

Disseminating Research to Improve Population Health: Creating & Evaluating Evidence

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RE-AIM Working Group

(www.re-aim.org)

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Overview

- Models of population health intervention
- What type of evidence is available for decision making?
- What type of evidence will enhance dissemination of research?
- What methods can be used to generate practical and relevant research evidence?
- Conclusions & future direction

"Show me the research evidence!"

"A decision is as good as the information that goes into it."

-- John F. Bookout, Jr.

Do we have “good” information?

- Average 17 yrs for a fraction of efficacious treatments to move into practice
- Decision makers do not see current evidence as relevant in terms of:
 - * Constituents
 - * Resources and Setting
 - * Staff Expertise
 - * Measures/Outcomes

Balas, et al., www.ahrq.gov/clinic/trip1997

Public Health Decision-Makers: Responsibilities

Assessment by regularly and systematically collecting, assembling, analyzing and making health information available to constituents

Policy & program development to serve the public interest

Assurance of high quality programs and services

Evidence-based Public Health

“...process of integrating science-based interventions with community preferences to improve the health of populations.”

Kohatsu ND et al. Am J Prev Med 2004;27:417-21

Evidence-based Policy Making

Health Impact Assessment Method (HIA)

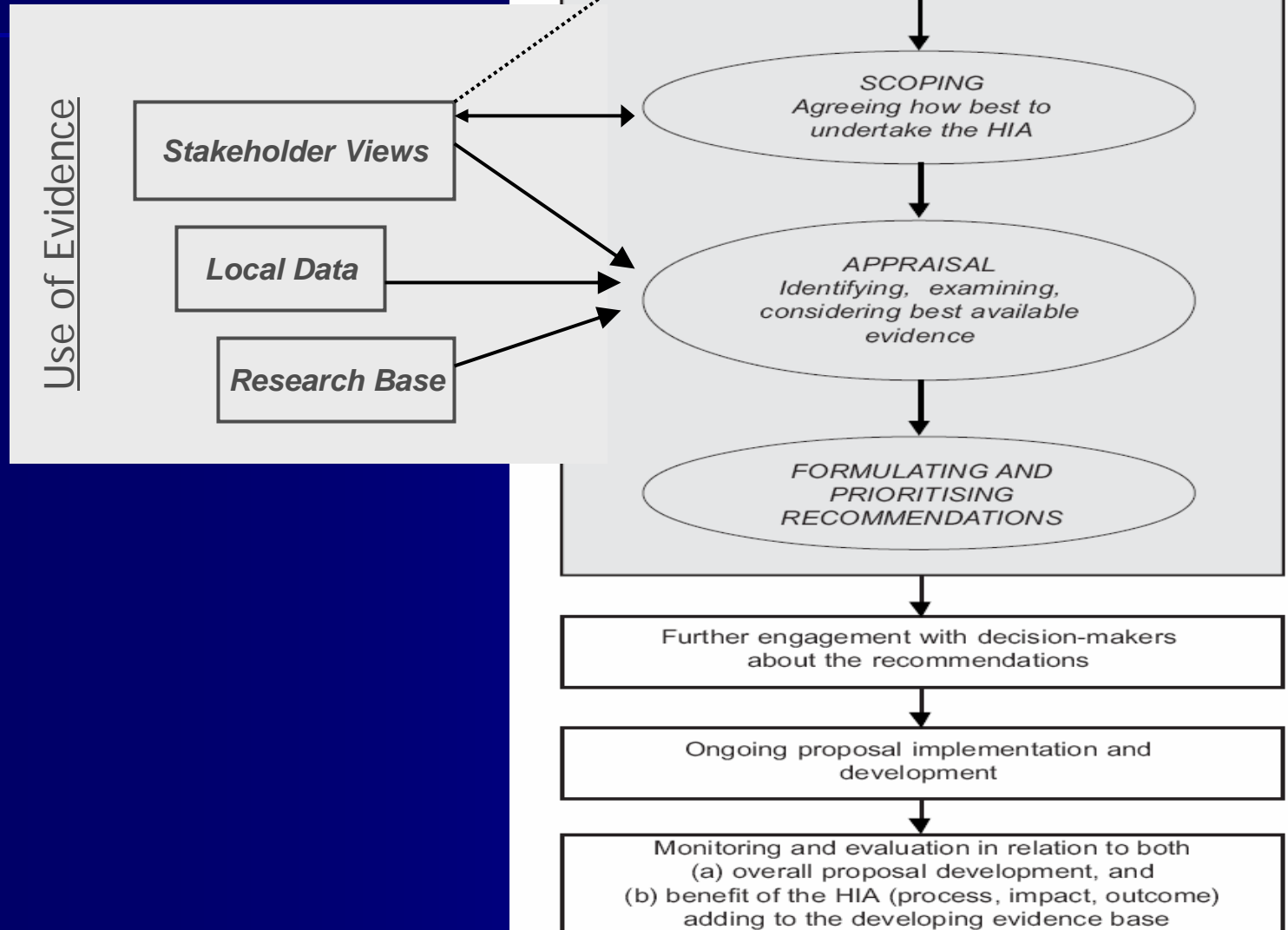
--"a combination of procedures, methods and tools by which a policy, program, or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population."

(WHO, 1999)

Features of Health Impact Assessment

- Analyzes proposed policies or projects
- Comprehensive appraisal of potential health effects, positives are weighed against negatives
- Considers wide ranging evidence, local data, stakeholder views, and research base
- Employs a multidisciplinary model and approach to analysis of population health
- Monitors and evaluates process, impact and outcomes after implementation of proposal

Steps in Conducting Health Impact Assessment



When research does not influence policy decisions

- Research evidence irrelevant or not applicable**
- Knowledge exchange is not of high quality
- Policymakers do not prioritize clinical effectiveness for decision making
- Lack of consensus on interpretation of evidence, too complex or controversial
- Competing sources of evidence
- Social environment not conducive to change

Where's the Relevant Research?

"Show me the evidence!"

Assessment/Appraisal

Are relevant local data available for describing community health status?

Policy & program development

Are issues relevant to stakeholders and practitioners being addressed?

*Is relevant evidence available for appraisal to form approach? ***

Assurance & evaluation

*Are practical and relevant program evaluations occurring? ***

Is Relevant Research Available for Intervention Integration?

Issue	Clinical Research	Population Research
Study Goal	Isolate mechanisms	Replicable approach
Design	Experimental Randomized	Observational & Quasi-experimental
Key Criteria	Internal validity	External validity
Perspective	Isolate causes	Understand context
Available Evidence	Large volume - Efficacy data	Small volume – Effectiveness data
Decisions Support	Theory	Practice & Policy

*Public health workers, ...deserve to get
somewhere by design, not just by
perseverance.*

McKinlay and Marceau, AJPH January, 2000

Why Might Translation of Research Evidence Fail?

- Ineffective approach applied due to insufficient evidence
- Implementation of the approach is incomplete so full effect not gained
- Approach is not generalizable to local community so effects don't replicate
- Evaluation fails to capture effect or does not assess meaningful outcomes

Improving the Evidence Base By Design -- Beyond Efficacy

Elements of practical, relevant approaches:

- Representative groups and participants
- Multiple and diverse settings
- Comparison groups, conditions realistic
- Broad range of outcome measures relevant to decision makers

Expanding the Evidence Base

Diverse Participants

- Represent diversity of population by race, ethnicity, age, gender, literacy
- Reflects health status of population
- Includes those who might benefit most

Expanding the Evidence Base

Multiple, representative settings

- Include multiple and representative community settings
- Typical, no-research staff involved
- Study variations in process and outcomes across settings

Expanding the Evidence Base

Practical feasible approaches

- Assess extent program or policy was delivered or implemented
- Variability in enforcement
- Document time and expense data
- If comparison, select realistic alternative

Expanding the Evidence Base

Multiple relevant outcomes

- Meaningful evaluation outcomes for participants, community members, and decision makers
- Monitor intended and unintended consequences, include quality of life
- Economic analysis

Designing Relevant Research

- Bold in issues to be studied
- Practical in intervention delivery
- Broad in what is measured
- Transparent in reporting (TREND*)
- Summarize results in terms understandable to decision-makers

(*Transparent Reporting of Evaluations with Nonrandomized Designs
www.trend-statement.org)

RE-AIM TO HELP PLAN, EVALUATE, & REPORT RESEARCH

R	→	Increase	<u>R</u> each
E	→	Increase	<u>E</u> ffectiveness
A	→	Increase	<u>A</u> doption
I	→	Increase	<u>I</u> mplementation
M	→	Increase	<u>M</u> aintenance

Simple Questions for Dissemination

1. Who is exposed to innovation? (Reach & Representativeness)
2. What outcomes --intended and unintended-- are produced? (Effectiveness)
3. Where will program work? (Adoption and Representativeness)
4. How consistently is program delivered? (Implementation)
5. How long will effects last? (Maintenance)



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

RE-AIM Dimensions

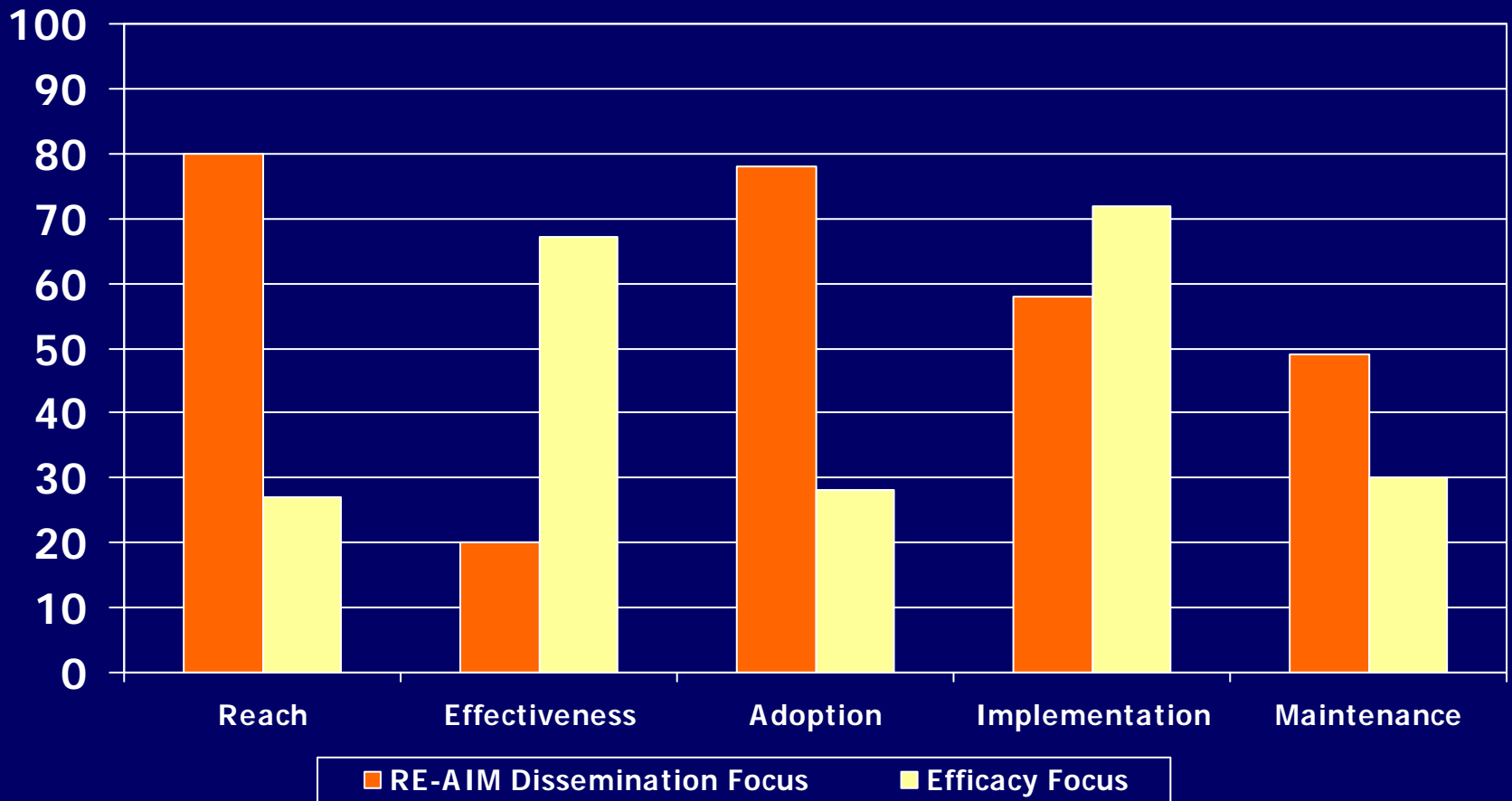
	Dimension	Definitions
Individual Level	<u>REACH</u>	<ol style="list-style-type: none">1. Participation rate among potential target group(s)2. Representativeness of participants in terms of social, demographic, and health characteristics
	<u>EFFICACY/ EFFECTIVENESS</u>	<ol style="list-style-type: none">1. Effects of intervention on primary outcome of interest2. Impact on quality of life and negative outcomes3. Robust outcomes (similar effects among targeted groups)

RE-AIM Dimensions (cont.)

Dimension

Definitions

	Dimension	Definitions
Setting Level	<u>A</u> DOPTION	<ol style="list-style-type: none">1. Participation rate among possible settings and contexts2. Representativeness of participating settings, intervention staff
	<u>I</u> MPLEMENTATION	<ol style="list-style-type: none">1. Extent intervention was delivered as intended in protocol2. Time & cost of intervention
Both	<u>M</u> AINTENANCE	<ol style="list-style-type: none">1. Longer-term effects \geq 6 months (Individual)2. Impact of attrition on outcomes (Individual)3. Sustained delivery or modifications of intervention (Setting)



See www.re-aim.org for additional displays and evaluation questions

Designing for Dissemination

Determine if acceptable program/policy will:

- Reach large numbers of people, especially those who can benefit most
- Be widely adopted by different settings using available “channels” of delivery
- Be consistently implemented by settings and staff members reflective of local community
- Produce relevant, replicable, long-lasting effects (w/ minimal negative impacts) at reasonable cost

RE-AIM Perspectives on Generating Relevant Evidence

Dimension	Issues to Consider	Population Policy Ex.
Reach	<ul style="list-style-type: none"> -Number of people influenced -Representativeness of those involved -Inclusion of those most at-risk 	<ul style="list-style-type: none"> -Extent that risk-exposed groups are reached -Representative of catchment area
Effectiveness	<ul style="list-style-type: none"> -Impact on risk reduction -Impact on health outcome -Robustness -Impact on quality of life -Unanticipated consequences 	<ul style="list-style-type: none"> -Consistent effects across risk groups -Impact on other environmental outcomes -Approach "tolerates" adaptation, effects aren't diminished
Adoption	<ul style="list-style-type: none"> -Number and proportion of target settings involved -Diffusion/adoption curves for the innovation approach 	<ul style="list-style-type: none"> -Large number and representative settings are involved -Settings adopting are relevant to policy decisions
Implementation	<ul style="list-style-type: none"> -Approach enacted as intended -Cost of enactment -Level of enforcement or delivery variability 	<ul style="list-style-type: none"> -Adherence over time -Costs of program/policy implementation
Maintenance	<ul style="list-style-type: none"> -Policy/program sustained over time -Long-term monitoring of population 	<ul style="list-style-type: none"> -Long-term impact on health -Large number of relevant settings sustain the innovation -Extent policy is adapted or program re-invented

Improving the Base for Disseminable Evidence

- Increasing amount of high quality, relevant research evidence**
 - Researchers, Funders, Editors, Reviewers
- Build capacity for use of evidence-based information by decision-makers
- Improve access to evidence base

*If we want more evidence-based
practice,
we need more practice-based
evidence.*

L. W. Green, 2004