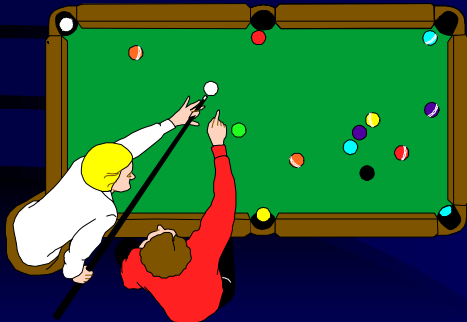


# Evaluating Public Health Interventions

## Problems, progress and challenges

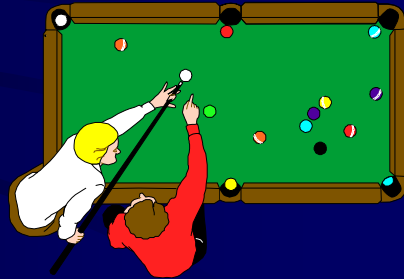
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Building evidence of the effectiveness of public health interventions -  
a game of snooker, or water polo?



## The “snooker” paradigm of intervention research

- One person, one opponent
- Level playing surface, no background noise
- Highly defined playing strategy, predictable outcomes
- Action occurs above ground under spotlights



## The “snooker” paradigm of intervention research

- One person, one opponent
- Level playing surface, no background noise
- Highly defined playing strategy, predictable outcomes
- Action occurs above ground under spotlights
- *Single intervention method, single setting, single issue*
- *Manageable intervention environment*
- *Well designed protocol, defined sequence of events*
- *Capable of intensive examination of all key elements*

## The “water polo” paradigm of intervention research

- Team game multiple opponents
- Constantly changing playing environment, considerable background noise
- Fast moving, constantly changing game plan
- Much action occurs below the surface



## The “water polo” paradigm of intervention research

- Team game, multiple opponents
- Constantly changing playing environment, considerable background noise
- Fast moving, constantly changing game plan
- Much action occurs below the surface
- *Multi-level intervention, multi-setting, multi-outcome*
- *Difficult to manage and predict intervention environment*
- *Need for flexibility and willingness to adapt*
- *Unforseeable actions and consequences*

## Assessing evaluation results – where do things go wrong?

|   | Pre-program/<br>Formative  | Process/<br>Implementation   | Outcomes<br>observed   |
|---|--|--|--|
| <b>Program {process}<br/>failure</b>              | Program developed too quickly; used Poor resources                   | Intervention or program elements not delivered or Implemented as planned | No effect observed   |
| <b>Theory {planning,<br/>logic model} failure</b> | Program based on no theory, or inappropriate or ineffective theory   | Program delivered as planned but based on wrong theory                   | No effect or wrong effect Observed   |
| <b>Measurement failure</b>                        | Good program well developed but measures used are not reliable/valid | Program delivered as planned but evaluated using unreliable measures     | Effect exists but is not detected  |
| <b>Research design failure</b>                    | Good program well developed Limited research design                  | Program as planned, but evaluation using sub-optimal research design     | Effects may exist but limitations to design preclude demonstrating program effects |

## Program planning - What makes a good public health intervention?

- **Plan on the basis of an analysis of epidemiological, behavioural and social research** - identify the scope and feasibility of successful intervention
- Develop intervention programs that are **informed by established theory**
- **Create the necessary conditions for successful implementation** - engage practitioners for a reality check, develop capacity and secure resources
- Ensure that the intervention program is of **sufficient size, duration and sophistication to be detectable** - combine different intervention methods

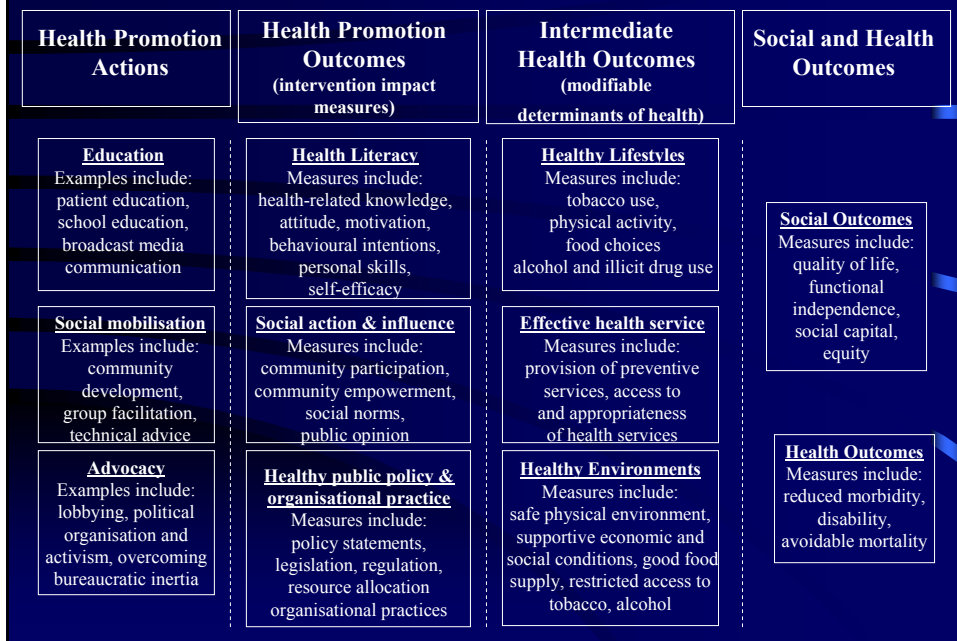
# Impact and outcome measurement - How to measure success in public health interventions?

Use of **outcome hierarchies** which distinguish between:

- changes to **health and social outcomes** (usually long term)
- changes to **health determinants** (behavioural, socio-economic, environmental, usually medium term)
- **health promotion impacts** (changes to knowledge, motivation, capacity, social norms, public policy organisational practice, usually in short-term)

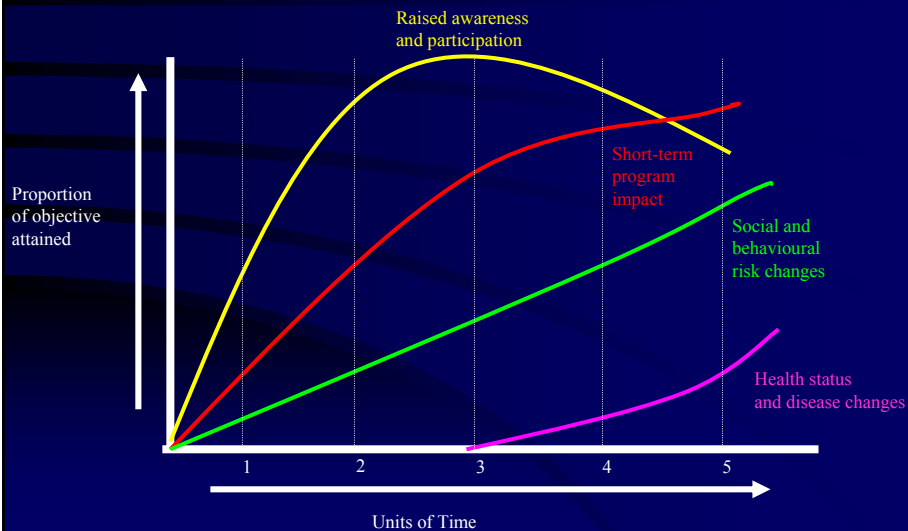
Implies use of much wider range of indicators

**Fig 1. Outcome model for health promotion**



## Impact and outcome measurement

Theoretical distribution over time of outcomes from public health intervention

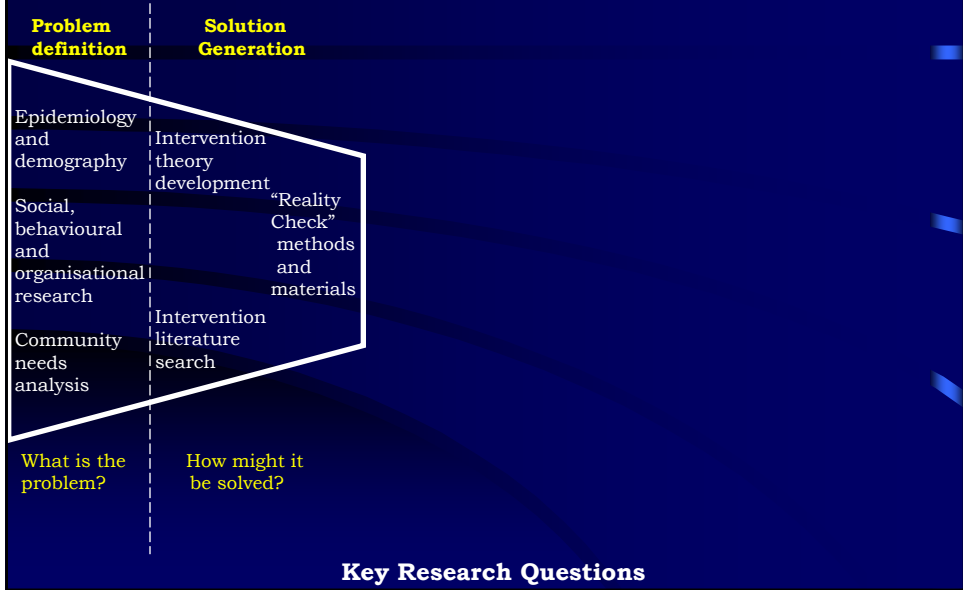


## Building evidence through research

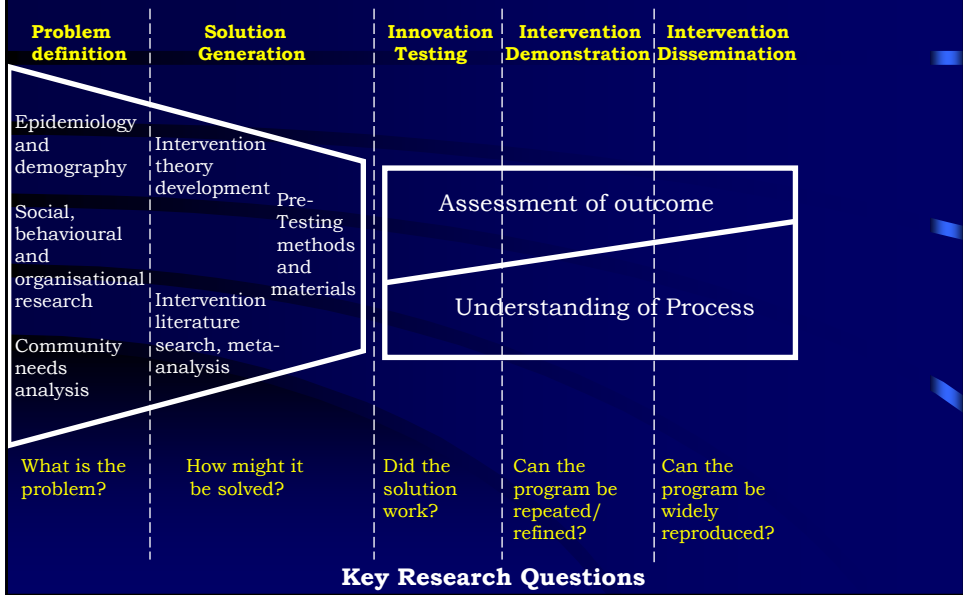
What is the best evaluation research method?

- Different stages in the development of ideas need **different evaluation methods**
- Multi-level interventions require **multiple layer evaluations**
- **Assessment of outcome** is of greatest interest to academics and policy makers, and needs to be tied to relevant, measurable objectives
- Understanding **process of implementation** and conditions for success of is of greatest interest to practitioners

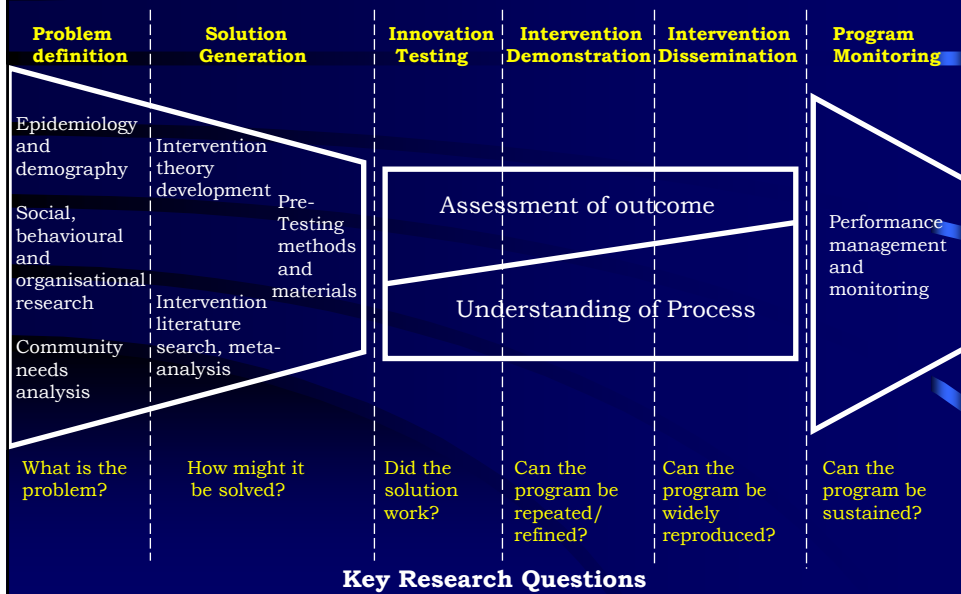
## Building evidence for public health intervention: Stages of Research and Evaluation



## Building evidence for public health intervention: Stages of Research and Evaluation



## Building evidence for public health intervention: Stages of Research and Evaluation



## Key elements of the model

- Different stages in the development of ideas require research to answer different questions
- Type and intensity of evaluation research needs to be related to stage of development of a program and perceived “risks”
- Measuring outcome and tracing causality of greater interest to academics, policy makers
- Understanding the processes of implementation and how to create conditions for success are of greatest interest to practitioners

## Inadequacies of current intervention research

- Current research is heavily directed towards the right of the model
- “Evidence” is confused with descriptions of determinants and modifiable risk factors
- Focus on controlled trial methodology and limited measurable outcome measures often leads to regressive intervention methods (single risk, single method, single setting)
- Change process insufficiently studied or described

## What do we need to do?

- Need careful debate about the nature of “evidence” in public health intervention
- Need to encourage more intervention research (left side of model)
- Need to reflect complexity of effective intervention in the development of research methods and outcome measurement
- Need to combining research methods (quantitative, with qualitative), and “build” evidence derived from a much richer base of knowledge and experience than if often advocated