What Counts as Evidence-Based Public Health?

Some Advice from the Guide to Community Preventive Services

David Hopkins
Community Guide, CDC

Disclaimer

The findings and conclusions in this presentation have not been formally determined by the Task Force on Community Preventive Services or disseminated by the Centers for Disease Control and Prevention and should not be construed to represent any Task Force or agency determination or policy.

Agenda

- The concepts behind “evidence-based” public health
- Systematic reviews and The Guide to Community Preventive Services
- Best and Promising Practices

Double Disclaimer

- There is no universal consensus on what is required for an “evidence-based” plan, program, or decision-making process
- There are some issues to consider
- There is <u>no substitute</u> for explicitly describing the methods used in your evaluation process
- Even if we don’t <yet> agree on the specifics, the field recognizes both the advantages and the limitations of these standards: “Evidence-based”; “Best Practices”; and “Promising Practices”

Concepts

Moving from Evidence-based Medicine to Evidence-based Population Health

Evidence-based Medicine

- The process of basing clinical care decisions on the (latest) science-based research in the field

- "The conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients."

  (McMaster University Evidence-Based Medicine Working Group)

Evidence-based Medicine

- "Evidence-based medicine asks questions, finds and appraises the relevant data, and harnesses that information for everyday clinical practice"
  (CancerWeb)
- Follows 4 steps
  - Formulate and answerable question that reflects a decision-point in clinical care
  - Search for relevant clinical articles
  - Evaluate and critically appraise the evidence for its' validity and relevance
  - Develop clinical practices supported by the weight of the evidence

Key Components of Evidence-Based Public Health

- Making decisions based on the best available scientific evidence
- Using data and information systems systematically
- Applying behavioral science theory and program planning frameworks
- Conducting sound evaluation
- Engaging the community in assessment and decision-making
- Disseminating what is learned to key stakeholders and decision-makers

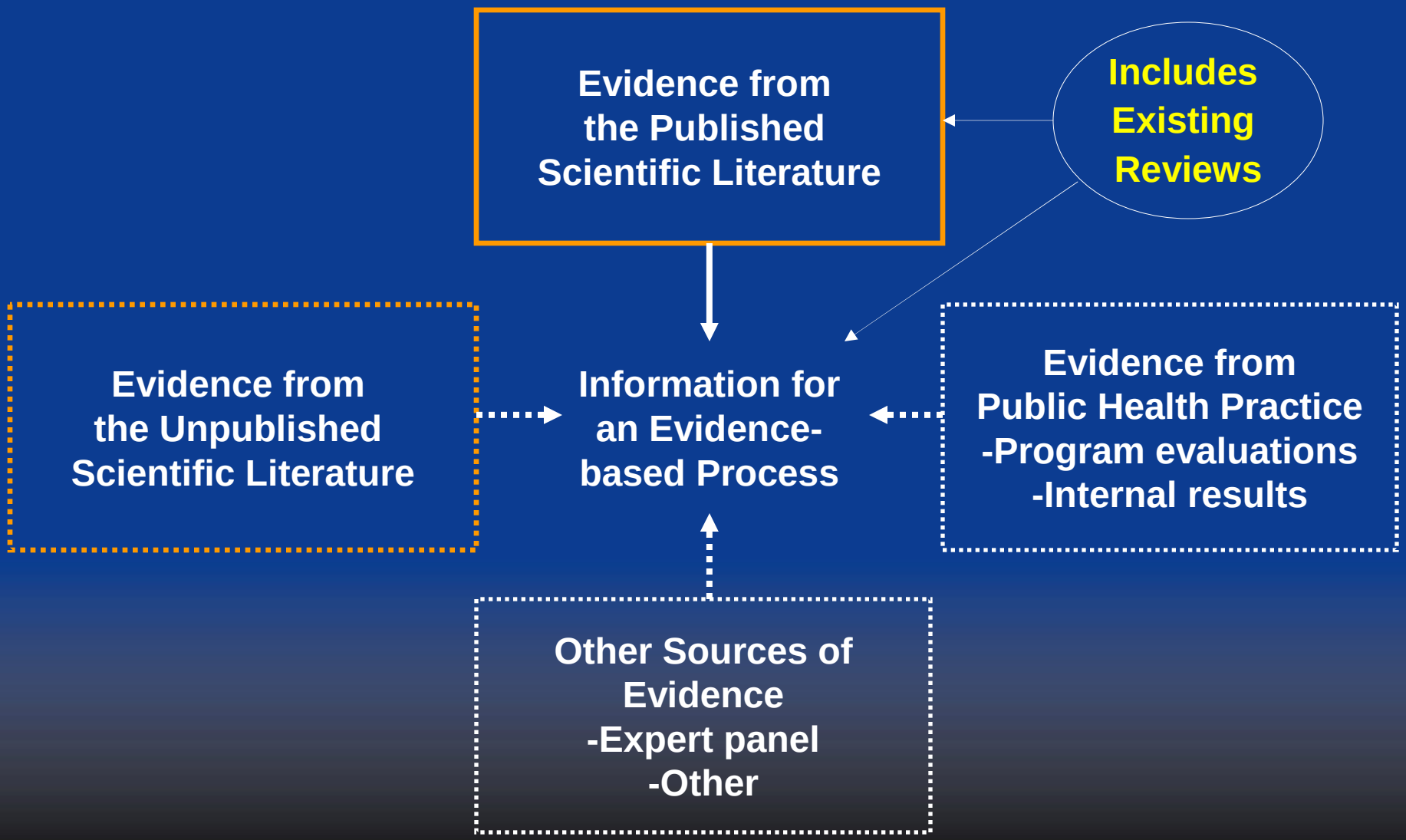
Systematic Reviews and the Guide to Community Preventive Services

One Route to Evidence-Based Decisions

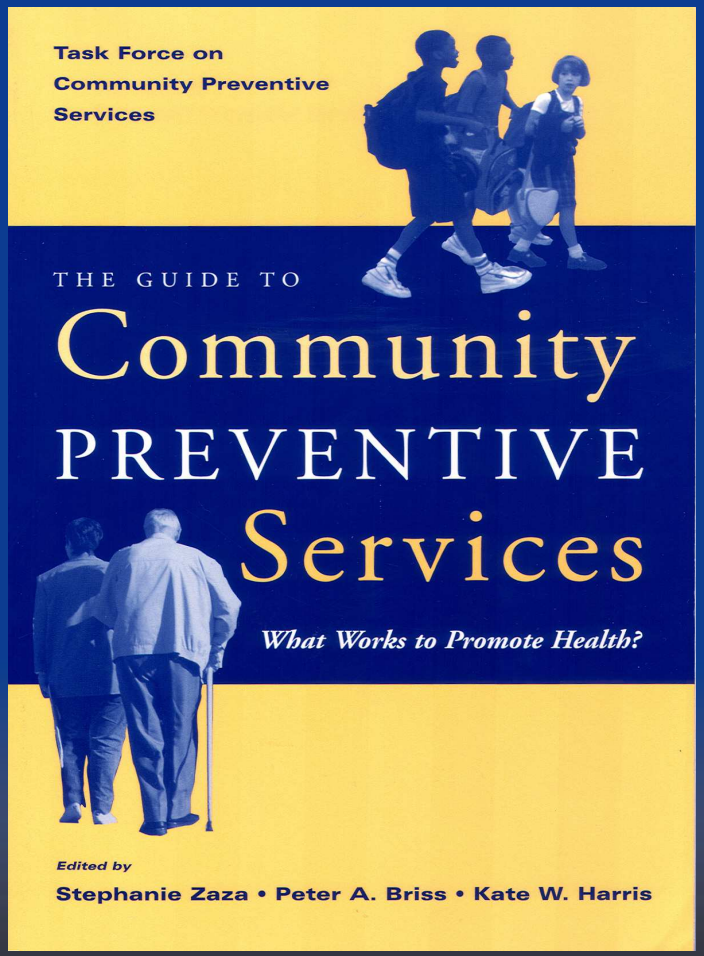
We Consider Systematic Reviews as an Essential Component of an Evidence-based Process

- An effort to find all of the available scientific evidence
- An effort to consider, at some point in the process, all of the scientific evidence
- An effort to draw a conclusion regarding the evidence
- All of these steps are conducted using explicit scientific methods

There is Evidence Beyond the Published Scientific Literature

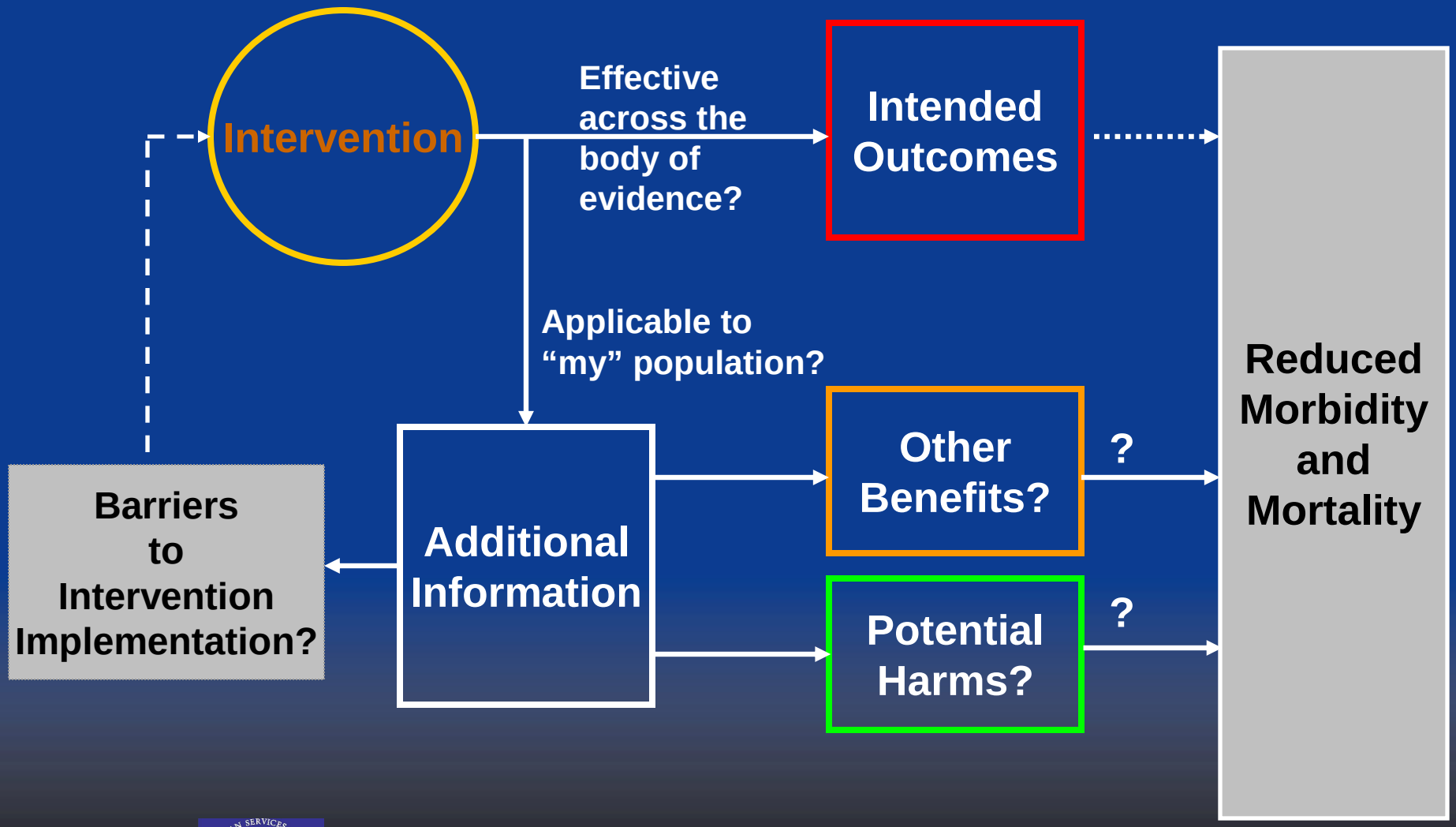


The Community Guide



- 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



GUIDE TO COMMUNITY Preventive Services

CDC

CG Task Force Translation Table (1997)

Evidence of Effectiveness	Quality of Execution	Design Suitability	Number of Studies	Consistent ?	Effect Size?
1. Strong					
	Good	Greatest	≥ 2	Yes	Sufficient
	Good	Greatest or Moderate	≥ 5	Yes	Sufficient
	Good or Fair	Greatest	≥ 5	Yes	Sufficient
	Meet criteria for sufficient evidence				Large
2. Sufficient					
	Good	Greatest	1	--	Sufficient
	Good or Fair	Greatest or Moderate	≥ 3	Yes	Sufficient
	Good or Fair	Greatest, Moderate or Least	≥ 5	Yes	Sufficient
3. Insufficient	Insufficient design or execution		Too few	No	Small

Task Force (Commmunity Guide) Recommendations

- Recommended* based on
  - Strong (body of) evidence of effectiveness
  - Sufficient (body of) evidence of effectiveness

- Insufficient Evidence to support a Task Force conclusion on effectiveness
  - "We can't tell whether or not this intervention works"
    - Too few studies?
    - Inconsistent findings?
    - Other effects (applicability or potential harms)?

* For or Against

The Community Guide is Part of a Family of Federal Initiatives

USPSTF (Clinical Guide) Activities

- Provide evidence-based scientific reviews of preventive health services for use in primary healthcare delivery settings
- Age- and risk-factor specific recommendations for routine practice
- Recommendations include:
  - Screening tests
  - Counseling
  - Preventive medications

US Preventive Services Task Force (USPSTF) Ratings

Grade	Definition	Suggestions for Practice
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer / provide this service
B	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.	Offer / provide this service
C	The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small.	Offer/provide this service only if other considerations support the offering or providing the service in an individual patient.
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.

US Preventive Services Task Force (USPSTF) Ratings

Grade	Definition	Suggestions for Practice
I Statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.	Read the clinical considerations section of USPSTF Recommendation Statement. If the service is offered, patients should understand the uncertainty about the balance of benefits and harms.

Best and Promising Practices

Moving Down the Evidence Scale

-When all of the highest quality scientific evidence is considered, there is consistent evidence that this intervention has a meaningful impact

-When all of the information is considered, there is consistent evidence that this intervention has a meaningful impact

– –

Moving Down the Evidence Scale

-When all of the highest quality scientific evidence is considered, there is consistent evidence that this intervention has a meaningful impact

-When all of the information is considered, there is consistent evidence that this intervention has a meaningful impact

---

-There is scientific evidence that this intervention can be effective

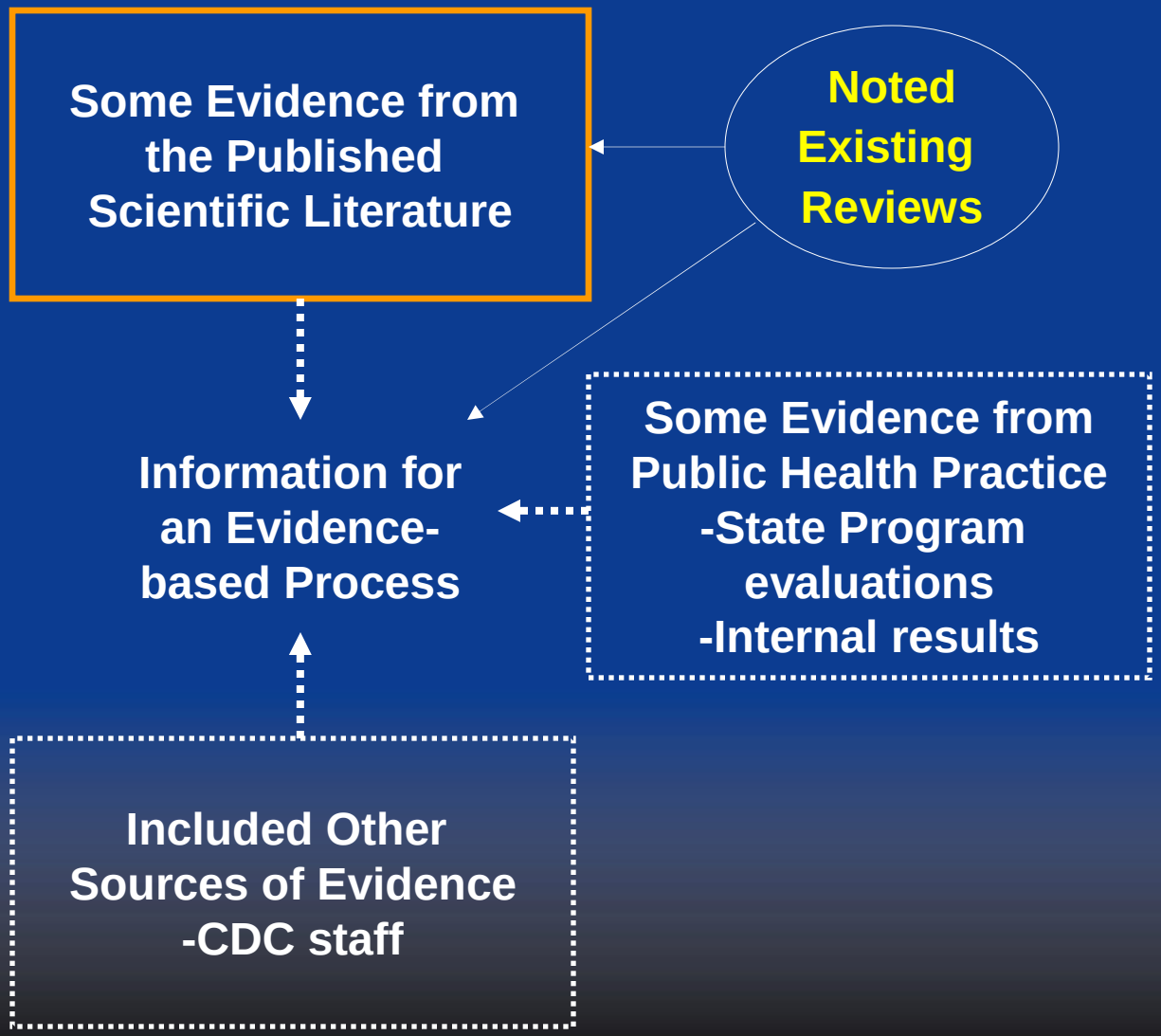
-There is at least some information that suggests that this intervention might be effective

Example: CDC's Best Practices

- CDC's *Best Practices for Comprehensive Tobacco Control Programs—2007* is an evidence-based guide to help states plan and establish effective tobacco control programs to prevent and reduce tobacco use.

- This updated edition describes an integrated programmatic structure for implementing interventions proven to be effective and provides the recommended level of state investment to reach these goals and reduce tobacco use in each state.

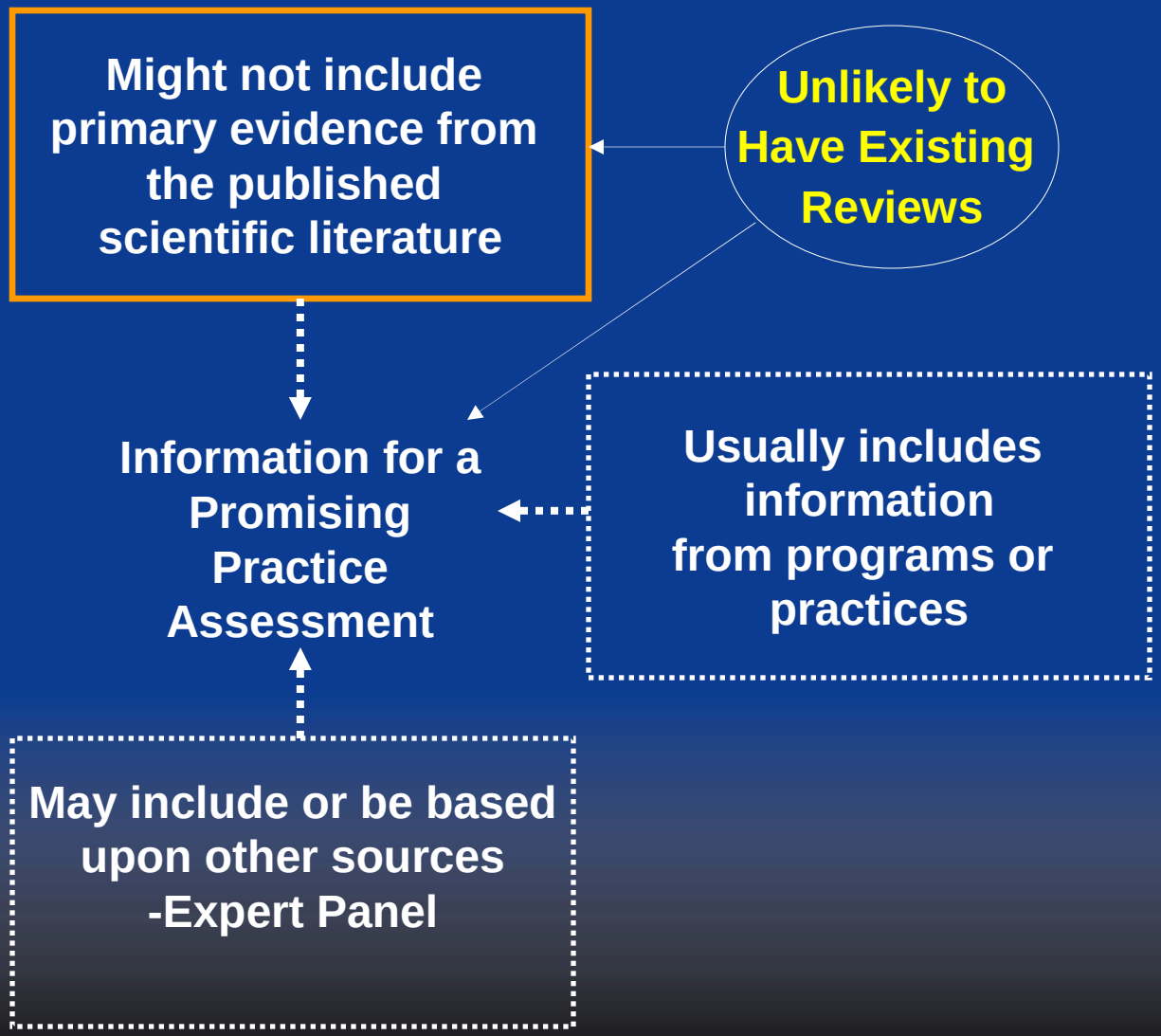
Information Used to Identify Best Practices



“Promising” Practices

- Often used to identify interventions with conceptual or practical appeal, but with limited evaluation data or results
  - Not enough outcome evidence
  - Available evidence demonstrates process impact, but the downstream health impact remains unclear
    - Example: changes knowledge but ? behaviors
  - Easy, cheap, popular, etc.

Promising Practices



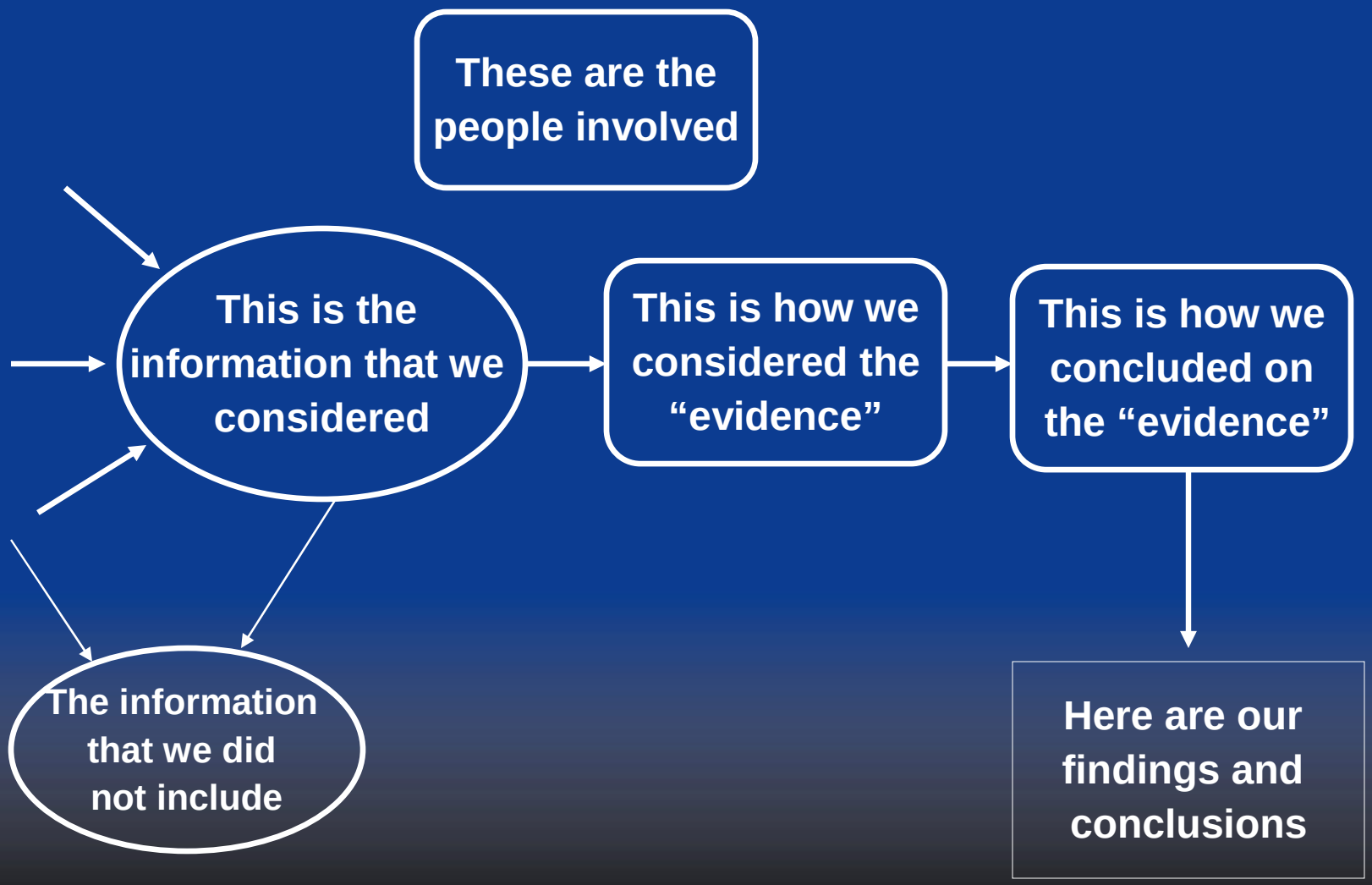
Some Differences to Consider

	Based on a Systematic Assessment?	Effectiveness Standard	Primary Source(s) of Information
Evidence Review * (Systematic)	Always	Overall, is consistently effective with a meaningful impact	Published scientific evaluations
Best Practice *	Sometimes	Can be Effective	Published literature and Program practices
Promising Practice * *	Can be	Might be Effective	Program practice and reports

*Most audiences will consider these as evidence-based

**Might be better considered as "Evidence-informed"

Always Be Explicit About Your Process



For More Information

- **Website**
  www.thecommunityguide.org

- **David Hopkins MD, MPH**
  Community Guide Staff, CDC
  dhh4@cdc.gov