Welcome!

Before we begin…

Today's session will be recorded

Please add your name and health system in the chat

February 20, 2024, | 4:30 PM ET • 3:30 PM CT • 2:30 PM MT • 1:30 PM PT

Prostate Cancer Screening IMPACT ECHO

Session 1: The Science of Prostate Cancer Screening: Risks, Benefits and Strategies to Reduce Overdiagnosis and Overtreatment

Welcome to Session 1 of the

Prostate Cancer Screening IMPACT ECHO

Each ECHO session will be recorded and ***may*** be posted to a publicly-facing website. Chat content, attendance, and poll responses are also recorded

Please update your Zoom Participant Name to First Last, Org (Molly Black, ACS).

Type your full name, the full name of your organization, and e-mail in the chat box.

You will be muted with your video turned off when you join the call. Use the buttons in the black menu bar to unmute your line and to turn on your video.

Today's materials will be made available on our ACS ECHO website.

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Questions about Zoom or Slido during the call? Find @Beth Graham in the chat.

This project is being funded by

American Cancer Society | Project ECHO

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MERCK

Have a question? Don't wait to ask! Feel free to enter in the **Chat** at any time.

Today's Agenda

1. Welcome & Housekeeping | *5 minutes*
2. Didactic Presentation & Discussion: The Science of Prostate Cancer Screening | *30 minutes*
   Presented by: Andrew M.D. Wolf, MD, MACP and Yaw A. Nyame, MD, MS, MBA
3. Participant Site Introduction: Cornell Scott-Hill Health Corporation | *3 minutes*
4. Case Presentation & Recommendations | *15 minutes*
   Presented by: Varshi Thanikonda, MBBS, Cornell Scott-Hill Health Corporation
5. Survey, Schedule, Reminders, & Wrap-Up | *7 minutes*

Your ACS ECHO Team

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Director, Screening
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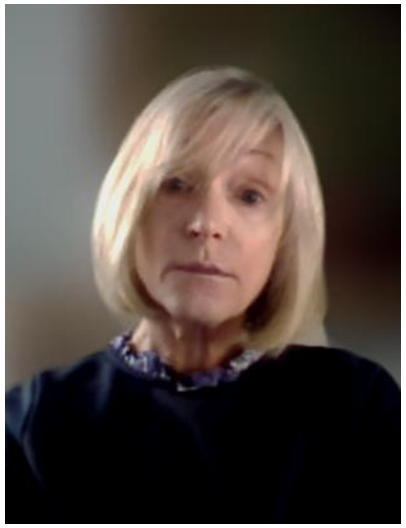
ACS ECHO Program Lead & ECHO Facilitator

Mindi Odom
Director, Project ECHO
Your ECHO Co-Lead



Beth Graham, MPH, CHES
Program Mgr., Project ECHO
Your Program Support

Jennifer McBride, PhD
Senior Data & Evaluation Manager

Introductions

Meet Our Prostate Cancer Screening IMPACT ECHO HUB – Subject Matter Experts (SMEs)

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Assistant Professor,
Director of Urology
Fred Hutch at University of Washington

The Science of Prostate Cancer Screening: Benefits, Risks & Strategies to Reduce Overdiagnosis & Overtreatment

Objectives

- To discuss benefits and risks of prostate cancer screening with your patients
- To understand commonalities and differences among major guidelines
- To appreciate and incorporate strategies to reduce overdiagnosis and overtreatment of prostate cancer

How big a problem is prostate cancer?

Male

Estimated New Cases

Prostate	299,010	29%
Lung & bronchus	116,310	11%
Colon & rectum	81,540	8%
Urinary bladder	63,070	6%
Melanoma of the skin	59,170	6%
Kidney & renal pelvis	52,380	5%
Non-Hodgkin lymphoma	44,590	4%
Oral cavity & pharynx	41,510	4%
Leukemia	36,450	4%
Pancreas	34,530	3%
All sites	**1,029,080**	

Male

Estimated Deaths

Lung & bronchus	65,790	20%
Prostate	35,250	11%
Colon & rectum	28,700	9%
Pancreas	27,270	8%
Liver & intrahepatic bile duct	19,120	6%
Leukemia	13,640	4%
Esophagus	12,880	4%
Urinary bladder	12,290	4%
Non-Hodgkin lymphoma	11,780	4%
Brain & other nervous system	10,690	3%
All sites	**322,800**	

Estimates are rounded to the nearest 10, and cases exclude basal cell and squamous cell
Puerto Rico or other US territories. Ranking is based on modeled projections and may dif

Siegel RL, et al. CA A Cancer J Clinicians 2024;74(1):12-49.

Individual Risk of Prostate Cancer

- Of 100 American men:
  - 13 will be diagnosed with prostate cancer over their lifetime (~ 1 in 8)
  - 2-3 will die from prostate cancer
- Who is at higher risk:
  - Older men: age is the predominant risk factor
  - Black men are at 1.7x higher risk of developing and TWICE the risk of dying from prostate cancer
  - Family history
    - Men with a first-degree relative with prostate cancer have ~ 2x higher risk
  - Gene mutations
    - BRCA 1&2, Lynch Syndrome, HOXB13

Source: Division of Cancer Prevention and Control, Centers for Disease Control and Prevention, 7/17/23.

Goals of Prostate Cancer Screening

- To reduce the risk of premature death from prostate cancer
- To reduce the risk of suffering from metastatic prostate cancer
- To reduce the risk of being diagnosed with low-grade, low-risk prostate cancer
- To attain reassurance from a negative screen

Benefits of Prostate Cancer Screening

PLCO Prostate Ca Screening Trial

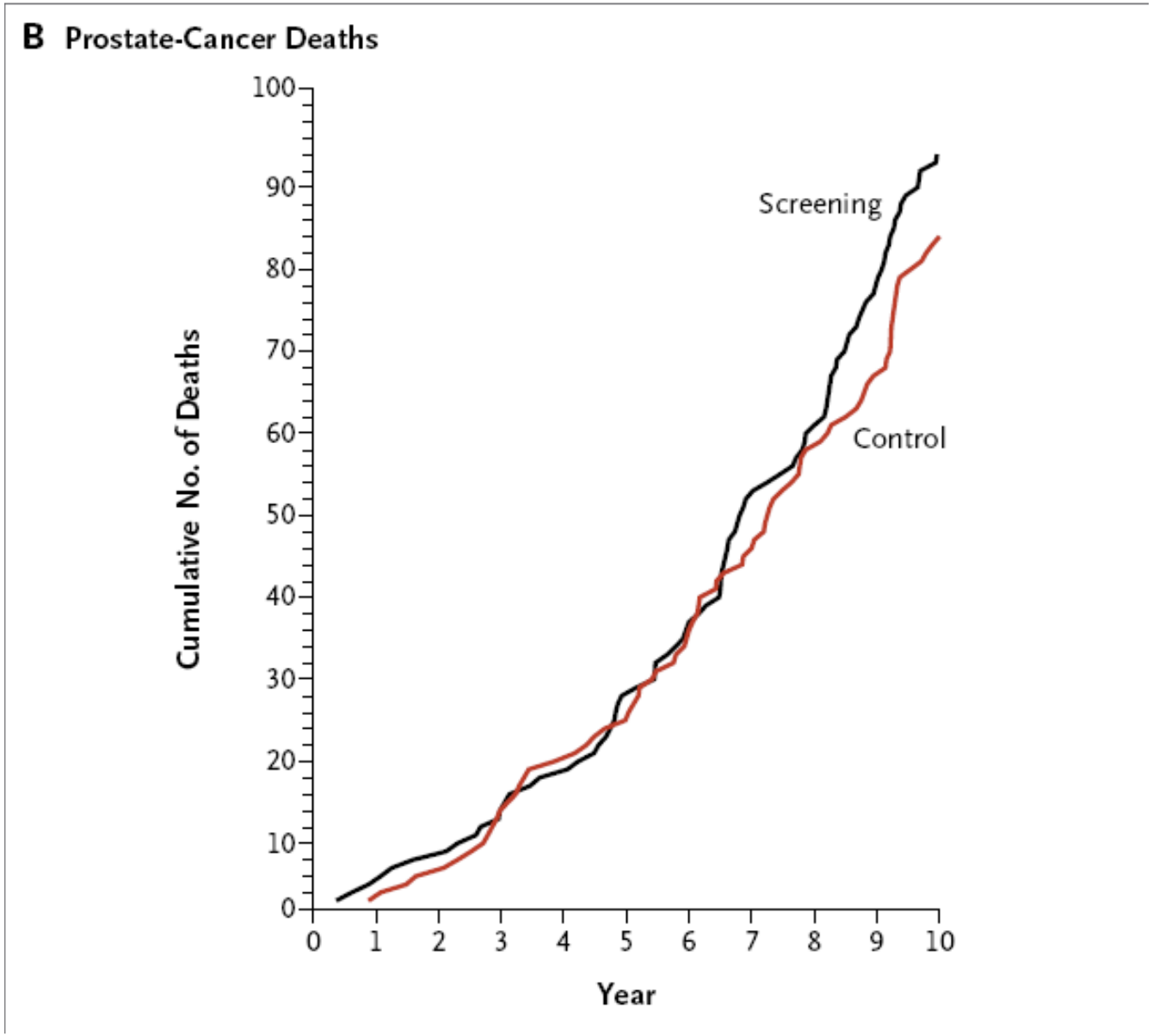
ORIGINAL ARTICLE

Mortality Results from a Randomized Prostate-Cancer Screening Trial

Gerald L. Andriole, M.D., Robert L. Grubb III, M.D., Saundra S. Buys, M.D.,

N ENGL J MED 360;13 NEJM.ORG MARCH 26, 2009

PLCO Results



Original Investigation

March 6, 2018

Effect of a Low-Intensity PSA-Based Screening Intervention on Prostate Cancer Mortality

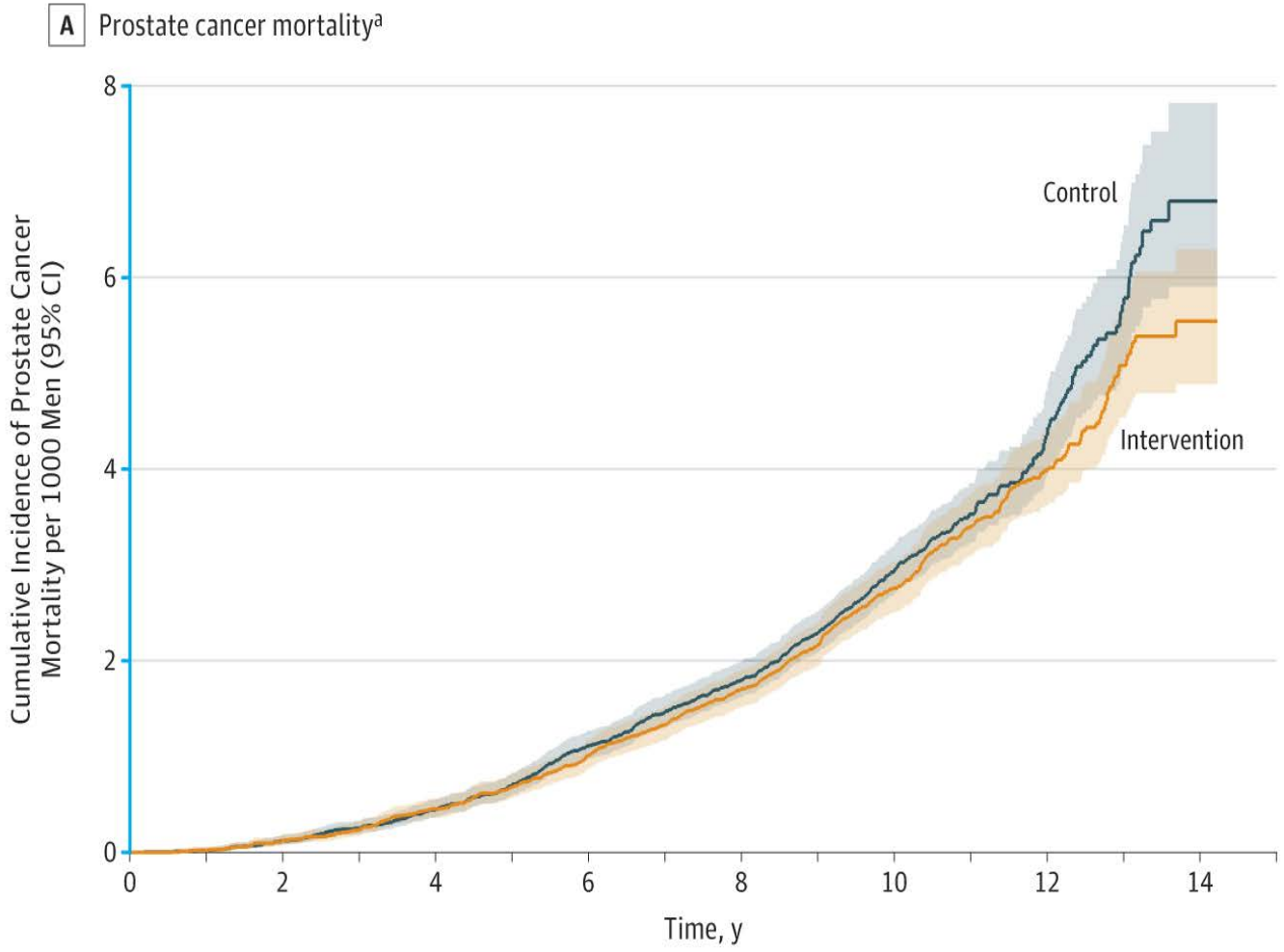
The CAP Randomized Clinical Trial

Richard M. Martin, PhD[1,2]; Jenny L. Donovan, PhD[1,3]; Emma L. Turner, PhD[1]; et al

» Author Affiliations | Article Information

JAMA. 2018;319(9):883-895. doi:10.1001/jama.2018.0154

CAP Trial Results



Martin RM et al. JAMA 2018;319:883.

ORIGINAL ARTICLE

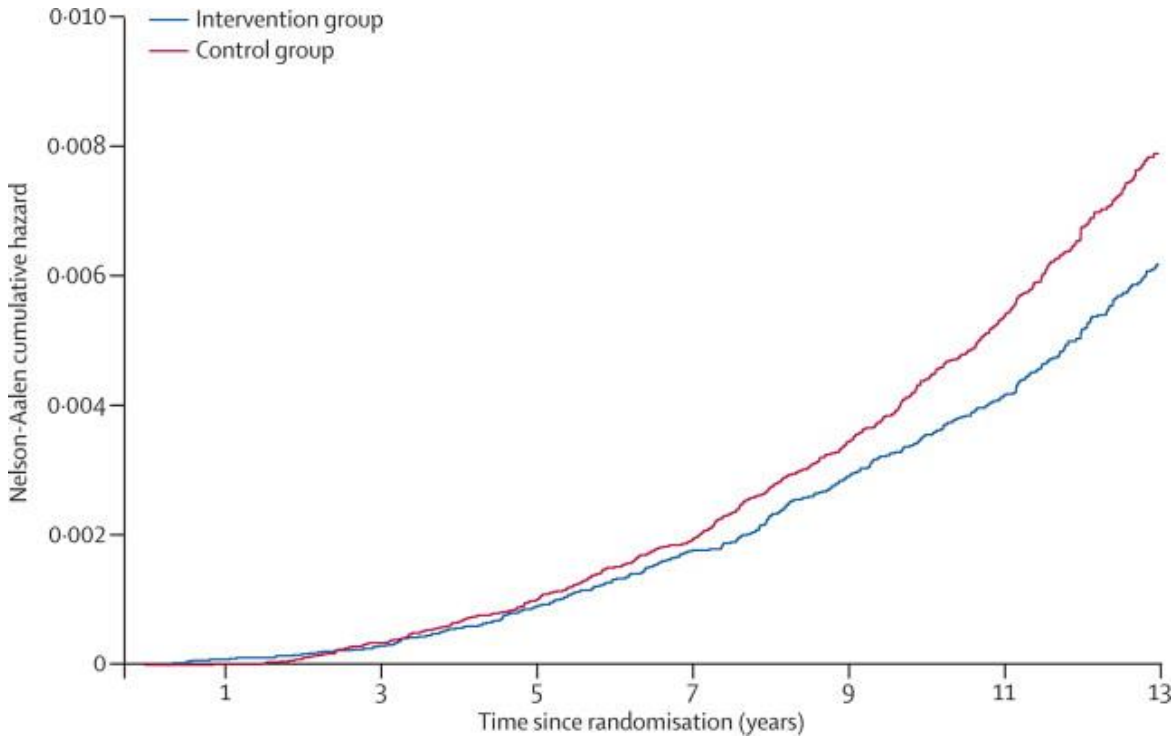
Screening and Prostate-Cancer Mortality in a Randomized European Study

Fritz H. Schröder, M.D., Jonas Hugosson, M.D., Monique J. Roobol, Ph.D.,

N ENGL J MED 360;13 NEJM.ORG MARCH 26, 2009

ERSPC Results

- Prostate cancer death rate 27% lower in screened group (p = 0.0001) at 13 yrs.
- Number needed to screen to save 1 life: 781
- NNS to prevent 1 case of metastatic cancer: ~350
- Number needed to diagnose to save 1 life: 27
  - **Major issue of over-diagnosis & over-treatment**
- PSA threshold was 3 ng/mL in most countries



Schroeder FH, et al. *Lancet* 2014;384(9959):2027-2035.

Reassurance from a Negative Test

- In US study, if PSA was < 1.0 ng/mL at age 55-59, the risk of dying from prostate cancer or being diagnosed with metastatic disease was 0.3% over the next 15 years, 0.6% over 30 years
  - Compared with 17% risk for those with PSA > 4
- In Swedish study, if PSA was ≤ 0.85 (median) at age 51-55, risk of metastatic disease was 0.3% at 15 years and 1.6% at 25 years
  - If PSA in highest 10% (≥ 2.4), risk was 5% at 15 years and 11% at 25 years
- Hence rationale for less frequent testing for men with lower PSA's, more frequent if higher

Preston MA, et al. J Clin Oncol 2016;34(23):2705-11. Vickers AJ, et al. BMJ 2013;346:f2023.

Harms of Prostate Cancer Screening

Harms of Prostate Cancer Screening

- False positives: 10-15% risk over 3-4 screening rounds
  - 5% risk of a false positive leading to a negative biopsy
- Risks of biopsy:
  - 5-7% infection risk
  - 2.5% bleeding risk
  - 1-3% hospitalization risk
  - It's not fun!!
- **Overdiagnosis and overtreatment**
- Finding low-grade cancer & the burden of active surveillance
  - Repeated biopsies
  - Anxiety from not treating a known cancer
- Harms of treating screen-detected cancer

J Urology 2017;198:329.

Long-term Outcomes of Treating Localized Prostate Cancer

Table 2. Survey Responses on Selected Items Regarding Urinary, Bowel, and Sexual Function.*

Outcome	Prostatectomy	Radiotherapy
	percent	
Urinary incontinence		
No control or frequent urinary leakage		
2 yr	9.6	3.2
5 yr	13.4	4.4
15 yr	18.3	9.4
Bothered by dripping or leaking urine‡		
2 yr	10.6	2.4
5 yr	12.9	2.9
15 yr	17.1	18.4
Sexual function		
Erection insufficient for intercourse		
2 yr	78.8	60.8
5 yr	75.7	71.9
15 yr	87.0	93.9
Bothered by sexual dysfunction‡		
2 yr	55.5	48.2
5 yr	46.7	39.7
15 yr	43.5	37.7
Bowel function		
Bowel urgency		
2 yr	13.6	34.0
5 yr	16.3	31.3
15 yr	21.9	35.8
Bothered by frequent bowel movements, pain, or urgency‡		
2 yr	2.9	7.9
5 yr	4.4	5.8
15 yr	5.2	16.0

Resnick MJ. NEJM 2013;368:436-445.

Synopsis of Major Guidelines

Organization	Shared Decision Making?	Recommended Screen	Age Range	Screening Interval
USPSTF (2018)	Yes "C" recommendation "D" recommendation for screening ≥ age70	PSA	55-69	No recommendation
AUA (2023)	Yes	PSA +/-DRE	Start at 45-50 40-45 if FH/Black Stop at 69	2-4 years (longer if PSA<1)
ACS (2010*) *update in progress	Yes	PSA +/-DRE	Start at 50 45 if AA or FH Stop ≤10 yr. life expectancy	PSA <2.5: 2 yrs. PSA 2.5-4: 1 yr.

Grossman DC, et al. *JAMA* 2018 319(18):1901-1913; Wei JT, et al. J Urol 2023 210:46-53; Wolf AMD, et al. *Ca Cancer J Clin*. 2010;60:70-98.

Commonalities Between Guidelines

USPSTF Guidelines Over Time

2008
GRADE

C

Age: 55-69
Shared-decision

2008
GRADE

D

Age: 70+
Against screening

2012
GRADE

D

Age: all
Against screening

2018
GRADE

C

Age: 55-69
shared-decision

USPSTF, Ann Int Med, 2008; Moyer et al, Ann Int Med, 2012, Grossman et al, JAMA, 2018

Remaining Guidelines

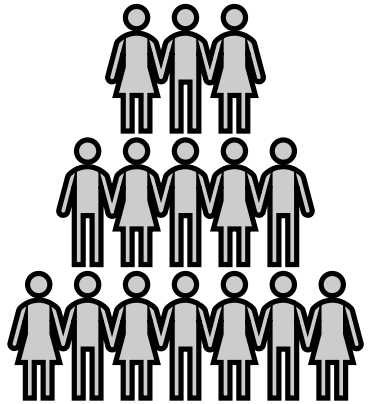
Organization	Guidelines Recommendation
American Cancer Society	- Recommend screening for healthy* men of average risk at age 50 years - Recommend screening for men of high risk between age 40-45 years
American Urological Association	- Recommend screening for **healthy men** ages 55-69 years - Recommend screening in **high-risk men**** between 40-55 years
National Comprehensive Cancer Center	- Risk adjusted screening for ages 45-75 years based on baseline PSA, risk, and life expectancy

*Healthy: life expectancy of 10-15 years

**High risk populations: Rare genetic variants, strong family history, Black race

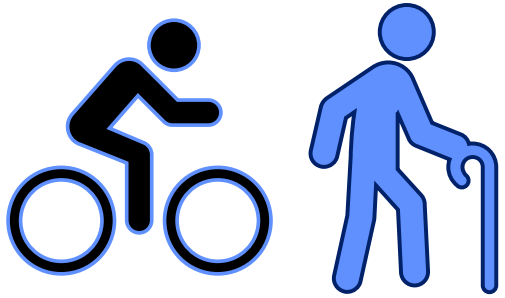
AUA 2023; ACS 2021; NCCN 2022

Commonalities Among Guidelines



There are **high-risk** populations…

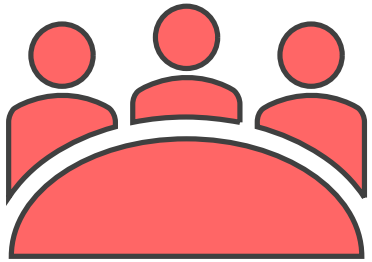
e.g., carriers of rare genetic variants (BRCA 1/2, HOXB13, Lynch), Black populations



Age to start and stop screening matters

Limited benefit if life expectancy < 10 years

Bigger benefit if initiated early



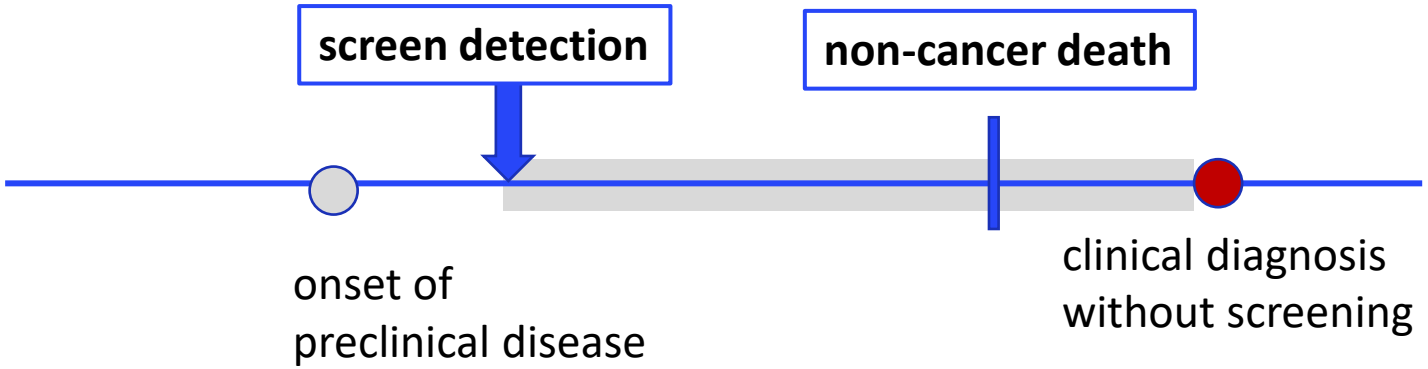
Shared decision making

Reducing Over-detection

The Problem of Over-detection

Over-detection occurs when a cancer is detected by screening but it would not have been detected in the absence of screening

An “excess cancer” caused by early detection



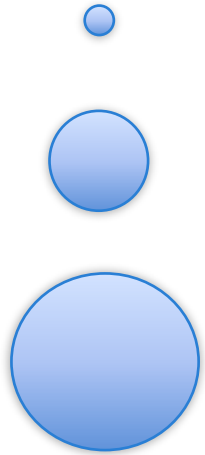
OVERDETECTED

Slide courtesy of Dr. Ruth Etzioni

The hard facts of screening

Intervene in a healthy population to save a few

	Outcomes	A fraction of
Benefit	Lives saved	Deaths in the absence of screening
Harm	Overdetection	Cancers detected by screening
Harm	False positives (unnecessary biopsies)	Individuals who screen positive



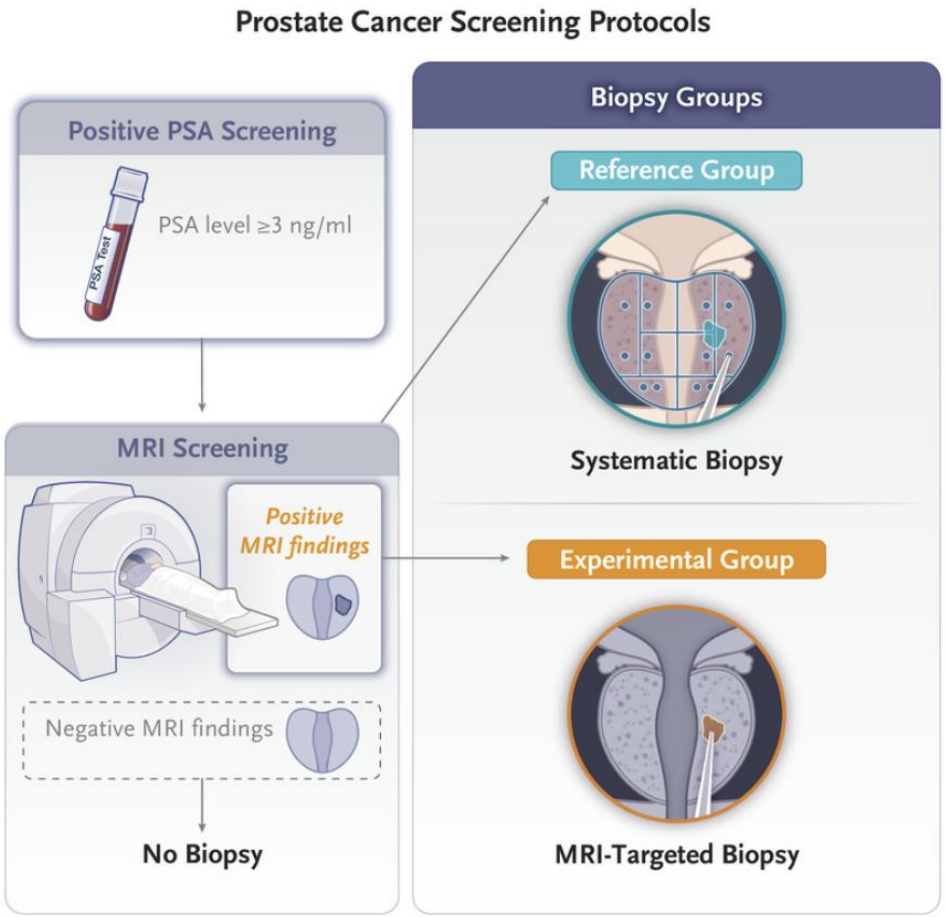
Harm-benefit tradeoff cannot work if the risk of cancer death is too low

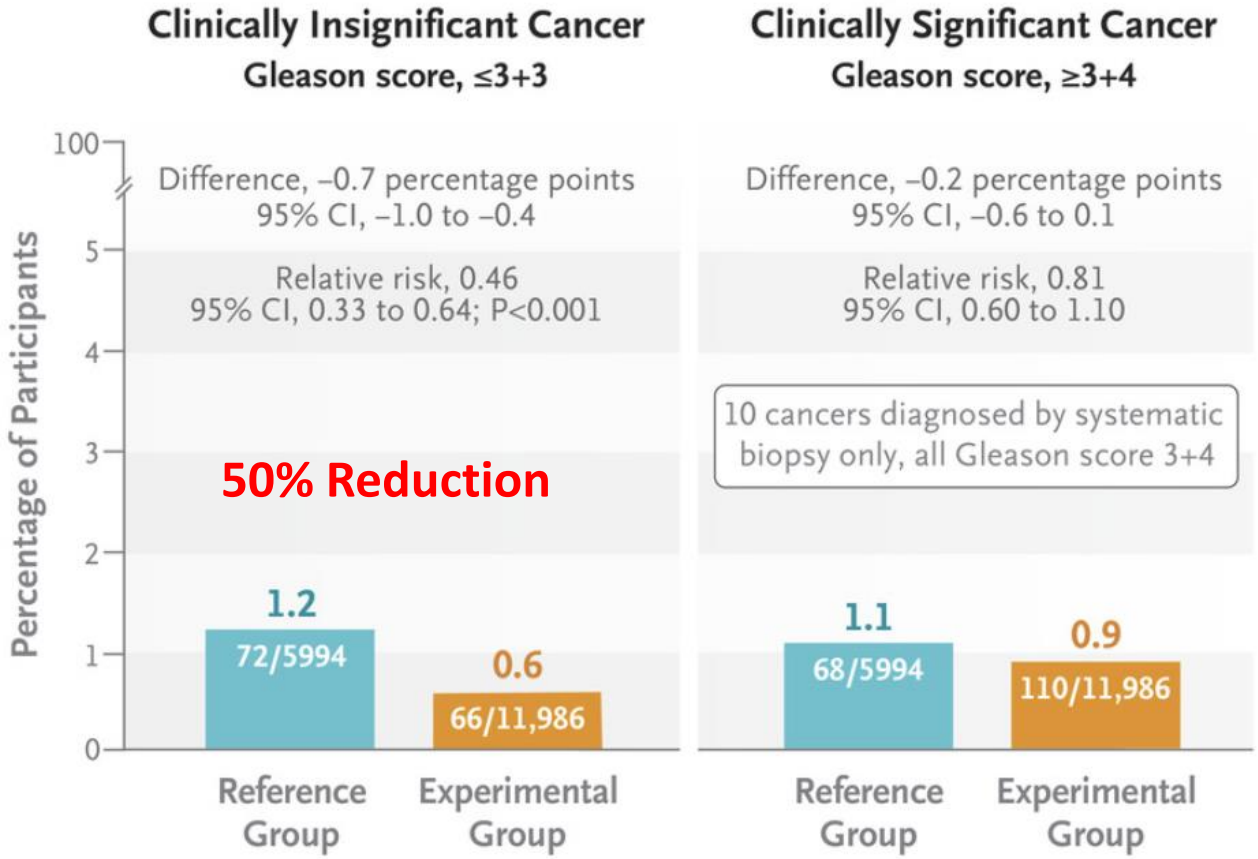
Slide courtesy of Dr. Ruth Etzioni

Reducing Over-detection

- Prostate MRI
- Starting at younger ages and stopping at younger age
- Personalizing prostate cancer screening (i.e., baseline PSA at 40-50 years)
- Urinary and blood biomarkers
  - Prostate Health Index, 4KScore, ExoDx, PCA3, MyProstateScore
- Polygenic risk score (future direction?)

Prostate MRI





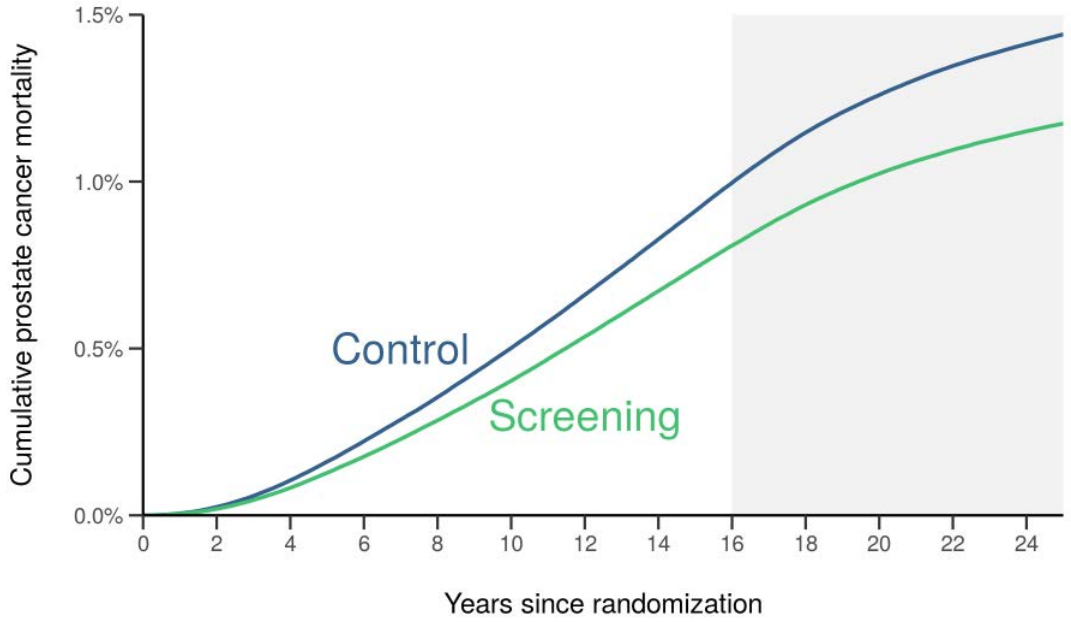
Hugosson J, NEJM, 2022

Screening Benefit over Time

Table 1. Estimates of the Number Needed to Screen and the Number of Excess Prostate Cancer Diagnoses to Prevent One Death from Prostate Cancer during the Indicated Follow-up Interval.*

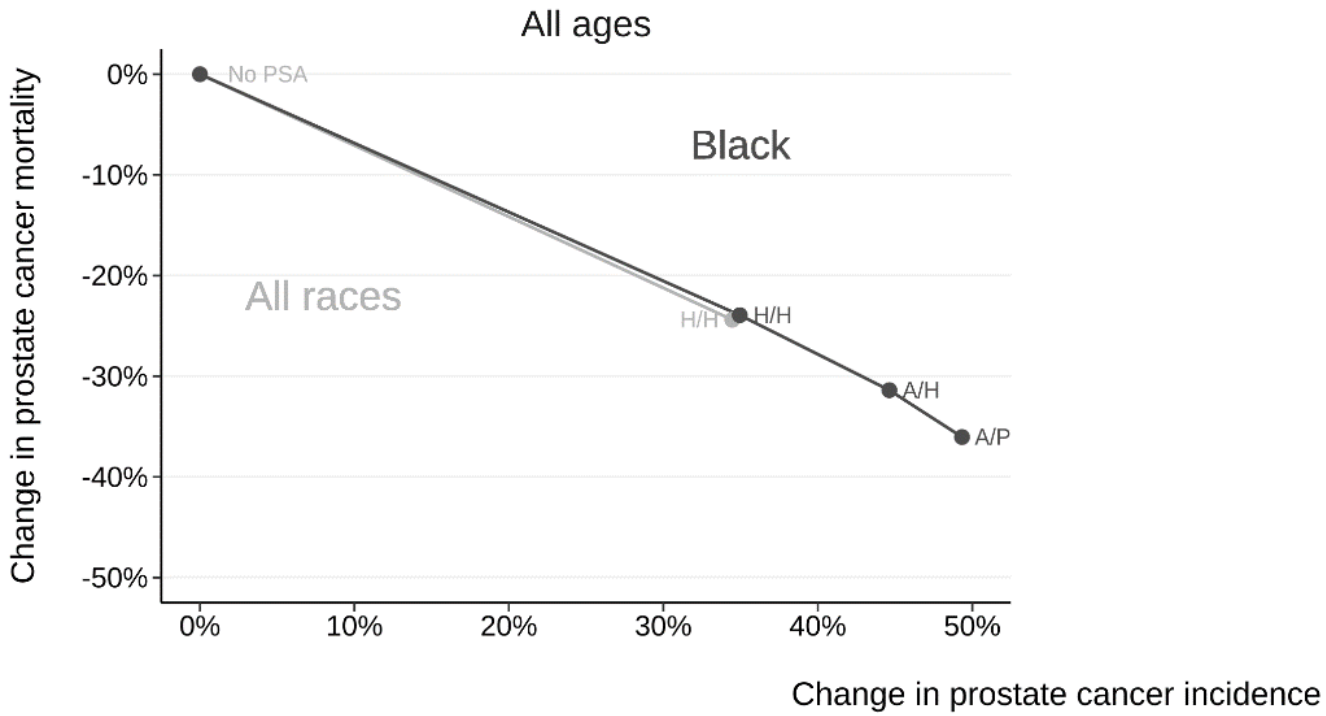
Variable	No. Needed to Screen (95% CI)	No. of Excess Diagnoses (95% CI)
16 Yr of follow-up: empirical estimate from ERSPC	570 (380–1137)	18 (12–35)
25 Yr of follow-up: conservative model estimate	385 (273–687)	11 (8–20)

* Model estimates are based on extrapolation of deaths from prostate cancer among men who received a diagnosis of prostate cancer during the first 16 years of follow-up of the European Randomized Study of Screening for Prostate Cancer (ERSPC), under the assumption that the relative mortality reduction would continue with additional follow-up. Confidence intervals are based on 95% confidence limits of the 16-year empirical estimates of mortality. (For model assumptions and details, see the Supplementary Appendix.)



Shoag JS, Nyame YA et al, NEJM, 2020

Harm & Benefit of Various PSA Screening Strategies



H/H is Historical frequency/Historical biopsy; A/H is Annual frequency/Historical biopsy; A/P is Annual frequency/Perfect biopsy.

Nyame YA et al, JNCI, 2021

Baseline PSA data from the PHS cohort

Age at Blood Draw (years)	Upper Percentiles *v* Below Median PSA			
	≤ 50th Percentile (referent)	> 50th Percentile	> 75th Percentile	> 90th Percentile
Total prostate cancer (original case-control study)				
40 to 49				
PSA level (ng/mL)	≤ 0.68	> 0.68	> 1.04	> 1.68
Cases/controls	4/51	30/50	29/25	20/10
OR (95% CI)	1.00	7.3 (2.4 to 21.8)	10.7 (3.4 to 33.6)	32.4 (7.1 to 149.0)
50 to 54				
PSA level (ng/mL)	≤ 0.88	> 0.88	> 1.40	> 1.96
Cases/controls	9/107	61/104	47/51	40/21
OR (95% CI)	1.00	7.6 (3.4 to 17.2)	11.9 (5.0 to 28.5)	34.6 (11.5 to 103.6)
55 to 59				
PSA level (ng/mL)	≤ 0.96	> 0.96	> 1.64	> 2.88
Cases/controls	12/200	118/199	90/97	63/39
OR (95% CI)	1.00	10.1 (5.2 to 19.6)	16.8 (8.2 to 34.7)	30.3 (13.5 to 67.7)
All ages, 40 to 59*				
Cases/controls	25/358	209/353	166/173	123/70
OR (95% CI)	1.00	8.7 (5.5 to 13.9)	14.1 (8.6 to 23.3)	31.1 (17.3 to 56.1)

Age at Blood Draw (years)	Upper Percentiles *v* Below Median PSA			
	≤ 50th Percentile (referent)	> 50th Percentile	> 75th Percentile	> 90th Percentile
Lethal prostate cancer (updated case-control study using rematched controls)				
40 to 49				
PSA level (ng/mL)	≤ 0.68	> 0.68	> 1.04	> 1.68
Cases/controls	2/13	9/20	9/14	6/5
OR (95% CI)	1.00	2.9 (0.5 to 15.7)	5.6 (0.6 to 48.7)	8.7 (1.0 to 78.2)
50 to 54				
PSA level (ng/mL)	≤ 0.88	> 0.88	> 1.40	> 1.96
Cases/controls	5/22	12/29	11/17	11/8
OR (95% CI)	1.00	1.9 (0.6 to 6.7)	2.9 (0.8 to 10.7)	12.6 (1.4 to 110.4)
55 to 59				
PSA level (ng/mL)	≤ 0.96	> 0.96	> 1.64	> 2.88
Cases/controls	6/53	37/76	30/39	22/25
OR (95% CI)	1.00	4.0 (1.6 to 10.0)	6.0 (2.3 to 15.8)	6.9 (2.5 to 19.1)
All ages, 40 to 59*				
Cases/controls	13/88	58/125	50/70	39/38
OR (95% CI)	1.00	3.1 (1.6 to 6.1)	4.8 (2.3 to 9.7)	7.4 (3.3 to 16.6)

Preston MA et al, JCO, 2016

Reflex testing (urine and blood biomarkers)

Table 1 The biomarkers as screening tools.

Biomarker	Provider	Source biomaterial	Certification	Outcome	Cut-off	NPV for CS PCa	AUC for CS PCa	NCCN	Cost (USD)
PSA	N/A	Blood	FDA	>0	None	85% at 4 ng/mL	0.577–0.767	-Multiple scenarios	$19
PHI	Beckman Coulter	Blood	FDA	0–55+	NR	97% at 27	0.707–0.790	-Consider	$499
4Kscore	OPKO	Blood	CLIA	0–100%	>7.5%	N/A	0.720–0.870	-Consider	$1185
PCA3	Progensa Hologic	Urine	FDA	0–100+	>25	98%–99% at 21	0.706–0.800	-Neg prior bx	$255
ExoDx	Exosome Diagnostics	Urine	CLIA	0–60+	>15.6	89%–98%	0.700–0.803	-Consider	$760
SelectMDx	MDxHealth	Urine	CLIA	0–100%	−2.8	94%–95%	0.672–0.850	-Investigational	$500
MiPS	Michigan Labs	Blood and urine	CLIA	0–100%	NR	90% for any PCa	0.779	-Investigational	$760

PSA, prostate-specific antigen; FDA, Food and Drug Administration; CLIA, Clinical Laboratory Improvement Amendments under Center of Medicare and Medicaid Services; NPV, negative predictive value; CS, clinically significant; PCa, prostate cancer; NCCN, National Comprehensive Cancer Network; USD, United States dollars; PCA3, prostate cancer antigen 3; PHI, prostate health index; MiPS, Mi-Prostate Score; N/A, not applicable; NR, no recommended cut-off.

Chang EK et al, 2021, Asian J Urol

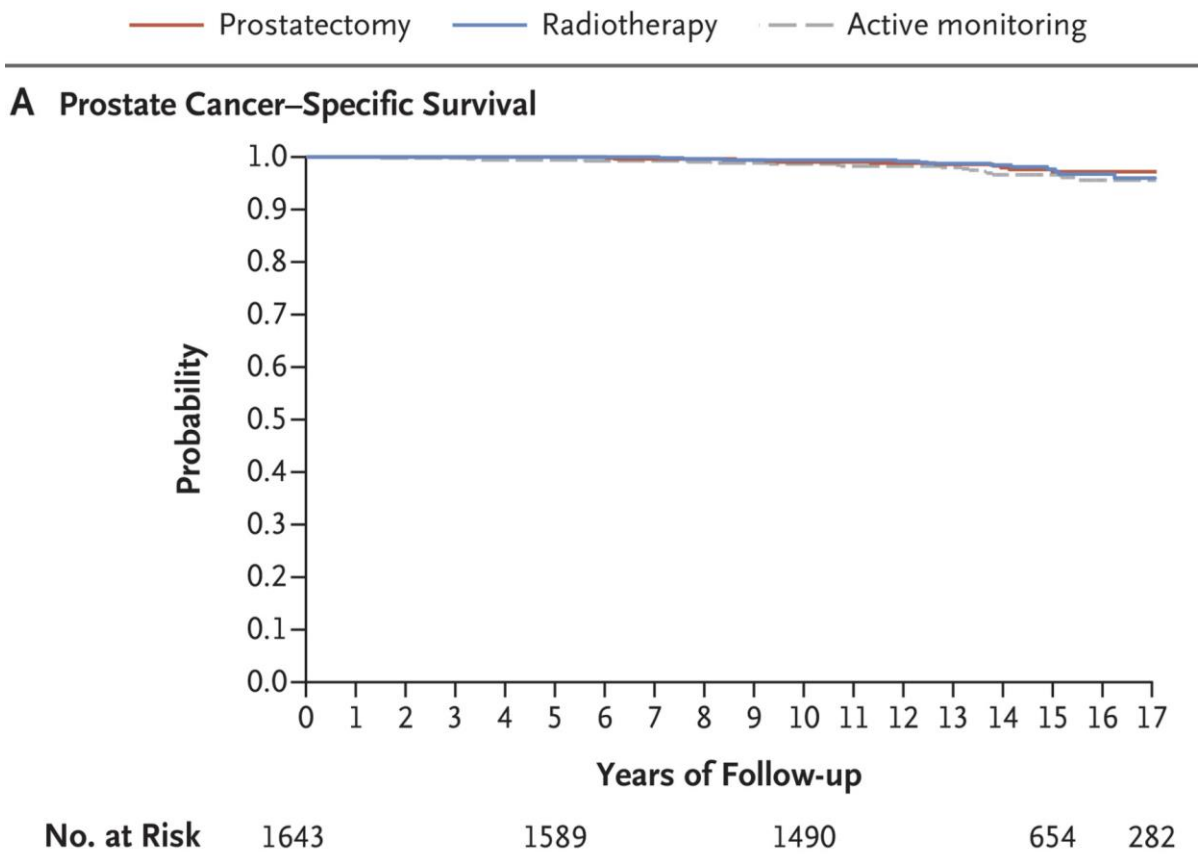
Reducing Over-treatment

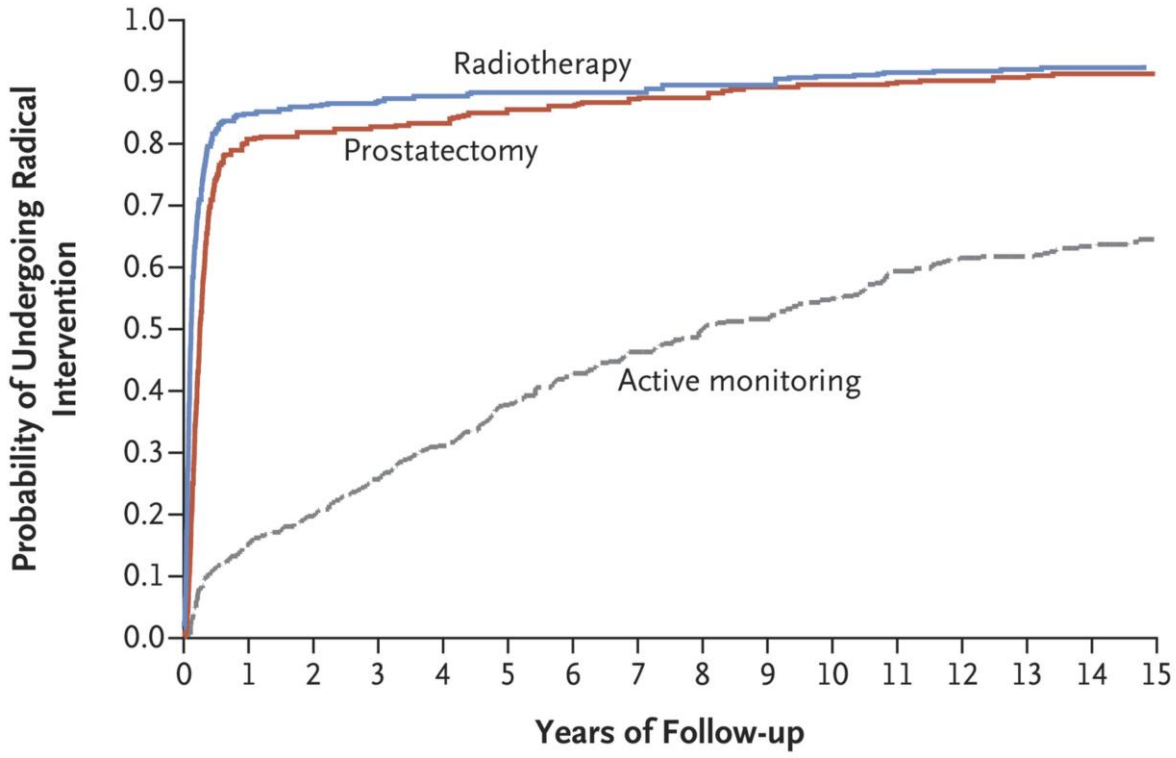
Active Surveillance of Low-Risk Prostate Cancer

Institution	Date Established	Total patients surveilled*	Median f/u	Cancer related death at 10-years	Metastasis at 10-years	Treatment rate at 10-years
Johns Hopkins	1995	1,298	5 years	0.1%	0.6%	50%
Univ of Toronto	1995	993	6.4 years	2%	2.8%	36.5%

Tosoian JJ et al, 2015, JCO; Klotz et al, 2015, JC)

ProtecT Trial



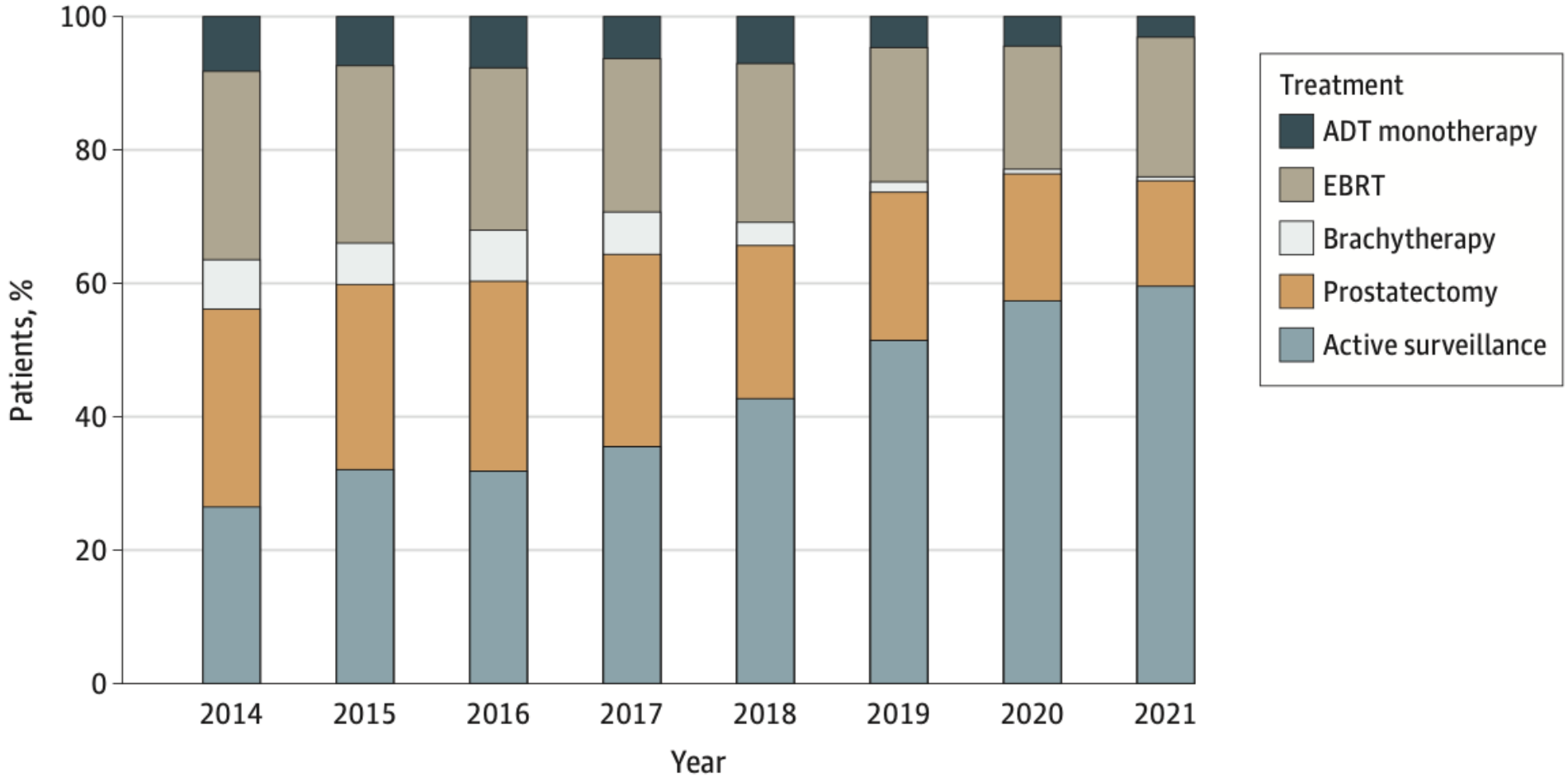


Median age: 62 years, median PSA: 4.6 ng/ml
77% of cohort with grade group 1 cancer and 76% had cT1c disease

Hamdy FC et al, 2023, NEJM

Primary Use of Active Surveillance in the US

Figure 1. Treatment of Low-risk Prostate Cancer Over Time



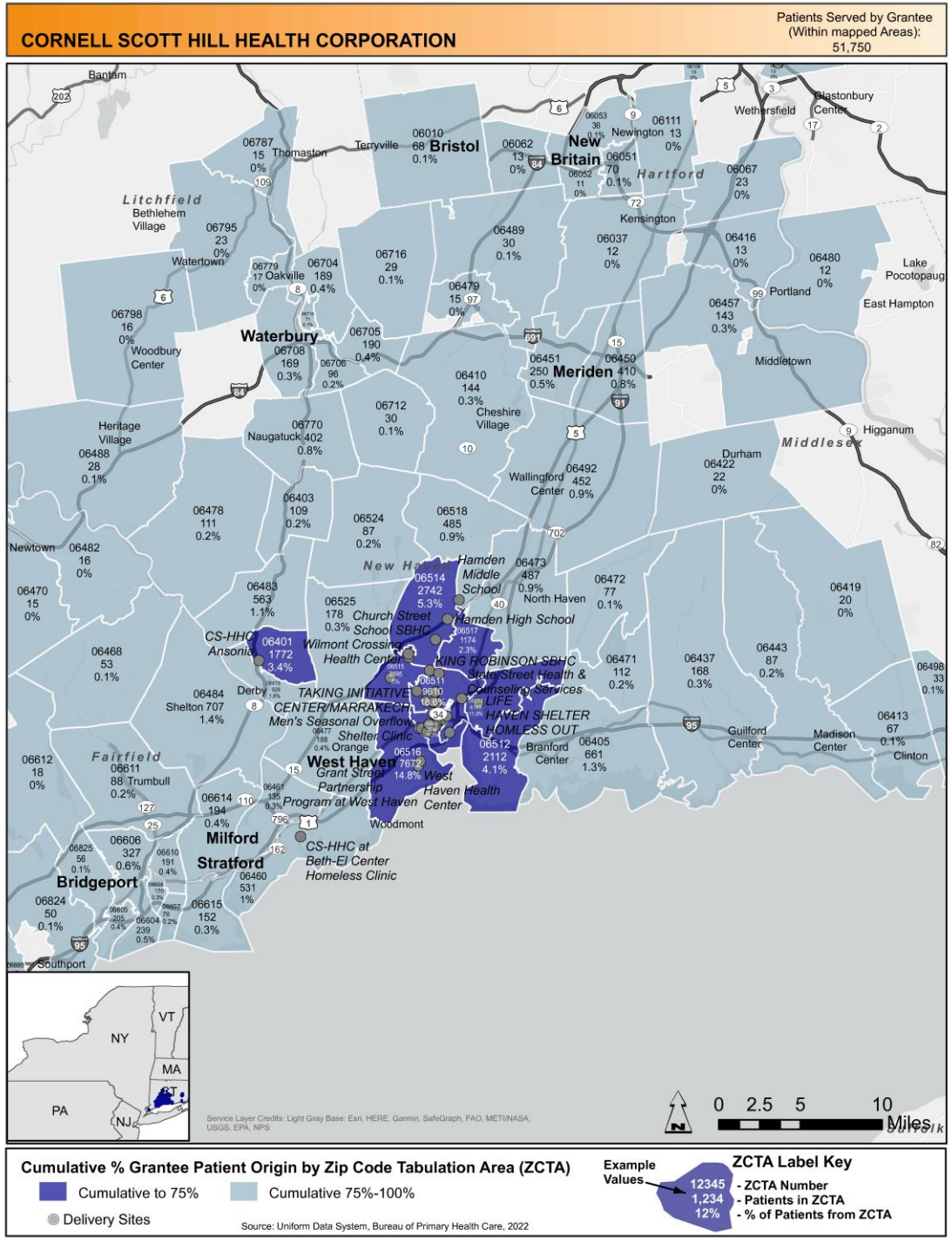
Cooperberg MR et al, 2023, JAMA Net Open

Open Discussion: Questions & Answers

Welcome **Cornell Scott-Hill Health Corporation**

New Haven, CT

Cornell Scott Hill Health Center



Varshi Thanikonda, MBBS
Primary Care Physician and Site Lead Physician, Cornell Scott-Hill Health Center

Session 1
System Workflow Case Presentation

System/Workflow Case Presentation

Presented By: Varshi Thanikonda, MBBS | Cornell Scott-Hill Health Center

System: 1) Epic's Primary Care Pathway for PSA SDM, testing and referral process. **2)** Clinician training on SDM documentation in notes. **3)** Include SDM tool in workflow. **4)** Implement text reminder system for people participating in screening.

Current Process

- 100+ clinicians who are PCPs (MD, Residents, APRN, PA)
- 8 sites including one in-house Urology clinic
- During primary care visits (which could be follow up visits or during annual physical exam visits) the clinician orders PSA testing along with any other needed blood work.
- Sometimes clinicians include SDM documentation. There is no standardized way to document SDM.
- If the PSA result is abnormal, the patient is offered a Urology appointment where they can discuss the next steps.
- The Urology referral is either within the organization or with a nearby academic medical center.
- Usually, during the urology appointment, the patient is offered either an MRI of their prostate or a prostate biopsy is arranged.

Vision

- Clinicians during annual physical exam visits, identify the population requiring PSA testing
- Clinicians implement the Care Pathway for PSA testing that is in Epic
- Document the SDM decision in a standard manner either with an SDM tool or SDM documentation
- Add PSA screening to Health Maintenance tab
- Document the SDM decision in chart to avoid repeat conversations yearly in those who agreed.
- After shared decision making between the patient and the clinician, we will add them to a reminder system that will trigger on
  a) PSA orders that are incomplete and/or
  b) People with Health maintenance trigger indicating that a PSA is due.
  - *Reminders will be in English and Spanish language.*

Data: Baseline number of qualifying patients , Baseline incomplete PSA orders , Baseline completed PSA orders, Baseline patients with an active prostate cancer diagnosis , Patient age, race and ethnicity data

Pathways

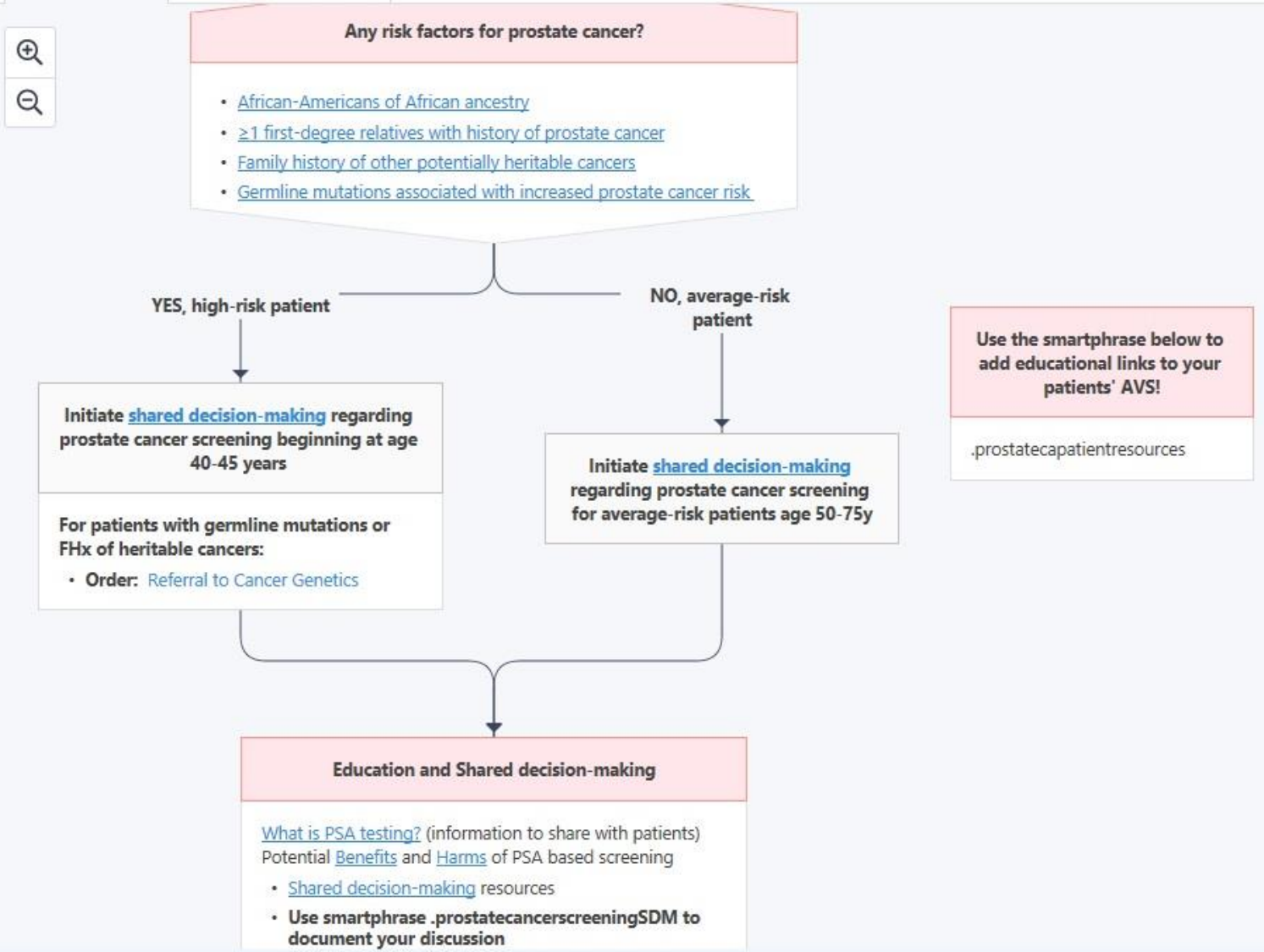
BACK

Prostate Cancer Screening: Adult Ambulatory

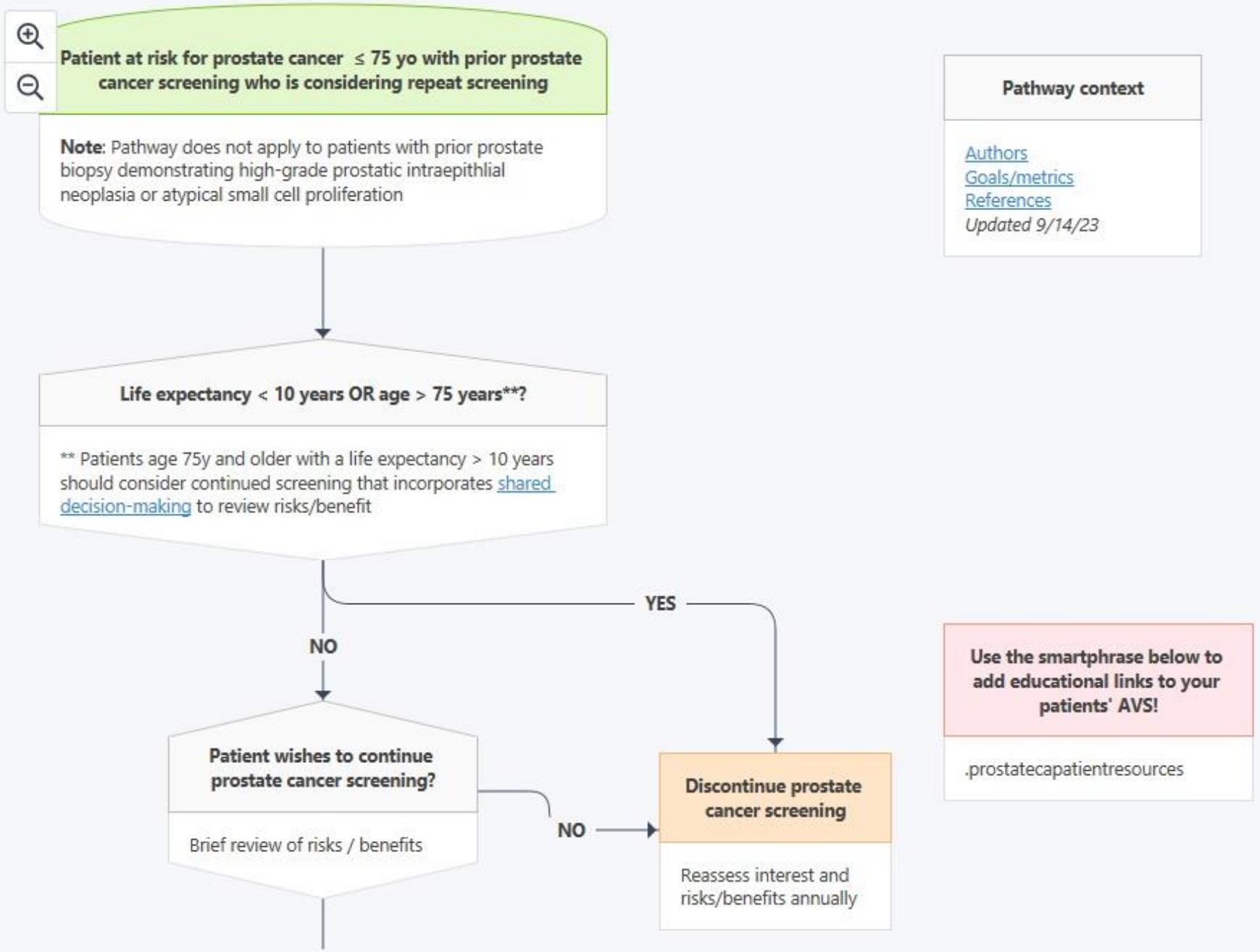
Guidance for when to initiate or continue prostate cancer screening, including shared decision making tools

Prostate Cancer Screening | PSA Results Interpretation

Initial Screening | Subsequent Screening



Initial Screening | Subsequent Screening



Pathway context

Authors
Goals/metrics
References
Updated 9/14/23

Use the smartphrase below to add educational links to your patients' AVS!

.prostatecapatientresources

Open Discussion: Questions & Answers

Survey Time!

Post-Session 1 Survey

https://forms.office.com/r/3RSJe6ac3c

How to Use a QR Code

1. **Turn on** your phone camera
2. **Aim** the camera at the code
3. A link will show up
4. **Tap** the link to go to the survey

C-SASI Baseline due tomorrow 2/21/2024!

Participant Site	Case Presentation Date	C-SASI
Agape Family Health	7/16/2024	-
Albany Area Primary Health Care, Inc.	6/18/2024	-
BMS Family Health and Wellness Centers	TBD	-
CareSouth Medical & Dental	9/17/2024	-
Central Florida Health Care, Inc.	3/19/2024	Submitted
Cornell Scott-Hill Health Corporation	2/20/2024	Submitted
Family Circle of Care	5/21/2024	Started
Greater Baden Medical Services, Inc.	4/16/2024	Started
Nashville Healthcare Center	-	Submitted
North Hudson Community Action Corporation	8/20/2024	In-Progress
Roots Community Health Center	9/17/2024	Started
Southside Community Health Services	6/18/2024	Submitted

Post-Session 1 Survey

Reminders

Session 1 Slides, Recordings, & Resources will be made available within one week on the **ACS ECHO Website.**

Post-Session 1 Survey

Central Florida Health Care

Is **Session 2** in your calendar?

Tuesday, March 19, 2024

4:30 PM ET • 3:30 PM CT • 2:30 PM MT • 1:30 PM PT

Topic: Informed Decision Making, Effective SDM Conversations and Decision Aids

Didactic Presenter: Quoc-Dien Trinh, MD, MBA
Chief of Urology, Brigham and Women's Faulkner Hospital

Case Presenter: Geoff Hall, APRN
Family Nurse Practitioner, Central Florida Health Care

Post-Session 1 Survey

Thank You!

See you again

Friday, March 19th at
4:30 PM ET • 3:30 PM CT • 2:30 PM MT • 1:30 PM PT
in iECHO Zoom