Timely Follow-up Colonoscopy and Colorectal Cancer Mortality

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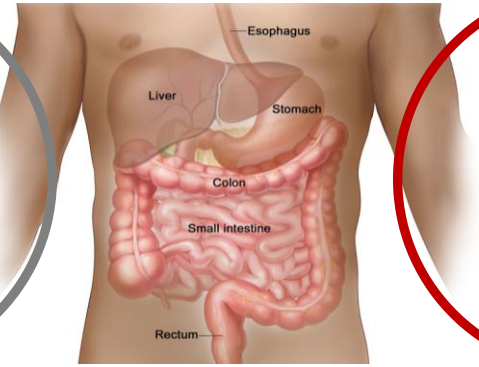
ACS CRC Mortality Disparities Learning Community- Session #2 | June 5, 2025

Background

Disparities across dimensions and continuum

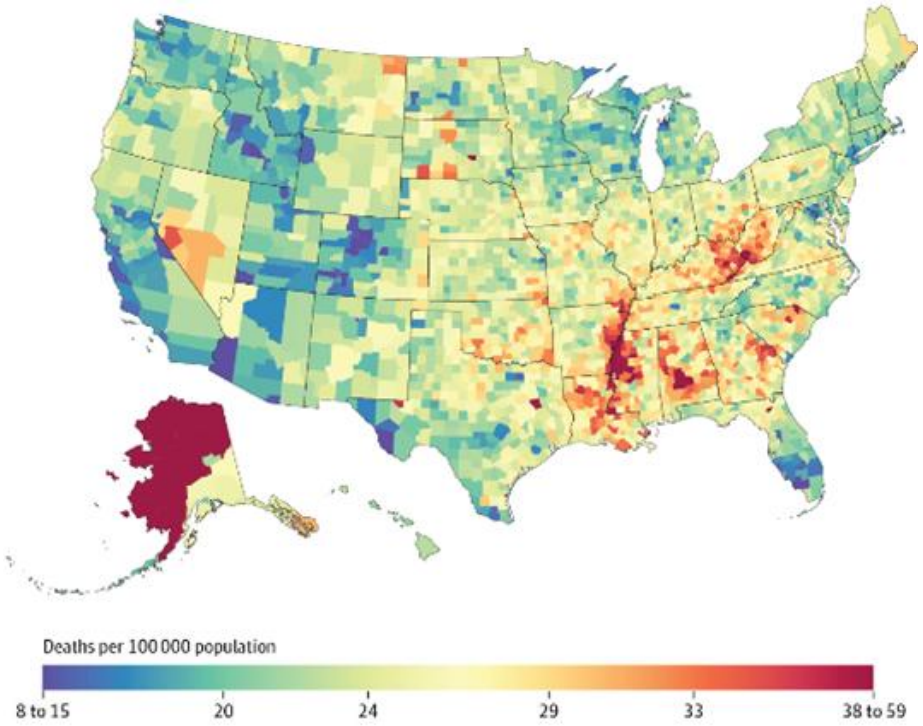
Colorectal cancer #2 (2025)

154,270 diagnosed



52,900 lives lost

8.8	10.5	12.9	15.6	18.0
Asian/PI	Hispanic	White	Black	AI/AN



Age-adjusted death rates (per 100,000) from cancer 2019-2023, US, SEER

JAMA. 2017;317(4):388-406

Screening for colorectal cancer is an effective preventive strategy

- Screening is effective in reducing the risk of dying from colorectal cancer
- Uptake of screening is a major contributor to progressively declining mortality rates from colorectal cancer over the last 3-4 decades in the US
- There are several tests that are recommended for use by the US Preventive Services Task Force, American Cancer Society and other guideline groups

Recommended screening strategies and emerging tests

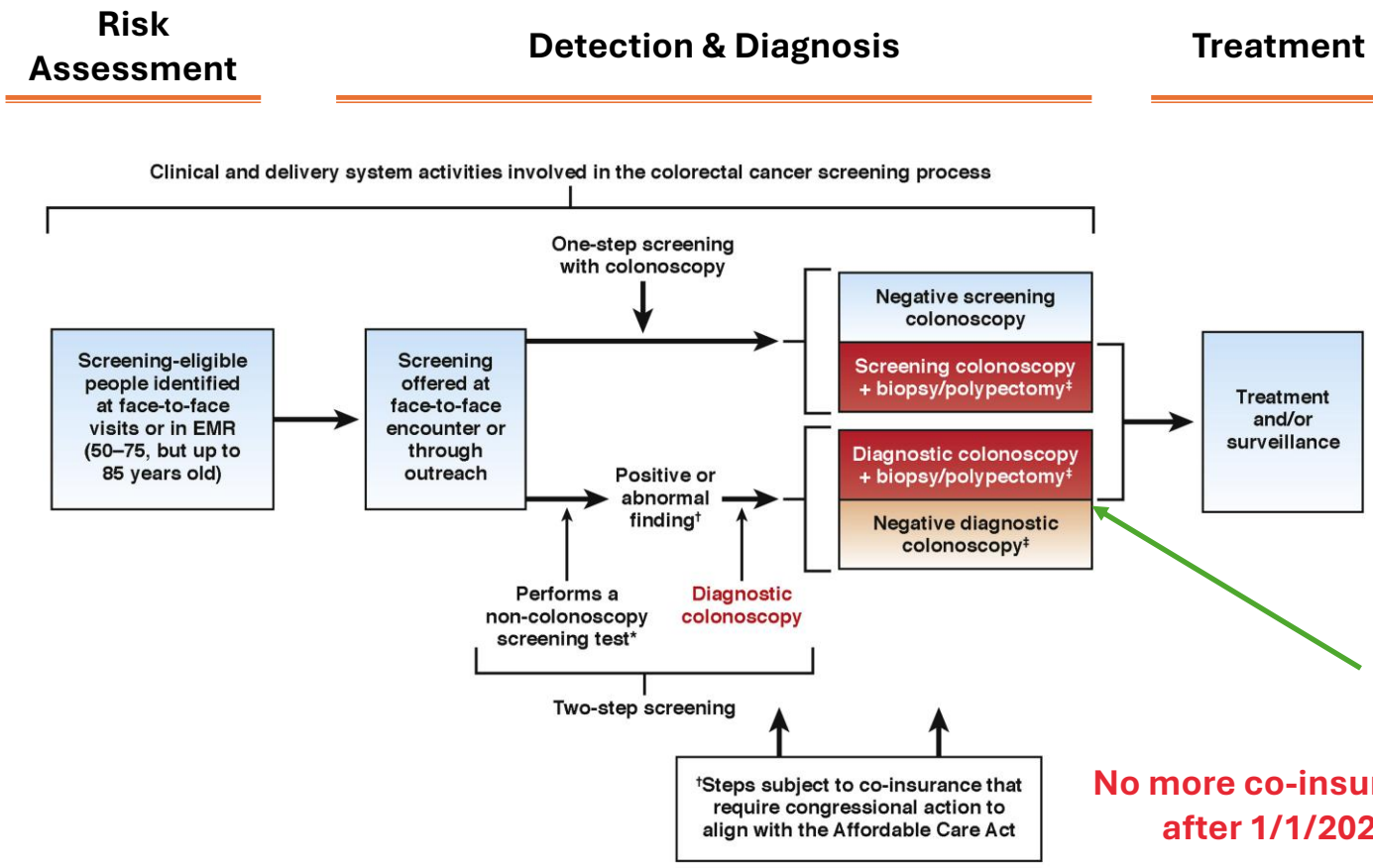
Recommended strategies:

- High-sensitivity fecal occult blood tests (g-FOBT) annually
- Fecal immunochemical tests (FIT) annually
- Multitarget FIT-Stool DNA (Cologuard) every 1-3 years
- Flexible sigmoidoscopy with/without FIT every 5 or 10 years
- CT Colonography every 5 years
- Colonoscopy (Optical) every 10 years

Emerging additional tests

- New FIT-DNA (Cologuard 2.0)
- Stool FIT-RNA
- Blood-based (Shield)

CRC screening involves multiple steps and definitions have evolved



This now a "Screening" Colonoscopy

No more co-insurance after 1/1/2023

Gastroenterology 2016 1501052-1055DOI: (10.1053/j.gastro.2016.03.012)

Colorectal Cancer Screening as a Process

- Completing a screening test is essential, but insufficient by itself
- A negative test should be repeated at regular recommended intervals

"Complete Colorectal Cancer (CRC) Screening to include a "follow-on" screening colonoscopy after a … non-invasive…screening test returns a positive result" ~ *1/1/2023*

"Positive results on stool-based screening tests **require follow-up with colonoscopy** for the screening benefits to be achieved" ~*USPSTF*

National coverage decision: *https://www.cms.gov/files/document/mm13017-removal-national-coverage-determination-expansion-coverage-colorectal-cancer-screening.pdf
https://www.federalregister.gov/documents/2022/11/18/2022-23873/medicare-and-medicaid-programs-cy-2023-payment-policies-under-the-physician-fee-schedule-and-other

Colorectal Cancer Screening Continuum

Definitions

People at average risk for CRC
No apparent symptom of CRC
Apply a test to detect CRC signal
A multistep process

Administrative Definition
"non-invasive, stool-based test and **the follow-on colonoscopy** are both **part of a continuum of a complete CRC screening**"

=

Operational Definition

- Negative non-colonoscopy test,
- Positive non-colonoscopy test + **follow-on** colonoscopy, or
- Colonoscopy

+

Aspirational

High quality/complete colonoscopy, when performed

For Every one

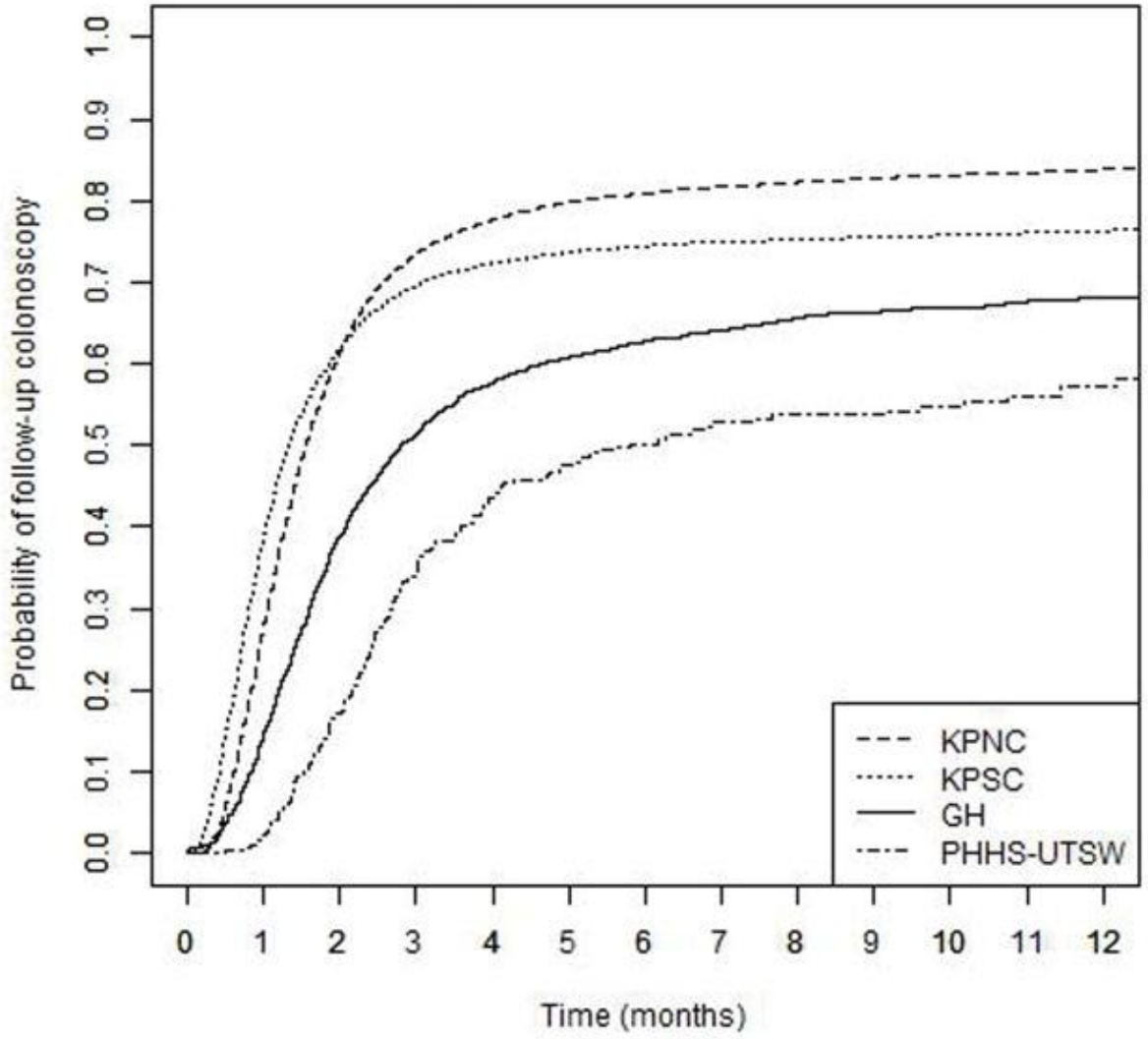
Research Article

Cancer Epidemiology, Biomarkers & Prevention

Time to Colonoscopy after Positive Fecal Blood Test in Four U.S. Health Care Systems

Jessica Chubak[1], Michael P. Garcia[2], Andrea N. Burnett-Hartman[2,3], Yingye Zheng[2], Douglas A. Corley[4], Ethan A. Halm[5], Amit G. Singal[5], Carrie N. Klabunde[6], Chyke A. Doubeni[7], Aruna Kamineni[1], Theodore R. Levin[8], Joanne E. Schottinger[9], Beverly B. Green[1], Virginia P. Quinn[9], and Carolyn M. Rutter[10], on behalf of the PROSPR consortium

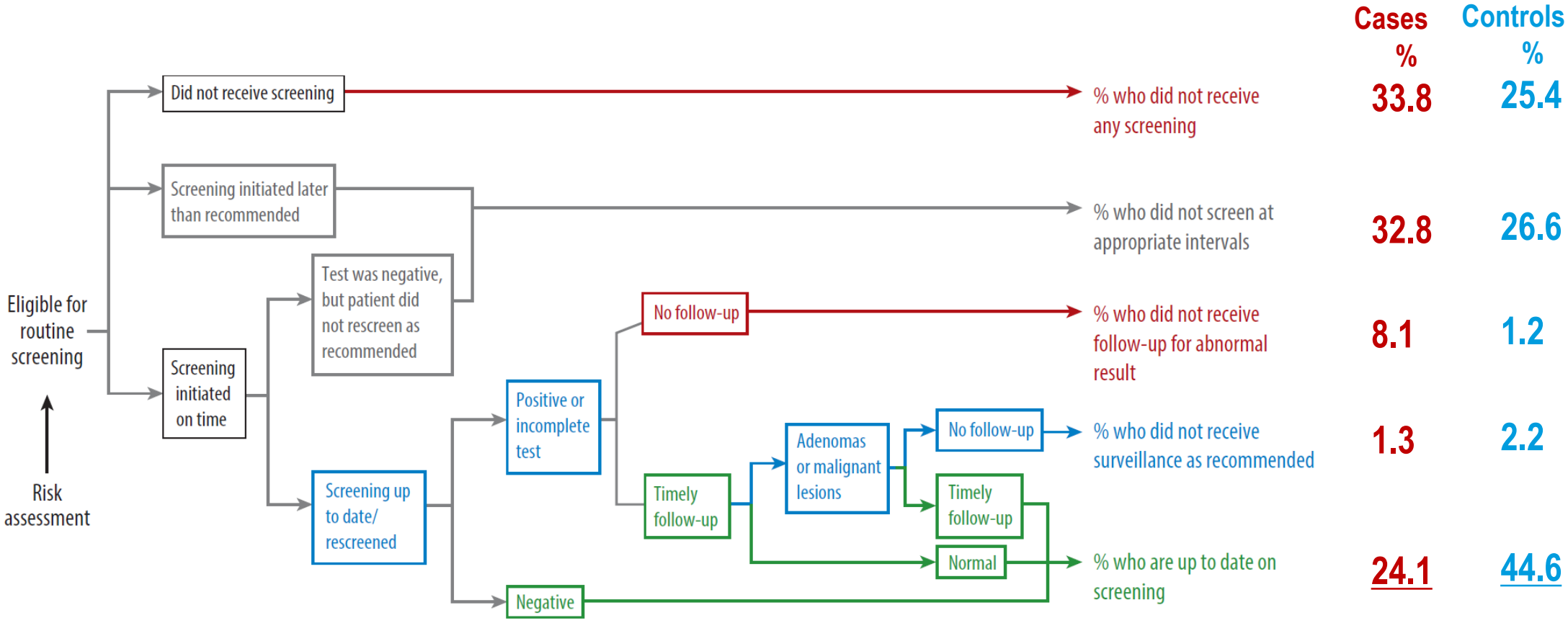
The rates of follow-up were lower in the safety-net system in contrast to integrated system



https://pubmed.ncbi.nlm.nih.gov/26843520/

Effect of failures across the screening continuum on CRC mortality

Nested case-control study in Kaiser Permanente Northern (KPNC) and Southern California (KPSC) among people at average risk for CRC during 2006 through 2012.
Identified **1,750** people ages 55-90 years old who died of cancer and **3,486** without a history of CRC



Screening trajectory over a 10-year period

Doubeni et al. Gastroenterology. 2019; Doubeni et al. Annual Review of Medicine, 2021

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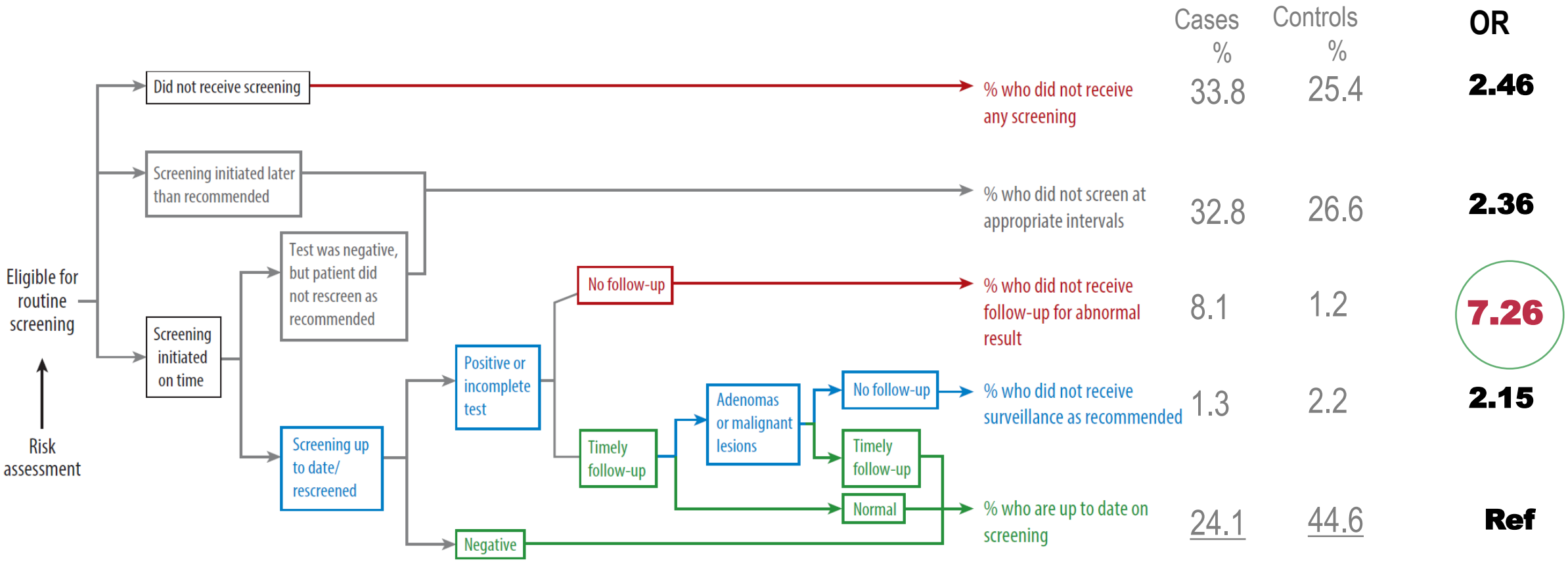

Screening trajectory over a 10-year period

Being up to date on screening substantially decreases the risk of CRC death; failures to follow-up on abnormal findings was associated with a >7-fold higher risk of CRC death compared with being up-to-date.

Doubeni et al. Gastroenterology. 2019; Doubeni et al. Annual Review of Medicine, 2021

Research

JAMA | Original Investigation

Association Between Time to Colonoscopy After a Positive Fecal Test Result and Risk of Colorectal Cancer and Cancer Stage at Diagnosis

Douglas A. Corley, MD, PhD; Christopher D. Jensen, PhD, MPH; Virginia P. Quinn, PhD, MPH; Chyke A. Doubeni, MD, MPH; Ann G. Zauber, PhD; Jeffrey K. Lee, MD, MAS; Joanne E. Schottinger, MD; Amy R. Marks, MPH; Wei K. Zhao, MPH; Nirupa R. Ghai, PhD; Alexander T. Lee, MD; Richard Contreras, MS; Charles P. Quesenberry, PhD; Bruce H. Fireman, MA; Theodore R. Levin, MD

Retrospective cohort study of 70,124 patients with positive fecal immunochemical test (FIT) results (mean age 61) during 2010-2014; 2,191 CRCs with 601 at advance stage were diagnosed.

Among patients with a positive fecal immunochemical test result, compared with follow-up colonoscopy at 8 to 30 days, follow-up after 10 months was associated with a higher risk of CRC and more advanced-stage disease at the time of diagnosis.

Risks for follow-up colonoscopy at 10-12 months:

- Any CRC: **1.5-fold higher risk**
- Stage II: **2.4-fold higher risk**
- Stage IV: **2.7-fold higher risk**

JNCI: Journal of the National Cancer Institute, 2024, 116(11), 1807–1816
https://doi.org/10.1093/jnci/djae140
Advance Access Publication Date: July 24, 2024
Article

Impact of racial disparities in follow-up and quality of colonoscopy on colorectal cancer outcomes

Oguzhan Alagoz, PhD.[1,*] Folasade P. May, MD, PhD, MPhil.[2] Chyke A. Doubeni, MD, MPH,[3] A. Mark Fendrick, MD,[4,5]

Modeling Study

Follow-up colonoscopy and adenoma detection rates modeled as 15% and 10% lower among Black patients

Elimination differences in follow-up colonoscopy and ADR could reduce CRC incidence 14.6% and CRC mortality by 18.7% and potentially yield a gain of 7.1% in life-years

Interventions to Improve Follow-up of Positive Results on Fecal Blood Tests: A Systematic Review

Reviewed multiple levels of interventions:

1. Patient-level (i.e., patient navigation),
2. Provider-level (reminders or performance data)
3. System-level (automated referral, pre-colonoscopy telephone calls, patient registries, and quality improvement efforts).

Moderate evidence supported patient navigators and provider reminders or performance data for improving follow-up after an abnormal screening.

Selby K, Baumgartner C, Levin TR, Doubeni CA, Zauber AG, Schottinger J, Jensen CD, Lee JK, Corley DA. https://pubmed.ncbi.nlm.nih.gov/29049756/

Barriers and solutions – awareness and accessibility

- Need vs. physical availability
- Resources – adequacy of clinical expertise, clinics, hospitals, etc.

- Expected vs. delivered
- Cross-cultural factors

- Ability to access when needed
- Location of service vs clients
- Travel time, distance, cost

- Prices or fees vs. perception of value

- Preferences, values (CLAS)
- Need for an office visit
- Scheduling and prep

Penchansky R, Thomas JW. The concept of access: definition and relationship to consumer satisfaction. Med Care. 1981. PMID: 7206846.

Key principles for improving screening completion rates

- Dedicated leader or champion (accountability)
- Have a measure to guide improvement work (what get measured gets done)
- Leadership commitment – aligned incentives (+ team sport)
- Robust monitoring and tracking tools (no one left behind)
- Create the capacity (assure delivery)
- Support social and cultural barriers (for everyone)

Call to Action

- Patients:
  - Education and awareness of follow-up
- Clinicians
  - Understand patient barriers
  - Prioritize colonoscopy resources for follow-up
- Community
  - Improve resource availability
- Health systems
  - Measure and track follow-up rates
  - Provide tailored navigation
  - Support transportation, home, and financial barriers
  - Community engagement
  - Prioritize follow-up colonoscopy
- Policy
  - Create a measure
  - Create data systems to support tracking of screening history
  - Incentivize follow-up colonoscopy

Resources

- Modifiable Failures in the Colorectal Cancer Screening Process and Their Association with Risk of Death: https://pubmed.ncbi.nlm.nih.gov/30268788/
- **Association Between Time to Colonoscopy After a Positive Fecal Test Result and Risk of Colorectal Cancer and Cancer Stage at Diagnosis:** https://pubmed.ncbi.nlm.nih.gov/28444278/

Thank you!

Questions for coalition members/participants

1. Why is lack or delay in follow-up for abnormal screening so strongly associated with risk of death?
2. What metric can help guide improvements in follow-up colonoscopy?
3. What are effective ways to improve follow-up after a positive screening test?
4. What are key features of exemplar systems with high follow-up rates in the US?

3 knowledge-based questions

- When delivering colorectal cancer screening, which represents an incomplete screening:
  A. A colonoscopy with adequate bowel preparation and inspection of the cecum that found a polyp
  B. Receiving a Cologuard test that was positive, but the patient simply wants a repeat confirmatory test
  C. Receiving a fecal immunochemical test that was negative
  D. A and C
- In published research, about 56% of people with a positive fecal screening test for colorectal cancer went on to get a colonoscopy, but the rates may be much lower or higher depending on the population
  - True or False
- In people with positive screening test, delays or failures to receive follow-up colonoscopy may increase the risk of dying from colorectal cancer up to 7-fold or even higher
  - True or False