

# Making the case: improving health through transport

## Summary

### Why 'transport and health'?

It is clear that transport and health are inextricably linked. Transport has major health impacts – through accidents, levels of physical activity undertaken, effects on air pollution, and access to a range of services. The organisation of health services can add to or alleviate all these impacts, as well as making it more or less difficult for patients, relatives and staff to travel to and between healthcare settings. The provision of transport services (including issues such as car parking) have major cost implications, as does addressing the health issues associated with transport.

Transport issues are an integral element in meeting a range of NHS aims, including those set out in national service frameworks and other policy documents, and in the NHS environmental standards.

There are significant inequalities in the impact of transport on the health of individuals and communities, both directly (eg through the social distribution of child pedestrian deaths); and indirectly (eg through the influence of planning decisions to accommodate car access).

Transport planning is a major role of local government, and health service involvement and partnership is an important element in this. NHS involvement in the full range of transport planning issues will help local partners to meet their own targets, including local public service agreement (PSA) targets, and can be an important part of local partnership working through local strategic partnerships and other mechanisms.

This document sets out:

- **Impacts of transport – the evidence** *page 2*
  - Physical activity
  - Injuries
  - Air pollution
  - Access to services
  - Social networks and community severance
  - Health inequalities
  - Economic costs
- **Policy drivers** *page 3*
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  - Introducing patient and staff travel plans
  - Implementing a physical activity strategy
  - Contributing resources/support to local transport programmes
  - Contributing to local accessibility planning
  - Assessing the health impact of local transport plans/schemes

### Who is it for?

This publication is aimed at those interested in developing health and transport policies; those involved in partnership work with local authorities; those with responsibilities for NHS estates; and those developing work where transport will play a significant part. These may include:

- National service framework leads for coronary heart disease, cancer and diabetes
- Those developing physical activity strategies
- Those developing accidental injury strategies
- Estate managers
- Directors of public health
- Local authority transport planners.

## Impacts of transport – the evidence

- Physical activity – adults who are active have a 20–30% reduced risk of premature death. Walking and cycling can provide suitable forms of physical activity.
- Around 3,500 people are killed and 250,000 injured in Great Britain annually on the roads.
- Air pollution from particulate matter is linked to 8,100 premature deaths annually, and sulphur dioxide to 3,500.
- Exposure to air pollution is greater for those living in areas of deprivation.
- Access to work, employment, healthcare and food is more difficult for those without a car.
- Children from social class V are five times more likely than those from social class I to be killed as pedestrians.

The main impacts of transport on individuals are through physical activity, injuries, air pollution and access. Transport planning also has an impact on communities. Health problems associated with transport are frequently more evident among those from disadvantaged groups.

### Physical activity

The Chief Medical Officer's report (DH, 2004a) notes that 'the scientific evidence is compelling. Physical activity not only contributes to wellbeing, but is also essential for good health.' Adults who are physically active have 20–30% reduced risk of premature death and up to 50% reduced risk of developing major chronic diseases such as coronary heart disease, stroke, diabetes and cancers. The current advice is to achieve a minimum of 30 minutes moderate activity on at least five days of the week. 'Moderate activity' would include brisk walking and cycling.

The clearest evidence of decreases in physical activity over the past 20–30 years comes from changes in travel patterns. Walking and cycling for transport have decreased steadily (Table 1).

Around 58% of trips by car or van (either as driver or passenger) are under five miles, a distance that would take about 30 minutes by bike, and nearly 25% are under two miles (30 minutes brisk walk).

## Injuries

In 2003 there were 3,508 people killed on roads in Great Britain, with a further 33,707 seriously injured, and 253,392 injured (DfT, 2004a). In addition, 4,100 children were killed or seriously injured. It is likely that, particularly for slight injuries, this is a substantial underestimate of the burden of injury and therefore of the use of NHS services. Slight (and, to an extent, serious) injuries may not to be recorded as transport-related, even when the injured party goes to an accident and emergency unit. When people with slight injuries seek other treatment (for instance via a GP), it is less likely still that the injury will be recorded in official statistics.

### Air pollution

Air pollution is associated with increased mortality and morbidity in both hot and cold weather. It has been estimated by the Committee on the Medical Effects of Air Pollutants (COMEAP, [www.advisorybodies.doh.gov.uk/comeap](http://www.advisorybodies.doh.gov.uk/comeap)) that there are 8,100 premature deaths every year as a result of exposure to particulates (measured as PM<sub>10</sub> units – particulate matter generally <10 µg in diameter), and 3,500 premature deaths a year due to sulphur dioxide (DH, 1998). For nitrogen dioxide and carbon monoxide there is still insufficient evidence to allow quantification of effects, but there is some evidence that exposure to current levels of these pollutants affects health (DH, 1999a). The Acheson report noted that exposure to air pollution was worse in areas of greatest disadvantage (Acheson, 1998).

### Access to services

People travel in order to gain access to goods, services, employment, friends and family, leisure pursuits and healthcare. Many people travel much greater distances than in the past for routine purposes, as a result of the increasing affordability and accessibility of driving. Overall motoring costs are at or below 1980 levels, over which time average disposable income has increased by 90%, and planning decisions are based around the expectation of car use by all.

Consequently, the 28% of households without access to a car find it harder to travel to get to shops, employment, healthcare and other services. While only 7% of those in the highest income quintile have no access to a car, 62% of those in the lowest income quintile are without such access (DfT, 2003a).

**Table 1 Miles travelled per person per year, cycling and walking**

	1975/76	1985/86	1992/94	1998/2000	2002	2003
Walking	255	244	199	192	189	192
Cycling	51	44	38	39	33	34

Note: 2003 figures are provisional. Source: DfT, 2003b.

**Table 2 Some economic costs of the impact of transport on health**

Area	Economic evaluation	Source
Hospital and ambulance costs of injury accidents	Cost £560 million (Great Britain)	DfT (2002b)
Physical inactivity	Cost £8.2 billion (England)	DH (2004a)
Reductions in PM <sub>10</sub> , sulphur dioxide and ozone	Net benefit £1.69–£1,295 million (Great Britain)	DH (1999a)
Implementation of 110 '20 mph zones' in Kingston upon Hull	Cost £4 million Benefits £40 million	IPPR (2002)

The Social Exclusion Unit report on transport (SEU, 2002) summarises the contribution of transport and location of services to social exclusion:

- **Work:** two out of five jobseekers say lack of transport is a barrier to getting a job
- **Learning:** nearly half of 16–18-year-old students say they find their transport costs hard to meet
- **Health:** over a 12 month period, 1.4 million people miss, turn down or choose not to seek medical help because of transport problems
- **Food shopping:** 16% of people without cars find access to supermarkets difficult, compared with 6% of people with cars.

### Social networks and community severance

Studies have demonstrated the links between strong social networks and health. Busy roads may disrupt these networks and sever communities. Widespread car use also results in fewer people interacting on the streets in the ways that pedestrians and cyclists are able to. A study of three San Francisco streets found that the busier the traffic on a street, the more fragmented the social networks and the lower the satisfaction of residents (see eg HEA, 2000b).

In addition to any direct influence on health, social networks are also important for the support mechanisms they can offer people, as well as their role in creating opportunities for advice and informal care.

### Health inequalities

- Ownership/access to a car is highly related to social class – 62% of the poorest groups do not have a car, compared with 7% of those in the richest groups.
- Exposure to air pollution tends to be greater for people experiencing disadvantage, who are less likely to own a vehicle.

- Access to healthcare, shops, work and leisure is likely to be more difficult for poorer groups.
- Children in social class V are five times more likely than those in social class I to die as pedestrians (IPPR, 2002).

### Economic costs

It is difficult to assign economic costs to the specific elements of transport's impacts on health. Table 2 indicates the scale of the problem to society and to the NHS.

### Policy drivers

#### Health policies

Physical activity is one of six priorities for action identified in the public health white paper *Choosing health*:

'Walking and cycling present practical, alternative forms of activity that can be part of the daily routine for most people' (DH 2004c, p. 89)

Increasing physical activity is also important in reaching many of the national targets set out in *National standards, local action* (DH, 2004d). These include:

- Substantially reduce mortality rates by 2010 from the *Our healthier nation* baseline, 1995–97 (DH, 1999b):
  - from heart disease and stroke and related diseases, by at least 40% in people under 75
  - from cancer, by at least 20% in people under 75
- Tackle the underlying determinants of ill health and health inequalities by:
  - halting the year-on-year rise in obesity among children under 11 by 2010 in the context of a broader strategy to tackle obesity in the population as a whole [joint target with Department for Education and Skills (DfES) and Department for Culture, Media and Sport (DCMS)].

National service frameworks for coronary heart disease, diabetes and the *NHS cancer plan* provide models to support the achievement of these reductions in morbidity and mortality (DH, 2000a,b, 2001).

The NHS is expected to introduce green transport plans at all its sites to help achieve the above targets and to improve access. The *National Service Framework for Coronary Heart Disease* set a target date for the introduction of green

### Summary of policy drivers

*Choosing health: making healthy choices easier* (DH, 2004c)

National service frameworks for coronary heart disease, diabetes, cancer plan (DH, 2000a,b, 2001)

New Environmental Strategy for the NHS

Local transport planning (DfT, 2004c)

transport plans within the NHS by April 2002, and this was revised in the New Environmental Strategy for the NHS to October 2002 (NHS Estates, 2002).

The new public health white paper *Choosing health* (DH, 2004c) encourages the NHS to work with local authorities to contribute to local accessibility planning and local transport planning.

‘Accessibility planning can make a significant contribution to the achievement of the Department of Health aim to “transform the health and social care system so that it produces faster, fairer services that deliver better health and tackle health inequalities” ’ (DH, 2004c, p. 97)

### **Local transport planning guidance and health**

Department for Transport guidance on the second round of local transport plans (DfT, 2004a) notes that transport can have both a positive and a negative impact on the health of local communities. Local transport plans are required to limit or mitigate adverse effects and maximise the positive contribution they can make to health. Air quality, road safety, accessibility, and policies to promote walking and cycling are identified as priorities shared between the health and transport sectors which can be addressed through the local transport plan.

#### **Transport policies**

The transport white paper *A new deal for transport: better for everyone* (DETR, 1998) said:

‘The way we travel is making us a less healthy nation.’

The transport white paper *The future of transport: a network for 2030* reiterates these concerns for health and the environment, and encourages walking and cycling to increase levels of physical activity and improve public health (DfT, 2004b).

### **Public service agreements**

#### **Department for Transport**

- Reduce the number of people killed or seriously injured in Great Britain in road accidents by 40% and the number of children killed or seriously injured by 50% by 2010 compared with the average for 1994–98, and tackle the significantly higher incidence in disadvantaged communities.
- Improve air quality by meeting the Air Quality Strategy objectives for carbon monoxide, lead, nitrogen dioxide, particles, sulphur dioxide, benzene and 1,3 butadiene (joint target with Department for Environment, Food and Rural Affairs: Defra).

- Reduce greenhouse gas emissions to 12.5% below 1990 levels in line with our Kyoto commitment and move towards a 20% reduction in carbon dioxide emissions below 1990 levels, by 2010, through measures including energy efficiency and renewables (joint target with Defra and Department of Trade and Industry).

### **Other key PSAs**

Several other PSAs require cross-sector action to encourage safer walking and cycling which can benefit health.

- By 2008 ... increase the number of people aged 16 and above from priority groups who engage in at least 30 minutes of moderate intensity level sport, including walking, at least three times a week by 3% (DCMS PSA target)
- Lead the delivery of cleaner, safer and greener public spaces ... with measurable improvement by 2008 (Office of the Deputy Prime Minister, ODPM)

### **NHS as a partner in local transport planning**

A survey of local authority cabinet members in England with responsibility for transport found that 89% of respondents agreed that transport planning has a responsibility to promote health (Davis, 2003). The key issues identified were:

- Air pollution and air quality
- Walking
- Cycling
- Accidents and safety concerns
- Access issues.

### **Taking action**

The NHS can play a significant role in supporting local authorities to develop local transport plans and schemes to improve health and access to health services. Such joint working was reviewed in the Health Education Authority report *Making THE links* (Hamer, 1999). Several more recent studies show how many primary care trusts (PCTs) and NHS trusts are now actively involved in:

- Introducing patient and staff travel plans
- Implementing physical activity strategies in conjunction with cycling/walking strategies
- Providing resources for local transport programmes
- Contributing to local accessibility planning and improving transport access to NHS sites
- Assessing the health impact of local transport plans.

### **Introducing patient and staff travel plans**

The NHS is the UK’s largest employer, creating around 25 billion passenger kilometres in 2001 (Material Health, 2004), equivalent to about 4% of all passenger kilometres

travelled in the UK. Two per cent of all NHS land is devoted to car parks. Travel plans are packages of measures aimed at promoting environmentally sustainable, healthy and accessible forms of transport across an organisation or site. Help is available for NHS sites, including a number of Department for Transport guides, and free consultancy advice from a government programme (TransportEnergy, 2003).

The Addenbrooke's Trust Board has signed up to a travel plan that aims to reduce the number of people who drive to the hospital, as well as the number of single-occupancy cars coming onto the site each day.

The annual cost of maintaining a parking space can be £300–500; the cost of running a travel plan was typically £47 a year for each full-time employee (DfT, 2002a).

Table 3 shows data from a number of major NHS sites before and after the implementation of a travel plan (DfT, 2002a).

### Implementing a physical activity strategy

These strategies set out how a PCT aims to increase participation in regular physical activity – including walking and cycling – as part of everyday life. They can be developed in conjunction with local authorities' walking and cycling strategies or action plans. See HDA coronary heart disease and cancer guidance (HDA, 2001, 2002).

Also gaining in popularity are the types of exercise referral scheme that refer patients to walking or cycling instead of traditional exercise opportunities in a gym or leisure centre (Cavill and Tierney, 2005). Research shows that moderate-

### Example: Addenbrooke's Space Programme

Addenbrooke's has over 18,000 traffic movements on and off the site each day, and is reported to be the largest single generator of traffic in Cambridgeshire.

Our key messages are:

- We haven't enough parking spaces for everyone coming to Addenbrooke's
- Help us save our spaces for people who really need them – the ill, frail and elderly
- Can you use park-and-ride, travel by bus, car-share, taxi, walk or cycle?

[www.addenbrookes.org.uk/news/news2003/mar/space\\_070302.htm](http://www.addenbrookes.org.uk/news/news2003/mar/space_070302.htm)

intensity physical activity which can be done from the home, such as walking, is more likely to be maintained (HDA, 2004a).

### Contributing resources/support to local transport programmes

The majority of PCTs are providing resources or funding specific transport programmes that can influence public health.

A recent survey of directors of public health (Cavill *et al.*, 2004) found that over 50% of PCTs say that they are involved in some form of campaign on sustainable travel locally, 40% saying they are involved in cycling campaigns, and 35% in accident prevention programmes.

**Table 3 Hospital trust travel plan before-and-after results – staff journeys to work**

NHS trust	Mode	Mode share at outset (%)	Mode share with travel plan (%)
Addenbrookes, Cambridge (1993 and 2003*)	Bus	4	19
	Car (driver only or with passengers)	74	49
	Walk	4	6
John Radcliffe, Oxford (2000 and 2001)	Bus	7	9
	Car (driver only)	58	54
	Walk	12	14
Derriford Hospital, Plymouth (1995 and 2001)	Bus	8	15
	Car (driver only)	78	54
Nottingham City Hospital (1997 and 2000)	Bus	11	19
	Car (driver only)	72	55
	Walk	8	9

Source: DfT (2002a).

\*Includes most recent survey data.

### **Example: A framework for action on physical activity in the South East**

The framework sets out overarching objectives to ensure a coordinated, strategic, population-based approach to increasing physical activity, with a focus on increasing walking and cycling. Inter-agency working, networking and partnerships are a key element, including transport and planning policy development.

Source: Sport England/DH (2004).

An analysis of local transport plans found that nearly one third refer to specific partnership projects with the NHS. These include:

- Transport and health partnerships/forums
- Working groups focused on key NHS sites, such as hospital travel planning groups
- Specific project-based partnerships to manage funds, such as Rural Bus Challenge and Invest to Save (HDA, 2004b).

A survey of cross-sector action on transport and health (HEA, 2000a) identified a number of examples of funding of transport projects by health authorities, and *vice versa*. These included:

- Recurrent commitment to contribute funding to the inter-agency road safety programme in North Derbyshire
- Funding a road safety coordinator post for two years in East Lancashire
- Capital monies from Leicestershire Health Authority used to part-fund traffic calming in Leicester
- Lincolnshire provided £12,000 to help the highway authority install speed cameras
- South Essex Health Authority provided £8,000, over two years, for Sustrans to negotiate part of the National Cycle Network
- Herefordshire Health Authority provided £1,250 as match funding for a guide to promote walking
- Bolton Health Authority provided £1,000 towards a safer routes to schools project
- £3,000 for a walk-to-school project in Bury and Rochdale
- Cambridgeshire Health Authority part-funded a travel-to-work project which incorporates a cycle-friendly employer scheme – total funding from the Health Authority is £4,500 out of £27,000 per annum.

### **Contributing to local accessibility planning**

A major focus of the 2006/07 to 2010/11 local transport planning process is to incorporate accessibility planning (DfT, 2004c), and this is emphasised in the *Choosing health* white paper (DH, 2004c). A review of access to health services (HDA, 2004b) identified a range of actions being taken by NHS organisations working with local authorities, including:

- Developing transport plans for new NHS sites
- Introducing transport plans to existing NHS sites
- Developing integrated public transport services
- Bus service developments
- Tram and rail services
- Improved park-and-ride facilities
- Improved walking routes
- Improved cycle routes
- Taxi schemes
- Parking schemes
- Linking timing and booking of NHS services with public transport provision
- Information provision about NHS-related transport
- Reduced fare schemes.

### **Assessing the health impact of local transport plans/schemes**

PCTs can work with local authorities to undertake health impact assessment of a transport plan or scheme. This will assess the likely positive and negative impacts of the plan or scheme on public health, and make recommendations for maximising the health benefits. Evidence is emerging that this can be a powerful force in influencing policy (Mindell *et al.*, 2004).

Aspects of a local transport plan that might be assessed include:

- Speed management to reduce road danger, and thus casualties
- Cycle-friendly infrastructure
- Road space reallocation towards pedestrians, cyclists, public transport and public space
- Air quality management plans and noise abatement programmes
- Employer and school travel plans
- Compact settlements and local facilities
- Educational programmes to change attitudes towards alternatives to the car
- Action on congestion reduction targets.

**Information about health impact assessment, together with examples, toolkits and other resources, can be found at [www.hiagateway.org.uk](http://www.hiagateway.org.uk)**

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From 1 April 2005, the functions of the Health Development Agency will transfer to the National Institute for Clinical Excellence.

The new organisation will be the National Institute for Health and Clinical Excellence (to be known as NICE). It will be the independent organisation responsible for providing national guidance on the promotion of good health and the prevention and treatment of ill health.

The web address from 1 April 2005 will be [www.nice.org.uk](http://www.nice.org.uk).

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