



Behavior & economic barriers to colorectal cancer screening: Are current recommendations a barrier?

Belinda L. Udeh, PhD

Natoshia M. Askelson, MPH

Shelly Campo, PhD

College of Public Health, University of Iowa



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Argument

- CRC screening rates are less than optimal
- Colonoscopy most commonly recommended
- Majority of reported barriers to screening related to colonoscopy
- Colonoscopy is cost-effective (most effective but most costly)
- Alternate screening modalities are also cost-effective (less effective but less costly)



Current recommendations

American Cancer Society Guidelines *

- Beginning at age 50, 1 of these 5 testing schedules:
 - yearly fecal occult blood test (FOBT) or fecal immunochemical test (FIT)
 - flexible sigmoidoscopy every 5 years
 - yearly FOBT or FIT, plus flexible sigmoidoscopy every 5 years
 - double-contrast barium enema every 5 years
 - colonoscopy every 10 years

All positive tests should be followed up with colonoscopy.

* http://www.cancer.org/docroot/PED/content/PED_2_3X_ACS_Cancer_Detection_Guidelines_36.asp



CRC statistics

- 138,000 diagnosed, 56,000 deaths (US Cancer Statistics, 2004)
- 30% of death in Iowa could have been prevented (Thompson, Lynch, West, et al, 2006)
- Only 62.9% of adults ever screened (Peterson, Murff, Ness, & Dittus, 2007)
- Iowa only 46% of patients screened according to recommendations (Levy, Dawson, Hartz, & James, 2006)



Barriers to screening survey

- 2006 RDD telephone survey
- 2 rural counties in Iowa
- 981 respondents age 48 and older



Survey protocol

- 51 questions (based on focus group data)
 - Past screening behavior
 - Knowledge about colorectal cancer & screening
 - Attitudes about screening
 - Barriers & benefits
 - Distal & proximal norms perceptions
 - Demographics



Survey analysis

- 'Ever screened' vs. 'Never screened'
- Chi-square and *t*-tests



Survey results

- Importance of providers
 - 83% of ‘Ever screened’ reported their health care providers talked about screening (compared to 71% of ‘Never screened’) ($\chi^2=136.20$, $df=1$, $p<.000$)
 - 91.1% of the ‘Never screened’ who had providers who talked, recommended only colonoscopy
 - ‘Ever screened’ respondents reported their providers recommended a variety of screening tests (FOBT 16.1%, sig 7.0%, colonoscopy 82.9%)



Survey results

	Ever Screened mean (SD)	Never Screened mean (SD)	<i>t</i>	P value
Uncomfortable	2.21 (1.02)	2.55 (1.02)	4.45	P<.001
Embarrassing	1.99 (.98)	2.30 (1.04)	4.27	P<.001
Scary	2.05 (.99)	2.51 (1.06)	6.21	P<.001
Time	2.36 (.99)	2.45 (1.01)	1.28	NS
Transportation / long distances	1.85 (.87)	2.05 (.97)	3.03	P<.01
Expensive	2.33 (1.12)	2.73 (1.14)	4.68	P<.001
Insurance	1.81 (1.10)	2.26 (1.23)	5.01	P<.001
Liquid	2.62 (1.19)	2.39 (1.10)	-2.59	P<.01

Cost-effectiveness

- Economic evaluation is a method of assessing the efficiency of changes
- Efficiency: maximum possible benefit with the given resources
- Analytic & mathematical models: synthesize all the costs and benefits of the alternatives being evaluated (economic modeling) (Drummond & Jefferson, 1996)

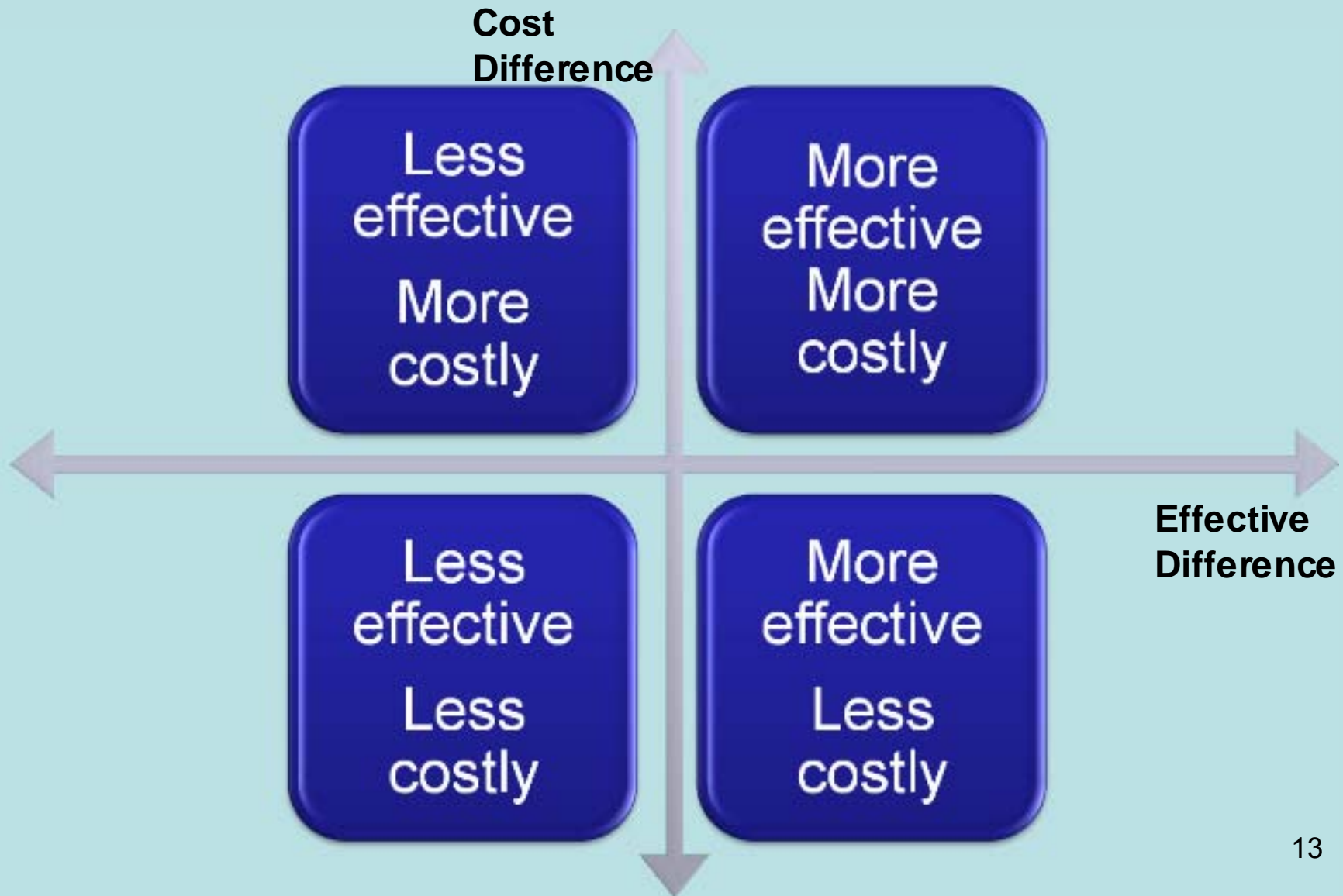


Cost-effectiveness

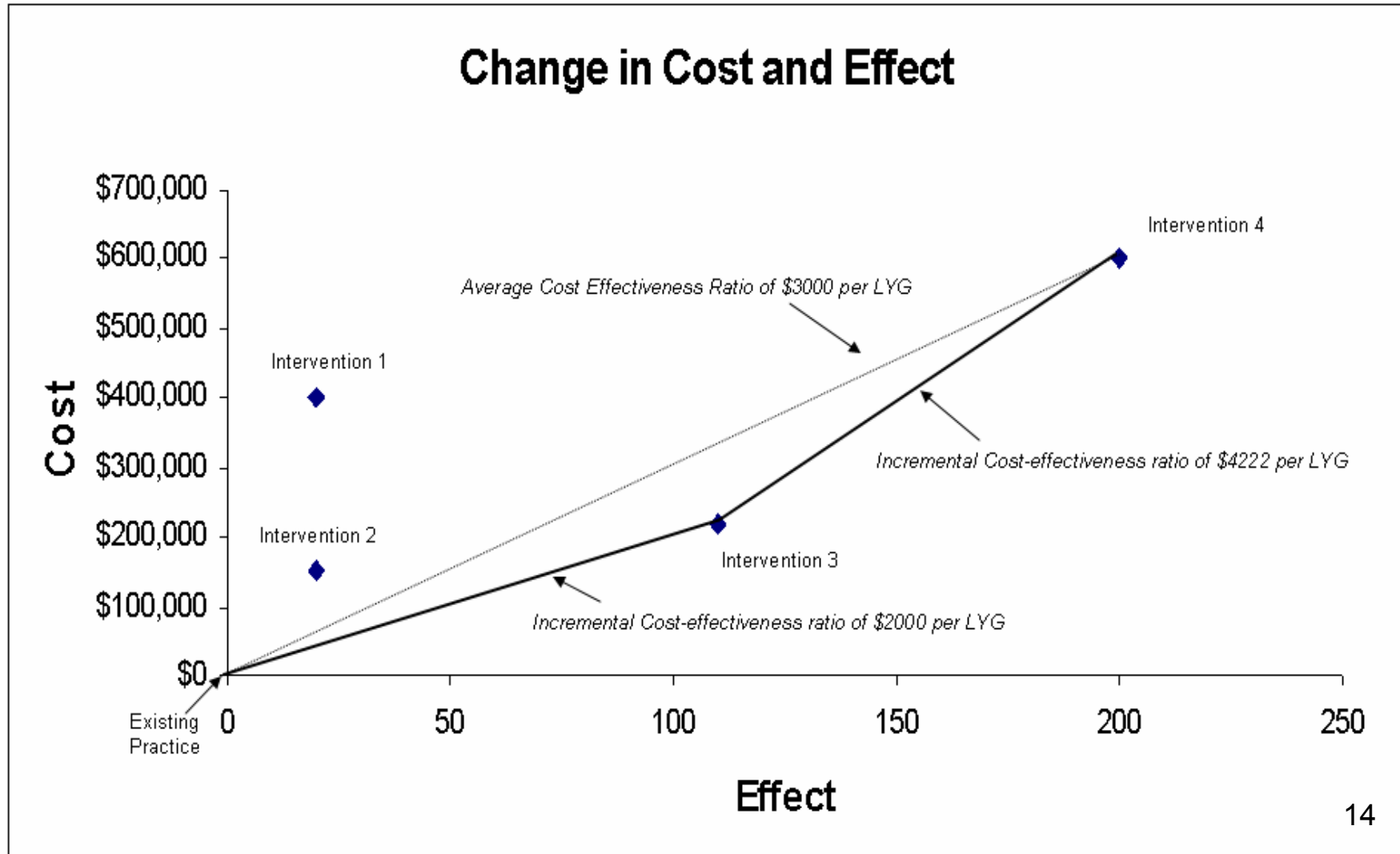
- Cost-effectiveness:
 - measures costs in monetary terms and effects in natural units such as life years gained (LYG)
 - ratio of costs to effects e.g. \$/LYG for each strategy
 - different perspectives
 - Individual
 - Local, State or Federal Governments
 - Healthcare provider
 - Society
- Cost-effectiveness & CRC:
 - Most commonly used in CRC screening evaluations (Drummond & Jefferson, 1996; O’Leary, Olynyk, Neville & Platell, 2004; Frazier, Colditz, Fuchs, & Kuntz, 2000; Sonnenberg Delco, & Inadomi , 2000; Lejeune, Arveus, & Dancourt , 2004; Vijan, Hwang, Hofer, & Hayward, 2001; Khandker, Dulski , Kilpatrick , Ellis, & Mitchell, 2000)
 - Most from a healthcare perspective



Cost-effectiveness Plane



ICER Graph



Screening cost and barriers

- Better understanding of the greater effect colonoscopy have AND greater costs
- Individual and societal costs of colonoscopy
 - Time off work for preparation, procedure, recovery
 - Time off work for caregiver
 - Travel time to healthcare facility
 - Insurance coverage
 - Preparation



Screening cost and barriers

- Alternate screening modalities do not have many of the barriers of colonoscopy
- Are less effective, but less costly and still cost-effective compared to no screening
- Should be offered to patients who express barriers to the colonoscopy



Behavior theory

- **Foot-in-the-door** (Freedman & Fraser, 1966; Bloom, McBride, Pollack, Schwartz-Bloom, & Lipkus, 2006; Fonitiat, 2006)



Summary

- CRC screening rates in Iowa less than optimal
- Survey results indicate most barriers relate to colonoscopy
- Colonoscopy most commonly prescribed screening modality
- Colonoscopy is most effective, but most costly modality
- Alternate modalities less effective, but less costly and still cost-effective compared to no screening
- When barriers to colonoscopy exist, alternate modalities should be recommended



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