Synthesising and presenting research synthesis to a policy and practitioner audience

Conducting a systematic review with an eye to the policy community: New roads and human health

M Egan, M Petticrew, D Ogilvie, V Hamilton
Aims of Centre

• Build consensus on evidence related to public health and health inequalities

• Synthesise evidence to inform policy and practice
Policy advisers told us that public health research evidence was perceived as…

- detail obsessed
- full of caveats
- contradictory
- poor on assessing interventions
- narrow
- socially excluding
- out of tune with areas of current political importance
As one advisor put it, the best available research evidence was perceived to be...

‘behavioural and clinical rather than social. It also tends to be descriptive rather than impact based, and often looks at middle-classes rather than the poor. Not useful for making compelling evidence about interventions that affect poor people. Cochrane and Campbell need to address this.’
Some advisers said systematic reviews were at times perceived as...

- obsessed with methodology
- concerned only with RCTs
- synonymous with meta-analysis
- clinical/behavioural not social
- lacking firm conclusions

These are misconceptions!
To provide the kind of evidence that policy advisors want, the Centre will conduct systematic reviews that...

- look at social interventions
- consider all appropriate evidence
- consider all appropriate synthesis methods
- disseminate clear results to policy community
The health impacts of new roads: a systematic review

Matt Egan, Val Hamilton, David Ogilvie, Mark Petticrew
We contacted...

- UK Department of Transport
- Transport researchers in Scottish Exec.
- London Health Commission
- HDA
- TRL + European equivalents
- University based researchers known to have connections with policy community
- Environmental groups
Work in progress disseminated using

- JISC mailing lists
- website
- poster presentations
- LANTERN seminar
- ‘Evidence, Policy, Practice’ conference
- etc.
Search strategy

- electronic and manual
- 23000 titles and abstracts
- 700 articles ordered
- grey literature
- foreign language
Selection

3 researchers independently assess >100 articles containing new roads

- new road + health impact = ✔
- post 1960 + OECD = ✔
- road construction process = ✗
- predictive modelling = ✗
- economic/environmental, but no human health = ✗

32 studies selected for synthesis
Narrative Synthesis

- categorisation
- critical assessment
- comparison
‘A New Deal for Transport’ (DoT 1998)

- transport safety
- noise and vibration
- air quality
- quality of life for individuals and communities
- access to health care
- walking and cycling
# Categorisation

<table>
<thead>
<tr>
<th>Outcome type</th>
<th>Intervention type</th>
</tr>
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<tbody>
<tr>
<td>accident injury</td>
<td>major urban road</td>
</tr>
<tr>
<td>disturbance/severance</td>
<td>out-of-town bypass</td>
</tr>
<tr>
<td>respiratory health</td>
<td>major connecting road</td>
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Policy advisors’ views on critical analysis…

- “to answer specific questions – ‘is intervention x effective for y?’
  - RTC is often best method in these kinds of circumstances but there are other circumstances where it is not the best method.’

- ‘its an unfruitful way ahead to be obsessed with endless debates on gold standards etc…we need appropriate methodologies’
Critical Assessment

Outcome: disturbance/severance

1= appropriate sampling
2= response rate/follow-up >60%
3= controls/adjustment for confounders
4= appropriate exposure measures
5= adaptation to disturbance considered
6= impact on secondary roads considered
7= sufficient data presented to validate results
8= compares more than one new road
9= prospective study
Critical Assessment

Outcome: accident injuries

1= control for general trends
2= reliable/representative sample of data
3= sufficient data presented to validate results
4= control for regression-to-the-mean
5= follow-up at least 3yrs before and 3yrs after
6= compares more than one new road
7= injury severity considered
8= no. of individual casualties included
9= secondary roads considered
Comparison:
Effect of new bypasses on injuries

<table>
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<tr>
<th>STUDY</th>
<th>METHODS</th>
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<td>Andersson (2002). Denmark, 11 roads.</td>
<td>1 2 3 5 6 8 9</td>
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<td>1 2 3 4 5 6 7</td>
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<td>Jørgensen (1991). Denmark, 1 road.</td>
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<td>0%</td>
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<tr>
<td>Leeming (1969). UK, 19 roads.</td>
<td>1 2 3 5 6 7</td>
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Out of town bypass studies

Elvik, Leeming, Newland
Out of town bypass studies

Andersson, Jørgensen
Summary of results

Out-of-town bypasses
- injuries = migration; respiratory = not significant;
- disturbance and severance = decrease in towns at expense of smaller number of rural residents

Major urban roads
- injuries = not significant;
- disturbance and severance = increase

Major connecting roads
- injuries = decrease
Conclusion

*Policy community involvement via...*

- consensus conference with policy advisors
- contacting individuals
- website, work in progress seminar/conference
- policy literature

*Policy-makers views influence review at key stages*

- during planning and protocol stage
- during literature search
- categorisation
- critical assessment
Epilogue: disseminating final results

- Research community
- AJPH, website, papers, Campbell

Policy community
- the next step...
For more info about the Centre for Evidence-Based Public Health Policy, and for a copy of the New Roads Review Protocol see:

http://www.msoc-mrc.gla.ac.uk/Evidence/Evidence.html