Case-study 8.3.6

Informing Transport Health Impact Assessment

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Aim

To evaluate the **direct** relationships between transport and health, especially in London, and consider whether it is possible to use these for quantification.

Objectives

- To assess the direct positive and negative relationships between transport and health
- To develop a framework that allows quantification of these effects in transport-related decision-making.
- To make explicit where impacts can be quantified and where this is problematic: by doing to identify gaps in the knowledge and highlight research priorities.
- To assess the potential relative importance of different health effects from transport in London.

Methodology

The study has aimed to provide input into the growing area of Health Impact Assessment for transport, both in terms of the evidence of effects and also in terms of appraisal methodologies. The document discusses the evidence and has undertaken a rapid literature review to examine positive and negative relationships between transport and health for five key categories.

These are:

- Traffic accidents;
- Air pollution related health effects from transport emissions;
- Noise related health effects from transport activity;
- Health benefits from physical activity from cycling and walking;
- Community severance, mental health and inequality effects.

The study aims only to cover direct transport-specific effects. It therefore does not assess the very large indirect benefits of transport, such as access to services, employment, etc., which in turn have very large quality of life and health benefits, though consideration of these effects is essential in the overall context of HIA or wider transport policy.

Key aspects of the study have been:

- to review the evidence and relationships for assessing transport and health and peer review the approach;
- to review different frameworks for incorporating these relationships into appraisal methodologies;
- to assess the requirements of users for the framework and ensure it is consistent with other techniques and other relevant policy initiatives.

Outputs

At present we conclude that it is not possible to quantify all the health impacts of transport with similar confidence. There is considerable uncertainty associated with many of the impacts addressed. This uncertainty is relevant to the effect itself (i.e. is it real?), as well as with respect to the reliability of quantification.

The study conclusions are summarised in the Table below.

Category	Effect	Certainty of impact	Certainty and approach for quantification
Accidents	Injury	High	High Direct cause and effect based on historic rates.
Air Pollution	Respiratory and cardio vascular mortality and morbidity	Medium	Medium. Quantification possible through 1 Assessment of effects of traffic on air quality 2 Assessment of health impacts with exposure-response functions Debate on which health endpoints and which functions should be used.
Noise	Indirect through annoyance and sleep disturbance to well-being, mental health and mortality	Low	Low. Quantification **potentially** possible through 1 Assessment of effects of traffic on noise levels 2 Assessment of health impacts with exposure-response functions Many endpoints are secondary and are difficult to quantify. Questions over functions and how they relate to noise specifically. Issues of perception, sensitivity of individuals, thresholds, non-linearity.
Physical activity	Cardio-vascular, diabetes, cancer, (**beneficial**)	Medium – High	Low. Quantification **potentially** possible through 1 Assessment of benefits of physical activity 2 Assessment of background levels/confounders 3 Estimate changes in likely physical activity from transport policy or scheme Questions over linearity and threshold with functions. Some issues relating traffic activity to levels of effects.
Community Severance		Low	Low. Many endpoints are secondary and as such difficult to quantify, especially in relation to transport activity. Overall difficulty in linking traffic activity and levels of impact.

Overall, the study concludes that it is possible to evaluate the health effects of accidents and air pollution, though stress the uncertainty associated with the latter is higher and the consensus on effects lower. Frameworks exist for both categories to assess the marginal effects of transport, though the analysis for air pollution is complex. It is also likely that the health benefits of cycling and walking can be quantified, though further work is needed to provide quantification methods that fit conventional frameworks. It is possible to assess quantitatively the noise levels from transport, though it is very difficult to evaluate quantitatively what the health consequences of these levels are. A qualitative approach could be undertaken, though there remains considerable debate on the reliability of evidence relating to health effects. Finally, the evidence and assessment methods for other direct effects from transport are less well characterised, though it may be possible to qualitatively assess the potential health effects of community severance.

Fuller details of this work are available through the London's Health website - www.londonshealth.gov.uk - and an **Executive Summary** of the full report has been produced **as 'On the Move - Informing transport health impact assessment'** available on the website.

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