



Implementing Colorectal Cancer Screening: Evidence for Effectiveness of Community and Office-Based Interventions

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**The Guide to Community Preventive Services
National Center for Health Marketing
Centers for Disease Control and Prevention**

SAFER • HEALTHIER • PEOPLE™



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"My question is: Are we making an impact?"

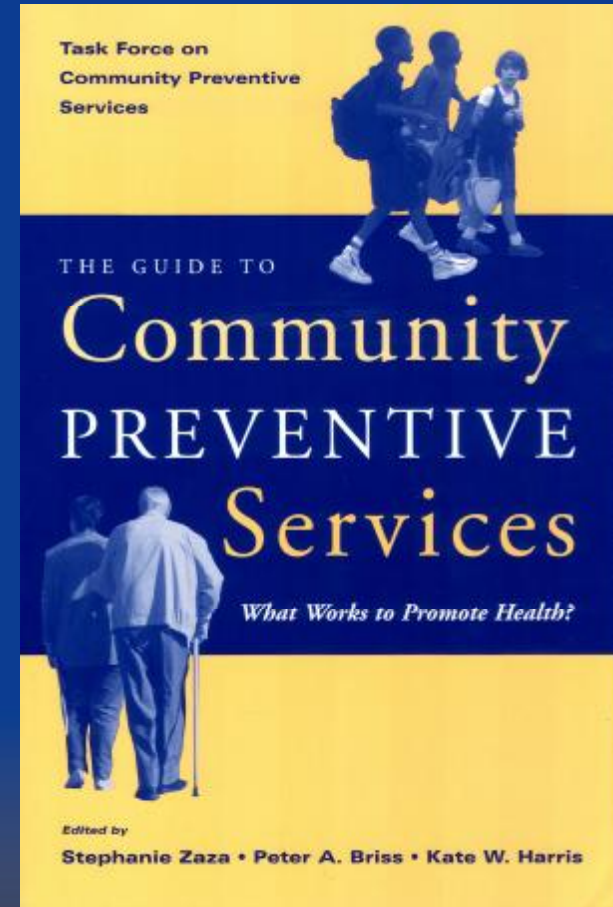


GUIDE TO
COMMUNITY
Preventive Services

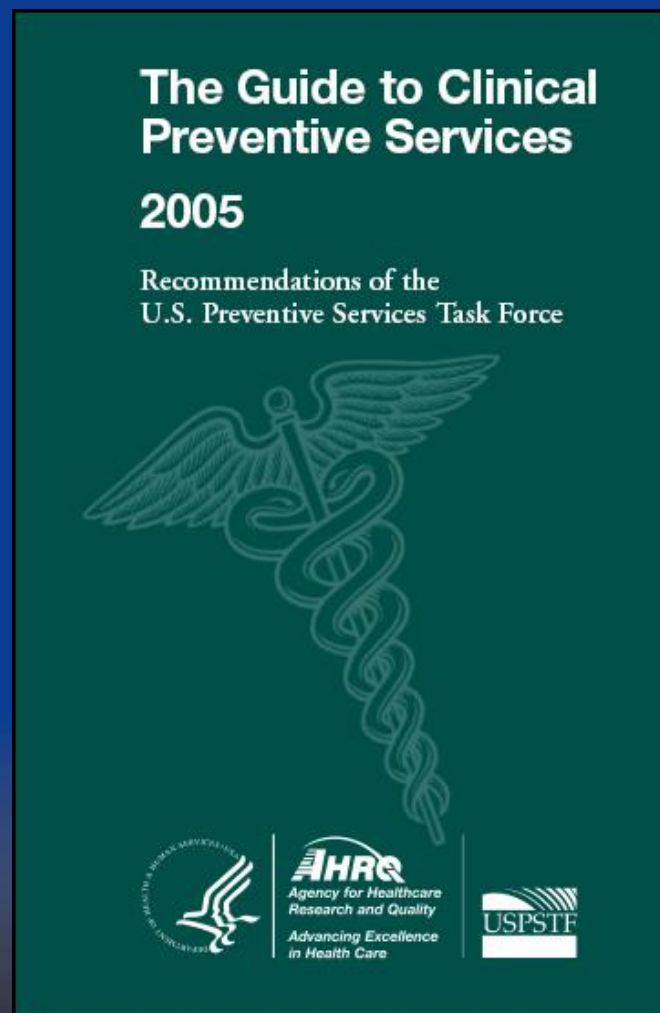
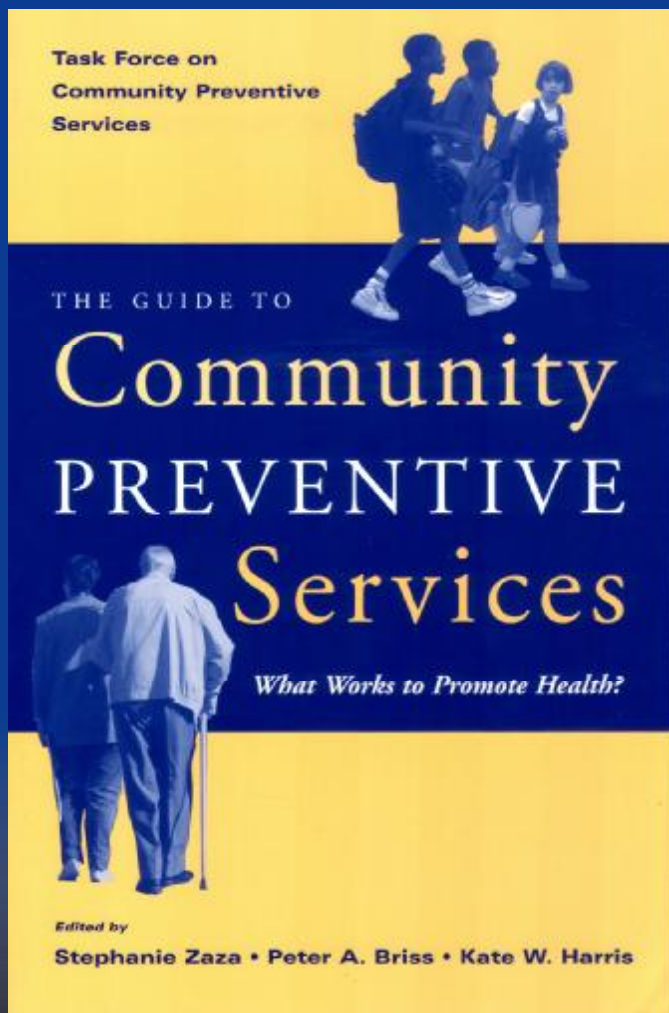


The Community Guide is:

- n **Systematic reviews** of the available evidence
- n Formulated by a team of renowned researchers, public health practitioners, representatives of health organizations
- n Concise, carefully-considered **recommendations for policy and practice**
- n Identification of **research gaps**



The *Clinical Guide* and *Community Guide* Are Complementary



The Clinical and Community Guides Are Complementary

Individual level
Clinical settings
Delivered by healthcare providers
Screening, Counseling, etc.

Clinical Guide
(USPSTF
Recommendations)

Group level
Health system changes
Insurance/benefits coverage
Access to/provision of services
Community, population-based
Informational
(Group Education, Media)
Behavioral, Social
Environmental & Policy Change

Community Guide
(TFCPS
Recommendations)



Community Guide (CG) Topics

The Environment

Social Environment

Settings

Worksites

Schools

Risk Behaviors

Tobacco Use

Alcohol Abuse/Misuse

Other Substance Abuse

Poor Nutrition

Inadequate Physical Activity

Unhealthy Sexual Behaviors

Specific Conditions

Vaccine-Preventable Disease

Pregnancy Outcomes

Violence

Motor Vehicle Injuries

Depression

Cancer

Diabetes

Oral Health

Obesity

Task Force on Community Preventive Services

Current Members



**Jonathan C. Fielding, MD, MPH,
MBA, Chair**

Bruce Nedrow Calonge, MD, MPH

John M. Clymer

Kay Dickersin, PhD

Karen Glanz, PhD, MPH

Ron Goetzel, PhD

Robert L. Johnson, MD

**Barbara K. Rimer, DrPH,
Vice-Chair**

Ana Abraido-Lanza, PhD

Nico P. Pronk, PhD

Gilbert Ramirez, DrPH

C. Tracy Orleans, PhD

Lawrence W. Green, DrPH

Current Consultants

Robert S. Lawrence, MD

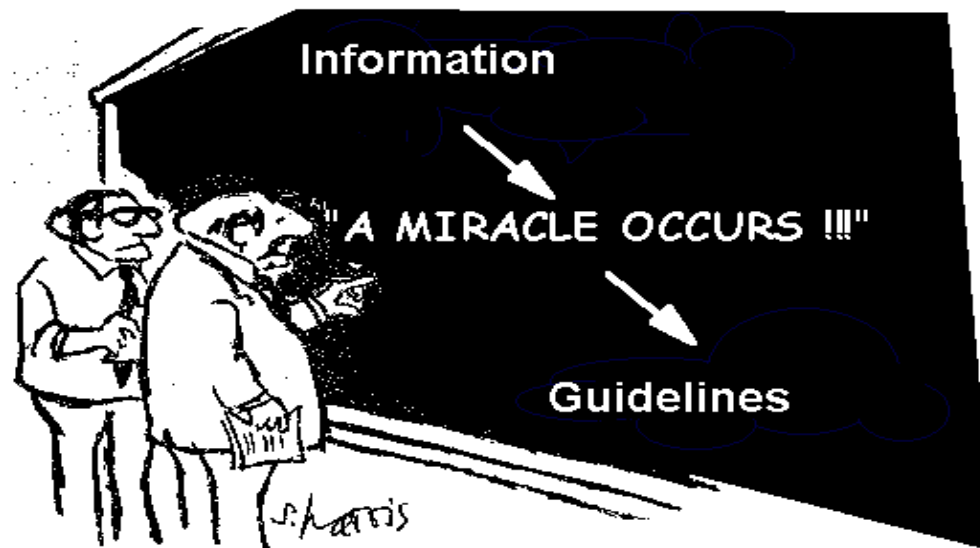
J. Michael McGinnis, MD

Alonzo L. Plough, PhD, MPH

Steven M. Teutsch, MD, MPH



Transparency (A Minor Detail!)



I think you should be more explicit here in step two."

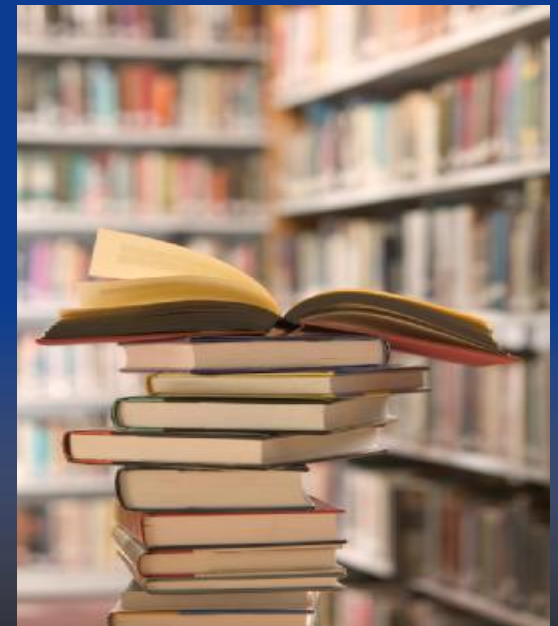
Guide Reviews are a Team Effort

- n **Community Guide Staff**
- n **Coordination Team**
 - u CG Staff (lead scientist, abstractors)
 - u Subject matter experts
 - u Task Force member(s)
- n **Consultation Team**
 - u Subject matter experts
- n **Task Force on Community Preventive Services**
- n **Liaisons**
 - u 25 federal agency and organizational



Community Guide Review Process

- n Convene review teams
 - u Coordination team
 - u Consultation team
- n Develop a conceptual framework
- n Develop prioritized list of interventions
- n Develop, refine clear research questions
- n Search for evidence

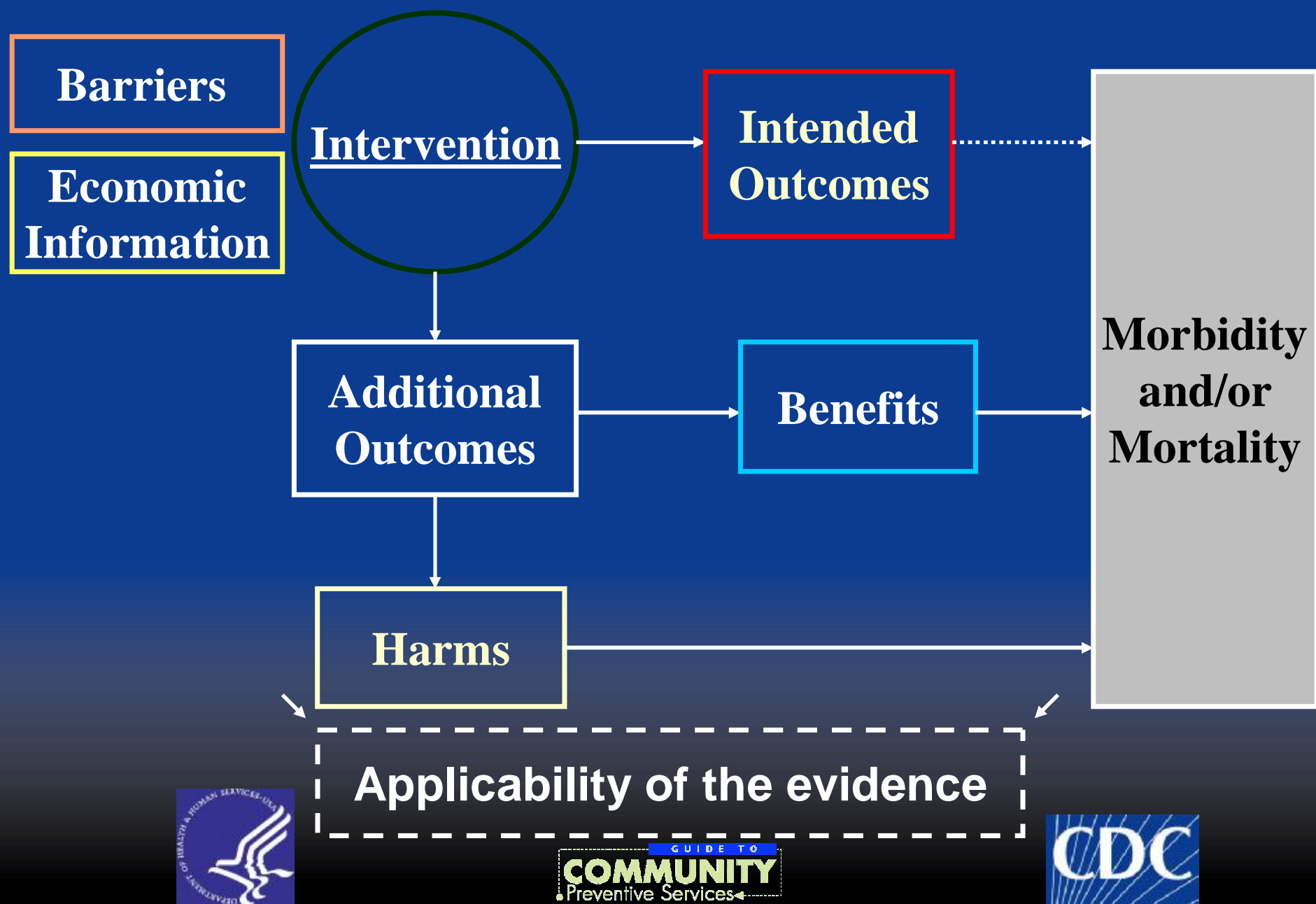


Community Guide Review Process

- n Abstract and critically evaluate the available studies
- n Summarize the evidence
 - u Calculate effect sizes
 - u Summarize effect sizes
 - Median or mean
 - Homogeneity tests
 - Meta-analysis
 - Meta-regression
- n Task Force discussion and recommendations
- n Disseminate the results
- n Support translation into action



Issues Considered in Guide Reviews



In General, a Conclusion About Effectiveness Requires....

A Body of Evidence

+

A Demonstration of Effectiveness

- Number of studies
- Quality of studies
- Suitability of study design

Consistency of Effect

+

Sufficient Magnitude of Effect

“Most” studies demonstrated an effect in the direction of the intervention

The effect demonstrated across the body of evidence is “meaningful”



Converting Evidence to Recommendation: Translation Table

Strength of Evidence of Effectiveness	Quality of Execution	Suitability of Study Design	Number of Studies	Consistent	Effect size
Strong	Good	Greatest	≥ 2	Yes	"Makes a difference"
	Good	Greatest or Moderate	≥ 5	Yes	"Makes a difference"
	Good or Fair	Greatest	≥ 5	Yes	"Makes a difference"
Sufficient	Good	Greatest	1	Yes (multiple study arms)	"Makes a difference"
	Good or Fair	Greatest or Moderate	≥ 3	Yes	"Makes a difference"
	Good or Fair	Greatest, Moderate, or Least	≥ 5	Yes	"Makes a difference"
Insufficient	Insufficient designs or execution		Too few	No	Small

Task Force Recommendation Options

n Recommend

- u Strong Evidence of effectiveness
- u Sufficient Evidence



n Recommend against

- u Strong Evidence that it is ineffective
- u Sufficient Evidence



n Insufficient evidence

- u To determine it is effective or ineffective



What Population-Based and Health System Interventions are Effective in Increasing Breast, Cervical, and Colorectal Cancer Screening?



Initial Steps

1. Looked for evidence of effectiveness of breast, cervical, colorectal cancer screening

è **Guide to Clinical Preventive Services**

2. Grouped interventions into strategies:

- a) **Client-directed**

- 1) **Increase community demand**

- Knowledge/awareness, perception/fear/attitude, motivation, forgetfulness

- 2) **Increase community access**

- Time, location, transportation, scheduling
- Out-of-pocket cost

- b) **Increase service delivery by health providers**

- Provider-client interaction



Initial Steps (cont'd)

3. Team prioritized interventions

- Using a standardized (ranking process)

4. Team decision: by cancer site or across sites?

a) Client-directed interventions: by cancer site

- Differences in target populations by site

b) Provide-directed interventions: collectively

- Less dependent on client barriers and screening test



Increasing Community Demand:

- n Client reminder
- n Client incentive
- n Mass media
- n Small media
- n Group education
- n One-on-one education



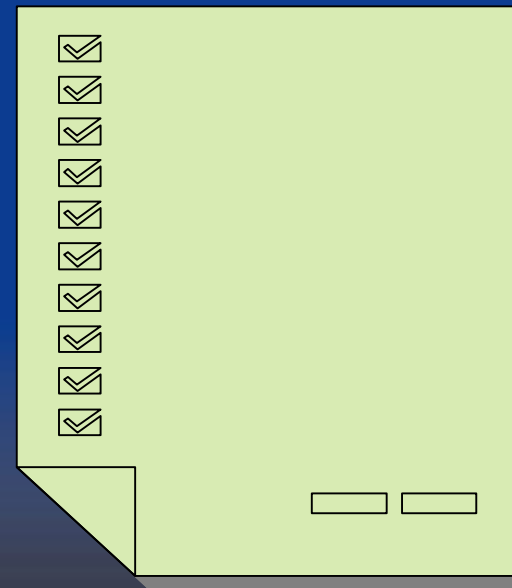
Increasing Community Access:

- n Reduce structural barriers
- n Reduce out-of-pocket cost to client

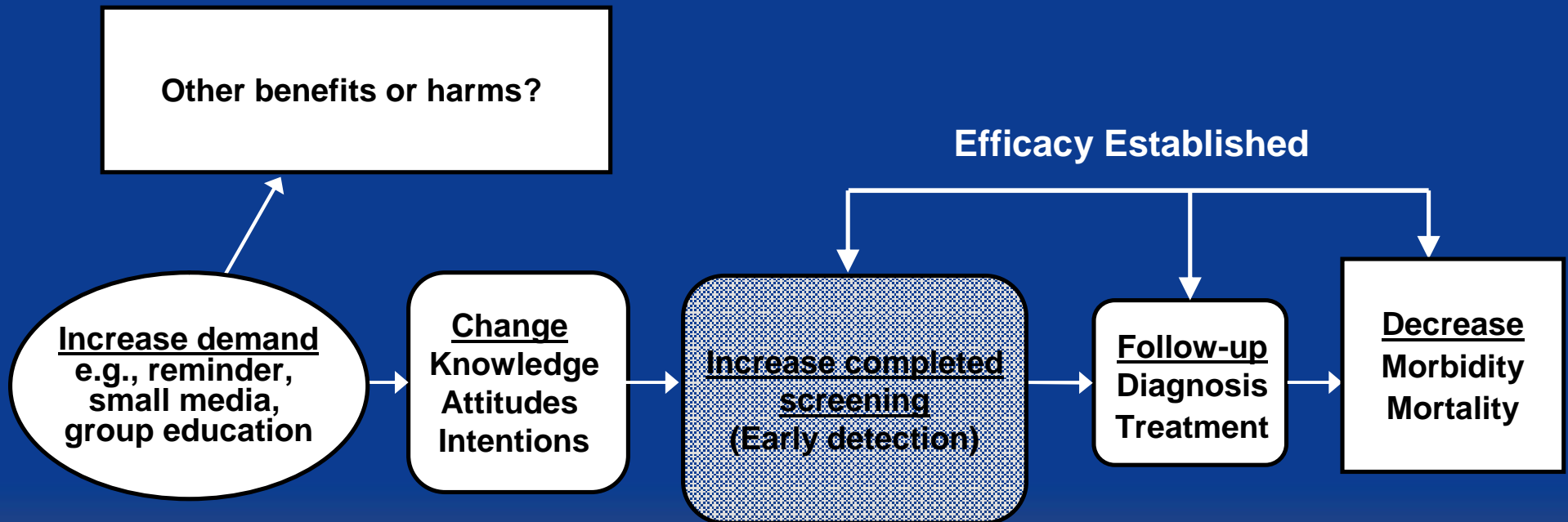


Increasing Provider Delivery:

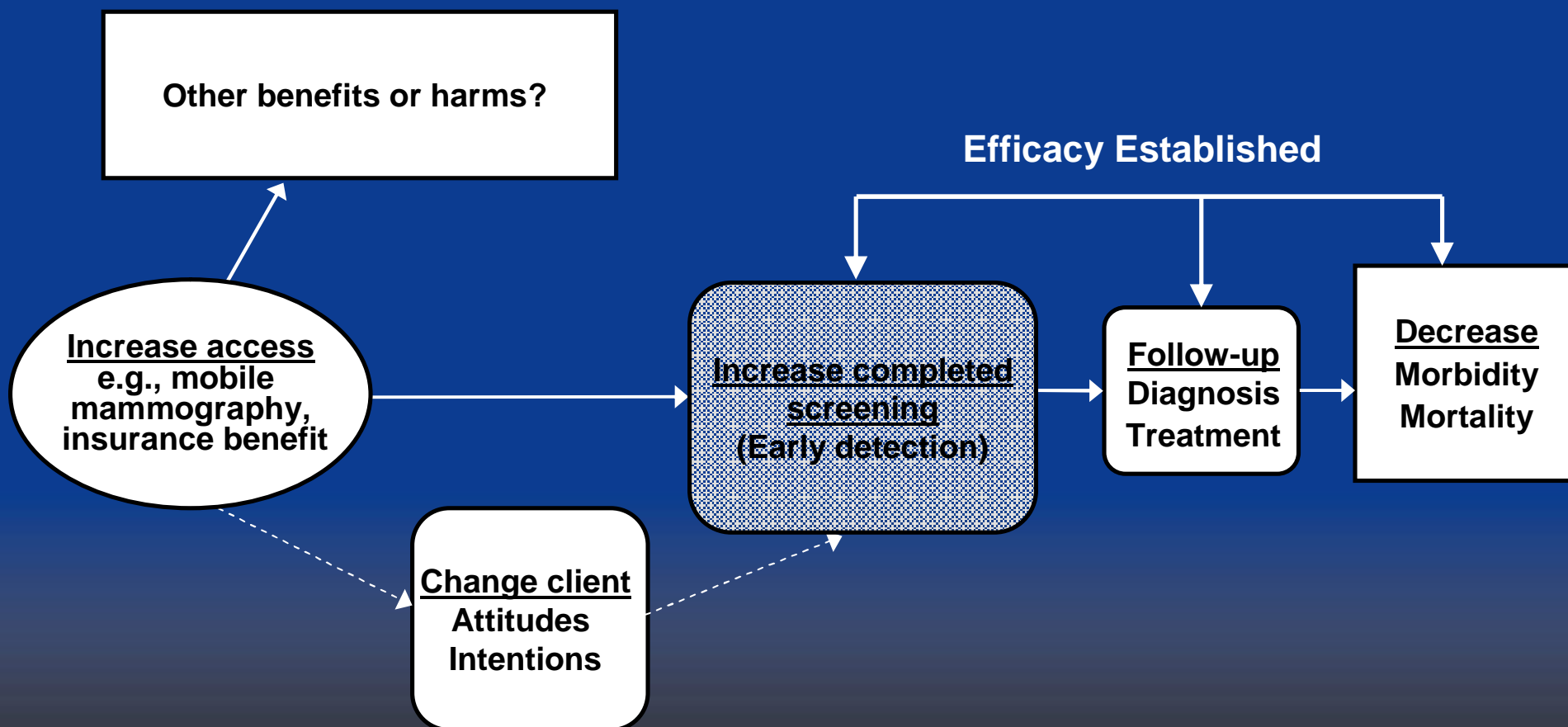
- n Provider reminder
- n Provider assessment and feedback
- n Provider incentive



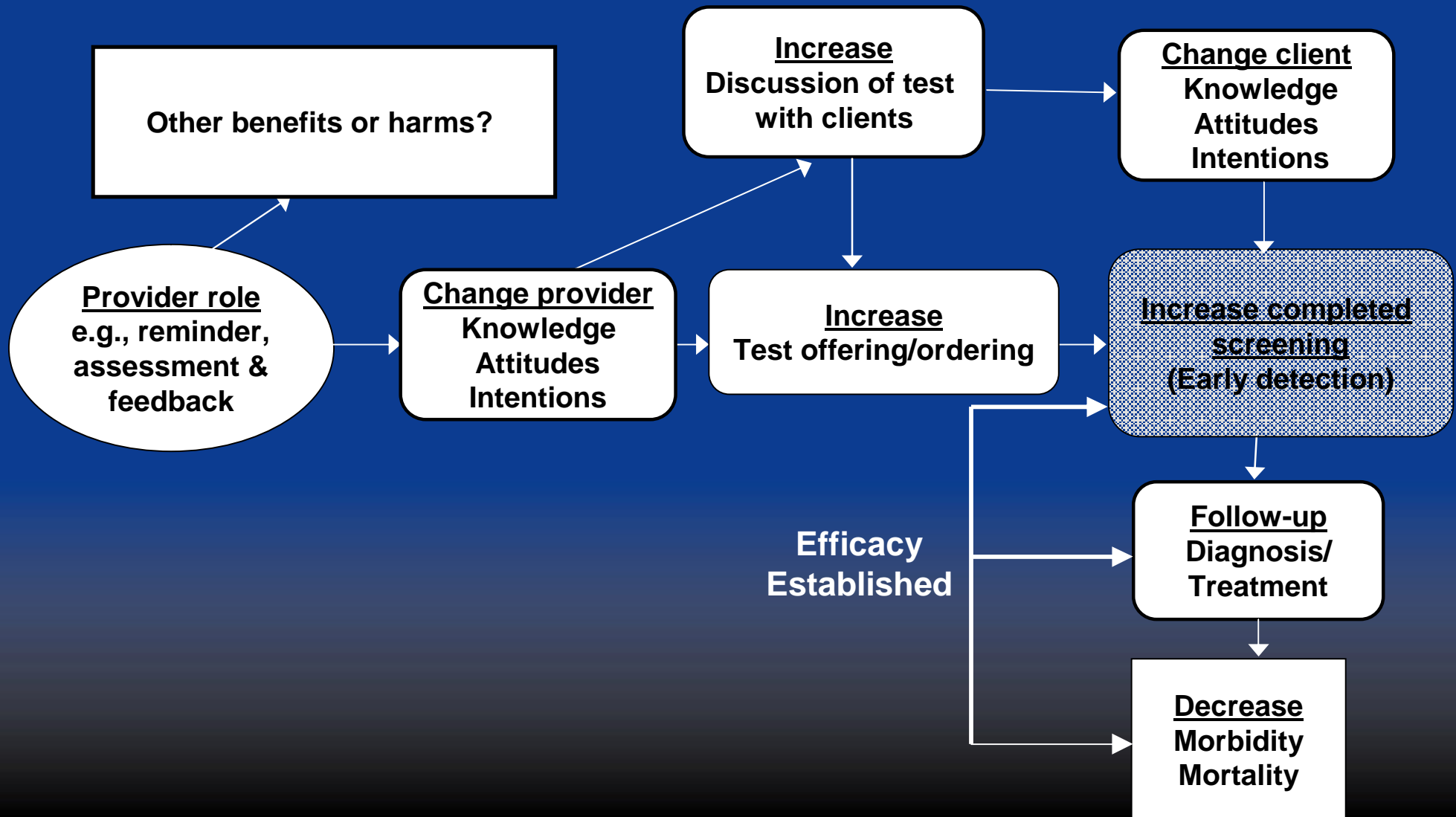
Increasing Community Demand: Conceptual Approach



Increasing Community Access: Conceptual Approach



Increasing Provider Delivery: Conceptual Approach



Search Results

Step 1. Search data bases using key terms

> 9000 citations found

Step 2. Screen titles and abstracts

→ > 8420 articles excluded

~ 580 articles/studies pass screen

Step 3. Screen article text*

→ ~ 336 articles excluded

244 studies pass screen (“Candidate studies”)

Step 4. Sort by intervention:

Client reminders	Small media	Client incentives	Group education	Mass media
One-on-one education	Reducing out-of-pocket cost	Reducing structural barriers		
Provider reminders	Provider incentives	Provider assessment & feedback		
Multi-component interventions				

***Inclusion criteria: published in English; primary study; one or more selected interventions; one or more selected outcomes; suitable comparison**

Increasing Community Demand: Client Reminder

- n Printed (letter or postcard) or telephone messages advising people they are:
 - u Due (reminder) for screening
 - u Late (recall) for screening
- n May be enhanced by:
 - u A follow up printed or telephone reminder
 - u Additional text or discussion about
 - Indications for screening
 - Benefits of screening
 - Overcoming barriers to screening
 - u Assistance scheduling appointments
 - u Tailoring

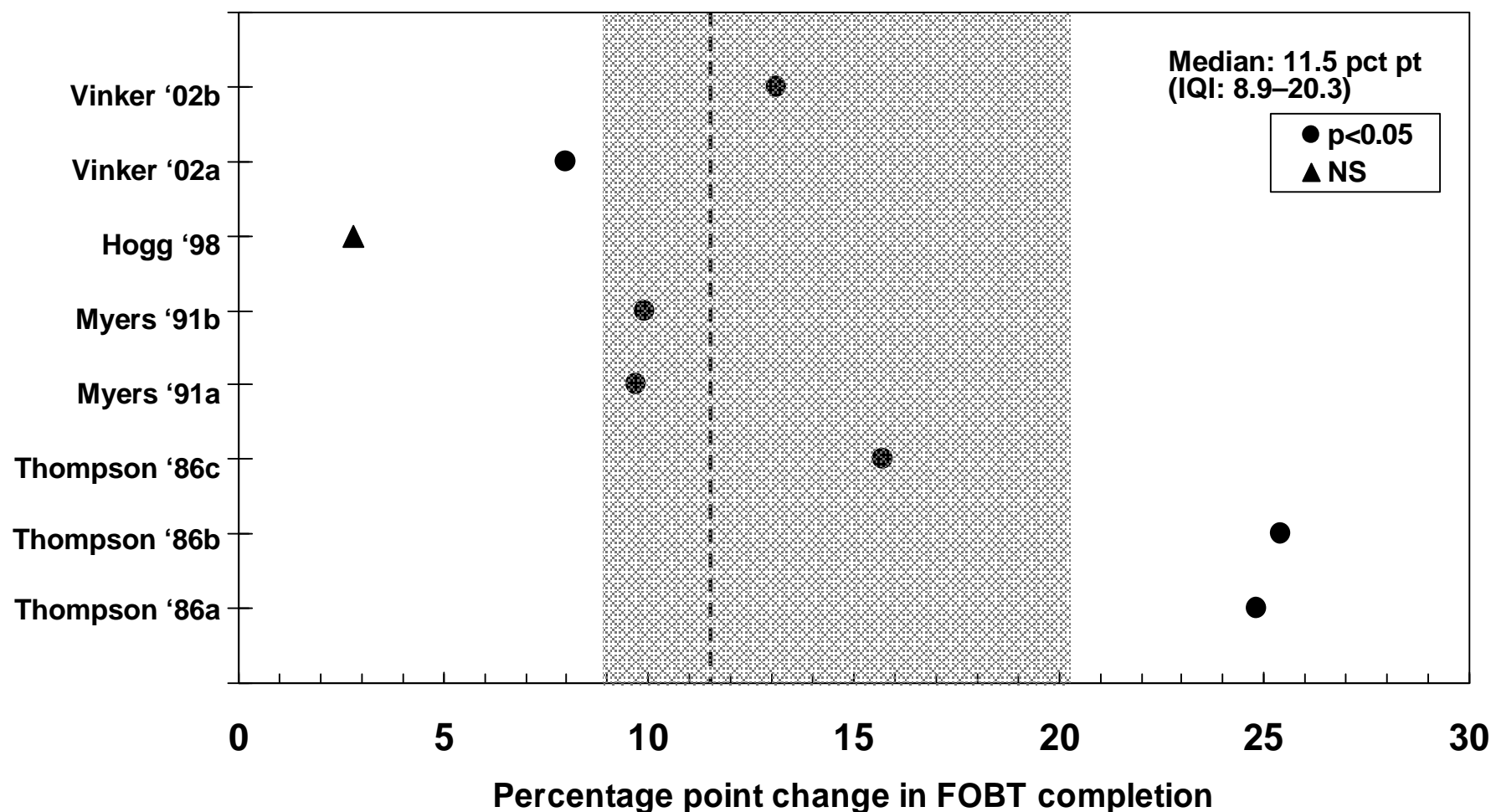


Body Of Evidence: Client Reminders for Colorectal Cancer Screening

	Candidate Studies for Client Reminders (n = 7 Fecal occult blood test [FOBT]) (n = 0 flex sigmoidoscopy, colonoscopy, barium enema) Qualifying Studies (n = 4) Suitability of Study Design		
Quality of Execution	<i>Greatest</i>	<i>Moderate</i>	<i>Least</i>
Good (0 – 1 Limitations)	0	0	0
Fair (2 – 4 Limitations)	4	0	0
Limited (5+ Limitations)	2	0	0

1 study excluded because comparison group also received reminder

Effectiveness of Client Reminders for Increasing FOBT



Client Reminders: Applicability

- n **Studies: HMOs in US, clinics in Canada & Israel**
- n **Limited/no description of:**
 - u SES, racial-ethnic, screening backgrounds of study participants
 - u Geographic settings of studies
- n **Studies of client reminders for breast, cervical screening suggest broad applicability**



Client Reminders: Conclusions

n FOBT:

- u **Recommended**
- u Sufficient evidence

n Flexible sigmoidoscopy, colonoscopy, barium enema:

- u **Insufficient evidence**
- u No qualifying studies



Increasing Community Demand: Small Media

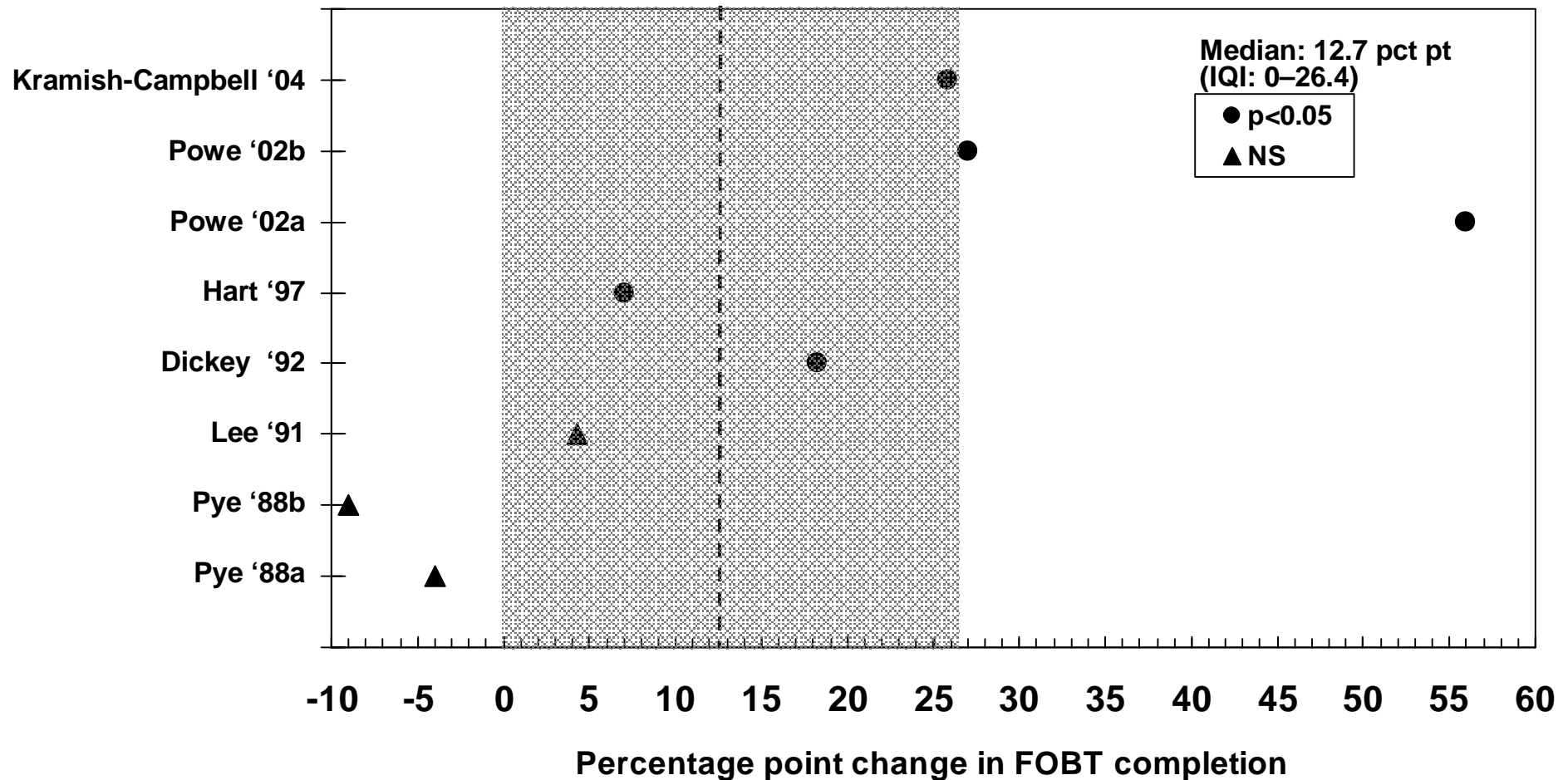
- n Videos or Printed materials
 - u Letters, brochures, pamphlets, flyers, newsletters
- n Distributed from healthcare or community settings
- n Educational or motivational information
 - u Based on behavior change theories
- n May be tailored or untailored



Body Of Evidence: Small Media for Colorectal Cancer Screening

	Candidate Studies for Small Media (n = 9 FOBT) (n = 0 flex sigmoidoscopy, colonoscopy, barium enema) Qualifying Studies (n = 7) Suitability of Study Design		
Quality of Execution	<i>Greatest</i>	<i>Moderate</i>	<i>Least</i>
Good (0 – 1 Limitations)	0	0	0
Fair (2 – 4 Limitations)	7	0	0
Limited (5+ Limitations)	2	0	0

Effectiveness of Small Media in Increasing FOBT



Small Media: Applicability

- n Studies in UK and US
- n Study participants
 - u White, African-American
 - u Some low SES
 - u Urban and rural
 - u Clinical and community settings
- n Suggest broad applicability
- n Only one tailored intervention



Small Media: Conclusions

n FOBT:

- u **Recommended**
- u Strong evidence

n Flexible sigmoidoscopy, colonoscopy, barium enema:

- u **Insufficient evidence**
- u No qualifying studies



Increasing Community Access: Reduce Structural Barriers

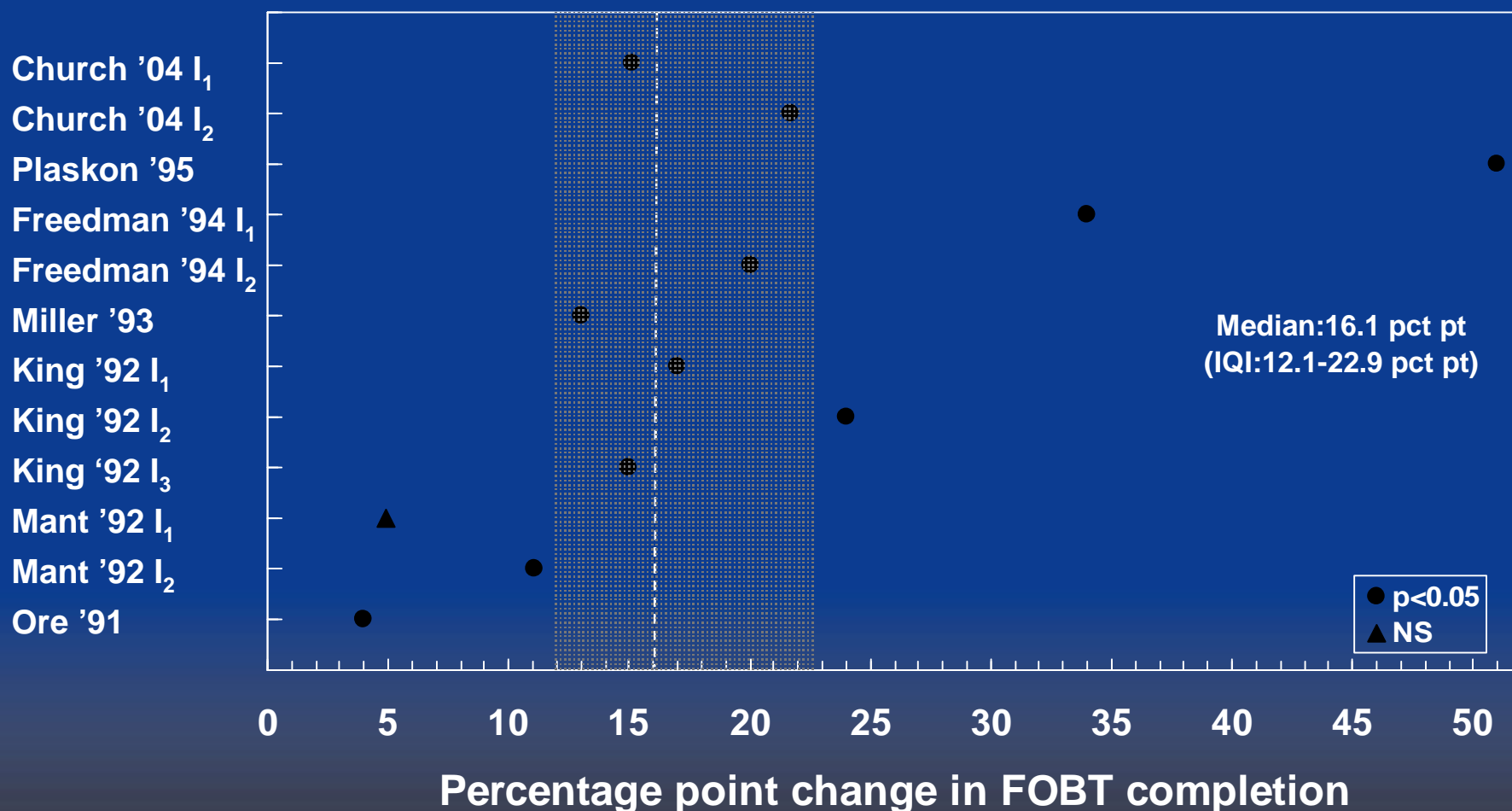
- n Reduce time or distance to delivery setting
- n Modify hours of service to meet client needs
- n Offer services in alternative, nonclinical setting
 - u E.g., mobile vans
- n Eliminate/simplify administrative procedures
 - u E.g., scheduling help, transportation, translation
- n Sometimes secondary supporting measures
 - u Information or education
 - u Measures to reduce out-of-pocket costs



Body Of Evidence: Reducing Structural Barriers, Colorectal Cancer Screening

	Candidate Studies for Reducing Structural Barriers (n = 7 FOBT) (n = 0 flex sigmoidoscopy, colonoscopy, barium enema) Qualifying Studies (n = 7) Suitability of Study Design		
Quality of Execution	<i>Greatest</i>	<i>Moderate</i>	<i>Least</i>
<i>Good</i> (0 – 1 Limitations)	4	0	0
<i>Fair</i> (2 – 4 Limitations)	3	0	0
<i>Limited</i> (5+ Limitations)	0	0	0

Effectiveness of Reducing Structural Barriers in Increasing FOBT



Reducing Structural Barriers

n **Within study comparisons:**

- u More effective if include:
 - Invitation to attend a clinic
 - Pre-paid postage on return mailer
 - Follow-up telephone reminder

n **Applicability:**

- u Studies in US, UK, Australia, Israel
- u Clinical settings
- u Urban and rural
- u White and African-American
- u Suggest broad applicability



Reducing Structural Barriers: Conclusions

n FOBT:

- u **Recommended**
- u Strong evidence

n Flexible sigmoidoscopy, colonoscopy, barium enema:

- u **Insufficient evidence**
- u No qualifying studies



Provider Reminder: Breast, Cervical & Colorectal Cancer Screening

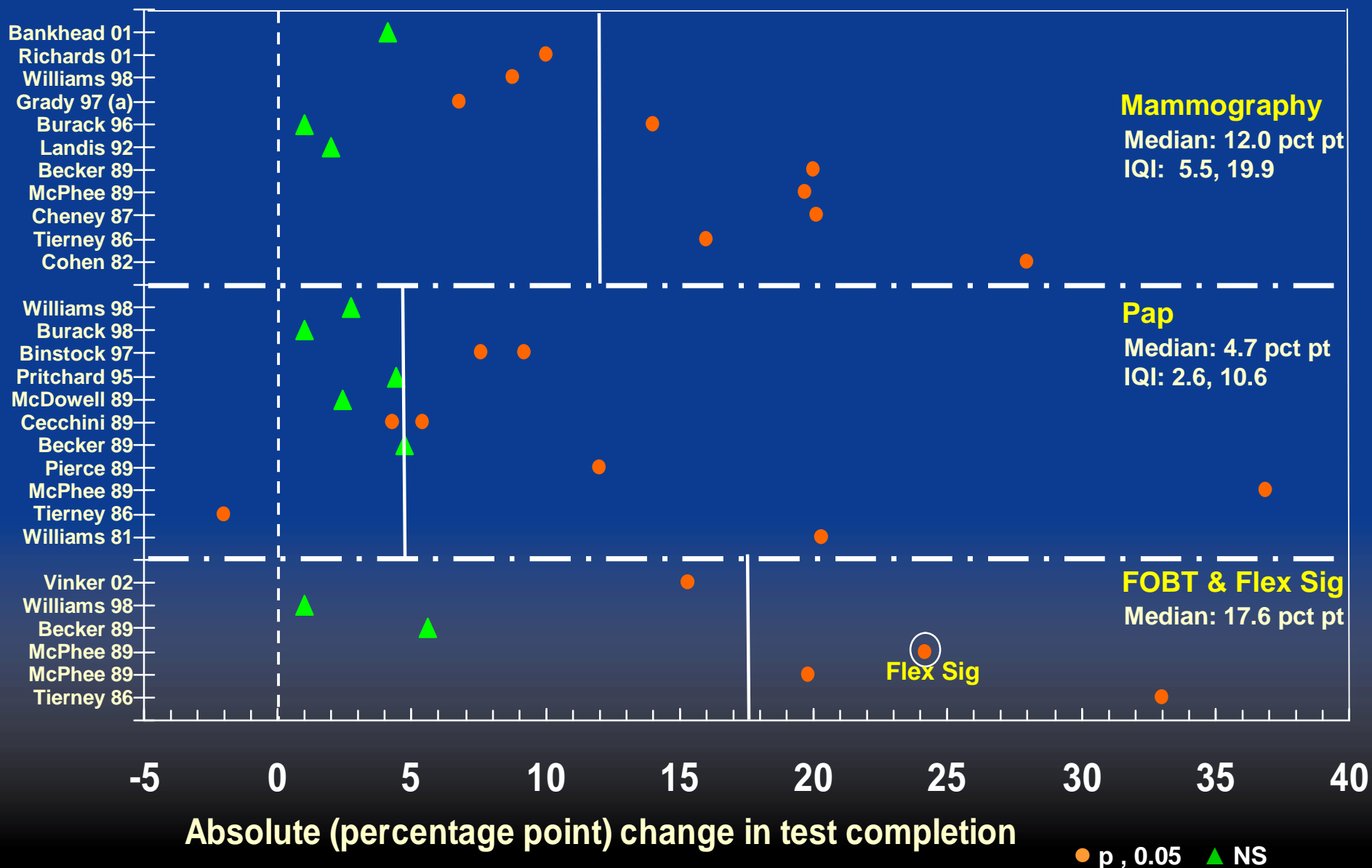
- n Inform, cue, or remind providers or other health care professionals that individual clients are:
 - u Due (reminder) for screening, or
 - u Overdue (recall) for screening
- n Notes in client charts or
- n Memorandum or letter



Body Of Evidence For Provider Reminders

	Candidate Studies for Provider Reminder Review (n = 36) Qualifying Studies (n = 25) Suitability of Study Design		
Quality of Execution	<i>Greatest</i>	<i>Moderate</i>	<i>Least</i>
<i>Good</i> (0 – 1 Limitations)	5	0	0
<i>Fair</i> (2 – 4 Limitations)	20	0	4
<i>Limited</i> (5+ Limitations)	5	0	2

Provider Reminders to Increase Screening for Breast, Cervical, Colorectal Cancers



Provider Reminders: Applicability

- n US, Italy, UK, Canada, Australia, and Israel
- n University hospitals, clinics, HMOs, and independent offices
- n Urban and rural
- n White and African-American (clients)
- n Physician trainees (residents/interns) and non-trainees
- n Due and overdue for screening



Provider Reminders

n Barriers

- u Access to electronic/computerized records
- u Perceived physician time investment

n Other benefits/harms

- u May increase utilization of other preventive services
- u No harms reported



Provider Reminders: Conclusions

- n For breast, cervical, colorectal (FOBT and flexible sigmoidoscopy)
 - u **Recommended**
 - u Strong evidence



Evidence of Effectiveness for Cancer Screening Interventions

	Breast	Cervical	Colorectal
Community Demand:			
Client reminder	Strong	Strong	Sufficient
Client incentive	<i>Insufficient*</i>	<i>Insufficient*</i>	<i>Insufficient*</i>
Mass media	<i>Insufficient*</i>	<i>Insufficient**</i>	<i>Insufficient*</i>
Small media	Strong	Strong	Strong
Group education	<i>Insufficient†</i>	<i>Insufficient**</i>	<i>Insufficient†</i>
One-on-one education	Strong	Strong	<i>Insufficient**</i>
Community Access:			
Reduce structural barrier	Strong	<i>Insufficient**</i>	Strong
Reduce out-of-pocket expense	Sufficient	<i>Insufficient**</i>	<i>Insufficient*</i>
Provider Role:			
Provider reminder	Strong		
Provider assessment & feedback	Sufficient		
Provider incentive	<i>Insufficient**</i>		

Reason evidence insufficient:

* No studies

** Too few studies

† Inconsistent findings

What to Do with Insufficient Evidence

- n If the intervention is currently being used
 - u May want to continue using it if there are no associated harms
 - u May choose to stop due to issues such as cost

- n If the intervention is not being used
 - u May not want to begin using it

- n **Consider:**

- u Are there are better-documented alternatives for reaching the same goals?



Still Have to Make Tradeoffs and Judgment Calls



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For More Information

- n Community Guide website:
www.thecommunityguide.org
- n American Journal of Preventive Medicine
- n Shawna Mercer, Community Guide Director
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