

THE TRANSPORT AND HEALTH STUDY GROUP



HEALTH on the MOVE 2

Policies for Health Promoting Transport

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The Transport and Health Study Group (THSG) is an independent society of public health and transport practitioners and researchers committed to understanding and addressing the links between transport policies and health and promoting a healthy transport system. We were founded in the late 1980s by Dr. Stephen Morton. The publication "*Health on the Move*" authored by the Transport & Health Study Group was the first definitive account of the relationship between transport and health. THSG later contributed to "*Road Transport and Health*" by the British Medical Association. In 2009 THSG agreed to administer a Transport Special Interest Group for UKPHA.

Health on the Move 2 was updated in 2009-2011 from the original report *Health on the Move* published by the then Public Health Alliance in 1991 with support from Transport 2000, West Midlands Passenger Transport Authority, and Greater Manchester Passenger Transport Authority.

HEALTH on the MOVE 2

POLICIES FOR HEALTH PROMOTING TRANSPORT

The policy statement of The Transport and Health Study Group

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FOREWORD

Public health needs ideas, it needs inspiration, it needs champions. Such are the scale and complexity of the challenges that must be addressed.

The causes of ill health, the solutions to some of our major health problems and the sustainability of our environment are intricately interwoven with the way that we move from place to place both locally and across the globe. The scope of any analysis in this area of public health also needs to encompass the way that goods and services are accessed and the ways that groups of people gather. For example, what a family chooses to eat, where they buy their food, where the food is sourced and how they acquire it may seem simple and routine. A few minutes reflection though and it is clear that the implications of millions of families' choices and habits can have profound implications for the health of our country and the planet.

Health on the Move 2 is a clear and comprehensive account of what would constitute a healthy transport system.

The report is unusual in that it blends evidence, authoritative opinion from experts in their field as well as creativity. It is not only an educational tool and a series of recommendations for policy-makers, it is a powerful basis for advocacy. No-one should underestimate the scale of changes required to realise the vision for the future set out in this ground-breaking report.

If just a small number of towns and cities in the country would act on the ideas and evidence in it then we would begin to see the shape of a new future in which every move is a healthy move.

Sir Liam Donaldson

Chief Medical Officer for England (1998 – 2010)

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1 A Vision for a Healthy Transport System

S Watkins and J Mindell

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1.1 Introduction

This report is intended primarily for transport and public health professionals and other policy- and decision-makers working at national, regional or local levels in the public, private or voluntary sectors.

The opening chapter presents the Transport and Health Study Group's vision for a healthy transport system – one that promotes the health of the population, reduces inequalities, and is sustainable for the environment. After a brief explanation of the nature of this report, this chapter gives a short cameo of what life might be like in a sustainable future with healthy transport the norm. It then considers the elements that constitute a healthy transport system. It concludes by mentioning various controversies that emerged and were discussed during the preparation of this report.

It is the nature of public health practice to examine scientific evidence, develop a vision that flows from that evidence, and put forward policy proposals that flow from that vision. That is what this book does. Section II of this report, chapters 2 to 10, presents the evidence on which our conclusions are based. Section III sets out implications for professional practice. Chapter 11 considers clinical aspects of transport-related disease while chapter 19 covers the role of the NHS as transport providers and users; chapter 12 is directed towards transport and planning professionals, providing information on why health and inequalities considerations are relevant to and should inform their thinking. Section IV, chapters 13 to 22, discusses the policy implications of these facts for various players. Chapter 21 sums up our recommendations, with chapter 22 concluding this report. For ease of reference, each chapter has been referenced separately.

Some of our academic members have suggested that it might be better if we concentrated on the science and missed out the visionary ideas. That might be appropriate, scientific, cautious epidemiology but it would not be public health. The purpose of scientific understanding is to make it possible to decide the direction of human advance. Where scientific understanding is incomplete, scientists set themselves far too simple a task if all they say is that more research is needed: it is certainly necessary to be clear of the uncertainties and the need for more research but it is also necessary to provide policy makers with a clear point of reference as to what can be learned from the data.

For practical professionals, the reverse problem exists. This book may seem far too full of complex analysis. For those who are uncomfortable with epidemiological analysis, it is

possible to read a relatively analysis-free version of the book by concentrating on chapter 1, section 2.3, chapter 3, section 4.3, chapters 5 and 6, sections 7.2.5, 7.3 and 7.4.4, and chapters 10 to 22. If that was all that we had written, it could be treated as mere opinion. If that is all that you choose to read then you must forego the right to dismiss it in those terms and understand that these opinions are rooted in scientific evidence.

Transport of goods or people by ships or air cause air pollution and emission of greenhouse gases. Shipping generally uses high sulphur fuels, being permitted to use the cheapest, high sulphur residue remaining after all the lighter fuels that are legal for land use have been taken. The world's largest ships use as much fuel as small power stations, emitting to the atmosphere sulphurous smoke that can result in cardio-respiratory problems and cancer. Aeroplanes cause significant noise pollution as well. However, to keep this report within manageable limits, it is generally limited to land travel.

1.2 Living with healthy transport

Jean checked her diary for the day. It wouldn't be necessary to go into HQ. But there were some meetings which would need her to use the video facility at her local neighbourhood work station. She pondered whether to go to the work station for the whole day or whether to work at home in the large office that they had built in the garage when they gave up the cars. She'd rather like the company, she thought, and Angela was always there on a Tuesday so she'd be able to ask Angela for advice about storing her parents' motorised transport contraptions once they convert their garage into a downstairs bedroom. It had taken her so long to persuade them to do this but, of course, her parents' generation had grown up in the days of private transport and found it hard to abandon old attitudes. Angela always used the community transport bus door to door whenever she needed to go further than her self-propelled wheelchair could manage. Jean had only ever used this when she had heavy luggage but she wondered if it would answer all her parents' travel needs too now they had finally given up driving regularly.

Coming back to the present she settled down to eat her breakfast. Bacon from the pig farm in the next village. Eggs from her own hen. Toast and marmalade, made from good Sheffield oranges grown in the multi-storey farms of the Don Valley.

David had overslept. Not surprisingly after the late night he had had the previous evening. As she was finishing her breakfast he joined her, spent a few minutes bolting down some cereal (from the multi-storey farms at Ringway, built on the site of the old airport) and rushed out to get his bicycle.

"It's pouring down" she said *"Why don't you walk?"* *"Too late"* he said as he pedalled off to the station.

Jean followed him but she walked along the covered walkway to protect her from the rain. It was a nice street. Rose gardens and trees and children's play areas filled the gaps between the opposing houses. On a sunny day Jean would have wandered amongst them, chatting to neighbours and watching the children play in the street out of harm's way but today the weather called for being under cover. Half way to the work station there was the facility that Jean had pressed so hard for when the street was being designed – the open air swimming pool. As she passed the swimming pool, the delivery van bringing the shopping up to the

local shop for people to collect was picking its way along the carriageway. Unlike the straight direct cycleway, motor vehicles had to negotiate the gaps between the obstacles rather than having a protected carriageway. Jean watched the van, its guidance devices, speed regulators and obstacle detectors all fully engaged, as it inched gingerly along the edge of the pool. It reminded her of the incident last winter when the council had only had had enough grit to do the pavements, cycleways and busways and the roads had been closed. The delivery van driver had foolishly ignored this and had ended up in the swimming pool and winner of You Tube's Idiot of the Week.

As Jean arrived at the work station, checked her booking of the videoconference for the meeting that afternoon, switched on her computer, and started to write a lecture for medical students setting out the evidence for the powerful health benefits of social networks, David was arriving at the Metro station.

He inserted his card and keyed adult single with cycle to Emmerdale into the journey planner. A recorded voice came over the intercom. *"Next but one service from Platform 3. Change at Angerfield, which is the fourth station, for a bus to Emmerdale from stand E."* Then a real human voice replaced it as the controller intervened. *"The Emmerdale bus is demand-responsive and you are the only person booked on it today. If you'd prefer we could let you have a car from the Car Club for the normal bus fare and without road charges."* They often made this offer when he was going to Emmerdale. Usually he took it but today he was feeling tired and he didn't think it would be safe so he declined, collected his tickets and made his way to the platform. The freight train to the shopping distributive warehouse at Angerfield was passing as he reached the platform, then the fast train to the city drew up into the platform making the wayside stop that it made here once an hour instead of running through non stop as it did the rest of the time. David knew this train stopped at Angerfield. They wanted him to wait for the tram because he would get no benefit from the train due to the connection and they liked to keep short distance passengers on the trams if they could. But he rather fancied the plusher seats of the train so he climbed aboard, stored his cycle in the cycle van and lounged back into a seat. The train flashed past the three intervening tram stops and overtook the freight train as it manoeuvred itself into the shopping sidings. Then the train drew up at Angerfield. He made his way to stand E and relaxed in an armchair watching the trolley buses come and go as he waited for his own bus. While he waited, he thought about their holiday. 15 days on a cruise train. They started with a day in Paris, then a slow daytime ride across the Alps with a break at Innsbruck. Full days spent, in Venice, Bled, Dubrovnic, Athens, Istanbul, Samarkand, St Petersburg, Narvik and Bergen, sometimes linked by high speed overnight travel, sometimes interspersed with slow, looking out of the window days. He thought Samarkand and Athens would be the highlights of the trip.

1.3 The elements of a healthy transport system

In this little cameo of the future we can see many features of a healthy transport lifestyle. There is powerful evidence that social support benefits health. The living streets that provide opportunities for social networking show how we can learn the lessons of Appleyard & Lintell¹ and Joshua Hart² that streets full of traffic isolate and separate us. In the future we should find that intolerable. Living streets can also create greener local environments, with

the street becoming a shared garden. Evidence is emerging of the importance of pleasant green surroundings to health – even to the point that people recover faster from operations if they have plants in their hospital room³ or can see the natural environment rather than a brick wall from their window.⁴ Motor vehicles should not be banned from living streets but they should, like the delivery van in the cameo, be out of place, picking their way slowly round obstacles.

The guidance devices, speed regulator and obstacle detector on the van reflect the fact that the kind of technological controls that have long been a feature of the railway need to apply on the roads as well. A transport system which doesn't force people to drive is also safer – David had the choice of the car but chose the bus because he felt tired.

Climate change should be a major factor in transport policy. Reduced need to travel and reduced freight distances are achieved by the use of local produce and by local work stations. The use of local work stations rather than home-working is a way to provide facilities – like Jean's videoconference - that it may not be worth providing to every home. It also sustains the social support of being at work. For many types of employment, similar benefits can be obtained by mixed use in urban planning – close proximity of homes, workplaces, and services rather than siting these in discrete locations. Electric traction should be used as far as possible, although electricity is only clean if it is generated by renewable means. In the cameo, aviation has been curbed – we propose that it be limited to flights across oceans and polar ice and to islands, where such travel is unavoidable. International high speed trains would replace it, Although long distance business travel would have declined dramatically with many business meetings and conferences taking place in cyberspace, the world's ecosystem should be able to afford to provide a reasonable number of long distance holidays.. The car has also been curbed, limited to journeys where there is nobody to share a bus or a train. The combination of the cycle (for short journeys) with the train (for longer ones) has all the flexibility of the car. The cycle is healthier (and would be safer if it didn't have to mix with heavy traffic) and the train is safer and faster.

Active travel - walking and cycling - has an immense potential to enable people to get more daily exercise. Calculations based on American research⁵ into the effect of pedestrian-permeability on mean body weight has shown that simply making it easy to walk can have an impact of one per 1,000 per year on death rate. Given the worldwide obesity epidemic,⁶ these findings are of even greater importance.

The lifestyle described in the cameo is not an isolated travel-free lifestyle nor an unpleasant restricted one. It is a technologically feasible lifestyle. It is healthy. It protects our environment. It actually offers chances to improve our lives – the extra space in the house because the garage is no longer needed, the extra garden taken from the street, the extra personal time due to shorter journeys and less travel time. Why should it not come about?

In the middle of the last century, a comprehensive rail and bus network provided effective transport for most people. Those who bought a car bought greater freedom and greater speed. But as car ownership grew, this freedom and speed became eroded. People buy a car in order to drive on an open road a typical advert might show a drive across a Scottish moor. However, and they use it to inch their way through city centre traffic jams searching for somewhere to park. The car owner today may travel further – and certainly spend more time doing so – but is much less mobile than the car user of the 1950s. Indeed within city

traffic, the car owner of today is no faster than the public transport user of the 1950s, although it must be recognised that even in the 1950s rural public transport was often infrequent, so today's car-based system is more flexible.

If the car owner of today enjoys only slightly better mobility than the public transport user of the 1950s, what about today's public transport user? Over half of the route-mileage of the railway system has been closed. Rural buses and late night buses have been reduced. Non-radial public transport routes have diminished. Public transport is no longer a comprehensive network. In order to have access to a comprehensive network, it is necessary to buy a car. And so the vicious circle takes another twist. The vision of increasing car ownership points us towards the situation of Los Angeles, where two-thirds of the land area is occupied by roads and car parks,⁷ and smog is a major hazard.

Yet there is another vision. Fast, modern, comfortable, frequent public transport systems can provide cities in which everybody can travel without encumbrance. In recent years, new stations and the Channel Tunnel high speed railway have been opened, with new high speed railway routes planned. New developments such as people movers (small personalised computer-controlled tracked vehicles) make it possible for public transport to meet even the unusual and individual transport needs for which the car has hitherto been the only possible system.

Trains can now travel at speeds of more than twice the motorway speed limit, light rapid transit offers the only hope of congestion-free city centres, and people movers can challenge the car even in the area of lightly trafficked distinctive journeys, so some people now argue that the car and lorry are in the situation that the horse was in between the opening of the Stockton and Darlington Railway in 1825 and the railway boom of the 1840s. Its dominance of the transport system was complete. The alternatives were scattered and the idea that they could be made comprehensive was visionary. Yet the end of the horse as the main mode of transport was as inevitable as its inevitability was, to many, imperceptible. Those towns and nations who were the first to see the future gained an economic advantage which lasted for many decades.

Is this political and economic argument one that has relevance for public health or are transport and public health separate spheres of human activity? The Transport and Health Study Group believes that transport is a public health issue. Public health must consider the socially unequal distribution of opportunities for access to such health promoting facilities as shops selling healthy food, sports centres and the countryside.

Opportunities for social networking and for children's independent travel and play are public health issues⁸ and we cannot overlook the potential that traffic-calmed streets hold out for enhancing community life. Roads were made for cars, but streets were made for people.

Much of this policy statement consists of detailed analysis and proposals. Yet behind the detail there is a vision. It is a vision of a society where we no longer accept that children cannot play in the streets for fear of being killed, nor that disabled people should be confined to the home, nor that the poor cannot have access to healthy lifestyles because they cannot travel to their sources. It is a vision of a people who enjoy the beauty of their cities instead of scurrying along narrow pavements, who breathe unpolluted air and who read and chat as they travel rapidly and unimpeded about their business. It is a vision of a people who can choose to live in rural areas and know that they can readily access the goods, services, and

people they need without needing a car for most journeys. It is a vision of a future where people will no more accept road crash deaths than we accept maternal mortality or diphtheria.

Public health has always been driven by such visions. The vision of clean water and sanitation in the 19th century; the development of housing standards and the eradication of infectious diseases in the 20th century; the virtual ending of maternal mortality in western countries; the idea of a clean atmosphere in which you could stand on top of a Pennine hill and see the industrial town below; the idea that people in workplaces and public places shouldn't poison their neighbour with cigarette smoke in the 21st century. These are the visions, dismissed as crackpot when first articulated, fought for against powerful economic interests, and yet, today, accepted without question as part of the inevitable onward flow of civilisation.

The health of the people is a fundamental social value. In comparison with the battles we have fought and won in the past, our vision of a healthy transport system does not seem at all ambitious.

1.4 Some areas of controversy

The members of THSG were consulted about each chapter of this book after the authors and editors had produced a version of the chapter with which they were almost happy. Many helpful suggestions were made and incorporated. It also became clear that some elements of the vision are to some extent controversial. Three areas in particular sparked controversy.

1.4.1 Can we afford high-speed international transport?

Our most controversial proposal was that aviation be replaced with high-speed international rail systems. Intercontinental travel across the Bering Straits, the Straits of Gibraltar, from Eritrea to Yemen, and from Russia to Japan via Sakhalin could be undertaken by high speed trains through tunnels. Perhaps there could even be a link from Singapore to Australia by a series of tunnels linking Indonesian islands, although the carbon cost/benefit of this is not as clear as for the other proposals and would need to be assessed, including the one-off costs of railway and tunnel construction as well as in use. Intercontinental railways – as a curb on air travel - is an essential part of our climate change strategy.

A number of our environmentalist members argued that we should not replace aviation at all – we should simply eliminate the concept of high-speed international transport. For business travel, cyberspace is an alternative venue for meetings and conferences whilst those who want to see the world should do it properly, taking the time out to travel by local train and ferry and mix with those whose culture they want to experience. Long distance tourism is ephemeral and unnecessary. High speed international travel is unnecessary. The vision of a Bering Straits Railway should be put in the same bin as the aeroplane it was intended to replace.

The words of one of the founding fathers of our field of study, Mayer Hillman, were quoted to us: *"in the absence of a miraculous technical fix, travel will have to become more local, less frequent, less energy-intensive and slower. Avoidance of transportation is at the heart of the transition required."*⁹

Mayer is right that avoidance of transportation is essential. Our own vision embodies that in our proposals for using cyberspace for business meetings and conferences; our proposals for a four day working week, one of which will be at home; cutting commuting by 40%; our proposals for an organised system of efficiently delivering routine shopping to local shops; and our proposal to revitalise local services wherever possible. None of those things in any way diminish human potential or step backwards in human development. Abandoning high-speed international travel would be a qualitatively different step. On the whole, public health does not work by constricting human growth and potential. Healthy food tastes nice, physical activity creates a glow of well being, social networks and empowerment are important public health issues. Puritanism is a different thing entirely. We do not believe that it is actually necessary to abandon high-speed international transport if enough is done in more mundane areas.

It is however important that the high speed international rail system replaces aviation instead of adding to the amount of long distance international travel. It may well be that some system of rationing of long distance international travel is necessary, not necessarily a rigid limit on how much usage is permitted but certainly in the sense of arrangements applying both to air and rail so that above a certain level of individual usage the price rises substantially. This could be achieved by a general system of individual carbon accounts extending more broadly than just transport, or alternatively by some special pricing/rationing system specific to high speed long distance international transport.

1.4.2 Compete with the car or provide for existing users

In two separate areas – cycling and public transport – we have been faced with a dilemma that the provision which is most likely to compete with the car is probably not the provision that will best serve existing users.

Our suggestion that there be investment in cycling networks separate from the main heavily-trafficked roads has been questioned as a departure from the Hierarchy of Provision favoured by cycling organisations as the most cost-effective way to make provision for cycling. We have no doubts that if the issue was simply how to provide for existing cyclists then the current Hierarchy of Provision is right. However our objective is also to attract large numbers of relatively sedentary people out of their cars and on to bicycles in order to save their lives and we are deeply impressed by the evidence which suggests that this will not happen unless quiet networks are provided because of these current non-cyclists' perceptions of risk.

Similarly, the planning of public transport has been dominated for several decades by finding the most cost-effective way to move a declining (or, recently, slowly growing) number of relatively captive users and the system is usually embarrassingly taken by surprise by any rapid growth in demand. Against this background, ideas have developed that the bus is much more important than the train because far more people use buses than local trains and trains tend to be used by the more affluent who do not matter because they could always use their car. Ideas have also developed that “we don't pay operators to haul fresh air” and that it is sensible to cut out lightly used services in order to make resources for “core” services. We do not dispute that this is right if the idea is to maintain a public transport system as a safety net for a captive group of non-car-users. If, however, the idea is to attract car users out of their cars then this will not work. European evidence shows that cities with

rail-based public transport have higher levels of bus usage than cities with bus-based systems,¹⁰ presumably because the whole public transport system competes more effectively with the car. This is borne out in the UK by the difference between London and other cities. Yes – there are lots of other things different about London, and they may be hypothesised to contribute to the difference, but the difference can be explained without reference to any such hypothetical effects simply by referring to the Europe-wide evidenced trend for one kind of system to outperform others so that is the scientifically-conservative explanation in the current state of the evidence. This finding may only be a single study but it is supported by the work of Mogridge¹¹ who correlated traffic congestion in London inversely with the quality of the rail system. It is plausible that it is the fixed network and speed of the train that creates this difference rather than the metal rails or a love of rail vehicles; we are supported in that view by Spanish evidence that investment in converting a bus route to a trolley bus route can reassure users enough to increase their reliance on it.¹² Against that evidential background we have come to our conclusion that a clearly defined comprehensive network of freely flowing train, tram, motorway bus and coach and limited stop/high frequency bus services with bus priority is necessary to attract people out of cars.

In both these areas it is not enough to be satisfied with increases in usage that seem substantial when the existing usage is taken as the denominator. We need shifts that seem substantial when the total number of journeys by any mode is used as the denominator. For example, to reduce car usage by 30% (measured by passenger-mile) with the train, the bus or coach and the bicycle each taking up one-third of the shift, we would need to double bus and train usage and increase cycling seven-fold. This requires very different thinking from the marginal change we are accustomed to celebrate.

1.4.3 Is it realistic to plan for such changes?

Almost everybody who now works as a transport planner or transport system manager has spent their entire career in an atmosphere of retrenchment where the emphasis is on squeezing more and more through the existing system and where it has been assumed that the trend towards the car is unstoppable. It is not surprising therefore that many of them have expressed unease at the scope of the measures which we describe as the minimum necessary. And yet, the wider societal costs of transport in urban areas in England has recently been estimated as costing £38 – 48billion.¹³

As we have already said, public health is used to being described as “unrealistic” - even “crackpot” - when it advocates the inevitable. The transport system that we advocate is no more unrealistic than the building of the sewers or the removal of industrial and domestic smoke from the air was in the 19th and 20th centuries, respectively. What is totally unrealistic is to believe that as a species we will allow ourselves to become extinct because we refuse to use available technologies to stop carbon emissions destroying us, or that we can tolerate a situation where it becomes normal to be obese, or even that we will allow our large cities to grind to a halt in gridlock. We are the realists. It is those who pretend that we can avoid these measures who lack an understanding of reality.

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