

Screening for Cancer:

Moving beyond the checkbox

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DISCLOSURES:

- None

AT THE END OF THIS TALK PARTICIPANTS
WILL BE BETTER ABLE TO:

- Educate patients on the magnitude of screening benefits and harms
- Apply an evidence driven, patient-centered approach to screening decisions
- Incorporate life expectancy into screening decisions

What are the benefits and harms of cancer screening?

HOW WE THINK ABOUT SCREENING

Hoffmann TC, Del Mar C. Clinicians' Expectations of the Benefits and Harms of Treatments, Screening, and Tests: a Systematic Review. *JAMA Intern Med.* 2017;177(3):407–419.

Hoffmann TC, Del Mar C. Patients' Expectations of the Benefits and Harms of Treatments, Screening, and Tests: a Systematic Review. *JAMA Intern Med.* 2015;175(2):274–286.

JAMA, 2004;291(1):71-81. doi:10.1001/jama.291.1.71

JAMA. 2019;304(14):1584-1591. doi:10-
1001/jama.20101.1449

REQUIREMENTS OF A SUCCESSFUL SCREENING PROGRAM:

1. Screening advances time of diagnosis of cancers **destined to cause trouble**
2. **Early treatment is superior** to treatment started once the patient has symptoms

Figure by H. Gilbert Welch, MD, MPH

- Source: NCI Division of Cancer Prevention
- Adapted from a figure provided courtesy of H. Gilbert Welch, Dartmouth Medical School

SNIDELY WHIPLASH EXPLAINS LEAD TIME

TRUE OR FALSE?

Early detection of cancer with a screening test improves survival time even if death isn't delayed by screening/subsequent treatment

TRUE OR FALSE?

Detecting cancer earlier in screened populations proves that cancer screening saves lives

Ann Intern Med. 2012;156(5):340-349.

PROSTATE CANCER SCREENING

CASE #1

- 59 year old Caucasian man with well controlled hypertension presents for routine visit
- Feels well and places a high value on prevention
- Father died of prostate cancer at age 70

He asks: “I’m concerned about my risk of dying from prostate cancer and wonder if you think screening might be worthwhile?”

- **How & why have USPSTF prostate cancer screening recs changed recently?**
- **Who stands to benefit most from prostate cancer screening?**
- **Who should NOT be screened for prostate cancer?**
- **Is DRE useful as a screening tool?**

PROSTATE CANCER TRENDS IN USA

Hoffman, R.M., *Screening for Prostate Cancer. New England Journal of Medicine*, 2011. **365(21): p. 2013-2019.**

THE GIST...

JAMA. 2018;319(18):1901–1913

https://seer.cancer.gov/csr/1975_2015/browse_csr.php?sectionSEL=23&pageSEL=sect_23_table.10

TRUE OR FALSE?

The USPSTF recommends against DRE as a prostate cancer screening test

RECS FROM THE USPSTF

Ann Intern Med, 2012. 157(2): p. 120-134

JAMA. 2018;319(18):1901–1913

CASE #1 RESOLUTION

- 59 year old Caucasian man with well controlled hypertension presents for routine visit
- He feels well and places a high value on prevention
- Father died of prostate cancer at age 70

He asks: “I’m concerned about my risk of dying from prostate cancer and wonder if you think screening might be worthwhile?”

I would offer screening with PSA, emphasize benefit is small/potential for overdiagnosis and skip the DRE

Possible messaging:

“The benefit of the PSA has been somewhat controversial but it can reduce risk of dying from prostate cancer in a small but important way, especially in higher risk men like you. The challenge is that many prostate cancers found by the PSA will not ever cause trouble and treatment can have notable side effects including urinary incontinence and erectile dysfunction.”

Messaging to avoid:

“We don’t do the PSA anymore.”

KEY POINTS

- Screening PSA may reduce prostate cancer mortality though overdiagnosis common, especially if limited life expectancy (< 10 yrs)
- Potential benefit from screening larger for higher risk patients (i.e. fam hx, African American) and those with longer life expectancy
- Increased use of active surveillance has reduced harms of screening → new USPSTF recs
- Patient inclination to be screened may be a deciding factor

BREAST CANCER SCREENING

CASE #2

- 69 y/o African American woman w/ ischemic cardiomyopathy (LVEF 25%)
- Homebound, uses walker, needs help with ADLs
- No personal or fam hx breast ca
- Following up diuretic titration, diabetes & HTN management
- Received reminder is due for mammogram

She asks: *“is it important that I keep doing these?”*

- **How has breast cancer incidence and mortality changed over time?**
- **How does benefit of mammography change with age?**
- **How long does it take for cancer-specific mortality benefit of screening mammography to be realized?**
- **How can life expectancy be incorporated into screening decisions?**

TRENDS IN BREAST CANCER DIAGNOSIS (USA)

Source: [SEER.cancer.gov](https://seer.cancer.gov)

<https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/breast-cancer-facts-and-figures/breast-cancer-facts-and-figures-2017-2018.pdf>

N Engl J Med 2012; 367:1998-2005

THE GIST...

Ann Intern Med. 2016;164(4):279-296.

https://seer.cancer.gov/csr/1975_2015/browse_csr.php?sectionSEL=4&pageSEL=sect_04_table.17

TRUE OR FALSE?

The breast cancer mortality benefit from screening mammography increases as age increases from 40 to 70 yrs

SCREENING MAMMOGRAPHY: *BETTER* WITH AGE

Keating NL, Pace LE. Breast Cancer Screening in 2018: Time for Shared Decision Making. *JAMA*. 2018;319(17):1814–1815

BUT... Patients have to live long enough to benefit

BMJ. 2013;346:bmj.e8441

Ann Intern Med. 2016;164(4):279-296.

CASE #2 RESOLUTION

- 69 y/o African American woman with ischemic cardiomyopathy (LVEF 25%)
- Homebound, uses walker
- Following up diuretic titration, diabetes & HTN management
- Recently received reminder is due for mammogram

She asks: “*is it important that I keep doing these?*”

JAMA Intern Med. 2017;177(8):1121–1128

KEY POINTS

- Benefit from screening mammography ↑ as risk of breast cancer ↑ (eg **age**, fam hx, estrogen exposure, breast density)
- Benefit of screening takes ~ 10 yrs to realize → <https://eprognosis.ucsf.edu/calculators/#/>
- Life expectancy important to consider but patients may view negatively and prefer positive framing re: screening cessation
- False positives/overdiagnosis common and can be mitigated with biennial screening/starting age 50

COLORECTAL CANCER SCREENING

CASE #3

- 60 year old healthy Hispanic man presents to establish care
- Healthy, takes no meds, no fam hx CRC, feels great
- You note EMR reminder that he is due for colonoscopy
- Has never been screened for CRC

He asks: “*can I do something other than colonoscopy?*”

- **Which CRC screening test is best?**
- **How does screening impact CRC incidence and mortality?**
- **What patient-centered approach in the clinic optimizes chance of patients getting screened?**
- **Should we be screening patients at 45?**

TRUE OR FALSE?

Randomized controlled trials demonstrate the superiority of screening colonoscopy over stool based testing for reducing CRC mortality

THE GIST...

JAMA. 2016;315(23):2564-2575

https://seer.cancer.gov/csr/1975_2015/browse_csr.php?sectionSEL=6&pageSEL=sect_06_table.18

PLEASE SEE SLIDE AT
PRESENTATION

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PRESENTATION

Siegel RL et al. Colorectal cancer incidence patterns in the United States, 1974-2013 [serial online]. *J Natl Cancer Inst.* 2017;**109**;djw322

Please see slide at presentation

JAMA, 2016;315(23):2564.
doi:10.1001/jama.2016.5989

TRUE OR FALSE?

Offering patients a choice between colonoscopy or stool based testing increases screening completion rates compared to offering colonoscopy alone

Liang PS, Wheat CL, Abhat A, et al. Adherence to Competing Strategies for Colorectal Cancer Screening Over 3 Years. *Am J Gastroenterol*. 2015;111(1):105-14.

CASE #3 RESOLUTION

- 60 year old healthy Hispanic man presents to establish care
- Healthy, takes no meds, no fam hx CRC, feels great
- You note EMR reminder that he is due for colonoscopy
- Has never been screened for CRC

He asks: “*can I do something other than colonoscopy?*”

I would encourage screening and offer a choice between stool based testing and colonoscopy

Possible messaging:

“It is a good idea to get screened for colorectal cancer. We aren’t sure which test is best but really it comes down to two good options: stool based testing or colonoscopy. Each has pros and cons that are important to consider... the best test is the one that gets done.”

Messaging to avoid:

“Looks like you’re due for a colonoscopy.”

KEY POINTS

- CRC screening reduces incidence **and** mortality
- The best test is the one that gets done
- CRC screening rates patients > 50 yrs are sub-optimal
- Unless deemed higher than average risk screening at 45 is lower yield compared to patients > 50
- Giving patients a choice increases CRC screening completion rates

TO SUMMARIZE

- Clinicians and patients often overestimate benefits and minimize harms from screening
- Tradeoff between benefit/harm will vary depending on unique circumstances of patients
- Patients at higher risk of cancer, life expectancy > 10 yrs benefit most from screening
- We can improve patients' lives by targeting screening to those most likely to benefit

Thank you



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