# Comparing the Effectiveness of Automated and Live Reminders for a Direct-Mail Fecal Testing Program

Jennifer S Rivelli, MA<sup>1</sup> Jamie H Thompson, MPH<sup>1</sup> Carrie M Nielson, MPH, PhD<sup>1</sup> Morgan J Fuoco, MA<sup>1</sup> Victoria Gawlik, MPH<sup>2</sup> Ricardo Jimenez, MD<sup>2</sup> Amanda F Petrik, MS<sup>1</sup> Gloria D Coronado, PhD<sup>1</sup>

<sup>1</sup> Center for Health Research, Kaiser Permanente Northwest, Portland, OR

<sup>2</sup> Sea Mar Community Health Centers, WA

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#### Gloria D. Coronado, PhD

Kaiser Permanente Center for Health Research 3800 N Interstate Avenue Portland, OR 97227-1098 gloria.d.coronado@kpchr.org 503.335.2427 | P 503.335.2424 | F

#### BACKGROUND

- Colorectal cancer (CRC) remains one of the most common cancers among adults over age 50.
- Annual screening by fecal immunochemical test (FIT) reduces CRC mortality (2).
- The US Multi-Society Task
   Force on Colorectal Cancer has
   recommended targeting a ≥ 60%
   completion rate for those offered
   FIT testing (3).

As part of the Strategies and Opportunities to STOP Colon Cancer in Priority Populations (STOP CRC) study, we conducted two sequential pilot studies to compare the effectiveness of automated and live reminders to a direct-mail FIT program and examined whether the effectiveness differed by patients' language preference (English or Spanish):

- Pilot I: a seven-arm study that compared various combinations of automated and live reminders (Figure 1).
- Pilot II: a two-arm study that compared the most effective reminder formats in Pilot I

   (automated calls and the combination of automated and live calls), holding constant the total number of calls/call attempts in each arm (Figure 2).



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#### METHODS

- Clinical partners: Sea Mar Community Health Centers, a community-based health center specializing in service to Latinos in western Washington.
- Eligibility:
- o ages 50 75
- o had a primary care visit in the past year
- o were not up-to-date with CRC screening.
- o Exclusion: previous CRC diagnosis or colectomy.

- All participants were sent an informational letter and FIT kit by mail. Patients who did not return their FIT kits within 3 weeks were randomized.
- Reminders were delivered in English, Spanish or Russian according to patients' preferred language obtained from the electronic medical record.
   Bilingual (English and Spanish) outreach workers delivered live phone calls in English and Spanish and in other languages through an interpreter.

	Pilot I	<b>Pilot II</b>		
	(N=2010)	(N=431)		
Age				
50-64	82%	78%		
65-74	18%	22%		
Insurance				Fig
Medicare or Medicaid	75%	80%		
Commercial	14%	3%	All All	
Uninsured	10%	2.3%Patie	nt PortBbMessdgertal Message	
Annual household incon	ne	Au	tomated/ <b>Live</b> Call	
< \$20,000	50%	52% Romind	er L <b>æteen/hdær Cætt</b> ter/Live Call	
≥ \$20,000	13%	17%		
Ethnicity			Text/Live Catext/Live Call	
Hispanic	24%	32%	Live Call Live Call	
Non-Hispanic	75%	67%	Text Messag <b>e</b> ext Message	
Preferred language			Automated <b>Galfornated Call</b>	
English	73%	65%		
Spanish	19%	25%	Reminder Letter	
Other	8%	10%	0	

## Table 1. Baseline characteristicsof participants in each pilot study

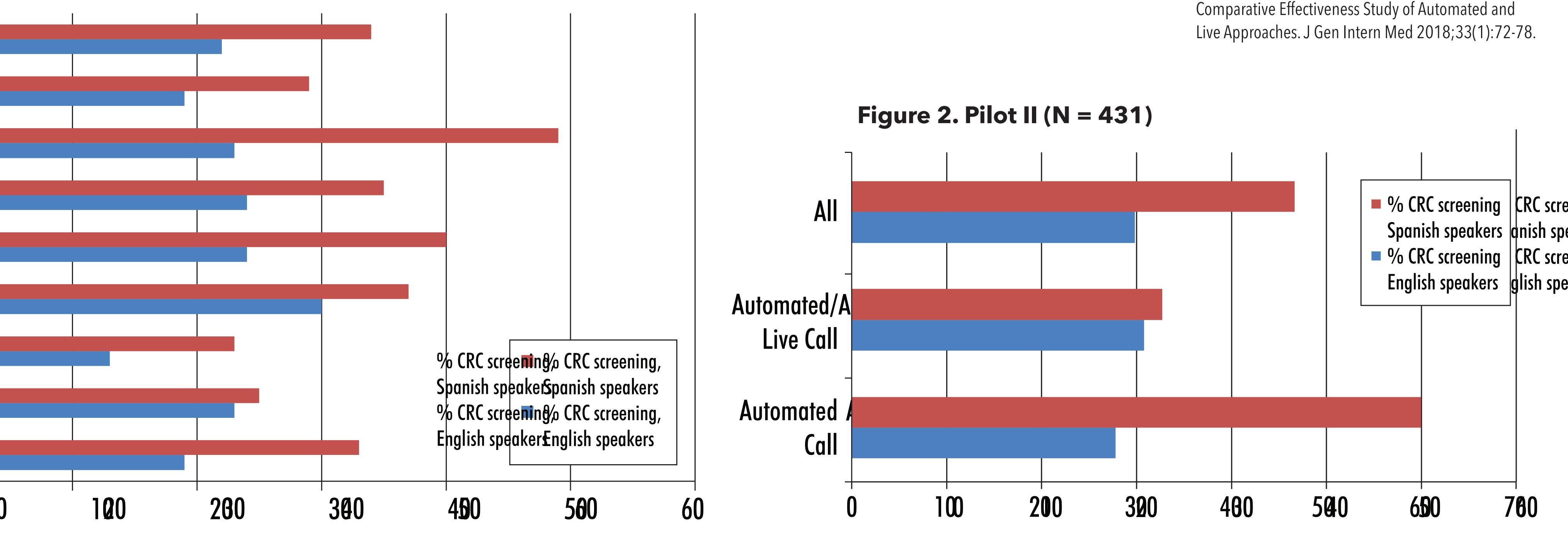
#### RESULTS

#### • Pilot I:

- o 255 (10%) participants returned their FIT before randomization (within 3 weeks of the mailing).
- Among randomized participants (n = 2,010), an additional 25.5% returned their FITs after reminders were delivered (estimated overall return rate = 32.7%).
- Compared to the group allocated to receive a reminder letter, return rates were higher for the group assigned to receive the live phone call (OR= 1.51 (95% CI: 1.03 - 2.21)) and lower for the group assigned to receive text messages (OR = 0.66 (95% CI: 0.43 - 0.99)).
- o Reminder effectiveness differed by language preference (**Figure 1**).

#### • Pilot II:

- o 20 (4.6%) participants returned their FIT within 3 weeks of the mailing.
- Among randomized
   participants (n = 431), an
   additional 31.6% returned
   their FITs after reminders were
   delivered (estimated overall
   return rate = 36%).
- Compared to the group allocated to receive the automated phone call reminders only, return rates did not significantly differ between reminder formats (p=0.71).
- There was a significant
   interaction between language
   preference and reminder
   format. This difference was
   driven by a high FIT return
   rate (60%) among adults
   who preferred Spanish in the
   automated call only arm
   (Figure 2).



### ure 1. Pilot I (N = 2010)

In both pilot studies, adults whose preferred language was Spanish had a higher FIT return rate than adults who preferred English (Pilot I: FIT return rates: 34% v. 22%, p<0.001; Pilot II: 47% v. 30%).

#### DISCUSSION

- **Pilot I:** live phone calls were most effective for patients who preferred English, and the combined automated plus live calls were most effective for patients who preferred Spanish. However, the number of calls/ call attempts differed across arms (3 attempts for live call; up to 6 calls/attempts for the combined automated plus live calls).
- Pilot II: When the number of calls/ call attempts was held constant across arms (n = 6), compared to automated calls alone, the combined automated plus live calls did not boost FIT return rates.
- Automated call reminders to a mailed FIT program appear to be an effective, low-cost way to raise FIT return rates.

- Mailed FIT outreach programs plus reminders can effectively address the disparate rates of CRC screening in federally qualified health centers and are particularly effective among Latino populations.
- FIT completion rates for mailed FIT plus reminder programs can reach the ≥ 60% target, set by the US Multi-Society Task Force on Colorectal Cancer, for some population subgroups.

#### **REFERENCES:**

- Siegel RL, Miller KD, Fedewa SA, Ahnen DJ, Meester RGS, Barzi A, et al. Colorectal cancer statistics, 2017. CA Cancer J Clin 2017;67(3):177-193.
- Zhang J, Cheng Z, Ma Y, He C, Lu Y, Zhao Y, et al. Effectiveness of Screening Modalities in Colorectal Cancer: A Network Meta-Analysis. Clin Colorectal Cancer 2017;16(4):252-263.
- Robertson DJ, Lee JK, Boland CR, Dominitz JA, Giardiello FM, Johnson DA, et al. Recommendations on Fecal Immunochemical Testing to Screen for Colorectal Neoplasia: A Consensus Statement by the US Multi-Society Task Force on Colorectal Cancer. Gastroenterology 2017;152(5):1217-1237.e3.
- Coronado GD, Rivelli JS, Fuoco MJ, Vollmer WM, Petrik AF, Keast E, et al. Effect of Reminding Patients to Complete Fecal Immunochemical Testing: A Comparative Effectiveness Study of Automated and Live Approaches. J Gen Intern Med 2018;33(1):72-78.