Valuing the benefits of walking and cycling: guidance and tool for cost-benefit analysis

THE PEP Workshop on Transport, Environment and Health
with a special focus on health impacts
25-26 June 2007, Telč, Czech Republic

Sonja Kahlmeier, WHO Europe
Nick Cavil, Cavill Associates
Francesca Racioppi, WHO Europe
Economic valuation

- Usual practice for transport professionals
- Cost-benefit analysis carried out before building any new road
- Transfer to cycling and walking infrastructure?
- How can health benefits of cycling and walking be included?
Background

- **Nordic council: CBA of cycling project (Feb 2005)**
  - Public health benefits are great, esp. if inactive persons can be reached
  - Promote CBA of cycling further
  - Call to WHO to cooperate in further research and development of methodology
Workshop on economic valuation of physical activity (Sept 2005, Magglingen, Switzerland)

- Economic valuation of physical activity is a very useful tool
- should be promoted more
- Scientific consensus needed on:
  - Health endpoints
  - Risk estimates
  - Basic assumptions
- Convergence of methods and values used by different sectors should be supported
- User-friendly step-by-step model needed
WHO Europe convened expert group and commissioned review with objectives:

- To identify relevant publications through expert consultation and tailored searches of the literature
- To review the approaches taken to the inclusion of health effects in economic analyses of transport interventions and projects
- To propose recommendations for the further development of a harmonized methodology, based on the approaches developed to date
Results

- 4,267 titles screened
- 17 included
- Wide range of approaches to economic analysis
- Majority being cost-benefit analyses of cycling projects or programmes.
Benefit-cost ratios for selected studies

- Rutter (++)
- Saelensminde 1 (++)
- Saelensminde 2 (++)
- Saelensminde 3 (++)
- DfT 1 (+)
- DfT 2 (+)
- DfT 3 (+)
- sustrans 1 (+)
- sustrans 2 (+)
- Sustrans 3 (+)
- TfL 1 (+)
- TfL 2 (+)
- TfL 3 (+)
- Foltýnová (+)
- Wang (+)
- Buis (-)
Towards a new cba tool...

<table>
<thead>
<tr>
<th>Draft CBA tool: cycling</th>
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<tbody>
<tr>
<td>Section 1</td>
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<tr>
<td>Data entry fields</td>
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<tr>
<td>1 Number of trips per day</td>
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<td>2 Mean trip length (km)</td>
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<td>3 Proportion of these trips that are one part of a return journey (or 'round trip')</td>
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<td>4 Proportion of the trips that are by new cyclists</td>
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<td>5 Value of life</td>
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<td>Notes</td>
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<td>6 Enter data on total num</td>
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<td>7 Enter data on mean trip</td>
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<td>8 Standard UNITE values</td>
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<td>9 Total value of lives save</td>
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<td>Maximum annual benefit once in steady state</td>
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<tr>
<td>52 Savings per km cycled per individual cyclist per year</td>
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<td>53 Savings per individual cyclist per year</td>
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<td>54 Savings per trip</td>
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<td>55 Mean annual benefit based on 5 year time build-up of benefit over 10 years</td>
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<td>56 Mean annual benefit based on 10 year build-up of benefit over 10 years</td>
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<tr>
<td>57 Discount rate</td>
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<td>58 Net present value of mean annual benefit based on 5 year build-up of benefit over 10 years</td>
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<tr>
<td>59 Net present value of mean annual benefit based on 10 year build-up of benefit over 10 years</td>
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Example 1: Graz

- Population 250,000
- 22.4% cycle regularly
- Average 3.1km
- Most (90%) round trips
- Estimate 50% regular cyclists
- Maximum value (mortality) €6.3M
- Discounted value €2.4M - €3.7M
Example 2: Liverpool Loop Line

- 34 cycle trips/day
- Mean trip length estimated 5km
- Most (90%) round trips
- Estimate 50% regular cyclists
- Maximum value (mortality) €4,000
- Discounted value €1,600-€2,400
Conclusions

- Economic evaluations are at an early stage
- Positive results demonstrate the importance of walking and cycling
- Help us to speak the language of transport planners – solve ‘their’ problems
- Economic valuations strengthen our case
- Now proposed methods need to be tested and developed further