Prognosticating for Older Adults: Why and How?

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Disclosure

- No conflicts of interest

What is Prognostication?

The Three parts:

1. **Formulation** of the *probability* of a person developing a particular *outcome* over a specific period of time
2. **Incorporation** of formulated prognosis into a clinical decision
3. **Communication** of the prognosis with the patient and/or family

Objectives

1. Identify clinical scenarios where prognostication is critical
2. Describe how clinicians prognosticate today
3. Use web-based tools to inform prognostic estimates
4. Apply a prognostic estimate to a clinical decision
5. Ethical and Clinical concerns, Ideas- YOU

Case: Ms A

- Ms. A is a 68 year old clinic patient with congestive heart failure, COPD, DM2, dependence on others for shopping, and difficulty walking a quarter mile.
- Should you recommend that Ms. A have colon cancer screening?

1. Yes
2. No

USPSTF Guidelines
Colorectal Cancer Screening

- Age (45), 50-75: Routine screening
- Age 75-85: Marginal Benefit, recommend against routine screening
- Age 85+: Recommend against screening
- USPSTF also recommends clinicians target screening to healthier **patients with good prognosis**

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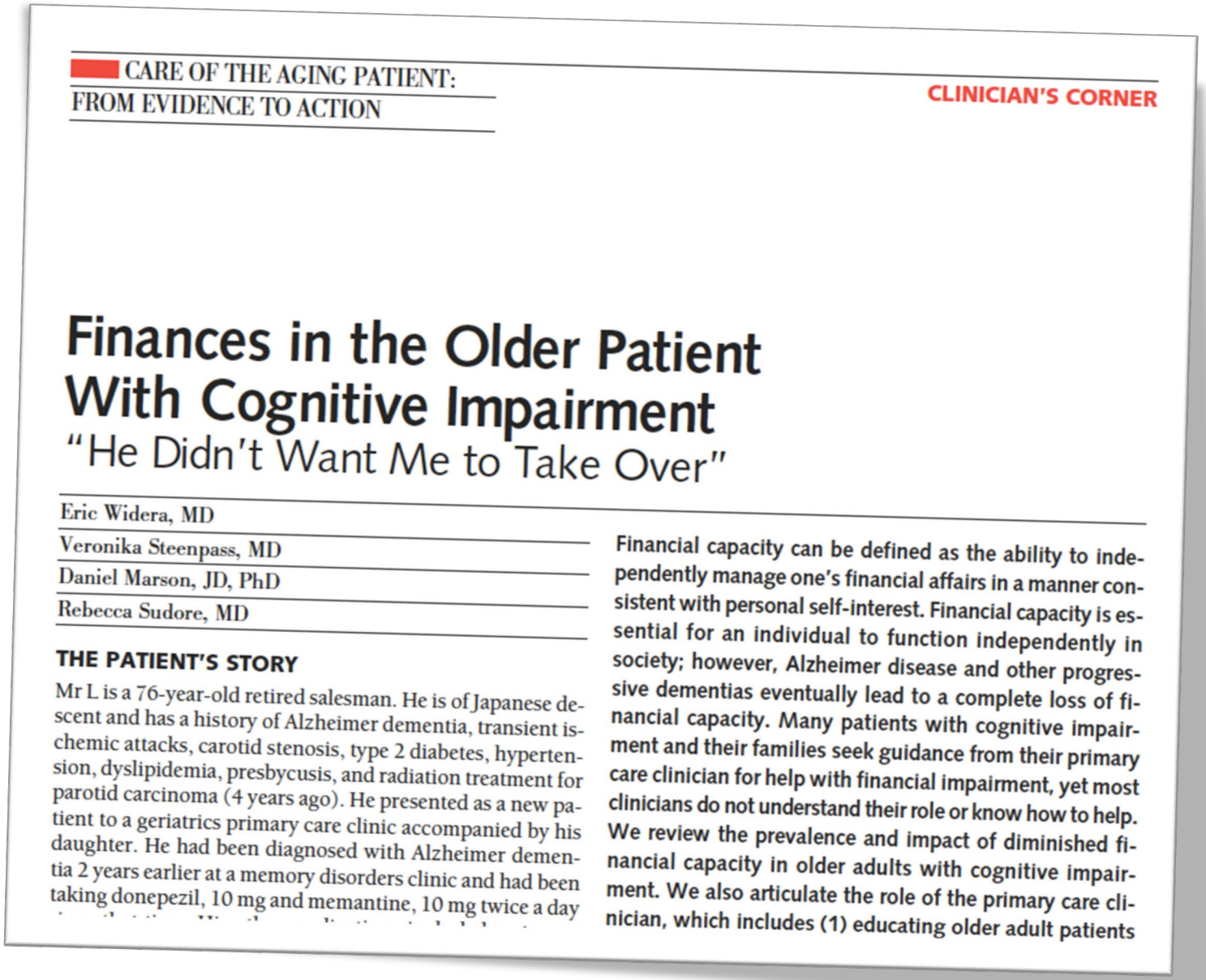
How long do I got, Doc?

- General internists are asked this by patients an average of **6 times/year**

- Oncologists are asked this by patients an average of **100 times/year**

Nicholas Christakis. *Death Foretold*. 2011

Why Prognosticate – Life Planning



CARE OF THE AGING PATIENT:
FROM EVIDENCE TO ACTION

CLINICIAN'S CORNER

Finances in the Older Patient With Cognitive Impairment

"He Didn't Want Me to Take Over"

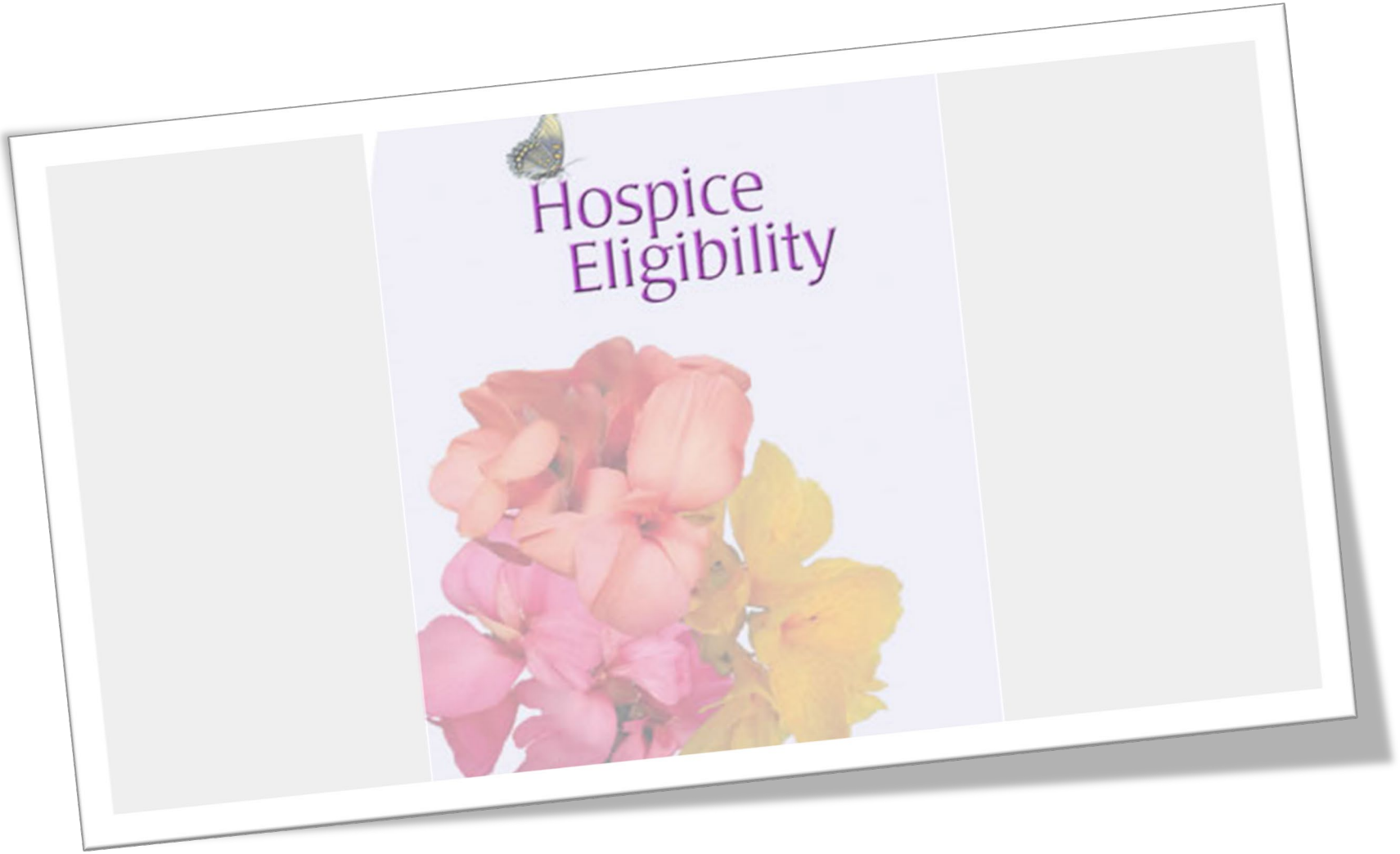
Eric Widera, MD
Veronika Steenpass, MD
Daniel Marson, JD, PhD
Rebecca Sudore, MD

Financial capacity can be defined as the ability to independently manage one's financial affairs in a manner consistent with personal self-interest. Financial capacity is essential for an individual to function independently in society; however, Alzheimer disease and other progressive dementias eventually lead to a complete loss of financial capacity. Many patients with cognitive impairment and their families seek guidance from their primary care clinician for help with financial impairment, yet most clinicians do not understand their role or know how to help. We review the prevalence and impact of diminished financial capacity in older adults with cognitive impairment. We also articulate the role of the primary care clinician, which includes (1) educating older adult patients

THE PATIENT'S STORY

Mr L is a 76-year-old retired salesman. He is of Japanese descent and has a history of Alzheimer dementia, transient ischemic attacks, carotid stenosis, type 2 diabetes, hypertension, dyslipidemia, presbycusis, and radiation treatment for parotid carcinoma (4 years ago). He presented as a new patient to a geriatrics primary care clinic accompanied by his daughter. He had been diagnosed with Alzheimer dementia 2 years earlier at a memory disorders clinic and had been taking donepezil, 10 mg and memantine, 10 mg twice a day

Why Prognosticate - Hospice



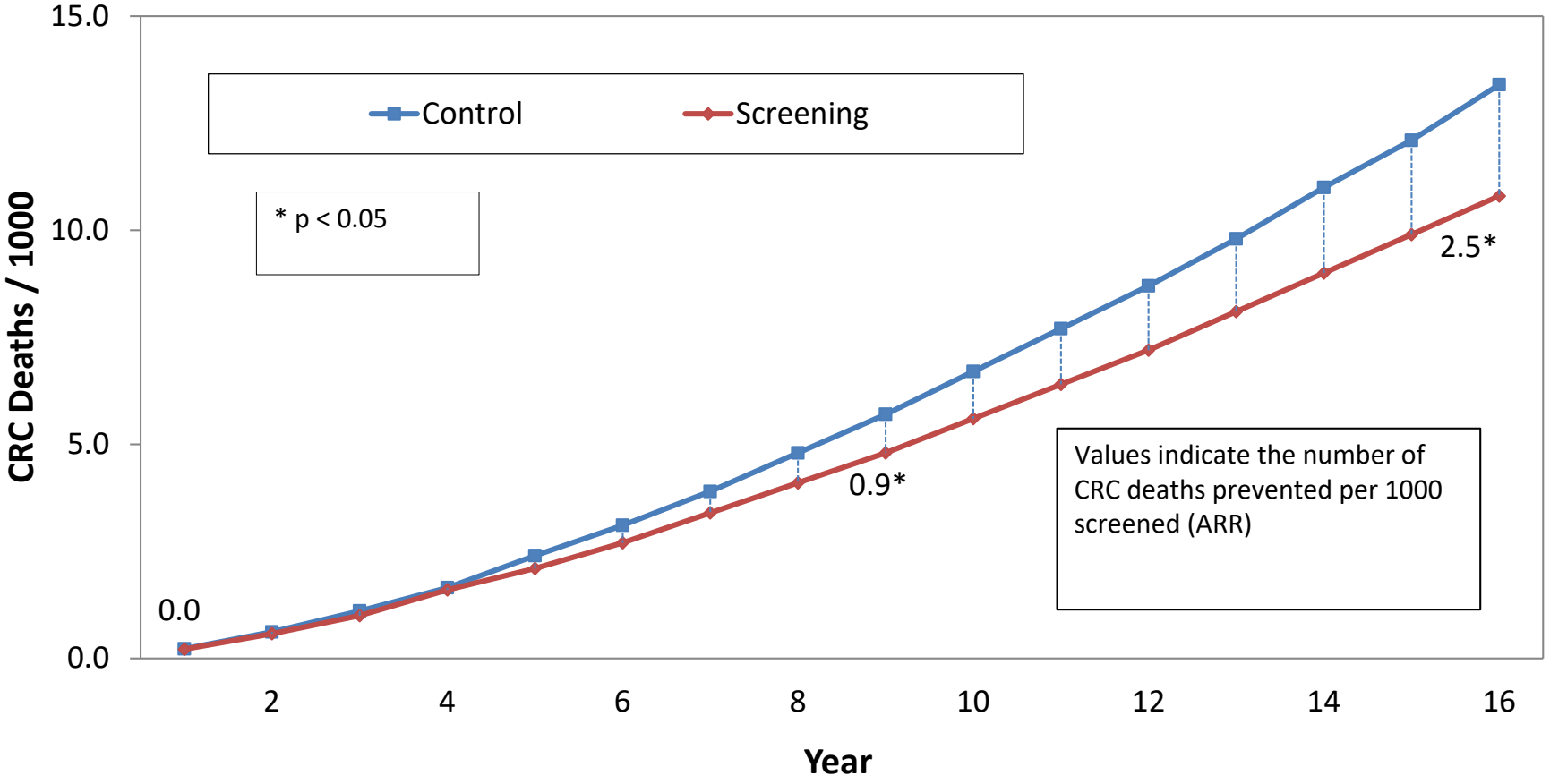
Why Prognosticate – Target Preventive Services

- Preventative interventions usually have **immediate** **risk** with **delayed** **benefits**

- Patients with poor prognosis who receive preventative interventions are exposed to the risks with little chance of benefit

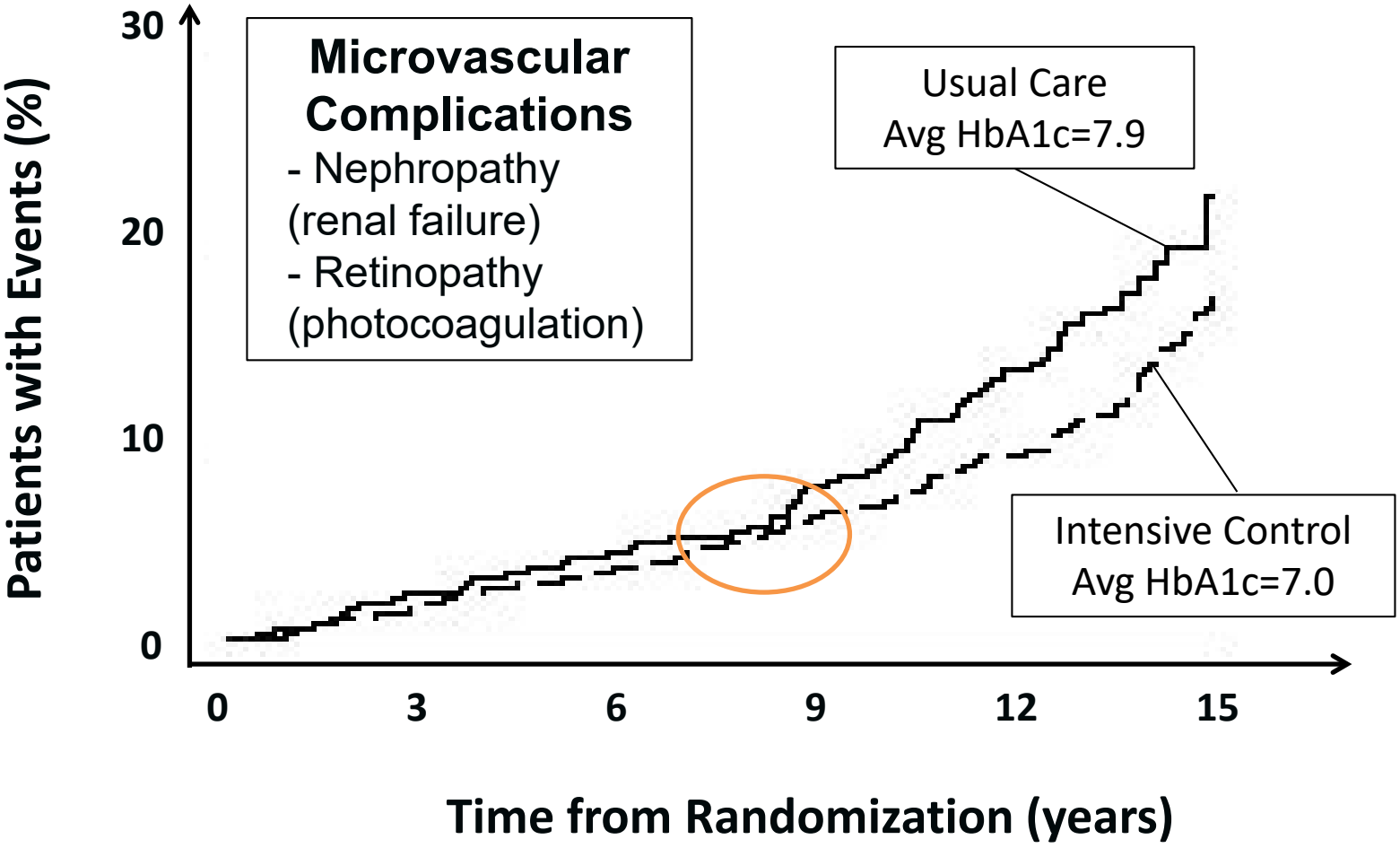
- Intervention should be **targeted** to patients whose **life expectancy > time to benefit**

Colorectal Cancer Screening



Lee SJ et al, BMJ 2013 Jan 8; 346. e8441

Glycemic Control: UKPDS



Huang et al., Ann Intern Med 2008

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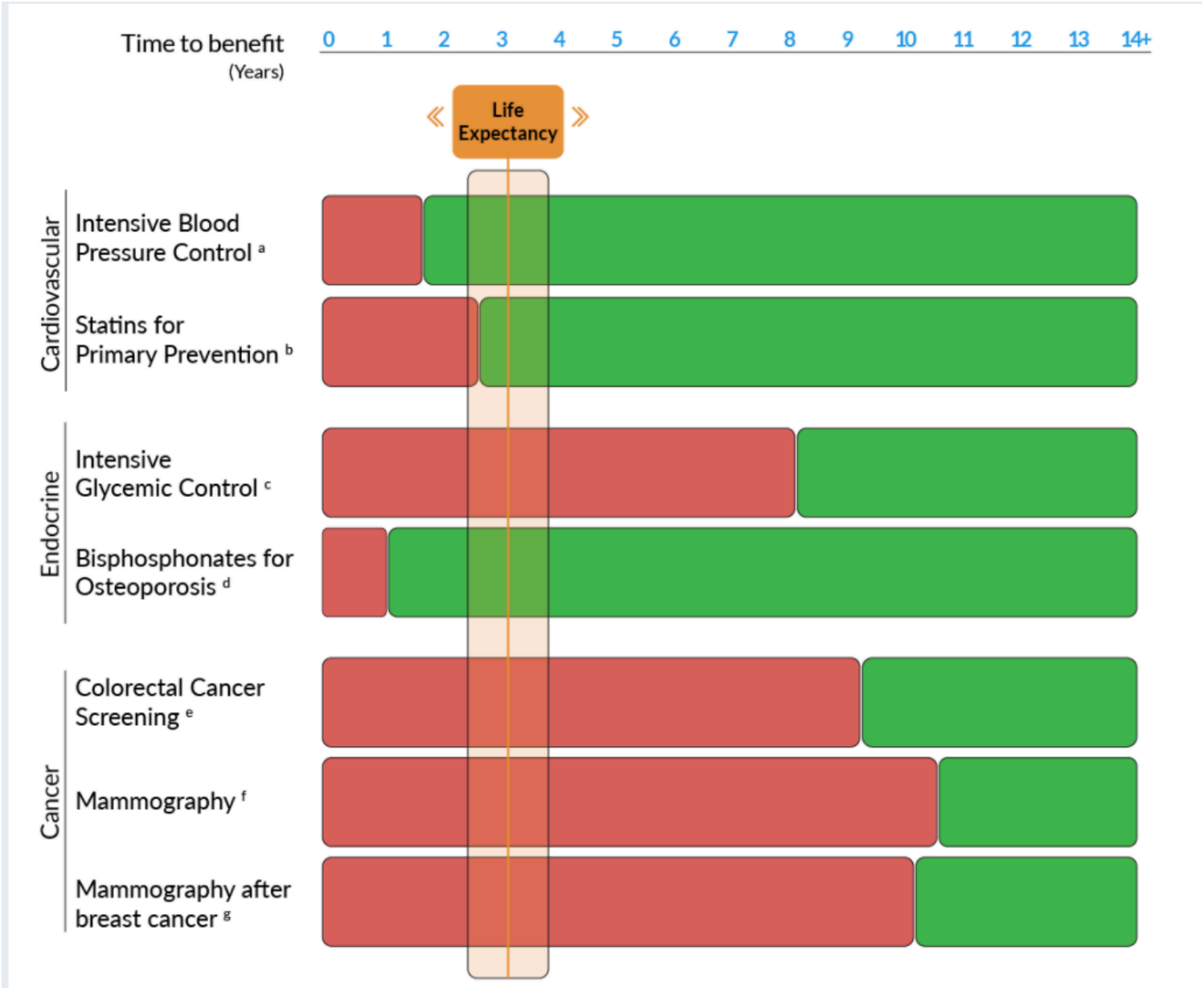
Clinical Decisions Influenced by Life Expectancy

Life Expectancy	Clinical Decision
<4-6 weeks	Methylphenidate over SSRI for depression
<3 months	Discontinue statins
<6 months	Refer to hospice
<1-2 years	Nonoperative management of asymptomatic AAA
<2-3 years	Tight BP control in diabetes unlikely to prevent stroke, MI
<5 years	Bio-prosthetic heart valve over mechanical
<5 years	Discontinue tight blood sugar control in diabetes
<5 years	Discontinue breast cancer screening
<7 years	Discontinue colorectal cancer screening

Yourman et al., JAMA 2012


Time to benefit
(Years)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14+
Life Expectancy
Cardiovascular
Intensive Blood Pressure Control a
Statins for Primary Prevention b
Endocrine
Intensive Glycemic Control c
Bisphosphonates for Osteoporosis d
Cancer
Colorectal Cancer Screening e
Mammography f
Mammography after breast cancer g

Guidelines and Prognosis

- **"One-size-fits-all"** approach to medical care **based on age does not work** in diverse elderly population
  - Great variation in life expectancy/preferences
- More guidelines now base **recommendations on prognosis rather than age alone**
  - Eg. cancer screening (stop if limited life expectancy)
  - Eg. Diabetes care (higher A1c if limited life expectancy)

Gill et al., JAMA 2012: 199-200

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Clinician Prognostication

- **Not Prepared--** 57% of 1311 Internists surveyed , inadequately trained in prognostication (Christakis et al., Arch Intern Med 1998)

- **Overestimate**- 343 Internists surveyed, by a factor of 5 in terminally ill patients they referred to a home hospice program (Christakis et al, BMJ 2000)

- **Withholding, Misleading-** 25% withheld prognostic information, 35% intentionally inflated estimates, and only 35% gave their most objective estimate (Christakis et al, BMJ 2000)

Cancer Screening Among Patients With Advanced Cancer (Sima et al., JAMA 2010)

-87,000 patients with stage IV GI, breast, or lung cancer

-PSA 15%, Mammography 9%, Pap Smears 6%, colonoscopy 2%

-<5% of these patients were alive in 5 years

Screening Geriatric Assessment

Less than half of health problems identified in a Common Geriatric Assessment were known to random sample of General Practicioners

- Junius et al., Fortschr Med 1996: 259-261

Cross-sectional study of nine general practices (115 patients over 75) **failure to screen and treat** for:

- **75% of patients with hearing impairment**
- **75% of patients with depression**
  - BMC Geriatrics 2004, 4:4

Why is Prognostication So Hard?

For older adults?

In general?

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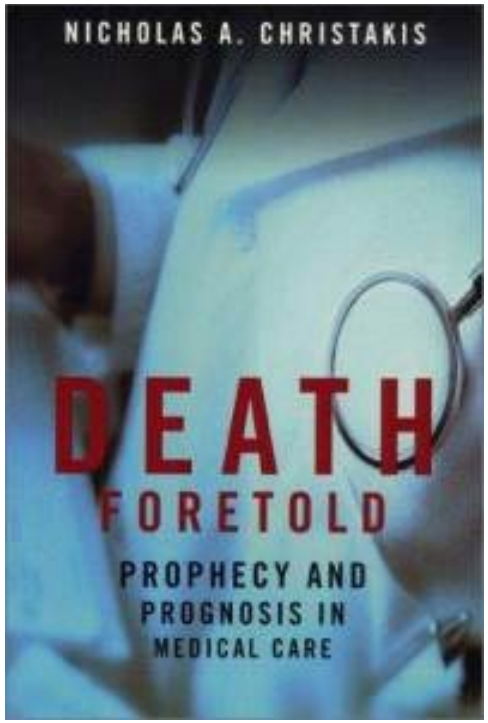
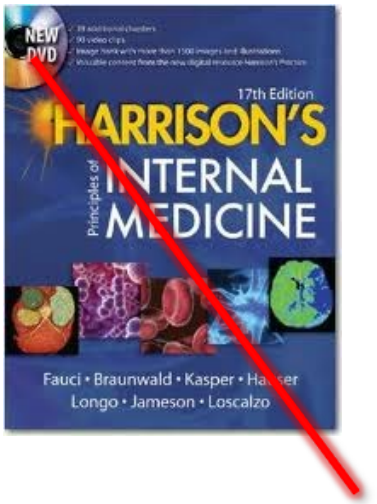
Psychological Barriers



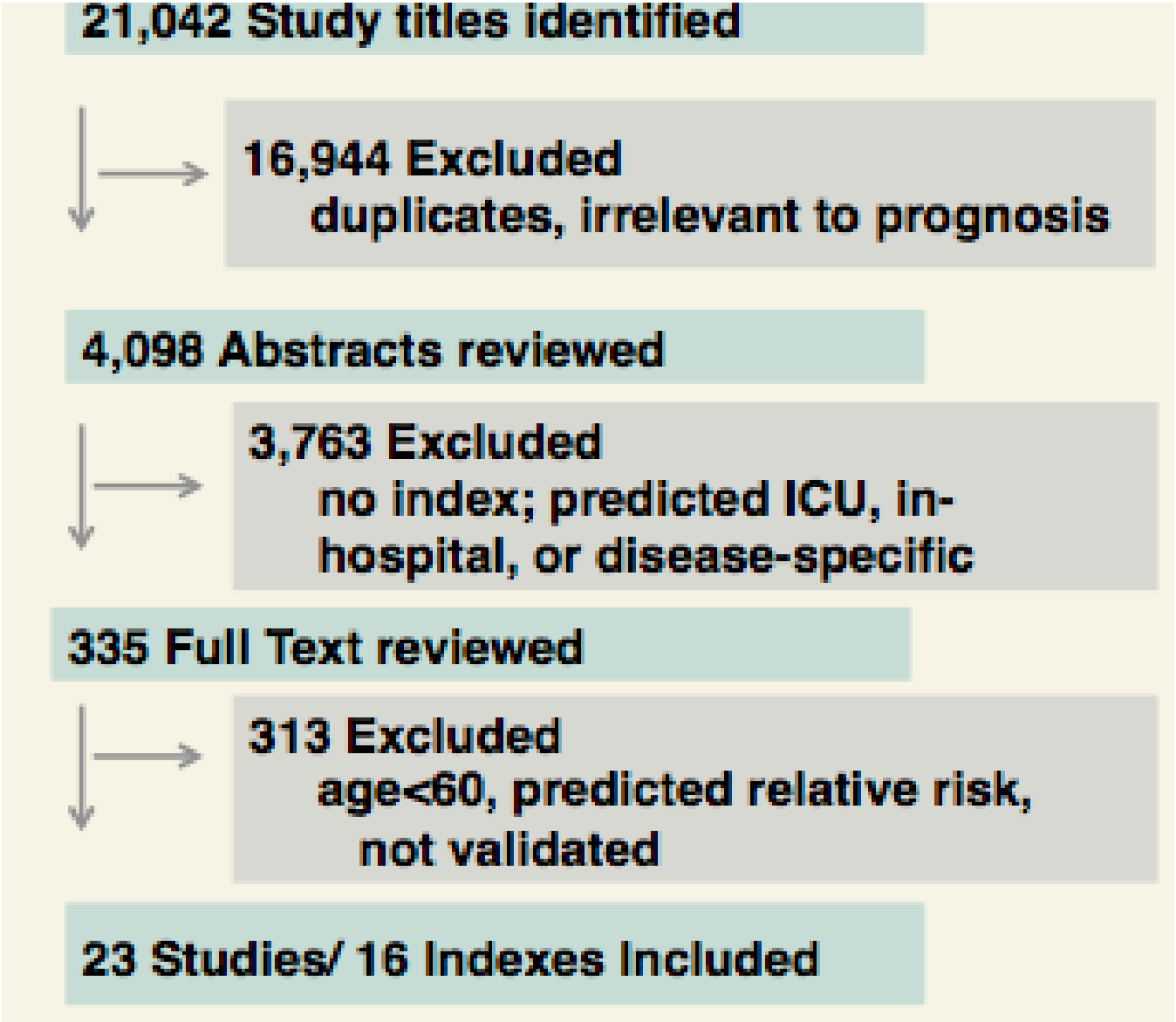
"The necessity of prognostication is heightened by the **asymmetry in knowledge** that exists between the patient and the physician . . . When patients are sick, their interest in diagnosis and therapy is often **secondary to their interest in prognosis** . . . [A prognosticator has obligations] of **truthfulness, disinterestedness, completeness, accuracy, and empathy**. Patients soliciting or receiving prognoses put their faith and trust in physicians, who have a great **technical and moral responsibility** as a result."

Doctor-in-training Determined to Prognosticate

Not just Psychological, but Logistical Barriers, too!



Data Source: PubMed, EMBASE, cochrane, google scholar, emailing author
Study Selection: validated prognostic indices that predict absolute risk of all-cause mortality in patients age >60 with multiple comorbidities



Prognostic Indices for Older Adults
A Systematic Review

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Mara A. Schonberg, MD, MPH
Eric W. Widera, MD
Alexander K. Smith, MD, MS, MPH

Context To better target services to those who may benefit, many guidelines recommend incorporating life expectancy into clinical decisions.

Objective To assess the quality and limitations of prognostic indices for mortality in older adults through systematic review.

Data Sources We searched MEDLINE, EMBASE, Cochrane, and Google Scholar from their inception through November 2011.

- Systematic review
- Identified 16 validated non-disease specific prognostic indices for older adults
- Evaluated quality of published indices (Moderate, Good, Very Good, or Excellent)

What is a Prognostic Index?

Many different names (clinical prediction rules, decision rules, staging systems…, eg. CHADSVASC2, NYHA for CHF)

Definition:

- *A clinical tool that quantifies the contributions that various components of the history, physical exam, and laboratory findings make towards a prognosis*

McGinn, JAMA, 2000

Systematic Review Findings

- **Functional Status** most important predictor

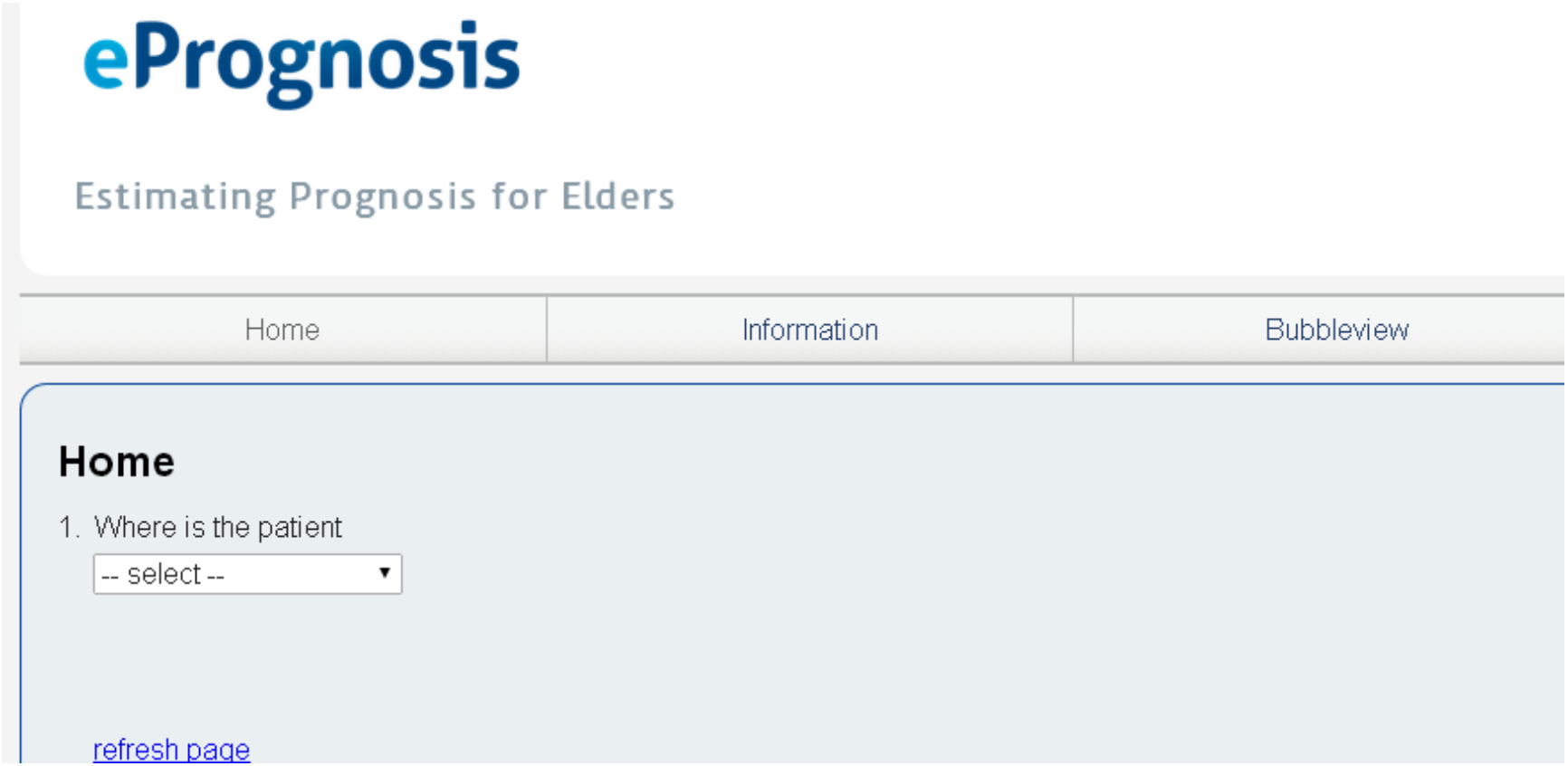
- A few indices were classified as “Very Good”
  - Accurate, validated in large and diverse settings

- None could be graded as “Excellent”
  - Validated by independent investigators, none studied patient outcomes

Systematic Review Conclusions

- Since previous studies suggest
  - Prognostic indices **plus** clinical judgment leads to more accurate estimates than either alone (Christakis & Iwashyna, Arch Intern Med 1998)
- We recommend cautious use of highest quality indices with
  - Clinical factors not captured in index
  - Patient preferences

Or, just take out your handheld, and type www.eprognosis.org



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Case: Ms A

- Ms. A is a 68 year old clinic patient with congestive heart failure, COPD, dependence on others for shopping, and difficulty walking a quarter mile.

- What is your best guess of 5 year mortality risk?

1. <10%
2. 13-23%
3. 35-43%
4. 34-43%
5. 59%
6. >69%

Clinic Chart

- **HISTORY**
- **HPI:** describes health as fair
- **PMH:** CHF, DM2, and COPD w/2 hospitalizations for exacerbation this year
- **Allergies:** none, **Meds:** see list
- **SH:** former smoker. dependence on others for chores and shopping due to shortness of breath, needs help with finances due to mild cognitive impairment
- **PHYSICAL EXAM** 5ft 4 inches, 110lbs BMI 19
- Difficulty pushing a chair across the room

ePrognosis

Home

1. Where is the patient [Clinic (living at home) ▾]
2. What time frame best fits the clinical issue? [4 - 10 years ▾]
3. Is your patient 65 or older? [-- select -- ▾]

ePrognosis

Lee Schonberg Index

- Population: Community dwelling adults aged 50 and older
- Outcome: All cause 4 and 10 year mortality
- Scroll to the bottom for more detailed information

Are you a healthcare professional? ○ No ○ Yes

Risk Calculator

1. How old is your patient?

Select

2. What is the sex of your patient?

Female Male

3. What is your patient's BMI?

Select

4. Which best describes your patient's health in general?

Select

5. Does your patient have chronic lung disease, such as emphysema or chronic bronchitis?

Yes No

6. Has your patient ever had cancer (excluding minor skin cancers)?

Yes No

7. Does your patient have congestive heart failure?

Yes No

8. Does your patient have diabetes or high blood sugar?

Yes No

9. Which best describes your patient's cigarette use?

Select

10. Does your patient have difficulty walking 1/4 mile (several city blocks) without help from other people or special equipment?

Yes No

11. During the past 12 months, how many times was your patient hospitalized overnight?

Select

11. During the past 12 months, how many times was your patient hospitalized overnight?

Select

12. Because of a physical, mental or emotional problem, does your patient need the help of others in handling routine needs such as everyday household chores, doing necessary business, shopping, or getting around for other purposes?

Yes No

13. Because of a health or memory problem, does your patient have difficulty managing money - such as paying bills and keeping track of expenses?

Yes No

14. Because of a health or memory problem, does your patient have difficulty with bathing or showering?

Yes No

15. Because of a health problem, does your patient have difficulty pushing or pulling large objects like a living room chair?

Yes No

Total Lee Index Points: 0

Total Schonberg Index Points: 0

Your best guess of 10 year mortality risk

your guess

Calculate Risk ▶

Results Based on Score:

Your total Schonberg index score is **17**

Your total Lee index score is **13**

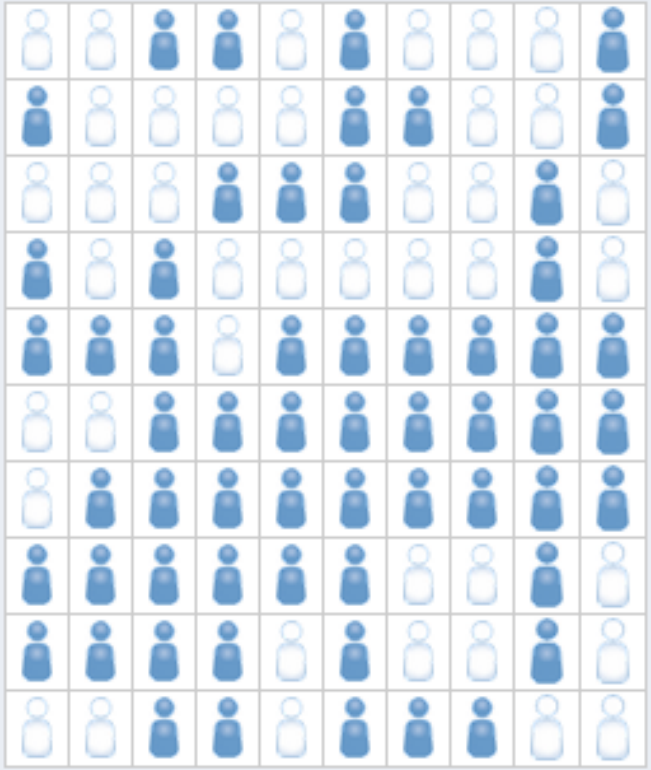
PROGNOSTIC ESTIMATE

Five Year Mortality for Schonberg Index	
Points	**Risk of FIVE YEAR mortality**
0 - 1	2%
2 - 3	4%
4 - 5	6%
6 - 7	9%
8 - 9	13%
10 - 11	23%
12 - 13	35%
14 - 15	43%
16 - 17	59%
≥18	69%

Schonberg 5 year mortality risk:

As illustrated by the graphic below, out of 100 community dwelling adults aged 65 and older with similar answers, 59 will die (shaded) and 41 will survive (un-shaded) over the next 5 years.

Risk calculators cannot predict the future for any one individual. Risk calculators give an estimate of **how many** people with similar risk factors will live and die, but they cannot identify **who** will live and who will die.

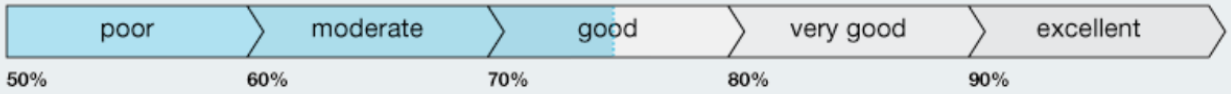


WHAT IT MEANS

Graphic adapted from Han 2011.

Schonberg Index

- This index was developed in 16,077 community dwelling older adults who responded to the 1997-2000 National Health Interview (NHIS) (27% >80 years old, 60% female, 85% white, 17% 5-year mortality)
- The index was internally validated in a random sample of 8038 from respondents from the same data source from 2001-2004(27% >80 years old, 60% female, 85% white, 17% 5-year mortality)
- Discrimination: This risk calculator sorts patients who died from patients who lived correctly 75% of the time (c-statistic). The discrimination was the same in the independent validation study.



- Calibration: The model was well calibrated across all risk levels with less than 10% difference between estimated and actual mortality.

Citations

- Lee SJ, Lindquist K, Segal MR, Covinsky KE. Development and validation of a prognostic index for 4-year mortality in older adults. JAMA. 2006 Feb 15;295(7):801-808.
- Schonberg MA, Davis RB, McCarthy EP, and Marcantonio ER. Index to predict 5-year mortality of community dwelling adults aged 65 an older using data from the National Health Interview Survey. J Gen Intern Med. 2009;24(10):1115-1022.

RELEVANCE FOR THE PATIENT IN FRONT OF YOU?

Would you recommend Ms. A. get screened for colorectal cancer?

If Ms. A.'s life-expectancy is <5 years,

AND

TTB of colorectal cancer screening is >5 years,

then harms of screening may >>> benefits

- Consider screening Ms. A. for conditions that are likely to affect her within her lifetime, such as hearing loss, incontinence, and mobility.

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Decision Aids

Decision Aids that Consider Prognosis

Decision aid for colon cancer screening:

For women 70-74: English

For women 75-79: English

For women 80-84: English

For men 70-74: English

For men 75-79: English

For men 80-84: English

Purpose of this decision aid: This decision aid is designed to help patients decide whether getting screened for colon cancer is the right choice for them.

Decision aid for mammography screening for women aged 75 and older:

For women 75-84: English Spanish English (low Literacy) Spanish (low Literacy)

For women 85 and older: English Spanish

Purpose of this decision aid: This decision aid is designed to help women aged 75 and older weigh the benefits and risks of mammography screening and to make a more informed decision with their doctor about whether or not to continue having mammograms.

Decision aid for device for patients with advanced heart failure:

Booklet English Spanish French

Video: English

Purpose of this decision aid: LVADs are devices for patients with advanced heart failure. This page is designed to help you understand what an LVAD is and to help you, your family, and your doctors think about what is best for you. Your values and goals are the most important factors in making a decision.

Decision aid for patients considering ICD therapy for primary prevention:

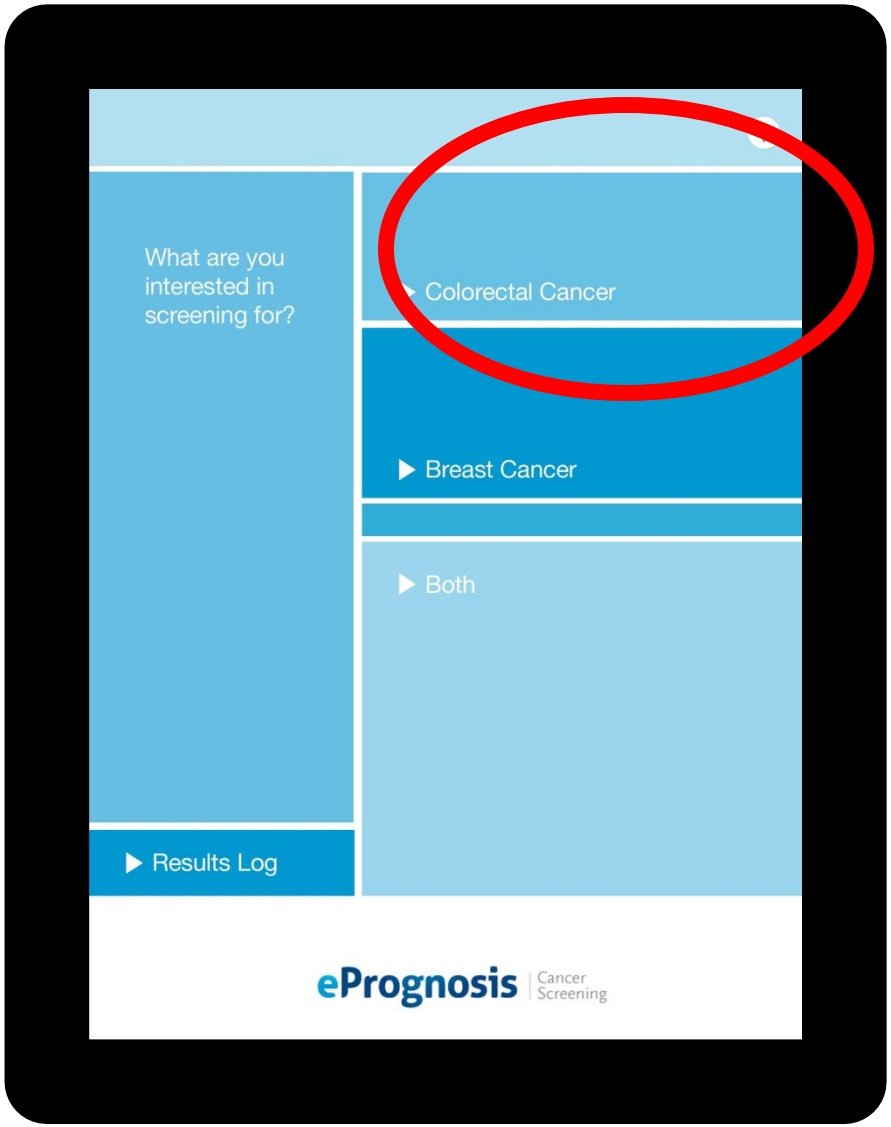
Booklet English Spanish

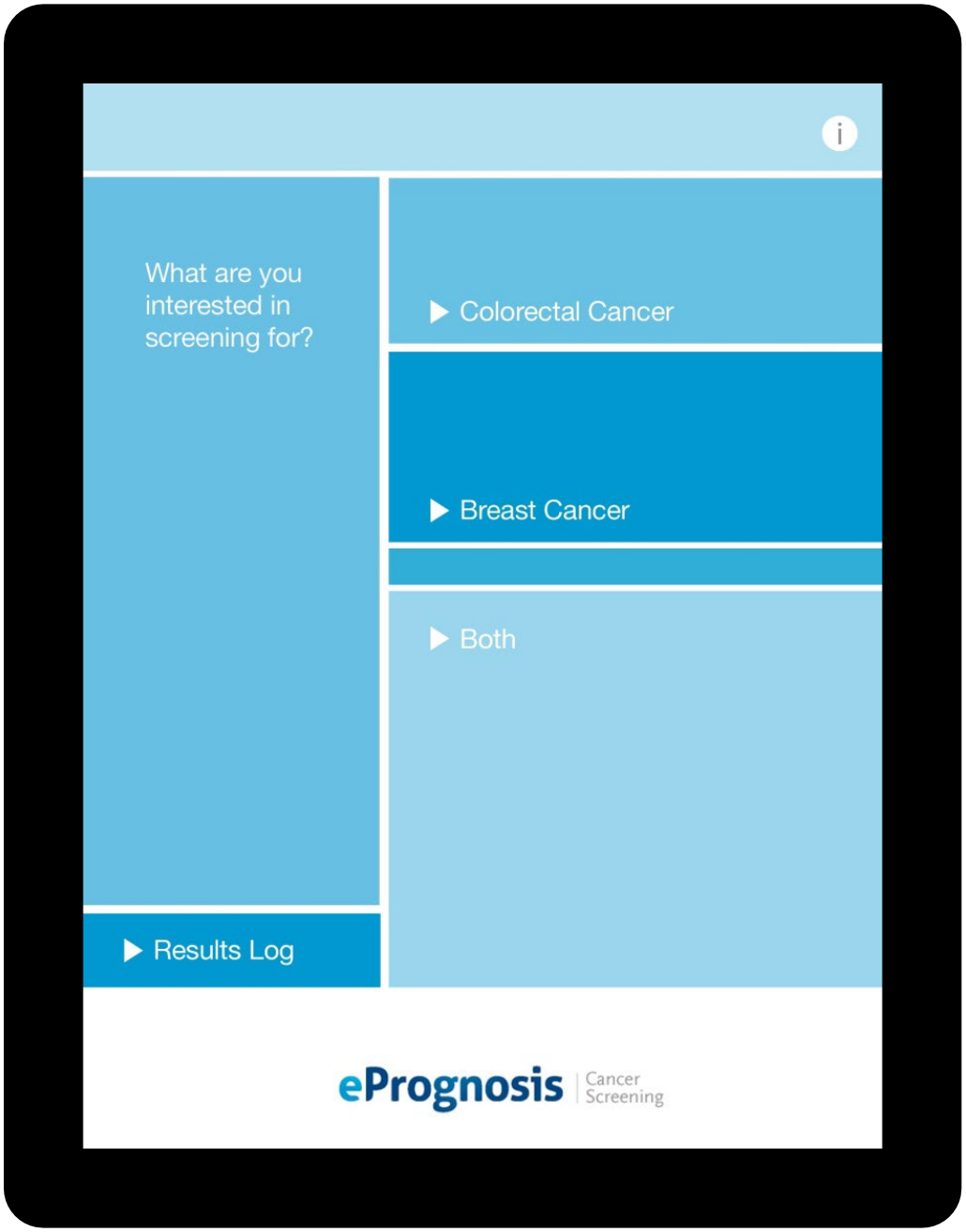
Video: English

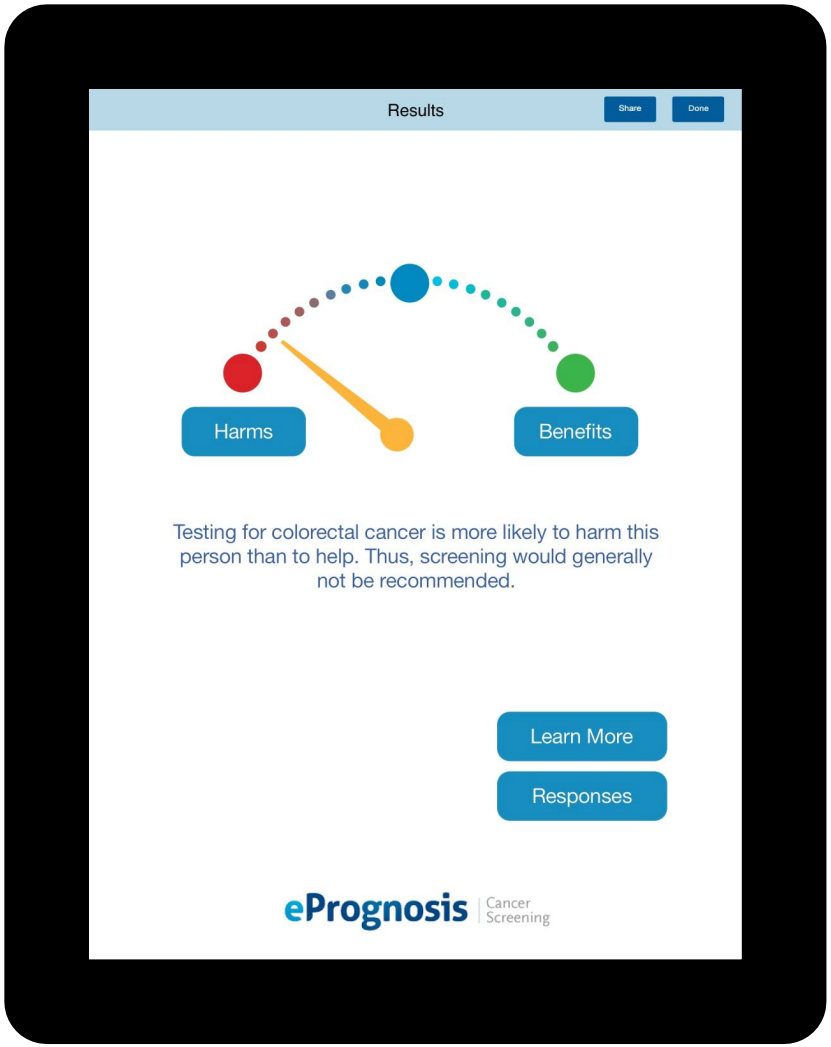
Purpose of this decision aid: This decision aid is for patients with heart failure considering an ICD who are at risk for sudden cardiac death (primary prevention). This website will lead you step-by-step through some information on ICDs that may be helpful. We also hope this will make talking to your doctor easier.

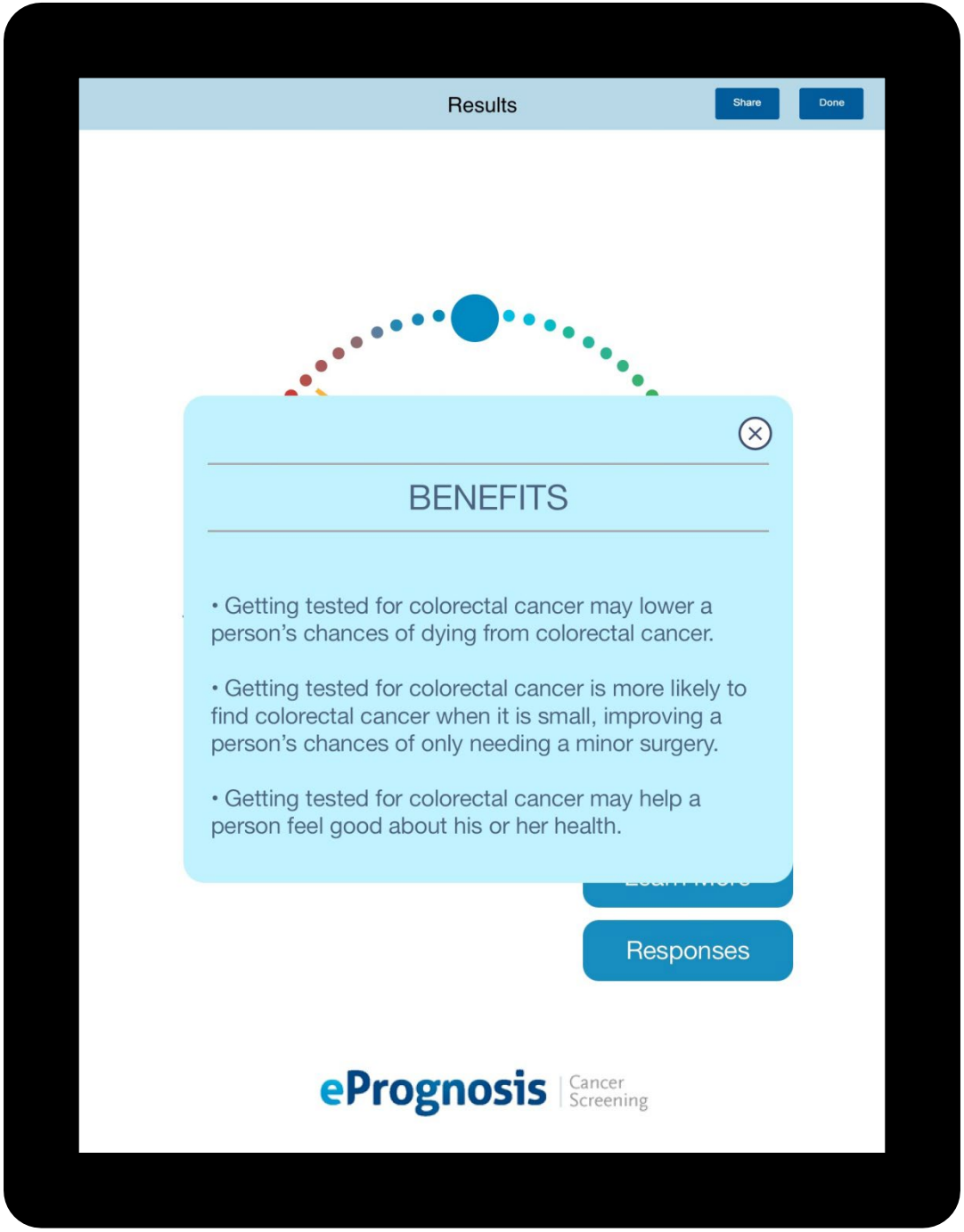
Point of Care

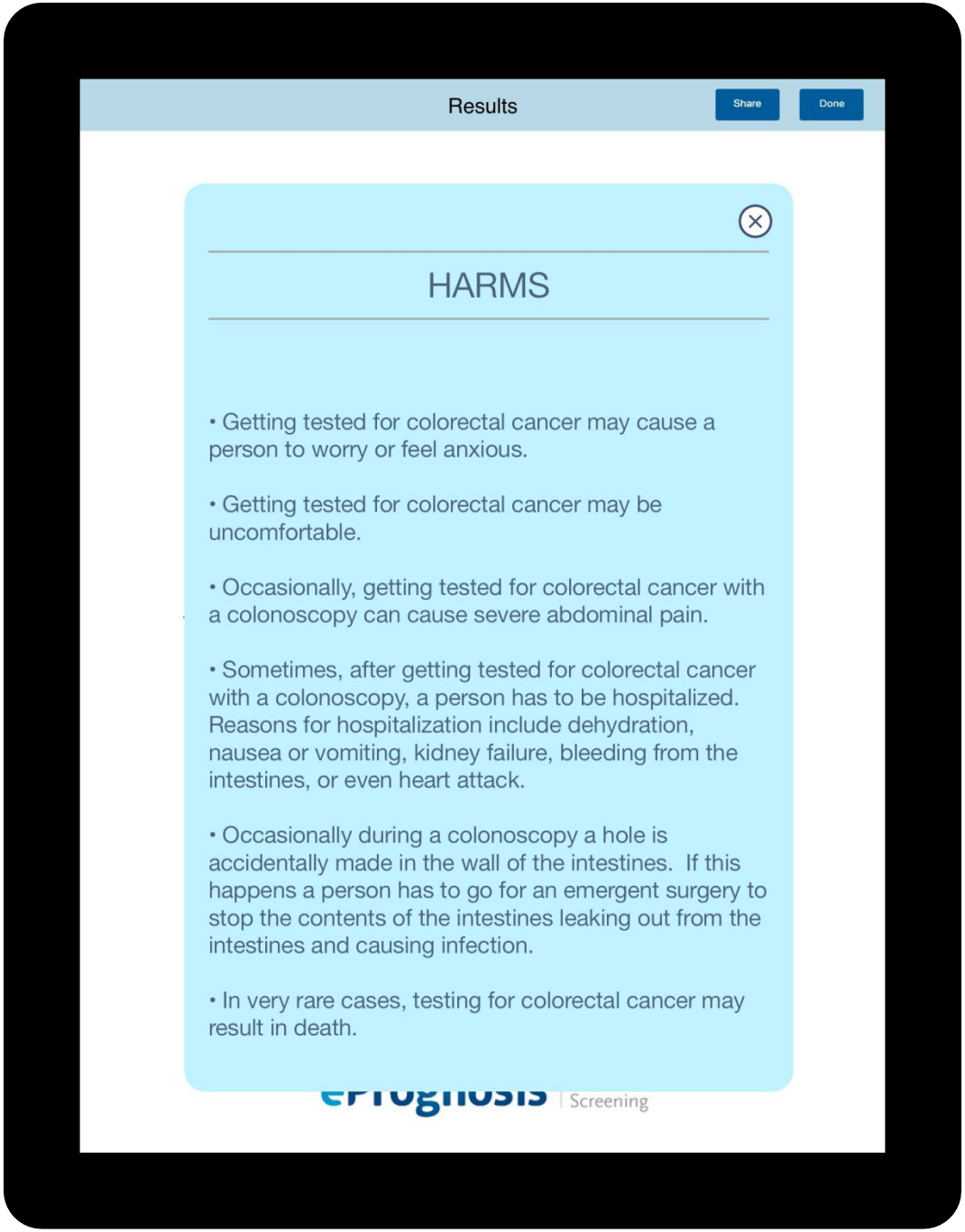
Cancer Screening




What are you interested in screening for?
Colorectal Cancer
Breast Cancer
Both
Results Log
ePrognosis
Cancer Screening


Results
Share
Done
Harms
Benefits
Testing for colorectal cancer is more likely to harm this person than to help. Thus, screening would generally not be recommended.
Learn More
Responses
ePrognosis
Cancer Screening


Results
Share
Done
BENEFITS
• Getting tested for colorectal cancer may lower a person's chances of dying from colorectal cancer.
• Getting tested for colorectal cancer is more likely to find colorectal cancer when it is small, improving a person's chances of only needing a minor surgery.
• Getting tested for colorectal cancer may help a person feel good about his or her health.
Responses
ePrognosis
Cancer Screening


Results
Share
Done
HARMS
• Getting tested for colorectal cancer may cause a person to worry or feel anxious.
• Getting tested for colorectal cancer may be uncomfortable.
• Occasionally, getting tested for colorectal cancer with a colonoscopy can cause severe abdominal pain.
• Sometimes, after getting tested for colorectal cancer with a colonoscopy, a person has to be hospitalized. Reasons for hospitalization include dehydration, nausea or vomiting, kidney failure, bleeding from the intestines, or even heart attack.
• Occasionally during a colonoscopy a hole is accidentally made in the wall of the intestines. If this happens a person has to go for an emergent surgery to stop the contents of the intestines leaking out from the intestines and causing infection.
• In very rare cases, testing for colorectal cancer may result in death.
ePrognosis
Screening

Communication about Prognosis

To incorporate prognosis in communication with patients

"You've got six months, but with aggressive treatment we can help make that seem much longer."

Some patients want to discuss

75% of patients wanted to discuss prognosis with their doctor

Domain	Quote
Financial	"I would take money out of the bank and see who I could give it to." (Latino man, age 84)
Spiritually	"I need to prepare for eternity. If I can change something for the better, it's my opportunity to do so. If I don't know, I couldn't reform." (White woman, age 78)
Friends and Family	"I would talk and spend time with my family and friends more. I would talk to the people close to me. Finish all the unfinished business." (Chinese-American woman, age 76)

Ahalt et al., JGIM 2011

Some patient's don't want to discuss

25% said they would prefer NOT to discuss prognosis with their doctor

Domain	Quote
Emotionally Difficult	"If you are told you only have so long to live, you will get depressed. You will go downhill thinking you will only reach a certain age." (Latino man, age 66)
Irrelevant	"I would not change what I am doing and my children wouldn't either . . . I don't think I would feel good . . ." (Latino woman, age 86
Doctors don't know	"I wouldn't believe it . . . [doctors are] just guessing, God is the only one knows." (African-American woman, age 88

Ahalt et al., JGIM 2011

Perspectives from older adults

- Many are open to tailoring clinical decisions to individual health status/functional status
  - Ex: amenable to stop cancer screening
- BUT age + health status + functional status ≠ life expectancy
- Heterogeneous opinions on whether clinicians can estimate prognosis or whether prognosis should be discussed

Schoenborn NL, Lee K, Pollack CE, Armacost K, Dy S, Bridges JF, Xue QL, Wolff A, Boyd, C. Older adults' views and communication preferences around cancer screening cessation JAMA Intern Med. 2017;177(8): 1121-1128.

Message framing was important

This test will not help you live longer.

You may not live long enough to benefit from the test.

Main Points

1. **Identify clinical decisions where prognosis is critical**

   - Hospice, Preventative Care, Life-Planning

2. **Describe how clinicians prognosticate today**

   - Unequipped to formulate, often don't communicate

2. **Use web-based tools to estimate prognosis**

   - supplement, not replace, clinical judgment

4. **Apply a prognostic estimate to a clinical situation**

   - for Ms. A., prioritizing Geriatric screening

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- Mara Schonberg, MD
- Sei Lee, MD
- Nancy Schoenb