



Applying risk prediction modeling to address low rates of follow-up colonoscopy

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# Acknowledgements

- **PRECISE CHR research team:**

- Michael Leo, PhD
- Eric Johnson, PhD
- Dave Smith, PhD
- Raj Mummadi, MD
- Amanda Petrik MS
- Jennifer Rivelli, MA
- Jennifer Schneider, MA
- Jamie Thompson, MPH
- Dennis Nyongesa
- Editors (Neon Brooks, Kevin Lutz), graphics (Lisa Fox), administration (Robin Daily)

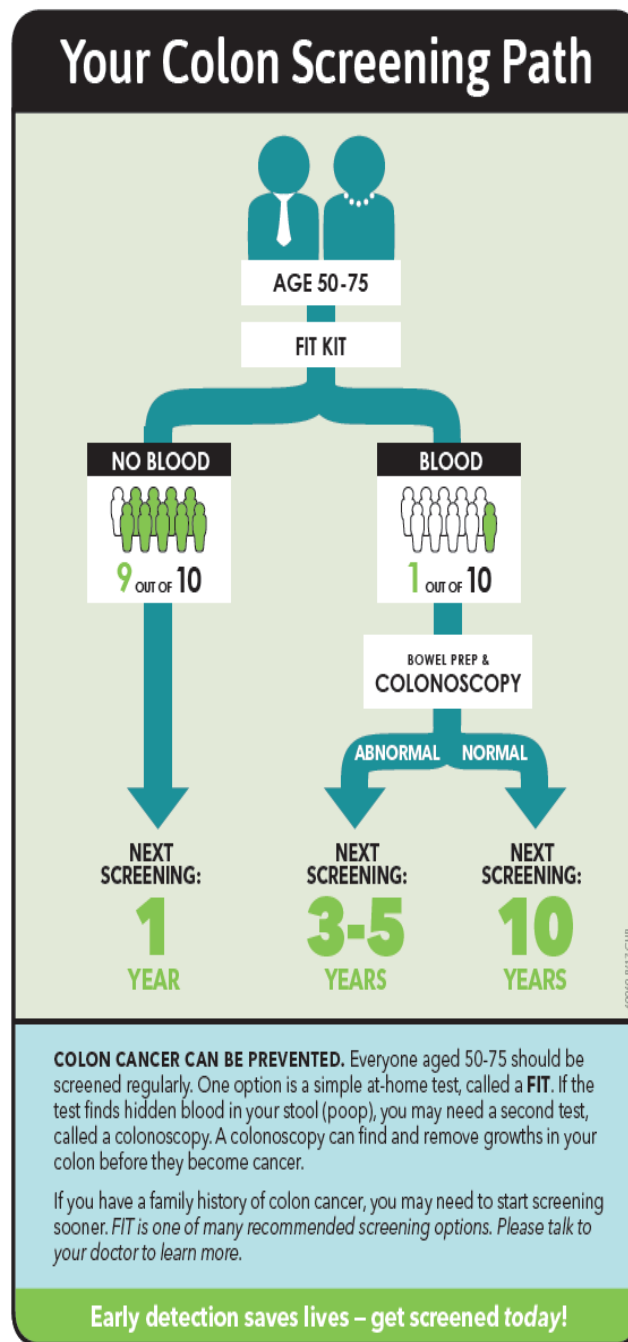
- **Sea Mar Community Health Center**

- Ricardo Jimenez, MD

- Funding source: NIH / NCI R01 CA218923: Predicting and Addressing Follow-up Colonoscopy in Safety Net Settings (PRECISE)
- CHR leadership team

# The problem

- An estimated 8.7 million individuals complete a fecal test each year.
- Yet, not all individuals who test positive get a follow-up colonoscopy.
- For these patients, the benefit of fecal testing is nullified!



# Why this matters...

**1 in 20 patients will have colon cancer**



**\$143,284 average cost of treating a patient with colon cancer**

In safety net practices, only **52% - 59%\*** of individuals who screen positive on FIT obtain a follow-up colonoscopy.

\* Liss et al. 2016; STOP CRC study

## Key Points

- Patients and providers face challenges with follow-up colonoscopy
- Patient navigation is widely endorsed, but not needed by everyone
- New study: Predicting and Addressing Follow-up Colonoscopy in Safety Net Settings (PRECISE)



## Reasons for no follow-up\*

Reason	Not referred (n = 84) N (%)	Referred, no colonoscopy (N = 195) N (%)
No reason indicated	26 (32.1)	86 (44.1)
Patient declined	24 (29.6)	54 (27.7)
Unable to contact	4 (5.0)	21 (10.8)
Recent colonoscopy	22 (25.9)	25 (12.8)
Other	5 (5.9)	9 (7.7)

\*based on chart abstraction of 613 patients w/positive FIT results

# Barriers to CRC Follow-up

Reason	Provider N = 15	Patient N = 10
Bowel preparation challenges	X	
Logistical issues		
Arranging a ride	X	X
Unable to take time off work	X	X
Delays in getting appointment		X
Insurance/cost-related barriers		
Billing / insurance issues	X	
Cost of colonoscopy	X	X
Psychosocial/other issues		
Patient fears	X	
Confusion about colonoscopy	X	X
Multiple health issues		X



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# The reality...

Patient navigation is widely endorsed as a way to improve colonoscopy completion rates, **yet not everyone needs patient navigation.**

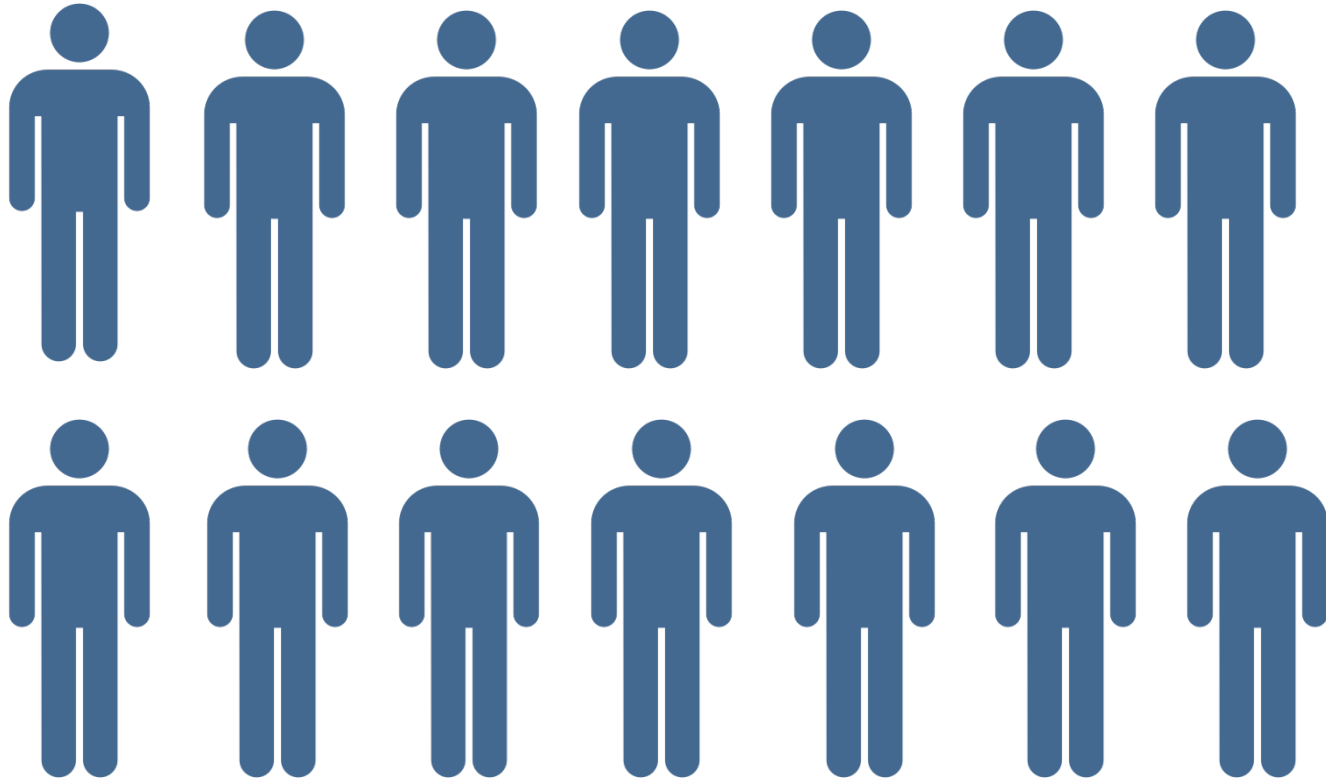
Colonoscopy completion in some usual care groups **~50–70%.**

# How to winnow targets for patient navigation

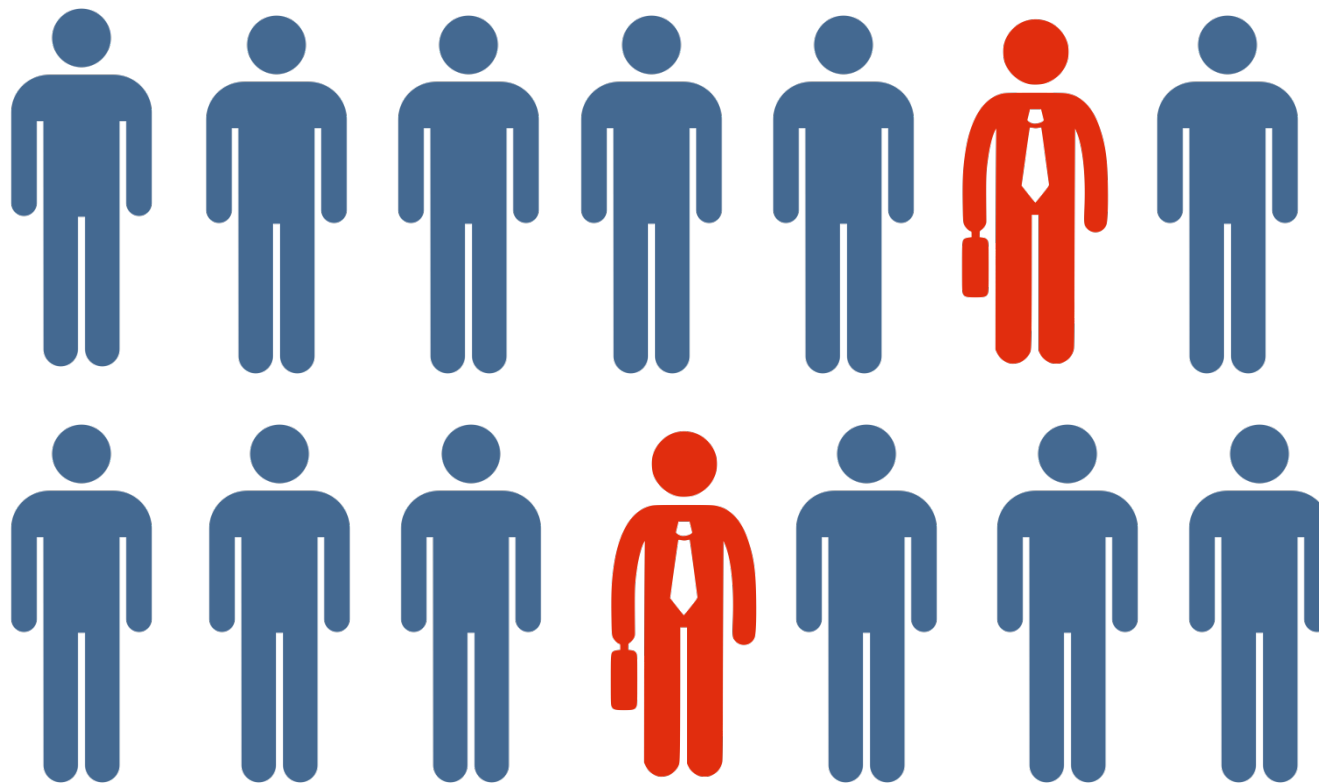
## Candidate best practices; select patients who:

- screen positive on FIT
- have never had a colonoscopy
- have no upcoming appointment for a colonoscopy
- have not obtained a colonoscopy after xx months
- are referred by a provider
- are identified using a risk prediction model

# Patients with positive FIT tests

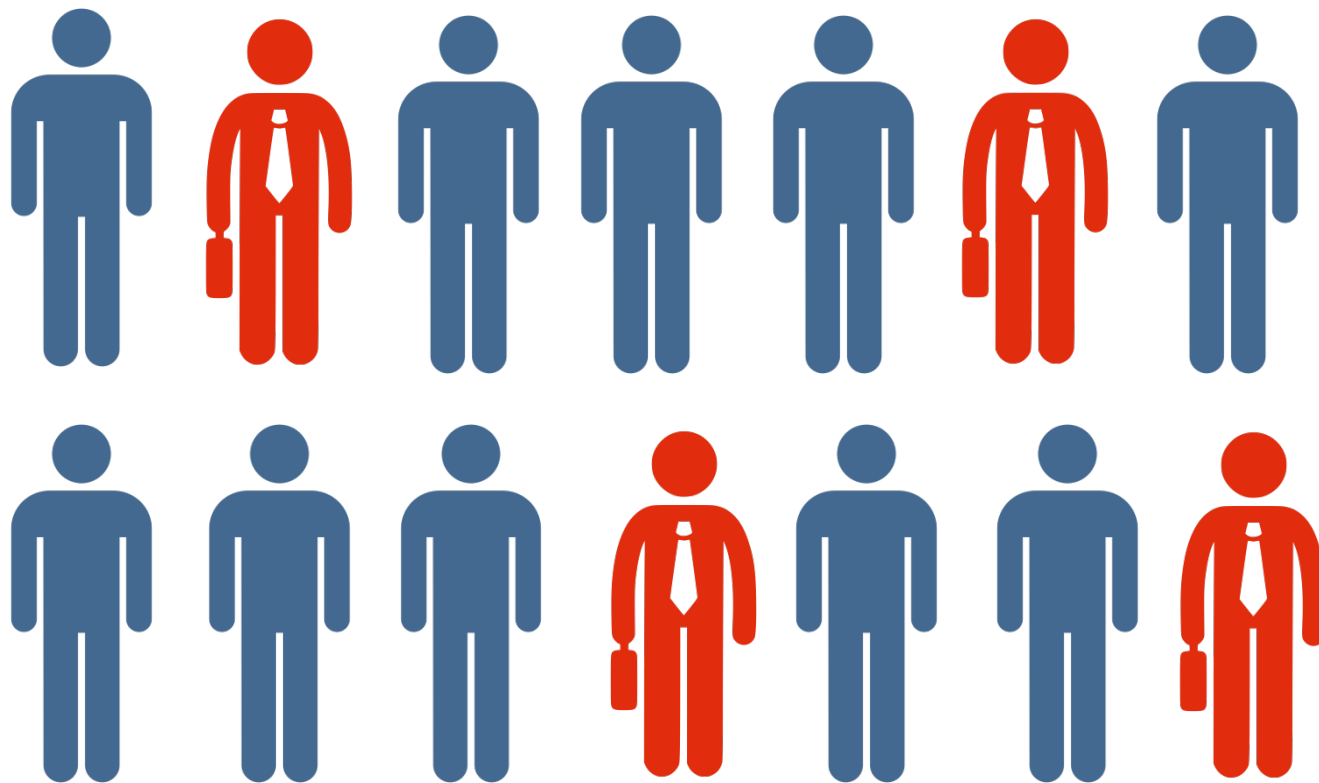


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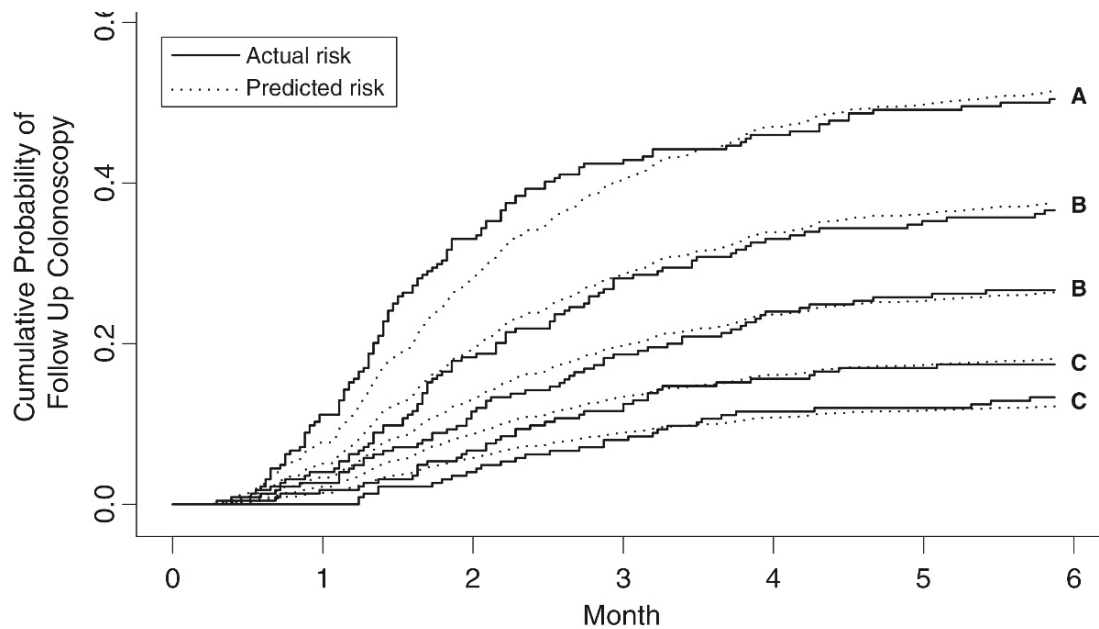


patients who need navigation

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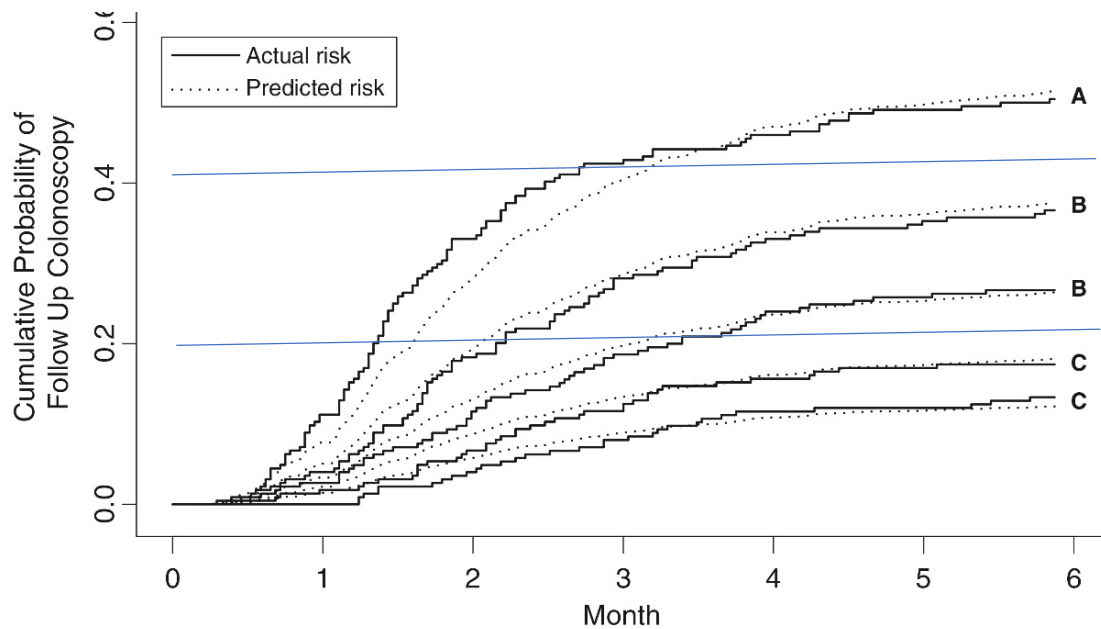


patients who need navigation



- age
- Hispanic ethnicity
- body mass index
- number of clinic visits in the past year
- frequency of missed clinic appointments
- previous CRC screening
- receipt of a flu vaccine in the past year, and
- clinic site

## Risk prediction model



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## Risk prediction model

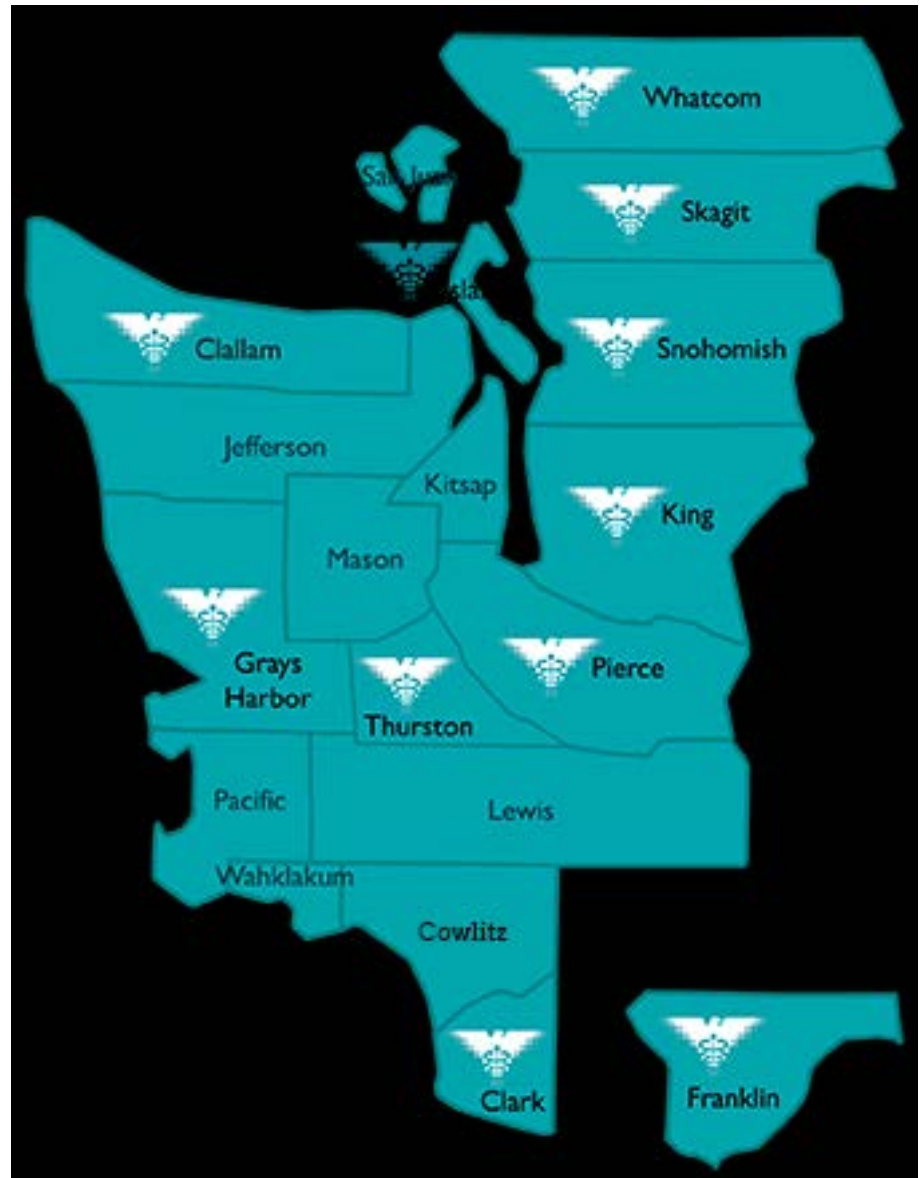


# Predicting and Addressing Follow-up Colonoscopy in Safety Net Settings

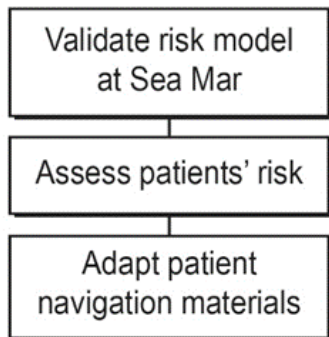


# Sea Mar clinics

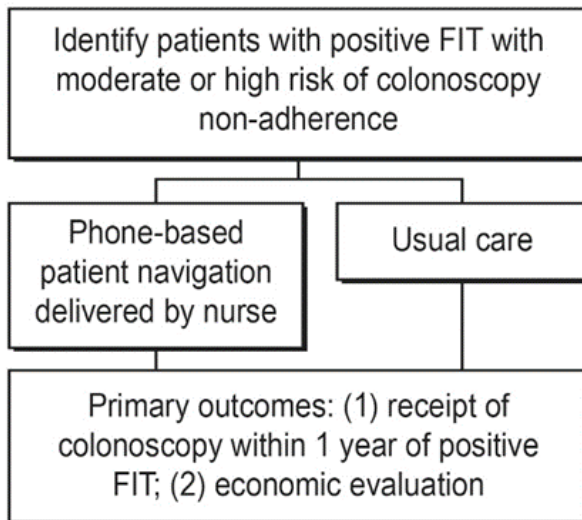
- 34 clinics in 12 counties in Western Washington
- Serving ~250,000 patients; ~40% Latino
- CRC screening rate = 44% (2017)



**Phase 1: Validate & apply risk model**



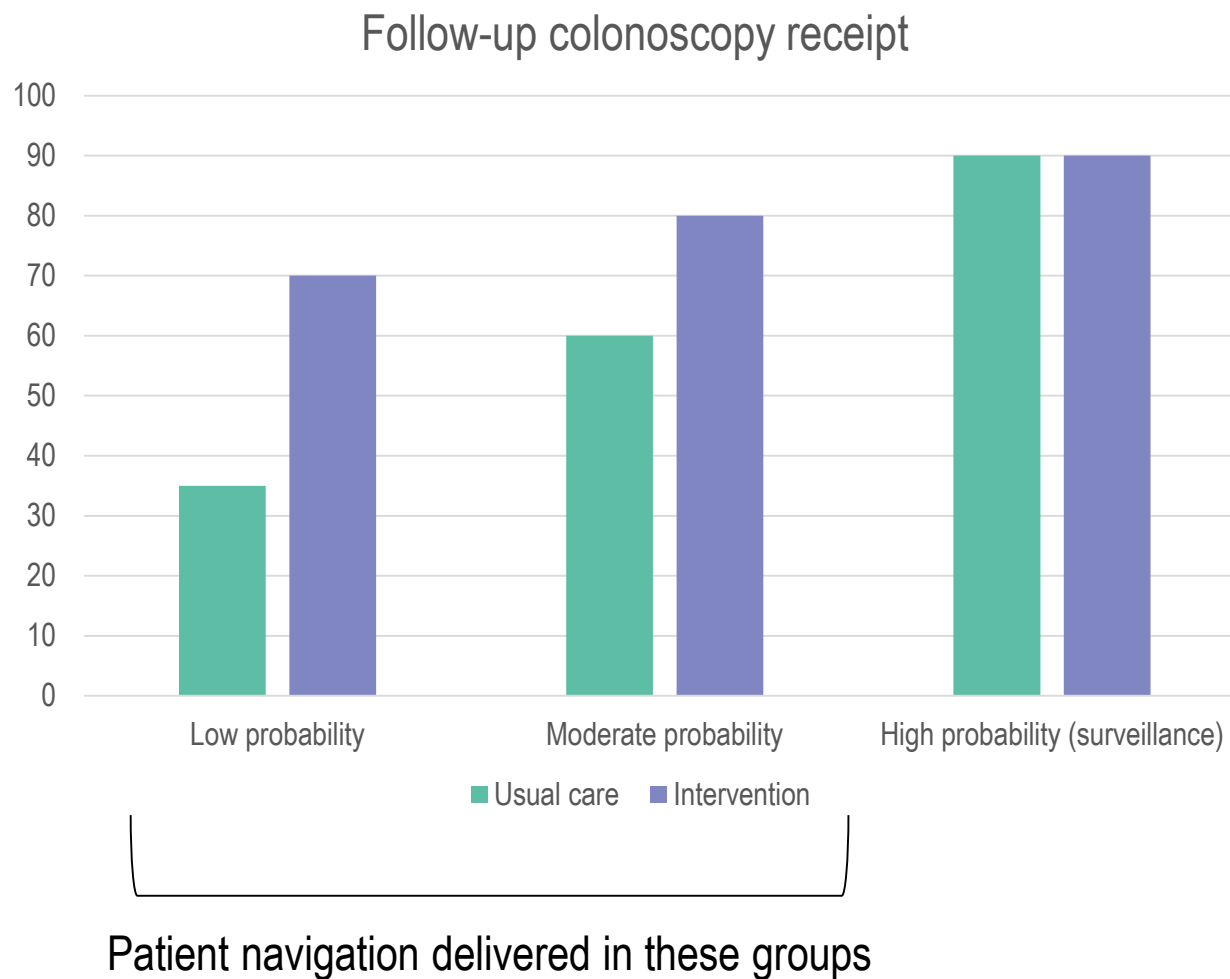
**Phase 2: RCT**



# PRECISE study design

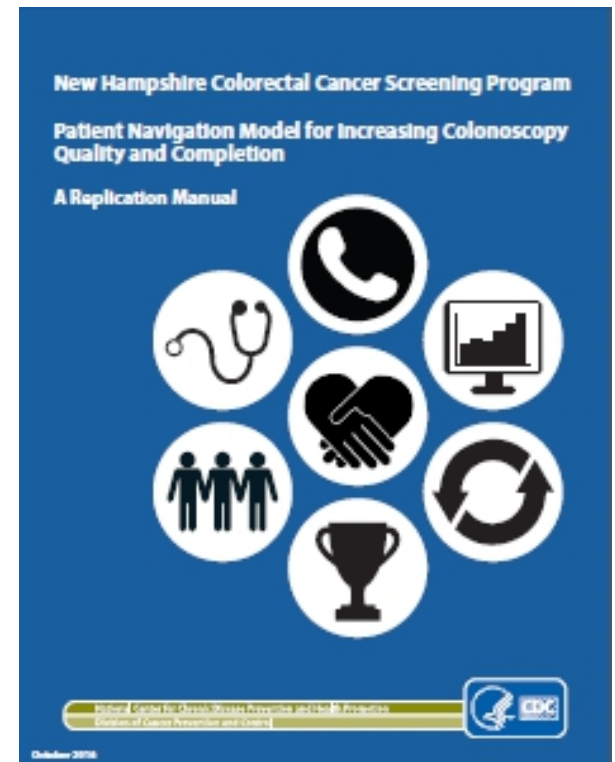
- **2-phase, patient-randomized trial of Patient Navigation vs. Usual care**
- **Enroll ~1200 patients across 28 Sea Mar clinics**
- **5-year R01 study funded by the National Cancer Institute**

# Planned analysis



# NH Colorectal Cancer Screening Program

- Timed, 6-topic area, phone-based patient navigation program delivered by a registered nurse
- Average 120 min. per patient of navigated time



## NH Patient Navigation program outcomes (n = 443)

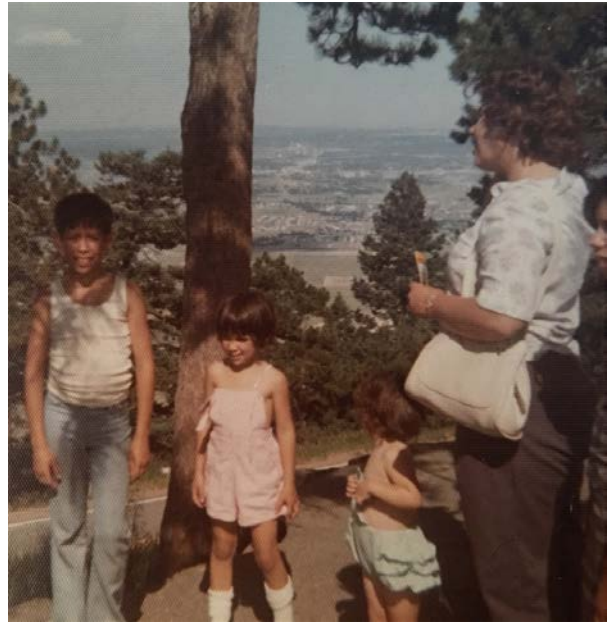
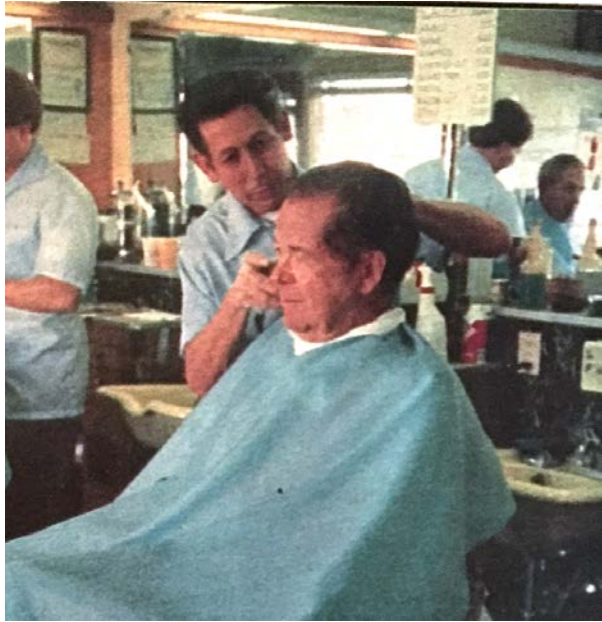
Outcome	%
Colonoscopy completed	97.3
Adequate bowel preparation quality	99.1
Missed appointment/no-show without prior cancellation	0.0
Cancellation <24 hours prior to appointment	0.7
Cancellation 24-48 hours prior to appointment	1.6
Results communicated to patient, PCP, screening interval consistent with guidelines	100%

# Conclusion

- Low rates of follow-up colonoscopy is a significant problem;
- Several patient- and system- barriers contribute to the problem;
- Patient navigation is widely endorsed, but not needed by everyone;
- Precisely delivering patient navigation to those who need it can save health care costs, and improve the colorectal cancer outcomes.







# Childhood

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