EU-Dap Final Conference

Building policies from evidence

Eva Buiatti, Alberto Baldasseroni
Regional Health Agency of Tuscany (Italy)

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Question 1:

How evidence informs health policy

How policy informs the evidence (BMJ, 2001)
Dutch experience

• Efficacy evidence is searched on the field on a list of relevant “problems” before deciding the list of interventions.
• Six years experimental phase.
Dutch experience

Positive results of experimentation:

• an integrated programme to prevent school children starting to smoke;
• programmes for tooth brushing at primary school;
• adapted working methods and equipment for bricklayers;
• rotation of tasks among dustmen;
• formation of local care networks;
• peer education for patients of Turkish origin with diabetes; and
• introduction of nurse practitioners for patients with asthma or chronic obstructive pulmonary disease.

Negative results of experimentation:

• Supplementary benefits to parents in poverty;
• Counseling of children with frequent school absence;
• Periconceptional use of Pholic acid in low socio-economic groups;
• Self-organizing teams in production

BMJ, 2002
UK Experience

• Acheson inquiry (1997) to help the Government formulate policy based on a list of suggested interventions.
• One macro field of interest: how to tackle inequalities in health.
• A subcommission for evaluate the quality of evidence used.
UK Experience

• Results:
  – Dozens of recommendations by the Acheson commission;
  – Ten remedies suggested by the subcommission
UK Experience

• Scanty empirical evidence on what works and what doesn’t
• Do we really need evidences to correctly implement health protection and promotion policies?

Davey-Smith, BMJ, 2001
Question 2:

Evidence for Information vs. Evidence for Decision by policy-makers

(ex. Chickenpox and pneumococcal vaccination programs)
Question 3:

Does the RCT (paradigma for efficacy studies) fit when evidence in public health is gathered?
Preventive Intervention as a Multicomponent Process, a patchwork of different actions

At individual level
(Primary Care)

At community level
(Public Health)
Efficacy: a measure of the benefit resulting from an intervention for a given health problem under the ideal conditions of an investigation; it answers the question, "Does the practice do more good than harm to people who fully comply with the recommendations?"

Generally Efficacy is tested with RCTs.

Highlighted INTERNAL VALIDITY
The extent to which a specific intervention, procedure, regimen of service ... does what it is intended to do for a defined population.

Usually Effectiveness is measured through impact/evaluation studies. The results of these studies are valid *hic et nunc*, they are not generalizable.

Highlighted EXTERNAL VALIDITY
Efficacy in trial
33% relative risk reduction in cardiovascular events

- Diagnostic accuracy: 80%
- Population coverage: 50%
- Population eligibility for treatment: 75%
- Patient adherence: 80%
- Professional competence: 100%

Community effectiveness =
33% × 80% × 50% × 75% × 80% × 100% = 8% relative risk reduction

Assuming an untreated event rate of 3% per year
Unadjusted number needed to treat = 100
Community effectiveness number needed to treat = 420
Question 4:

a) is scientific evidence the only component in decision making?

b) which are the steps of a decision process?
Is quantitative evidence the only relevant one?

Others:
- Risk perception
- Participation
- Technical feasibility
- Cost/benefit balance
- Local expertise availability
- Relevance of the issue for the next generations
  - …
The puzzle of decision making

- Levels: International, National, regional....

- Subjects in Decision and in Intervention: Health Organizations, Governments, Local Communities, Economical Stakeholders, Citizens stakeholders, Scientists and Health professionals, ...

- Political setting: centralization/decentralization; public/private welfare (for instance health insurance)
A proposal of decision phases, a proposal of decision matrix

Browson et al, Evidence-Based public health, 2003
A regional experience of decision making in Italy
**PHASE I: Prioritization Process of health problems: make the list of the problems and decide whether an intervention has to be done**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Issue 1</th>
<th>Issue 2</th>
<th>Issue 3</th>
<th>Issue …</th>
<th>Issue n</th>
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<tbody>
<tr>
<td>Claimed Precautionary Principle (*)</td>
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<tr>
<td>Evidence that problem does exist</td>
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<td>Burden of problem</td>
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<td>Burden of related diseases</td>
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<td>Public Opinion perception (*)</td>
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<td>Stakeholders' perception (*)</td>
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<td>Final score</td>
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(*) Qualitative evidence
Some examples of Prioritization Process in Public Health field.

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<thead>
<tr>
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<th>Claimed precautionary principle (*)</th>
<th>Evidence that problem does exist</th>
<th>Burden of problem</th>
<th>Burden of related diseases</th>
<th>Public opinion perception (*)</th>
<th>Stakeholders’ perception (*)</th>
<th>Final score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ELF exposure</td>
<td>YES</td>
<td>?</td>
<td>++</td>
<td>?</td>
<td>+++</td>
<td>+++</td>
<td></td>
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<tr>
<td>2. Sport physical exertion (SCD)</td>
<td>NO</td>
<td>+/-</td>
<td>+</td>
<td>+/-</td>
<td>+++</td>
<td>++</td>
<td></td>
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<tr>
<td>3. Foodborne diseases</td>
<td>NO</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td>+++</td>
<td>+</td>
<td></td>
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<tr>
<td>4. Protection from urban environmental pollution</td>
<td>NO</td>
<td>++</td>
<td>+++</td>
<td>/++</td>
<td>++</td>
<td>++</td>
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</tbody>
</table>

(*) Qualitative evidence
PHASE II: make the choice of an intervention.

**Health problem:** Protection from urban environmental pollution

<table>
<thead>
<tr>
<th>Action to be taken</th>
<th>Criteria</th>
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<tbody>
<tr>
<td></td>
<td>Systematic review of efficacy</td>
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<tr>
<td></td>
<td>Cost/benefit analysis</td>
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<tr>
<td></td>
<td>Technical feasibility (*)</td>
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<td></td>
<td>Local professionalities availability (*)</td>
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<td></td>
<td>relevance and participation (*)</td>
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<tr>
<td></td>
<td>Stakeholders’ analysis (*)</td>
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<tr>
<td>Traffic policy 1 score</td>
<td>score</td>
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<tr>
<td>Traffic policy 2 score</td>
<td>score</td>
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<tr>
<td>Traffic policy 3 score</td>
<td>score</td>
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<td>Traffic policy ...</td>
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<tr>
<td>Traffic policy n score</td>
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(*) Qualitative evidence
Some examples of different component of an intervention

**Health problem:** 4. Protection from urban environmental pollution

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<th>Action to be taken</th>
<th>Choice’s criteria</th>
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<tbody>
<tr>
<td></td>
<td>Systematic review of efficacy</td>
</tr>
<tr>
<td>1. Traffic interruption during the week-end</td>
<td>score</td>
</tr>
<tr>
<td>2. Forbidden EURO 1 and EURO 2 cars</td>
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<tr>
<td>3. Allowance of alternate numberplates circulation during the working-week days</td>
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<tr>
<td>4. Forbidden motorbikes before 1997</td>
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<tr>
<td>5. Mass media campaigning to support public transportation</td>
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(*) Qualitative evidence
Conclusions (1)

• Points of view about the role of evidence in policy decision making varies widely in time and space;

• Evidence for information and evidence for decision imply a different pathway;

• Public health programs pertain mainly to the effectiveness domain in which the role of RCTs is marginal;

• Decision making is a process involving a framework of steps, criteria and subjects;

• Qualitative and quantitative methods are both used.
Conclusions (2)

While the list of health problems for which “something should be done” is largely overlapping in different settings (international, country and region level), “what should be done” diverges in relation with organization, culture, tradition etc.

What is desirable is to develop a widespread and shared evaluation process on results of different models, to allow the comparison among choices.

*S. Allin et al, WHO 2004, modified*
Thank you for your attention