 earning incentives over 4 years

Neal Kohatsu
Medical Director (Retired), CA Department of Health Care Services
Lead PI

Elisa Tong, UCD
Statewide Outreach PI

Shu-Hong Zhu, UCSD
Helpline PI

Wendy Max, UCSF
Cost-Effectiveness PI

California Smokers' Helpline

Free telephone counseling operated by UC San Diego

- 30 minute session and follow-up sessions with a counselor
- Doubles the chances of long-term quitting (Zhu, NEJM 2002)
- Over 25 years in operation
  - National: 1800-QUIT-NOW

MIQS Incentives:
Financial and Medication Incentives

2012

Callers "Ask and Earn" $20 Gift Card from the Helpline

2013

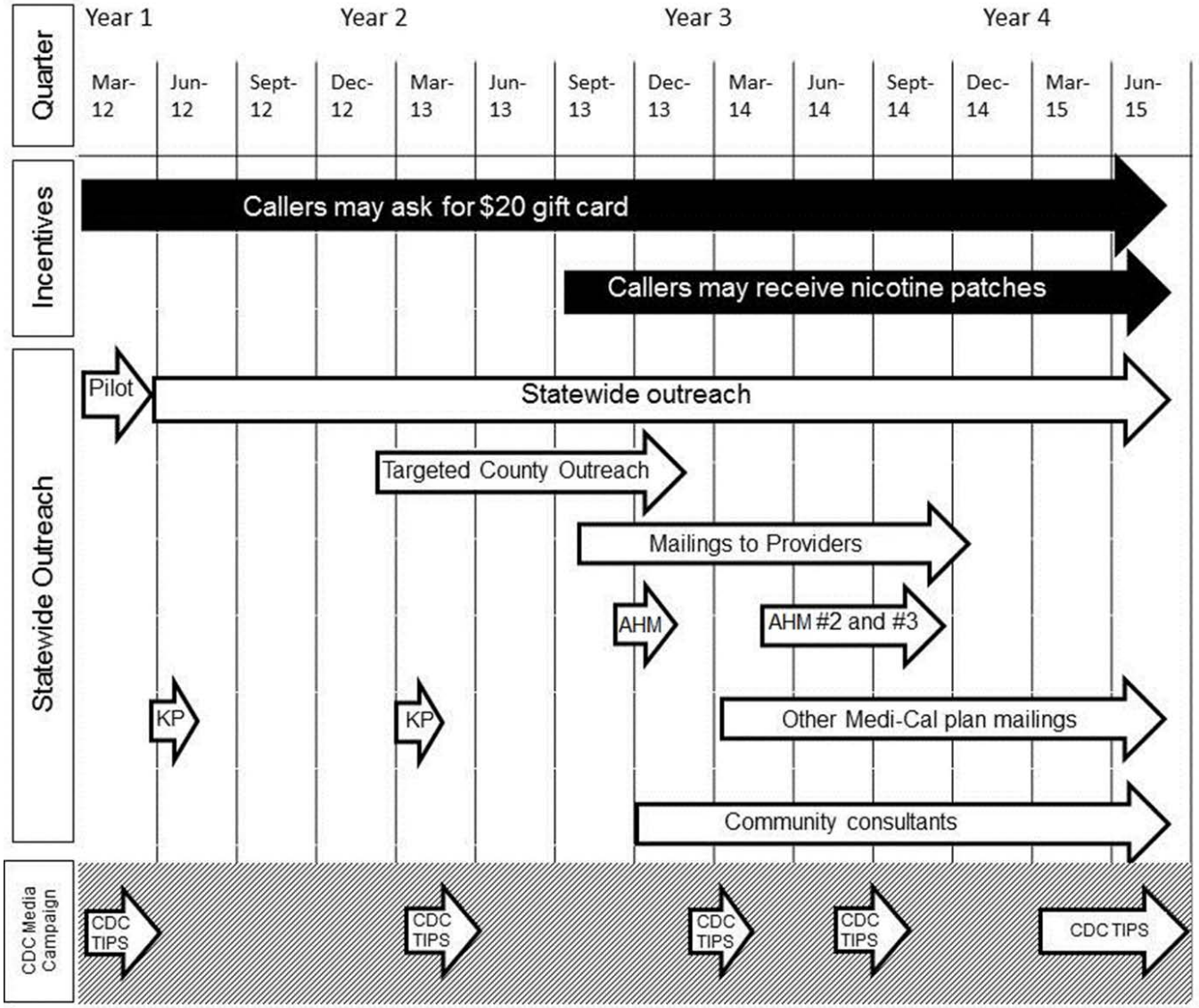
Helpline "Asks and Sends" Free Nicotine Patches to Callers

* Must have verified 14-digit ID BIC to receive incentives

MIQS Outreach Materials: Providers, Plans, Partners

*All-Household Mailings: Nicotine Patch Only

Timeline of MIQS Incentives & Outreach



Medi-Cal Calls During MIQS
(March 2012 - July 2015)

Total Medi-Cal Calls: 92,900

- 70% increase from prior years
- Completed Counseling
  - 62,232 (67.0%)

CALIFORNIA SMOKERS' HELPLINE 1-800-NO-BUTTS

Incentives: 58,762

- Asked for $20 Incentive
  - 11,523 (**12.4%**)
    - Among Completed Counseling (15.5%)

- Sent nicotine patch
  - 47,239 (**73.3%** when available)

Who Were these Medi-Cal Callers?

Medi-Cal Callers

Demographics

- About half were 45-64 yrs, female, non-Latino white, high school degree or less
- African Americans: 1 in 5 and Latinos: 1 in 6
- Live with child $\leq$ 5 yrs: 1 in 6 or pregnant (n=1150)

Health conditions

- 40% HTN, anxiety, or depression
- 10-20% diabetes, bipolar, alcohol/drug use, schizophrenia

Activated Medi-Cal Callers

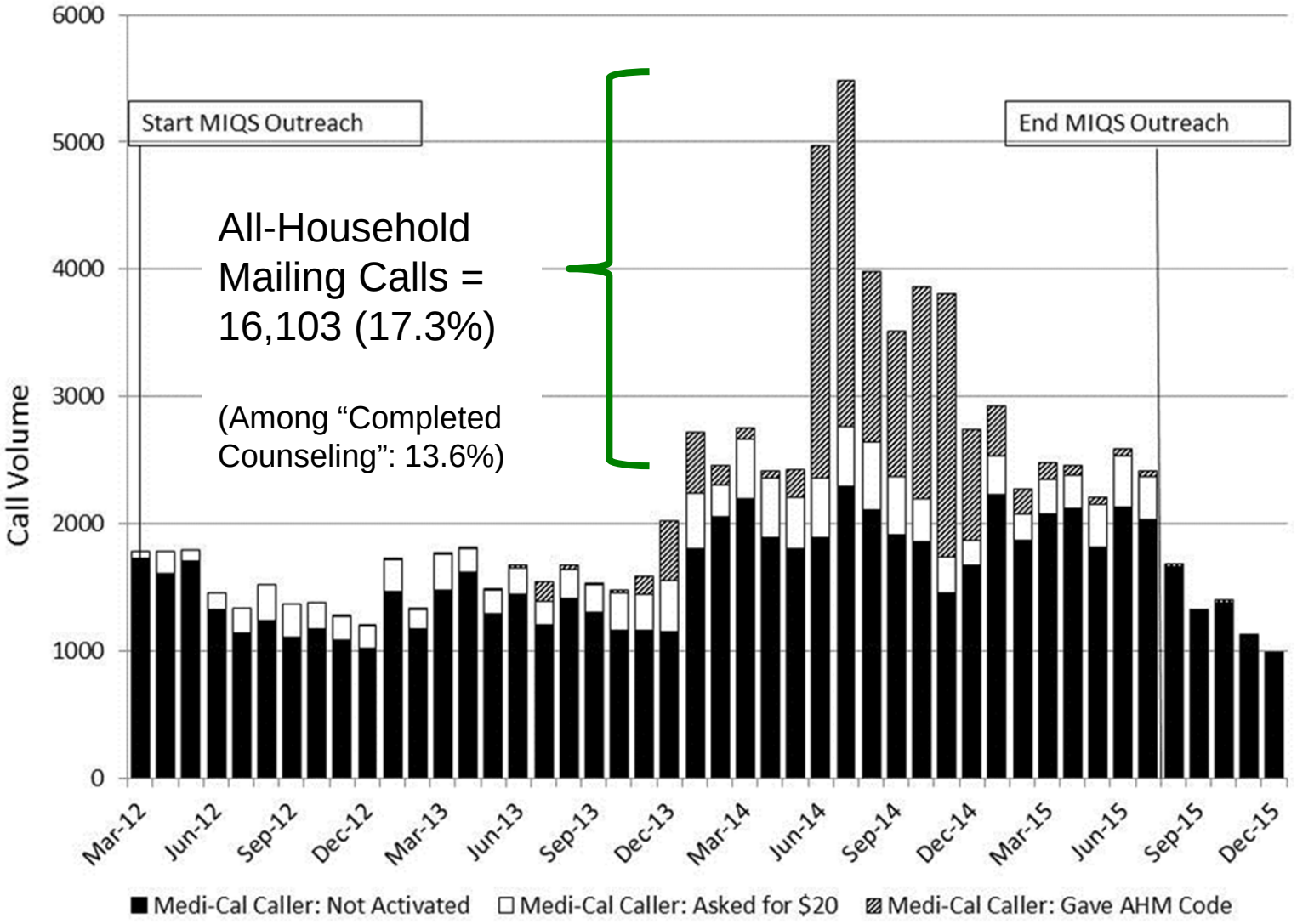
Higher "ask for $20" rates

- African Americans
- American Indians
- Pregnant women
- Gay/lesbian/bisexuals
- Behavioral health
- Referred by nonprofit

Higher "all-household mailing"

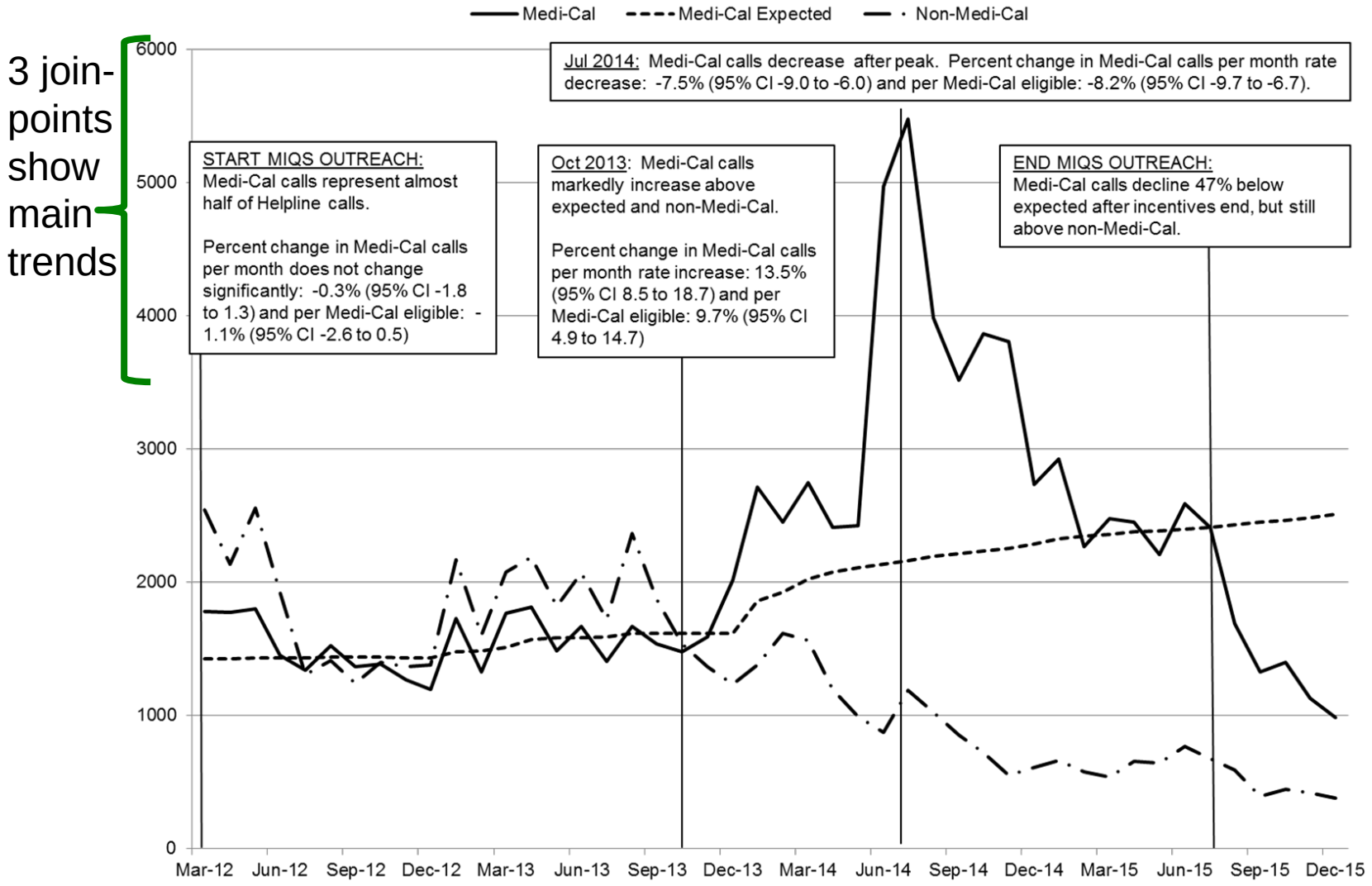
- Older age, males, whites
- College grads
- Latinos, Spanish-language line

Medi-Cal Monthly Calls Increased



Comparing Expected Medi-Cal & Non-Medi-Cal Calls:

23% Above Expected for Population Growth



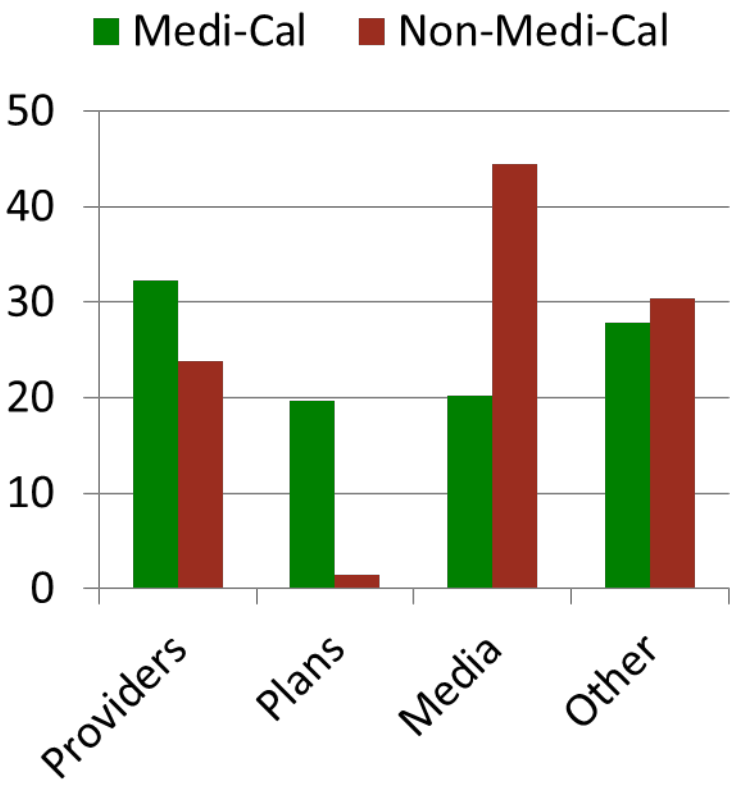
Comparing Medi-Cal vs. Non-Medi-Cal Calls

REACH

	Medi-Cal (%, 95% CI)	Non-Medi-Cal (%, 95% CI)
2011 (pre-MIQS)	2.3 (2.1-2.6)	0.6 (0.5-0.6)
2012	**2.8** (2.4-3.1)	0.7 (0.6-0.7)
2013	**3.1** (2.5-3.7)	0.7 (0.7-0.8)
2014	**4.5** (3.6-5.3)	0.5 (0.4-0.6)
2015	1.8 (1.6-2.1)	0.3 (0.2-0.3)

Reach = Helpline Callers / Smoker Population in California Health Interview Survey

REFERRAL SOURCE



p value <0.0001

CALIFORNIA SMOKERS' HELPLINE 1-800-NO-BUTTS

Discussion

MIQS outreach increased utilization and reach of quitline

- Doubled the reach among Medi-Cal smokers
- 70% increase from prior years; above expected for growth

MIQS outreach channels

- Providers and plan mailings: important referral sources
- Higher "ask for $20" rates in some subgroups

MIQS incentives

- "Ask for $20" incentive limitations; may be underreported
- "Free" nicotine patch promotion alone quite significant

→ How do we implement this for sustainability?

Effectiveness of Incentives for Helping Medicaid Recipients Quit Smoking: A Randomized Controlled Trial

Shu-Hong Zhu, Ph.D.

University of California, San Diego

Webinar for SCLC
March 12, 2019

DHCS

CALIFORNIA SMOKERS' HELPLINE 1-800-NO-BUTTS

The Team

- **UCSD**
  - **Christopher Anderson**
  - **Sharon Cummins**
  - **Anthony Gamst**
  - **Carrie Kirby**
  - **Shu-Hong Zhu**

DHCS

UCSF

UCD

Background

- **FDA-approved quitting aids (e.g., NRT, varenicline) can help smokers quit**
  - **But smokers mostly do not use them**
- **Telephone counseling, especially a multiple-session counseling program, can help smokers quit**
  - **But smokers often do not stay with the program**

Research Questions

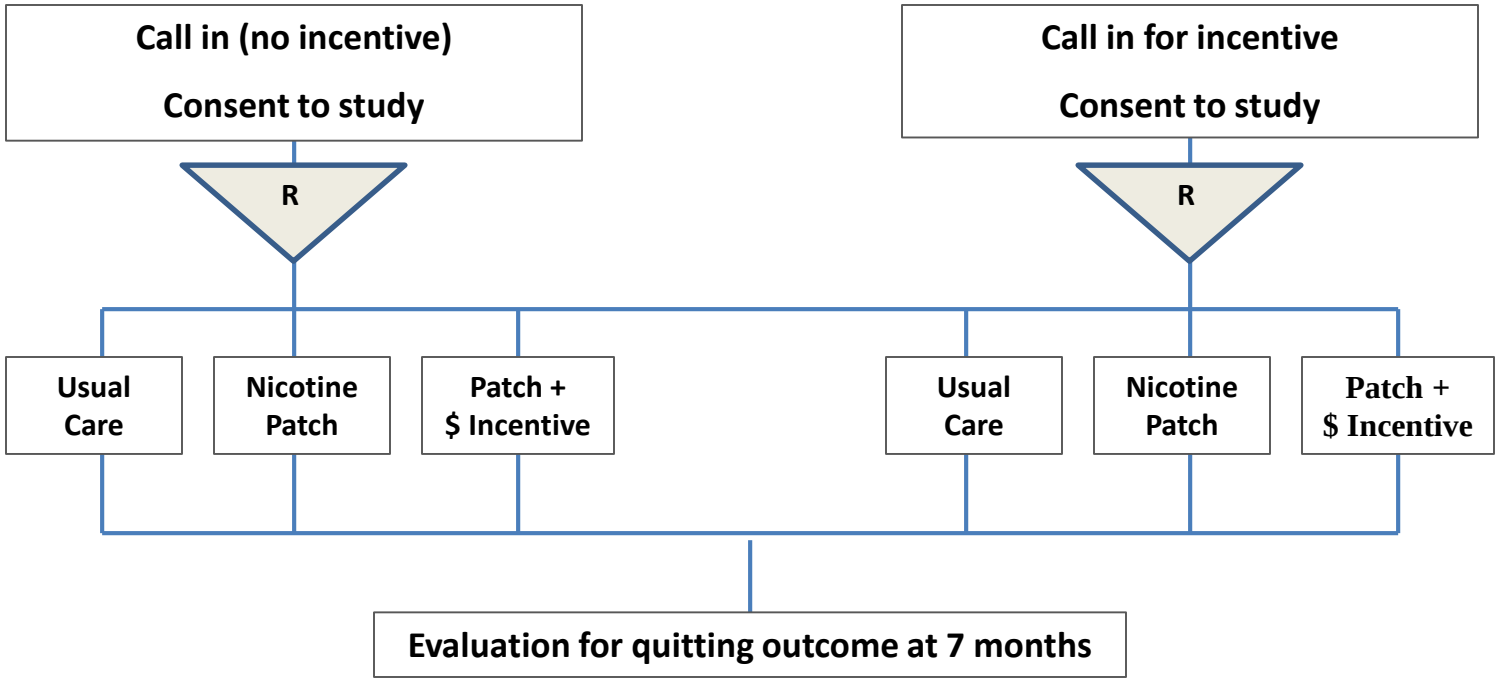
- **Will sending nicotine patches directly to smokers help them quit?**
- **Can financial incentives help smokers better adhere to counseling program, and increase their quit rate?**
  - **The incentives are for increasing program adherence, and are not contingent on success in quitting smoking**

Two Levels of Financial Incentives

- **Incentive to call the California Smokers' Helpline (promotion)**
  - A $20 incentive to enroll in the Helpline
  - Dr. Elisa Tong's presentation
- **Incentive to adhere to the multiple-session counseling program**
  - $20 first session, and $10 for each of 4 follow-up sessions
  - **Only the second incentive was tested for its effectiveness in the randomized trial for smoking cessation**

Trial of Patches and $ Incentives

(N=3,816)



1. Usual Care: free counseling, certificate of enrollment for NRT with MD prescription (requires going to the pharmacy)

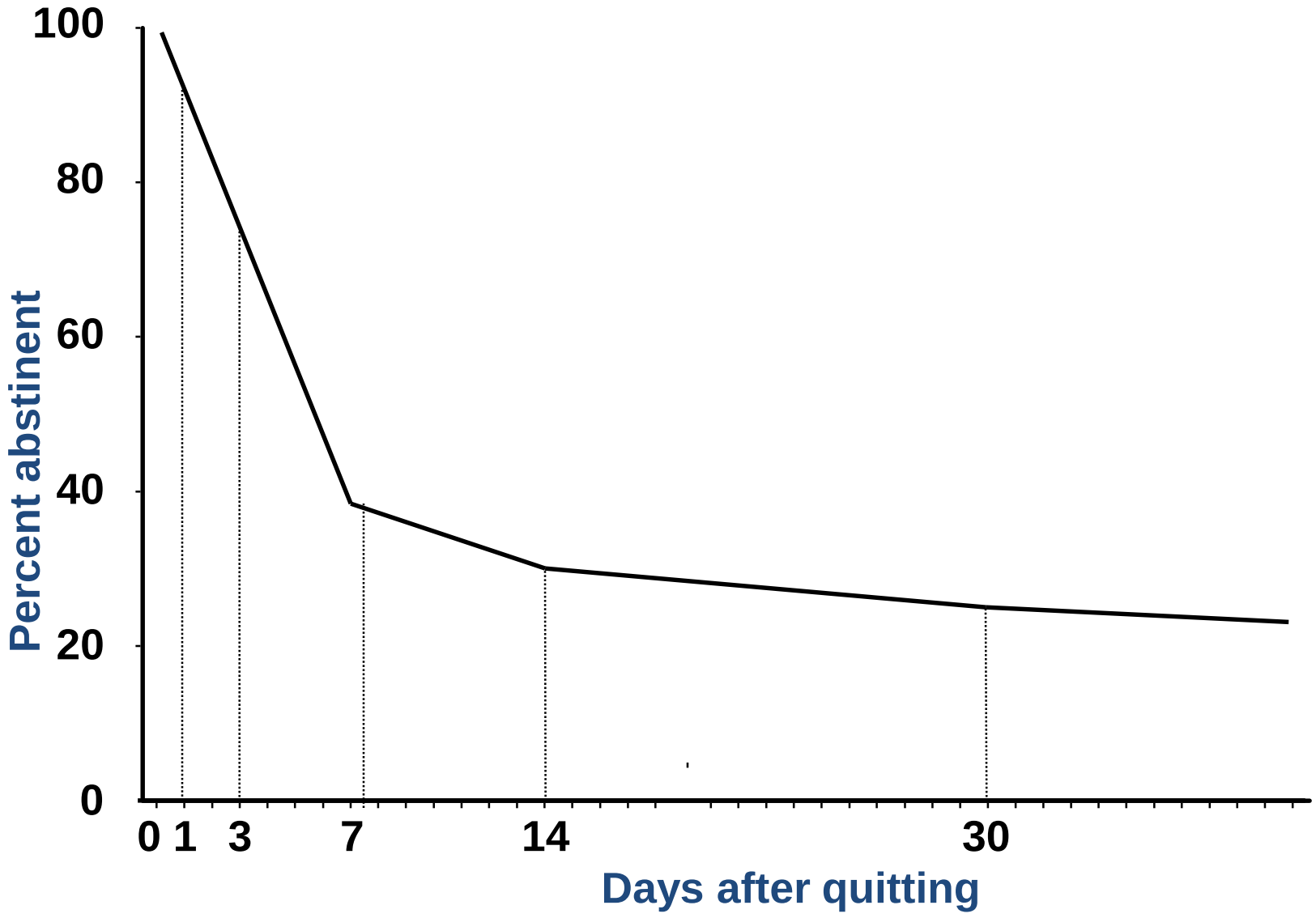
2. Nicotine Patches: free counseling, NRT shipped directly, no limit on # of times

3. Nicotine Patches + Financial Incentive: free counseling, NRT shipped directly, no limit on # of times, $20 for completing a first counseling session and $10 for each completed relapse-prevention counseling session (up to 4)

Telephone Counseling

- **One comprehensive session before the quit attempt**
- **Up to four sessions after the quit attempt.**
  - **The callers can receive more sessions if they so desire or the counselor decides it is beneficial**
  - **The $ incentives are there for keeping appointments for the follow up sessions, but the first gift card is sent after the first completed session.**

Relapse-Sensitive Scheduling



Source: Zhu & Pierce **(1995),** ***Prof. Psych. Res.& Practice, 26,*** **624-625**

Eligibility Criteria

- **Adult daily smoker**
- **English or Spanish speaker**
- **Verified Medi-Cal beneficiary**
- **If potential contraindications to NRT, needed MD approval**

Demographics

	% Usual Care N=1,004	% Nicotine Patches (NP) N=1,405	% NP + Financial Incentives N=1,407
Gender			
Female	**67.2**	**68.0**	**67.7**
Age			
18-24	**5.3**	**4.8**	**4.5**
25-44	**35.4**	**36.6**	**35.5**
45-64	**54.8**	**52.9**	**54.1**
65+	**4.6**	**5.7**	**6.0**
Mean	**46.1**	**46.0**	**46.5**
Race			
White	**61.3**	**58.4**	**58.2**
Black	**15.8**	**19.6**	**20.1**
Hispanic	**9.1**	**10.1**	**9.8**
Asian/Pacific Islander	**1.9**	**1.7**	**1.1**
American Indian	**1.9**	**2.7**	**2.2**
Multiracial	**9.8**	**7.3**	**8.1**
Other	**0.1**	**0.3**	**0.4**
Education			
High school or less	**58.8**	**60.1**	**58.5**
Cigarettes per day (mean)	**17.7**	**17.4**	**17.1**

Quitting Aids Used

Quitting Aids Used by 7 Month Eval. (complete case)	Usual Care (N=639)	Nicotine Patch (N=919)	Patch + $ Incentive (N=958)
Patches (%)	51.8[a]	86.5[b]	89.4[b]
Gum (%)	6.3	6.3	7.1
Lozenge (%)	2.7	1.2	1.8
Bupropion (%)	4.5	3.7	4.9
Varenicline (%)	15.8[a]	10.8[b]	10.0[b]
All quitting aids (%)	72.1[a]	92.0[b]	93.6[b]

Different superscripts indicates significant difference

Counseling Received from the Helpline

Counseling Received	Usual Care (N=1,004)	Nicotine Patch (N=1,405)	Patch + $ Incentive (N=1,407)
% First call	93.2[a]	89.9[b]	95.5[a]
$20 incentive for 1st call	19.7[a]	21.3[a]	95.5[b]
Follow-up calls	N=936	N=1,263	N=1,343
0 calls	18.0[a]	14.9[b]	9.0[c]
1 call	12.9[a]	13.3[a]	6.5[b]
2 calls	12.3[a]	13.0[a]	8.9[b]
3 calls	15.2[a]	13.7[a]	9.8[b]
≥4 calls	41.7[a]	45.1[a]	65.8[b]
Mean #	5.0[a]	5.1[a]	6.2[b]
Median #	4[a]	4[a]	5[a]

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Counseling Received	Usual Care (N=936)	Nicotine Patch (N=1,263)	Patch + $ Incentive (N=1,343)
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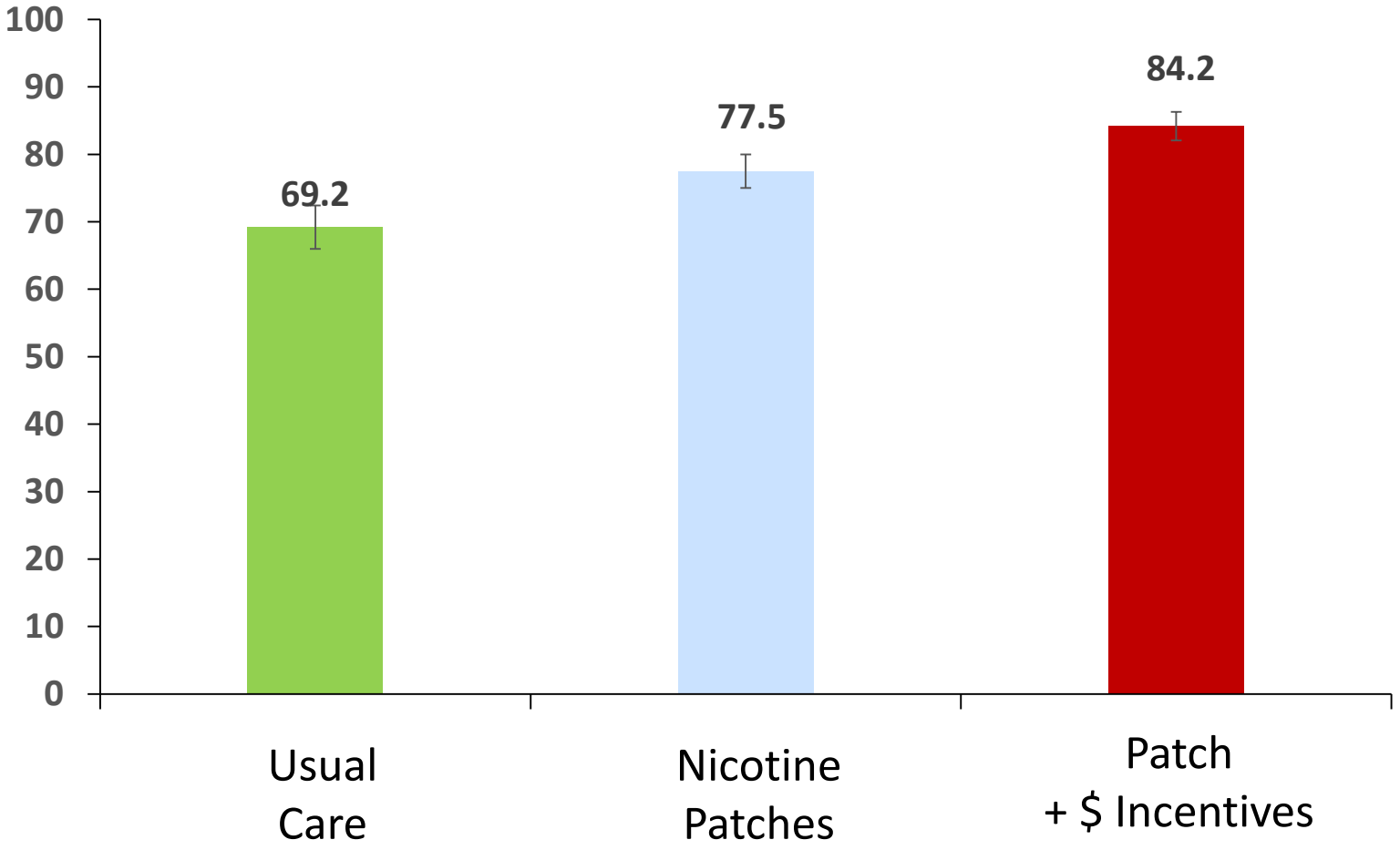
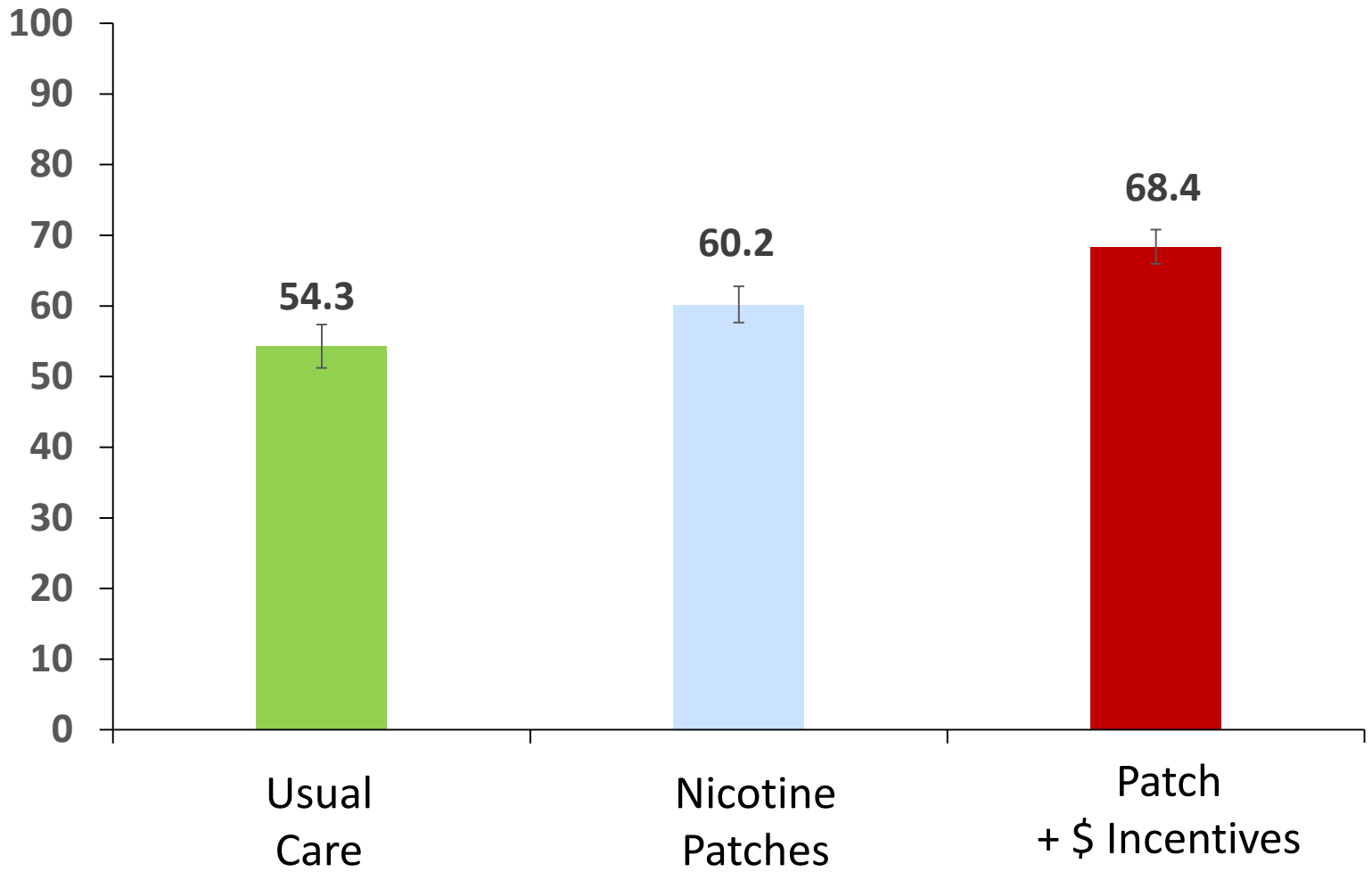
$20 incentive for 1st call	19.7[a]	21.3[a]	95.5[b]
Incentives for follow-up calls	N=936	N=1,263	N=1,343
$0	0	0	10.6
$10	0	0	7.4
$20	0	0	9.7
$30	0	0	14.3
$40	0	0	58.0

Different superscripts indicates significant difference

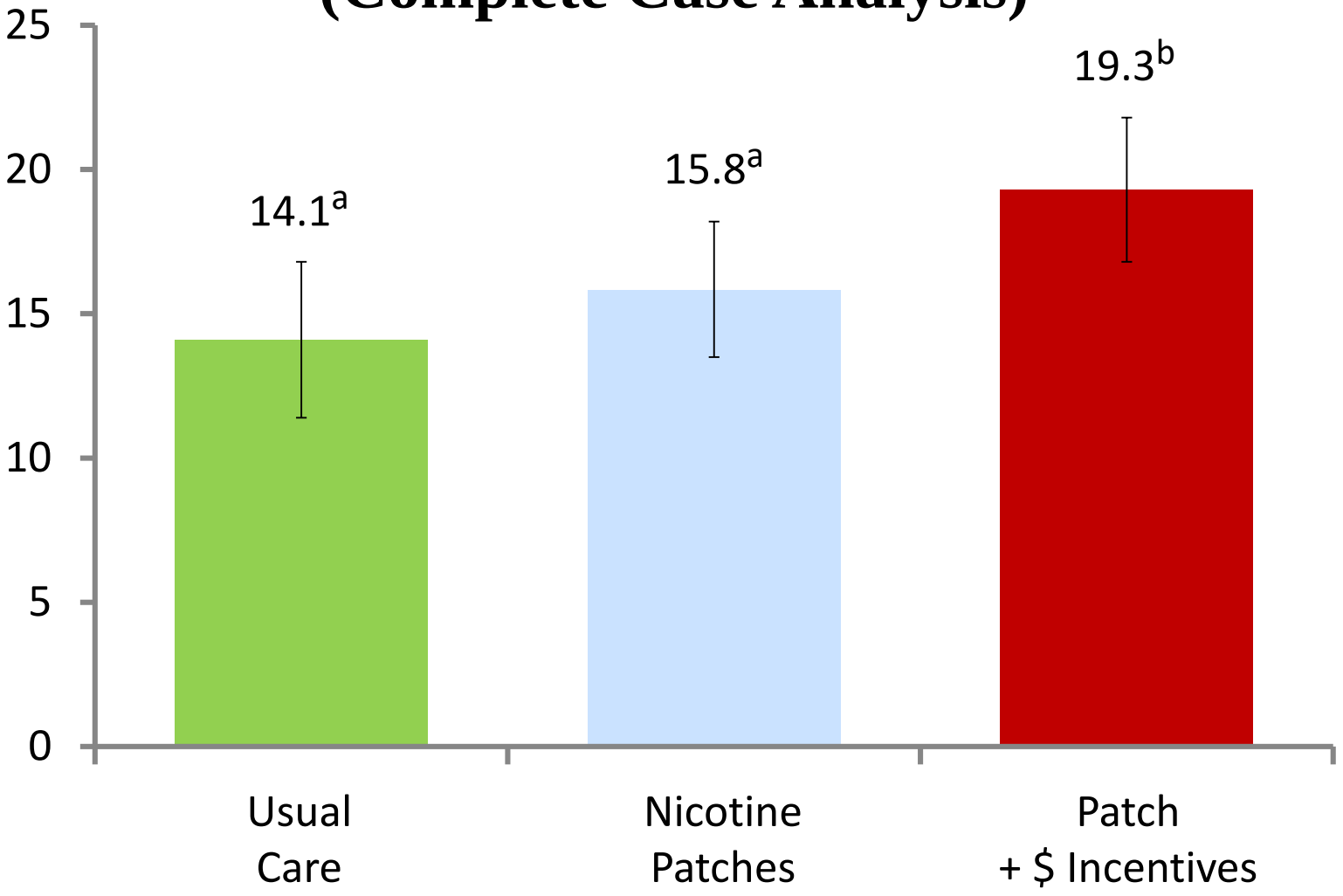
Quit Attempt Made by 2 Month Evaluation
(Complete Case Analysis)



Quit Attempt Made by 2 Month Evaluation
(Intent-to-Treat Analysis)



6-Month Prolonged Abstinence Rates (180 day)
(Complete Case Analysis)



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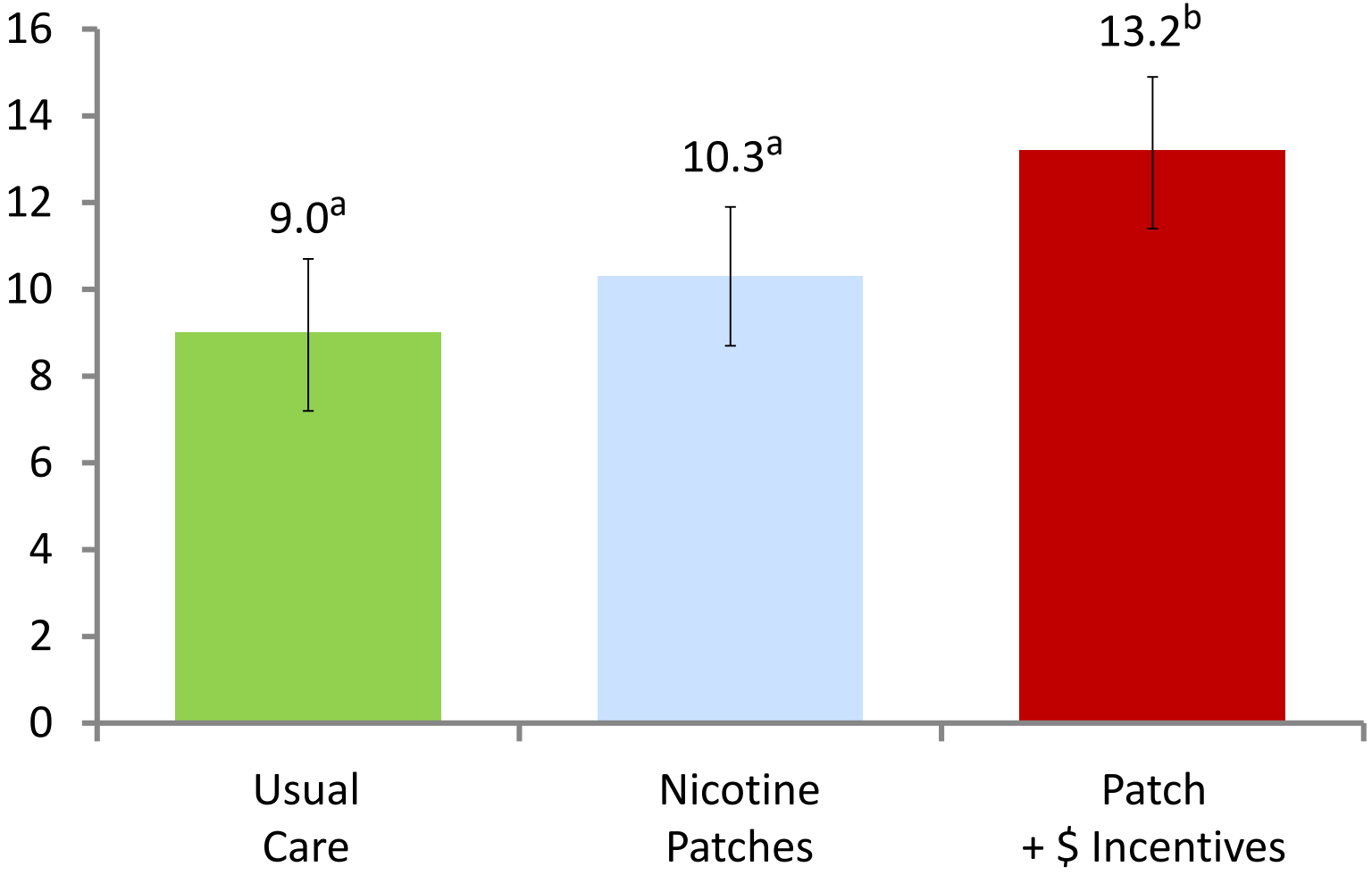
6-Month Prolonged Abstinence Rates (180 day)
(Intent-to-Treat Analysis)



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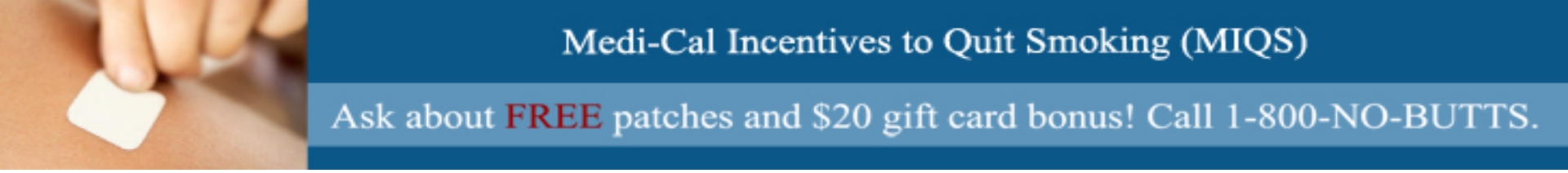
Summary of Results

- **Participants were very motivated**
  - **Many in the UC condition used quitting aids**
  - **Most made a quit attempt**
- **Mailing nicotine patches increased the quit attempt, but not the long term success as most in the usual care condition used quitting aids.**
- **Monetary incentives led to better adherence to the multiple-session counseling program**
- **The better program adherence is associated with a greater long term success rate**

Implications for Implementation

- **A small amount of monetary incentive may be a cost-effective way of helping Medicaid smokers quit (Dr. Sung's talk).**
- **Incentives for program adherence can be a more practical way of implementing a reward system for positive behavioral change**

Thank you!

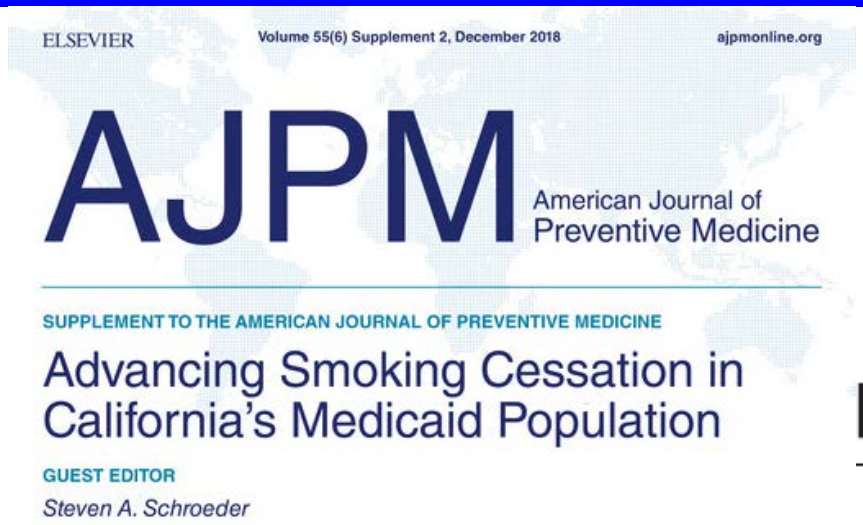


Economic Impact of Financial Incentives and Mailing Nicotine Patches to Help Medicaid Smokers Quit Smoking: a Cost–Benefit Analysis

Hi-Yen Sung, PhD
Professor of Health Economics
University of California, San Francisco

Smoking Cessation Leadership Center (SCLC) Webinar
March 12, 2019

Acknowledgments



Economic Impact of Financial Incentives and Mailing Nicotine Patches to Help Medicaid Smokers Quit Smoking: A Cost–Benefit Analysis

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Plan for Today

- Background
- Study aims
- Cost-benefit analysis methods
  - Evaluation scenarios
  - Outcome measures
  - Calculation of costs
  - Estimation of benefits
- Results
- Discussion

Background

- The results from the MIQS RCT on smoking cessation showed that providing both financial incentives (FI) and nicotine patches (NP) to Medicaid smokers who called the quitline is an effective treatment strategy to increase quit rates.

- However, it is unknown whether this treatment strategy is cost effective or cost saving.

Study Aims

- To conduct a cost-benefit analysis of integrating FI and NP in a real-world quitline setting for the Medicaid population

- To assess whether the costs of the intervention can be justified by the value ($) of the benefits it provides

Cost-Benefit Analysis Methods: Evaluation Scenarios

- Scenario 1: Compare the usual care plus providing both incentives and patches (i.e., UC+FI+NP) treatment with the usual care alone (i.e., UC) treatment

UC+FI+NP

UC

- Scenario 2: Compare the UC+FI+NP treatment with the UC+NP treatment

UC+FI+NP

UC+NP

Cost-Benefit Analysis Methods: Outcome Measures

- **Incremental cost:** (cost of treatment X) – (cost of treatment Y)
- **Incremental benefit:** (benefit of treatment X) – (benefit of treatment Y)
- **Net savings:** (incremental benefit) – (incremental cost)
- **Benefit-cost ratio:** (incremental benefit) / (incremental cost)

Cost-Benefit Analysis Methods: Calculation of Costs

Pharmacotherapy

- Patch (6-week at $81)
- Gum (6-week at $116)
- Lozenge (6-week at $146)
- Bupropion (6-week at $227)
- Varenicline (6-week at 499)

Incentives for counseling

- $20 gift card for first call
- Incentives for follow-up calls:
  - 1 call ($10)
  - 2 calls ($20)
  - 3 calls ($30)
  - ≥ 4 calls ($40)

Counseling

- First call (30 min, $70/call)
- Follow-up calls (5-10 min, $40/call)

Other cost

- Postage per gift card ($3)

The average cost of providing cessation services per participant is derived by applying the unit cost shown above to the percentage of participants who used the corresponding type of services.

Cost-Benefit Analysis Methods: Estimation of Benefits

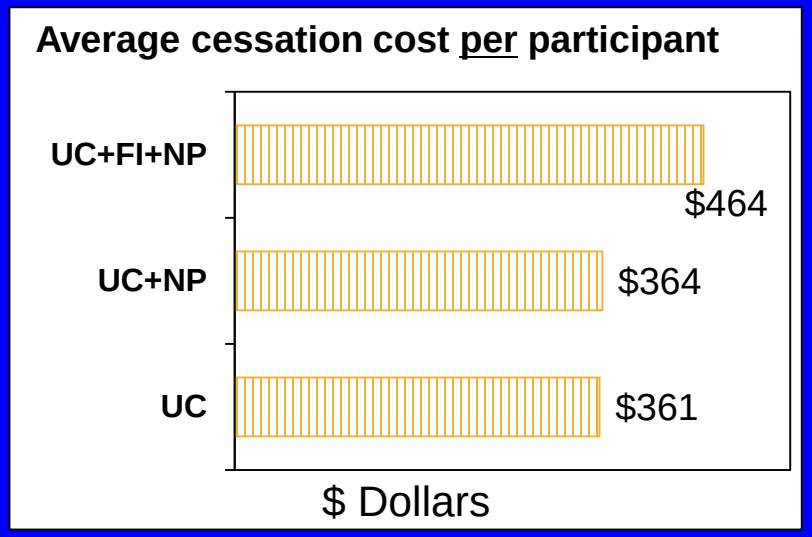
- Benefit is defined as the averted future healthcare (HC) expenditures due to quitting smoking
  - adjusting for additional HC expenditures for quitters who live longer and experience normal aging-related costs
- Future HC expenditures are estimated under each cessation treatment using the Cardiovascular Disease (CVD) Policy Model
  - a computer simulation, state-transition (Markov) model of coronary heart disease and stroke incidence, prevalence, mortality, and HC costs
    - inpatient costs for acute CVD events and procedures
    - total HC costs for chronic CVD, non-CVD diseases, and injuries
  - originally designed for U.S. adults aged 35 years and older
- Study cohort: California Medicaid enrollees aged 35-64 in 2014 (n=2,452,000)
  - Among them, 478,336 were active smokers

Cost-Benefit Analysis Methods: Estimation of Benefits (cont.)

Input parameters of the CVD Policy Model:

- 180-day continuous abstinence rates (from the MIQS RCT)
- Relapse rates after 180-day abstinence (17.7% in year 1, 11.4% in year 2, … and 0% after year 10)
- Time horizon of simulation (10 years)
- Discount rate (3%)
- HC costs were converted to 2015 dollars
- Assumed average annual HC costs per CVD event/procedure or per person remain constant through future years
- Incidence of heart disease, stroke, and non-CVD death (derived from Framingham data, and adjusted by the CVD risk factors for California Medicaid population)
- Prevalence of smoking, overweight/obesity, diabetes, and pre-existing CVD among Medicaid adults (2013-2014 CHIS data)
- Other CVD risk factors (2011-2016 NHANES data for adults of low SES)

Results: Costs of Cessation Services (cohort: 478,336 smokers)



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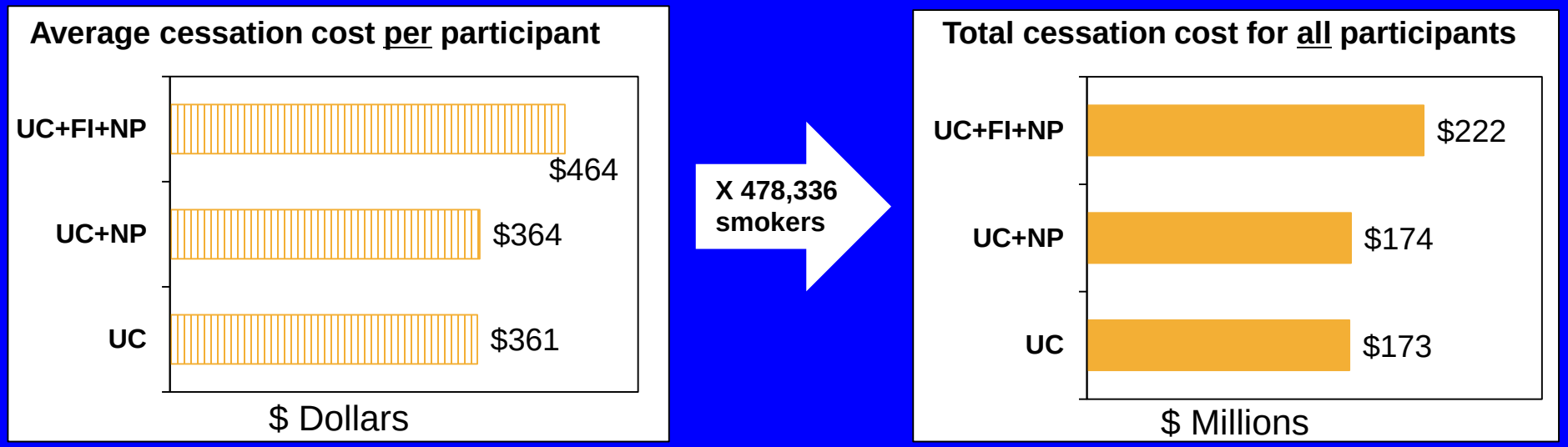

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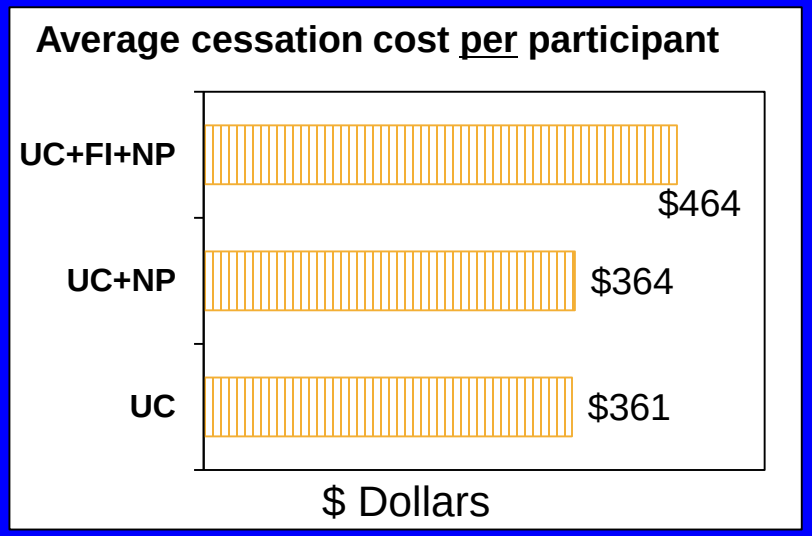
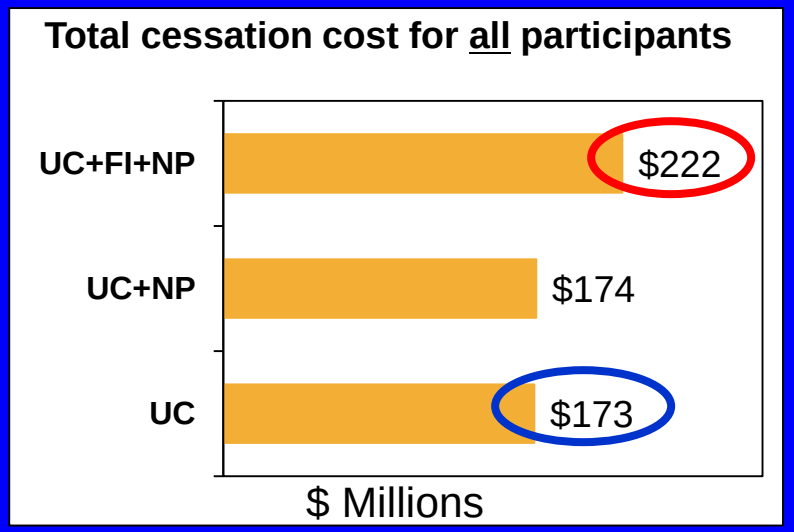


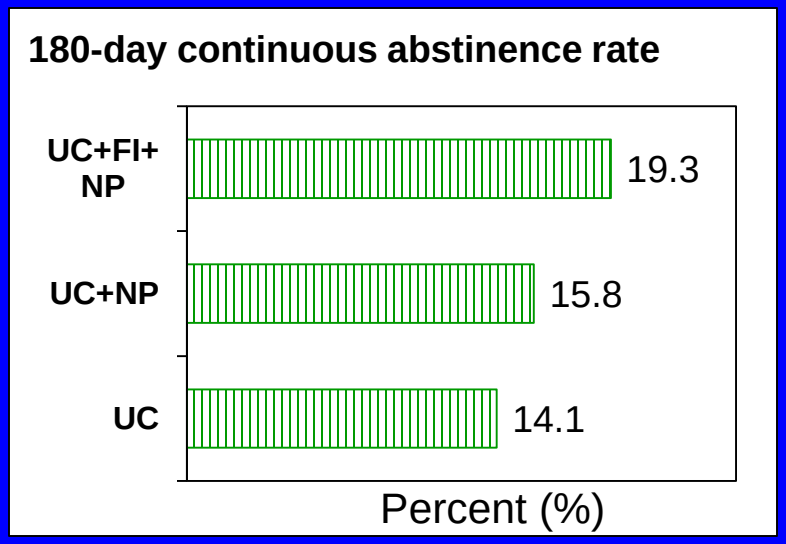
X 478,336 smokers



Scenario 1 incremental "costs" of cessation services
= (costs for UC+FI+NP) – (costs for UC)
= $222 million – $173 million
= $49 million

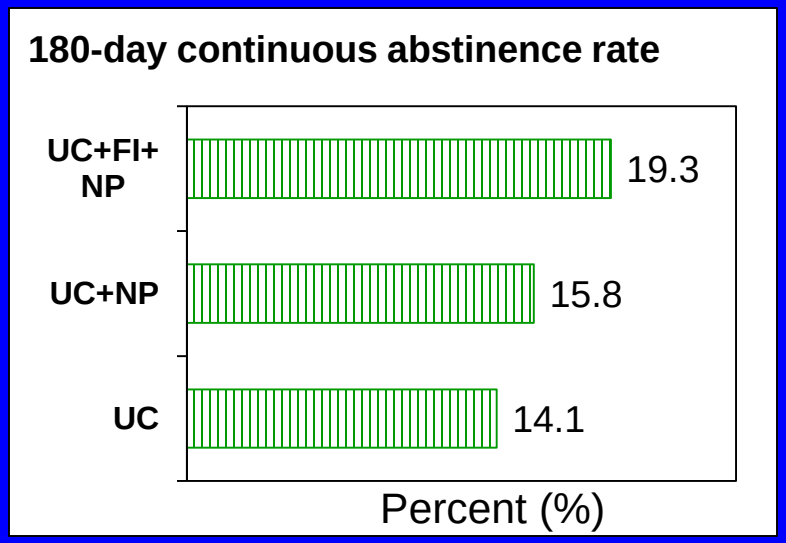
Scenario 2 incremental "costs" of cessation services
= (costs for UC+FI+NP) – (costs for UC+NP)
= $48 million

Results: Projected Benefits* after Cessation (cohort: 478,336 smokers)

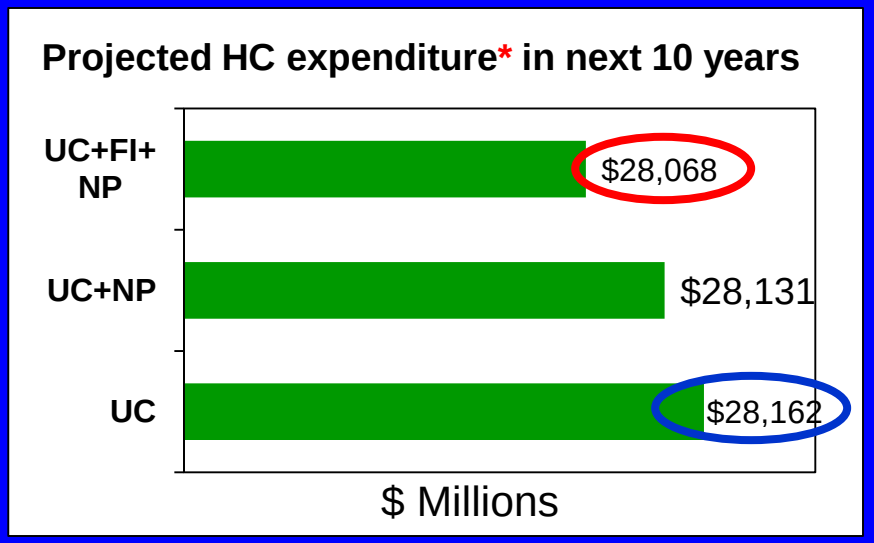


*In 2015 dollars

Results: Projected Benefits* after Cessation (cohort: 478,336 smokers)

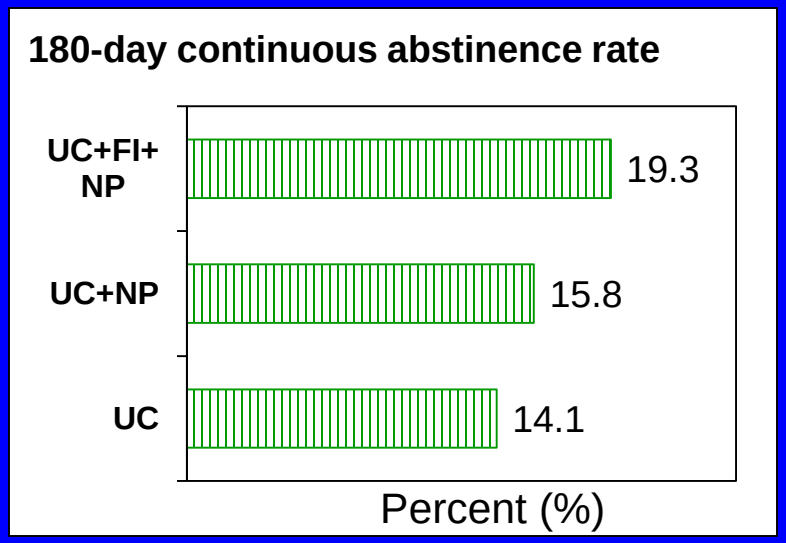


CVD Policy Model

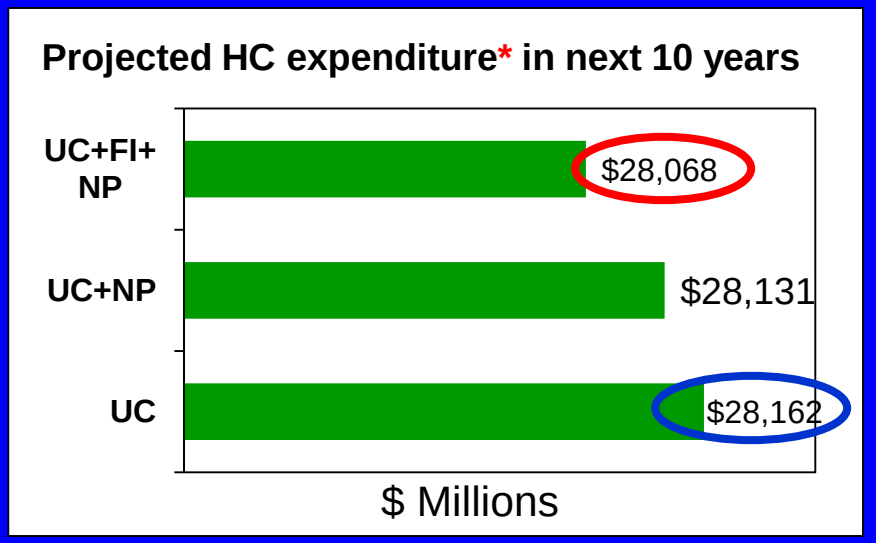


*In 2015 dollars

Results: Projected Benefits* after Cessation (cohort: 478,336 smokers)



CVD Policy Model

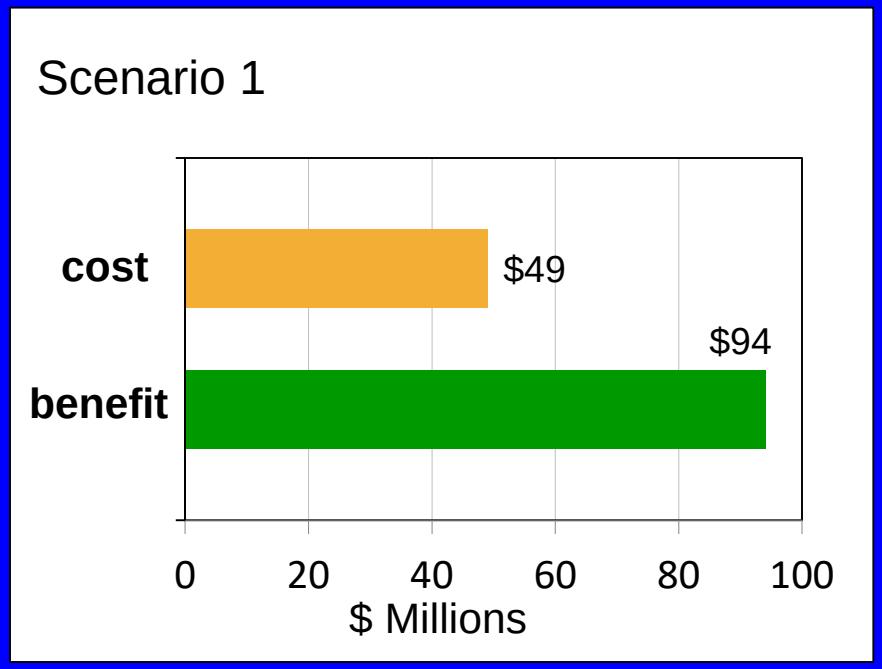


Scenario 1 incremental "benefit" of smoking cessation
= (projected exp for UC+FI+NP) – (projected exp for UC)
= $28,068 million – $28,162 million
= –$94 million *(Note: "–" sign means savings)*

Scenario 2 incremental "benefit" of smoking cessation
= (projected exp for UC+FI+NP) – (projected exp for UC+NP)
= –$63 million *(Note: "–" sign means savings)*

*In 2015 dollars

Cost-Benefit Analysis for Scenario 1



Outcome measures:

Net savings

= $94 - $49
= $44 million

⇩

Greater than 0

Benefit-cost ratio

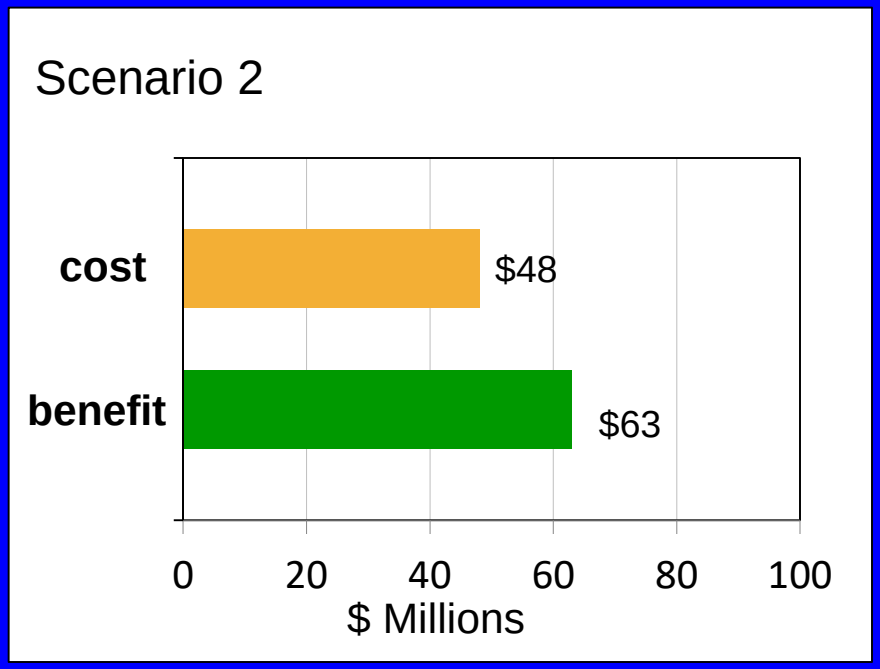
= $94 / $49
= 1.90

⇩

Greater than 1

Compared to UC alone, adding both FI and NP is **cost saving** within 10 years

Cost-Benefit Analysis for Scenario 2



Outcome measures:

Net savings

= $63 - $48
= $15 million

⇩

Greater than 0

Benefit-cost ratio

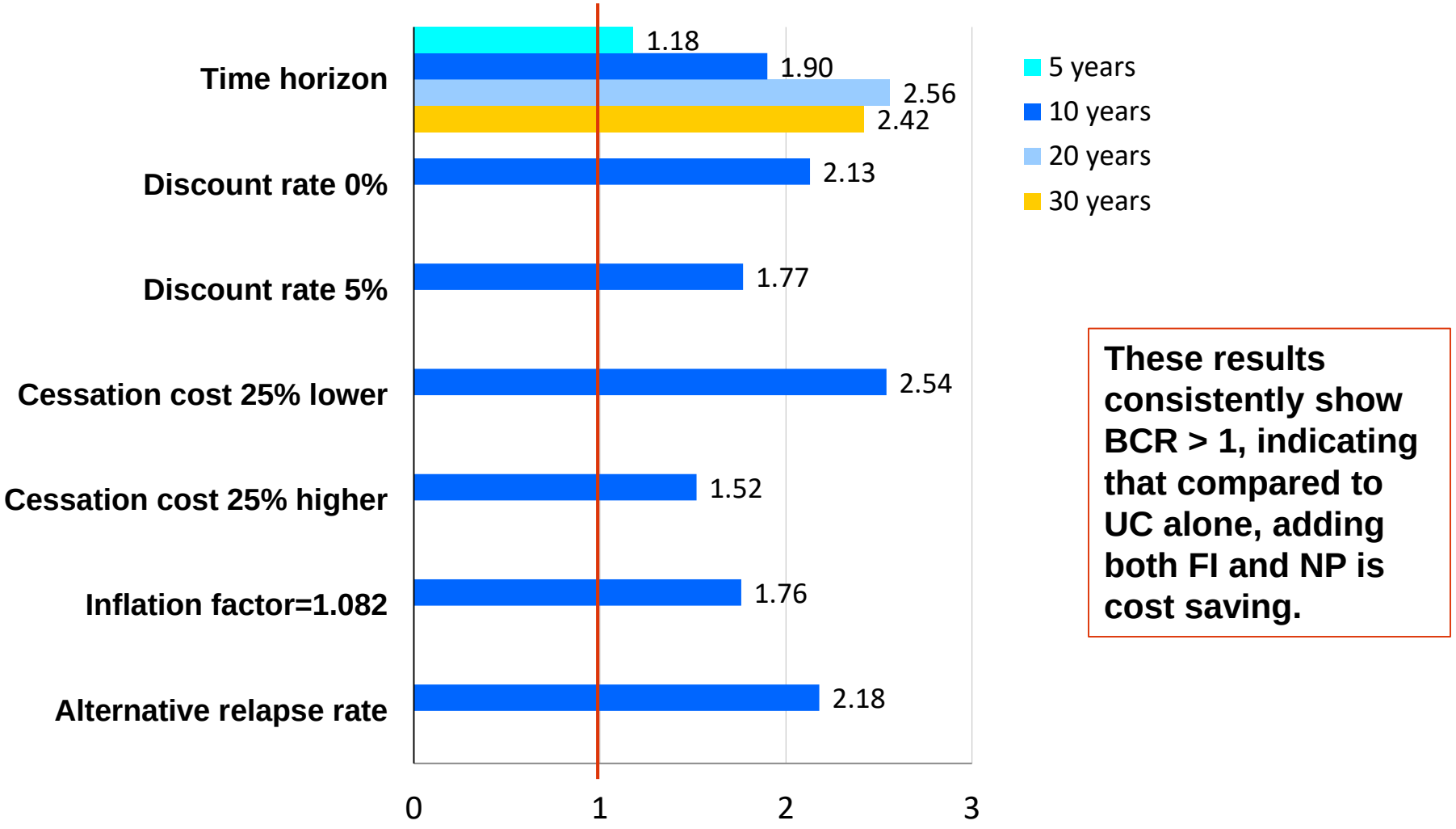
= $63 / $48
= 1.30

⇩

Greater than 1

Compared to adding only NP, adding both FI and NP is **cost saving** within 10 years

Benefit-Cost Ratio (BCR) for Scenario 1 under Alternative Assumptions



These results consistently show BCR > 1, indicating that compared to UC alone, adding both FI and NP is cost saving.

Discussion

- This study found that providing modest FI and mailing NP directly to Medicaid smokers who call the quitline is cost saving
- Although this cessation intervention would incur a one-time cost, the averted healthcare expenditures due to more quitters will accumulate quickly and exceed the one-time cost within 5 years
  - The net savings and the benefit-cost ratios will increase over time, peak for the 20-year time horizon, and then decline for the 30-year time horizon.
- Our cost saving estimates are likely underestimated because:
  - The usual care group has a relatively high quit rate due to the highly effective quitline in California
  - The participants in the MIQS RCT might have been more motivated to quit smoking than the general Medicaid population

Q&A

- Submit questions via the **chat box**

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Save the Date

- SCLC's next live webinar, co-hosted with ATTUD
- April 9, 2019 at 11:00 am PST
- Opioids and Tobacco Use, with Dr. Shadi Nahvi, Associate Professor, Departments of Medicine, and of Psychiatry & Behavioral Sciences at Albert Einstein College of Medicine / Montefiore Health System
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