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Effective Interventions to Improve Vaccination Coverage in Children, Adolescents, and Adults

Findings and Recommendations from
the US Task Force on Community
Preventive Services

David Hopkins
Community Guide, CDC



Agenda

- Status of immunization in the US
- What is evidence on effectiveness?
- Evidence; Systematic reviews; and the Community Guide
- Vaccination strategies and Recommendations
- Other Considerations



"...No duty of society, acting through its government agencies, is paramount to this obligation to attack the removable cause of disease. The duty of leading this attack and bringing home to public opinion the fact that the community can buy its own health protection is laid upon all health officers, organization and individuals interested in public health movements....."

Hermann Biggs
Medical Officer
New York City DOH 1911

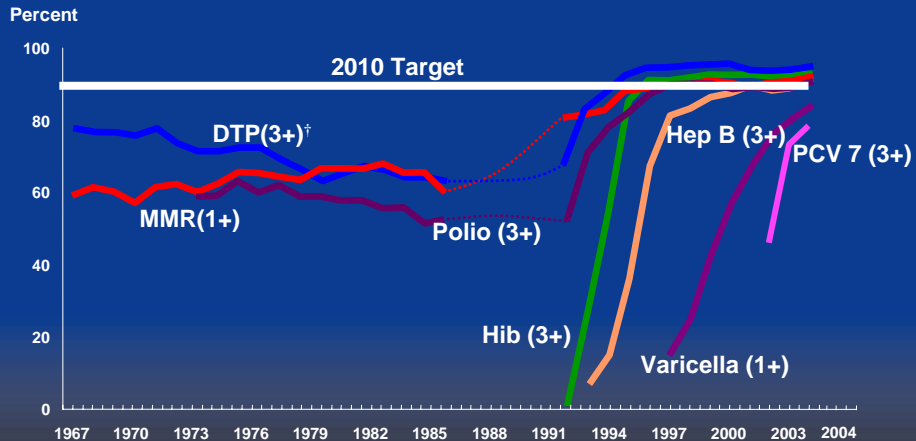


Challenges in the United States

- Rapid introduction of new vaccines
- Establishing and maintaining a steady vaccine supply
- Vaccine financing
- Reducing remaining racial/ethnic disparities in coverage
- Effectively addressing fears about vaccine safety

Source (slides 4 and 5): S Cochi, National Immunization Program, CDC, 2005

Vaccine-Specific Coverage Rates Among Pre-school Aged Children in the United States



† DTP(3+) is not a Healthy People 2010 objective. DTP(4) is used to assess Healthy People 2010 objectives.
 Note: Children in the USIS and NHIS were 24-35 months of age. Children in the NIS were 19-35 months of age.
 Source: USIS (1967-1985), NHIS (1991-1993) CDC, NCHS, and NIS (1994-December 2003), CDC, NIP and NCHS;
 No data from 1986-1990 due to cancellation of USIS because of budget reductions

Still A Lot of Room for Improvement among Adults (2005)

<u>Influenza</u>		<u>Pneumococcal</u>	
■ 18-49 yrs with high risk conditions	18%	■ 18-49 yrs with high risk conditions	15%
■ 50-64 yrs old	34%	■ 50-64 yrs old	31%
HP 2010 objective	60%	HP 2010 objective	60%
■ 65+ yrs	60%	■ 65+ yrs	56%
HP 2010 objective	90%	HP 2010 objective	90%

Source: National Immunization Program, CDC (2006)

What is Evidence on Effectiveness?



“Evidence” in Public Health

- A wild guess
- An educated guess
- Word of mouth (what others are doing)
- Case report (before-after experience)
- A scientific trial
 - One group gets the intervention
 - A second group acts as a comparison
- A narrative review of related studies
- A systematic review



A Lot of People are Doing a lot of Work

The Practice of Immunization

(What people, groups, and programs are doing now in communities, schools, worksites, health care systems)

Differences in:
-Support
-Focus
-Partners
-Activities

Some of This Work Gets Evaluated

The Practice of Immunization

(What people, groups, and programs are doing now in communities, schools, worksites, health care systems)

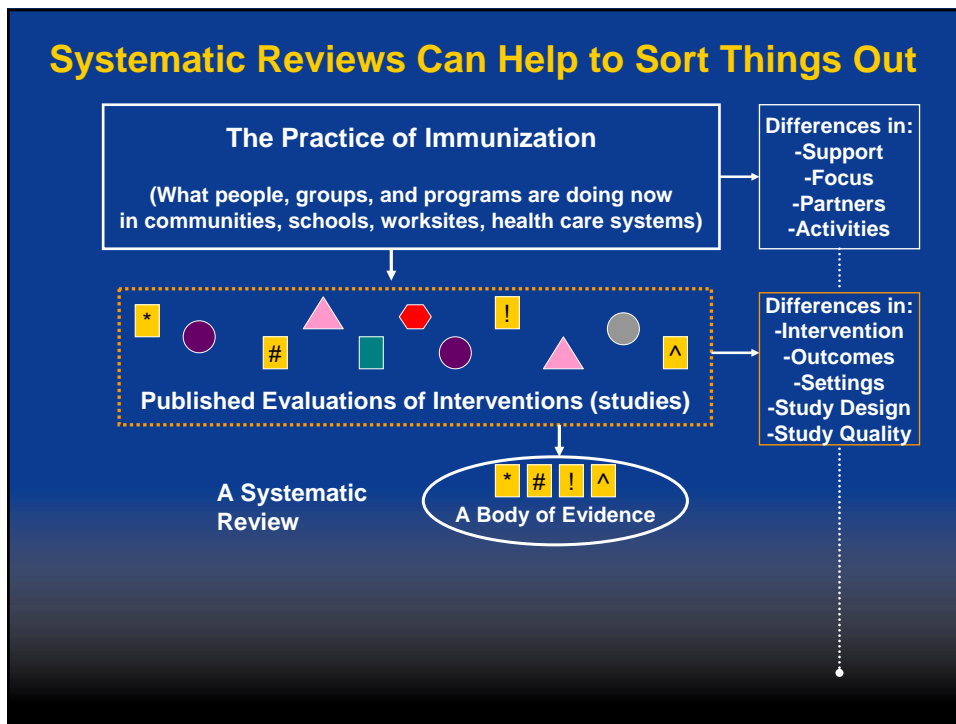
Differences in:
-Support
-Focus
-Partners
-Activities



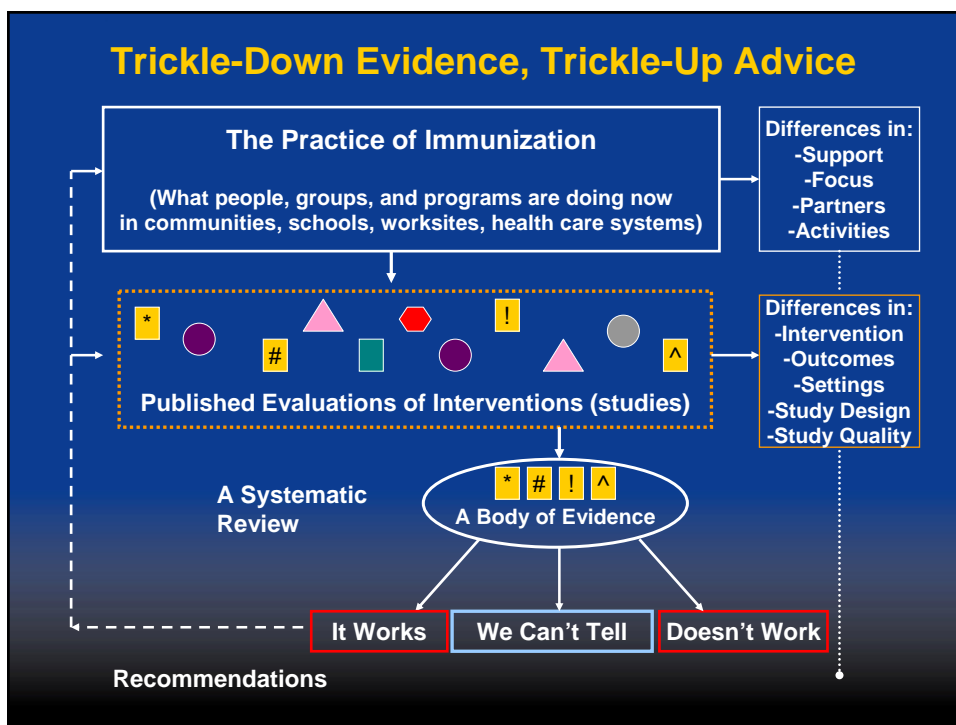
Published Evaluations of Interventions (studies)

Differences in:
-Intervention
-Outcomes
-Settings
-Study Design
-Study Quality

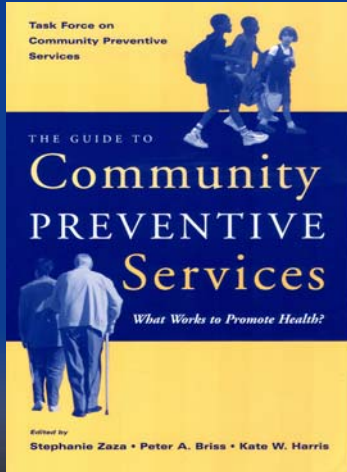
Systematic Reviews Can Help to Sort Things Out



Trickle-Down Evidence, Trickle-Up Advice

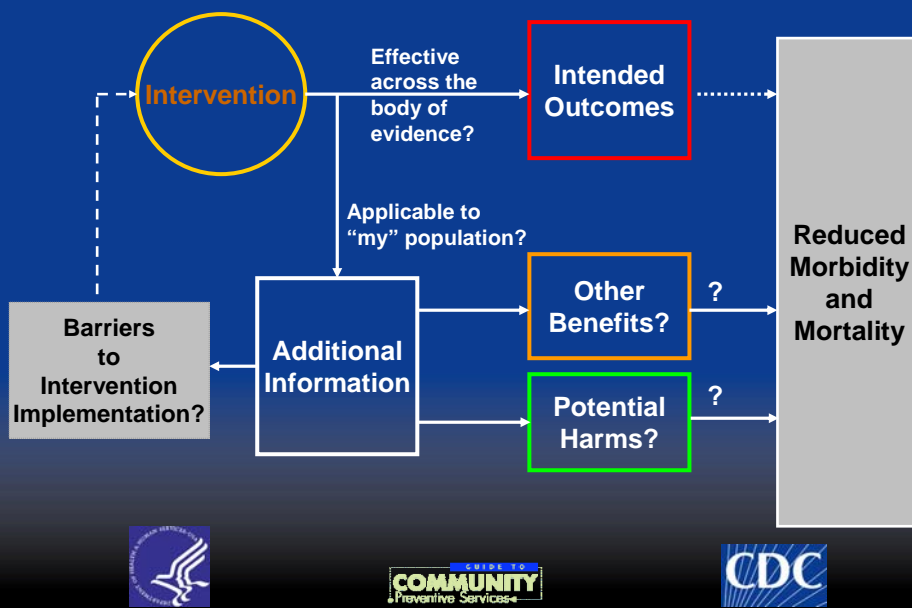


The Community Guide



- An independent US Task Force
- A method for conducting systematic reviews
- A focus on population-based interventions
 - ◆ Communities
 - ◆ Health care systems
- Evidence-based conclusions and recommendations regarding use

Issues Considered in Community Guide Reviews



Evidence on Effectiveness of Interventions to Improve Vaccination Coverage

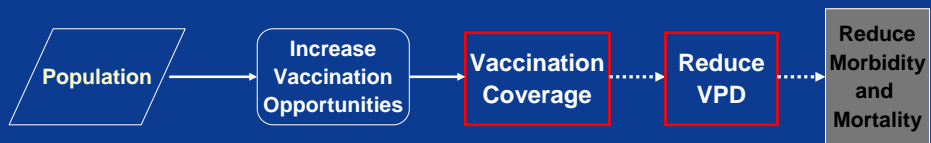
Recommendations regarding Use of Interventions appropriate for Communities and Healthcare Systems



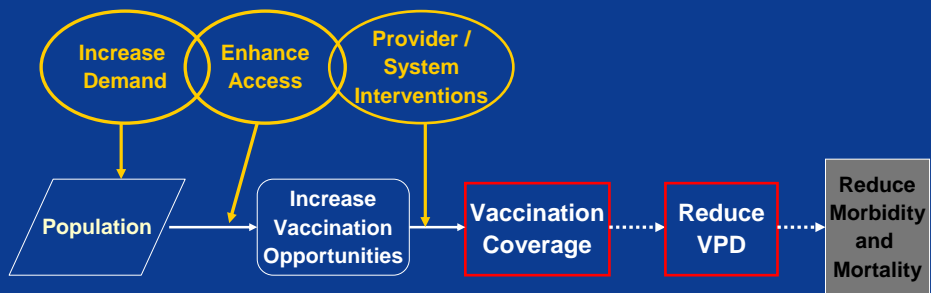
Our Conceptual Approach: Target and Goals



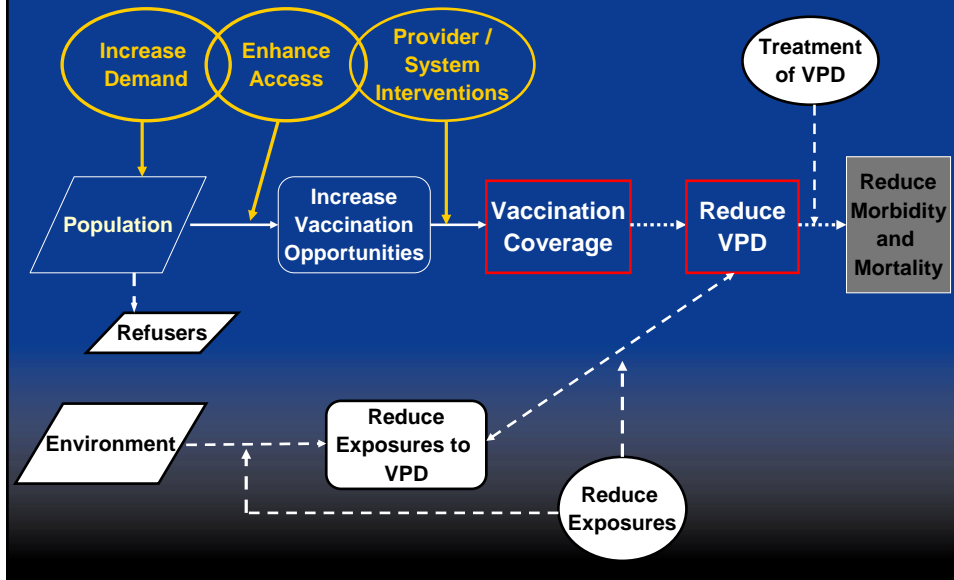
Important Intermediate Steps



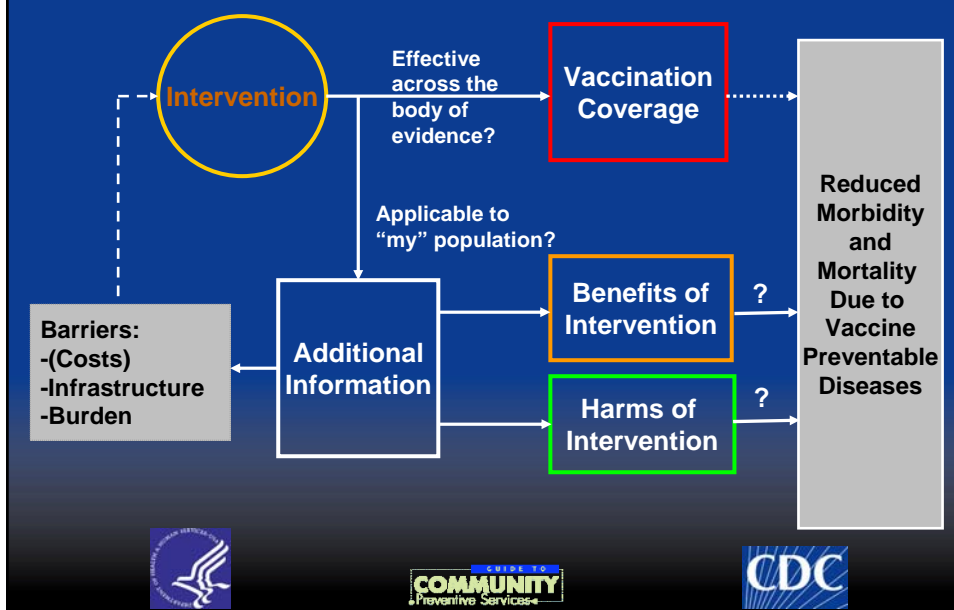
Strategic Approaches Considered



Strategies and Issues Not Included in this Review



Issues Considered in the VPD Reviews



Recommendations from the Task Force on Community Preventive Services

Interventions to Increase Vaccination Coverage in Children, Adolescents, and Adults



Interventions to Increase Client and Community Demand for Vaccinations

Intervention Reviewed	# Studies	Task Force Finding
Client reminder / recall	42	Recommended—Strong
Education when combined with other Interventions	17	Recommended—Strong
Vaccination requirements for childcare, school, college	9 (3)	Recommended—Sufficient
Community education when implemented alone	1	Insufficient Evidence
Clinic-based education when implemented alone	3	Insufficient Evidence
Client or family incentives	3	Insufficient Evidence
Client-held medical records	4	Insufficient Evidence

Interventions to Enhance Access to Vaccination Services

Intervention Reviewed	# Studies	Task Force Finding
Reducing client out-of-pocket costs	19 (14)	Recommended—Strong
Expanding access in health care settings when combined with other interventions	15	Recommended—Strong
Vaccination Programs in US WIC settings	4	Recommended—Sufficient
Home Visits for vaccinations	7	Recommended—Sufficient
Vaccination programs in schools	9 (2001)	Recommended—Sufficient
Vaccination programs in childcare centers	0	Insufficient Evidence
Expanding access in health care settings alone	2	Insufficient Evidence

Provider-based Interventions to Increase Vaccinations

Intervention Reviewed	# Studies	Task Force Finding
Provider Reminder / Recall	29	Recommended—Strong
Provider Assessment and Feedback	14	Recommended—Strong
Standing Orders for Adult Clients	10	Recommended—Sufficient
Standing Orders for Children	0	Insufficient Evidence
Provider Education when implemented alone	4	Insufficient Evidence

An Example of Review Findings

- Client Reminder / Recall
 - ◆ Prompts to clients that their vaccinations are due or overdue
 - Mail (letters, postcards)
 - Telephone
 - ◆ Registry systems can be used to identify and generate reminders



Impact on Vaccination Coverage

- 42 included studies
 - ◆ 31 study arms when implemented alone
 - Median change: +8 pct points across baseline coverage of 4% to 94%
 - ◆ 23 study arms when combined with other interventions
 - Median change: +16 pct points across baseline coverage rates of 5% to 89%



Additional Information

- **Applicability:** Interventions were effective in a variety of settings, and populations, and for most vaccines
 - ◆ Across a range of baseline coverage
 - ◆ For children and adults
 - ◆ (No studies of adolescents/ Hepatitis B)
- **Benefits/Harms:** No information
- **Barriers:** Infrastructure; Burden



Task Force Recommendation

- Client reminder/recall interventions are recommended on the basis of strong scientific evidence that they improve vaccination coverage 1) in children and adults, 2) in a range of settings and populations, 3) when applied at different levels of scale from individual practice settings to entire communities; 4) across a range of intervention characteristics (e.g. reminder or recall, content, theoretical basis and method of delivery); and (5) whether used alone or as part of multicomponent intervention.

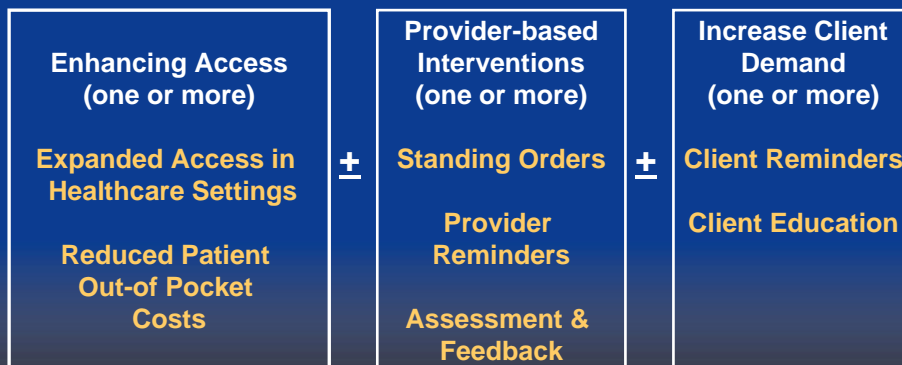


Additional Considerations



Interventions in Combination

A Menu Recommendation*



* Task Force review of interventions to improve influenza, pneumococcal, and hepatitis B vaccination coverage among high-risk adults (2005)

Limits of Community Guide Reviews and Recommendations

- Recommendations do not replace the need for local assessments of community priorities and resources
- Reviews provide:
 - ◆ options to health systems and public health programs in building more comprehensive programs
 - ◆ evidence to advocate for change
 - ◆ evidence to defend decisions made



Conclusions

- There are a number of effective interventions to improve vaccination coverage
- Education alone (for clients or providers) is probably not enough
- Combinations of interventions may be more effective than single interventions
- These reviews are now being updated to incorporate new studies



For More Information

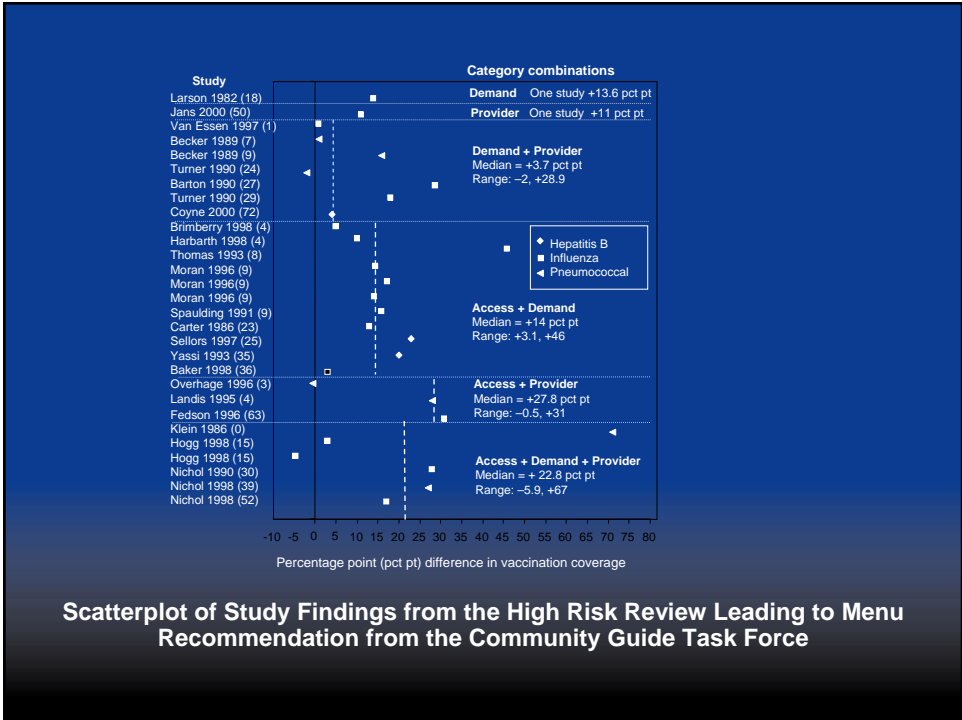
- Website
www.thecommunityguide.org
- David Hopkins
Community Guide Staff, CDC
dhh4@cdc.gov



Discussion



Additional Slides



Scatterplot of Study Findings from the High Risk Review Leading to Menu Recommendation from the Community Guide Task Force