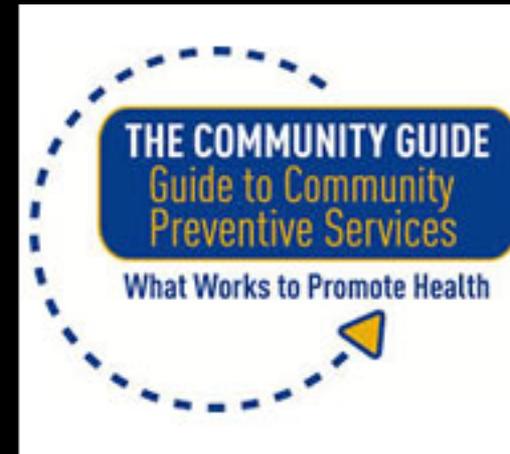


DSHS Grand Rounds

Nov. 5

The Community Guide: An Evidence-Based Public Health Resource

**Presenter: Anil Thota, MBBS, MPH,
Coordinating Scientist and Senior
Service Fellow, Office of Public Health
Scientific Services, Centers for Disease
Control and Prevention**



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For registration questions, please contact Laura Wells, MPH at
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Logistics (cont.)

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Questions?

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Commercial Support

This educational activity received no commercial support.

Disclosure of Financial Conflict of Interest

The speaker and planning committee members have not disclosed any relevant financial relationships.

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Introductions



David Lakey, MD
DSHS Commissioner
is pleased to introduce our
DSHS Grand Rounds speaker

The Community Guide: An Evidence-Based Public Health Resource



Anil Thota, MBBS, MPH,
Coordinating Scientist and Senior
Service Fellow, Office of Public
Health Scientific Services, Centers
for Disease Control and Prevention

athota@cdc.gov

The Community Guide: An Evidence-Based Public Health Resource

Anil Thota, MBBS, MPH

Coordinating Scientist

Community Guide Branch

Centers for Disease Control and Prevention (CDC)

Disclaimer

The content of this presentation provides information on the methods of the Community Preventive Services Task Force (CPSTF) and does not necessarily represent the official position of the Centers for Disease Control and Prevention (CDC). CDC provides administrative, research, and technical support for the CPSTF.

Learning Objectives

- To learn about the role of systematic reviews in developing recommendations for public health intervention strategies
- To understand the guiding principles of the Community Guide and the Community Preventive Services Task Force
- To be familiar with the role of the Community Guide as a resource for evidence-based public health recommendations
- To identify the characteristics and components of collaborative care, an evidence-based intervention strategy for managing depression

Agenda

- Context for Evidence-Based Public Health
- Objectives and Guiding Principles of the *Community Guide*
- Overview of *Community Guide* Methods
- Evidence Synthesis and *Community Preventive Services Task Force* Recommendations
- Case Study: *Collaborative Care to Improve Management of Depression*

CONTEXT FOR EVIDENCE-BASED PUBLIC HEALTH

Why Use an Evidence-Based Approach?

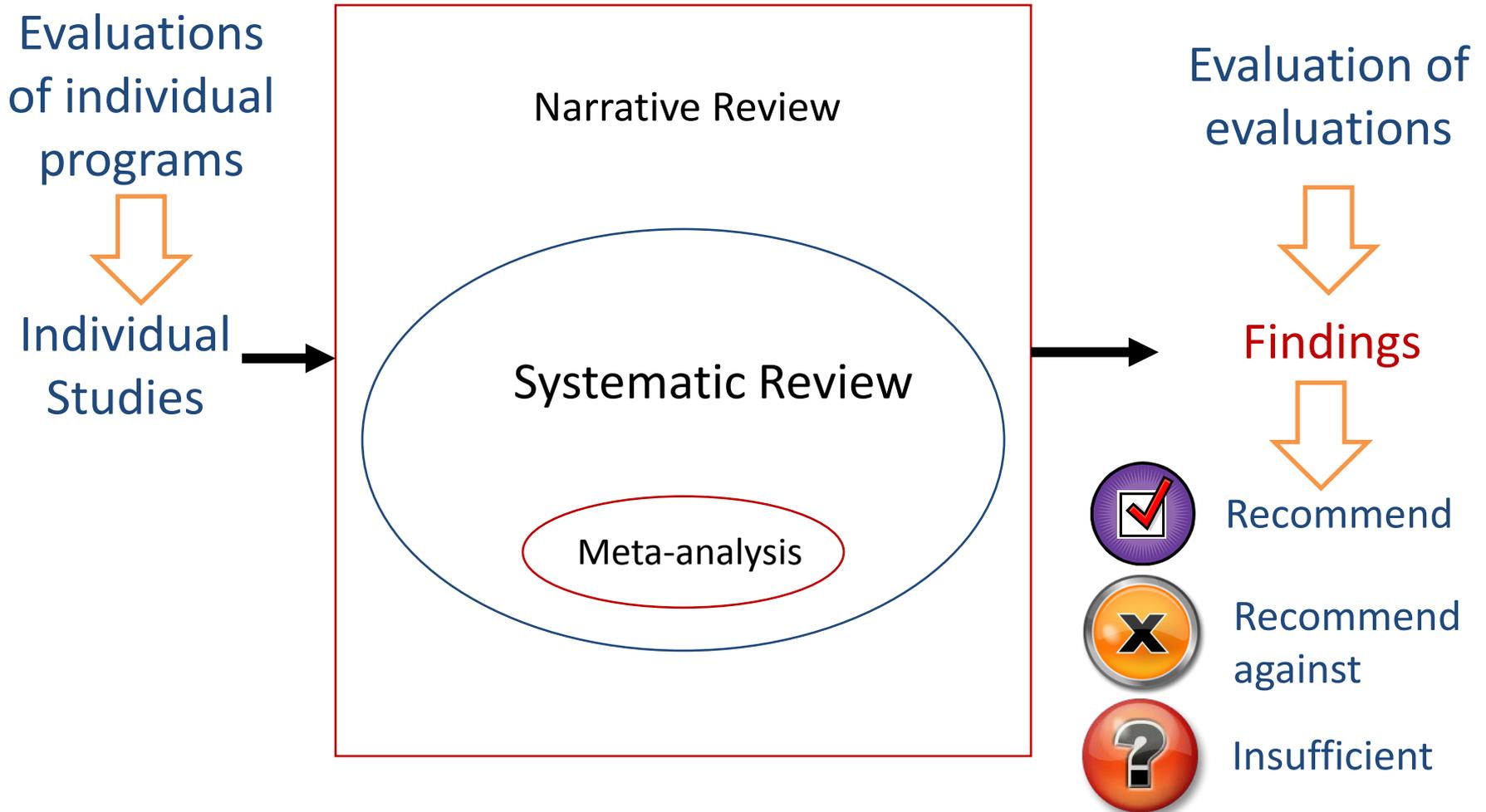
- It's the responsible thing to do
 - Maximizes ability to effectively and efficiently use resources

- It's the smart thing to do
 - Improves ability to justify allocation of scarce resources to address important problems
 - Addressing public health needs
 - Filling evidence gaps

Benefits of Basing Guidelines on Systematic Research Synthesis

- Reliability
 - Move us beyond anecdote and selective use of scientific evidence
- Transparency
 - Reduce bias
 - Make assumptions and procedures clear
- Synthesis
 - Streamline enormous amounts of data
 - Reconcile or explain variable results

Systematic Reviews and Developing Recommendations



What Do Public Health Interventions Look Like?

- Programs, services, and policies
 - Often implemented to address perceived needs, considering available resources
 - Seldom permit random allocation to intervention and control conditions

- Usually more “complex” than clinical interventions
 - Multiple facets that vary across locations
 - Often adapted to meet local needs and resources
 - Rarely implemented in isolation—several potential confounding factors to consider
 - Results may depend on context

- Potential for substantial health impact at a modest cost

Quality of Evidence Is Not Uniform Across Interventions and Questions



- Highest-quality evidence for:
 - Clinical treatment
 - Individually-oriented approaches
 - Simple interventions
 - Short-term interventions
 - Main effects (vs. interactions)
- Need to avoid the “drunk at the lamppost” problem

Key Questions to Address About a Public Health Intervention

- Does it work?
 - How well?
 - For whom?
 - Under what conditions?
 - How does it influence health disparities?
 - What is the cost?
 - Does it provide value?
 - What are important considerations for implementation?
- Tentative answers to these questions (especially the latter ones) are preferable to no answers

OBJECTIVES AND GUIDING PRINCIPLES OF THE *COMMUNITY GUIDE*

The Community Guide*

The screenshot shows the homepage of the Community Guide website. At the top, there is a blue header with the logo "The Guide to Community Preventive Services THE COMMUNITY GUIDE What Works to Promote Health" and the text "Community Preventive Services Task Force". Below the header is a navigation menu with links for Home, Task Force Findings, Topics, Use The Community Guide, Methods, Resources, News, and About Us. A search bar is located on the right side of the header. The main content area is divided into several sections: 1. "Now Published: Collaborative Care to Manage Depression" featuring a photo of an elderly woman and text about newly published reviews. 2. "Task Force Meetings" listing dates for 2012 and 2013. 3. "Get Email Updates" with a form to submit an email address. 4. "Topics" with a grid of links for various health conditions like Adolescent Health, Diabetes, Motor Vehicle Injury, Social Environment, etc. 5. "What is The Community Guide?" with a paragraph explaining the resource and a list of questions it answers. 6. Two promotional banners for the "TASK FORCE ANNUAL REPORT TO CONGRESS" and "Success Stories".

Now Published: Collaborative Care to Manage Depression
Newly published reviews and Task Force findings feature the effectiveness of this intervention in improving depression symptoms, adherence to treatment, response to treatment, and remission and recovery.

Task Force Meetings

2012
June 20-21
October 10-11

2013
February 20-21
June 19-20
October 23-24

Get Email Updates
Submit your email address to get updates on The Community Guide topics of interest.

Topics

Adolescent Health	Diabetes	Motor Vehicle Injury	Social Environment
Alcohol	Health Communication	Nutrition	Tobacco Use
Asthma	Health Equity	Obesity	Vaccines
Birth Defects	HIV/AIDS, STIs, Pregnancy	Oral Health	Violence
Cancer	Mental Health	Physical Activity	Worksite

What is The Community Guide?
The Guide to Community Preventive Services is a free resource to help you choose programs and policies to improve health and prevent disease in your community. Systematic reviews are used to answer these questions:

- Which program and policy interventions have been proven effective?
- Are there effective interventions that are right for my community?
- What might effective interventions cost; what is the likely return on investment?

Learn more [about The Community Guide](#), [collaborators](#) involved in its development and dissemination, and [methods](#) used to conduct the systematic reviews.

TASK FORCE ANNUAL REPORT TO CONGRESS

LEARN HOW COMMUNITIES ARE WORKING TO PROTECT AND IMPROVE HEALTH
Success Stories

- Product of an independent US Task Force: **Community Preventive Services Task Force**
- A focus on population-based interventions in:
 - Communities
 - Health care systems
- Evidence-based recommendations and conclusions regarding use

Topics for Community Guide Reviews

Reviews Organized by Environment

Health Equity

Social Environment

Reviews by Risk Behavior

Reviews by Specific Condition

Alcohol abuse/misuse

Cancer

Tobacco use

Mental health

Poor nutrition

Vaccine-preventable disease

Physical inactivity

Violence

Unhealthy sexual behaviors

Motor vehicle injuries

Cardiovascular disease prevention

Diabetes

Oral health

Reviews Organized by Setting

Reviews Organized by Life Stage

Worksite health promotion

Adolescent health

Special Projects

Health communications

Pandemic influenza

2014 Community Preventive Services Task Force

- Jonathan C. Fielding, MD, MPH, MBA Los Angeles County Dep. Of Public Health
- Barbara K. Rimer, DrPH University of North Carolina
- Bruce N. Calonge, MD, MPH Colorado Trust
- Marshall Chin, MD, MPH, FACP University of Chicago
- John M. Clymer Nat.Forum for Heart Dis. and Stroke Prev.
- Karen Glanz, PhD, MPH University of Pennsylvania
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- Shiriki Kumanyika, PhD, MPH University of Pennsylvania
- C. Tracy Orleans, PhD Robert Wood Johnson
- Nico P. Pronk, PhD HealthPartners
- Gilbert Omenn, MD, PhD University of Michigan
- Patrick Remington, MD, MPH University of Wisconsin

Overarching Goals of the *Community Guide*

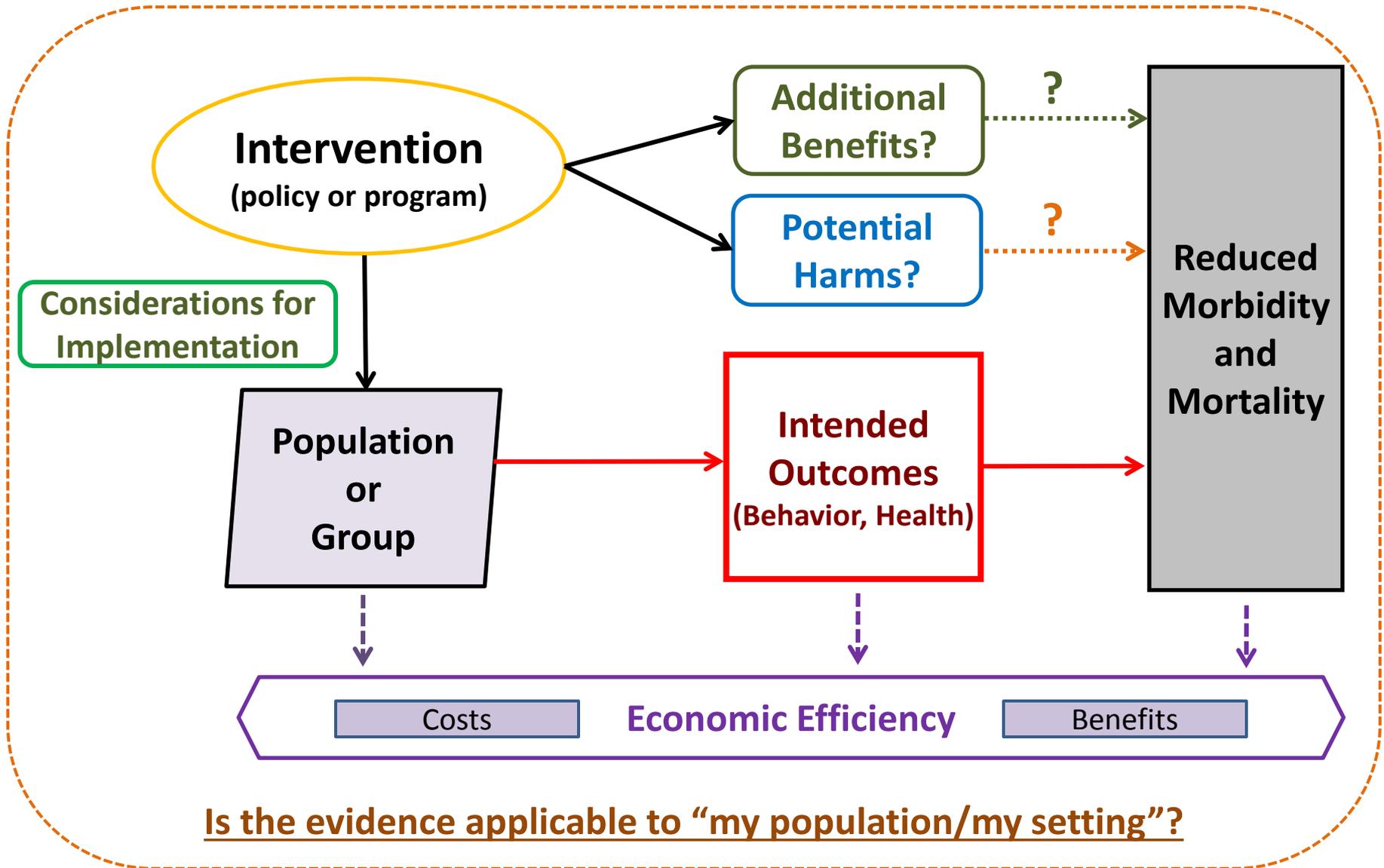
Develop evidence-based guidance on interventions to improve population health that is of maximum utility for decision-makers:

- Provide evidence-based recommendations
- Assess economic efficiency
- Highlight important evidence gaps

Systematic Review Methods Are Adapted to Meet *Community Guide* Goals

- A rigorous, systematic approach to gathering and synthesizing evidence
- Consideration of all relevant sources of information
 - Practice-based evidence (i.e., non-randomized studies of real-world interventions) is a cornerstone of most *Community Guide* reviews
 - Key criterion for inclusion of a study is whether it is informative, not whether it provides a perfect effect estimate
- Answering all relevant questions to the extent the data will support
 - Developed specific methods for providing the best possible guidance on applicability and implementation issues, despite evidence limitations

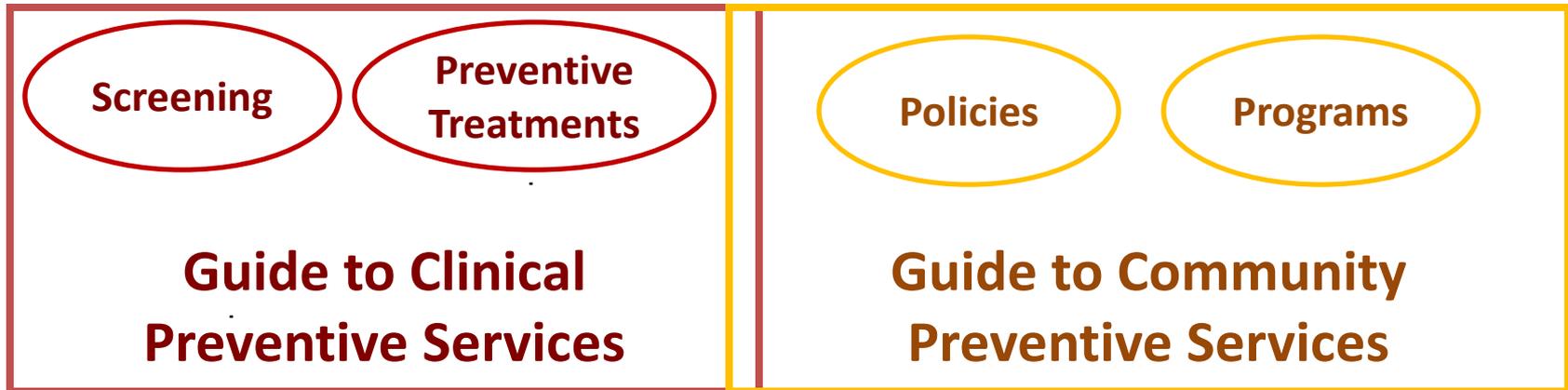
Issues Considered in *Community Guide* Reviews



Important Roles for the Clinical and Community Guides

Evidence on Effectiveness of
Provider-Patient Interactions
in Primary Care Settings

Evidence on Effectiveness of
Interventions Appropriate for Health
Systems and Communities



**Guide to Clinical
Preventive Services**

**Guide to Community
Preventive Services**

- Community Guide reviews frequently examine strategies to increase effective clinical preventive interactions
- Both Guides provide evidence-based findings on interventions to meet HP 2020 objectives

Healthy People (2020)

Annual Report to Congress



- Report from Task Force to US Congress
- Highlights:
 - Recent findings
 - Priority areas
 - Evidence gaps
- 2013 report was focused on Cardiovascular Disease Prevention

OVERVIEW OF *COMMUNITY GUIDE* METHODS

Prioritizing Topic Areas

- Review topics are identified and prioritized through a multi-stage process conducted periodically (5-10 years)
 - Extensive stakeholder input, from multiple agencies and organizations
 - Extensive background information compiled on all proposed topics
 - Topics are refined and ranked by Task Force over multiple rounds of review
 - Topics categorized as “highest,” “high,” and “medium”

- Key prioritization criteria include
 - Potential magnitude of preventable burden
 - Potential to reduce health disparities
 - Degree and immediacy of stakeholder interest

- Task Force Prioritization Committee reassesses priorities on an ongoing basis

Community Guide Coordination Teams

- Each topic has a Coordination Team

- Membership
 - Coordinating scientist and research fellows (Guide staff)
 - Members of Task Force
 - Task Force Liaison Members
 - Subject matter experts representing various perspectives
 - From CDC
 - Outside CDC

- Broad participation helps to ensure
 - Relevant questions are asked
 - Data are interpreted appropriately
 - Results are communicated appropriately
 - Utility of the product to the field is enhanced

Prioritizing within a Topic

Scope

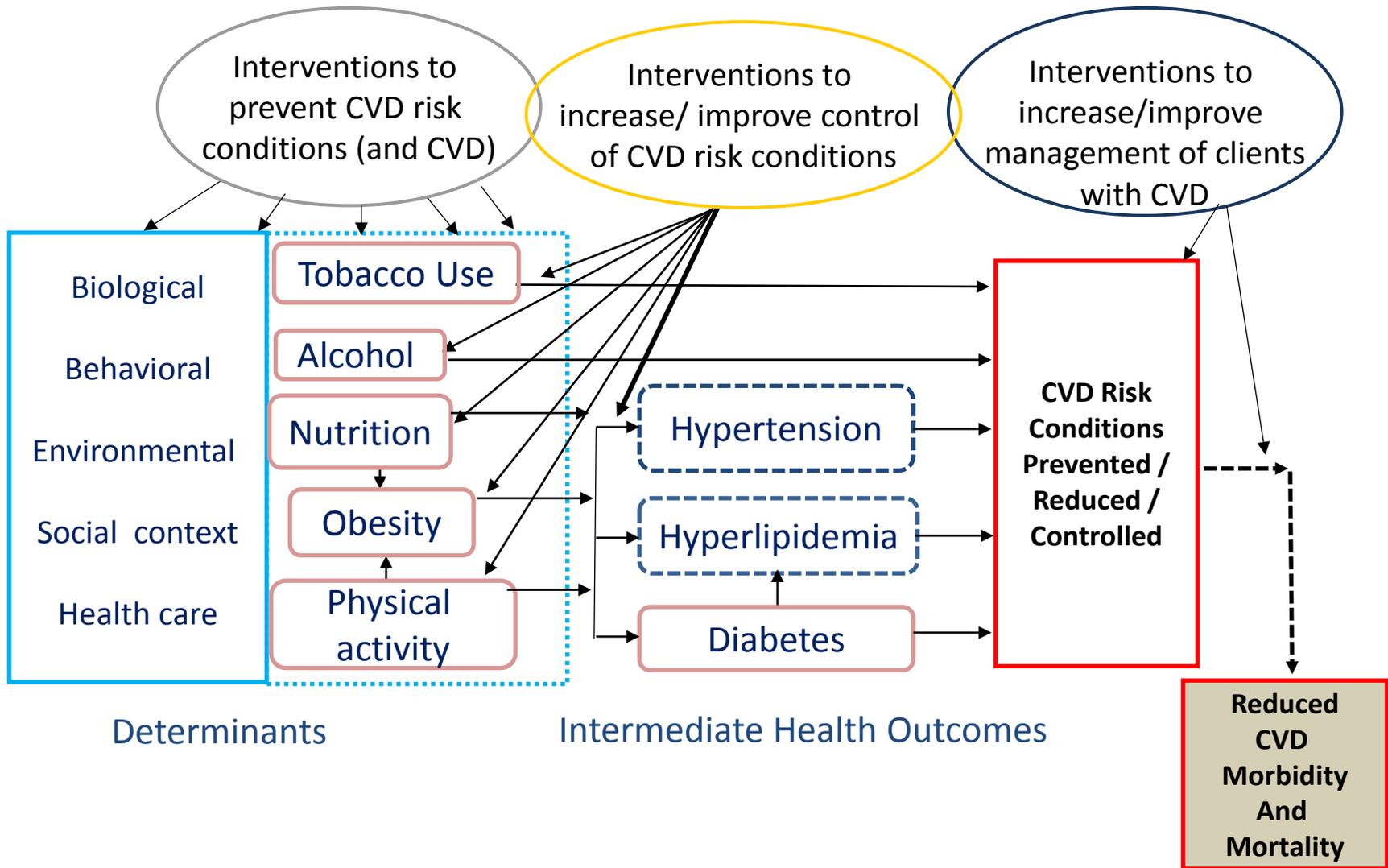
- Review team considers major categories of interventions within their topic area and creates a conceptual model ('logic model') for how they influence health
- Team then considers whether the scope of the topic area should be narrowed in any way
 - Motor vehicle team proposed excluding engineering interventions
 - Health equity team proposed initial focus on low-income and minority populations

Priority Intervention List

- Review team develops a comprehensive list of interventions for potential review within a given topic for the Task Force to discuss
- Factors considered include
 - Multiple levels of intervention
 - Importance to the field
 - Feasibility considerations
 - Balance

Task Force considers, discusses and finalizes scope and the priority list of interventions for a topic

Example Logic Model: Strategies to Prevent CVD



Example Priorities List for Task Force

Consideration: CVD Prevention

1. Interventions to improve hypertension control
2. CVD risk reduction interventions that bundle preventive services
3. Health system implementation/organizational variables and processes
4. Policies to reduce dietary sodium
5. Comprehensive Tobacco Control programs*
6. Community-based campaigns to increase awareness
7. Improved access to quality care for CVD
8. Setting-based CVD risk reduction interventions
9. Technology-enabled CVD risk reduction interventions

<Task Force consensus additions (if any)>

General Steps in a *Community Guide* Review

- Develop an intervention definition
- Determine research questions
- Develop an Analytic Framework
- Search for evidence
- Abstract and evaluate the identified studies
- Synthesize evidence
- Present findings to the Task Force
- Task Force adopts consensus conclusions
 - Recommended for/against
 - Insufficient Evidence
- Disseminate Task Force findings and evidence gaps

Conceptualizing the Intervention

- Refining the Definition:
 - Utility is decreased by scope being too broad or too narrow
 - Relevant to current US public health context
- Expected Causal Pathways
 - Guides decisions regarding outcomes of interest
 - Helps identify key effect modifiers
 - Useful for dissemination
- Contextual Variables and Key Effect Modifiers
 - Useful in describing the body of evidence
 - Shapes the approach to assessing applicability of findings
 - Can address potential sources of heterogeneity in results
 - Common categories for these variables
 - Population
 - Intervention
 - Setting
 - Study Design

Intervention Definition, Research Questions and Analytic Framework

- Reflect the team's conceptual approach to assessing the effectiveness of a given intervention in improving population health
- Appropriate level of breadth and depth to be useful to the field
- Hypothesized pathways and relationships between:
 - Population groups
 - Setting
 - Intervention characteristics
 - Key Effect Modifiers
 - Intermediate and 'Recommendation' Outcomes
 - Additional Benefits and Potential Harms

Example Intervention Definition:

Internet-based Interventions for Tobacco Cessation

Definition. Internet-based cessation interventions are websites providing open access to evidence-based information, strategies, and behavioral support for tobacco users interested in quitting.

Content may be developed or adapted for specific populations and communities. These interventions also may provide content tailored for individual clients, typically using computer algorithms to match information and advice to client inputs.

Websites may be interactive with automated monitoring, feedback, and support features. Coaching, counseling, and social support may be made available through e-mails, chat rooms, or bulletin boards.

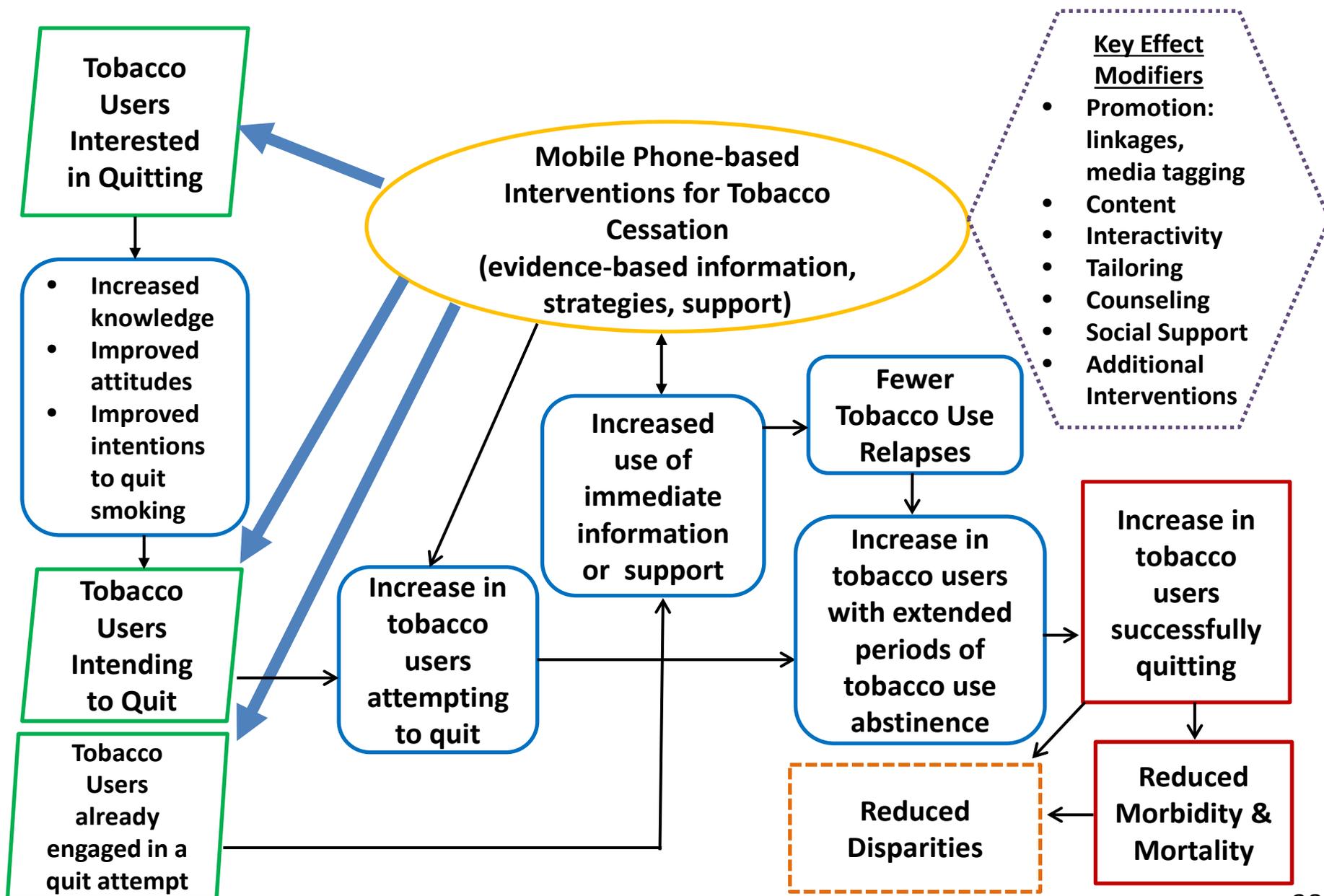
Internet-based cessation interventions may be coordinated with additional interventions, such as quitlines or provision of pharmacotherapy.

Example Research Questions:

Team-Based Care (TBC) to Improve BP control

1. How effective is TBC in improving BP control:
 - By increasing the proportion of patients with controlled BP?
 - By reducing systolic blood pressure /diastolic blood pressure?
 - By reducing CVD morbidity and mortality?
2. Does TBC improve outcomes for comorbidities:
 - Lipid outcomes?
 - Diabetes outcomes?
3. Does the effectiveness of TBC vary by:
 - Demographic variables – age, gender, race, ethnicity, SES?
 - Setting and scale?
 - Type of team members added?
 - Roles of team members in TBC?

Example Analytic Framework: *Mobile Phone-based Interventions for Tobacco Cessation*



Role of Judgment in the *Community Guide* Process

- *Community Guide* methods are systematic and transparent
- Nonetheless, judgments are needed at multiple stages
- Broad participation helps to inform those judgments and reduce bias
 - Systematic review experts
 - Subject matter researchers
 - Subject matter practitioners
 - Community Preventive Services Task Force members
 - Task Force Liaison members

Identifying Relevant Studies

- Develop search strategy
- Perform literature search
- Apply Inclusion/Exclusion criteria
- Screening
 - Level 1 – Titles and Abstracts
 - Level 2 – Full-length

**End of this step =
'included' studies for a
given intervention review
identified**



"First, they do an on-line search."

Abstracting Information from Studies

- The Community Guide has a standard abstraction form that is applied across reviews
http://www.thecommunityguide.org/library/ajpm355_d.pdf
- This form was designed to be applicable across topics and study designs
- The specific abstraction tool developed for each individual review must reflect
 - Conceptual approach of the team in evaluating the intervention of interest
 - Research questions, definition, the analytic framework
 - Applicability/generalizability considerations pertinent to the intervention of interest

Assessing Study Quality

- “Study quality” can be a misleading term
- We are interested in the utility of the study in helping to answer our research questions
- A study that is very well done may not be rated as high quality because:
 - Confounding factors beyond the researcher’s control
 - Researcher was attempting to answer a different question than our review
- Two aspects to assessing study quality at the Guide
 1. Suitability of Study Design
 2. Quality of Study Execution

1. Suitability of Study Design Categories

Greatest	RCT Non-Randomized “trial” Prospective Cohort Other Design With Concurrent Comparison
Moderate	Interrupted Time Series Retrospective Cohort Case-Control
Least	Uncontrolled Before-After Cross-sectional

2. Quality of Study Execution

- To assess limitations to external validity and internal validity
- Nine possible limitations for a given study (across six domains)
- Appropriate decision rules for study quality assessment also need to be made by the team pertinent to the specific review e.g. a policy review is very different from a health system review
- These decision rules can take two forms
 - Specifying exceptions to the guidance provided in the generic abstraction form
 - Specifying clear cutoffs for items that are not already clearly specified

Quality of Study Execution Assessment Framework*

Domain	Potential Reasons for Limitations	Max. lims.
Description	<ul style="list-style-type: none"> Was the study population well described? Was the intervention well described? What was done? When it was done? How it was done? Where it was done? How it was targeted to the study population? 	1
Sampling	<ul style="list-style-type: none"> Was the sampling frame/universe adequately described? Were the inclusion and exclusion criteria clearly specified? Was the unit of analysis the entire eligible population or a probability sample at the point of observation? 	1
Measurement	<ul style="list-style-type: none"> Outcome measures valid? Were they reliable? Did they measure exposure to the intervention? If yes, were these exposure measures valid? Were these exposure measures /variables reliable? 	2
Data Analysis	<ul style="list-style-type: none"> Appropriate statistical testing conducted Reporting of analytic methods and tests Appropriate controlling for design/outcome/population factors Other issues with data analysis 	1
Interpretation of results	<ul style="list-style-type: none"> >80% completion rate? Data set complete? Study groups comparable at baseline? If not, was confounding controlled before examination of intervention effectiveness? Were study personnel blinded to allocation of the study groups? Was there contamination? Other biases that might influence the interpretation of results including other events/interventions that might have occurred at the same time. 	3
Other	<ul style="list-style-type: none"> Other biases not included in the previous domains 	1

* Framework is applied to assessing quality for each individual review as appropriate

Quality of Study Execution Categories

Good	0-1 limitations
Fair	2-4 limitations
Limited	> 4 limitations

**EVIDENCE SYNTHESIS
AND
*COMMUNITY PREVENTIVE SERVICES TASK
FORCE* RECOMMENDATIONS**

Primary Challenges in Synthesizing Public Health Data

- Often very complex (i.e., there is variability on many dimensions)
 - Stratification on all important dimensions is often impossible due to too few studies
- Experimental studies are often uncommon or impossible to conduct
 - Need to rely on “lesser” study designs than RCTs
- There are often few available studies

Inferential Statistical Approaches: Meta-Analysis

- Requires sufficient homogeneity for estimate of central tendency to be useful
- Therefore often not appropriate for reviews of public health interventions
- Less complex interventions are most likely candidates (e.g., safety belt laws)
- Subgroup analysis can be used to account for some heterogeneity

Inferential Statistical Approaches: Meta-Regression

- Able to account for sources of heterogeneity in more complex interventions
 - Partially address collinearity issues with univariate subgroup analyses
- Potentially useful for selected interventions with large evidence base
- Pitfalls include:
 - Poor reporting/measurement of effect modifiers
 - Underpowered analyses of effect modification
 - Potential for false positives with multiple comparisons
 - Susceptibility to ecological fallacy

Descriptive Approaches: Narrative Synthesis

- Most common approach for complex public health reviews

- Pros
 - Can be applied to any data
 - Often the only option given heterogeneous interventions, populations, and outcomes
 - Allows thoughtful synthesis of small bodies of evidence

- Cons
 - Challenging for larger bodies of evidence
 - More prone to biased interpretation, e.g., temptation to engage in vote counting
 - More difficult to evaluate effect modification

Narrative Synthesis with Descriptive Statistics

- Use of inferential statistics vs. purely narrative approaches are not the only options for synthesizing evidence
- Descriptive summary statistics, along with tabular and graphical methods can be very useful
 - This is the most common approach in *Community Guide* reviews
- Facilitates simple, concise, unbiased summaries of the distribution of study results
 - What is the central tendency? (e.g., median)
 - How much variation in results can be expected? (e.g., range, interquartile interval)

Example Body of Evidence: School-based Vaccination Programs

Quality of Execution	Suitability of Study Design		
	Greatest	Moderate	Least
Good (0-1)	2 Guay 2003; Glik 2004	0	0
Fair (2-4)	6 Liu 2001; Riddell 2001 King 2005; King 2006; Wiggs-Stayner 2006; Davis 2008	3 Patrick 2003; Sugaya 2005; Mele 2008	4 (+14 Post-only) Chen 2001; Hurley 2001; Mark 2001; Bramley 2002; Dilraj 2003; Joyce-Cooney 2003; Sweet 2003; Middleman 2004; Rivest 2005; Milne 2006; Carpenter 2007; Brabin 2008; Hull 2008; Reeve 2008
Limited (>4)	1 Zuckerman 2005		

Qualifying Intervention studies: 15 studies (+14 post-only)
Excluded Intervention studies: 1

Example Quality of Execution Assessment Display

Study	Descp	Sample	Msrmt: Outcome	Msrmt: Exposure	Data Analysis	Interpretation of results			Other
						Loss to F/u	Confnd	Bias	
An 2008								L	L
Brendryen 2008a	L		L			L			
Brendryen 2008b	L		L						
Clark 2004	L								L
Huag 2011	L								
Japuntich 2006						L		L	L
McDonnell 2011		L		L	L	L			
Mermelstein 2006		L				L			
Patten 2006				L	L	L			
Swan 2010						L	L		
Swartz 2006	L					L			
Whittaker 2011		L	L			L			
Woodruff 2007		L	L	L	L	L			

 No QoE limitation

 Assigned QoE limitation

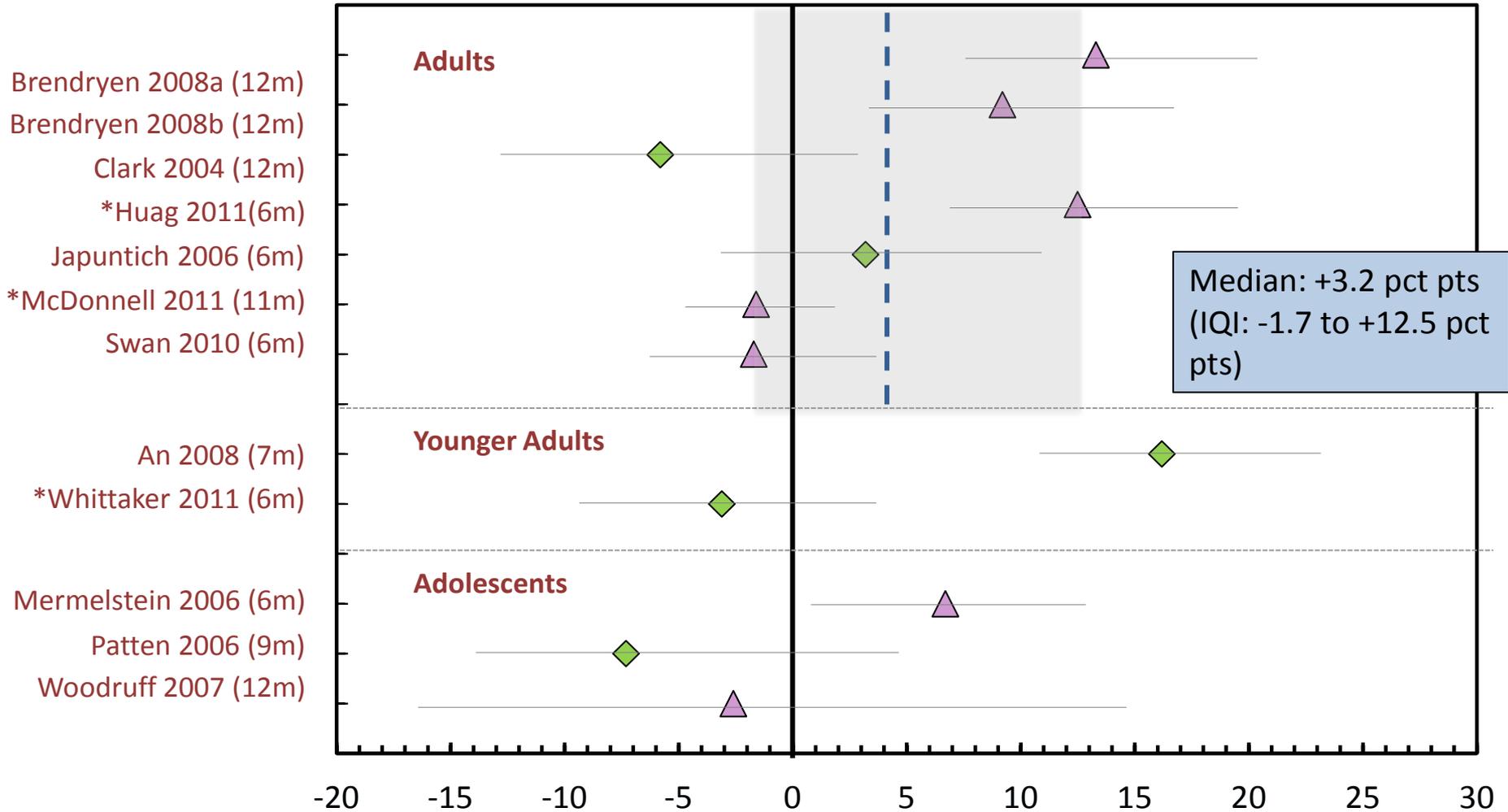
Example Graph #2: Absolute Percent Differences in Tobacco Use Cessation Included Studies Comparing Internet vs. No Internet or No Intervention

Study (F/U)

◆ Biochemical verification

▲ Self-report only

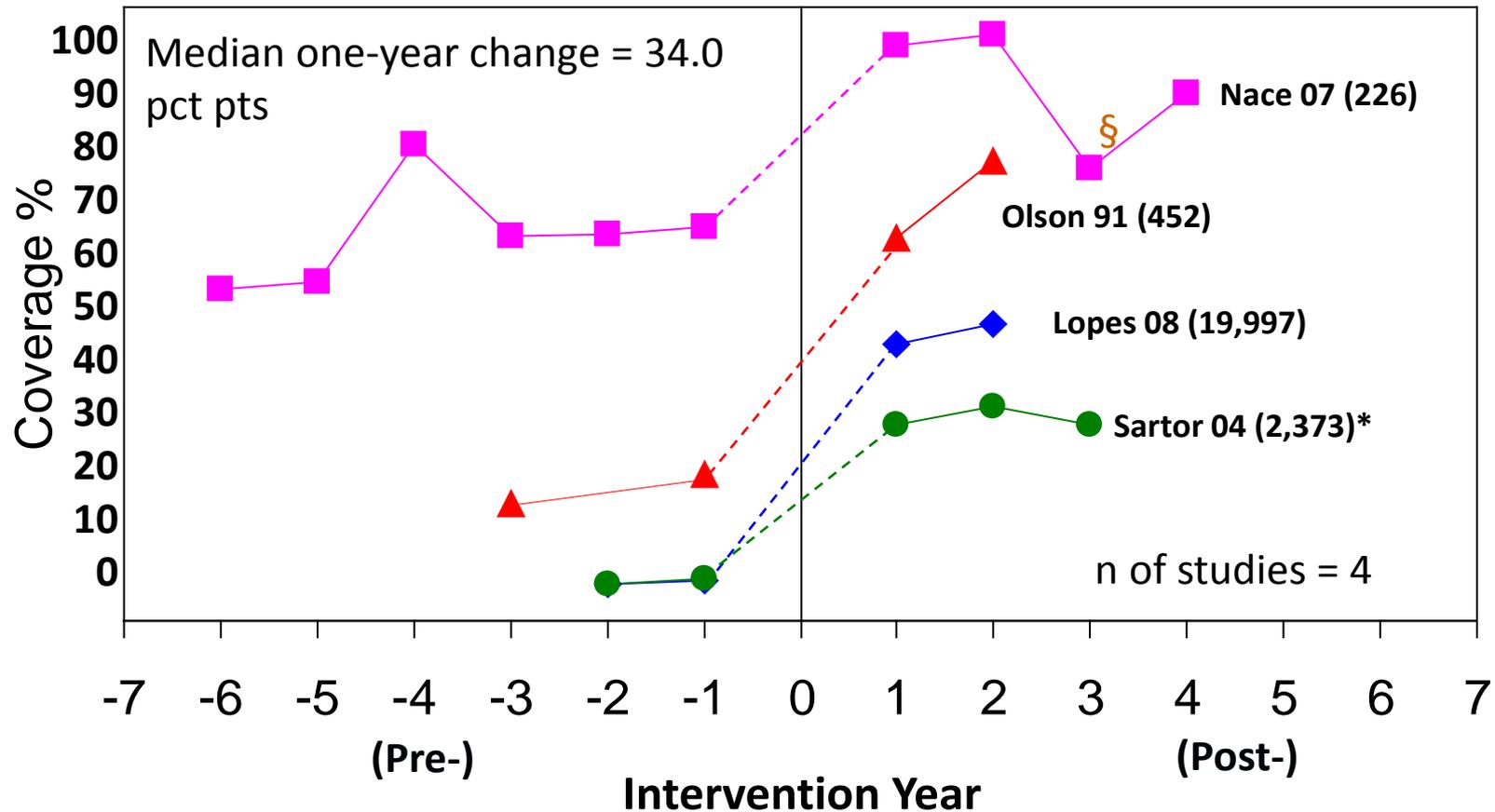
N= 12 studies
(search end August 2011)



* Included studies published in 2011

Absolute percent difference in Tobacco Use Cessation at Longest Follow-up

Example Graph #3: Influenza Vaccination Coverage with Moderate Suitability (Time-Series) Studies



*p < .05

§ Shortage year

Additional Information

- Assessments on various contextual factors is integral to the *Community Guide* review process
- Applicability/Generalizability
 - Population characteristics, Settings, Intervention characteristics
- Additional Benefits
 - Indirect health and non-health benefits from the intervention
- Potential Harms
 - Harms directly from the intervention to recipients
- Considerations for Implementation
 - Facilitating factors
 - Barriers to implementation
 - Resources
- Evidence Gaps

Example Overall Review Assessment: Team-Based Care for BP Control

- Body of evidence: 49 studies (of good/fair quality)
 - ≥90% RCTs (See translation table)

- Impact on BP
 - Magnitude of effect meaningful? Meaningful
 - Median change:
 - Proportion with BP controlled +12.0 pct pts.
 - SBP change -5.6 mm Hg
 - DBP change -1.8 mm Hg
 - Consistent across the body of evidence? Consistent

- Impact on morbidity; mortality; disparities Unclear

- Team assessment Strong evidence of effectiveness

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

A Body of Evidence

+

A Demonstration of Effectiveness

More than one study
Fewer if high quality
More if lower quality

Consistency of Effect

+

Sufficient Magnitude of Effect

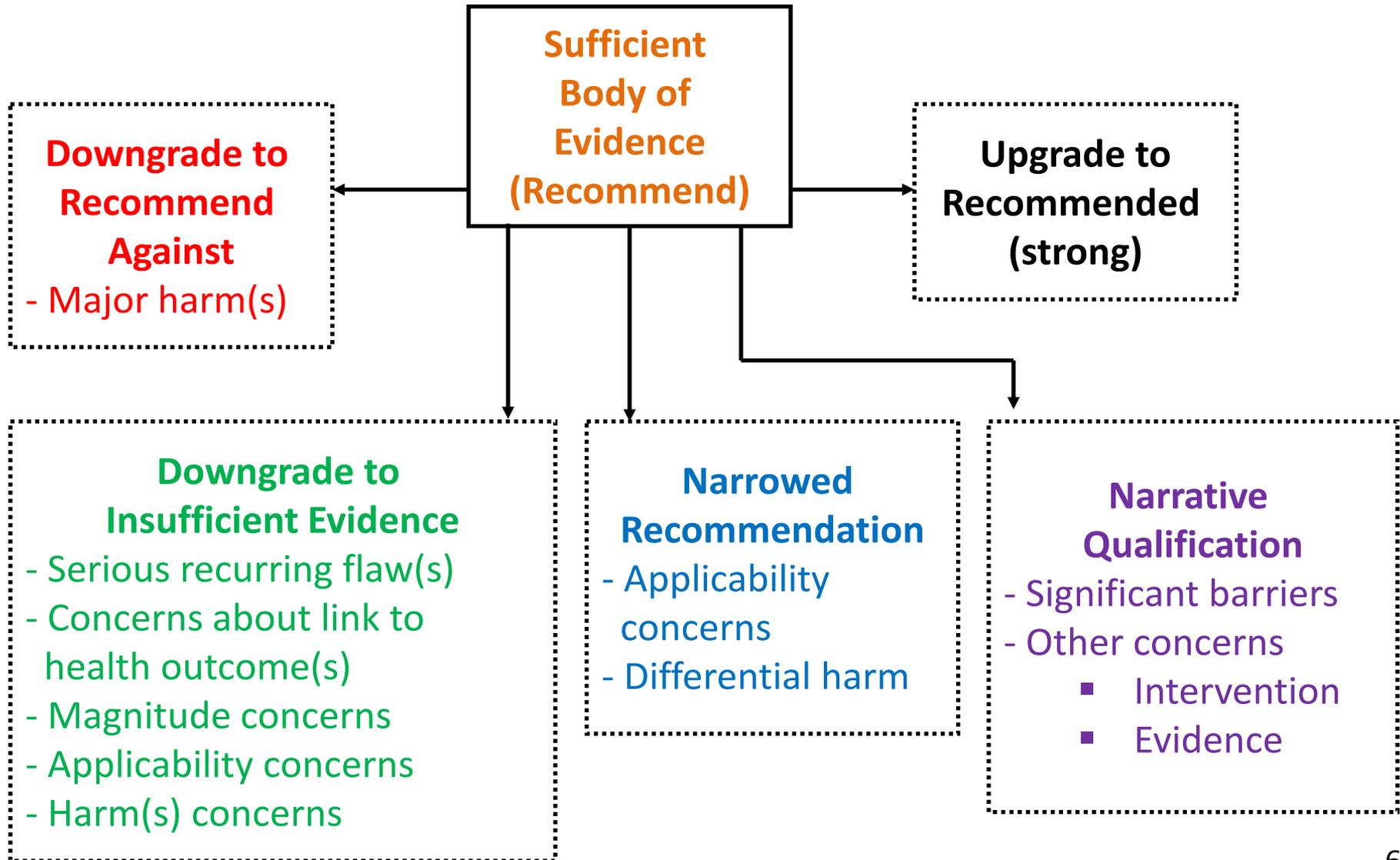
“Most” studies demonstrated an effect in the direction of the intervention

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

Translation Table: Task Force Adopts Consensus Conclusions

Evidence of Effectiveness	Quality of Execution	Suitability Of Design	Number of Studies	Consistent	Effect Size
STRONG	Good	Greatest	2 or more	Yes	Meaningful
	Good	Greatest or Moderate	5 or more	Yes	Meaningful
	Good or Fair	Greatest	5 or more	Yes	Meaningful
	Meet criteria for SUFFICIENT but not STRONG body of evidence				LARGE
SUFFICIENT	Good	Greatest	1	NA	Meaningful
	Good or Fair	Greatest or Moderate	3 or more	Yes	Meaningful
	Good or Fair	Greatest Moderate Least	5 or more	Yes	Meaningful
	Meet criteria for STRONG body of evidence, but Task Force opts to downgrade conclusion to SUFFICIENT for one or more reasons				
Expert Opinion	Varies	Varies	Varies	Varies	Meaningful
INSUFFICIENT (one or more)	Inadequate designs or execution		Too Few	No	Small

Current Options for Qualifying an Intervention Review Conclusion



Task Force Findings Options

- Recommend

- Based on strong evidence
- Based on sufficient evidence



- Recommend against

- Based on strong evidence
- Based on sufficient evidence



- Insufficient evidence to recommend for or against



Example Task Force Findings Statement #1

- The Community Preventive Services Task Force recommends comprehensive tobacco control programs based on strong evidence of effectiveness in reducing tobacco use and secondhand smoke exposure.
- Evidence indicates these programs reduce the prevalence of tobacco use among adults and young people, reduce tobacco product consumption, increase quitting, and contribute to reductions in tobacco-related diseases and deaths.
- Economic evidence indicates that comprehensive tobacco control programs are cost-effective, and savings from averted healthcare costs exceed intervention costs.

Example Task Force Findings Statement #2

- The Community Preventive Services Task Force finds insufficient evidence to determine the effectiveness of high school- and college-based interventions to prevent skin cancer by reducing exposure to ultraviolet radiation.
- Evidence was considered insufficient based on inconsistent results for sun protective behavioral outcomes.
- Interpretation of included studies also was complicated by (1) variability in interventions and evaluated outcomes; (2) short follow-up times; and (3) limitations in the design and execution of important subsets of studies.

Task Force Findings and Rationale Statement (TFFRS)

- Developed for each intervention review
- Available on the [Community Guide](#) website
- Contains, for each completed intervention review:
 - Intervention Definition
 - Findings Statement (with ‘recommendation’ language)
 - Rationale Statement
 - Basis for findings: Consistency of effect; magnitude of effect; quality of evidence
 - Applicability conclusions
 - Additional Benefits and Potential Harms
 - Data quality issues
 - Considerations for implementation
 - Evidence Gaps

Economics Systematic Review

- Conducted after the CPSTF has recommended an intervention (typically) or simultaneously with an effectiveness review (rarely)
- Objective is to evaluate
 - Total program costs and costs per participant
 - Economic benefits and cost savings from the intervention
- Systematic, rigorous process by the *Guide* Economics Team
- Studies included in the economic analyses include:
 - Cost-only, Benefit-only, Cost-effectiveness, Cost-benefit
- Considered by the Task Force with corresponding findings from the effectiveness review

Collaborative Care to Improve Management of Depression

Collaborative Care Coordination Team

Staff Team

- Theresa Sipe
- Anil Thota
- Robert Hahn
- Carlos Zometa
- Guthrie Byard
- Elena Watzke
- Su Su

Task Force member

- Ana Abraido-Lanza (Columbia University)

Liaison member

- Kevin Hennessy (SAMHSA)

CDC Partners

- Lela McKnight-Eily (NCCDPHP)
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- Mary Vernon-Smiley (NCCDPHP)
- Samantha Williams (NCCHHSTP)

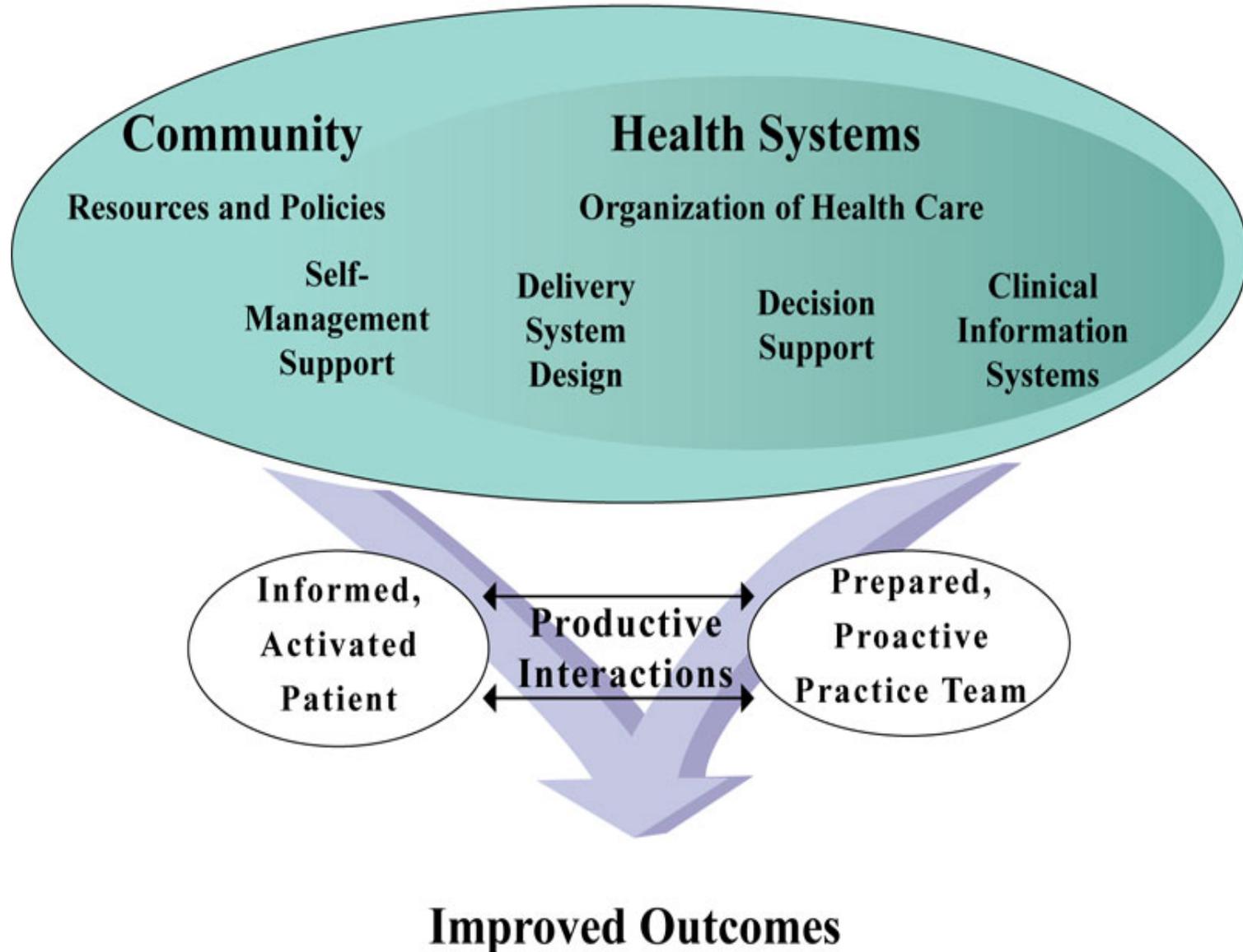
External Partners

- Jane Pearson (NIMH)
- Farifteh Duffy (APA)
- Alan Gelenberg (Penn State)
- Clinton Anderson (APA)
- Don Nease (AAFP)
- Tracy Whitaker (NASW)
- Ken Duckworth (NAMI)

Background

- Depression affects 15 million Americans each year¹
- 11.2 million adults reported an unmet need for mental health services and 5.7 million did not receive treatment in the past year²
- Primary care is the typical point of entry and opportunity for identifying and treating depression
 - Prevalence in primary care: 12%³
 - 61.4% receive treatment in primary care only⁴
- 52 billion USD in productivity costs every year⁵
- Increasing efforts to implement 'integrated care' models for management of depression

The Chronic Care Model



Adapting the Chronic Care Model and Integrated Team-Based Care for Depression

- Collaborative Care Model* with two core components
 - Allied health professionals support primary care providers:
 - Patient education
 - Patient follow-up
 - Tracking depression outcomes and treatment adherence
 - Facilitating additional visits or treatments with the primary care physician if depression does not improve
 - Consultation by a psychiatrist/psychologist:
 - Caseload supervision
 - Clinical advice and decision support to primary care providers

Intervention Definition:

Collaborative Care for Management of Depression

Definition. Collaborative care for depressive disorders is a complex, healthcare systems-level intervention in which depression care is coordinated by linking primary care providers, patients, and mental health specialists through case managers.

Primary care providers receive case management support in addition to consultation and decision-support from mental health specialists. This level of collaboration is designed to achieve:

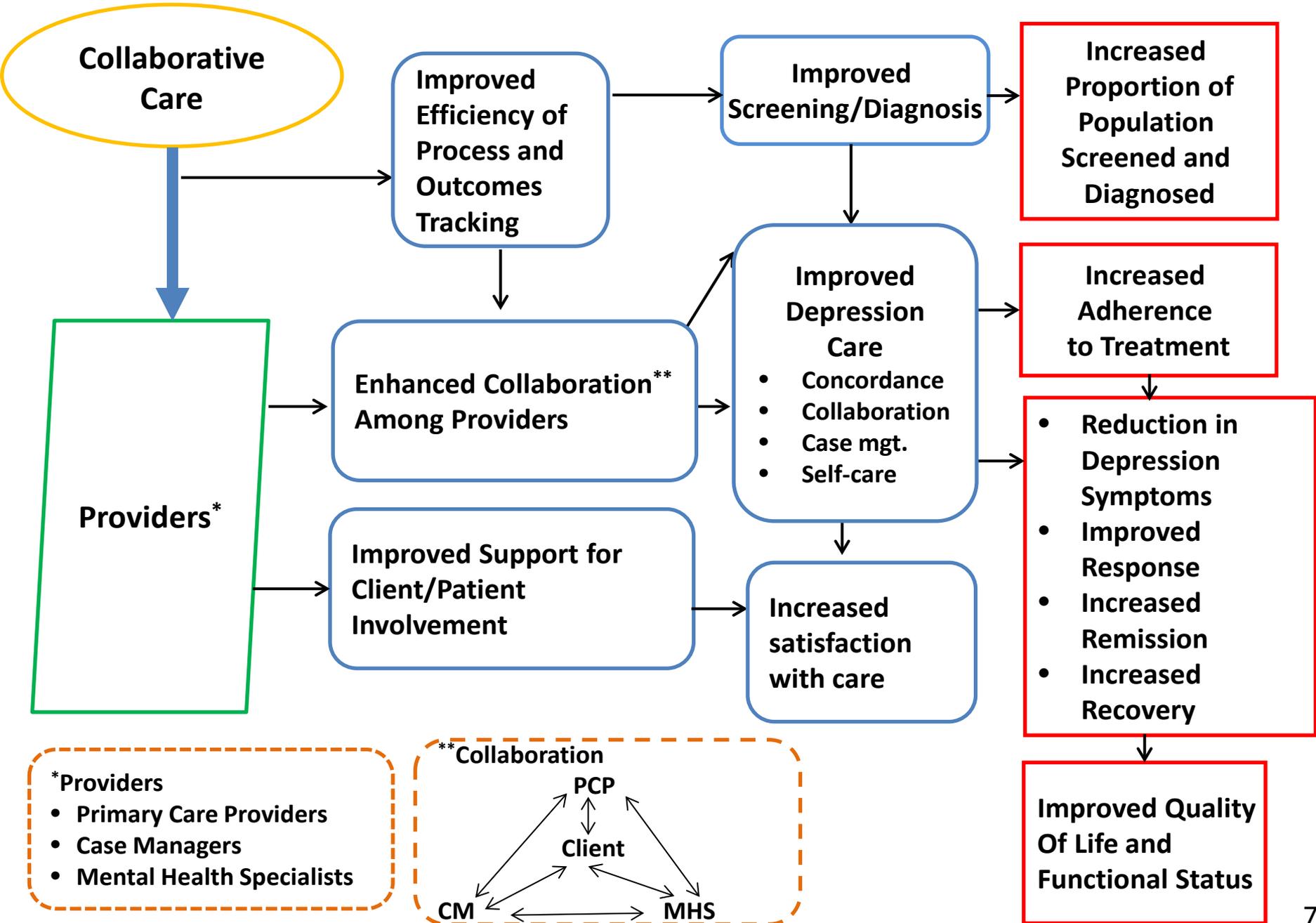
- Improved screening and diagnosis of depressive disorders
- Improved support for active client/patient involvement
- Improved concordance with evidence-based guidelines for management of depressive disorders

Collaborative Care Components

- These complex interventions often include
 - Patient education
 - Support for self-care
 - Provider education
 - Provider feedback
 - Oversight of providers
 - Emphasis on evidence-based guidelines

- These elements are often supported by technology-enabled resources (e.g., electronic medical records, telephone contact, provider reminder mechanisms.)

Analytic Framework: Collaborative Care for Depression



An Example: *Pathways* (Simon 2007)

- Settings: 9 primary care clinics in Washington and Idaho
- Population: Clients with depression and co-morbidity (diabetes)
- Intervention
 - Case manager: Nurse
 - Primary care provider: Physician
 - Mental health specialist: Psychiatrist or Psychologist
- Physician prescribed medications (antidepressants)
- Case manager followed up in-person or via telephone every 2 weeks
- Mental health specialist provided supervision/consultation

Another Example: Worksite Setting (Wang 2007)

- Settings: 16 diverse national organizations – airline, banking, manufacturing, state government etc.
- Population: Employees with depression
- Intervention
 - Case managers engaged employees
 - Telephonic outreach and care management program encouraged workers to enter outpatient treatment.
 - Initial telephone contacts included assessment, recommendation for in-person psychotherapy and medication evaluation.
 - Case managers also provided feedback and algorithm-based recommendations to providers as necessary
 - For those who declined in-person treatment, case managers provided a motivational intervention and telephone follow-up

Research Questions

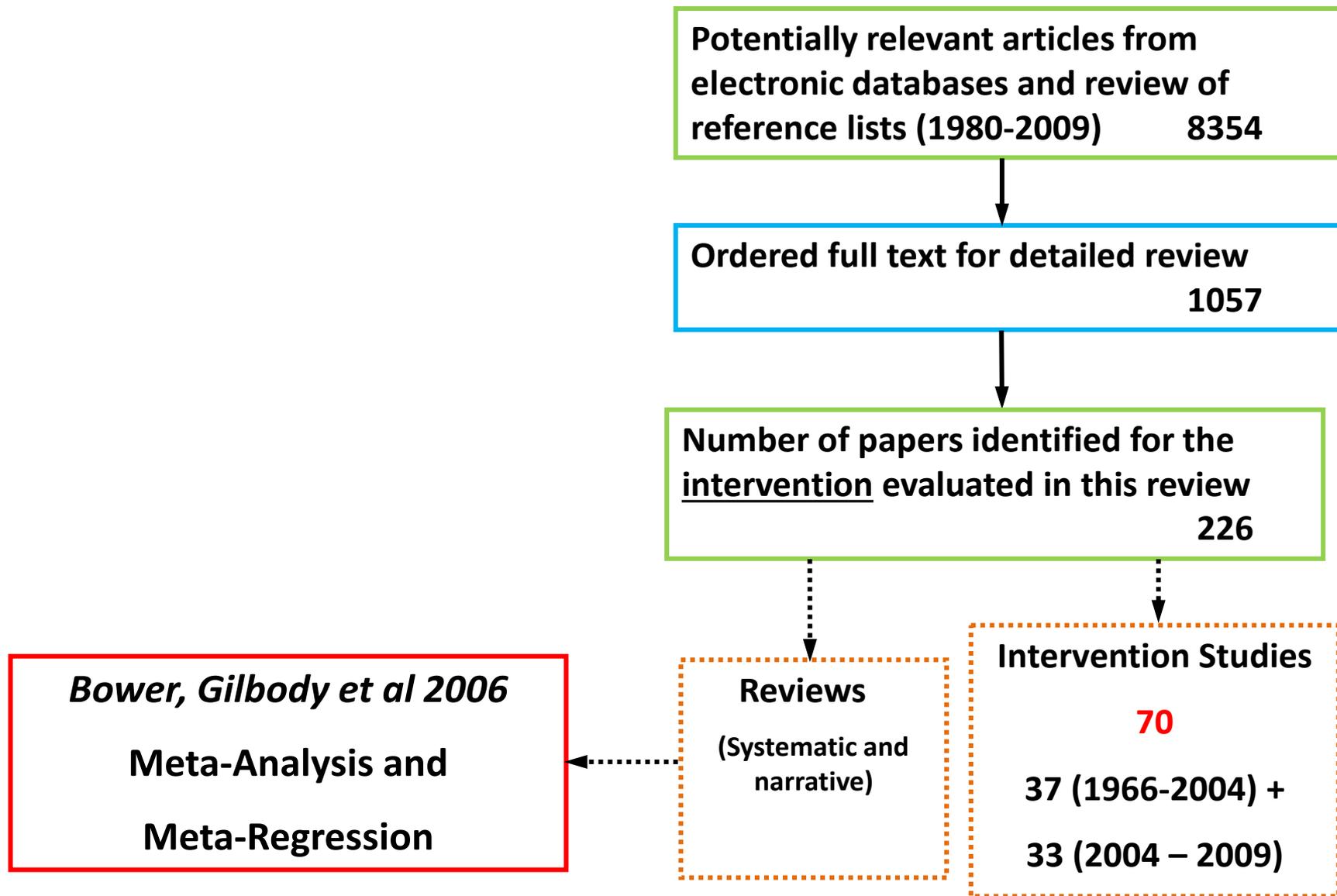
1. Is collaborative care effective in managing depressive disorders in the community by:

- Improving depression symptoms?
- Improving adherence to treatment?
- Improving response to treatment?
- Improving the rate of remission and recovery?
- Increasing the proportion of population screened for depression?
- Improving quality of life and functional status?
- Improving satisfaction with care?

2. Does the effectiveness of collaborative care differ by:

- Demographic variables – age, gender, race/ethnicity, SES?
- Organization, setting?
- Substantive variables - collaborative care elements, type of provider?
- Methodological variables – study design, type of comparison group

Literature Search: 1980-2009



Findings from Existing Systematic Reviews

- **Gilbody, Bower et al (2006)** – cumulative meta-analysis
 - 37 randomized trials in primary care settings (12,355 patients)
 - Random effects meta-analysis showed that depression outcomes were improved at 6 months
 - Standardized Mean Difference= 0.25; (95% CI, 0.18-0.32)
 - Improved outcomes persisted up to 5 years
 - Standardized mean difference=0.15; (95% CI, 0.001-0.31)

- **Bower, Gilbody et al (2006)** – meta-regression
 - Key predictors of improved outcomes
 - Systematic identification of patients
 - Professional background of staff
 - Specialist supervision

Review Plan: Update the Bower and Gilbody Reviews

■ Rationale

- Task Force encourages the consideration of existing high-quality systematic reviews
- Team assessment of Bower and Gilbody
 - Similar conceptualization of intervention
 - Similar outcomes
 - 5 years old (in an area of active research)

■ Plan

- Bower and Gilbody reviews cover study period 1966-2004
- Community Guide review update for the period 2004-2009

Body of Evidence (2004-2009)

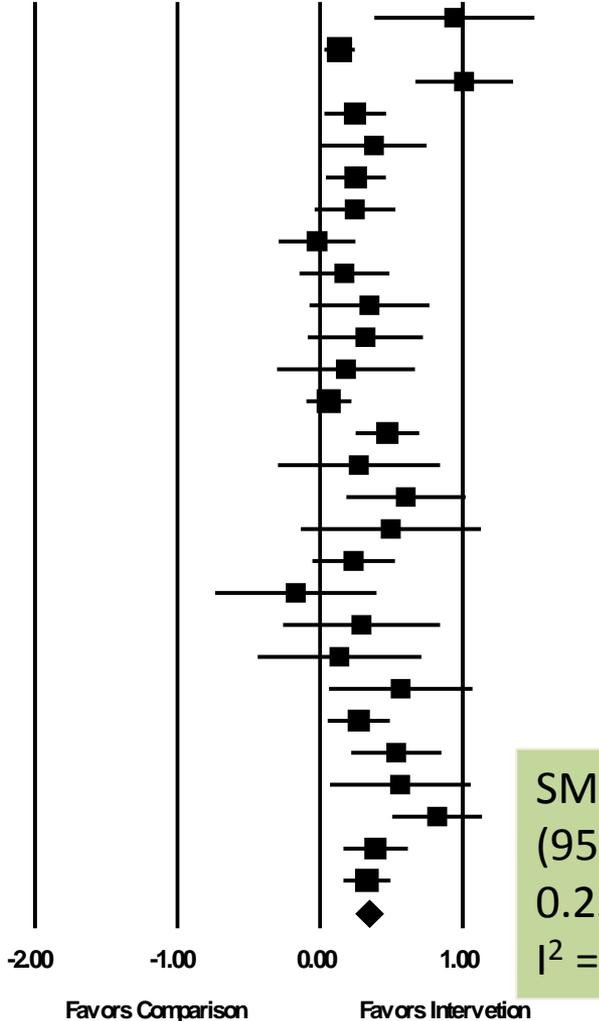
Quality of Execution	Suitability of Study Design		
	Greatest	Moderate	Least
Good (0-1)	13 (15)	-	-
Fair (2-4)	19 (24)	-	-
Limited (>4)	1 (1)	-	-

Included Intervention studies: 32

Excluded Intervention studies: 1

Meta-Analysis Results: Improvement in Depression Symptoms

Study name	Outcome	Time point	Statistics for each study			Hedges's g and 95% CI
			Hedges's g	Lower limit	Upper limit	
Sharpe 2004	SCID	6.000	0.942	0.378	1.506	
Oslin 2004	MH-D	6.000	0.137	0.029	0.245	
Ciechanowski 2004	SCL-20	6.000	1.010	0.666	1.355	
Dietrich 2004	SCL-20	6.000	0.247	0.029	0.465	
Baldwin 2004	GDS-30	2.000	0.379	0.010	0.747	
Asanow 2005	CES-D	6.000	0.251	0.039	0.462	
Simon 2006	SCL-20	6.000	0.245	-0.040	0.529	
Dobscha 2006	PHQ-9	6.000	-0.021	-0.292	0.250	
Smit 2006 (1)	BDI	6.000	0.171	-0.146	0.488	
Smit 2006 (2)	BDI	6.000	0.346	-0.076	0.768	
Smit 2006 (3)	BDI	6.000	0.318	-0.088	0.724	
Cole 2006	HAMD	6.000	0.181	-0.304	0.666	
Wang 2007	QIDS-SR	6.000	0.061	-0.098	0.221	
Simon 2007	SCL-90	12.000	0.472	0.248	0.696	
McMahon 2007	BDI	6.000	0.272	-0.298	0.842	
Chew-Graham 2007	HSCL-20	4.000	0.602	0.183	1.021	
Ollum 2007	GDS-15	4.000	0.496	-0.137	1.130	
Williams 2007	HAMD	3.000	0.236	-0.057	0.528	
Ludman 2007 (1)	SCL-90	6.000	-0.171	-0.739	0.398	
Ludman 2007 (2)	SCL-90	6.000	0.291	-0.262	0.844	
Ludman 2007 (3)	SCL-90	6.000	0.137	-0.439	0.712	
Richards 2008	PHQ-9	3.000	0.566	0.060	1.071	
Eli 2008	PHQ-9	6.000	0.272	0.052	0.491	
Stiefel 2008	CES-D	6.000	0.536	0.217	0.854	
Bogner 2008	CES-D	1.500	0.562	0.066	1.058	
Strong 2008	SCL-20	6.000	0.821	0.505	1.138	
Rollman 2009	HAMD	8.000	0.389	0.162	0.616	
Gensichen 2009	PHQ-9	12.000	0.329	0.162	0.495	
			0.338	0.248	0.428	



SMD = 0.34
 (95% CI
 0.25, 0.43)
 I² = 60%

Summary of Findings for All Outcomes

Outcome	Number of Study Arms	Effect Estimate	Team Assessment of effect
Depression Symptoms	28	SMD = 0.34	Meaningful
Adherence	10	OR = 2.22	Meaningful
Response	14	OR = 1.78	Meaningful
Remission (< 6 months)	5	OR = 2.37	Meaningful
Remission (6 months)	9	OR = 1.74	Meaningful
Recovery (12 months)	5	OR = 1.75	Meaningful
Quality of Life (includes Functional Status)	15	SMD = 0.12	Small
Satisfaction with Care	11	SMD = 0.39	Meaningful

Comparison of Findings: Bower/Gilbody and CG Update

Outcome Category	Bower, Gilbody 1966 - 2004		Community Guide 2004*- 2009	
	Number of study arms	Effect estimate	Number of study arms	Effect estimate
Depression Symptoms	34	SMD 0.24	28	SMD 0.34
Adherence	28	OR 1.92	10	OR 2.22

Additional Information

- Applicability of the evidence:
 - To most primary care settings and populations
- Other benefits:
 - Increased productivity; Positive impact on job retention(1 study)
 - Increased adherence to cancer treatment (1 study); Reduction in mortality (1 study) although mechanism of this reduction was unclear.
- Potential harms: none identified
- Barriers to implementation:
 - Institutional resistance
 - Recruitment /retention of clients
 - Access/insurance coverage

Economic Evaluation

- Studies identified:
 - 20 evaluations of 14 intervention studies
 - Cost- Utility: 6 ; Cost-Benefit: 5; Benefits-Only: 7; Cost-Only: 2
 - 2 Modeling studies
- Outcomes:
 - Reported Program Costs/Person/Year: \$104 - \$2160 Median: \$436
 - Benefits-Only: 4 studies - positive benefits, 3 studies - zero to minimal
 - Cost-Benefit: All 5 studies – cost-beneficial
 - Cost-Utility and Modeling: All 8 studies – cost-effective
- Findings:
 - “The weight of the economic evidence indicates that collaborative care provides good economic value.”

Summary

- Team-based multi-component intervention to improve depression care
 - Coordinates care for depression at the primary care level
 - Case Managers, PCPs and mental health specialists
 - 'Activates' patient involvement and provides social support
 - Found to improve a range of depression-related outcomes
 - Requires healthcare system-level organizational changes

- Applicable to a variety of populations and settings

- Found to be of good economic value

Task Force Findings Statement

- The Community Preventive Services Task Force recommends collaborative care for the management of depressive disorders based on strong evidence of effectiveness in improving depression symptoms, adherence to treatment, response to treatment, and remission and recovery from depression.
- The Task Force also finds that collaborative care models provide good economic value based on the weight of evidence from studies that assessed both costs and benefits.



<http://www.thecommunityguide.org/mentalhealth/collab-care.html>

Evidence Gaps

- Better reporting of results by race/ethnicity, SES
- Collaborative Care interventions in adolescent populations
- Impact on screening practices for depression in primary care (only 1 study reported this outcome)
- New research emerging on application to populations with co-morbid chronic conditions e.g. depression and hypertension

Economics of Collaborative Care for Management of Depressive Disorders

A Community Guide Systematic Review

Verughese Jacob, PhD, MPH, Sajal K. Chattopadhyay, PhD, Theresa Ann Sipe, PhD, MPH, CNM, RN, Anilkrishna B. Thota, MBBS, MPH, Guthrie J. Byard, MPH, Daniel P. Chapman, PhD, MSc, Community Preventive Services Task Force

Context: Major depressive disorders are frequent models developed from the Chronic Care Model. This paper assesses the economic efficiency of collaborative care by comparing its economic costs and economic benefits to other models of depression management in the community, based on a review of the literature.

Evidence acquisition: The economic review was conducted in tandem with a review of effectiveness by the Community Preventive Services Task Force, a nonfederal, independent body that uses methods developed by the *Guide to Community Preventive Services* to abstract, adjust, and summarize the economic evidence. An earlier economic review that included only randomized controlled trials expanded the evidence with both RCTs and other study designs.

Collaborative Care to Improve the Management of Depressive Disorders

A Community Guide Systematic Review and Meta-Analysis

Anilkrishna B. Thota, MBBS, MPH, Theresa A. Sipe, PhD, MPH, CNM, RN, Carlos S. Zometa, PhD, MPH, Lela R. McKnight-Eily, PhD, Daniel P. Chapman, PhD, Jane L. Pearson, PhD, Clinton W. Anderson, PhD, Kevin D. Hennessey, PhD, Farifteh F. Duffy, PhD, Donald E. Nease Jr., MD, Samant D. Chaturvedi, MD, Community Preventive Services Task Force

Context: To improve the quality of depression management, the Chronic Care Model over the past 20 years has developed a patient-centered, healthcare system-level intervention that uses case managers, primary care physicians, and mental health specialists. In addition to case managers, patients, and mental health specialists, providers receive consultation and decision support from mental health professionals (e.g., nurses and psychologists). This collaboration is designed to (1) improve the management of diagnosed depressive disorders; (2) increase provider use of evidence-based practices; and (3) improve patient and provider engagement in treatment goal-setting.

AJPM Publications

Recommendation from the Community Preventive Services Task Force for Use of Collaborative Care for the Management of Depressive Disorders

Community Preventive Services Task Force

Summary: The Community Preventive Services Task Force recommends collaborative care for the management of depressive disorders, based on strong evidence of effectiveness in improving depression symptoms, adherence to treatment, response to treatment, and remission and recovery from depression.

(Am J Prev Med 2012;42(5):521–524) Published by Elsevier Inc. on behalf of American Journal of Preventive Medicine

The widespread prevalence of depressive disorders and the large disease burden from these disorders is well established.^{1,2} Primary care remains the most frequent point of entry into the healthcare system for patients with depression symptoms, and nearly 60% of patients with depression continue to receive care at the primary care level.³ Hence, engagement in primary care to reduce morbidity and mortality from depression would include optimizing two processes: screening and treatment. The U.S. Preventive Services Task Force rec-

ommends collaborative care for the management of depressive disorders as a multicomponent, healthcare system-level intervention using case managers to link primary care providers, patients, and mental health specialists. This collaboration is designed to (1) improve routine screening and diagnosis of depressive disorders; (2) increase provider use of evidence-based protocols for proactive management of diagnosed depressive disorders; and (3) improve clinical and community support for active patient engagement in treatment goal setting and self-management.

Community Guide Reviews: Improving Mental Health and Addressing Mental Illness

Intervention	Description	Task Force Finding
Collaborative Care for Management of Depression	Team-based, health systems intervention with case manager, primary care provider and mental health professional working together to improve depression outcomes.	Strong Evidence <ul style="list-style-type: none"> Improvements in Depression-related outcomes 
Mental Health Benefits Legislation (MHBL)	Changing regulations for mental health insurance coverage to improve financial protection (i.e., decreased financial burden) and to increase access to, and use of, mental health services including substance abuse services. Moving toward parity for mental health coverage is a key element of most MHBL, i.e., no greater restrictions on mental health coverage relative to physical health coverage.	Sufficient Evidence <ul style="list-style-type: none"> Improving financial protection Increasing appropriate utilization of mental health services 
Home-Based Depression Care Management for Older Adults	Home as main setting for: Active screening for depression + Measurement-based outcomes + Trained depression care managers + Case management + Patient education + Supervising psychiatrist	Strong Evidence <ul style="list-style-type: none"> Improved short-term depression outcomes 
Clinic-Based Depression Care Management for Older Adults	Primary Care Clinics as setting for: Active screening for depression + Measurement-based outcomes + Trained depression care managers providing case management + Primary care provider and patient education + antidepressant treatment and/or psychotherapy + supervising psychiatrist	Sufficient Evidence <ul style="list-style-type: none"> Improved short-term depression outcomes 
Community-Based Exercise Interventions for Older Adults	Individual or Group Classes for older adults focused on strengthening or endurance or functional training.	Insufficient Evidence <ul style="list-style-type: none"> Impact on depression outcomes 

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5. Greenberg PE, Kessler RC, Birnbaum HG, et al. The economic burden of depression in the United States: how did it change between 1990 and 2000? J Clin Psychiatry 2003;64(12):1465-75.

Questions and Answers



Remote sites can send in questions by typing in the *GoToWebinar* chat box or email GrandRounds@dshs.state.tx.us.

For those in the auditorium, please come to the microphone to ask your question.

Lauren Lacefield Lewis
Assistant Commissioner
DSHS

Our Next Grand Rounds

Nov. 12

Preventing the First Cesarean Delivery: Practical Application of the Evidence

**Presenter: Christina Davidson, MD,
Professor, Baylor College of Medicine
and Chief of Service, Obstetrics and
Gynecology, Ben Taub Hospital**

