International Cancer Screening Network (ICSN)

Rachel Ballard-Barbash, MD, MPH
Emily Dowling, MHS
for the ICSN Planning Committee

Applied Research Program
National Cancer Institute
Bethesda, MD USA
http://appliedresearch.cancer.gov

2010 Planning Committee Members

- Julietta Patnick (co-chair)
- Rachel Ballard-Barbash (co-chair)
- Mireille Broeders
- Emily Dowling
- Carrie Klabunde
- Elsebeth Lynge
- Verna Mai
- Sue Moss
- Annie Sampson
- Kathy Sedgwick
- Nereo Segnan
- Robert Smith
- Stephen Taplin
- Ann Zauber

Background & History

- Established (1988) as the International Breast Cancer Screening Database Project
  - Sponsored by U.S. National Cancer Institute
  - Hold biennial meetings with working group meetings interspersed
- Purpose revised (1997): foster collaborative efforts aimed at:
  - Using/comparing data from mammography programs
  - Developing methods for evaluating impact of these programs
- Name changed (1997) to the International Breast Cancer Screening Network (IBSN) to reflect changed purpose
- Name changed (2006) to the International Cancer Screening Network (ICSN) to reflect expansion to other cancer sites
- Network expanded to include 33 countries

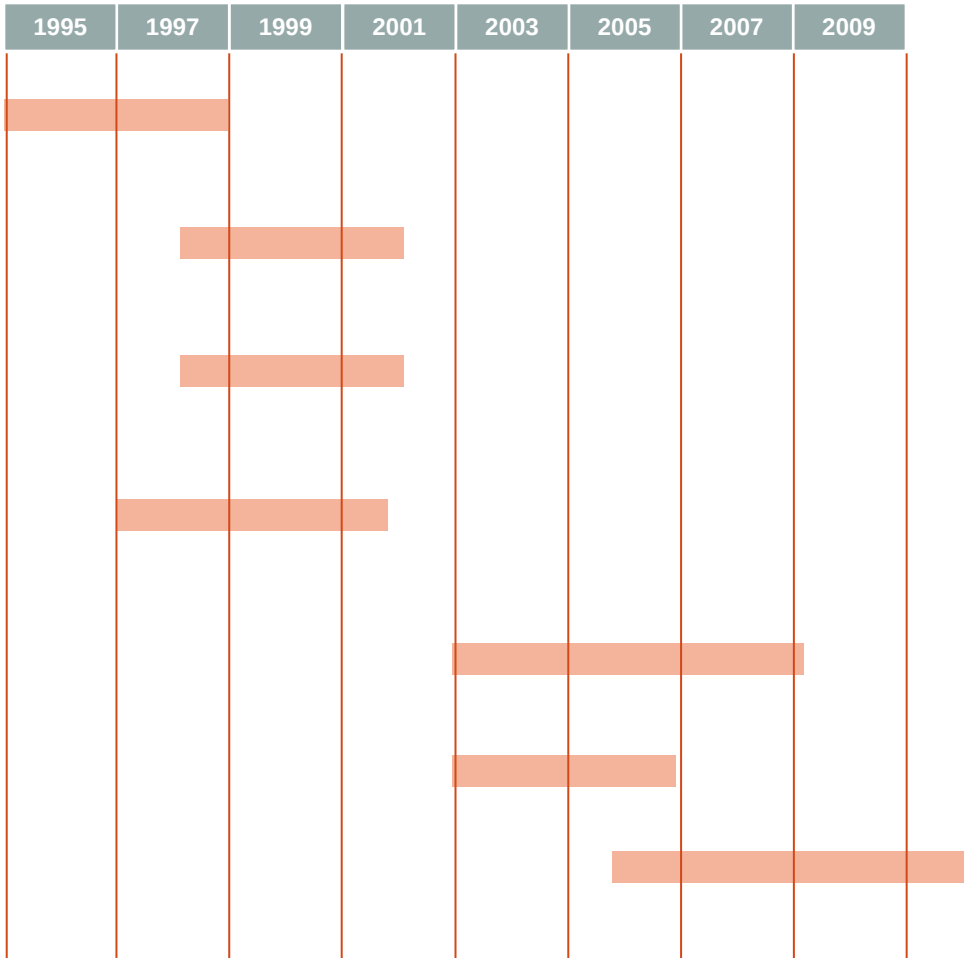
ICSN Participating Countries

Europe	Americas	Asia	Middle East	Oceania
Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Luxembourg, Netherlands, Norway, Poland,* Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom	Brazil Canada United States Uruguay	Japan Korea Taiwan Malaysia	Saudi Arabia	Australia New Zealand

* New Member

Completed Working Groups

- Program Assessment - Ballard-Barbash/ Broeders
- Mortality Evaluation (MEG) - Nyström/ Moss
- Performance Parameters Evaluation (PEG) - Yankaskas
- Quality Assurance - Klabunde/Ballard-Barbash
- Performance Parameters Evaluation (PEG II) - Fracheboud
- Communications - Geller
- Hormone Therapy & Breast Density - Cox



Recent Publications

ORIGINAL ARTICLE

Comparing interval breast cancer rates in Norway and North Carolina: results and challenges

Solveig Hofvind, Bonnie C Yankaskas, Jean-Luc Bulliard, Carrie N Klabunde and Jacques Fracheboud

J Med Screen 2009;**16**:131–139
DOI: 10.1258/jms.2009.009012

Objective To compare interval breast cancer rates (ICR) between a biennial organized screening programme in Norway and annual opportunistic screening in North Carolina (NC) for different conceptualizations of interval cancer.
Setting Two regions with different screening practices and performance.
Methods 620,145 subsequent screens (1996–2002) performed in women aged 50–69 and 1280 interval cancers were analysed. Various definitions and quantification methods for interval cancers were compared.
Results ICR for one year follow-up were lower in Norway compared with NC both when the rate was based on all screens (0.54 versus 1.29 per 1000 screens), negative final assessments (0.54 versus 1.29 per 1000 screens), and negative screening assessments (0.53 versus 1.28 per 1000 screens). The rate of ductal carcinoma *in situ* was significantly lower in Norway than in NC for cases diagnosed in both the first and second year after screening. The distributions of histopathological tumour size and lymph node involvement in invasive cases did not differ between the two regions for interval cancers diagnosed during the first year after screening. In contrast, in the second year after screening, tumour characteristics remained stable in Norway but became prognostically more favorable in NC.
Conclusion Even when applying a common set of definitions of interval cancer, the ICR was lower in Norway than in NC. Different definitions of interval cancer did not influence the ICR within Norway or NC. Organization of screening and screening performance might be major contributors to the differences in ICR between Norway and NC.

See end of article for authors' affiliations

Correspondence to: Solveig Hofvind PhD, Department of Screening Based-research, The Cancer Registry of Norway, NO-0310 Oslo, Norway; solveig.hofvind@kreftregisteret.no

Accepted for publication 27 May 2009

Hofvind S et al. Comparing interval breast cancer rates in Norway and North Carolina: results and challenges. J Med Screen. 2009; 16 (3): 131-9.

Recent Publications: Self-Reported Information on HT Use

Country	At Current screen HT use recorded	Current use of HRT	Ever HT use	Combined HT and progestin alone recorded separately	Age Started	Duration in years	Linkage possible	Menopausal state recorded at screen
Australia	Yes	Yes					Yes	
Canada	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Denmark	Yes	Yes					Yes	
Finland	Yes	Yes	Yes	Yes			Yes	
Israel	Yes	Yes	Yes		Yes			Yes
New Zealand	No	No	No	No	No	No	Yes	No
Norway	Yes	Yes	Yes	Yes	Yes		Yes	
Switzerland	Yes		Yes	Yes	Yes	Yes	No	Yes
United States	Yes	Yes	Some	Yes	Some	Some	Yes	Yes

Cox B et al. Recording of hormone therapy and breast density in breast screening programs: summary and recommendations of the International Cancer Screening Network. Breast Cancer Res Treat. 2010 Apr 23

Recent Publications: Recording of Breast Density

Country	BD collected at screen	Only at first screen	Measure used	Available by age group	Moving to full-field digital	Computerized radiography used
Australia	No				Some	Some
Canada	Yes	No			Some	Some
Denmark	Yes		Fatty or Mixed	Yes	All since 2007	Not used
Finland	Yes	No			Some	Some
Germany	Yes				Some	Some
Israel	Yes		4 descr. categories		Some	Some
Japan	No				Some	Some
New Zealand	No					
Norway	No		<30%, 30-70%, >70%		Some	Not used
Switzerland	Yes	No	4 descr. categories	Yes	Some	
UK	No				Some	Some
United States	Yes	No	BI-RADS, MRS, Wolfe, dichotomous, other 4 category, continuous	Yes	Some since 2001	Some
Czech Republic	Yes	No	Tabar classification	Yes	Some	Some

Cox B et al. Recording of hormone therapy and breast density in breast screening programs: summary and recommendations of the International Cancer Screening Network. Breast Cancer Res Treat. 2010 Apr 23

Web Updates

- Updates of Program Practices and Policies
  - Initiated in 2002
  - Contact ICSN country representatives every 2-3 years for information about screening program status
  - Post selected data on ICSN website
- 2007-2008 assessment included breast and cervical screening programs
- Submitted publication: *Breast and Cervical Cancer Screening Program Implementation in 16 Countries*

2007-2008 ICSN Program Assessment: Breast

	Program Type	Year Program Began	Detection Methods	Age Groups Covered	Recommended Interval for Average Risk (under 70) for Mammography	
Country					**Age 40-49**	**Age 50+**
Australia	NS	1991	MM	50-69*	NA	2 years
Brazil	NS	2000	MM, CBE	40-69	NA	2 years
Canada	NS	1988	MM, DM, CBE	50-69	1 year	2 years
Denmark	S	1991	MM, DM	50-69	NA	2 years
Finland	N	1986	MM, DM	50-69	NA	2 years
France	N	2003	MM, CBE	50-74	NA	2 years
Hungary	N	2002	MM	45-64	2 years	2 years
Iceland	N	1987	MM, DM	40-69**	2 years	2 years
Ireland	N	2000	MM, DM	50-64	2 years	2 years
Italy	NS	2002	MM	50-69	NA	2 years
Japan	N	2000	MM, DM, CBE	40-75+	2 years	2 years
Korea	N	2002	MM	40-75+	2 years	2 years
New Zealand	N	1998	MM, DM	45-69	2 years	2 years
Norway	N	1996	MM, DM	50-69	NA	2 years
United Kingdom	N	1988	MM, DM	50-70	NA	3 years
Uruguay	O	1990	MM, CBE, BSE	40-69	2 years	1 year

2007-2008 ICSN Program Assessment: Cervical

Country	Program Type	Year Program Began	Detection Methods	Age Groups Covered	Recommended Interval for Average Risk (under 70)
Australia	NS	1991	PC	20-69	2 years
Brazil	NS	1998	PC	25-59	3 years
Canada	S	1988	PLC, PC	15-69	Varies by prov.
Denmark	NS	1962	PLC, PC	20-59	3 years
Finland	N	1963	PC	30-59	5 years
France	S	1990	PC	25-69	3 years
Hungary	N	2003	PC	25-59	3 years
Iceland	N	1964	PLC, PC	20-69	2 years (20-69); 4 years (40-69)
Ireland	P	2000	PLC	25-69	3 years (25-44); 5 years (45-60)
Italy	NS	1996	PLC, PC, HPV-T	25-69	3 years
Japan	NS	1983	PC	20-70+	2 years
Korea	N	2002	PC	30-70+	2 years
New Zealand	N	1990	PLC, PC	20-69	3 years
Norway	N	1995	PC, HPV-T	25-69	3 years
United Kingdom	N	1987	PLC, PC	25-64	3 years (25-49); 5 years (50-64)
Uruguay	S	1994	PLC, PC	30-70+	3 years

Current Working/Interest Groups

ICSN Working Groups

- DCIS and Quality of Care
  - Stephen Taplin and Antonio Ponti
- Screening Participation Rates
  - Carrie Klabunde and Verna Mai
- Biomarkers
  - Rachel Ballard-Barbash

Ancillary Interest Groups

- Radiology Feedback
  - Berta Geller
- International Test Sets
  - Bonnie Yankaskas

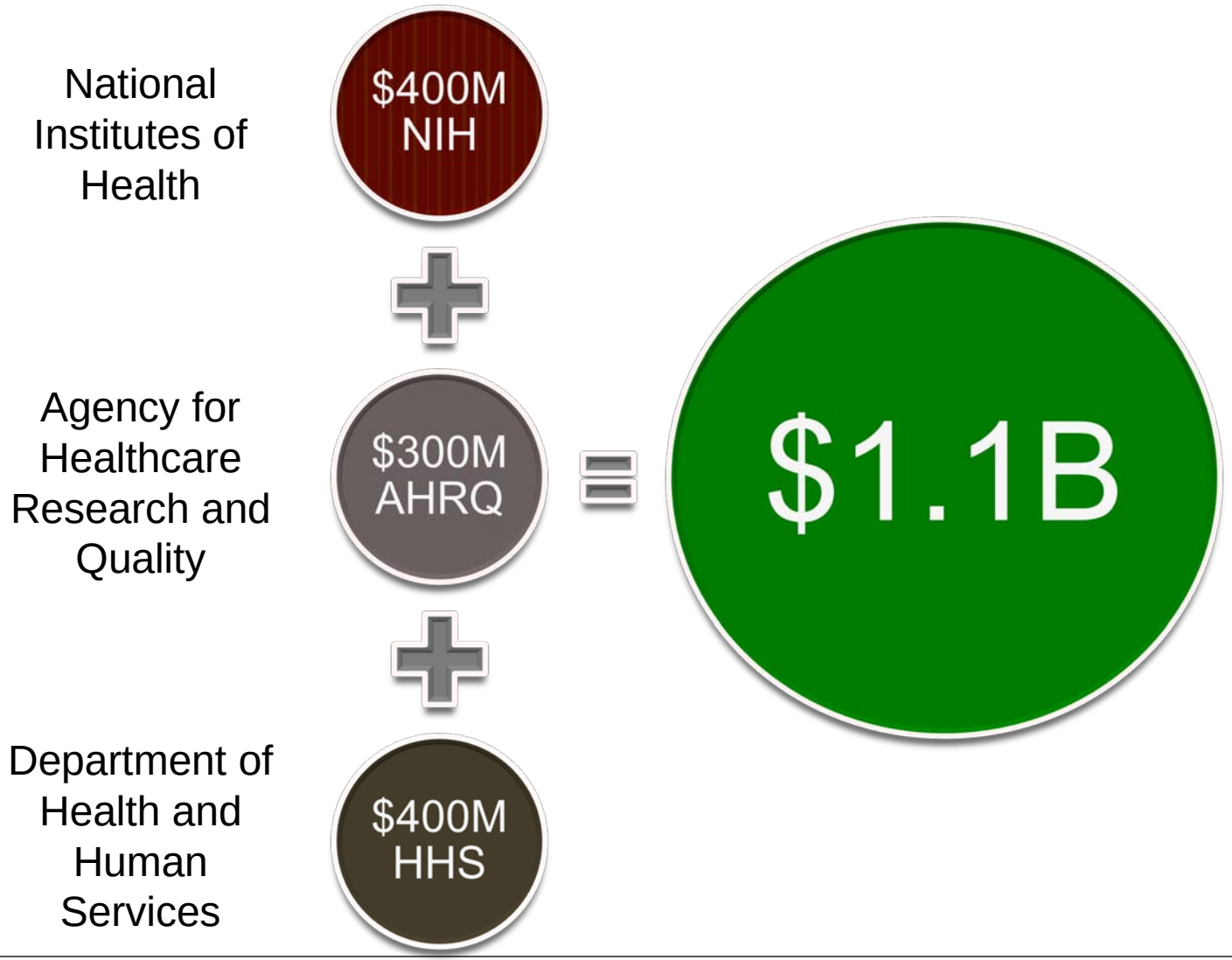
CER Definition - U.S. Federal Government

The conduct and synthesis of research comparing the benefits and harms of different interventions and strategies to prevent, diagnose, treat and monitor health conditions in “real world” settings. The purpose of this research is to improve health outcomes by developing and disseminating evidence-based information to patients, clinicians, and other decision-makers, responding to their expressed needs, about which interventions are most effective for which patients under specific circumstances.

- To provide this information, comparative effectiveness research must assess a comprehensive array of health-related outcomes for diverse patient populations and subgroups.
- Defined interventions compared may include medications, procedures, medical and assistive devices and technologies, diagnostic testing, behavioral change, and delivery system strategies.
- This research necessitates the development, expansion, and use of a variety of data sources and methods to assess comparative effectiveness and actively disseminate the results.

- http://www.hhs.gov/recovery/programs/cer/index.html

CER U.S. Federal Government Funding Allocation - 2009

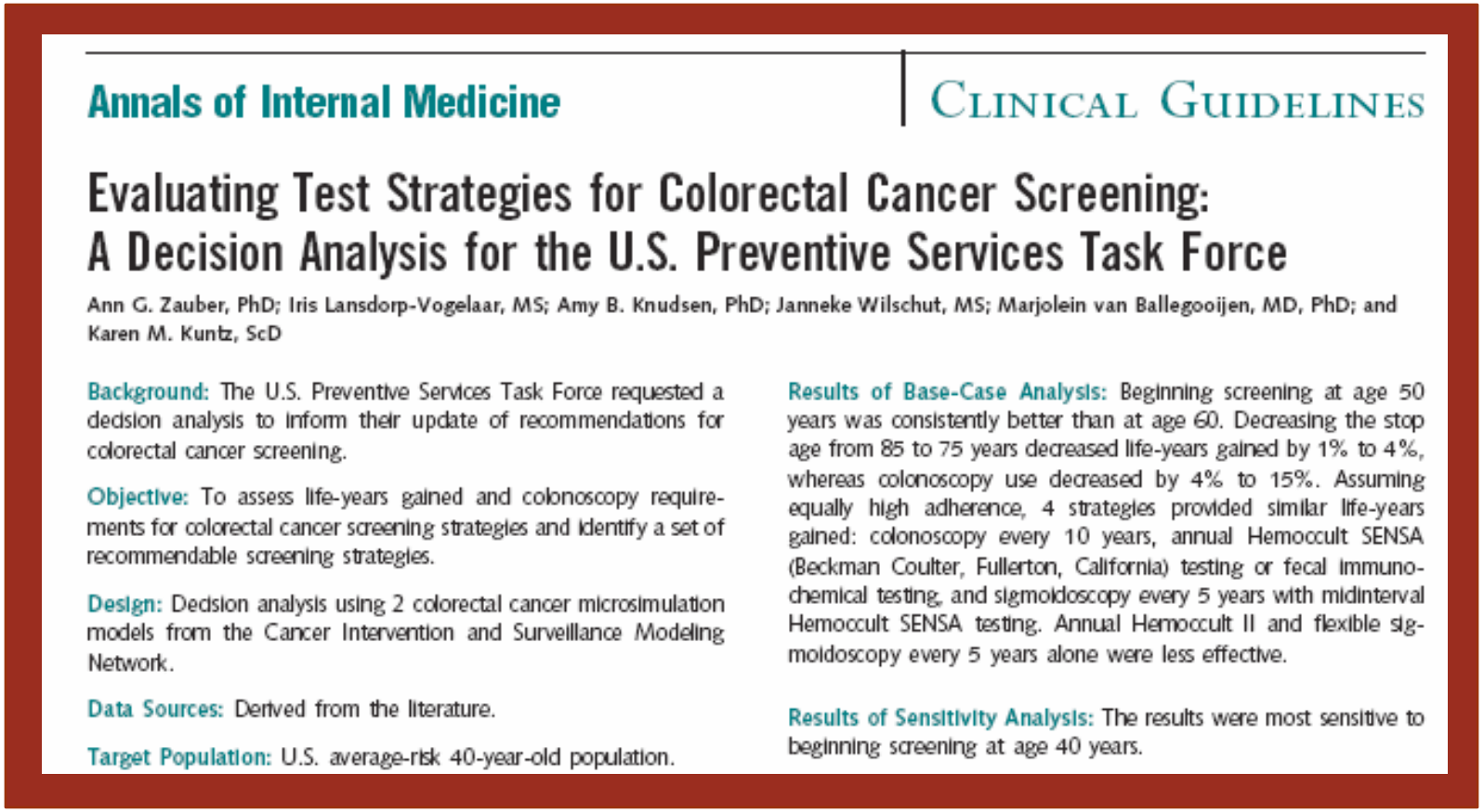


Examples of National Cancer Institute Grants Funded with CER Funds

- CYCORE: Cyberinfrastructure for Comparative effectiveness Research
- ADVICE: Advancing Innovative Comparative Effectiveness research-cancer diagnostics
- Comparative Effectiveness of Advanced Imaging in Cancer
- Comparative Effectiveness of Breast Imaging Strategies in Community Practice
- REACT: Research on the Effectiveness of Advanced Cancer Treatment
- SEARCH: Cancer Screening Effectiveness and Research in Community-based Healthcare

Recent Cancer Screening Research

Stopping Rules for Screening Colonoscopy



Annals of Internal Medicine | CLINICAL GUIDELINES

Evaluating Test Strategies for Colorectal Cancer Screening: A Decision Analysis for the U.S. Preventive Services Task Force

Ann G. Zauber, PhD; Iris Lansdorp-Vogelaar, MS; Amy B. Knudsen, PhD; Janneke Wilschut, MS; Marjolein van Ballegooijen, MD, PhD; and Karen M. Kuntz, ScD

Background: The U.S. Preventive Services Task Force requested a decision analysis to inform their update of recommendations for colorectal cancer screening.

Objective: To assess life-years gained and colonoscopy requirements for colorectal cancer screening strategies and identify a set of recommendable screening strategies.

Design: Decision analysis using 2 colorectal cancer microsimulation models from the Cancer Intervention and Surveillance Modeling Network.

Data Sources: Derived from the literature.

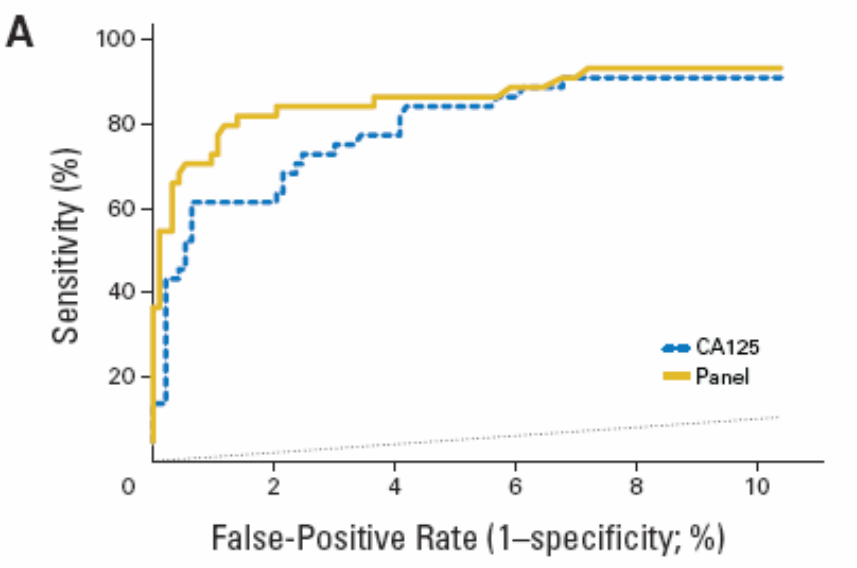
Target Population: U.S. average-risk 40-year-old population.

Results of Base-Case Analysis: Beginning screening at age 50 years was consistently better than at age 60. Decreasing the stop age from 85 to 75 years decreased life-years gained by 1% to 4%, whereas colonoscopy use decreased by 4% to 15%. Assuming equally high adherence, 4 strategies provided similar life-years gained: colonoscopy every 10 years, annual Hemoccult SENSA (Beckman Coulter, Fullerton, California) testing or fecal immunochemical testing, and sigmoidoscopy every 5 years with midinterval Hemoccult SENSA testing. Annual Hemoccult II and flexible sigmoidoscopy every 5 years alone were less effective.

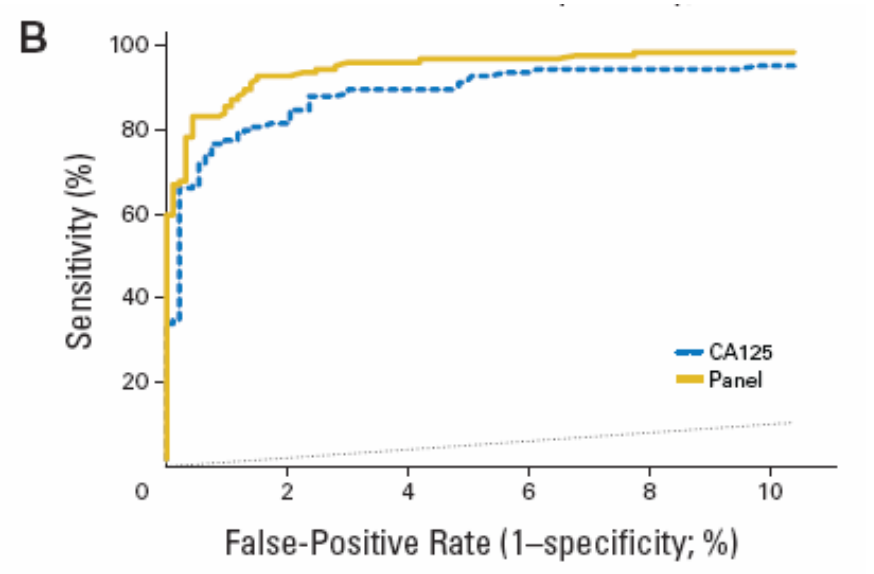
Results of Sensitivity Analysis: The results were most sensitive to beginning screening at age 40 years.

Zauber A et al. Evaluating test strategies for colorectal cancer screening: A decision analysis for the U.S. Preventive Services Task Force. Ann Intern Med. 2008 November 4; 149(9):659-669.

Biomarkers: Multimarker Assays for Ovarian Cancer Detection



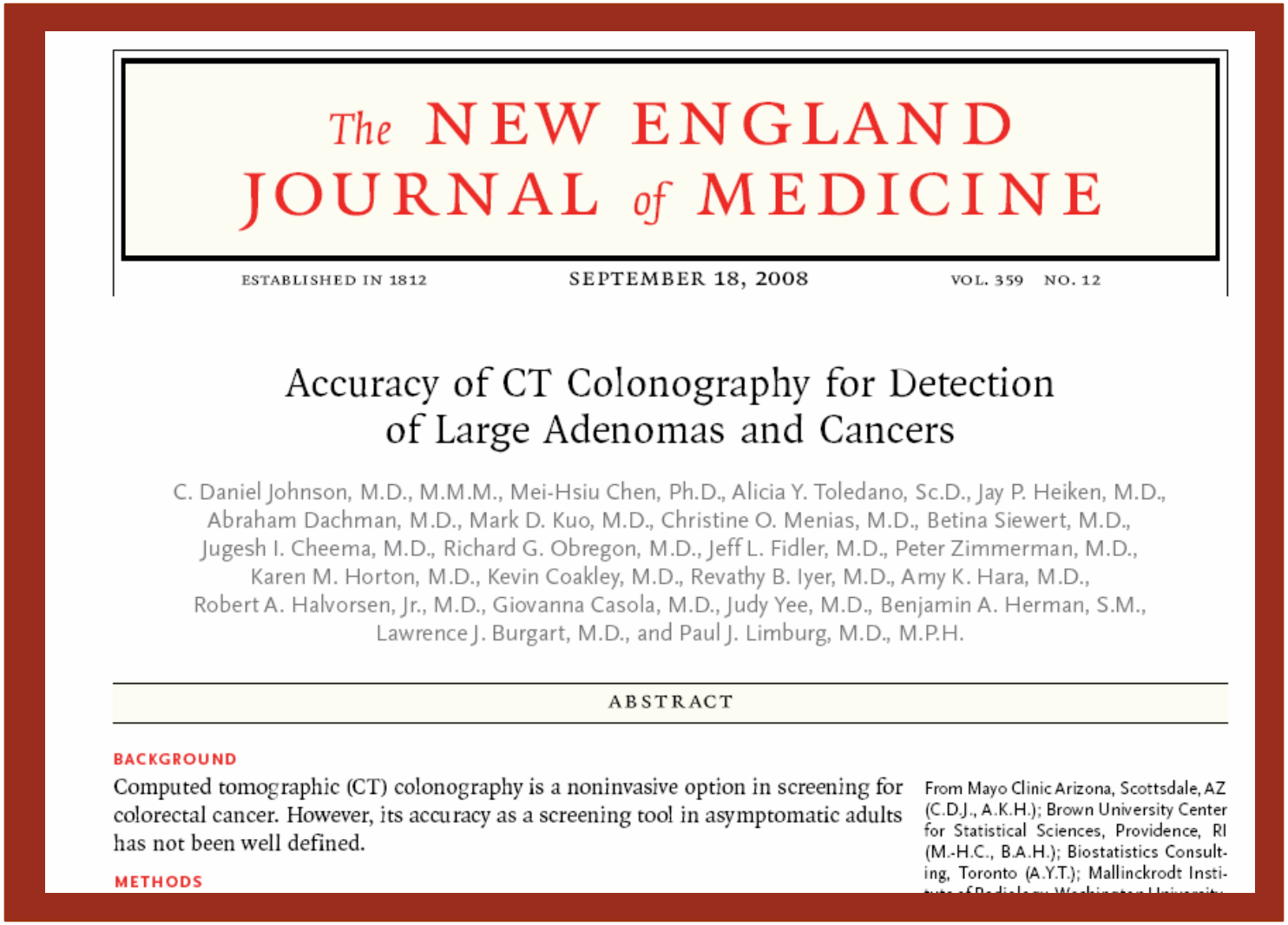
Healthy Controls vs. Stage I to IIB



Healthy Controls vs. Stage IIC to IV

Yurkovetsky Z et al. Development of a Multimarker Assay for Early Detection of Ovarian Cancer. J Clin Oncol 2010 May 1; 28:2159-2166.

Accuracy of CT Colonography



The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 SEPTEMBER 18, 2008 VOL. 359 NO. 12

Accuracy of CT Colonography for Detection of Large Adenomas and Cancers

C. Daniel Johnson, M.D., M.M.M., Mei-Hsiu Chen, Ph.D., Alicia Y. Toledano, Sc.D., Jay P. Heiken, M.D., Abraham Dachman, M.D., Mark D. Kuo, M.D., Christine O. Menias, M.D., Betina Siewert, M.D., Jugesh I. Cheema, M.D., Richard G. Obregon, M.D., Jeff L. Fidler, M.D., Peter Zimmerman, M.D., Karen M. Horton, M.D., Kevin Coakley, M.D., Revathy B. Iyer, M.D., Amy K. Hara, M.D., Robert A. Halvorsen, Jr., M.D., Giovanna Casola, M.D., Judy Yee, M.D., Benjamin A. Herman, S.M., Lawrence J. Burgart, M.D., and Paul J. Limburg, M.D., M.P.H.

ABSTRACT

BACKGROUND

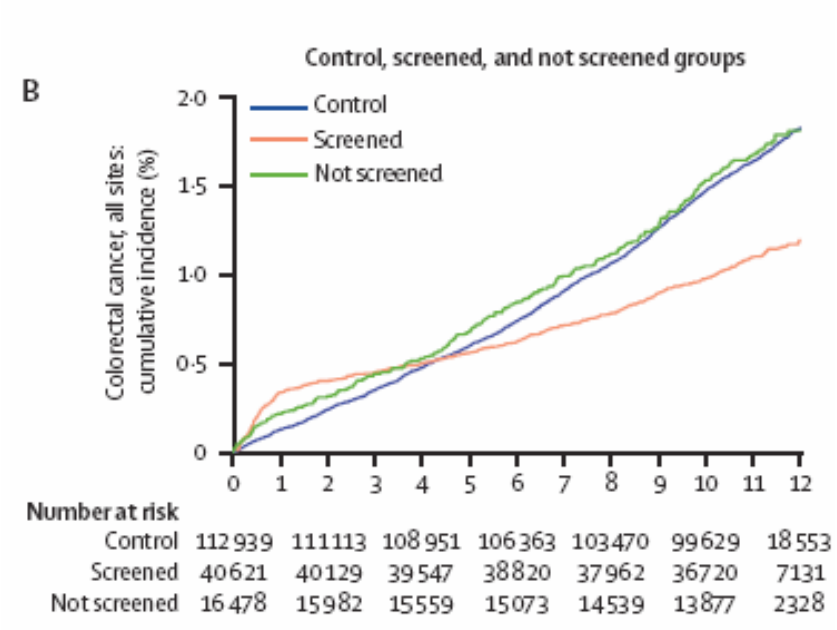
Computed tomographic (CT) colonography is a noninvasive option in screening for colorectal cancer. However, its accuracy as a screening tool in asymptomatic adults has not been well defined.

METHODS

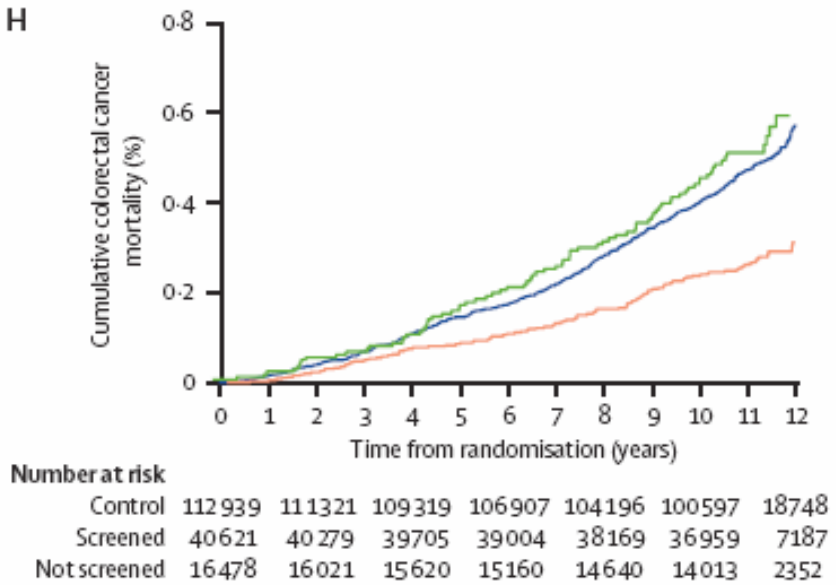
From Mayo Clinic Arizona, Scottsdale, AZ (C.D.J., A.K.H.); Brown University Center for Statistical Sciences, Providence, RI (M.-H.C., B.A.H.); Biostatistics Consulting, Toronto (A.Y.T.); Mallinckrodt Insti-

Johnson CD et al. Accuracy of CT Colonography for Detection of Large Adenomas and Cancers. N Engl J Med. 2008 Sep 18; 359(12): 1207-17.

Flexible Sigmoidoscopy RCT



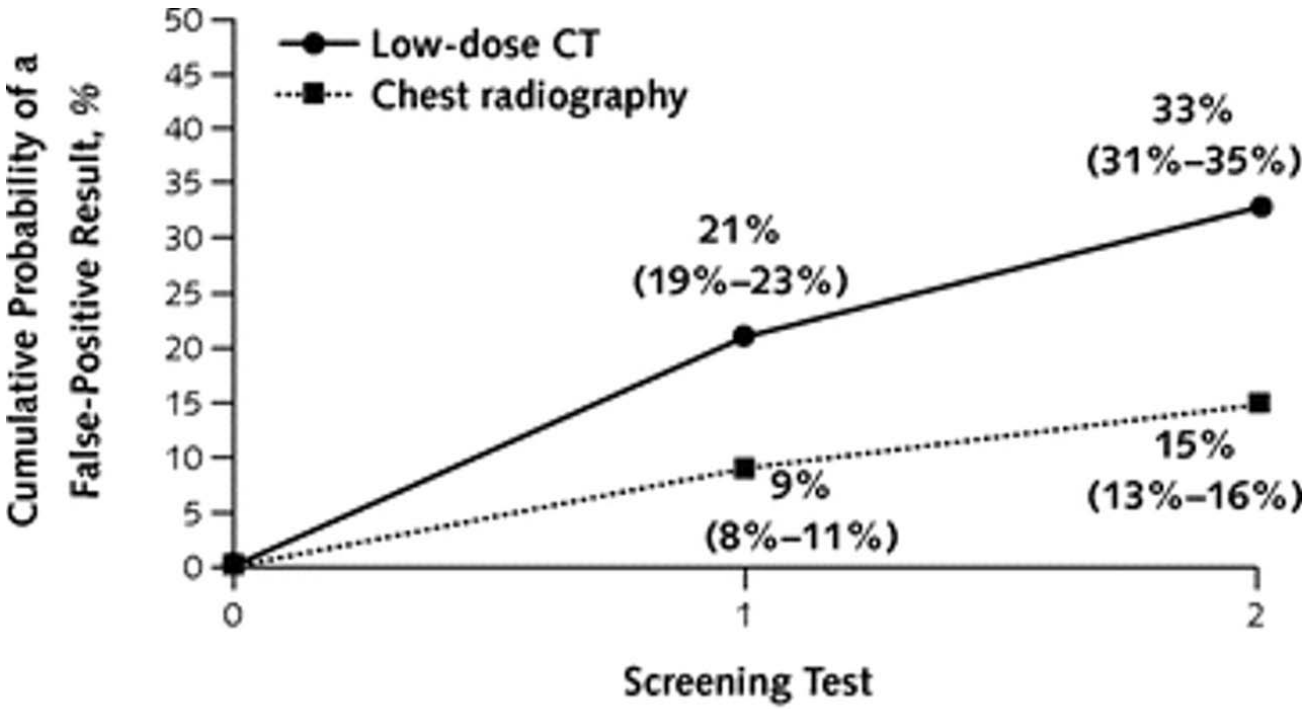
CRC Incidence



CRC Mortality

Atkin WS et al. Once-only flexible sigmoidoscopy screening in prevention of colorectal cancer: a multicentre randomized controlled trial. Lancet 2010: 375: 1624-33

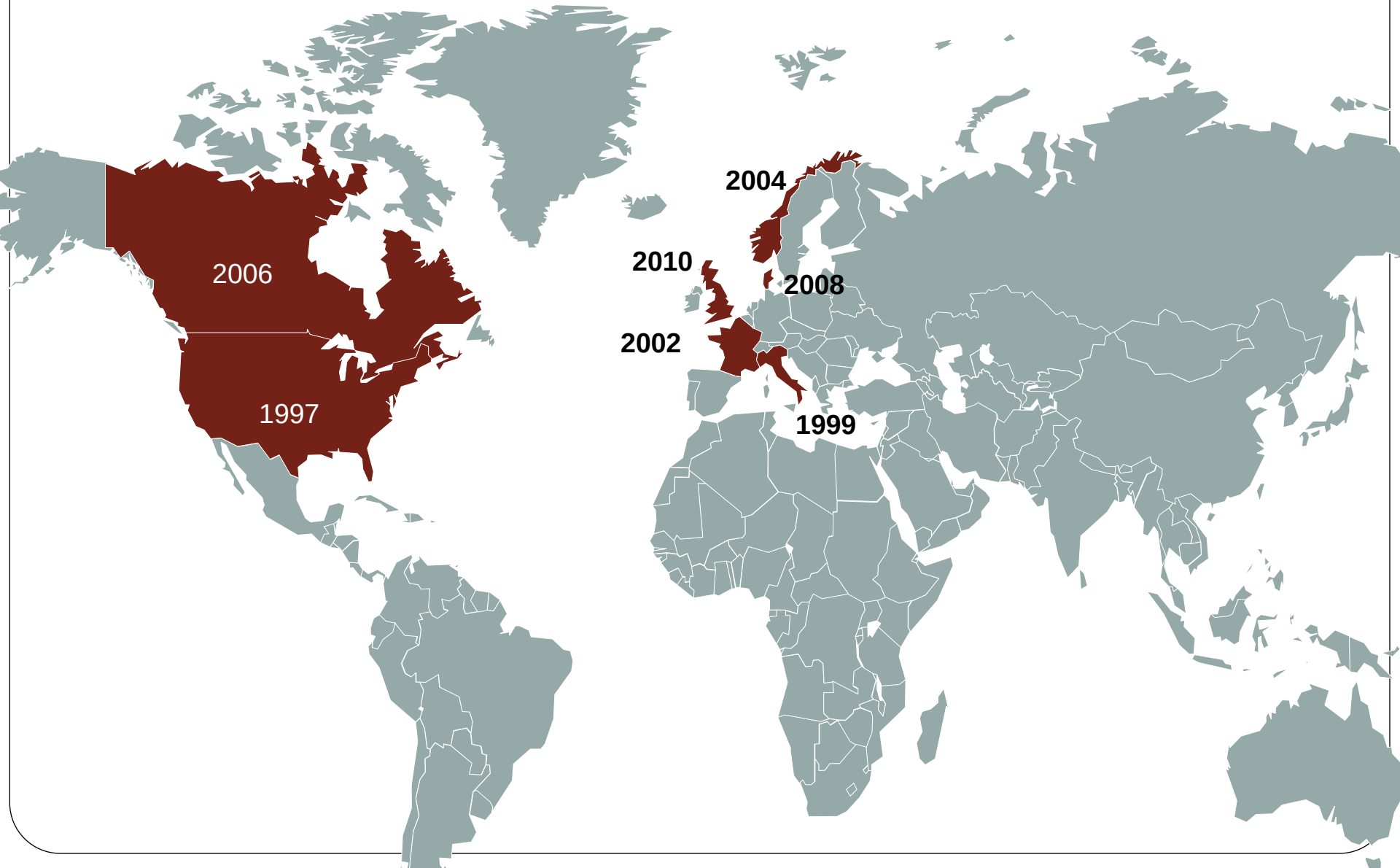
Cumulative Probability of False-Positive in Lung Cancer Screening



Participants at risk, *n*		
Low-dose CT	1610	1114
Chest radiography	1580	1183

Croswell J M et al. Ann Intern Med 2010;152:505-512

ICSN Meetings



Sessions and Scientific Presentations

- New Technologies and Comparative Effectiveness
- Stoppage Rules in Older Populations
- HPV Vaccine in Cervical Cancer Screening
- Can Overdiagnosis and/or Overtreatment be Reduced by Individualized Screening?
- Future of Cancer Screening: Prostate, Ovary, Lung