Overview of Current Cancer Screenings

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SYLVESTER COMPREHENSIVE CANCER CENTER
UNIVERSITY OF MIAMI HEALTH SYSTEM

IN PURSUIT OF *YOUR CURE.*™

Cancer Incidence

- Almost 1.9 million new cancer cases were expected to be diagnosed in 2021. This estimate excludes basal cell and squamous cell skin cancers.

Table 2. Estimated Number* of New Cases for Selected Cancers by State, US, 2021

State	All sites	Female breast	Uterine cervix	Colon & rectum	Uterine corpus	Leukemia	Lung & bronchus	Melanoma of the skin	Non-Hodgkin lymphoma	Prostate	Urinary bladder
United States	1,898,160	281,550	14,480	149,500	66,570	61,090	235,760	106,110	81,560	248,530	83,730

American Cancer Society https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/annual-cancer-facts-and-figures/2021/cancer-facts-and-figures-2021.pdf Accessed on 1.21.2022

Outline

- Cancer screenings during COVID
- General cancer screening information
- Breast cancer screening recommendations
- Lung cancer screening recommendations
- Prostate cancer screening recommendations

Screening Tests

- Screening has the potential to detect precancerous lesions and cancers in their earliest stages, when they might be most treatable, and before symptoms appear.
- But cancer screening has potential risks as well.

Screening Tests During COVID

- COVID initially led to sharp decreases in cancer screening tests.
  - For Cancer Screening, COVID-19 Pandemic Creates Obstacles, Opportunities, March 10, 2021
- It is estimated that screenings for cancers of the breast, colon, and cervix have dropped by 94%, 86%, and 94% between January 20, 2020, and April 21, 2020, respectively.
  - Preventive cancer screenings during COVID-19 pandemic. Epic Health Research Network. 2020. [2020-09-01]. https://ehrn.org/articles/delays-in-preventive-cancer-screenings-during-covid-19-pandemic

Screening Tests During COVID- MASS Gen

Tracked how many people had at least 1 of 5 tests—mammography, colonoscopy, Pap test, PSA test, or LD CT scan

Cancer Screening Tests and Cancer Diagnoses at Massachusetts General Brigham

	Start of Pandemic (3/2/20 to 6/2/20)	Previous Year (3/2/19 to 6/2/19)	Preceding 3 Months (12/1/19 to 3/2/20)	Subsequent 3 Months (6/3/20 to 9/3/20)
Patients Screened	15,453	60,344	64,269	51,944
Patients Diagnosed with Cancer	1,985	2,961	3,423	3,190

So Who Should We Screen?

US Preventative Services Task Force (USPSTF)

- Independent experts in evidence-based medicine
- Grade A recommendation
  - Cervical cytology for cervical cancer screening at 21
  - Colorectal cancer in adults ages 50 to 75.
- Grade B recommendation
  - BRCA related breast cancer screening
  - Lung cancer screening
- Grade C recommendation
  - Breast cancer screening for women ages 50 to 74.
  - Prostate cancer screening 55-69 (small benefit, should talk to their doctor before choosing to be screened)

Why is Screening POPULAR?

- Clinicians genuinely hope screening prevents suffering from horrible diseases
- $$$
  - Medical device companies, drug companies, advocacy groups, hospitals, and medical specialty groups that benefit from screening

Harms of Screening

- Screening entails cost, time away from work and other activities, and sometimes physical discomfort.
- False alarms
  - Follow-up tests (biopsies)
  - Emotional consequences
- False reassurance

Shared Decision Making

- Health authorities urge patients to make informed decisions about screening, with support from their HCPs.
  - Time-consuming
  - Patient demands
  - Appropriate data not readily available
  - Incentivized to refer for screening

Take Note

- American Cancer Society Recommendations (advocacy organization) vs US Preventative Services Task Force (independent experts in evidence-based medicine)

ACS Recommendations: Breast

- Women 40-54
  - Mammography annually *should be offered* at 40-44
  - Mammography 45-54
- Women 55+
  - Transition to biennial or continue annual as long as overall health is good and life expectancy is 10+ years

US Preventative Services Task Force Recommendations: Breast

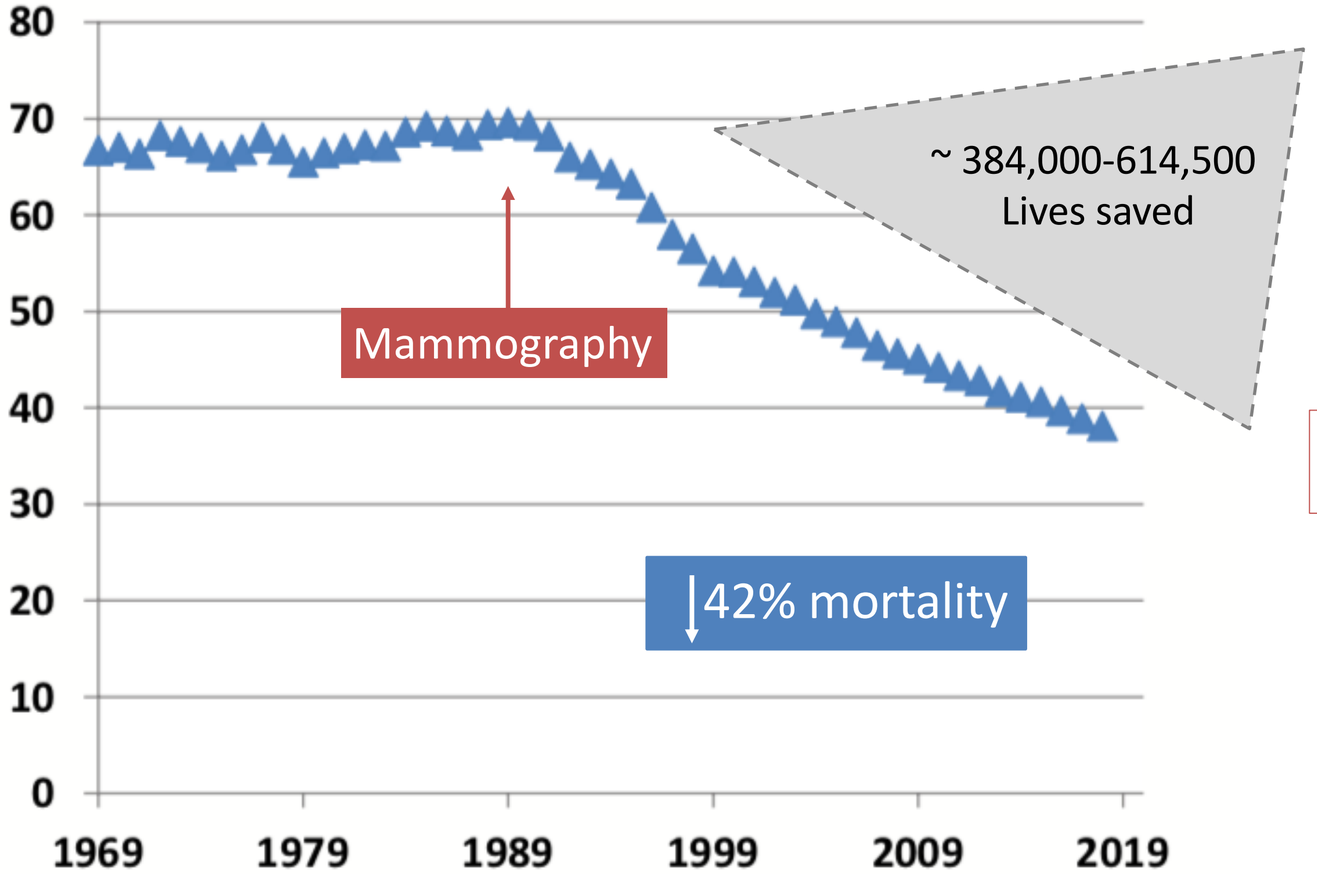
Pending updated recommendations

- Women 50-74
  - Biennial screening mammography

Women aged 50 to 74 years	The USPSTF recommends biennial screening mammography for women aged 50 to 74 years.	B
Women aged 40 to 49 years	The decision to start screening mammography in women prior to age 50 years should be an individual one. Women who place a higher value on the potential benefit than the potential harms may choose to begin biennial screening between the ages of 40 and 49 years. . For women who are at average risk for breast cancer, most of the benefit of mammography results from biennial screening during ages 50 to 74 years. Of all of the age groups, women aged 60 to 69 years are most likely to avoid breast cancer death through mammography screening. While screening mammography in women aged 40 to 49 years may reduce the risk for breast cancer death, the number of deaths averted is smaller than that in older women and the number of false-positive results and unnecessary biopsies is larger. The balance of benefits and harms is likely to improve as women move from their early to late 40s. . In addition to false-positive results and unnecessary biopsies, all women undergoing regular screening mammography are at risk for the diagnosis and treatment of noninvasive and invasive breast cancer that would otherwise not have become a threat to their health, or even apparent, during their lifetime (known as "overdiagnosis"). Beginning mammography screening at a younger age and screening more frequently may increase the risk for overdiagnosis and subsequent overtreatment. . Women with a parent, sibling, or child with breast cancer are at higher risk for breast cancer and thus may benefit more than average-risk women from beginning screening in their 40s. Go to the Clinical Considerations section for information on implementation of the C recommendation.	C

US Preventative Services Task Force Recommendations, 2016 (currently being updated)

Age-adjusted U.S. breast cancer mortality rates



MAMMOGRAPHY HAS REDUCED BREAST CANCER DEATHS

Women aged 40–84 by year 1969–2015

Hendrick RE, Baker JA, and Helvie MA. Breast Cancer Deaths Averted Over 3 Decades. Cancer 2019;0:1-7.

Higher Risk Women: ACS

- All women, especially black women and women of Ashkenazi Jewish descent, should be evaluated for breast cancer risk by age 30 to:
  - Identify those at higher risk than average
  - Benefit from supplemental screening

Tabar, et al. Cancer 2018 125: 515-523

Higher Risk Women: USPSTF

Population	Recommendation	Grade
Women with a personal or family history of breast, ovarian, tubal, or peritoneal cancer or an ancestry associated with BRCA1/2 gene mutation	The USPSTF recommends that primary care clinicians assess women with a personal or family history of breast, ovarian, tubal, or peritoneal cancer or who have an ancestry associated with breast cancer susceptibility 1 and 2 (BRCA1/2) gene mutations with an appropriate brief familial risk assessment tool. Women with a positive result on the risk assessment tool should receive genetic counseling and, if indicated after counseling, genetic testing.	B
Women whose personal or family history or ancestry is not associated with potential harmful BRCA1/2 gene mutations	The USPSTF recommends against routine risk assessment, genetic counseling, or genetic testing for women whose personal or family history or ancestry is not associated with potentially harmful BRCA1/2 gene mutations.	D

US Preventative Services Task Force, 2019

Mammography & COVID

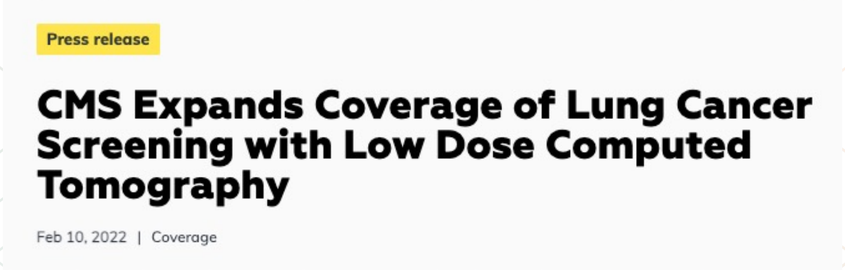
- Being vaccinated against COVID-19 may cause temporary swelling of the axillary lymph nodes
- The vaccine may be mistaken for a sign of breast cancer.
- Several oncology groups are recommending that people wait 4–6 weeks after completing COVID-19 vaccination before getting a mammogram.

https://www.cancer.net/blog/2021-03/answers-your-questions-about-covid-19-vaccine March 2021

CMS & USPSTF Recommendations: Lung

- Current smoker or former smokers, ages 50-74, 20 pack year history
  - A process of informed and shared decision making with a clinician related to potential benefits, limitations and harms associated should occur.
  - Smoking cessation counseling is high priority

ACR Recommendations: Lung


Press release

CMS Expands Coverage of Lung Cancer Screening with Low Dose Computed Tomography

Feb 10, 2022 | Coverage

- Lowering the starting age for screening from 55 to 50 years
- Reducing the tobacco smoking history from 30 PPY to at least 20 PPY
- The only recommended test is LDCT
- Simplifies requirements for the counseling and shared decision-making visit
- Removes the requirement for the reading radiologist to document participation in continuing medical education

US Preventative Services Task Force Recommendations: Lung

Population	Recommendation	Grade
Adults aged 50 to 80 years who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 years	The USPSTF recommends annual screening for lung cancer with low-dose computed tomography (LDCT) in adults aged 50 to 80 years who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 years. Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery.	B

Concerning study

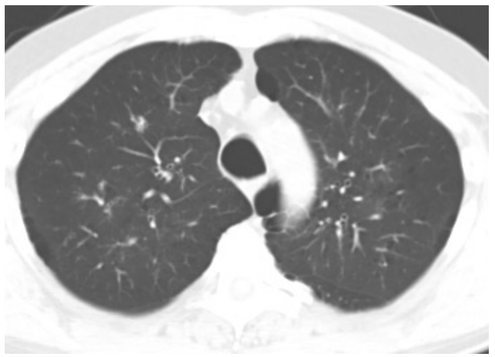
- American Thoracic Society 2022 International Conference, Alwiya Ahmed, MD - University of Washington
- 464 exams had high-risk findings
  - 59 patients (15 percent) were diagnosed with lung cancer.
  - 47% of high-risk exams showed a delay in follow-up
    - 58% for Lung-RADS3
    - 35% for Lung-RADS4A
    - 37% for Lung-RADS4B/4X
  - For all participants with delayed follow-up, median delay time was 91 days

Mammography vs LD Lung CT

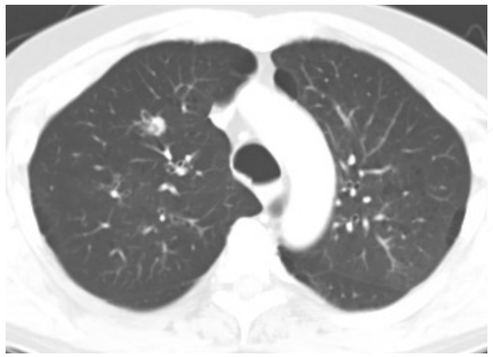
	Mammography	Low-dose CT Lung Cancer Screening
Number of individuals need to be screened in order to save one life	**~800-900**	**320**

- Only 4% of eligible patients undergo lung cancer CT screening
- False positive rate 24-96%
- Complications from invasive procedures 0.4
- Indolent cancers (overdiagnosis) 20%

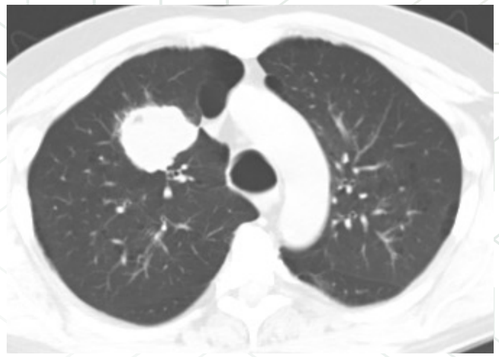
Missed Opportunity?



3/2017



7/2018



8/2019

ACS Recommendations: Prostate

- Men 50+
  - Prostate-specific antigen (PSA) with or w/o digital rectal exam (DRE)
    - Men who have a 10 year life expectancy should have opportunity to make an informed decision.
    - Need to have an informed decision-making process.
    - African American men should have this conversation at 45y/o

US Preventative Services Task Force Recommendations: Prostate

Population	Recommendation	Grade
Men aged 55 to 69 years	For men aged 55 to 69 years, the decision to undergo periodic prostate-specific antigen (PSA)-based screening for prostate cancer should be an individual one. Before deciding whether to be screened, men should have an opportunity to discuss the potential benefits and harms of screening with their clinician and to incorporate their values and preferences in the decision. Screening offers a small potential benefit of reducing the chance of death from prostate cancer in some men. However, many men will experience potential harms of screening, including false-positive results that require additional testing and possible prostate biopsy; overdiagnosis and overtreatment; and treatment complications, such as incontinence and erectile dysfunction. In determining whether this service is appropriate in individual cases, patients and clinicians should consider the balance of benefits and harms on the basis of family history, race/ethnicity, comorbid medical conditions, patient values about the benefits and harms of screening and treatment-specific outcomes, and other health needs. Clinicians should not screen men who do not express a preference for screening.	C
Men 70 years and older	The USPSTF recommends against PSA-based screening for prostate cancer in men 70 years and older.	D

Prostate Cancer Screening

- For men in the USA
  - Lifetime risk of being diagnosed with prostate cancer is ~11%
  - Lifetime risk of dying of prostate cancer is 2.5%
- Most cases of prostate cancer found in autopsy
  - Microscopic, well-differentiated lesions
  - Did not affect men's health during their lifetime
- Many cases of low-risk cancer detected by screening would never have caused symptoms or affected men's health had they never been identified through screening.

US Preventative Services Task Force, 2018 (last update)

US Preventative Services Task Force Recommendations: Prostate

- The American Academy of Family Physicians and the Canadian Task Force on Preventive Health Care recommend against PSA-based screening for prostate cancer.
- The American College of Physicians recommends clinicians discuss the benefits and harms of screening 50-69 y/o men. Only recommend screening men who prioritize screening and have a life expectancy of >10 to 15 years.
- The American Urological Association recommends that men aged 55-69 years with a life expectancy of >10 to 15 years be informed of the benefits + harms of screening and shared decision making, taking into account values and preferences.

US Preventative Services Task Force Recommendations: Prostate

- Interesting study result in JAMA Jan 2022
- 2012-2018 – USPSTF against PSA testing, then changed guidelines
  - Then changes its guidelines
  - PSA testing rose by 16.2% in men aged 70-89 years
  - PSA testing rose by 10.1% in men aged 40-54 years
  - PSA testing rose by 12.1% in men aged 55-69 years

JAMA Oncology 2022 Jan 1;8(1):41-47. doi: 10.1001/jamaoncol.2021.5143

Confused Yet?

What Has COVID Taught Us?

- Created an opportunity to promote home-based screening tests
  - Fecal immunochemical test (FIT) for colorectal cancer
  - Looking at home based cervical cancer screening tests

- Develop outreach/virtual programs aimed at groups that may be less likely to seek or complete cancer screening (telehealth for education and shared decision making)
- Prioritize highest medical risk of cancer by age and other risk factors
- Deprioritize those at lowest risk, who are unlikely to benefit from screening.”

For Cancer Screening, COVID-19 Pandemic Creates Obstacles, Opportunities, March 10, 2021

Disclaimer

- Ensure consent of the patient and their understanding of risks/benefits.

Resources

- Harvard University video: Mammography: How to make the right decision for you https://hms.harvard.edu/news/decisions-decisions-0
- National Institutes of Health: To Screen or Not to Screen? https://newsinhealth.nih.gov/2017/03/screen-or-not-screen
- National Cancer Institute: What is overdiagnosis? https://prevention.cancer.gov/news-and-events/infographics/what-cancer-overdiagnosis
- US Preventative Services Taskforce Recommendations https://www.uspreventiveservicestaskforce.org/uspstf/topic_search_results?topic_status=P

Thank You

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