COLORECTAL CANCER PREVENTION AMONG CHINESE AMERICANS

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ARCH

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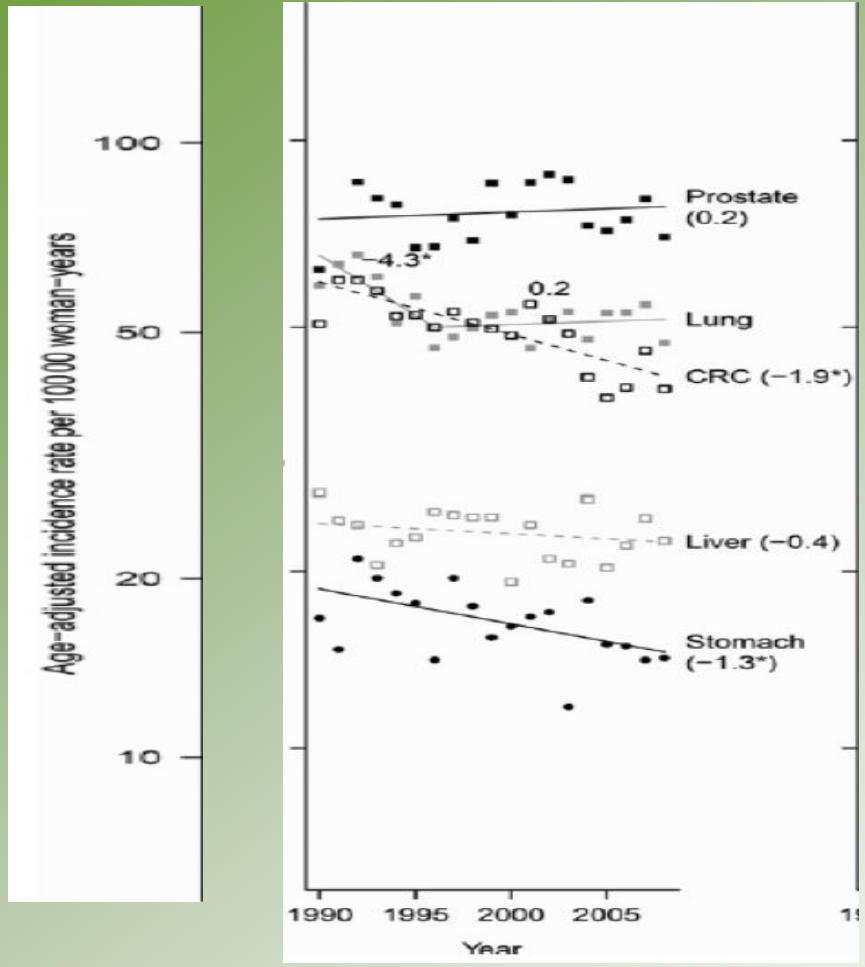
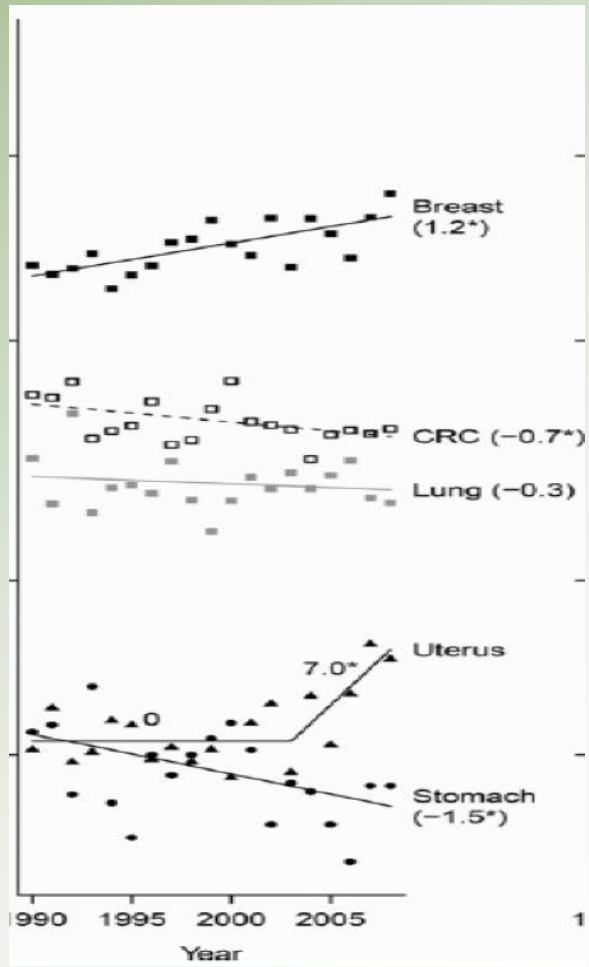
General Importance of Colorectal Cancer Prevention

- One of the most common cancers in incidence for both men and women.
- Effective prevention exists through screening
- Colorectal cancer screening is of the most important and cost-effective preventive care priorities.
- Rates of adherence to colorectal cancer screening remains sub-optimal.

Trends in Colorectal Cancer Incidence: Chinese Americans



Men



Women

U.S. Preventive Services Task Force Recommendations 2016

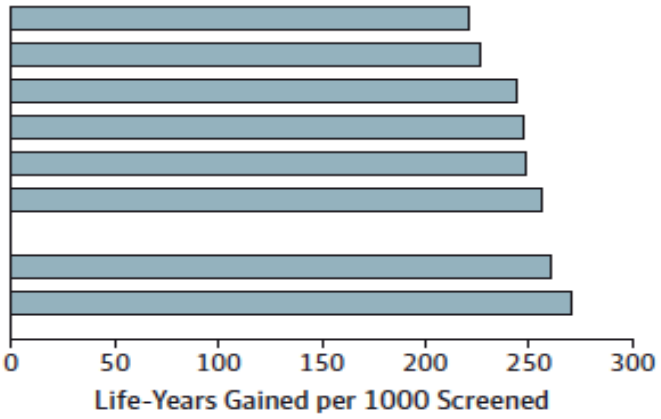
Population	Adults aged 50 to 75 y	Adults aged 76 to 85 y
Recommendation	Screen for colorectal cancer starting at age 50 y. Grade: A	The decision to screen for colorectal cancer is an individual one. Grade: C

Risk Assessment	For the vast majority of adults, the most important risk factor for colorectal cancer is older age. Other associated risk factors include family history of colorectal cancer, male sex, and black race.
Screening Tests	There are numerous screening tests to detect early-stage colorectal cancer, including stool-based tests (gFOBT, FIT, and FIT-DNA), direct visualization tests (flexible sigmoidoscopy, alone or combined with FIT; colonoscopy; and CT colonography), and serology tests (*SEPT9* DNA test). The USPSTF found no head-to-head studies demonstrating that any of these screening strategies are more effective than others, although they have varying levels of evidence supporting their effectiveness, as well as different strengths and limitations.

Benefits of Screening

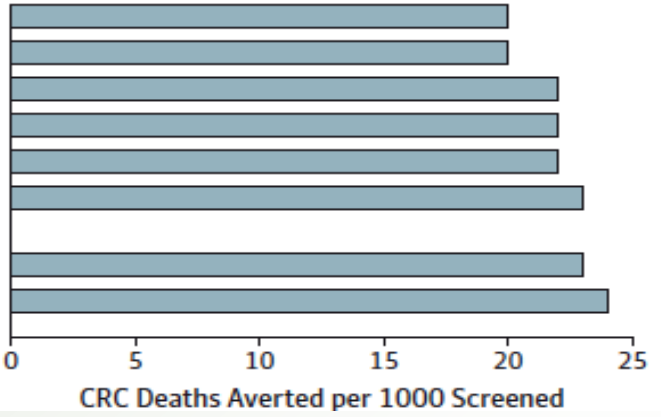
A **Benefit:** Life-years gained per 1000 individuals screened

Screening Method and Frequency	Model Estimates, Life-Years Gained per 1000 Screened		
	Middle	Low	High
Flexible sigmoidoscopy every 5 y	221	181	227
FIT-DNA every 3 y	226	215	250
FIT every year[a]	244	231	260
HSgFOBT every year	247	232	261
CT colonography every 5 y[b]	248	226	265
Flexible sigmoidoscopy every 10 y plus FIT every year[a]	256	246	270
FIT-DNA every year	261	246	271
Colonoscopy every 10 y[a]	270	248	275



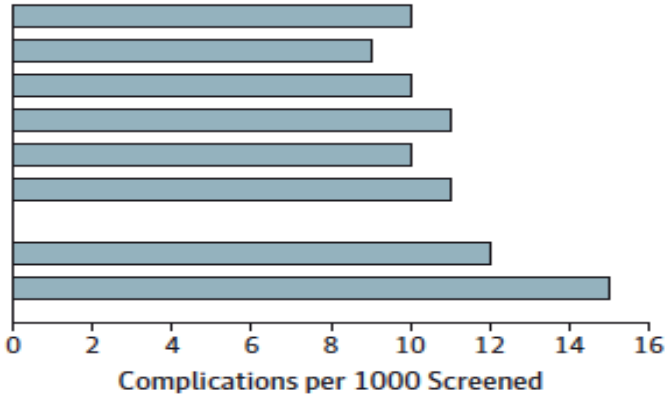
B **Benefit:** Colorectal cancer deaths averted per 1000 individuals screened

Screening Method and Frequency	Model Estimates, CRC Deaths Averted per 1000 Screened		
	Middle	Low	High
Flexible sigmoidoscopy every 5 y	20	17	21
FIT-DNA every 3 y	20	19	22
FIT every year[a]	22	20	23
HSgFOBT every year	22	20	23
CT colonography every 5 y[b]	22	20	24
Flexible sigmoidoscopy every 10 y plus FIT every year[a]	23	22	24
FIT-DNA every year	23	22	24
Colonoscopy every 10 y[a]	24	22	24



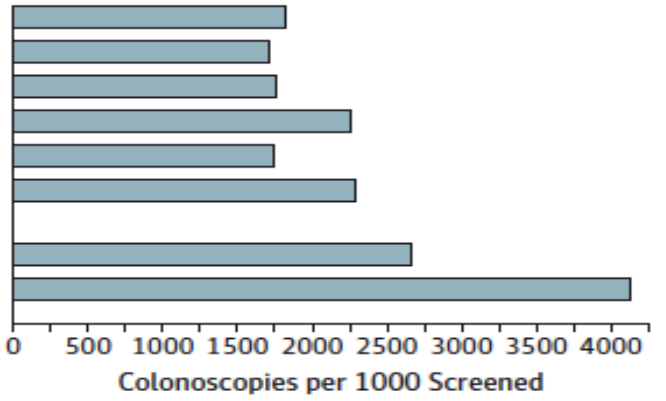
Harms and Burden of Screening

Screening Method and Frequency	Model Estimates, Complications per 1000 Screened		
	Middle	Low	High
Flexible sigmoidoscopy every 5 y	10	9	12
FIT-DNA every 3 y	9	9	10
FIT every year[a]	10	10	11
HSgFOBT every year	11	11	11
CT colonography every 5 y[b]	10	10	11
Flexible sigmoidoscopy every 10 y plus FIT every year[a]	11	11	12
FIT-DNA every year	12	12	13
Colonoscopy every 10 y[a]	15	14	15

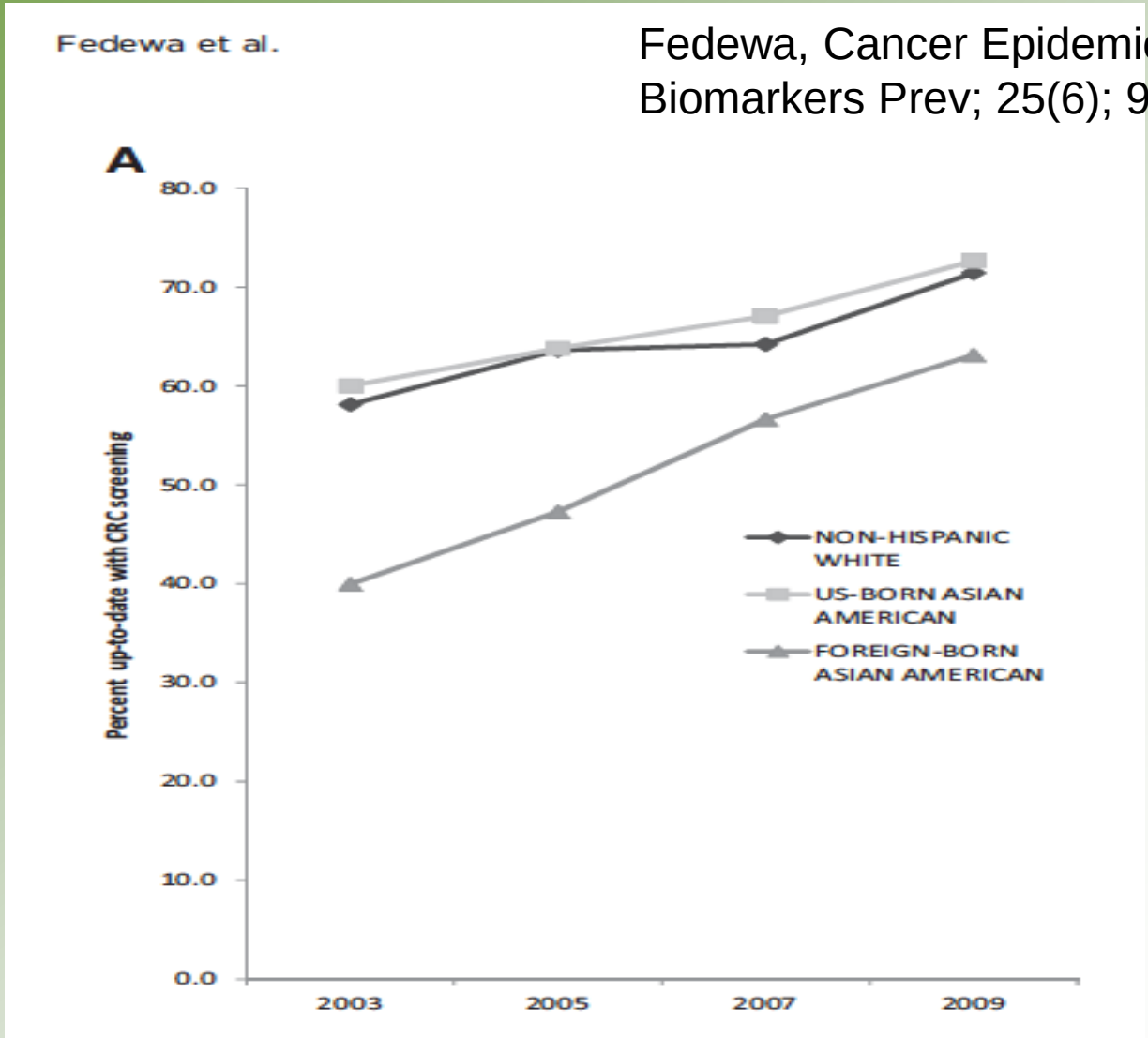


D **Burden:** Lifetime No. of colonoscopies per 1000 individuals screened

Screening Method and Frequency	Model Estimates, Lifetime Colonoscopies per 1000 Screened		
	Middle	Low	High
Flexible sigmoidoscopy every 5 y	1820	1493	2287
FIT-DNA every 3 y	1714	1701	1827
FIT every year[a]	1757	1739	1899
HSgFOBT every year	2253	2230	2287
CT colonography every 5 y[b]	1743	1654	1927
Flexible sigmoidoscopy every 10 y plus FIT every year[a]	2289	2248	2490
FIT-DNA every year	2662	2601	2729
Colonoscopy every 10 y[a]	4049	4007	4101

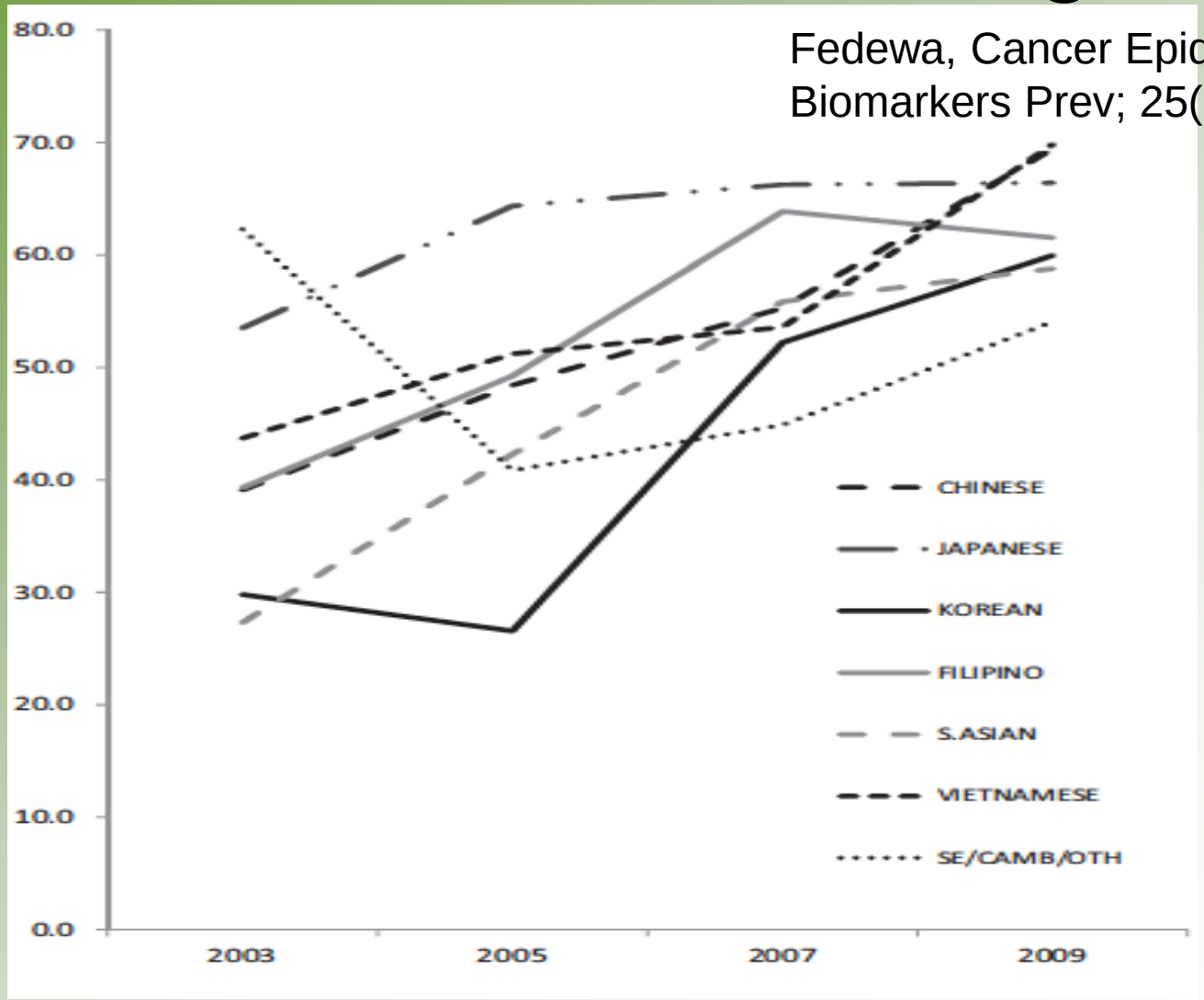


Up To Date for Colorectal Cancer Screening



Fedewa, Cancer Epidemiol Biomarkers Prev; 25(6); 995–1000.

Up To Date for Colorectal Cancer Screening



Fedewa, Cancer Epidemiol Biomarkers Prev; 25(6); 995–1000.

Improving Colorectal Cancer Screening Among Chinese Americans

Interventions by San Francisco Asian American Network for Cancer Awareness, Research and Training (SF-AANCART)

- Continuing Medical Education
- Mailing FOBT kits
- Flu-FIT
- Lay Health Worker Outreach

Continuing Medical Education

- CME with Chinese Community Health Care Association physicians 2005
- 56 physicians attended
- Pre-CME and Post-CME surveys

CME Outcomes: Knowledge

- Colorectal cancer is 2nd leading cause of U.S. cancer deaths
  - 55% pre-CME vs. 85% post-CME, $p<0.001$
- Colorectal cancer is the 2nd most common cancer for Chinese Americans
  - 47% pre-CME vs. 92% post-CME, $p<0.0001$
- Fecal occult blood test detects 30% cancer
  - 26% pre-CME vs. 79% post-CME, $p<0.0001$

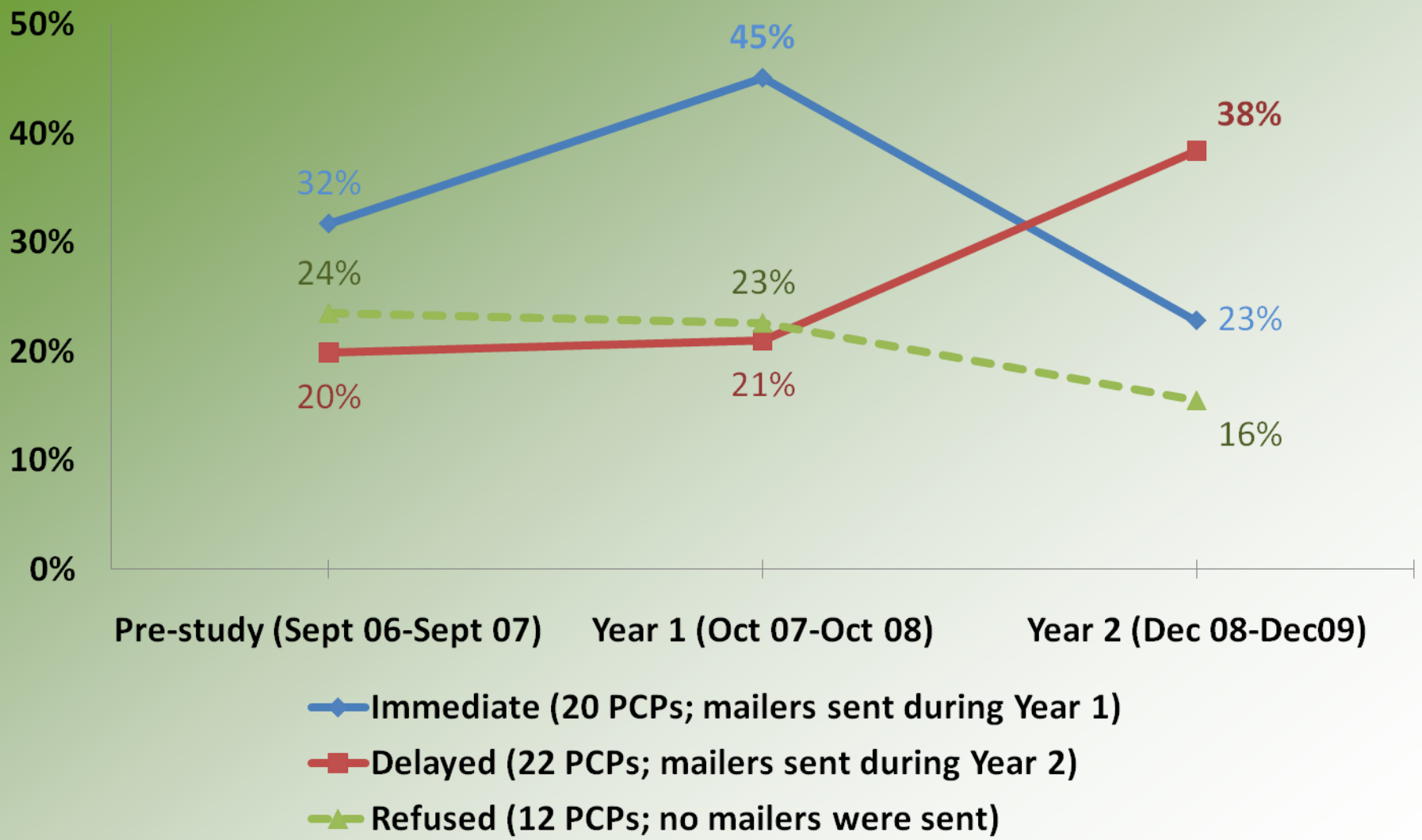
Screening Interval Knowledge

- Colonoscopy every 10 years
  - 58% pre-CME vs. 77% post-CME, $p<0.002$
- Fecal occult blood test annually
  - 79% pre-CME vs. 94% post-CME, $p<0.02$
- Sigmoidoscopy every 5 years
  - 42% pre-CME vs. 66% post-CME, $p<0.05$
- Patient with adenoma should have repeat screening in 3-5 years
  - 26% pre-CME vs. 74% post-CME, $p<0.001$

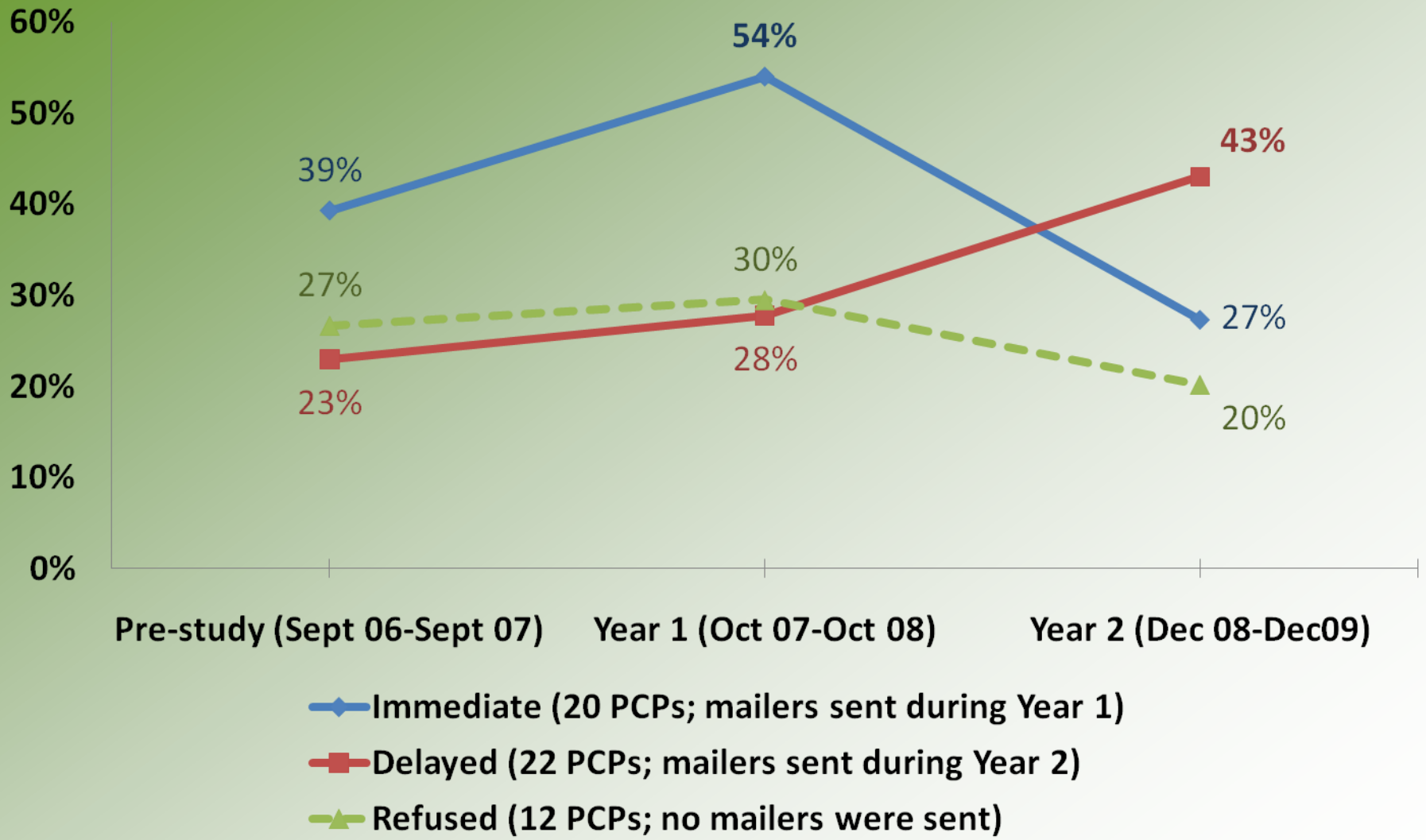
Mailing FOBT Kits Study

	All participating PCPs (N = 54)	Immediate Intervention (n = 29)	Delayed Intervention (n = 25)
Participation status % (n)			
Active	63.7% (42)	69.0% (20)	88.0% (22)
Refusals	27.3% (12)	31.0% (9)	12.0% (3)
Pre-Study (Sept 06 – Sept 07)			
Total patents due for CRCS	1688	1071	617
Average per PCP (range)	31 (0 – 173)	37 (0 – 173)	25 (0 – 125)
Mailers sent out (% out of pts due)	0 (0%)	0 (0%)	0 (0%)
Year 1 (Oct 07 – Oct 08)			
Total patents due for CRCS	2355	1548	807
Average per PCP (range)	44 (1 – 286)	54 (1– 286)	32 (2 – 146)
Mailers sent out (% out of pts due)	915 (38.8%)	915 (59.1%)	0 (0%)
Year 2 (Dec 08 – Dec 09)			
Total patents due for CRCS	2924	1774	1150
Average per PCP (range)	54 (0 – 250)	61 (0 – 250)	46 (2 – 208)
Mailers sent out (% out of pts due)	830 (28.4%)	0 (0%)	830 (72.2%)

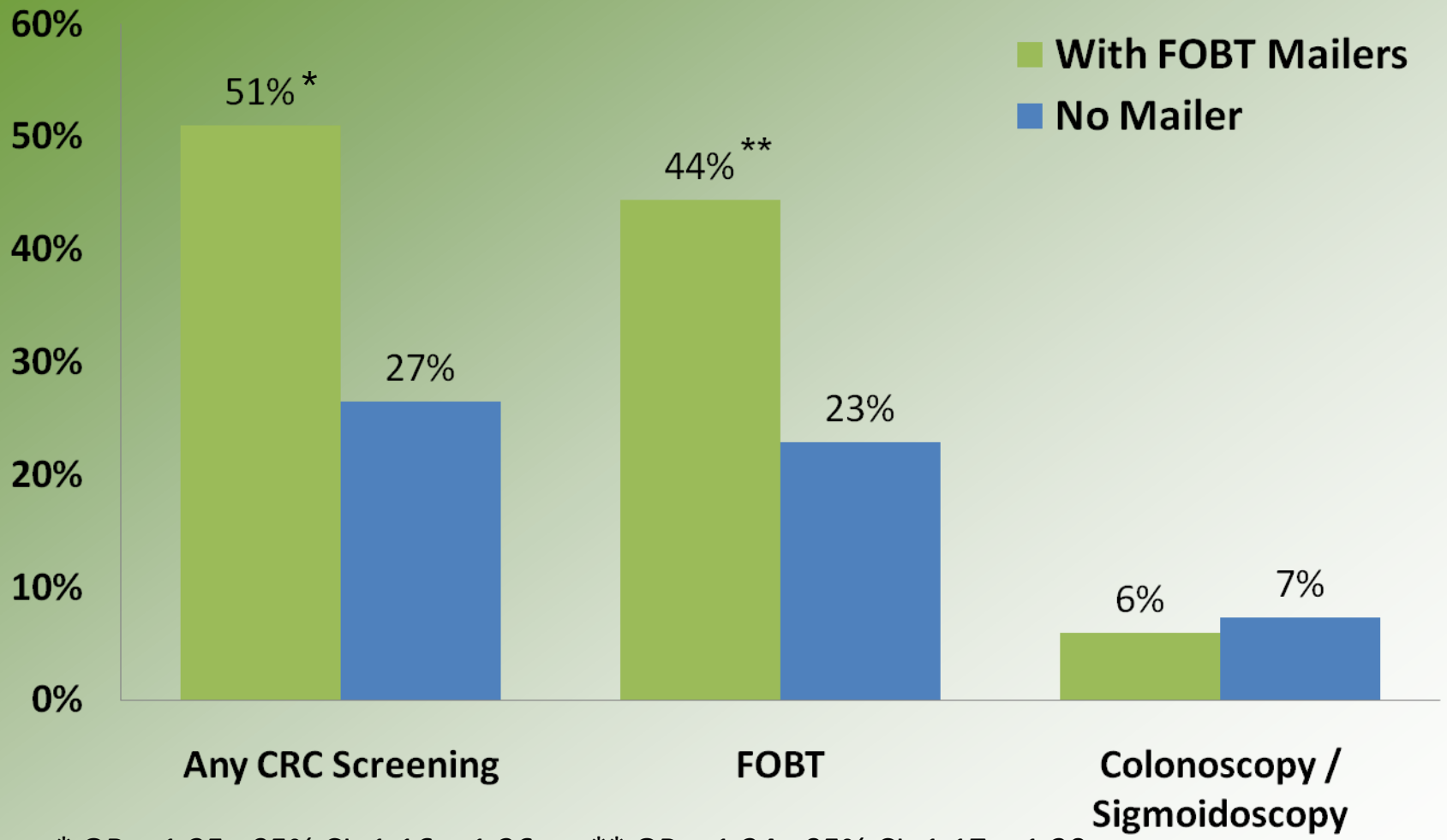
Mean FOBT Screening Rates by Intervention Periods and Conditions



Mean CRC Screening Rates (FOBT, colonoscopy or sigmoidoscopy) by Intervention Periods and Conditions



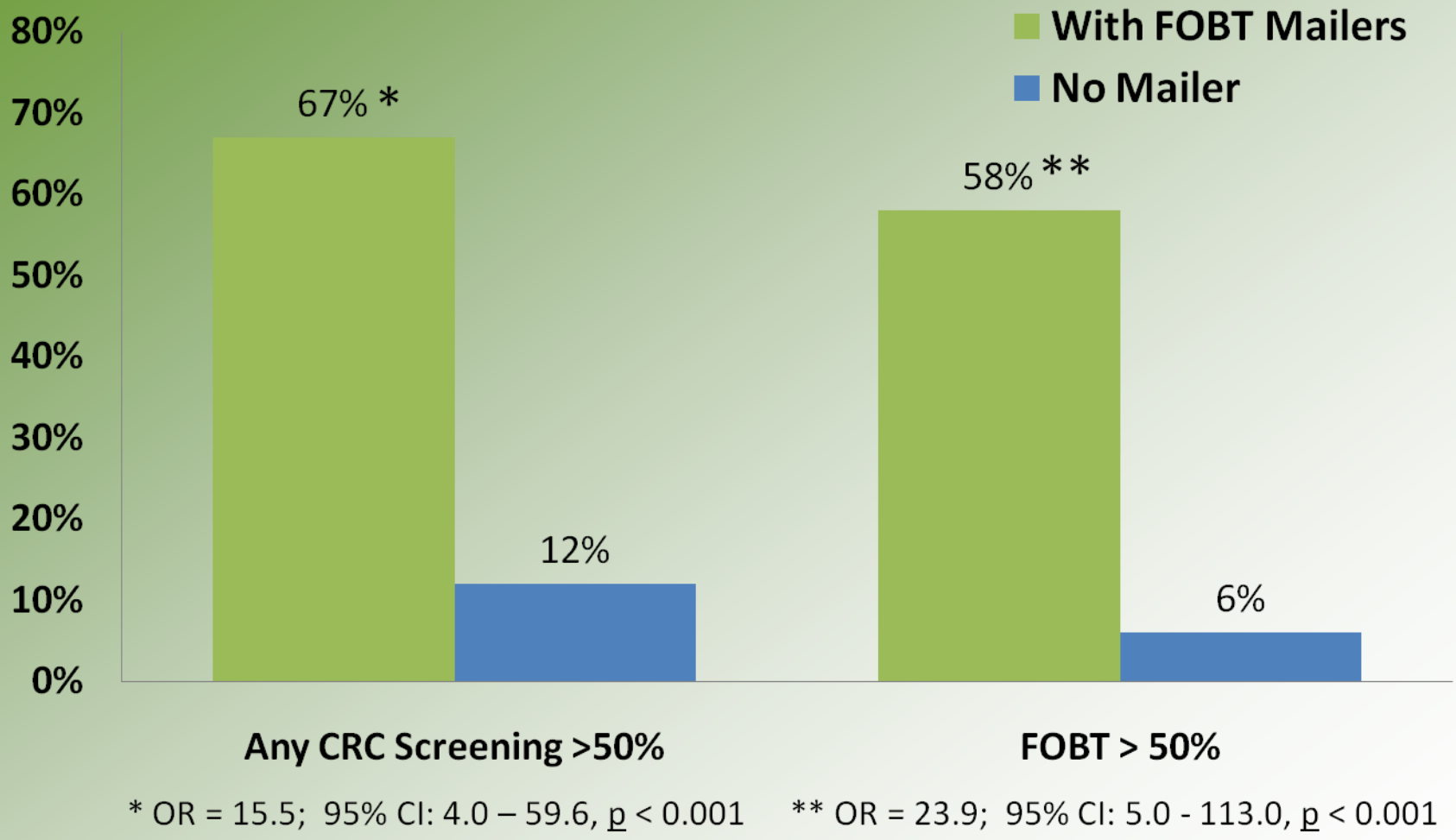
Adjusted CRC Screening Rates



* OR = 1.25; 95% CI: 1.16 – 1.36, p < 0.001

** OR = 1.24; 95% CI: 1.17 – 1.30, p < 0.001

Adjusted proportions of PCPs who achieved 50% or higher in CRC Screening rates



* OR = 15.5; 95% CI: 4.0 – 59.6, p < 0.001

** OR = 23.9; 95% CI: 5.0 - 113.0, p < 0.001

FOBT Distribution at Influenza Vaccine Clinic Appointments

- San Francisco General Hospital primary care clinics
- 17 Influenza Clinics, Fall of 2006
- Pre-intervention chart review of patients with influenza vaccination appointments to determine if due for CRC screening
- Patients randomized to intervention or control group

Potter, Ann Fam Med 2009

Randomized Controlled Trial

- Intervention group (N=268)
  - FOBT kit
  - Language-appropriate FOBT instruction sheet
  - Mailer with stamp for kit
- Control group (usual care) (N=246)
  - FOBT at time of primary care appointment
  - Kit returned in person
- 52% were Asians (Chinese, Vietnamese)

Colorectal Cancer Screening *and you*

流感是可以預防的! 結腸癌也是可以預防的!

每年檢查糞便一次， 簡單並容易進行。

每年檢查糞便一次，可以保護您的生命。

我們的醫生及護士一致推薦，50歲至79歲的健康男仕 及女仕們，應接受結腸檢查。

你何時需要測試? 我們就今天告訴你。

Flu is Preventable!
Colon Cancer is Preventable!

- **Yearly home stool tests are easy to do.**
- **Yearly home stool tests could save your life.**
- **All our doctors and nurses recommend Colon Screening for healthy men and women aged 50 to 79.**
- **When you should get tested? We will tell you today.**

大腸癌檢查: 糞便檢查

收集糞便之前，請閱讀以下提示：

需要收集三次大便樣本.
如果有痔瘡出血症狀，請 要收集大便.
女士們： 不要在月經期間 集大便.

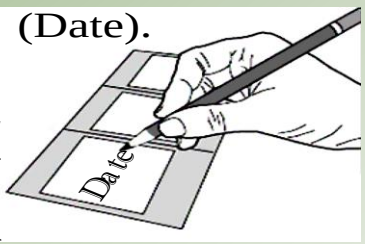
在檢查前幾天，您可能要在飲食或藥物上作些改變.
藥物方面：
從收集大便前七天開始，直到大便樣本收集結束期間，不要服用布洛芬類的止痛藥如 Advil，Motrin。一天內不要服用超過一片阿司匹林。但如果您一直有服用醋氨酚(Tylenol)，則無需要停止.

飲食方面：

從收集大便前兩天開始，直到大便樣本收集結束期間，不要吃未完全煮熟的紅肉。不要吃山葵，哈蜜瓜，白蘿蔔，西蘭花，椰菜花，小蘿蔔或防風草。亦不要吃豬紅或用豬血做成的香腸.

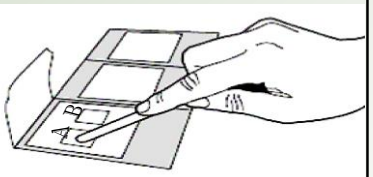
收集三次糞便的指示：

1. 在每張收集卡上記下您收集糞便的日期 (Date).



2. 收集糞便之前，取出馬桶內的清潔劑，並沖洗馬桶兩次，直至裡面只有清水，沒有清潔劑.

3. 收集糞便的步驟：
   a. 讓糞便像往常一樣掉入水
   b. 使用信封內的小木棒，來收集小量的大便樣本.
   c. 將小量糞便抹在標有“A”的地方.



   d. 在糞便另一個位置上，取小量糞便，抹在“B”的地方.
   e. 待收集卡乾後，再關上前蓋
   f. 不要將收集卡弄濕.

4. 按照同樣的步驟，收集另外兩次的糞便.

Results

Table 2. Preintervention and Postintervention Changes in Percentage of Study Participants Up-to-Date with Colorectal Cancer Screening in the Control and Intervention Groups

CRCS Status	Control (n = 246)	Intervention (n = 268)	Between Group *P* Value
CRCS up-to-date before influenza season (October 16, 2006), %	52.9	54.5	.711[a]
CRCS up-to-date after influenza season (March 31, 2007), %	57.3	84.3	<.001[a]
Percentage point change	+4.4 (−0.7 to 9.7)	+29.8 (23.7 to 36.0)	<.001[b]
Preintervention to postintervention *P* value[c]	.071	<.001	

CRCS = colorectal cancer screening.

[a] Pearson χ^2 test.

[b] 2-sample Wilcoxon rank-sum test on the preintervention-postintervention difference scores.

[c] McNemar test.

Potter, Ann Fam Med 2009

Results

Table 4. Multivariate Logistic Regression Analysis of Predictors of Being Up-to-Date with Colorectal Cancer Screening at End of Influenza Season (March 31, 2007) for Study Participants (N = 514)

Predictor Variable	Patients Initially Overdue for CRCS (n = 238) OR (95% CI)	Patients Initially Up-to-Date for CRCS (n = 276) OR (95% CI)
Study arm, intervention (vs control)	11.3 (5.8-22.0)[a]	5.8 (1.5-22.0)[a]
Age, 50-64 y (vs 65-79 y)	0.8 (0.4-1.5)	1.0 (0.3-3.4)
Sex, male (vs female)	1.1 (0.6-2.1)	2.5 (0.7-9.3)
Ethnicity, Hispanic (vs Asian)	0.8 (0.4-1.6)	0.4 (0.1-1.3)
Other (vs Asian)	0.5 (0.2-1.1)	1.7 (0.2-15.9)
Primary language, English (vs non-English)	0.8 (0.4-1.8)	2.0 (0.4-10.0)
Insurance, insured (vs uninsured)	1.4 (0.6-3.2)	1.3 (0.3- 5.2)
Income, above median (vs below)	2.0 (1.1-3.8)[b]	0.7 (0.2-2.0)
Primary care visits, above median (vs below median)	2.0 (1.0-3.7)[b]	0.7 (0.2-2.3)

CRCS = colorectal cancer screening; OR = odds ratio.

[a] $P < .001$ for comparison with reference category.
[b] $P < .05$ for comparison with reference category.

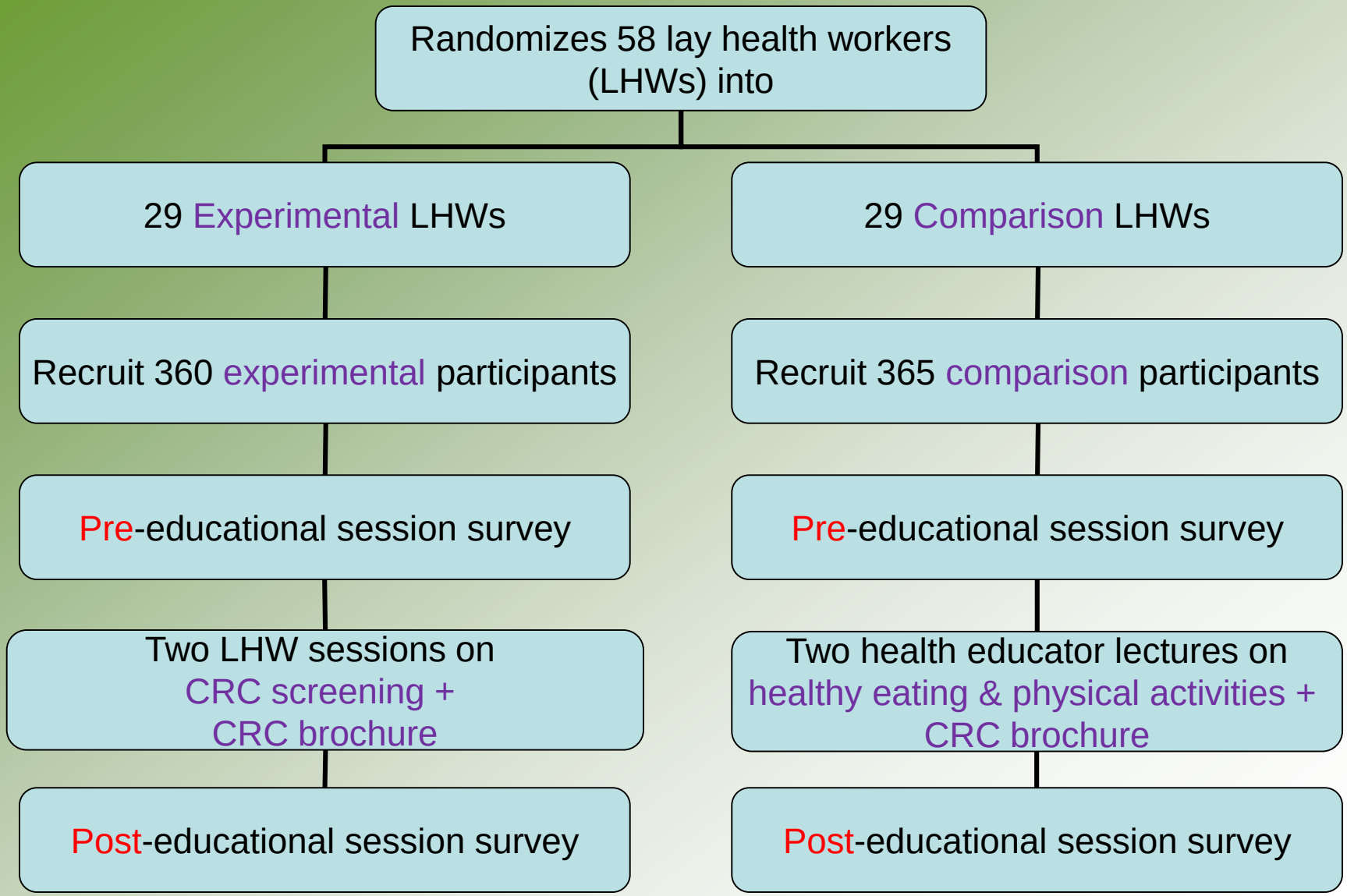
Potter, Ann Fam Med 2009

Lay Health Workers and Colorectal Cancer Screening among Chinese Americans

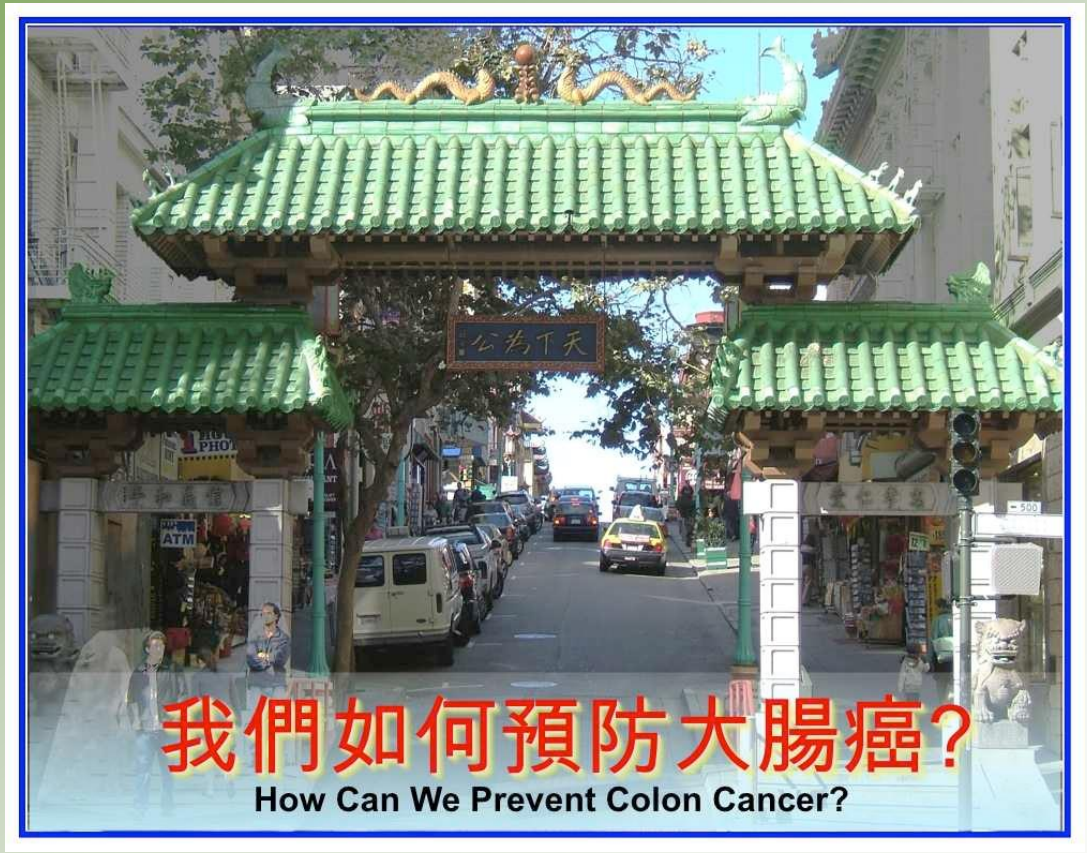
National Cancer Institute 5R01CA138778

National Cancer Institute U54CA153499

Study Design



Chinese Colorectal Cancer Screening Flipchart



Participants

- 58 LHWs and 725 participants completed the study
- 19% of LHWs and 19% of participants are men
- 99% retention rate over 6 month-period

Characteristics of Chinese American participants aged 50-75, San Francisco, N=725

Sociodemographic characteristics	**%**
Male	19%
Married	74%
Limited English proficiency	95%
Less than high school education	72%
Income < $20,000	60%
Health and health care access	
Fair/ Poor	65%
Has at least 1 chronic health condition	60%
Visited MD in the last 12 months	80%
Has regular place of care	90%
Uninsured	9%

Participants Knowledge/Beliefs About Colorectal Cancer Causes

• Age	18.1%
• Polyp	54.1%
• Family history	32.4%
• Diet	66.9%
• Heredity	40.6%
• Lack of exercise	38.9%
• Being unhappy	17.2%
• Alcohol	25.7%
• Toxin	28.4%
• Karma	3.0%

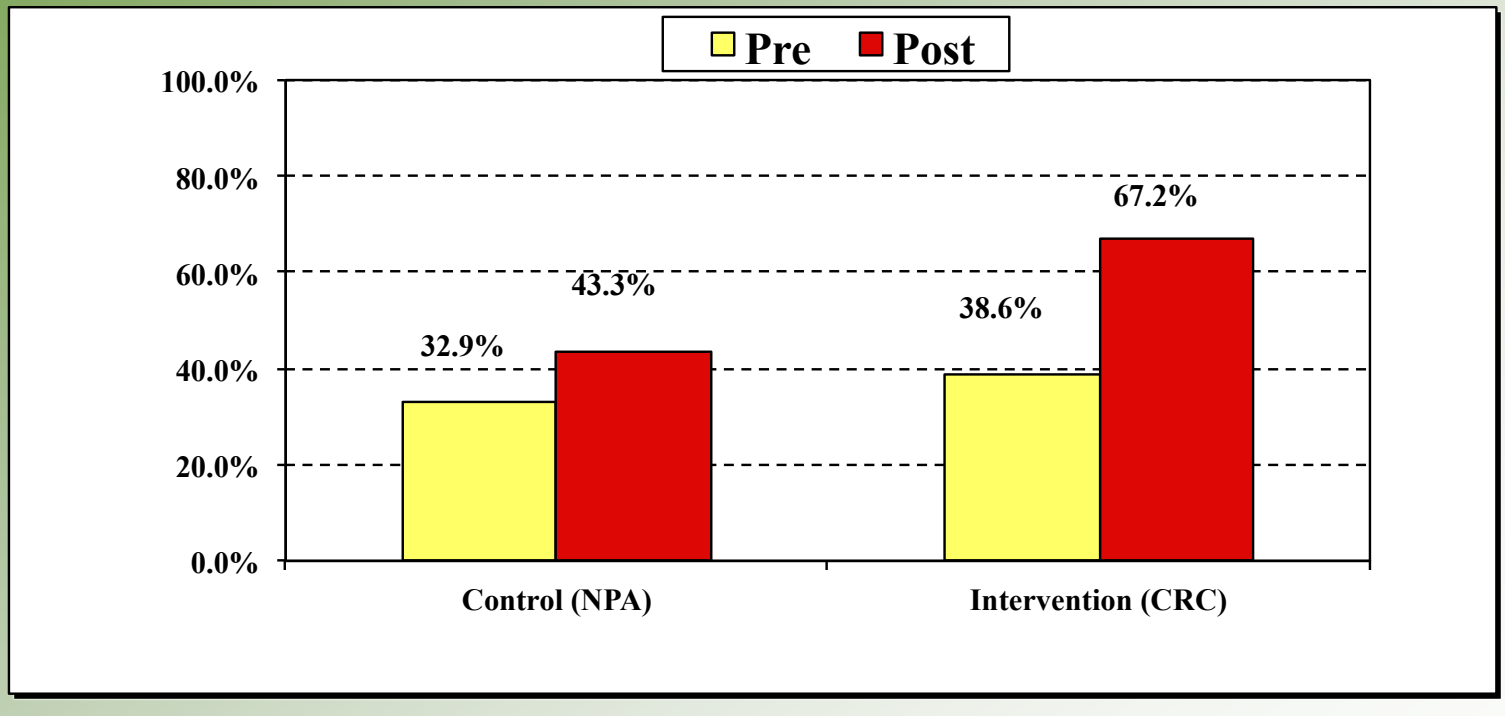
Participants Knowledge/Beliefs About Colorectal Cancer Prevention

• Get screening	58.1%
• Take aspirin	2.3%
• Exercise	53.5%
• Eat more fiber	81.8%
• Have regular bowel movements	65.4%
• Drink enough water	66.5%
• Take herbs	10.9%
• See traditional healers	8.1%
• Nothing	1.1%

Health Care Related Factors

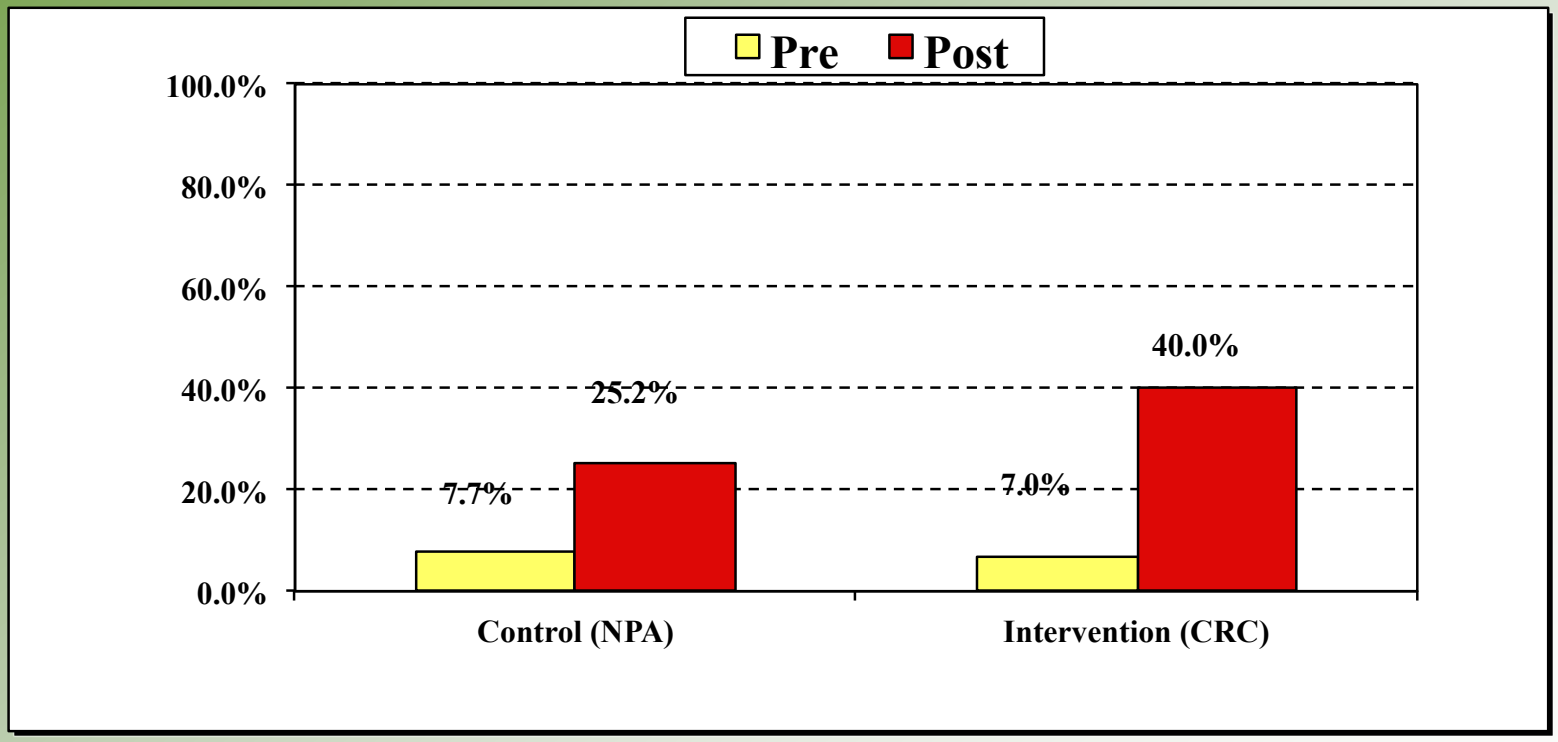
	Adjusted Odds Ratio (95% Confidence Interval) *	
	Ever Had CRC Screening	**Up-to-Date** for CRC Screening**
Has primary care provider (PCP) (vs. no PCP)	2.01 (0.80-5.04)	2.37 (1.11-5.06)
Has a Chinese PCP (vs. non-Chinese)	0.65 (0.31-1.34)	0.49 (0.28-0.86)
MD recommended no CRC screening tests (vs. FOBT)	0.05 (0.03-0.09)	0.17 (0.11-0.28)
MD recommended sigmoidoscopy/ colonoscopy (vs. FOBT)	0.40 (0.14-1.08)	1.58 (0.68-3.67)
MD recommended both FOBT & sigmoidoscopy/colonoscopy (vs. FOBT)	4.13 (1.19-14.30)	3.93 (2.06-7.49)

FOBT should be done once a year
(% Correct)



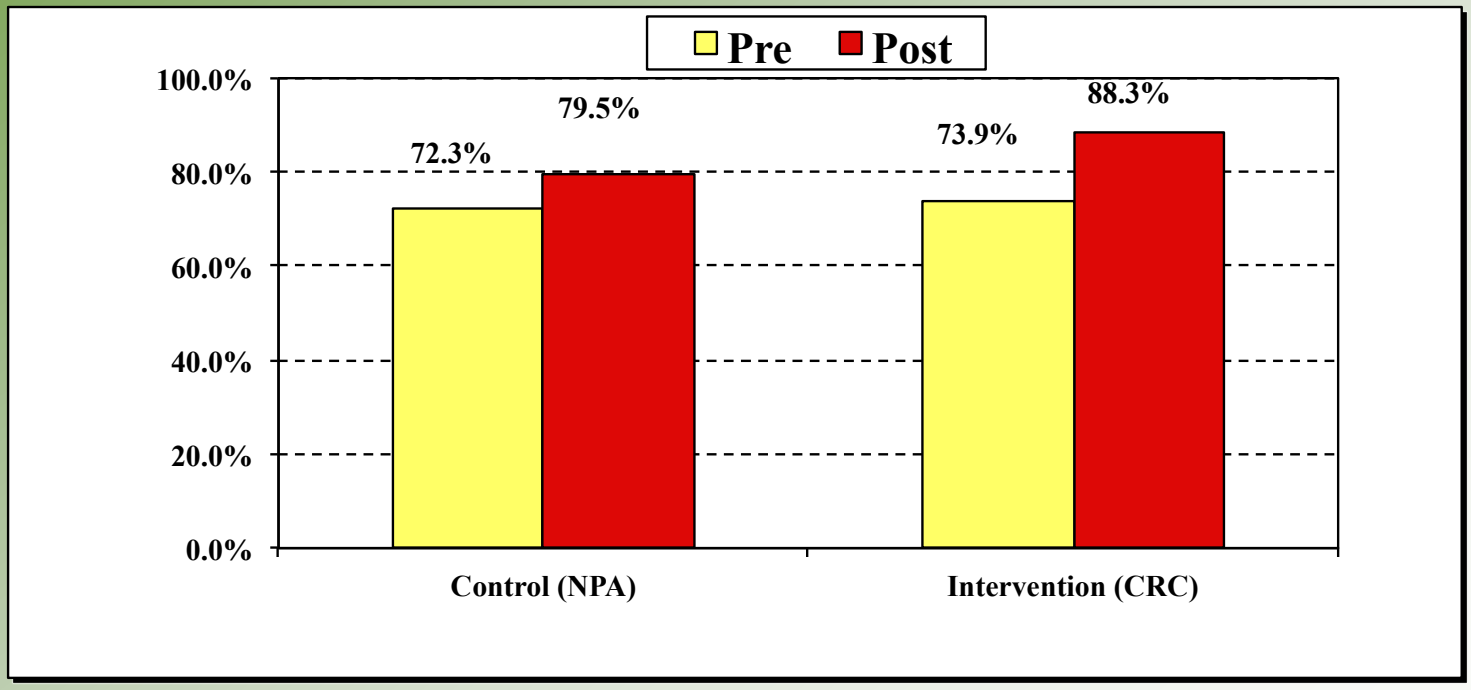
% change*: 10.4% vs. 28.6% *p = 0.001

Colonoscopy Should Be Done Every 10 Years
(% Correct)



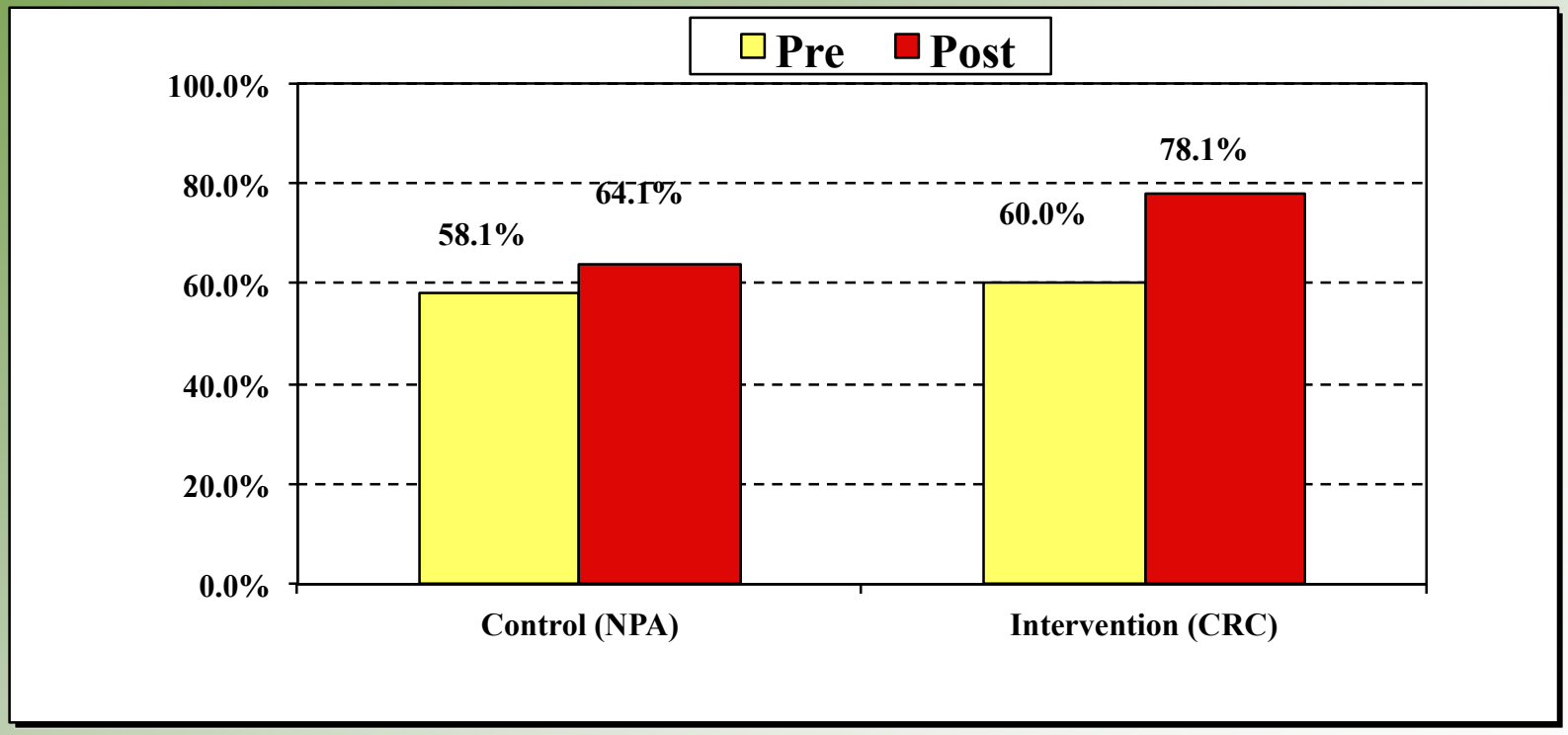
% change*: 17.5% vs. 33.0% *p = 0.046

Ever Screened for CRC?
(% Yes)



% change*: 7.2% vs. 14.4% *p = 0.0003

Up-to-date on FOBT, Sigmoidoscopy or Colonoscopy?
(% Yes)



% change*: 6.0% vs. 18.1% *p = 0.0004

Multivariable Models of Intervention Effects

	Ever Had CRC Screening	Up-to-date for CRC Screening
Intervention Effect	**1.94 (1.34, 2.79)**	**2.02 (1.40, 2.90)**
US Residence >10 yrs.	**1.65 (1.11, 2.46)**	1.37 (0.94, 2.00)
Fair/poor health	**1.52 (1.07, 2.15)**	1.29 (0.97, 1.73)
Had regular place for healthcare	**1.81 (1.01, 3.25)**	1.81 (0.99, 3.29)
Had primary care doctor	**2.64 (1.42, 4.92)**	**2.66 (1.47, 4.83)**
Have health insurance	**2.51 (1.34, 4.68)**	**2.60 (1.37, 4.94)**

Model adjusted for LHW cluster, age, gender, education, income, marital status, English fluency, employment

Available Educational Materials

- How to do FOBT/FIT video in Cantonese and Mandarin
- Pamphlet
- Lay health worker flipchart
- FOBT/FIT instructions in Chinese

asianarch.org/materials.html

Conclusions

- Colorectal cancer screening is an important and effective prevention method.
- Chinese Americans still do not meet colorectal cancer screening guidelines.
- There are several strategies that are proven to be effective in getting Chinese Americans screened for colorectal cancer:
  - Mailed FOBT/FIT
  - Flu-FIT
  - Lay health workers
  - Others: in-clinic health educators

Thank you!

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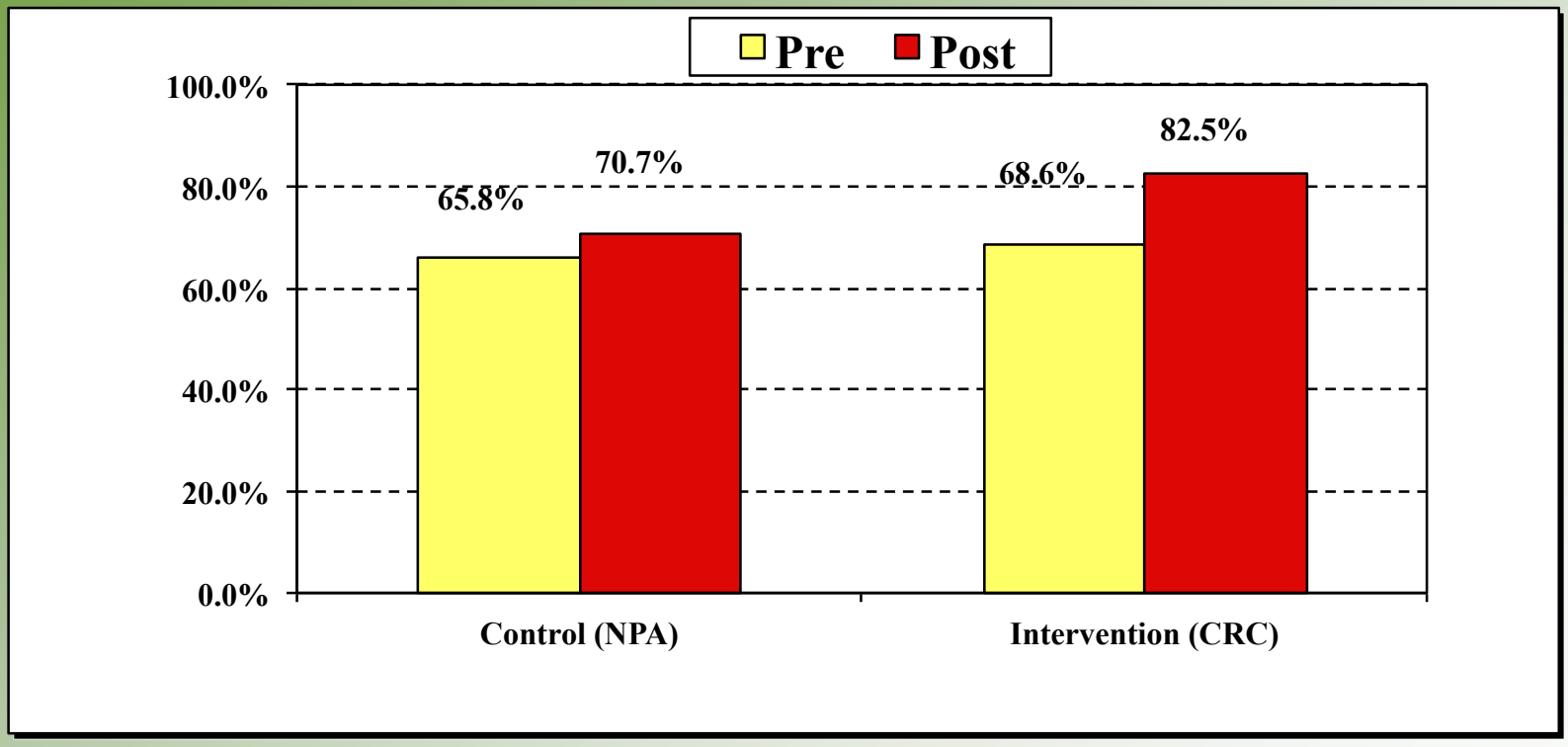
AsianArch.org

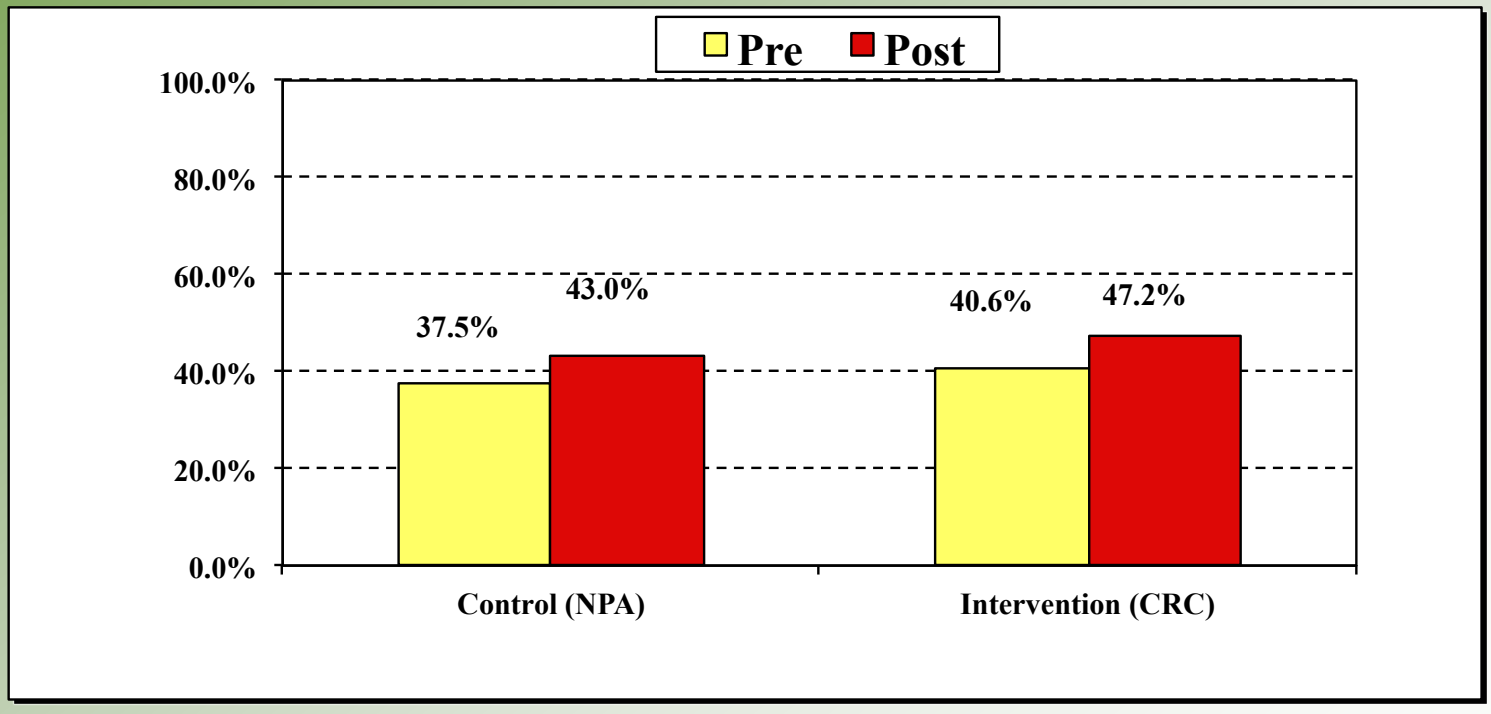
@ARCHDrNguyen

Ever Had FOBT?
(% Yes)



% change*: 4.9% vs. 13.9% *p = 0.003

Ever Had Sigmoidoscopy or Colonoscopy?
(% Yes)



% change: 5.5% vs. 6.6% p = 0.625