



Health impacts of transport initiatives: using the evidence for HIA

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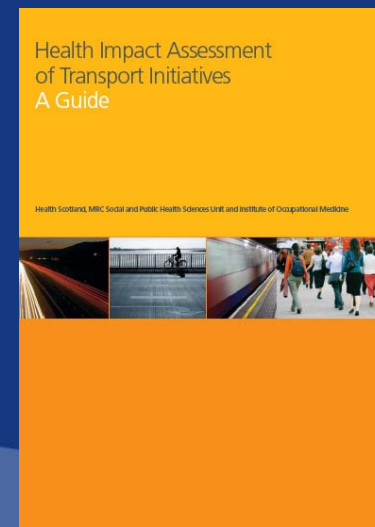
On behalf of the Scottish HIA Network



- Transport is an important area for HIA
- Wide range of potential impacts
- Huge volume of literature
- (Courageous) attempt to bring it together!
- Guidance for people doing transport HIA:
 - Public health professionals
 - (Transport professionals)

Setting it in context

- Background:
 - Transport in Scotland
 - Policy context
- Evidence
 - Cross sectional links
 - Impacts of interventions
- Using the evidence
 - Applying the evidence
 - Doing an HIA
 - Summary HIAs
 - Data sources



Gathering the evidence

- Agreed the research questions
 - Evidence on links between transport, health and physical activity/ pollution/ crashes/ stress/ severance/ social inclusion
 - Health impacts of new infrastructure
 - Health impacts of interventions to achieve modal shift/ reduce pollution/ reduce injuries/ improve safety
- Used and updated systematic reviews
- For air pollution and climate change used expert reviews

Areas of impact

- General physical health
- Physical activity
- Injuries and deaths
- Air pollution
- Noise pollution
- Stress/mental health and quality of life
- Personal safety and perceptions of safety
- Community severance and social inclusion
- Climate change

Impacts of interventions

- New transport infrastructure
- Interventions to
 - reduce road traffic and fuel consumption
 - reduce air pollution
 - reduce noise pollution
 - promote modal shift to walking and cycling instead of car use
 - improve psychosocial aspects of public transport
 - reduce crashes

Key findings

- Very little research on modes other than road transport
- Lots of data on injury and air pollution, less on other issues
- Most interventions studied are injury reduction measures
- Few looked at unintended impacts

General health

- Car ownership/access associated with better physical and mental health

Injuries

- Cyclists and pedestrians most vulnerable to injury, lower rates if higher rates of cycling
- Environmental and engineering measures, safety equipment and legal strategies can be effective in reducing crashes and/or injuries.
- Some educational interventions may be harmful

Air and noise pollution

- Road transport makes up 30% of $PM_{2.5}$ and 50% of $PM_{0.1}$
- 6% increase in mortality per $10 \mu g.m^{-3}$ increase in $PM_{2.5}$
- In vehicle concentrations higher than roadside
- Estimated benefits of reducing traffic related air pollution are high: few studies available but do show effects
- Noise pollution may disturb sleep but other impacts unclear

Physical activity and transport mode

- Unknown whether car use is linked to overall activity level
- Limited effects of most interventions to achieve modal shift
- Targeted behaviour change most effective and some improvement in health seen

Other impacts

- One oft-quoted study on community severance
- Little evidence on road rage or commuter stress
- Personal safety fears a barrier but little evidence on interventions
- Motorised transport accounts for 22% of CO₂ emissions

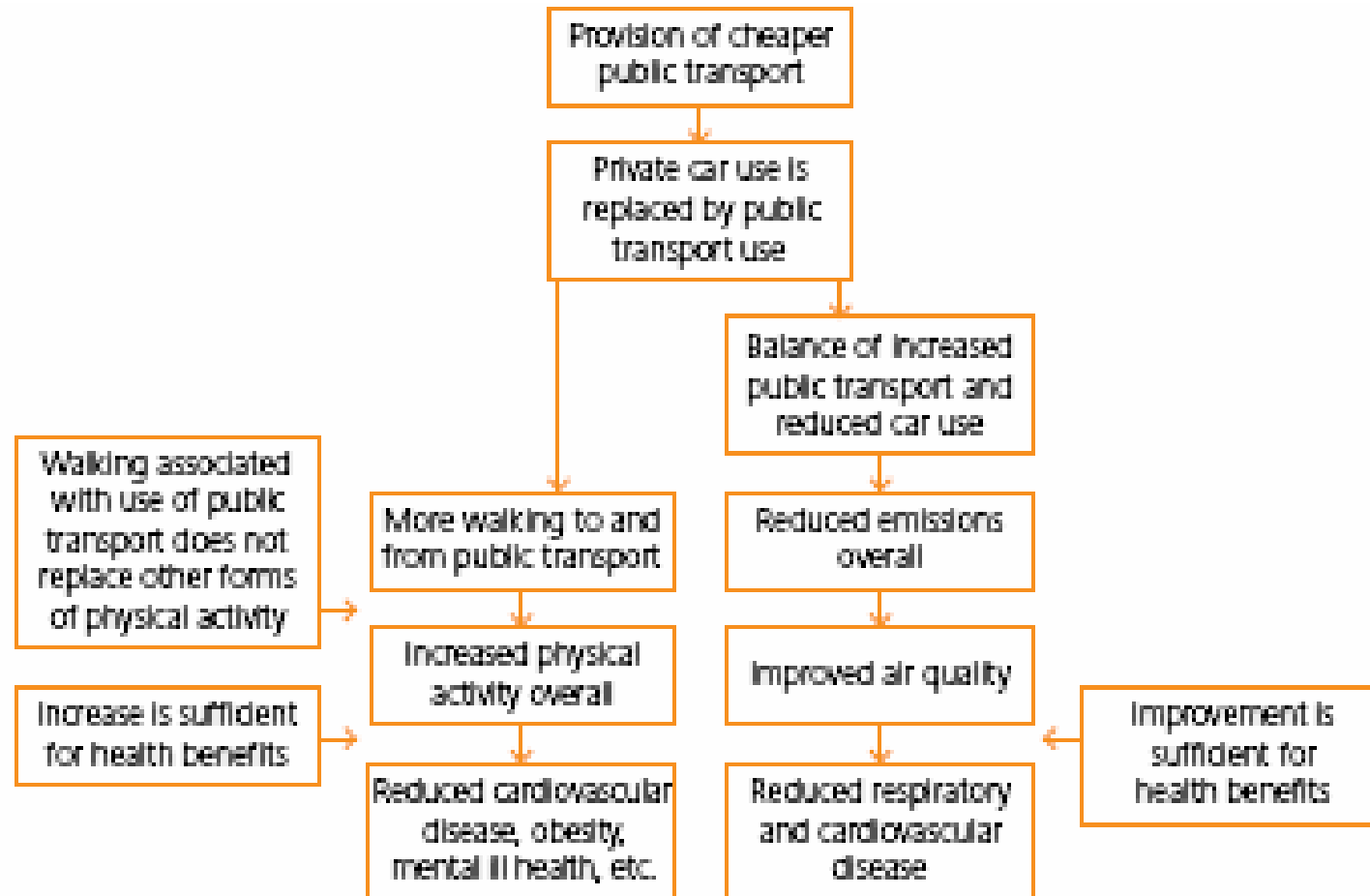
New transport infrastructure

- Bypasses reduce injuries on main roads, reduce severance in towns
- New urban roads have little impact on injury but increase disturbance and severance
- New roads between towns can reduce injuries

Key 'evidence informed' questions

- Nature and extent of proposal
- Research evidence on stated aim, intended and unintended impacts
- Features of local area
- Populations
- Economic implications
- Changes in travel patterns
- Traffic and impact displacement

Mapping impacts, exploring assumptions



Conclusions

- There's a lot of literature but in general 'more research is needed'
- It took a long time to finish the work!
- Transport does have important health impacts, on population and individuals
- Impacts on health inequalities and potential conflicts between health of different groups

Health Impact Assessment of Transport Initiatives A Guide

Health Scotland, MRC Social and Public Health Sciences Unit and Institute of Occupational Medicine

