

HP Strategies: Taking a best practices approach

Week 4: *The Roles of evidence*

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Class agenda

1. Why are we interested in “evidence” & research methodologies?
2. How do we make decisions about research methodology & use of evidence?
3. Examples of use of evidence in addressing the SDOH by governments
4. Use of evidence in health promotion practice
5. Challenges to use of evidence in health promotion practice
 1. Assessing the quality of evidence—scientific & qualitative methodologies
 2. Bridging the gap between research & practice

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Why are we interested in “evidence” & research methodologies?

- To help in decision making
- To check intuitions, current practice, common wisdom...
- To check & extend research findings
- To avoid harm
- To do good

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Why are we interested in “evidence” & research methodologies? (cont.)

- To...
 - answer a question
 - increase understanding... (needs assessment & theory building)
 - test understanding... (theory testing)
 - develop a response... (planning)
 - assess a response... (evaluation of intervention)
 - increase (or say something about) confidence in our findings and conclusions
 - ???

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Contradicted & initially stronger effects in highly cited clinical research (Ioannidis, JAMA, 2005)

| Claimed intervention effective | N | % | Randomized studies | | Non-randomized studies | |
|--------------------------------|-----------|------------|--------------------|------------|------------------------|------------|
| | | | N | % | N | % |
| Contradicted | 7 | 16 | 9 | 23 | 5 | 83 |
| Initially stronger | 7 | 16 | | | | |
| Replicated | 20 | 44 | 30 | 77 | 1 | 17 |
| Unchallenged | 11 | 24 | | | | |
| TOTAL | 45 | 100 | 39 | 100 | 6 | 100 |
| Negative studies | 4 | | | | | |
| TOTAL | 49 | | | | | |

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How do we make decisions about research methodology & use of evidence?

1. Explicit decisions about methodology
2. Role of personal factors
 - Values, ideologies, ...
 - Personal decisions/preferences regarding:
 - Paradigms & methodologies ...
 - Ease/difficulty
 - “Numbers”
 - Prior training, experience, familiarity...

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How do we make decisions about research methodology & use of evidence? (cont.)

3. Context of research
 - Purpose, goals...
 - Focus issue...
 - Settings: research, community, decision-making...
 - Partners, stakeholders...
 - Sources of funding
 - Resources: financial, human, time....
4. Multiple methods...mixed methods...

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Introduction to research paradigms

(Some slides in this preliminary section are credited to Blake Poland)

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Introduction to research paradigms

1. Two fundamental set of questions re:
 1. Nature of reality (ontology)
 2. Knowledge of reality (epistemology)
2. Role of critical thinking & deepening social analysis

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2. Leads to different paradigms, affecting:
 1. How questions framed
 2. How problems investigated
 3. How results interpreted
 4. Implications for policy & practice

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3. Three dominant ontological/epistemological paradigms
 1. (Post) positivist
 2. Constructivist
 3. Critical perspective

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Insights

1. Inter-related roles of
 - Values, ideologies
 - Theory
 - Evidence
2. Plasticity of terms
3. Overlapping boundaries between paradigms

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Insights (cont.)

4. Variety of questions & variety of methods to answer questions
5. Paradigms define themselves **in contrast to** other paradigms

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Conceptualizing & categorizing research

- Many ways to categorize research
- Depends on perspective: distal, intermediate, proximal
 - **Distal**: according to **paradigm**
 - **Intermediate**: according to **methodology**
 - **Proximate**: according to **design & methods**

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Relationships among...

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“Qualitative” vs “quantitative”

- can refer to paradigm, methodology, design, methods, procedures, data type, data analysis, ... (i.e., “plasticity”)
- ... Not very helpful distinction...?
- ... A mine-field...!!!

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Hypothetical relative contributions of quantitative vs qualitative research across phases of response to issue

| Phase | Quantitative research | Qualitative research |
|--------------------|-----------------------|----------------------|
| Background | High | High |
| Planning/designing | Low | High |
| Implementation | Low | High |
| Evaluation | High | Low |

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Use of evidence in health promotion practice

1. Overview of roles of evidence in HP practice
2. Challenges to use of evidence in HP practice

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Differential use of research in phases of HP initiative

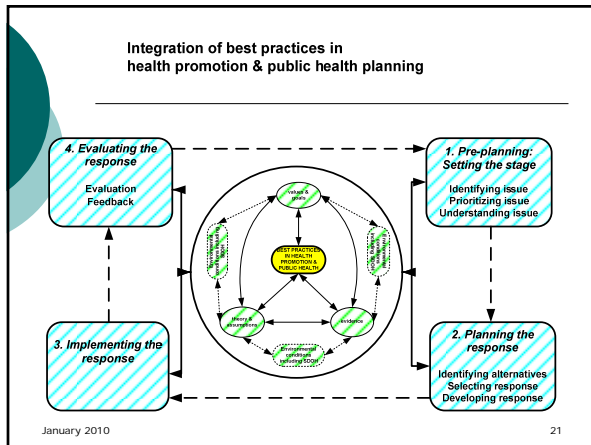
| <i>Generic phases</i> | <i>Qualitative research</i> (Morse, 1994) |
|----------------------------------|---|
| 1. Background to issue | 1. Reflection |
| 2. Planning/designing response | 2. Planning |
| 3. Implementing response | 3. Entry |
| 4. Assessing/evaluating response | 4. Data collection |
| 5. Revisiting issue & response | 5. Withdrawal |
| | 6. Writing |

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Phases/steps in HP practice

Governing principle
Application of best practices in all phases of planning, implementation, & evaluation

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Conclusions re. roles of "evidence" in HP practice?

1. What contributions should/can "evidence" make in HP practice?

- "Evidence" is an integral part of, and makes different contributions, to each phase of HP practice
 - Pre-planning: Setting the stage
 - Planning the response
 - Implementing the response
 - Evaluating the response
- Different kinds of "evidence" make different contributions

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Conclusions re. roles of "evidence" in planning HP (cont.)

2. What kinds of "evidence" are needed in planning HP?

- The nature & sources of evidence differ for each phase of HP practice
- The evidence required for planning HP "in general" differs from that required for planning responses to specific issues, problems, settings, etc.
- The evidence & sources of evidence differ for different issues, problems, settings, etc


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Conclusions re. roles of "evidence" in planning HP (cont.)

3. What is the relationship between evidence & the other (sub)domains of BP in HP?

- Mutuality of relationships among values, theories/concepts, and "evidence"
 - Definition & use of "evidence" is influenced by values
 - "Evidence" contributes to development & testing of theories & concepts
- "Evidence" is required for:
 - environmental understanding
 - development, implementation & evaluation of response


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Dennis Raphael (2000)
Raphael, D. (1998). Public health responses to health inequalities. *Canadian Journal of Public Health*, 89(6), 380-381.

“Health promoters require justification for their activities and there is ample evidence that HP activities can be so justified”
“There can be no better argument for health promoters to justify their activities than to state that not only is health promotion an ethical and principled discipline, but it is because of its values-based approach that it is effective”

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Examples of government efforts to address the SDOH

1. UK Department of Health
2. UK Cabinet Office: Social Exclusion Taskforce
3. [US] National Association of County & City Health Officials


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UK National Strategy for Tackling Health Inequalities

UK Department of Health
(<http://www.dh.gov.uk/en/PublicHealth/Healthinequalities/index.htm>)


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UK Cabinet Office: Social Exclusion Taskforce

Think Research: Using Research Evidence to Inform Service Development for Vulnerable Groups
(http://www.cabinetoffice.gov.uk/social_exclusion_task_force/think_research.aspx)


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[US] National Association of County & City Health Officials
(With Support of the Kellogg Foundation)

Tackling health inequities through public health practice: A handbook for action (2006)
(http://www.acphd.org/AXBYCZ/Admin/DataReports/ood_naccho_handbook.pdf)

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Challenges to use of evidence in health promotion practice

1. Bridging the gap between research & practice
2. Assessing the quality of evidence

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Evidence: challenges and gaps

1. *existence* of appropriate evidence
2. *access* to appropriate evidence
3. *modifying* available evidence
4. *appropriate use* of available appropriate evidence
5. *developing* new evidence

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Assessing the quality of research evidence

1. Common concerns
2. Scientific/experimental research
3. Qualitative research

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Common concerns in assessing scientific & qualitative research

1. Clarity of research question
2. Explicitness of methodology
3. Appropriateness & rigour of methodology re.
 - Sample or object of study
 - Methodology as related to question etc.
 - Analysis
 - Biases, including researcher-related bias
4. Confidence in drawing conclusions
5. Applicability, generalizability of results

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Assessing the quality of research evidence

1. **Positivist (scientific) paradigm**
 1. Well established criteria re. design & method issues
 2. Hierarchy of designs, w/ RCT's as the "gold standard"
2. **Post-positivist (qualitative) paradigm: problematic**
(see Eakin, J. M. & E. Mykhalovskiy (2003))

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Assessing the quality of HP research evidence

1. Lahtinen et al. (2005)
2. Cochrane Collaboration HP & Public Health Field (2007)
3. Cameron et al. (2001)

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Criteria for HP research

Lahtinen, E., et al. (2005).

| HP specific criteria | General quality |
|----------------------|----------------------------------|
| 1. HP relevance | 1. Scientific quality |
| 2. HP values | 2. Defined scope |
| 3. HP innovation | 3. Anticipated outcomes |
| 4. HP discourse | 4. Operationalization |
| 5. HP practice | 5. Feasibility |
| 6. HP action | 6. Process evaluation |
| 7. HP context | 7. Documentation & dissemination |

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Criteria for systematic reviews of HP & PH interventions

(Cochrane Collaboration HP & Public Health Field)
Jackson, N., Waters, E., et al. (2005)

1. Inclusion of study designs
2. Searching for public health literature
3. Quality assessment
4. Theoretical framework for interventions
5. Integrating qualitative & quantitative studies

(see also <http://www.vichhealth.vic.gov.au/cochrane/activ/brief/Guidelines%20for%20HP%20reviews.pdf>)

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Criteria for systematic reviews of HP & PH interventions (cont.)

6. Integrity of interventions
7. Heterogeneity
8. Ethics & inequalities
9. Sustainability
10. Context
11. Applicability

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Cochrane HP & Public Health Field

http://www.ph.cochrane.org/Files/Website%20Documents/Guidelines%20HP_PH%20reviews.pdf (2007)

Re. Assessment of Qualitative studies:

"Currently, there is no single validated checklist to use for all types of qualitative studies. Where possible, authors should use the checklists and report on their usefulness so methodological developments can occur.

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Cochrane HP & Public Health Field: re. assessment of qualitative studies (cont.)

"A set of *prima facie* criteria for assessing quality common to all qualitative research includes:

1. Method appropriate to research question
2. An explicit link to theory
3. Clearly stated aims and objectives
4. A clear description of context
5. A clear description of sample
6. A clear description of fieldwork methods
7. Some validation of data analysis
8. Inclusion of sufficient data to support interpretation"

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Linking science & practice... Criteria for adopting best practices for CDP (Cameron et al.)

1. Effectiveness: based on quality of evidence
 1. **"Best practice"** (if practicality acceptable):
 1. Positive evidence obtained from a properly designed RCT
 2. Or from properly designed quasi-experimental design
 2. **"Promising practice"** (if plausibility & practicality acceptable):
 1. positive evidence from well-designed cohort or case-control study
 2. Insufficient evidence: weak design
 3. No evidence (no data or inconclusive findings)
 3. **Not recommended:** no positive change found from RCT

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Plausibility criteria (Cameron et al. cont.)

1. Evaluation attributes
 1. Formative evaluation/pilot testing
 2. Process evaluation
2. Content attributes
 1. Behavioral objective
 2. Behavior change principles incorporated
3. Process attributes
 1. Collaborative approach
 2. Visibility
 3. Sustainability
 4. Community leader support
 5. Outreach (community buy-in)
 6. Mobilizes community resources

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Practicality criteria (Cameron et al. cont.)

1. Cost effectiveness
 1. Start up costs
 2. Ongoing implementation cost
 3. Reach
 4. Projected longevity
2. Availability
3. Fit
 1. Supportability
 2. Generalizability
 3. Adaptability
 4. Expertise required
 5. Linguistic accessibility
 6. Cultural accessibility
 7. Evaluability

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Assessing quality of evidence from scientific (positivist) research

1. Evidence-based medicine: background
2. Systematic reviews of evidence
3. Cochrane Collaboration
4. Campbell Collaboration
5. Australian framework
6. CDC Guide to Preventive Community Services

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Evidence-based medicine

One of 15 milestone in history of medicine

“Evidence based medicine is healthcare practice that is based on integrating knowledge gained from the best available evidence, clinical expertise, and patients’ values and circumstances.”

Dickersin, K., Straus, S. E., & Bero, L. A. (2007). Evidence based medicine: increasing, not dictating, choice. *BMJ*, 334 (suppl_1), s10

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Evidence-based medicine

One of 15 milestones in history of medicine (cont.)

“It is curious, even shocking, that the adjective “evidence based” is needed. The public must wonder on what basis medical decisions are made otherwise. Is it intuition? Is it magic? How could something so intuitively obvious to lay people not be similarly viewed by clinicians? And how could this medical milestone be so misunderstood by some?”

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Evidence-based medicine

One of 15 milestone in history of medicine (cont.)

“Critics of [EBM] worry that it dictates a single “right” way to practice, despite differences among patients; that some self appointed group of “experts” will declare only one type of study to be useful; or that healthcare decisions will be made solely on the basis of costs and cost savings. ...it is about making decisions that are based on the best available evidence, not dictating what clinicians do”

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Evidence-based medicine

One of 15 milestone in history of medicine (cont.)

“The question has moved beyond ‘Why is evidence based medicine important?’ to ‘Why is it not already a reality?’ and ‘How can we all work together to make it a reality, quickly?’ ”

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Systematic reviews: Myths & misconceptions

“The systematic literature review is a method of locating, appraising, and synthesizing evidence.”

Petticrew, M. (2001). Systematic reviews from astronomy to zoology: myths and misconceptions. *BMJ*, 322(7278), 98-101.

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Systematic reviews: steps in identifying & using research in HP practice

(Goodstadt & Kahan)

1. Set the stage
2. Identify potential information sources
3. Select information sources
4. Generate information
5. Analyze & assess information
6. Summarize or synthesize information
7. Report on findings
8. Make best practices decisions
9. Implement decisions
10. Evaluate practice
11. Revise decisions/practice

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Systematic reviews: myths & misconceptions

1. SR's are same as ordinary reviews, only better
2. SR's include only RCTs
3. SR's require the adoption of a biomedical model of health
4. SR's are of no relevance to the real world
5. SR's necessarily involve statistical synthesis
6. SR's have to be done by experts
7. SR's can be done without experienced information/library supports
8. SR's are a substitute for doing good quality individual studies

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The Cochrane Collaboration

Focuses on RCTs

“The logical reason for focusing on RCTs ... is that randomisation is the only means of allocation that controls for unknown and unmeasured confounders as well as those that are known and measured....”

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Cochrane Collaboration (cont.)

...Despite these concerns, there is sometimes good reason to rely on observational studies for information about the effects of healthcare interventions, and to include such studies in Cochrane reviews.”

(<http://www.cochraneconsumer.com/index.asp?SHOW=About>)

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Cochrane Collaboration etc. classification

1. **Experimental studies:** under researcher's control
 1. **Randomized Controlled Trial (RCT):** “Gold Standard”: complete random assignment & “blinding”
 2. **Quasi-experimental designs:** incomplete control

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Cochrane Collaboration etc. classification (cont.)

2. **Observational studies:** natural variation in “exposure” to conditions
 1. **Cohort study** (retrospective or prospective)
 2. **Case-control study** (retrospective)
 3. **Cross-sectional** (single point in time)
 4. **Before-after intervention**
 5. **Case series** (no control groups)

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Cochrane Collaboration: Hierarchy based on degree of researcher’s control (cont.)

1. **Level 1:** Experimental studies (RCT w/ concealed allocation)
2. **Level 2:** Quasi-experimental studies (experimental study w/o randomization)
3. **Level 3:** Controlled observational studies (cohort & case-control studies)
4. **Level 4:** Observational studies w/o control groups
5. **Level 5:** Expert opinion

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Cochrane Collaboration (cont.)

- o The Cochrane Collaboration now has
 - *The Cochrane Health Promotion and Public Health Field (see later slides)*
 - *The Cochrane non-randomized studies methods group*

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Cochrane Collaboration criteria

1. **Validity:** extent to which study design & conduct prevent systematic errors or bias
 1. Selection bias
 2. Performance bias
 3. Attrition bias
 4. Detection bias

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Cochrane Collaboration criteria (cont.)

2. **Precision:** likelihood of chance effects leading to random errors—uses confidence intervals
3. **Applicability:** generalizability; external validity

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The Campbell Collaboration

1. Building on the Cochrane Collaboration
2. Sponsors systematic reviews of the effects of interventions in the social, behavioral and educational arenas.
3. Not restricted to RCTs (<<http://www.campbellcollaboration.org/>>)

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Australian “schema for evaluating evidence on public health interventions”

<http://www.nphp.gov.au/publications/phpractice/schemaV4.pdf>

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“A schema for evaluating evidence on public health interventions”

[Australian National Public Health Partnership, 2002]

1. Was the assignment of study participants to the intervention (exposure) randomised?
2. Were all the groups similar at the start of the trial?
3. Aside from the intervention being tested, were the groups exposed to similar influences before and during the trial?

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“A schema for evaluating evidence on public health interventions” (cont.)

3. Aside from the intervention being tested, were the groups treated equally?
4. Were all the participants who entered the trial accounted for at its conclusion?

<http://www.nphp.gov.au/publications/phpractice/schemaV4.pdf>

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CDC Guide to Community Preventive Services

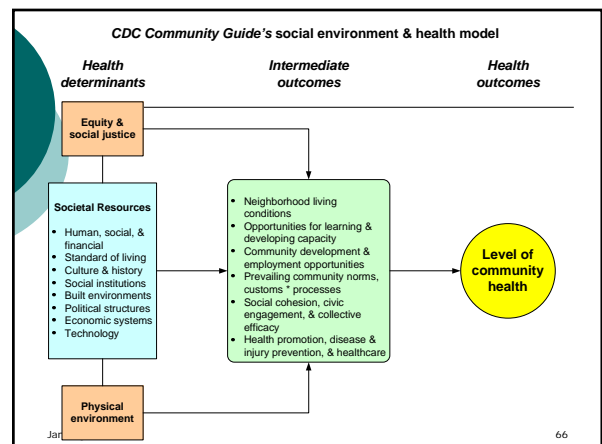
Systematic Reviews & Evidence-based Recommendations

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CDC Guide to Community Preventive Services: Systematic Reviews & Evidence-based Recommendations

| | |
|---|---|
| <p>Considers</p> <ol style="list-style-type: none"> 1. Suitability of evaluation design re. cause-effect 2. Quality of study execution 3. Number of studies 4. Consistency of findings 5. Size of observed effects 6. Expert opinion | <p>Evidence includes:</p> <ol style="list-style-type: none"> 1. Information appropriate re. effectiveness questions 2. Applicability of effectiveness data to other ops & settings 3. +ve & -ve side effects 4. Economic impact 5. Barriers to implementation |
|---|---|

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CDC Guide to Community Preventive Services: Systematic Reviews Steps

1. selecting topics
2. convening a SR team
3. developing conceptual model for each topic and intervention
4. defining & selecting interventions for review
5. conducting a search for relevant scientific information
6. evaluating the quality of, and abstracting data from, included studies
7. summarizing information on:
 1. effectiveness
 2. applicability of the effectiveness results
 3. other effects (side benefits and harms)
 4. cost and cost effectiveness
 5. barriers to implementation

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Assessing the strength of evidence on effectiveness of population-based interventions in the CDC Guide to Community Preventive Services

Table 9-1. Brennan, R. G., Pinsky, J. L., & Davis, S. (2004)

| Evidence of effectiveness | Execution | Design suitability | Number of studies | Consistent re-direction & effect size | Effect size | Expert opinion |
|---------------------------|---|------------------------------|-------------------|---------------------------------------|-------------|---------------------------|
| Strong | Good | Greatest | At least 2 | Yes | Sufficient | Not used |
| | Good | Greatest or moderate | At least 5 | Yes | Sufficient | Not used |
| | Good or fair | Greatest | At least 5 | Yes | Sufficient | Not used |
| | Meets design, execution, number, & consistency criteria for sufficient, but not strong evidence | | | | Large | Not used |
| Sufficient | Good | Greatest | 1 | Inapplicable | Sufficient | Not used |
| | Good or fair | Greatest or moderate | At least 3 | Yes | Sufficient | Not used |
| | Good or fair | Greatest, moderate, or least | At least 5 | Yes | Sufficient | Not used |
| Expert opinion | Varies | Varies | Varies | Varies | Sufficient | Supports a recommendation |
| Insufficient | Insufficient design or execution | | Too few | Inconsistent | Small | No used |

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Criteria for assessing quality of non-positivist (qualitative) research

1. Eakin & Mykhalovskiy (2003)
2. Buchanan (1998)
3. Greenhalg & Taylor (1997)
4. Australian framework (2002)
5. Spencer et al (UK Cabinet Office) 2003

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Eakin & Mykhalovskiy (2003)

Critiques current guidelines for evaluating qualitative research which focus on proper research procedures
 * * * * *

Recommends taking a “substantive” approach which focuses on the analysis presented

Eakin, J. M., & Mykhalovskiy, E. (2003). Reframing the evaluation of qualitative health research: reflections on a review of appraisal guidelines in the health sciences. *J Eval Clin Pract*, 9(2), 187-194.

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Eakin & Mykhalovskiy (2003) (cont.)

“A **substantive approach** would instead try to enhance the readers’ capacity to “feel” the texture of the account being put forward, to understand the conceptual development and foundations of the analysis and thereby, ultimately, to better apprehend the leaps of imagination and creative thinking that constitute (arguably) the most valuable feature of all research, qualitative or otherwise.”

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Criteria for assessing quality of non-positivist research [Buchanan, 1998]

Degree to which it is:

1. **Precise:** “sharply detailed in its descriptions”
2. **Accurate:** “neither omissions nor fabrications; corroborated from multiple perspectives”
3. **Authentic:** “documented; free of distortions; aware of its limits”
4. **Persuasive:** “makes a compelling case”

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Qualitative methodologies: attributes
Trisha Greenhalg & Rod Taylor (BMJ, 1997; 315:740-743)

1. Qualitative methods aim to make sense of, or interpret, phenomena in terms of the meanings people bring to them
2. Qualitative research may define preliminary questions which can then be addressed in quantitative studies

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Qualitative methodologies: attributes (cont.) Trisha Greenhalg & Rod Taylor

3. A good qualitative study will address a [clinical] problem through a clearly formulated question and using more than one research method (triangulation)
4. Analysis of qualitative data can and should be done using explicit, systematic, and reproducible methods

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Evaluating *qualitative* research papers
(Trisha Greenhalg & Rod Taylor)

1. Did the paper describe an important [clinical] problem addressed via a clearly formulated question?
2. Was a qualitative approach appropriate?
3. How were the setting & the subjects selected?
4. What was the researcher's perspective, and has this been taken into account?

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Evaluating *qualitative* research papers (cont.) (Trisha Greenhalg & Rod Taylor)

5. What methods did the researcher use for collecting data—and are these described in enough detail?
6. What methods did the researcher use to analyse the data—and what quality control measures were implemented?
7. Are the results credible, and if so, are they clinically important?

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Evaluating *qualitative* research papers (cont.) (Trisha Greenhalg & Rod Taylor)

8. What conclusions were drawn, and are they justified by the results?
9. Are the findings of the study transferable to other clinical settings?

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"A schema for evaluating *qualitative* evidence on public health interventions"
[Australian National Public Health Partnership, 2002]

1. Was there a clear statement of the aims of the research?
2. Was a qualitative method appropriate to address the aims of the research?
3. Was the sampling strategy appropriate to address the aims of the research?

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"A schema for evaluating *qualitative* evidence on public health interventions"
[Australian National Public Health Partnership, 2002] (cont.)

4. Were the data collected appropriately to address the research issue?
5. Was the data analysis sufficiently rigorous?
6. Was the data analysis sufficiently explicit?

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"A schema for evaluating *qualitative* evidence on public health interventions"
[Australian National Public Health Partnership, 2002] (cont.)

7. Has the relationship between the researchers and participants been adequately described and considered?
8. Is there a clear statement of the findings?
9. Did the researchers indicate links between their presented data, their findings, and their conclusions?

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New approaches to conceptualizing & undertaking systematic reviews

1. Realist synthesis (Pawson et al)
2. Narrative synthesis (Popay et al)
3. Meta-narrative synthesis (Greenhalgh et al)

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Realist synthesis (Pawson)

"Realist synthesis is an approach to reviewing research evidence on complex social interventions, which provides an explanatory analysis of how and why they work (or don't work) in particular contexts or settings. It complements more established approaches to systematic review, which have been developed and used mainly for simpler interventions like clinical treatments or therapies."

(Pawson et al. 2004
<http://www.ccsr.ac.uk/methods/publications/RMPmethods2.pdf>)

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Realist evaluation (Pawson)
<http://www.authorstream.com/presentation/Mahugani-9635-Nicosia-Raymond-Pawson-Realist-Evaluation-and-Realist-Synthesis-nicosia-raymond-pawson-ppt-powerpoint/>

| | |
|---|--|
| Programs are: <ul style="list-style-type: none">o Embeddedo Activeo Theories | Principle research tasks: <ul style="list-style-type: none">o Hypothesize the key mechanisms (M)o Hypothesize the key contexts (C)o Explain the outcome pattern (O) |
|---|--|

"Don't ask 'what works?'"
Rather, investigate: 'what works for whom in what circumstances?'

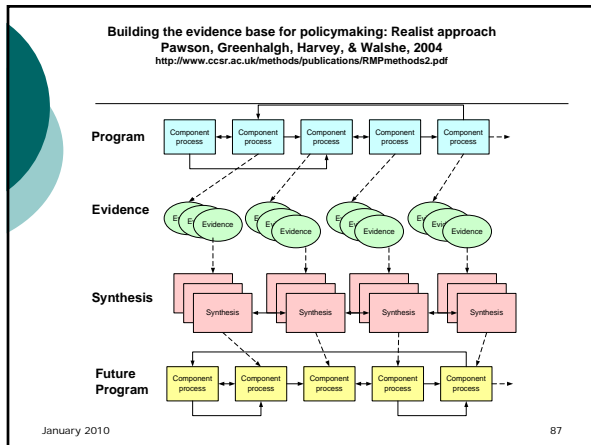
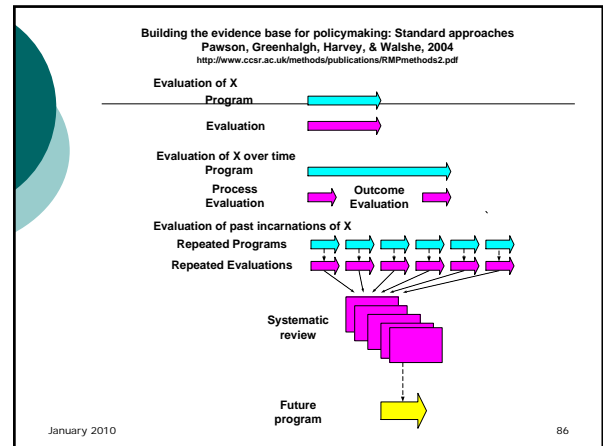
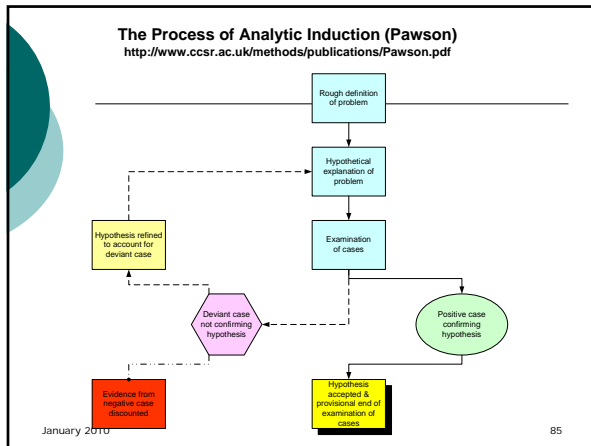
The same program mechanism will have different outcomes in different contexts

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Contrasting views of "systematic reviews"

| | |
|---|---|
| Meta-analysis perspective <ul style="list-style-type: none">o Programs have effectso Evaluation measures are effect sizeso Systematic review seeks mean effect | The realist understanding <ul style="list-style-type: none">o Programs are theorieso Evaluation is theory testingo Systematic review is theory synthesis |
|---|---|

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Narrative synthesis

Popay et al.

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Narrative synthesis: definition (Popay et al)

“An approach to the synthesis of findings from multiple studies the defining characteristic of which is that it relies primarily on the use of words and text to summarise and explain—to ‘tell the story’—of the findings of multiple studies. NS can involve the manipulation of statistical data and it can be used to synthesise evidence relevant to a wide range of questions including but not restricted to those concerned with effectiveness.”

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Narrative synthesis (Popay et al.)
<http://www.lancs.ac.uk/fass/projects/nssr/research/dissemination/publications/medsoc%20sept%2005.pdf>

Variants on NS widely used in evidence synthesis, & recommended in some guidelines for conducting SRs of effectiveness but:

- No consensus on what “it” is or how trustworthiness is established
- A systematic & transparent approach to NS is frequently absent

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General framework for a NS

1. Developing a theory of change
2. Developing a preliminary synthesis
3. Exploring relationships in the data
4. Assessing the robustness of the synthesis product

(Not stages—NS is an iterative process!)

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NS Framework

1. Theory of change

Purpose:

- to inform decisions about the review question & what types of studies to include
- To contribution to interpretation of findings
- To assess applicability of the findings
- Theory building & theory testing is a neglected aspect of SRs
- SRs have focused too much on description & too little on explanation
- SR could be more powerful than single studies re. theory

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NS Framework

2. Preliminary synthesis

Purpose: To organize findings to provide an initial description of patterns across the studies

- **In effectiveness reviews** the preliminary synthesis would focus on:
 - Direction of effects
 - Size of effects
- **In implementation reviews** preliminary synthesis would focus on:
 - Identifying & listing facilitators & barriers to implementation
 - Exploring the relationship between these

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3. Exploring relationships

Purpose in effectiveness reviews: to consider the factors that might explain any differences in the direction and/or size of effects across included studies

Purpose in implementation reviews:

- To consider factors that might explain any differences in reported facilitators and/or barriers
- To understand why & how interventions have an effect

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4. Assessing robustness

Purpose: to provide an assessment of the strength of evidence for

- Drawing conclusions about size & direction of effect
- Or factors shaping implementation
- Generalizability of synthesis product

Robustness is a complex concept, relates to:

- Methodological quality of included studies
- Judgements about the relevance of study findings for the review
- Trustworthiness of the product of synthesis

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Meta-narrative approach to systematic reviews

Greenhalgh et al. (2005)

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Meta-narrative approach to systematic review:
Phases (Greenhalgh et al, 2005)

1. Planning
2. Search
3. Mapping (identify for each research tradition)
 1. The key elements of the research paradigm (conceptual, theoretical, methodological and instrumental)
 2. The key actors and events in the unfolding of the tradition (including main findings and how they came to be discovered);
 3. The prevailing language and imagery used by scientists to 'tell the story' of their work.

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Meta-narrative approach to systematic review:
Phases (Greenhalgh et al, 2005)

4. Appraisal phase: Using appropriate critical appraisal techniques:
 1. Evaluate each primary study for its validity and relevance to the review question
 2. Extract and collate the key results, grouping comparable studies together

"We developed a data extraction form to summarise the research question, theoretical basis, study design, validity and robustness of methods, sample size and power, nature and strength of findings, and validity of conclusions for each empirical study. Each source was independently evaluated by two researchers, with an inter-rater reliability of 95%."

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Meta-narrative approach to systematic review:
Phases (Greenhalgh et al, 2005)

4. Synthesis phase
 1. Identify all the key dimensions of the problem that have been researched
 2. Taking each dimension in turn, give a narrative account of the contribution (if any) made to it by each separate research tradition
 3. Treat conflicting findings as higher order data and explain in terms of contestation between the different paradigms from which the data were generated.

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Meta-narrative approach to systematic review:
Phases (Greenhalgh et al, 2005)

6. Recommendation phase: Through reflection, multidisciplinary dialogue and consultation with the intended users of the review:
 1. Summarise the overall messages from the research literature along with other relevant evidence (budget, policymaking priorities, competing or aligning initiatives);
 2. Distil and discuss recommendations for practice, policy and further research.

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Meta-narrative approach to systematic review:
Principles (Greenhalgh et al, 2005)

1. Principle of pragmatism
2. Principle of pluralism
3. Principle of historicity
4. Principle of contestation
5. Principle of peer review

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Wrap up

1. Where does HP stand re. "evidence-based" practice?
2. Where do we stand re. "evidence-based" practice?
3. Outstanding issues & questions?
4. What next?

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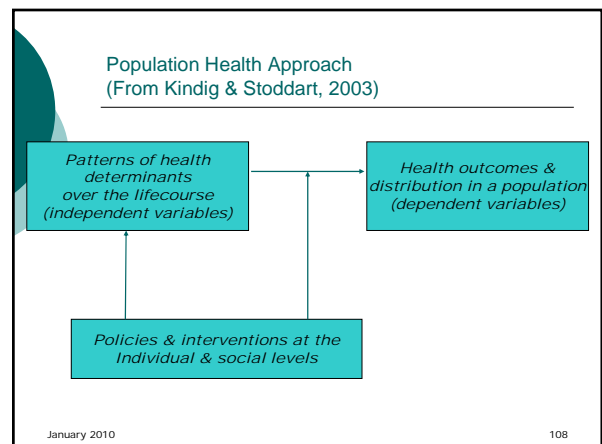
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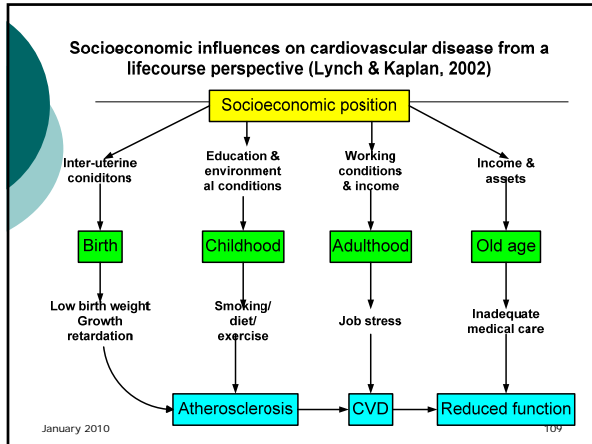
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Promising/best practice matrix (Goodstadt)

| Intervention attributes (e.g., contextual relevance) | Evidence (quantity & quality) | | |
|---|---|---|-------------------------------------|
| | High | Medium | Low |
| High | Best practice | Best practice? | Promising practice Improve evidence |
| Medium | Best practice? | Promising practice Improve evidence & relevance | No? |
| Low | Promising practice Improve contextual relevance | No? | NO |

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