1:00 – 2:15 pm

Screening Seniors: the Good, the Bad and the Questionable

SPEAKER
Katherine E. Galluzzi, DO, CMD, FACOFP dist.

pri♥med™

---

pri♥med™

Presenter Disclosure Information

The following relationships exist related to this presentation:

► Katherine E. Galluzzi, DO, CMP, FACOFP dist.: No financial relationships to disclose.

Off-Label/Investigational Discussion

► In accordance with pmiCME policy, faculty have been asked to disclose discussion of unlabeled or unapproved use(s) of drugs or devices during the course of their presentations.

Predicting the Future: When to Stop Screening

K. Galluzzi, D.O., CMD, FACOFP *dist*.
Professor, Chair
PCOM Dept. of Geriatrics

Goals

◉ Explain the effects of over-screening among the elderly

◉ Assess the complexity of decisions regarding when the decision to stop screening

◉ Formulate a practical method to determine stopping age for colon and breast cancer screening

---

Consider two different patients
1st Patient:

◉ 85 year-old woman
◉ PMH: HTN, well-controlled on lisinopril
  › Lifelong non-smoker
  › Lives at home, does household chores, and plays golf with her husband 2× week; walks the course and drags her own golf clubs. Friends have trouble keeping up with her.
  › BMI: 27

2nd Patient:

◉ 75 year-old man
  › PMH: COPD
  › Smokes a few cigarettes per day
  › Lives at home, walking is slow and limited to 1-2 blocks due to dyspnea
  › Takes breathing treatments at home several times a day but refuses home O_2
  › Able to do light household chores but needed help moving furniture last week
  › BMI: 22

USPSTF Grade Definitions

Grade	Definition	Suggestions for Practice
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer or provide this service.
B	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.	Offer or provide this service.
C	The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small.	Offer or provide this service only if other considerations support the offering or providing the service in an individual patient.

USPSTF Grade Definitions (Cont.)

Grade	Definition	Suggestions for Practice
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.
I statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.	Read the clinical considerations section of USPSTF Recommendations. If the service is offered, patients should understand the uncertainty about the balance of benefits/harms.

Cervical Cancer Screening

◉ Guidelines
  › USPSTF: Age 65
  › ACS: Age 65
  › AGS: Age 70

  (Assuming recent normal Pap screening)

◉ Consensus on stopping if total hysterectomy for a benign indication

USPSTF = US Preventive Services Task Force
ACS = American Cancer Society
AGS = American Geriatrics Society

Kizer N, et al. *Ann Intern Med*. Epub Mar 14 2012.
Saslow D, et al. *CA Cancer J Clin*. 2012;62:147-172.
Albert RH, et al. *Am Fam Physician*. 2008;78:1369-1374.
Walter LC, et al. *Am J Med*. 2005;118:1078-1086.

Cervical Cancer Screening

◉ < 0.1% of women > 60 yo w/ normal baseline Pap will develop HGSIL or cervical cancer

◉ > 80% of women w/ HGSIL or cervical cancer have had either no Pap or abnormal Paps

◉ 9610 vaginal Pap smears (s/p benign TAH)
  → 1.1% abnormal Pap smears
  → Zero vaginal cancers

HGSIL = high-grade squamous intraepitheliel lesion

Albert RH, et al. *Am Fam Physician*. 2008;78:1369-1374.
Pearce LF, et al. *N Engl J Med*. 1996;335:1559-1562.

USPSTF Screening for Cervical Cancer: Summary of Recommendations (2012)

◉ Screen women age 21-65 yr with cytology (Pap smear) Q 3 yr or, for women age 30-65 who want to lengthen screening interval, screen with cytology + HPV Q 5 yr. **A recommendation**
◉ Recommends against screening women < 21 years. **D rec.**
◉ Recommends against screening in women > 65 yr who have had adequate prior screening and are not otherwise at high risk.
  › **D recommendation**

◉ Recommends against screening in women who have had hysterectomy with removal of the cervix and who do not have a Hx of high-grade precancerous lesion or cervical cancer
  › **D recommendation**
◉ Recommends against screening for cervical cancer with HPV testing, alone or in combination with cytology, in women < 30 yr
  › **D recommendation**

http://www.annals.org/content/early/2012/03/14/0003-4819-156-12-201206190-00424.full. Accessed 3/15/12

Prostate Cancer Screening

◉ Guidelines
◉ USPSTF (2012): Recommends against prostate-specific antigen (PSA)–based screening for prostate cancer.

  Grade D Recommendation

AUA = American Urological Association

USPSTF. *Ann Intern Med*. 2008;149:185-191.
USPSTF. *Screening for Prostate Cancer: Draft Recommendation Statement*. 2011.
Wolf AM, et al. *CA Cancer J Clin*. 2010;60:70-98.
AUA. *Prostate-Specific Antigen Best-Practice Statement: 2009 Update*.

Prostate Cancer Screening: Benefits?

- ERSPC: Age 50-74; core group = 55-69 yo
  - 21% RRR in prostate cancer mortality
  - 1055 men invited, 37 prostate cancer diagnosed per prostate cancer death prevented (at 11 years)
  - Age >70 → trend toward harm
- Göteborg: Age 50-64
  - 44% RRR in prostate cancer mortality at 14 years
- PLCO: Age 50-74
  - No benefit (high rates of background screening)

ERSPC = European Randomized Study of Screening for Prostate Cancer
PLCO = Prostate, Lung, Colorectal, and Ovarian Cancer Screening
Schröder FH, et al. *N Engl J Med.* 2012;366:981-990.
Hugosson J, et al. *Lancet Oncol.* 2010;11:725-732.
Andriole GL, et al. *J Natl Cancer Inst.* 2012;104:125-132.

PSA-Based Prostate Ca Screening: Harms?

False + result (110-120/1000)

- Most + results lead to biopsy
- Of those biopsied, ~33% have
  - pain
  - fever
  - bleeding
  - infection
  - temporary urinary difficulties
- 1% will be hospitalized

Prostate Ca Diagnosis

Complications of treatment per 1000 men

Serious CV events	2
DVT or PE	1
Erectile dysfunction	29
Urinary incontinence	18
Die due to treatment	<1
	110

Moyer V A Ann Intern Med doi:10.1059/0003-4819-157-2-201207170-00459

PSA-Based Screening for Prostate Cancer

Possible benefit of screening:

Reducing 10 year risk of prostate cancer	Men, n
10 year risk of dying of prostate CA with no screening	5 in 1000
10 year risk of dying of prostate CA with screening	4-5 in 1000
Number who do not die of prostate CA because of screening	0-1 in 1000

Moyer V A Ann Intern Med doi:10.1059/0003-4819-157-2-201207170-00459

Newest Data

- Thirteen-year follow-up data from the European Randomized Study of Screening for Prostate Cancer (ERSPC) provides additional insights on the long-term implications of screening men aged 50 to 74 years for prostate cancer
- At 9 and 14 yr followup, 0.06 versus 0.11 fewer deaths per 1000 person years, respectively – no real change from prior data

Scroder FH, Hugosson J, Roobol MJ et al. Lancet. 2014 Aug

Other Groups' Recommendations

- **American Cancer Society (2010):**
  - Asymptomatic men with >10-year life expectancy should have opportunity to make informed decision with their health care provider about whether to be screened for prostate cancer
  - Black men or men with FH should receive information at age 45
- **American Urological Association (2014):**
  - recommends shared decision making for screening in men aged 55-69 years, with screening decision based on patient values and preferences (AUA Standard, Grade B Evidence)
  - European Association of Urology (EAU) recommends individualized risk-adapted strategy for early detection in well-informed men with good performance status and life expectancy of ≥ 10-15 years (EAU Grade B, Level 3), and that informed consent requires full discussion of pros and cons of complete procedure

Wolf AM, et al. *CA Cancer J Clin.* 2010; 60:70-98
http://www.auanet.org/content/guidelines-and-quality-care/clinical-guidelines/main-reports/psa09.pdf
http://www.auanet.org/content/health-policy/government-relations-and-advocacy/in-the-news/aua-response-to-uspstf.cfm

---

Prostate Cancer Screening: Summary

- Benefits of screening: men < 70 yo (primarily in unscreened populations)
- Benefits of treating early, non-screen-detected, cancer: primarily men < 65 yo
  - Younger age for screen-detected cancer?
- Risks (over-diagnosis, procedures) increase with age

Colon Cancer Screening

◉ Guidelines
> › USPSTF:
>> • 76-85 yo: against routine screening, consider in individual patients (C)
>> • > 85 yo: against screening (D)
> › ACS, ASGE: no recommendation on stopping age
> › AGS: Stop if life expectancy < 3-5 y
> › ACP: Age 75, or if life expectancy < 10 y

USPSTF. *Ann Intern Med.* **2008;149:627-637.**
Levin B, et al. *CA Cancer J Clin.* **2008;58:130-160.**
Davila RE, et al. *Gastrointest Endosc.* **2006;63:546-557.**
Walter LC, et al. *Am J Med.* **2005;118:1078-1086.**
Qaseem A, et al. *Ann Intern Med.* **2012;156:378-386.**

ASGE = American Society for Gastrointestinal Endoscopy
ACP = American Cancer Physicians

Colon Cancer Screening: Risks

◉ Medicare patients age 66-95:
> › Adverse event rate: 14/1000 c-scopes
> (Perforation rate: 0.5/1000)
> › Serious GI events increased by:
>> • Age
>> • Co-morbidity

Warren JL, et al. Ann Intern Med. 2009;150:849-857, W152.

Colon Cancer Screening: Benefits

◉ RCTs for FOBT screening included > 40,000 patients age 70-80
> › Reduced colon cancer mortality by ~15%
> › Independent of age

◉ Case-control trials of lower endoscopy included patients age 70-91
> › Reduced colon cancer mortality by ~60%
> › Independent of age

FOBT = fecal occult blood test

Walter LC, et al. Am J Med. 2005;118:1078-1086.

Colon Cancer Screening: Caveats

But … diminishing returns with age?

◉ Cross-sectional study at Virginia Mason Univ.*:

	Age 50-54	Age 75-79	Age ≥ 80
% with advanced neoplasia	3.2%	4.7%	14%
Years of life expectancy gained	0.85	0.17	0.13

*Lin OS, et al. *JAMA.* 2006;295:2357-2365.

Colorectal Cancer Screening in Elderly

◉ In 2008, the USPSTF recommended that colorectal cancer (CRC) screening begin at age 50 years and continue to age 75 years, and then be discontinued if consistent negative findings

◉ Average age of CRC diagnosis is 71 years

◉ 43% of CRC cases are diagnosed at age 75 years and older

◉ 37% of persons aged 75 to 84 years have never had a colonoscopy

Zauber AG et al. DDW 2011: Abstract 63

Colorectal Screening Model

◉ Model that simulated CRC screening in persons aged ≥ 75 years who had never been screened

◉ Calculated the life-years gained (LYG) by screening various age groups

◉ Compared this benefit with age-specific risks for serious adverse events associated with colonoscopy and polypectomy in the Medicare population

◉ Cost analysis included screening, diagnosis, treatment, and complication costs

Zauber AG et al. DDW 2011: Abstract 63.

Summary of Outcomes With Colonoscopy in Elderly

Age at Initiation of Screening	Number of Colonoscopies/ LYG	Serious Gastrointestinal Complications/ LYG	Costs/LYG ($)
65	13	0.038	(-) 3637
80	24	0.122	(-) 2601
83	30	0.172	(-) 50
85	41	0.256	5050
89	114	0.843	46,278
90	161	1.24	75,325

Zauber AG et al. DDW 2011: Abstract 63

What about those who've never been screened?

Should colorectal cancer screening be considered in elderly persons without previous screening? A cost-effectiveness analysis

- "For most older adults, it is reasonable to stop screening for colorectal cancer (CRC) at age 75 years, or 85 years at the latest"

van Hes F, Habbema JD, Meester RG, Lansdorp-Vogelaar I, van Ballegooijen M, Zauber AG. Ann Intern Med. 2014;160(11):750.

What about those who've never been screened?

- Based on results of this modeling study, for the 23 % of US elderly who have never been screened, one-time colonoscopy screening appears to be cost-effective up to age 86 years,
- Assuming $100,000 per quality-adjusted life-year gained, colonoscopy was cost-effective to age 83 years, sigmoidoscopy to 84 years, and fecal immunochemistry testing to 86 years for patients **without comorbidity and at average risk for CRC**

van Hes F, Habbema JD, Meester RG, Lansdorp-Vogelaar I, van Ballegooijen M, Zauber AG. Ann Intern Med. 2014;160(11):750.

Colon Cancer Screening: Summary

- Effective in the elderly
- Benefits decrease with age, but especially with co-morbidity
- Risks increase with age and co-morbidity

Screening Mammography
Women aged 40-49 years, conflicting rec's

- USPSTF recommends against routine screening for breast cancer but suggests individualized decision-making (Grade C)
- ACS, ACOG, American College of Radiology /Society of Breast Imaging (ACR/SBI): annual mammography starting at age 40 years
- Canadian Task Force on Preventive Health Care (CTFPHC) recommends against routine screening for breast cancer in women aged 40-49 years

---

Screening Mammography

Women aged 50-74 years
- USPSTF recommends every 2 years by (Grade B)
- ACS, ACOG, and ACR/SBI recommend annual screening
- CTFPHC recommends every 2-3 years for women ≥ 75 years old

Screening Mammography

Women > age 75

⊙ USPSTF, ACR/SBI, & CTFPHC make no recommendation (USPSTF Grade I)

⊙ ACS and ACOG continue to recommend screening mammography annually

⊙ Regular mammography screening among women ≥ 80 years old is associated with earlier disease stage at diagnosis and lower breast cancer mortality (level 2 [mid-level] evidence)

Mammography Screening

⊙ Guidelines

› USPSTF: "I" statement for women ≥ 75 yo

› ACS: "reasonably good health … "

› AGS: "life expectancy of 4 or more years … "

› ACOG: no recommendation on stopping age

Breast Self-Exam?

⊙ USPSTF recommends against teaching breast self-examination (USPSTF Grade D)

› no clear benefit and possible harm (level 2 [mid-level] evidence)

⊙ breast self-exam considered an option by ACS and (for high-risk women) by ACOG

Breast Cancer Screening: Benefits?

⊙ Observational data suggest benefit in older women:

› Age 65-69: RR 0.32

› Age 70-80 and older: RR ~0.50

⊙ Modeling studies suggest benefit of screening through ages 74, 79, or 84

Breast Cancer Screening: Caveats

⊙ RCT data has not included women > 74 yo

› Age 50-59: RR 0.86

› Age 60-69: RR 0.68

› Age 70-74: RR 1.12 (small sample size)

⊙ Observational study showed no benefit in women ≥ 75 yo w/ 2+ co-morbidities

Breast Cancer Screening: Risks

⊙ Women > 70 yo:

› ~80 positive mammograms per 1000 women

› 86% are false-positives

⊙ Over-diagnosis: estimates vary

› Range from < 1% to 30%

› Most estimates between 1% and 10%

Screening: Off-target? Breast Cancer

→ 81,000 mammograms in women ≥ 80 in the worst health quartile

→ 97,000 women age 70-84 in healthiest 2 quartiles without recent mammogram

Walter LC, et al. *Ann Intern Med.* 2004;140:681-688.

Breast Cancer Screening: Summary

◉ Strong evidence for efficacy ages 50-69

◉ Efficacy data in older women is primarily observational but reasonably compelling

◉ No benefit in older women w/ multiple co-morbidities

◉ Risks include false-positives and over-diagnosis

Guideline Consensus

◉ Benefits of screening are delayed:

> Cervical cancer: ≥ 5 -10 years

> Prostate cancer: ≥ 7-10 years

> Colon cancer: ≥ 5 -10 years

> Breast cancer: ≥ 4 -5 years (may be longer for older patients due to less aggressive cancers)

Walter LC, et al. *JAMA.* 2001;285:2750-2756.
USPST. *Ann Intern Med.* 2008;149:627-637.
Lewis CL, et al. *J Gen Intern Med.* 2009;24:816-821.
Albert RH, et al. *Am Fam Physician.* 2008;78:1369-1374.
Walter LC, et al. *Am J Med.* 2005;118:1078-1086.
Hugosson J, et al. *Lancet Oncol.* 2010;11:725-732.
Schröder FH, et al. *N Engl J Med.* 2012;366:981-990.

Does screening for disease save lives in asymptomatic adults?

◉ Systematic review of meta-analyses & RCTs

> reviewed 39 screening tests for 19 diseases

• 50 individual randomized trials and 9 meta-analyses

◉ "Among currently available screening tests for diseases where death is a common outcome, <u>reductions in disease-specific mortality are uncommon and reductions in all-cause mortality are very rare or non-existent</u>."

Saquib N, Saquib J, Ioannidid J PA. Int J Epidemiology 2015: 1-14

Screening: When to Stop

◉ Cervical cancer screening

◉ Prostate cancer screening

◉ Colon cancer screening

◉ Breast cancer screening

◉ Predicting life expectancy

◉ Patient expectations

◉ Putting it all together …

Patient 1

◉ 85 y/o woman for routine visit.

> PMH: HTN, well-controlled on lisinopril

> Lifelong non-smoker

> Lives at home, does household chores and plays golf with her husband 2× week; walks the course and drags her own golf clubs. Friends have trouble keeping up with her.

> BMI: 27

Patient 2

- 75 yo man for routine visit.
  - › PMH: COPD
  - › Smokes a few cigarettes per day
  - › Lives at home, walking is slow and limited to 1-2 blocks due to SOB
  - › Able to do light household chores but needed help moving furniture last week
  - › BMI: 22

Estimating Life Expectancy

- Cardiovascular Health Study 1998*
- Estimate of 5-year mortality based on:

• Age	• Posterior tib systolic bp	• EF on Echo
• Sex		• AS on Echo
• Income	• Diuretic use	• Major ECG abnormality
• Weight	• Fasting glc	• Degree of carotid stenosis by US
• Exercise	• Albumin	• Difficulty w/ IADL
• Smoking	• Creatinine	• Digit symbol substitution test score
• Brachial systolic bp	• Hx CHF	• Health self-assessment
	• FEV1	

*Fried LP, et al. *JAMA*. 1998;279:585-592.

Estimating Life Expectancy

- 85 yo woman, BMI 27, no major co-morbidities, non-smoker, active and independent
- → 4-year mortality: 12%

- 75 yo man, BMI 22, COPD, smokes, walking and pulling/pushing is limited
- → 4-year mortality: 67%

Lee SJ, et al. *JAMA*. 2006;295:801-808.

Estimating Life Expectancy

- Health and Retirement Study
- 20,000 community-dwelling adults > 50 yo
- 4-year mortality based solely on patient report:

• Age	• Hx chronic lung disease	• Difficulty managing money
• Sex	• Hx CHF	• Difficulty walking several blocks
• Low BMI	• Smoking	• Difficulty pushing or pulling large objects
• Hx DM	• Difficulty w/ bathing	
• Hx Cancer		

Lee SJ, et al. *JAMA*. 2006;295:801-808.

Estimating Life Expectancy

- National Health Interview Survey
- 24,000 community dwelling adults age > 65 yo
- 5-year mortality based solely on patient report:

• Age	• Hx COPD	• Able to walk 3 blocks?
• Sex	• Hx Cancer	• Need help w/ everyday activities?
• Low BMI	• Hx DM	• Hospitalized in the last year?
• Health self-assessment	• Smoking	

J Gen Intern Med. 2009;24:115-122.

Estimating Life Expectancy

- ➢ 85 yo woman, BMI 27, no major co-morbidities, non-smoker, active and independent
- → 5-year mortality: 11%

- ➢ 75 yo man, BMI 22, COPD, smokes, walking and pulling/pushing is limited
- → 5-year mortality: 58%

J Gen Intern Med. 2009;24:115-122.

Estimating Life Expectancy

◉ Is there a simpler way?

Studenski S, et al. *JAMA.* 2011;305:50-58.

Estimating Life Expectancy

◉ 34,000 community-dwelling adults ≥ 65
◉ Gait speed: 4-meter walk at usual pace
◉ Has been correlated with:
  › Co-morbidities
  › Atherosclerosis
  › Cognitive impairment
  › Hospitalization
  › Institutionalization

Studenski S, et al. *JAMA.* 2011;305:50-58.
Cesari M. *JAMA.* 2011;305:93-94.

Estimating Life Expectancy: Summary

◉ It can be really complicated

◉ In addition to age and sex, think of:
  › Low BMI
  › Hx cancer, diabetes, COPD, CHF, smoking
  › Functional limitations (walking, other IADLs)

◉ Or just use gait speed

IADLs = instrumental activities of daily living

What Do Patients Want from Us?

◉ Preferences in older adults regarding screening:
  › 52% want to discuss life expectancy
  › 84% want to discuss whether to continue
  › 94% want to hear about how tests for cancer can give the wrong result

◉ Factors influencing mammography:
  › 1: Doctor's recommendation
  › 2 & 3: Habit and reassurance

Lewis CL, et al. *BMC Geriatr.* 2006;6:10.
Schonberg MA, et al. *BMC Geriatr.* 2007;7:26.

Putting It All Together

First, decide if your patient's health is:
  › Below average
  › Average
  › Above average

Then, consider the following stopping ages:

◉ Women: ages 75, 85, or 90

◉ Men (subtract 5): ages 70, 80, or 85

Our Patients

◉ 85 yo woman, active, no major co-morbidities
  › Fast walker
  › Above-average life expectancy for age
  → Continue screening if desired

◉ 75 yo man, COPD limiting activities, smokes, low BMI
  › Slow walker
  › Below-average life expectancy for age
  → Discontinue screening

Goals/Summary

- Cervical cancer screening: stop at 65, or if no cervix

- Prostate cancer screening not recommended

- Tools for estimating life expectancy
  - Gait speed, co-morbidities, functional status

- Practical method to determine stopping age for colon and breast cancer screening
  - For women: 75, 85, 90 (subtract 5 for men)