King's Fund | Report | Editor: ANNA COOTE | Date: 2002

Claiming the Health Dividend

UNLOCKING THE BENEFITS OF NHS SPENDING

Claiming the Health Dividend

UNLOCKING THE BENEFITS OF NHS SPENDING

EDITED BY ANNA COOTE

The King's Fund is an independent charitable foundation working for better health, especially in London. We carry out research, policy analysis and development activities, working on our own, in partnerships, and through grants. We are a major resource to people working in health, offering leadership and education courses; seminars and workshops; publications; information and library services; a specialist bookshop; and conference and meeting facilities.

Published by
King's Fund
11–13 Cavendish Square
London W1G 0AN
www.kingsfund.org.uk

Charity registration number: 207401

First published 2002

ISBN 1 85717 464 X

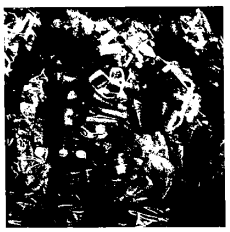
A CIP catalogue record for this book is available from the British Library

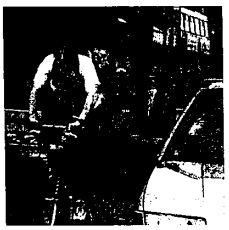
Available from:

King's Fund Bookshop
11–13 Cavendish Square
London W1G 0AN
Tel: 020 7307 2591
Fax: 020 7307 2801
www.kingsfundbookshop.org.uk

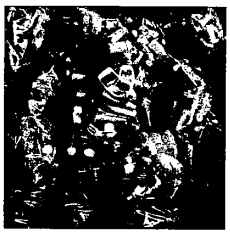
Edited by Brian Morrison and Alan Dingle
Cover design by Minuche Mazumdar Farrar
Figures by Peter Powell Origination and Print Limited
Printed and bound in Great Britain

Outline





Contents



About the authors

Helen Bishop advises the Department of Health London Region on regeneration and workforce development. She led research and development for the publication *Employment Improves Your Health*. Previous roles include: Manager of a European-funded project bringing unemployed people from Bangladeshi and Somali communities into health employment in Tower Hamlets; Equalities Manager for London East Training and Enterprise Council (now Learning and Skills Council); and Head of Access Department in Camden Adult Education Institute.

Ailish Byrne is an anthropologist who has worked as a qualitative and participatory researcher and evaluator. Her background is in international development, adult education and community health. She has extensive experience working to reorientate practitioners in the fields of development, health and education to community perspectives and participatory approaches in different cultural contexts.

Marsaili Cameron has worked as an independent consultant and writer for 25 years. She writes on workforce and development issues for the Department of Health London Region. Her publications include *Workforce and Development: Mapping the territory* and *Employment Improves Your Health*. A specialist in developing open learning material, she is a member of faculty of Embodying Leadership, a work-based master's degree programme for clinicians, practitioners and managers across London.

Helen Casstle: is a Senior Lecturer in Environmental Public Health in the Centre for Public Health at John Moores University. Her research focus is on environmental health; in particular, aspects of environmental health within the NHS, including hospital-acquired infection and sustainable development.

Anna Coote is Director of the Public Health Programme at the King's Fund. She was formerly Deputy Director of the Institute for Public Policy Research, consultant to the UK Government's Minister for Women, Senior Lecturer in Media and Communications at Goldsmiths College, London University, a producer and editor for Channel Four TV, Deputy Editor of the New Statesman, and a journalist and broadcaster. She has published widely on health, social policy and gender issues and is co-editor of *Five-Year Health Check: A review of Government policy 1997 – 2002*. She is a member of the Sustainable Development Commission and the London Health Commission.

Teresa Edmans is Programme Manager, Health and Regeneration at the King's Fund and leads the regeneration priority group on behalf of the London Health Commission. She is an adviser to the New Deal for Communities and Sure Start programmes, and prior to joining the King's Fund successfully led a SRB5 programme and a Healthy Living Centre bid to tackle inequalities in health. She has worked in the NHS, local government and voluntary sector, using community development to address the holistic health needs of the most socially excluded communities and bring about changes in service provision.

David Fell is an established social economist, having spent his career as a commercial consultant on economics, sustainability, labour markets, property and economic development. He is Director and co-founder of the research consultancy Brook Lyndhurst Ltd; Director of the London First Sustainability Unit; and a director of London Remade, a company that develops and promote new markets for recycled materials in London.

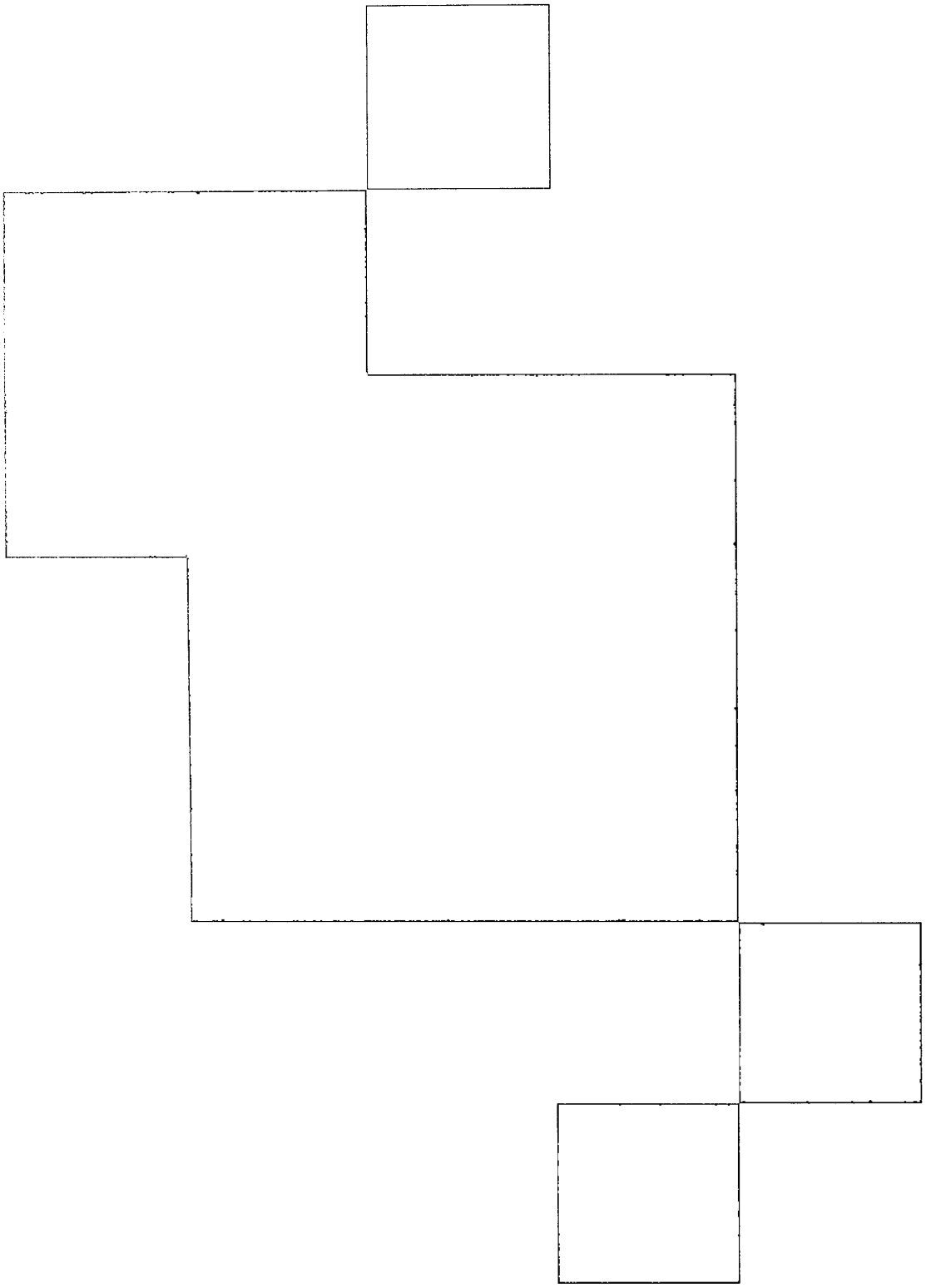
Karen Jochelson is a Research Officer in Public Health at the King's Fund. Formerly a consultant, she worked on sustainability future envisioning projects in the private and public sectors in Europe and the USA. She has held academic posts in South Africa and the UK and has published extensively on health, racism, business and politics. She is author of *The Colour of Disease: Syphilis and racism in South Africa 1880–1950*.

Jonathon Porritt is chairman of the Sustainable Development Commission. He is Programme Director of Forum for the Future, and one of the best known and most influential advocates for the environment.

Angela Towers is Development Officer for the North West Food and Health Task Force based in the Centre for Public Health at John Moores University. Her areas of interest include nutrition inequalities, food and health policies and sustainable food supply systems.

Claire Wilding is a policy analyst at the Sustainable Development Commission Secretariat. She is responsible for the Commission's work on food and farming and national government.

Kamila Zahno is the founder member of Zahno Rao Associates. She is a specialist in regeneration and economic development throughout the UK and has published widely on these topics. Her special interest is research and consultancy that contribute to social inclusion. She is an adviser to Government on neighbourhood renewal.



Introduction

The NHS is the largest single organisation in the UK – it is a huge and powerful buyer of goods and services. As a consumer of energy, a producer of waste, a cause of travel and a commissioner of building works, its potential impact on health, on the environment and on the social and economic fabric of our lives is without parallel.

Anna Coote

It's not enough to treat people when they are ill. We've got to do more to stop them falling ill in the first place. That means tackling the root causes of the avoidable illnesses.

Our Healthier Nation,
Department of Health, 1998

One of the key aims of the Government's health strategy for England is to improve the health of the worst off in society and narrow the health gap.

Reducing Health Inequalities: An action report, Department of Health, 1999

Our strategy for sustainable development has four main aims. These are:

- social progress which recognises the needs of everyone;
- effective protection of the environment;
- prudent use of natural resources; and
- maintenance of high and stable levels of economic growth and employment.

A Better Quality of Life: A strategy for sustainable development for the UK, Department for Environment, Transport and the Regions, 1999

We know that the causes of ill-health are many: a complex interaction between personal, social, economic and environmental factors.

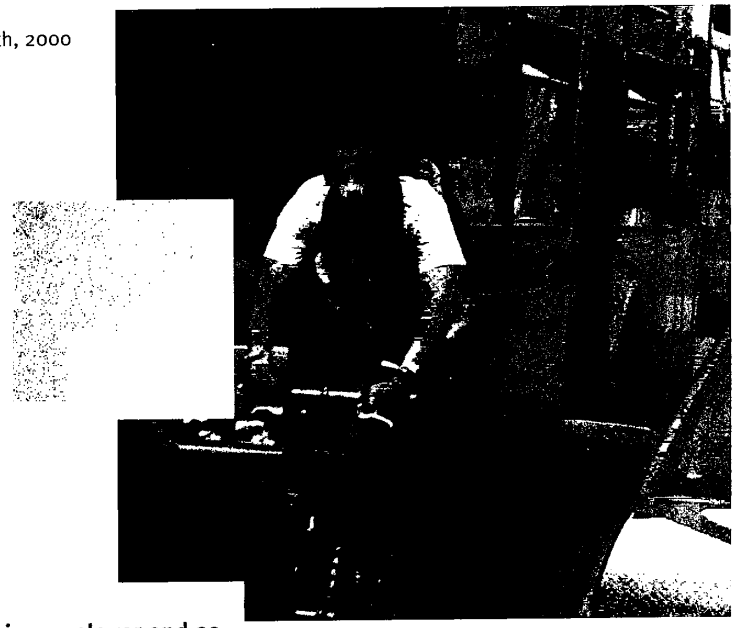
Saving Lives: Our healthier nation
Department of Health, 1999

The NHS will focus efforts on preventing, as well as treating ill-health. Recognising that good health also depends upon social, environmental and economic factors such as deprivation, housing, education and nutrition, the NHS will work with other public services to intervene not just after but before ill-health occurs.

The NHS Plan,
Department of Health, 2000

If people's health improves, they make a real contribution to their nation's prosperity. In my judgement, good health is not only an important concern for individuals, it plays a central role in achieving sustainable economic growth and an effective use of resources.

(Gro Harlem Brundtland, Director General,
World Health Organisation)
Sustainable Development in the NHS,
NHS Estates, 2001

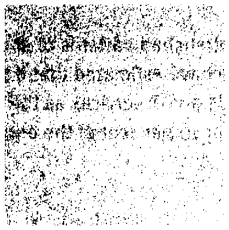


The NHS as a major employer and as a major business in virtually every locality has a role to play in tackling inequalities and addressing regeneration through its investment in staff and capital, the purchase of services, and the development and regeneration of local economies.

Tackling Health Inequalities:
Consultation on a plan for delivery,
Department of Health, 2001

Talking about sustainable development is not enough. We have to know what it is, to see how our policies are working on the ground. We must hold ourselves to account – as a government, but also as a country. Because the only way in which we will succeed is if we all play our part.

(Tony Blair, Prime Minister)
Achieving a Better Quality of Life,
Department for Environment, Food and Rural Affairs, 2002



Introduction

Think of the National Health Service. What comes to mind? Your last visit to the GP or hospital, television dramas such as Casualty or Peak Practice, tabloid headlines about patients abandoned on trolleys, heroic rescues, dodgy consultants...? These are images that dominate public discussions about the NHS and define our understanding of it.

But now take another look. The NHS is not just a provider of health services. It is the largest single organisation in the UK. It owns more land in London, for example, than could be covered by six Hyde Parks, and occupies more floor space than 27 Canary Wharfs. It employs more people nationally than any organisation in the world, with the possible exception of the Chinese Army. It is a huge and powerful buyer of goods and services. As a consumer of energy, a producer of waste, a cause of travel and a commissioner of building works, its potential impact on health, on the environment and on the social and economic fabric of our lives is without parallel.

The aim of this report is to suggest ways in which the NHS can contribute to health improvement and sustainable development. Can it make better use of its resources to help reduce health inequalities, build stronger local economies and safeguard the environment? We argue that it can – not only by delivering better services, but also by changing attitudes and patterns of behaviour in all of its corporate activities.

Shifting the debate

The first challenge is to change the terms of the debate about health and health care. Currently, public discussion of health policy in the UK is dominated by the perpetual crises that afflict the NHS: long waiting times, acute staff shortages, patchy performance and humiliating comparisons with other European health systems. These are matters of the utmost importance, but they should not be allowed to obscure the underlying reason why we care so much about our health services: because we want to safeguard health – for ourselves, our families and the population as a whole. A key objective of this report is to reconnect debates about health and health care within the context of the NHS.

The fact that the Government is investing unprecedented amounts of money in the NHS will help to address the crises that beset the organisation. But after decades of under-investment, the new money will make little difference in the short term. Even in the medium and longer term, money alone will not enable the Government to fulfil its promise to deliver an effective, patient-centred service fit for the 21st century.

One of the biggest challenges facing the NHS is the apparently unstoppable rise in demand for health services. This is partly because new treatments and technologies are expanding the menu of services and the range of public expectations. It is partly because an ageing population needs more health and social care. It is also because poverty, poor housing, inadequate schools, unsafe

The underlying reason why we care so much about our health services is because we want to safeguard health – for ourselves, our families and the population as a whole.

neighbourhoods, environmental damage and entrenched patterns of social exclusion are making people ill. For example, we have estimated that if the lowest social groups (IV and V) made the same demands on GP services as the highest (I and II), the NHS would save £1 billion annually, or 10 per cent of the entire budget for NHS general practice.[1]

Improving health

One way to contain demand for health services is to invest more in ways of keeping people healthy, and to do this by addressing the underlying causes of illness. These have been well documented, most recently by the report of the Independent Inquiry into Health Inequalities in 1998.[2] A strategy for tackling inequalities that is central to the present Government's programme and broadly supported by health experts is to build and strengthen groups and neighbourhoods that suffer disproportionately from the social, economic and environmental causes of ill health. The NHS is beginning to participate in local regeneration schemes that aim to help disadvantaged communities by improving their material environment, raising the standards of local services and boosting job opportunities. We aim to show how this approach might be developed further. In effect, it means bringing the health improvement agenda into the heart of the NHS, helping to 'join up' thinking about health and health care among policy makers as well as service providers and managers within the NHS.

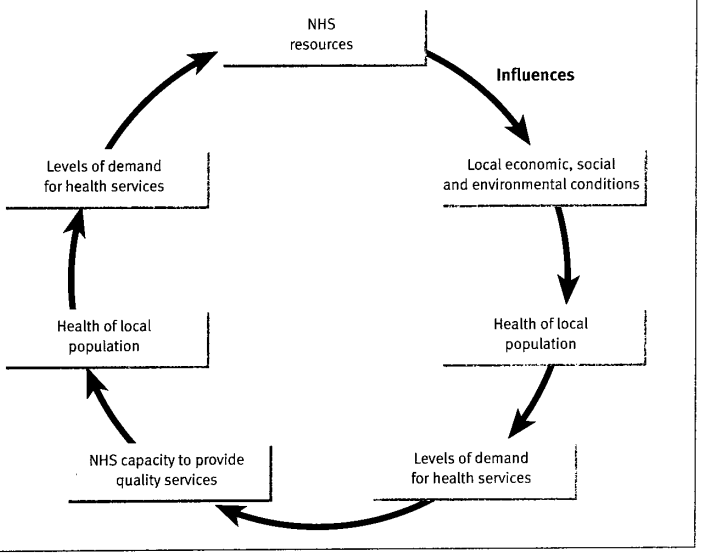
Sustainable development

There is a large degree of synergy between the health improvement agenda and the sustainable development agenda, provided that a long-term view is taken and the case for investing now in order to save later is understood. According to the Government's 1999 White Paper *A Strategy for Sustainable Development for the UK*, progress towards sustainability involves 'developing our economic and social capital while exercising sound stewardship over our environmental capital.'[3] It identifies four main aims: social progress that meets the needs of everyone, effective protection of the environment, prudent use of natural resources and maintaining high and stable levels of economic growth and employment. It acknowledges that a healthy population is a key indicator of sustainable development. This view is supported by Gro Harlem Brundtland, Director General of the World Health Organisation, who has pointed out that if people's health improves, they will 'make a real contribution to their nation's prosperity.' Good health, according to Brundtland, 'is not only an important concern for individuals, it plays a central role in achieving sustainable economic growth and an effective use of resources.'[4]

Now that there is at least some pressure on government departments and public service providers to change their behaviour in line with sustainable development objectives, we hope to show how it is possible to turn destructive cycles into virtuous circles for health and sustainability. A destructive cycle is where resources are used in ways that are wasteful and potentially damaging to health and the environment so that, cumulatively, there is more illness and less capacity to provide treatment and care. A virtuous circle is where patterns of behaviour that promote economic, social and environmental sustainability also have health benefits – directly and indirectly – and where measures to improve health, especially among people who are poor and therefore more vulnerable to ill health, also contribute to sustainable development. If the NHS can in this way help to

contain or even reduce demand for services, it should be better able to provide services when they are required. This will in turn help to improve health and, if appropriately targeted, to reduce health inequalities.

1 A VIRTUOUS CIRCLE



It is an approach that is already embedded in Government thinking, if not yet in its day to day practice. In 1999, a fact sheet issued by the (then) Department for the Environment, Transport and the Regions noted: 'The health sector can contribute to improving quality of life by ensuring that its activities are as sustainable as they can be, and through its contribution to improving the nation's health.'[5] It suggested that the NHS should, firstly, reduce waste and use its resources better to reduce its own costs, reinvesting the saved money in direct patient care, and, secondly, protect the health and well-being of its employees and local communities by minimising harm: for example, by reducing air pollution and transport congestion and buying sustainable equipment, services and facilities. In the same year, the public health White Paper *Saving Lives: Our healthier nation*[6] said that health service providers should consider the efficiency and quality of services and the impact of their activities on their local communities. In 2000, the Government promised 'to close the gap between the worst off and the better off', promising to intervene 'sooner rather than later' in 'transforming the NHS from a service that does not just fix and mend the ill, but which prevents and protects against illness.'[7] The challenge now is to turn these aspirations into action, not just through marginal experiment, but through mainstream policy and practice.

As the following chapters show, there is sufficient evidence to support the case for a health service that deploys its resources in ways that promote health and sustainable development, to ensure its own long-term viability. There are examples of current practice in the UK and elsewhere that suggest it is possible to change the way the NHS operates. We should not underestimate the size of the challenge: there are formidable cultural and practical barriers in the way of change. This report aims to identify those barriers and point to ways in which they may be overcome.

There is sufficient evidence to support the case for a health service that deploys its resources in ways that promote health and sustainable development, to ensure its own long-term viability.

Key themes

Employment

Take employment as an example. The NHS employs more than one million people nationally and in London more than 140,000 people, equivalent to more than 4000 per borough. The latter figure rises to almost 7000 per borough when you take account of contract workers. So the health service can justifiably be described as the most powerful employer in the capital – and in the country as a whole. Furthermore, it is trying to expand its workforce at a time when many other employers are reducing theirs. However, it is having serious trouble recruiting the new employees it needs. There are some 22,000 nurse vacancies nationally, while 110,000 nurses are expected to retire by 2004. A massive campaign to recruit from overseas has helped to fill the gap, bringing in nurses from Spain, the Philippines and elsewhere. Many NHS organisations, including hospitals, care homes and primary care centres, are located in disadvantaged neighbourhoods, where unemployment and poverty levels are high and where residents are living in conditions that make them vulnerable to mental and physical illness. For a range of reasons, local people are seldom considered as candidates for health service jobs: they lack basic skills and qualifications, or they don't hear about the vacancies, or their knowledge and experience are undervalued or unrecognised. So the health service recruits abroad – arguably at the expense of the family well-being of overseas staff, many of whom leave young children behind when they come to the UK – in order to provide services for local residents whose health is at risk because they are unemployed. This is a short-term strategy that may help to deal with illness once it has occurred. In the medium and longer term it is unsustainable.

There are now moves to increase recruitment locally, investing NHS funds in pre-employment training and starting people off in jobs that require few skills, with a view to helping them move up the health service ladder, acquiring new skills and qualifications as they go. London's NHS recently set out a model for a 'career skills escalator'. 'By providing access points at every level of skill or training,' it says, 'employers can ensure a constant stream of new recruits coming in and moving through the system. The end result of this innovative approach will be a regular supply of new professionals and workers at all levels, especially from hitherto under-represented black and ethnic minority communities.'[8] Some hospitals and health authorities have begun to move in this direction and examples are set out in Chapter One. It is a long-term strategy and one that is capable, over time, of reducing risks to health as well as developing a local workforce.

Purchasing policy

The NHS has substantial power not only as an employer, but also as a purchaser of goods, facilities and services. It spends about £11 billion on procurement every year at a national level, and more than £2.4 billion in London. NHS trusts can choose, to a certain extent, whether to buy from local or national suppliers and to buy goods that are more or less sustainable in terms of their impact on the environment and on local communities. Their choices are, however, circumscribed by European law, which is intended to safeguard fair competition, and by large national contracts brokered by PASA, the central purchasing and supplies agency of the NHS, to achieve economies of scale and ensure consistent quality. But these do not present insuperable barriers to sustainable purchasing, and sometimes even facilitate it. There is support, at the level of national policy, for encouraging small business and local enterprise and reducing risks to the environment.

The Department of Health's consultation paper *Tackling Health Inequalities* points to the contribution the NHS can make through 'its investment in staff and capital, the purchase of services and the development and regeneration of local economies'. PASA is keen to promote 'whole-life' costing in the evaluation of tenders, so that trusts can take into account not only the price of a product, but long-term running and maintenance costs, as well as the costs incurred through transport, consumption of energy and generation of waste. However, a recent survey of NHS buyers and suppliers showed that a large majority had not yet embraced this approach. Trusts were mainly sympathetic, but lacked the knowledge, skills and incentives to implement sustainable purchasing across the board.

Buying childcare

Childcare is a case in point. The NHS needs childcare to help recruit and retain staff. One in three health service employees is female, and of these, two in three have caring responsibilities. The NHS has committed £77 million to childcare in 2001–2. Effective childcare is known to have health benefits. It is central to many area-based government initiatives that aim to combat social exclusion. However, funding is often precarious and standards are patchy. At the same time, efforts to regenerate disadvantaged neighbourhoods depend on the development of local enterprises to provide employment. Often, the people who most need paid employment to keep their families out of poverty are lone mothers. Childcare can therefore play a pivotal role in regeneration by improving opportunities for children, by directly providing jobs for some women, by enabling others to combine parenting and paid employment, and by becoming a focus of local business development. But whether these opportunities are realised could depend on how local NHS organisations play their cards.

Trusts may choose to contract with large national companies, to concentrate on developing hospital-based nurseries, or to rely on care workers employed on casual terms at minimum rates. Alternatively, they may choose to work with local authorities and other locally-based organisations to recruit and train staff, to provide equipment and accommodation, and support the development of small and medium-sized enterprises with clear social as well as economic goals. The first approach may be the best route to affordable childcare in the short term, but it may not be the best way to develop a well-trained, secure pool of local providers. The latter approach, however, could give childcare workers more control over their pay and conditions, enabling them to reinforce their skills and to spread their client base so that they can serve other local businesses and avoid depending solely on contracts with a single, powerful purchaser. This would help to strengthen the local economy, to bring jobs to local residents who need them most, and to build up childcare as a sustainable resource for the community as a whole.

Childcare can play a pivotal role in regeneration by improving opportunities for children, by directly providing jobs for some women, by enabling others to combine parenting and paid employment, and by becoming a focus of local business development.

Buying food

Food provides a further illustration of how the NHS can use its purchasing power in ways that are more (or less) likely to contribute to sustainable development. Nutrition is clearly linked with health. Methods of food production strongly influence the environment, through the management of crops and livestock, consumption of energy in transport and processing, and generation of waste from packing and spoilage. Food is also an important source of employment.
The NHS is the largest single purchaser of food in the country. It spends some

By changing its approach to food purchasing, the NHS can save money and reduce environmental damage by cutting waste. It can help regeneration by creating jobs in areas of need. It can help patients recover faster and keep its staff healthy by serving nourishing meals.

£500 million a year on more than 300 million meals for patients, employees and visitors. Its shopping list includes 55,000 gallons of orange juice, 2.5 million pounds of butter and 1.3 million chicken legs. The NHS has committed £40 million to a scheme to improve hospital food, making it more attractive and nutritious and reducing waste. The scheme is chiefly concerned with the way meals are designed rather than with patterns of production and supply. In fact, food offers the NHS an opportunity to pursue several important goals. By changing its approach to food purchasing, the NHS can save money and reduce environmental damage by cutting waste. It can help regeneration by creating jobs in areas of need. It can help patients recover faster and keep its staff healthy by serving nourishing meals. But for all or any of this to happen, the NHS would need to develop a much more rounded and considered long-term strategy for purchasing and managing food.

Waste

The health service produces some 600,000 tonnes of waste a year. The average acute hospital produces more than 10 tonnes of waste a week, much of it domestic waste such as paper, bottles, cans and kitchen scraps. Most clinical waste is incinerated and the rest goes into landfill. The annual cost of waste disposal for the NHS in England and Wales is more than £42 million. Here is another opportunity for the NHS. By reducing waste, it can help to reduce energy consumption, safeguard natural resources, save money and minimise health hazards associated with landfill and incineration. Some health care organisations have begun to manage their waste more carefully, showing what can be done to reduce the bulk of refuse, to recycle where possible and to minimise use of toxic materials. But there is a long way to go before these practices become routine across the NHS.

Travel

Similarly, the NHS is a major cause of travel, for employees, patients and visitors and for the delivery of goods. Most of this travel is by road, and road traffic makes a significant contribution to ill health, through accidents and air pollution as well as by contributing to global warming and other kinds of environmental damage. Road accidents are thought to cost the NHS more than £420 million a year. Air pollution is estimated to cause between 12,000 and 24,000 premature deaths a year and a similar number of hospital admissions, costing up to £60 million a year. There is much the NHS could do to reduce these risks – by its decisions on where to locate hospitals and health centres, by discouraging private car use and on-site parking, and by encouraging public transport, walking and cycling. Government guidance has identified hospitals as 'major generators of travel' and proposed that new health facilities 'be planned to maximise accessibility by non-car modes of transport'. Many hospitals have begun to develop 'green travel plans' and to reduce freight deliveries. Addenbrooke's Hospital in Cambridge, for example, managed to reduce staff car use by 14 per cent. Great Ormond Street Hospital has developed a high-precision system of freight management to reduce congestion on its inner London site. However, these remain isolated examples. Most health care providers still rely heavily on road transport, and the full costs are not factored into NHS budgets. The opportunity to promote health and sustainability through more imaginative travel policies has yet to be seized.

Energy

The same may be said of energy. Hospitals consume it heavily, mainly for lighting, ventilation and lifts. Each year, they produce about 7.5 million tonnes of carbon dioxide (CO_2), which is a major contributor to global warming. Warmer winters may bring fewer cold-related deaths, but ozone depletion and climate change damage the environment and contribute to new health hazards, including cancers, cataracts and the infections and diseases borne by bacteria and insects able to flourish in warmer conditions. The NHS has agreed to reduce energy use by 15 per cent between 2000 and 2010. This would not only help reduce risks to health and environmental damage but would also make substantial savings, releasing funds to be spent on health services instead.[9] NHS Estates has estimated that a hospital designed for energy efficiency can consume 50 per cent less than one built to a standard design. Some NHS providers have managed to reduce energy use through design and the better management of resources. However, a recent survey found that although 80 per cent of NHS trust chief executives and finance directors knew they could save money by using energy more efficiently, few made it a priority. As the chief executive of a mental health trust explained, 'We can't just cut out waste. We need more money to run the system. We spend our time just trying to stop things falling down.' Conditions like these that encourage crisis management militate against a long-term approach to more efficient use of energy.

Building

The Government has committed itself to rebuilding and refurbishing the physical fabric of the health care system through the Private Finance Initiative (PFI). In 2001 there were 148 PFI schemes approved for the NHS in England, with an approximate capital value of £4.5 billion. PFI schemes typically involve a long-term contract of up to 35 years between the NHS and a private company or consortium. The contractor undertakes to design, build and finance the development to the specifications of the NHS. The contract usually includes building maintenance and may also cover support services such as cleaning and catering. PFI is a highly controversial arrangement, but it does provide a promising new incentive structure. By linking all the phases of hospital provision – designing, building and operating – incentives are created to provide and maintain health care facilities with an eye to their whole-life costs.

By linking all the phases of hospital provision – designing, building and operating – incentives are created to provide and maintain health care facilities with an eye to their whole-life costs.

A massive NHS development programme, coupled with a long-term financial framework, offers extensive opportunities for 'designing in' measures that are health enhancing and sustainable. Examples include: redeveloping brownfield sites, making maximum use of natural light and ventilation, introducing renewable sources of energy, ensuring effective public transport links, building with materials from renewable sources, employing local labour and contracting where possible with local suppliers, and planning facilities that are flexible enough to meet future health care needs, so that new buildings do not soon become redundant. Some of these measures are already being introduced through PFI schemes but the huge potential will only be realised if health improvement and sustainability are ranked equally with health service needs at the earliest stages of every project.

Emerging messages

In the chapters that follow, we indicate a range of possibilities within the NHS for promoting health and sustainable development. We suggest how far changing NHS corporate behaviour could avoid damage to health and the environment and – in many cases – avoid wasting substantial sums of money that might otherwise be spent on improving services. We consider the barriers to change and suggest how these may be overcome. Because this is a relatively new field, we offer this work as a way of opening up discussion, rather than claiming to present definitive findings or recommendations. Most of our research was conducted in London, but we are confident that our findings apply in equal measure to the rest of the country. When the material is examined as a whole, some strong themes emerge.

Unrealised potential

Most obviously, there is huge potential for change. The NHS has formidable powers at its disposal, arising from its size, from the fact that it reaches into almost every corner of the country and touches almost everybody's lives, and from the scale of its resources – not just money, but people, land, facilities, reputation and influence. In most of its routine activities it could do more – often much more – to promote health and sustainable development. This potential can be glimpsed here and there, but so far remains largely unrealised.

Official support

The approach we are advocating is already well articulated at an official level. Throughout government, there is support for improving health, reducing health inequalities between rich and poor, and promoting sustainable development. These ideas are not just tolerated, they are actively promoted – by the Prime Minister among others. They are reflected in major policy pronouncements from the Department of Health, the Department of Environment, Farming and Rural Affairs, the Sustainable Development Commission (set up by the Prime Minister and reporting directly to him) and the Health Development Agency. On the international front, they have long been advocated by the World Health Organisation and the United Nations. We are running with the tide of opinion, not against it.

The NHS has formidable powers at its disposal, arising from its size, from the fact that it reaches into almost every corner of the country and touches almost everybody's lives, and from the scale of its resources – not just money, but people, land, facilities, reputation and influence.

No debate

Although there is no apparent opposition to the idea that the NHS should behave in a health-enhancing, sustainable manner, there is also – thus far – an absence of debate about it. Policy makers, health care providers and media commentators seem able to argue at great length about how long people should have to wait for health care, or how we should finance, structure and manage the NHS. On the question of whether the largest single organisation in the country – which is, after all, devoted to health – could make better use of its resources in the long-term pursuit of health, there is mainly silence. This points to a kind of institutional inertia that heads off purposeful dialogue about how to make the changes required. No less important, the absence of debate means that members of the public are not exposed to arguments about health improvement and sustainable development. Conventional wisdom about what matters most in health policy is rarely challenged and political incentives for the NHS to change its behaviour remain weak.

The mutual benefits of health improvement and sustainable development can only be expected to occur over time. A long-term perspective is required – and one that takes the whole system into account.

Disconnectedness

One consequence of this lack of debate is that neither policy makers nor managers recognise the benefits that health improvement and sustainable development can bring. The sustainable development unit of the Department of Health is part of the health protection division of the public health directorate, rather than of the health promotion division, whose job it is to improve health and reduce health inequalities. The synergy between health improvement and sustainable development is not yet prominent in the Department's public health agenda. In some NHS regions (notably the north west), there are stronger connections, and throughout the country there are signs of new links being forged, in both conceptual and practical terms. Until these connections become more widespread and more firmly established, opportunities to improve health and sustainable development will continue to be missed because thinking and planning are insufficiently integrated.

Poor incentives

The mutual benefits of health improvement and sustainable development can only be expected to occur over time. A long-term perspective is required – and one that takes the whole system into account – if such benefits are to be reaped. Official endorsement there may be, but most people whose job it is to drive through changes in NHS corporate behaviour are unlikely to give it priority. We know that PASA, the NHS purchasing agency, is keen to promote sustainable purchasing and that the Private Finance Initiative offers a long-term financial framework that could favour sustainable development. But if the nettle is to be grasped, purchasing organisations throughout the NHS – chiefly acute and primary care trusts – must themselves have the right incentive structures.

Our interviews with acute trusts in London showed that most of them broadly supported the idea of sustainable purchasing, but had other priorities. Typically, one trust told us that its performance was judged by clinical activity, financial well-being and human resource management, but not by its impact on the environment. Another said it lacked the information to pursue an active policy of 'green' purchasing and would not change its approach unless it could be confident of early financial payback.[10]

Similarly, King's Fund research10 suggests several reasons why primary care trusts (PCTs) are not investing their resources and energies in this agenda. They are overloaded with other imperatives, which are chiefly about developing the new primary care structures and meeting targets set by the centre: for example, on treatment for cancer and coronary heart disease, and on reducing waiting times. It is rare to be rewarded for taking risks or changing the rules of the game. Key people, including trust leaders, are insufficiently aware of the wider public health agenda or fail to appreciate its vital role in the health system. There is a lack of clarity about how resources are – or should be – allocated and there is no dedicated funding for innovation in this area. Primary care trusts are still immature organisations. They have yet to accumulate enough knowledge and confidence to break away from the 'safe territory' of general practice and adopt a long-term, holistic approach to their work. There are too few models to follow and too few opportunities to learn from more experienced bodies. And there are signs that trusts are tending to displace responsibility for sustainable development, assuming that it lies elsewhere – for example, with the new Local Strategic

Partnerships (LSPs), whose job it is to co-ordinate planning and action for neighbourhood renewal at borough level. With the exception of the point about immaturity, these disincentives apply equally to acute trusts.

Implications for other organisations

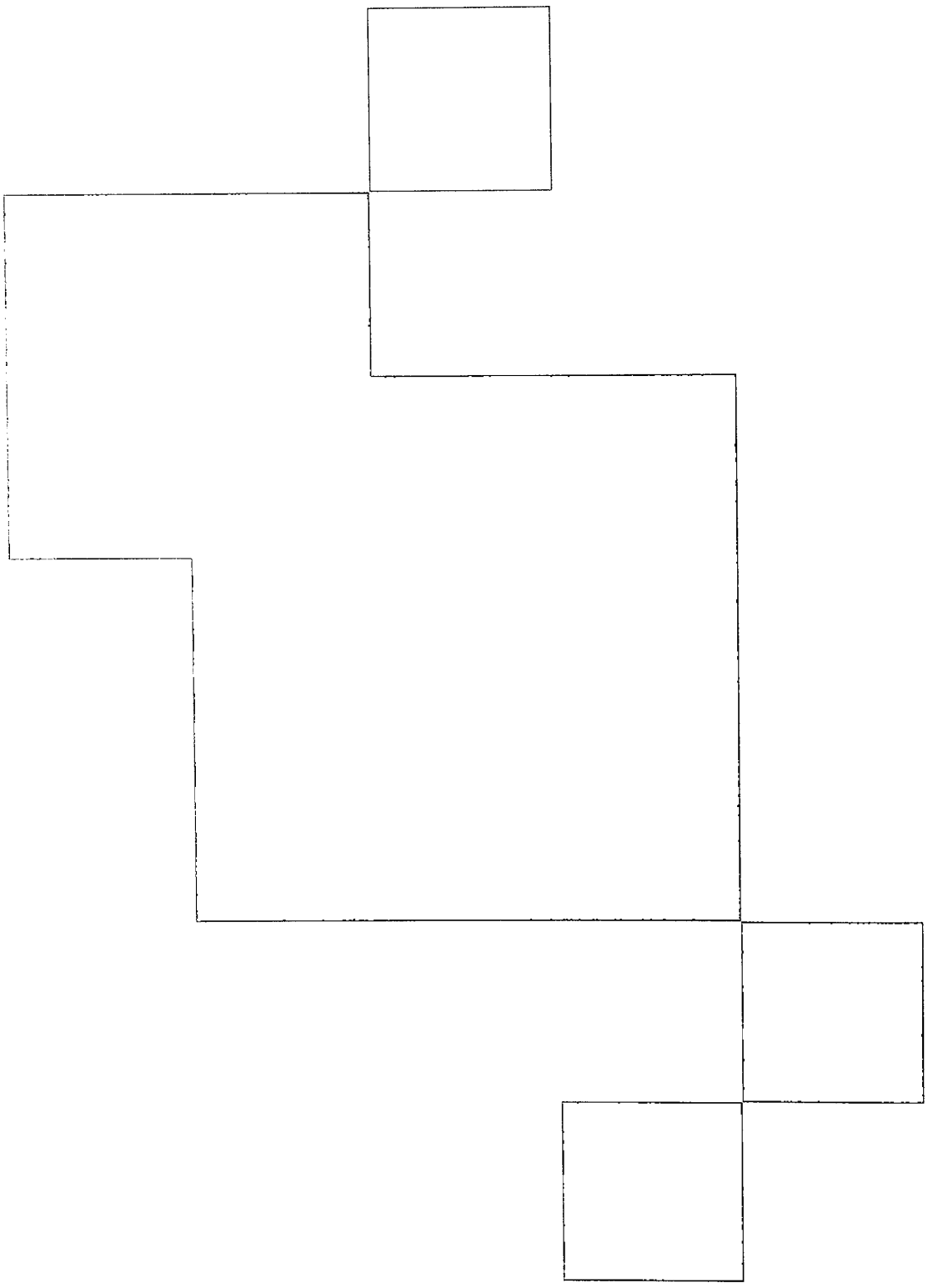
While this report focuses on the NHS, there are clear implications for other organisations in the statutory and non-statutory sectors, and especially for local government. Local authorities are in some respects ahead of the NHS in shaping their policy and practice to contribute to sustainable development. While improving health and reducing health inequalities are among the corporate objectives of the NHS, local government has a duty to promote the well-being of the local population. Taken together, local authorities have very substantial powers as employers, purchasers and participants in local regeneration schemes, as well as influence over patterns of travel, energy consumption, generation and disposal of waste, and planning and construction. It follows that many of our suggestions could apply equally to them.

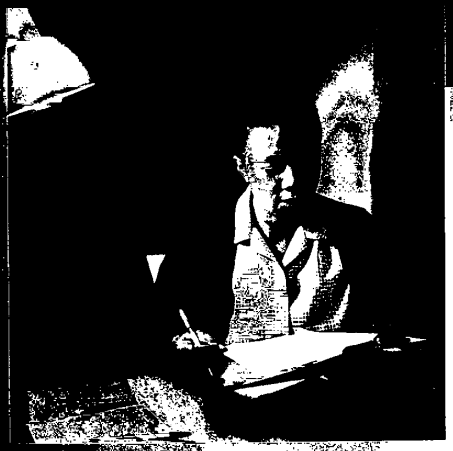
In conclusion

As these themes suggest, it is possible for the NHS to become an organisation that promotes health and sustainable development, thereby increasing its own chances of a sustainable future. For that to happen, however, incentives will have to be regeared to encourage and reward changes in corporate behaviour. There is clearly a case for closer integration of policy and practice for public health and sustainable development, and for both to be given a higher priority.

To make this possible, it will be necessary to change the terms of debate about health and health care. As long as policy makers, health care providers and the wider public remain wedded to the idea that health policy is primarily about the NHS and that the NHS is no more than a provider of services, the pressure for change will remain minimal.

We have begun to sketch out opportunities for the NHS, but more knowledge is required. We need to learn more about what actions might be taken by the NHS, what risks and opportunities are associated with change, and what costs and benefits are likely to accrue to the health of the population, the economy, society and the environment. This book is offered as a first step towards a wider and more profound debate that will, we hope, support an enduring shift in the culture and practice of the National Health Service.





1. Employment

The NHS is the largest employer in the country, but it cannot get the staff it needs. It operates in areas of high unemployment, where poverty makes people more vulnerable to illness. For the NHS to realise its full potential as an employer, it must develop a more strategic approach, build alliances with other sectors and strengthen links with local communities.

Helen Bishop, Marsaili Cameron and Teresa Edmans

Employment

Some sectors and industries make themselves visible and attractive as employers – the finance and IT industries spring to mind. The same is not true of the NHS. Current employees tend to think of themselves as working for a particular organisation – hospital, GP practice or mental health trust, for example – rather than for 'the NHS'. Meanwhile, the people looking in from the outside often assume that unless you are a doctor or a nurse, the health service has little to offer in the way of work or a career.

The truth is that the health service is a major employer throughout the country. It employs people in a wide range of jobs, and it operates in every neighbourhood. In London, it directly employs more than 140,000 people, equivalent to 4250 per borough. It is bigger than any individual company and in most boroughs is one of the largest employers. As well as employing staff directly, the health service provides work for many other people through contracts – for cleaning, building and catering work, for example. When these groups are taken into account, the overall figure for people working for the NHS in London is about 225,000 – that is, almost 7000 per borough.[1]

The overall figure for people working for the NHS in London is about 225,000 – that is, almost 7000 per borough.

But this major employer cannot get the workers it needs. In recent years, shortages of professional staff and practitioners have become chronic in the capital. Now health and care organisations are encountering increasing difficulty in attracting and retaining non-professional workers. These staff shortages are adversely affecting the quality of health care offered to local communities.

In 1998–99, 78 per cent of trusts had difficulty in recruiting nurses.2 There are about 22,000 nurse vacancies nationally, almost a third of them – more than 6000 – in London. Some 110,000 nurses may leave the NHS by 2004.3 At the end of 2000, there were over 10,000 more qualified nurses, midwives and health visitors in the UK than in 1997, partly because of a major programme of overseas recruitment from Spain, the Philippines and elsewhere.

Unemployment in the capital is twice the national average. Twenty London boroughs are among the 88 most deprived in the country. Almost a quarter of London children live in a non-earning household.[4]

So a situation exists where a major employer sees itself as potentially unable to attract and keep the employees it needs to provide the high quality services required of it. Meanwhile, it operates in areas of high unemployment and has a low, misleading or sometimes poor profile as an employer within the communities it serves.

This chapter will argue that in order to be able to offer local communities consistently high-quality services of a kind suited to their needs, health organisations in London need to take action now to 'grow their own' employees. In other words, with the help of partners inside and outside the health and care sector, they need to plan for and provide structured training and career opportunities for local people, including those who are long-term unemployed.

Employment, health and sustainability

People in work enjoy better health than unemployed people. Death rates from all major causes have been found to be consistently higher than average among unemployed men, while unemployed women have higher death rates from coronary heart disease and suicide.[5]

Not having a job increases the likelihood of ill health for both adults and their children. So the fact that almost a quarter of London children live in a non-earning household carries its own sombre message. Yet many health organisations have seemed oblivious to the potential contribution they themselves could make to the health of local people and their families – by employing them on a stable basis and offering career prospects. Equally, they seem to have overlooked evidence that, in the longer term, bringing jobs to the local economy is likely to improve the health of the wider community.

The *NHS Plan*[6] acknowledges the need in the short term to boost staff numbers through overseas recruitment. However, this solution to an immediate crisis should not be confused with what is needed in the long term: sustainable development to achieve a high-quality, stable workforce for the NHS.

What's to gain – and to lose?

To gain

Through planning and extending structured opportunities for employment to local people, NHS employers can make a significant contribution to:

- Improving the health of the local community More people in meaningful jobs results in improved health for these workers and their families – and, very possibly, the wider community.
- Reducing health inequalities. Disadvantaged groups in London, including black and minority ethnic communities and refugees, suffer from both higher than average levels of unemployment and poorer health.
- Developing services of a consistently high quality that offer better value. Recruitment from among the local community is likely to result in health care that can be relied on to be responsive to the needs of local people. Also, where there are good career prospects, employees are more likely to stay – thus, among other benefits, reducing the costs associated with agency staff.
- Maintaining quality of life. Staff who already live in the neighbourhood will be less reliant on car journeys or long journeys by public transport. They are therefore likely to enjoy a better quality of life and to be able to balance work and domestic responsibilities rather more effectively.

Many health organisations seem to have overlooked evidence that, in the longer term, bringing jobs to the local economy is likely to improve the health of the wider community.

To lose

By ignoring the need to engage meaningfully with local people as employees and potential employees, NHS organisations run the risk of:

- Increasing alienation between organisation and community. Where the workforce of a health organisation is not representative of local communities, the task of developing closer links with local people will be that much harder.
- Inhibiting take up of services. Local people may resist using services if they feel that staff are unlikely to understand their needs.

The Government has set national targets for reducing health inequalities and also requires health improvement targets to be set and met at a local level. Health organisations can help meet these targets by bringing stable employment and career prospects to local unemployed and low-income families.

- Making sustainable development of the workforce difficult or impossible. It is now virtually impossible to recruit and retain sufficient employees from outside London, so the health service has to find ways of 'growing its own' workforce.
- Using short-term solutions to block long-term development. Recruiting people from overseas on short-term contracts helps to reduce short-term staffing crises. But this can obscure the long-term need to plan for and invest in a training infrastructure that will sustain the future needs of the health and care sector.

The current picture

Government approach

The idea of using the power of the NHS as the largest single employer in the country to develop job training and career opportunities is supported by Government initiatives and other changes at regional and local levels.

- Investment in recruitment. At the national level, the NHS Plan for a patient-centred health service requires the delivery of appropriate high-quality services, provided by professionals working together in a flexible way. National Service Frameworks specify the standards to be reached across the UK. Health organisations in London and other parts of the country will be unable to reach these standards unless they engage in long-term planning with local partners to develop a suitably qualified workforce.

- Targets to improve health and reduce health inequalities. The Government has set national targets for reducing health inequalities and also requires health improvement targets to be set and met at a local level. Health organisations can help meet these targets by bringing stable employment and career prospects to local unemployed and low-income families.

- Joining up health and social care. Joint working between health and social care is increasing, through the development of care trusts, for example. Closer alignment between the health and social care agendas will help to focus organisations offering health care to build close links with the local community.

- New race legislation. Developing a representative workforce is part of compliance with the Race Relations Act 2000. The Commission for Racial Equality has published a statutory code of practice for the public sector as part of the implementation of the new Act. To comply with the code, public sector organisations are required to have their first annual action plan in place by the end of May 2002.[7]

- Pressures to recruit locally. Prohibitive housing costs, choked roads and poor public transport are driving people – particularly those in public sector occupations – from London or dissuading them from moving to the capital. So health organisations have a strong incentive to focus on developing people who are already living in the capital and are likely to be committed to it.

- Community involvement. In their plans to improve services, Local Strategic Partnerships are required to demonstrate a high level of user involvement and to open up new sources of employment. They are likely to take into account whether the employees delivering services reflect the variety of local communities being served, and what support is available for local unemployed

people who wish to gain the experience and skills needed to enter employment in the health and care sector.

- Workforce development confederations. For the first time, the NHS workforce development confederations bring together at local level funding streams for both medical and non-medical education and training. In other ways too, they occupy a potentially pivotal role in bringing initiatives, partners and funding streams together. For example, within confederations there is likely to be scope for increasing available funds through partnership with the Employment Service and the Learning and Skills Councils.

Barriers

To link together health, employment and sustainability in a constructive way means thinking holistically, across functions and across systems. This kind of thinking has come to the health service comparatively recently and is not yet widespread. Many of the barriers to taking these basic ideas on board may be to do with people at all levels of the health service being trapped within the perspective of their own function, clinical area or sector:

- The image of the NHS. When recruiting for specific posts, an employer is likely to focus on how far the applicant meets the specified criteria. An applicant's potential for achievement may be considered irrelevant if the criteria for the job in hand are not met; and a routine 'thanks, but no thanks' letter is likely to be sent. The situation often looks very different from the point of view of an applicant. Applicants from disadvantaged communities, for instance, may feel that they are ignored, sidelined or not taken seriously when they apply for jobs in local health organisations. The resulting negative perceptions of the organisation are likely to be shared with family, friends and the wider community. By providing constructive feedback to unsuccessful applicants and candidates, health organisations have an opportunity to create a more positive image of themselves as potential employers.

- Underestimating the potential of unemployed groups. A common misconception among employers is that black and minority ethnic communities suffer high rates of unemployment because they have low skills levels. In fact, these communities suffer disproportionate levels of unemployment despite equal or sometimes above-average attainment.[8] Employers also tend to take insufficient account of the relevant skills and talents that local people have – such as first-hand knowledge of local culture and languages.

A common misconception among employers is that black and minority ethnic communities suffer high rates of unemployment because they have low skills levels. In fact, these communities suffer disproportionate levels of unemployment despite equal or sometimes above-average attainment.

- Inappropriate thresholds. Local communities may often be unable to offer job-specific skills, but this fact alone need not prevent employers from acting. Health organisations often base their recruitment initiatives on the principle that 'We need certain skills and experience'. In fact, nearly half of the NHS jobs in London do not require specific entry qualifications. Many of these posts could become entry points for which unemployed people could be trained.

- Lack of integrated planning. Traditionally, what was known as 'workforce planning' had a narrow and paperbound existence in health organisations. Forecasting and planning were carried out in a largely formulaic way, based on the assumption that past patterns would provide the information to predict

The sidelining and compartmentalising of 'people issues' persists in many health organisations.

future demands for numbers and types of staff. There was little discussion between clinicians and managers about the pattern of services needed by local communities in the future, the skills to support these services and the employees required to provide that range of skills. This sidelining and compartmentalising of 'people issues' persists in many health organisations. Different functions and service areas tend to work to different agendas. Recruitment and retention, for example, will have one set of priorities; training and development another; while medical and clinical directors and service leaders will be facing their own, apparently quite different, pressures.

- Missed opportunities. Employment in the health sector needs to be seen in the round: it is not just about employing people to deliver care services, but involves staff in a wide range of occupations and trades. Take capital projects, for example. Few boards and senior management teams take into account at an early stage the implications of capital projects for unemployed people in local communities. But the building of new hospitals and clinics, and the refurbishment of old ones, present invaluable opportunities for training and using local labour, both in constructing the facility and in permanently staffing it once it is completed.

- Slow development of partnership. When it comes to joint working with other sectors, the health sector has had something of a 'stop-go' history. In recent years, much progress has been made in building effective partnerships at various levels with voluntary organisations, further and higher education, local government and the private sector. But there is a long way still to go in working with external organisations to extend the range of training and development opportunities available to local people.

Some examples of good practice

The examples below, and many others, are described more fully in *Working for Health*.[9]

Acute hospitals

The Director of Human Resources at Guy's and St Thomas' Hospital NHS Trust points out that it is comparatively unusual for acute trusts to be deeply involved in regeneration initiatives, and in community development and outreach. It is possibly easier for mental health and community trusts to take that route, as the nature of their work naturally takes them into a variety of community locations. Nevertheless, Guy's and St Thomas' trust has done a great deal of work to attract the community into its workforce. It has employed an education and employment co-ordinator for four years. Through the Education Business Partnership, she co-ordinates work on programmes such as New Deal for Employment, collaborating closely with a variety of local organisations. She also works with schools, setting up mentoring schemes and arranging workplace experience for students. The trust sees these initiatives as beneficial in three ways:

- local employment opportunities are increased
- Guy's and St Thomas' profile is boosted in the community
- Guy's and St Thomas' employees benefit in terms of management development from opportunities to become involved in activities such as coaching and mentoring.

Young people

Bradford Health Authority leads partnership working aimed at bringing health and education together to boost recruitment and retention in the NHS, particularly among minority ethnic communities, and to involve and develop NHS employees.

The local trust and the University of Bradford's School of Health Studies work with a girls' school, 97.5 per cent of whose students are of Asian origin. They offer targeted training in preparation for nursing, radiography and midwifery. The preparation schemes run for 11 weeks (two hours a week) and include placements that give students a 'buddy' health professional to support them. Parents are also closely involved – families need to be supportive if the young people are to be persuaded to join the NHS.

Mental health

The aim of the user employment programme at South West London and St George's Mental Health NHS Trust, based at Springfield Hospital, is to improve access to employment in mental health services for people who have experienced mental health problems. Recognised as a national example of good practice, this pioneer programme has been replicated in a number of other trusts. The programme has three elements:

- A supported employment programme to enable people who have experienced more serious mental health problems to work within the trust on the same terms and conditions as all other employees.
- A programme of work experience within the trust to enable people with more serious mental health problems to gain the experience and references they need to move into employment.
- A 'charter for the employment of people who have experienced mental health problems', which carries two main messages: it recognises that personal experience of mental health problems can be valuable in a service that provides help to people with such difficulties; and it recognises that most people who have experienced mental health problems need no special help other than a willingness on the part of employers to take them on.

Refugee health workers

Many areas are now running schemes to help refugees into health care jobs. Some are led from outside the NHS, with greater or lesser participation by the health service, while others are led by the NHS.

The schemes enable people who qualified overseas as doctors or nurses or in other health professions to convert their qualifications so that they are able to practise in the UK. Support includes conversion training, English language support, clinical and other kinds of supervised practice and help with writing CVs and going for job interviews. The health authorities leading such initiatives include: Camden and Islington; Kensington, Chelsea and Westminster; and Redbridge and Waltham Forest.

Further examples of innovative practice, originating in a wide range of organisations, sectors and partnerships, can be found in Volume 2 of *Employment Improves Your Health*.[10]

Possible future directions

Embedding good practice

The following factors seem to be important for health and care organisations seeking to turn staff shortages into an opportunity for programmes to combat local unemployment:

- Strategic thinking across the organisation. Trust leaders must take a long-term view of workforce needs, the profile of their local communities and how training routes may be opened up for local people. This should involve integrating the different agendas that confront the organisation, namely workforce development, recruitment and retention, service delivery, quality and diversity. It means identifying vacancies below professional level that could become trainee posts, forecasting future vacancies and skills shortages and analysing patterns of staff turnover and gaps in training provision. The data will be needed to inform the development of a long-term plan, so that in five and ten years' time significant numbers of local people will be qualified and keen to pursue careers in the local health sector. This approach must be cascaded through the organisation, with support from key decision makers, including senior clinicians.

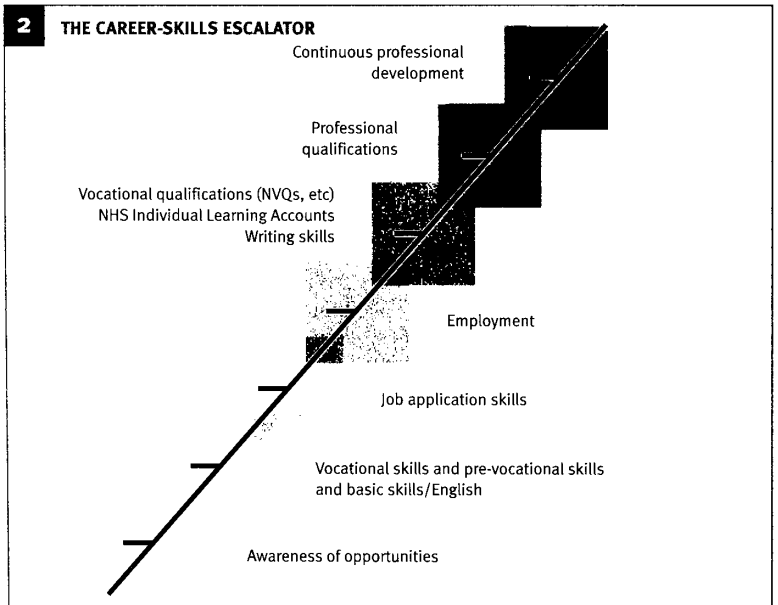
- Using the career-skills escalator. The career-skills escalator offers a common framework for action by managers and service leaders from across the organisation. As Figure 2 shows, it is a dynamic approach to acquiring and using skills – and thus to recruiting, developing and retaining clinical and non-clinical employees. Central to the approach is a shared realisation across the organisation of the need to focus on the skills development of local people well before they are qualified or employed. This kind of thinking is new to many organisations and may run counter to some preconceptions – such as the view that 'We can't fund pre-employment training.' The simple fact is that, in order to bridge skills gaps and to ensure a flow of qualified staff through the organisation, partnerships need to be developed with external organisations that can provide complementary expertise and provision, such as pre-employment training; in some cases, they can also provide funding. As Volume 2 of *Employment Improves Your Health*[11] explains, by providing access points at every level, employers can ensure a constant stream of new recruits moving through the system. There must also be stopping-off points, with appropriate accreditation, for those who do not wish to become health professionals: 'Most employers now would agree that effective health and social care depends on having quality skills at every level. The quality of receptionists, porters, cleaning staff and health care assistants is as important to health care as the skills of surgeons. These employees can also play an important role in supervising and passing on skills to new local employees, as well as to schoolchildren and the unemployed on work placement.' The end result should be 'a regular supply of new professionals and workers at all levels, especially from hitherto under-represented black and minority ethnic communities'. This approach challenges the traditional boundaries between professional and non-professional, qualified and unqualified and employed and unemployed.

- Working across the health economy. To achieve lasting results, health and care organisations will need to collaborate with one another and with organisations outside the sector. The new workforce development confederations will offer a

Trust leaders must take a long-term view of workforce needs, the profile of their local communities and how training routes may be opened up for local people. This should involve integrating the different agendas that confront the organisation: workforce development, recruitment and retention, service delivery, quality and diversity.

much wider range of vacancies than any individual trust is likely to be able to. They offer economies of scale; the chance to share information, training expertise and training facilities; and broader career opportunities for employees, making it more likely that they will stay in the area. NHS organisations can also benefit from collaboration with private care homes and voluntary sector organisations that deliver services such as home care.

2 THE CAREER-SKILLS ESCALATOR



Source: *Employment Improves Your Health*, London: NHS London Regional Office, 2002, vol.1.p.21. Available online: www.london.nhs.uk//newsmedia/publications/ EMPLOYIMPROVESHEALTH.pdf

- Developing new alliances outside the health and care sector. By forming partnerships with organisations outside the sector, it is possible to extend the range of training and development opportunities available to local people. Such partners might include Learning and Skills Councils, the Employment Service, regeneration agencies such as Local Strategic Partnerships, Single Regeneration Budget schemes (SRBs), New Deal for Communities, Sure Start, Education Business Partnerships and voluntary and community organisations.[12]

- Strengthening links with local communities. Health and social care organisations must see themselves as key players in their communities – not just as service providers, but also as employers and purchasers. They need to 'get out more', to work in partnership at grassroots level. This includes: making links with existing employment, volunteering and mentoring schemes; finding out about voluntary sector projects; building relationships with schools and colleges; and facilitating community events. They could also do more to establish a reputation for themselves as good employers, making themselves attractive to local communities.

- Promoting diversity in employment. Developing a workforce that is representative of local communities is part of compliance with the new Race Relations Act. One option for employers is to advertise a range of jobs

There is little consistency nationally in the extent to which local NHS organisations see themselves as active players in regenerating their communities through employment and training initiatives.

together, enabling candidates to be recruited, trained and supported as a group and thus to benefit from peer support. In some cases, exemption clauses in anti-discrimination legislation may apply.

- Offering stepping stones into employment. Health and social care organisations can work with partners and suppliers to create 'stepping stones' into employment – such as nurse cadetship schemes, mentoring arrangements, volunteering opportunities, apprenticeships and new support posts. These routes into employment need to be publicised widely and effectively.

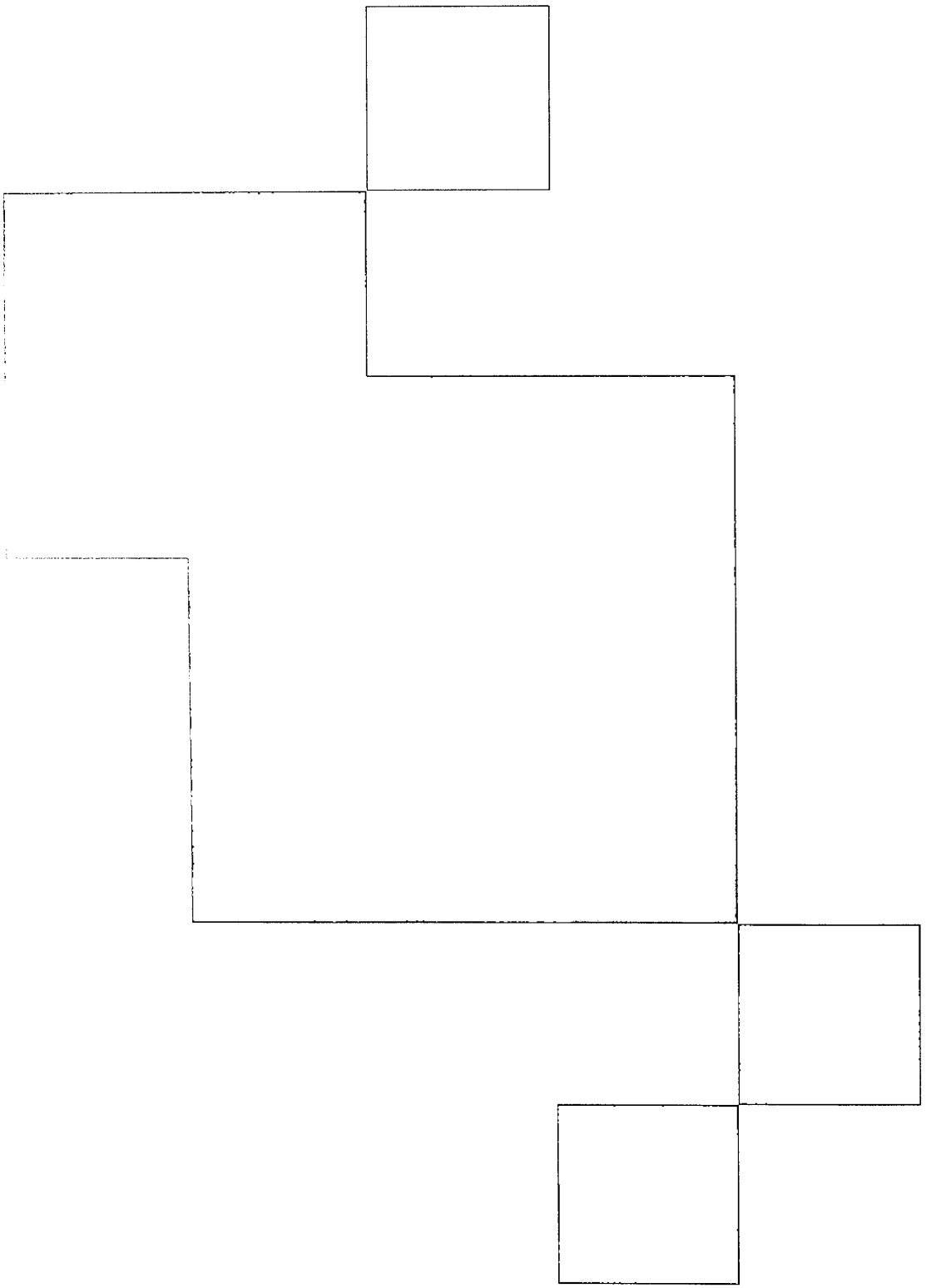
Strengthening the links

The time is ripe for a systematic strategy to strengthen the links in the health and social care sector between employment, health and sustainable development. In bringing this agenda into the mainstream, there are key roles for a range of players:

- Central government must give clear messages about how the health and care sector can support regeneration and local training and career opportunities.
- Strategic health authorities can take the lead in raising awareness within the sector locally, sharing learning and good practice, monitoring progress and promoting employment opportunities.
- Workforce development confederations can lead strategic thinking and help to develop cross-sectoral partnership working: for example, through joint commissioning with local authorities. They also have the potential to bring together, develop and lead important and demanding initiatives – such as those associated with refugee health workers – that originated with individual agencies.
- Primary care trusts and other NHS trusts can explore the range of opportunities open to them as employers, develop more family-friendly policies for their employees and work with local partners from different sectors to open up routes to training and employment.

There is little consistency nationally in the extent to which local NHS organisations see themselves as active players in regenerating their communities through employment and training initiatives. The picture is largely one of piecemeal initiatives instigated and driven by committed individuals. However, some health and care organisations have successfully turned staff shortages into an opportunity to develop collaborative programmes to combat local unemployment and thus improve health. Funds for training have been obtained from a range of sources, including local statutory investment, the European Social Fund, the Single Regeneration Budget Programme, New Deal for Communities and Sure Start.

The NHS Workforce and Development Framework for London demonstrates a growing awareness in some parts of the health and social care system of the need radically to review the system's stance as an employer. The Framework points out that people deliver health services to people, and systems help or hinder them: 'The changes needed to deliver the modernisation programme will depend on people, well led and properly prepared. ... By extending opportunities for employment among disadvantaged groups, an NHS employer is potentially having an impact on the health of the local community as a whole.'[13]



2. Purchasing policy

The NHS spends £11 billion a year on buying goods and services that enable it to provide effective health services. It could use its huge purchasing power more effectively to tackle health inequalities and regenerate local economies. In spite of EU law and national contracting, health service trusts have some choice in whether to buy goods that are more or less sustainable in terms of their impact on the environment and on local communities.

Teresa Edmans, Karen Jochelson and Kamila Zahno

Purchasing policy

The NHS in England spends about £11 billion every year on buying the goods and services that allow it to provide effective health care. Its purchases range from food to electricity and fuel, from syringes to ultrasound equipment, and from transport services to agency nursing staff. Every 20 minutes, on average, the NHS:

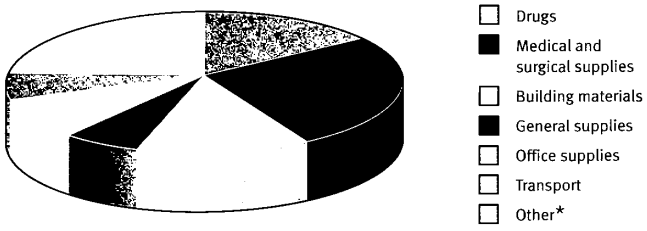
- issues 17,000 prescriptions
- uses 180kg infant formula
- uses 46,000 paper towels
- uses 232 pairs of surgeons gloves
- issues 5 hearing aids.[1]

In London alone, the NHS spends about £2.4 billion each year.[2] NHS trusts have their own procurement teams and budgets, and are free to buy what they wish through whatever route they choose. Trusts usually purchase through national contracts or framework agreements negotiated by the NHS Purchasing and Supply Agency (PASA) and through local contracts set up by the trusts themselves.

This chapter explores how the NHS can contribute to health improvement and sustainable development by buying locally and by buying goods that are less likely to damage the environment. It looks at: Government policies on public sector procurement; how trusts are attempting to develop local procurement markets; and environmentally sensitive purchasing strategies.

Chapters Three and Four look at procurement strategies for childcare and food respectively.

3 PURCHASING PATTERN IN A TYPICAL ACUTE TRUST



Source: Goods for Your Health. Improving Supplies Management in NHS Trusts, London: The Audit Commission, 1996, p.5

* 'Other' refers to the purchase of drugs, services, payments to utilities and non-pay expenditure on staff, such as travelling or removal expenses, which were considered outside the Audit Commission study.

Purchasing, health and sustainability

The scale of NHS purchasing power means that the choices it makes about suppliers and the type of goods it buys can have a significant influence on local economies and the environment.

Recognising the social and health impact of local purchasing means that the NHS can derive benefits from its purchasing decisions beyond the value of the actual goods or services bought.

Impact on local communities

In 2001 PASA influenced about one fifth of the funds spent nationally by the NHS through national contracts, but the rest was purchased through contracts negotiated by individual trusts themselves. Subject to compliance with public procurement rules, trusts can choose to buy supplies or services locally or from a national provider. Buying locally supports local businesses and local employment. This is beneficial to the health of individuals and their families, and to the social fabric of the local community. Unemployment, especially long-term unemployment, has a well-documented detrimental effect on the health of individuals and their families and on the social fabric of communities (see Chapter One).

Directly and indirectly, the strength or weakness of local economies affects the health profile of communities, and consequently the type of physical and mental health problems presented to local NHS services. Recognising the social and health impact of local purchasing means that the NHS can derive benefits from its purchasing decisions beyond the value of the actual goods or services bought. Buying locally can help to build local economies and job markets, which in turn will influence the health of the local community.

Environmental impact

The type of goods bought can also affect the environment, and hence the health and well-being of the employees and patients in a hospital and of the community beyond. For example:

- Indoor air pollution. This has been identified as one of the top five environmental risks to public health by the US Environmental Protection Agency.[3] In the UK people spend an average of 80 per cent of their time indoors.[4] For people confined indoors by illness – especially those who are young, elderly or have depressed immune systems – the consequences of indoor pollution may be significant.

  Indoor air pollution is caused by the mundane choices we make about the use of pesticides, cleaning materials and disinfectants, which can contain toxic chemicals, and by the particulates and emissions given off by equipment and the synthetic materials we use to furnish our offices. It can also be caused by endotoxins released by the moulds and fungi and the particulates from building materials found in mechanical ventilation systems, and by inadequate ventilation. Poor air quality can lead to 'sick building syndrome', with symptoms including: irritation of the mucous membranes (eye and throat irritation, cough); neurotoxic effects (headaches, fatigue, lack of concentration); respiratory symptoms (shortness of breath, cough, wheezing); skin symptoms (rash, pruritis, dryness); and chemosensory changes (enhanced or abnormal odour perception, visual disturbances).[5]

  Long-term exposure to certain chemicals can also lead to more serious ailments.[6] Ammonia compounds, phenols and bleach, commonly found in cleaning and disinfectant chemicals, can induce asthma or aggravate pre-existing asthma. Exposure to certain chemicals in floor strippers and polishers can lead to irreversible lung damage. Many pesticides are persistent organic pollutants that remain in the environment for a long time and bio-accumulate in animals and humans. Chronic exposure can cause cancer, reproductive and

developmental dysfunction, endocrine disruption, immunological and neurological dysfunction and behavioural impairment.

Buildings that have effective natural ventilation systems, and where the construction materials and cleaning methods are selected for their low environmental and health impact, reap benefits. Staff productivity improves, absenteeism declines and stress among employees is reduced.[7] There are no equivalent studies on the impact on staff health and patient recovery rates in hospitals, but this does not assume that there will be no positive benefits.

- Equipment and materials. Hospitals also make choices about the type of equipment they buy. PVC is found in a range of widely used items, such as IV bags, plasma collection bags, sharps containers, catheters, drip chambers, enteral feeding devices, haemodialysis equipment, inflatable splints, lab equipment, medical gloves, packaging, patient ID bracelets, respiratory therapy products, stationery supplies, tubing and thermal blankets.[8] When PVC is incorrectly incinerated, as discussed in Chapter Five, dioxin is created. This is a carcinogenic substance that also has severe developmental impacts on foetal growth and can lead to male and female reproductive dysfunction. Plasticisers, or phthalates, are added to PVC to make it softer and are thus used in products such as IV bags, storage bags and tubing. Phthalates are released into the environment during the manufacturing process, but also can leach out of the plastic when in contact with liquids such as blood and certain fat-emulsion products. Phthalates are a potential human carcinogen, are harmful to the liver and are a suspected endocrine disruptor in humans and animals. Mercury is found in dental amalgams, oesophageal dilators, thermometers, sphygmomanometers, the chemicals used in laboratories for histology fixatives and stains, in some antiseptics and preservatives, batteries, some bleaches and soaps, and fluorescent lights. All London acute hospitals have about 726kg of mercury – the equivalent of 2073 cans of cola. Based on just the amount of mercury in clinical thermometers and sphygmomanometers, we established that there was approximately 18kg of mercury in one London hospital, which is the equivalent of 53 cans of cola. Mercury is a persistent neurotoxin that attacks the body's central nervous system, can harm the brain, kidneys and lungs, and can damage a developing foetus.[9] There are often alternatives to equipment made with PVC, phthalates or mercury that claim to be environmentally sensitive and less harmful to health, but until now, trusts have not applied their environmental policies (where they exist) to procurement strategy.

The current picture

By measuring the amount of mercury in clinical thermometers and sphygmomanometers, there was approximately 18kg of mercury in one London hospital, which is the equivalent of 53 cans of cola.

Government approach

The Government's 1999 White Paper *A Better Quality of Life* suggests that sustainable development means 'developing our economic and social capital while exercising sound stewardship over our environmental capital'.[10] This means supporting economic growth while tackling social exclusion, poverty and unemployment, and doing both without undermining our natural resource base.

Building strong local economies and communities is an important part of the Government's sustainable development strategy. Similarly, as part of its strategy for tackling poverty and social exclusion, the Government has stressed the importance of building local economies through regeneration and neighbourhood

The Department of Health specifically recommends that 'NHS procurement of goods and services helps, wherever possible, to stimulate local economies and enhance the employability of vulnerable groups, especially in disadvantaged areas'.

renewal. Both these strategies suggest that local partnerships providing capital investment and skills training can help to develop local enterprise and employment and to build a more robust social and material infrastructure. The Department of Health's consultation paper *Tackling Health Inequalities* suggests that the NHS can help to tackle inequalities and address regeneration through 'its investment in staff and capital, the purchase of services, and the development and regeneration of local economies'. It specifically recommends that 'NHS procurement of goods and services helps, wherever possible, to stimulate local economies and enhance the employability of vulnerable groups, especially in disadvantaged areas'.[11]

Since 1990 the Government has committed itself to improving the environmental performance of its departments and estate. *A Better Quality of Life* recommends creating a Cabinet committee on the environment and the appointment of Green Ministers responsible for integrating environmental issues into their policies and operations. As part of the Greening Government campaign,[12] there are now targets for the Government estate ranging from exploiting renewable energy and reducing water consumption to using timber from sustainable forests. The Office of Government Commerce, set up in 2000 to develop good procurement practice across central government, will be reporting in summer 2002 on how Government procurement can support sustainable development. The *New Environmental Strategy for the Health Service* recommends that every trust should have a sustainable procurement strategy by 2002.[13]

PASA was set up in April 2000 as an executive agency of the Department of Health. It is an advisory body offering expertise on purchasing and the strategic direction of procurement. It also has the lead responsibility for modernising the purchasing and supply activities of the NHS in England, and uses the aggregated buying power of the NHS to yield greater savings than are possible with local or multi-trust consortia contracts. In 1999, following a Cabinet Office review of NHS procurement, the Department of Health required NHS trusts to produce a supply strategy and implementation plan.[14] This allows trusts to begin including social and environmental criteria in their procurement strategies.

Although health policy makers are aware of the links between health inequality and employment, and between the environment and 'green purchasing', it is less certain how these links can be made operational. Purchasing decisions by the public sector are governed by European Commission procurement directives and the UK regulations that implement them. As a public sector organisation, the NHS must comply with these directives.

Under EC public procurement directives, public sector procurement decisions must be guided by the following principles:

- Fair and open competition. The procurement process cannot discriminate on the grounds of nationality or restrict the free movement of goods or services, regardless of contract value. Any contract for supplies and services over £100,400, or for building works over £3,860,000, must be advertised in the *Official Journal of the European Communities* (OJEC). Open competition must still be demonstrated for contracts below these thresholds.[15]

- Propriety and regularity. Firms invited to submit a tender are required to provide information about their financial standing, technical capacity and

ability to undertake a specified contract. They need to demonstrate that their business is a legal entity and that it is indemnified against liability for loss of, or damage to, property or persons.

- Value for money. The lowest price option is not necessarily 'best value for money', as it may not be competitive on quality or whole-life costing criteria. Procurement policy guidelines define value for money as 'the optimum combination of whole-life costs and quality (or fitness for purpose) to meet the user's requirement'. Whole-life costs assess the value for money of a product on the basis of its price and its running and disposal costs. 'Quality' enables the buyer to specify what they need to meet their own operational and policy objectives while meeting government objectives too.[16]

Treasury guidance specifically states: 'It would not be consistent with value for money policy for purchasing power to be used to pursue other aims.'[17] This implies that a public body cannot use procurement policy to meet social, economic or environmental objectives. It is this guidance that has led to confusion over how procurement policy could fit in with local preference or environmental policies in local authorities and NHS trusts.

Our research suggests that many public sector procurement professionals believe that public procurement cannot be used to meet social objectives. However, some local authorities do in practice use public procurement to meet their local skills and training needs. The Byatt report[18] on local government procurement policies in England recognises that local government's responsibilities to local communities included promoting local economic development. It agrees that local businesses should be able to compete for work alongside external contractors, and that local authorities should encourage and support them in doing so. However, the report emphasises that using the procurement process to support policies that are not directly related to the goods, works or services being purchased could be defined as restricting fair and open competition.[19]

In Europe it is becoming common for the public sector to require contractors tendering for projects (usually in construction) to meet social or economic objectives, in cases where the public sector itself has a duty to meet such objectives. European legislation permits this as long as a contract does not favour local contractors, but instead ensures that any potential contractor considers how to meet explicit social or economic requirements. A recent communication of the European Commission[20] suggests that as long as a public body allows fair and open competition, it can define in the contract specifications what it considers as corresponding best to its social concerns. So a public contracting authority can insert a clause imposing, for example, an obligation to recruit unemployed people or to set up training programmes. In practice, some UK local authorities include such clauses in their contracts because they have a remit to promote well-being in their area. Since health trusts can make a similar case about the social impact of their purchasing decisions, they too may be able to include social and economic clauses in their contracts, though this remains unclear.

Procurement policy guidelines define value for money as 'the optimum combination of whole-life costs and quality (or fitness for purpose) to meet the user's requirement'.

Treasury guidance similarly suggests that it is possible for a public body to support its environmental policies through its procurement strategy.[21] The guidance reinforces the principle that a public body cannot use a contractor's position on environmental issues to inform its selection of tenders, and that it cannot use its purchasing power to pursue wider environmental ends outside the

scope of a contract. However, whole-life costing and quality are completely in keeping with procurement guidance and support the Government's environmental policy. For example, whole-life costing should favour products that are more energy efficient (thus resulting in lower energy bills) or are easier to reuse or recycle (thus reducing disposal costs), and may therefore be shown to offer better value than equivalent products with lower purchase prices. The Treasury guidance also suggests that contract specifications can use environmental criteria. For example, a contract can specify that a product should not release ozone-depleting gases, or that it should contain recycled materials or be recyclable. The public body cannot restrict its selection of tenders to providers who offer this, but among the tenders submitted it can select the best value supplier of the specified product. This is subject to the general rule that contract specifications should not discriminate against products or providers from other EU member states.

The UK Treasury guidance, together with the experiences of English local authorities and European public bodies, is relevant to the health sector's efforts to bring its procurement policy into line with wider Government policy on sustainable development and social exclusion, as well as with moves to reduce health inequality. So as long as the procurement process complies with EC and government rules, it seems possible that an NHS trust can, as part of a contract's specifications, define its social concerns and its environmental needs.

Opening up the health market

Local firms and innovative companies supplying environmental products face similar problems in trying to gain access to the health care market. Smaller suppliers can have difficulty in locating information about public sector contracts: they may not have the capacity to search OJEC online for large contracts, and they may be unable to find details of smaller contracts below the OJEC thresholds. The Byatt report notes that many suppliers believe the public sector buys on lowest price rather than value for money, and hence they might be discouraged from bidding for contracts.[22]

Small firms can find the process of tendering and providing detailed information about their market, finances and operation too costly and time consuming, especially if they feel they have little chance of winning a contract against larger competitors. Lack of communication during the tender process and lack of feedback afterwards can also be discouraging.

The Byatt report notes that local government suppliers and procurement officers both felt that European public procurement regulations were excessively detailed, prescriptive and time consuming, hampered good procurement and did not always achieve open competition.

Small suppliers may believe that the public sector buys on lowest price rather than value for money, and may find the process of tendering too costly.

PASA is investigating how to make the health market more attractive to innovative suppliers and how to reduce the barriers to entry for small, local companies. In 1999 it published a strategy for improving relations and communications with suppliers, which it updated in 2000.[23] This recognises that PASA needs to adopt a more proactive policy for dealing with small- and medium-sized enterprises. Since then, PASA has produced a guide for suppliers wishing to sell to the NHS, which describes current purchasing and logistic contracts, gives contact details for all English trusts, and provides detailed information on NHS quality standards, public procurement procedures and pricing and market structure. It offers opportunities

Procurement from local or social firms can contribute to building a healthy local economy and creating healthy communities.

for suppliers to demonstrate products, for customers to use products on a trial basis, and for PASA employees to attend trade association events. PASA offers feedback if a supplier is unsuccessful in bidding for a national contract, so that the supplier is better placed to reapply for future contracts. The NHS is also required to meet public sector targets for paying suppliers within 30 days of delivery or date of invoice.

PASA is also considering new guidance from the Office of Government Commerce (OGC), which looks at ways of making the Government market place more attractive to a wider range of suppliers so that the public sector can meet its 'best value for money' criterion. The *Supplier Financial Appraisal Guidance*[24] was published in October 2001 with the aim of making contractual requirements for suppliers less onerous: it advocates a more flexible approach to the provision of information by suppliers, and states that small- and medium-sized enterprises should not be inadvertently disadvantaged by such requirements for information. It suggests that suppliers should be asked to provide accounts only for the previous two years of trading, rather than the commonly requested three, and that, in the absence of audited statements, other information should be requested that is sufficient for assessment purposes. PASA's Supplier Information Database, which is still under development but will be completed during 2002, will allow suppliers to register once and thus avoid the time-consuming and costly process of repeatedly supplying pre-qualification information to different trusts. This will improve access to the health market place.

The OGC guidance also states that the assessment of risk should be based on business judgement rather than on mechanistic financial formulae, and recommends that financial liability for a contractor's failure to deliver what is required should be assessed on an individual basis. This could enable companies winning small contracts to take out a lower level of insurance than would be needed for larger contracts. So far, PASA has decided not to adopt this approach because of the difficulties of risk assessment, though easing the contractual requirements could help to open up the health care market to small businesses.

Local procurement preference policy

Linking procurement strategy to NHS social and environmental objectives is still relatively unchartered territory. A few trusts are exploring the potential of local sourcing, but they are in the minority. An analysis of the supply strategies of 60 London trusts in August 2001 revealed that only five explicitly mentioned a desire to encourage local suppliers where they represent best value. Evaluation of 24 action plans available in January 2002 found that most trusts were working towards cost reductions by rationalising the number of suppliers and minimising low-value orders, a move which might well favour large national suppliers. Just two trusts mentioned their support for local purchasing.

The trusts supporting local procurement believed it would comply with the 'best value' procurement principle. For example, one mentioned that its 'objective is to develop relationships with local businesses, exploring the potential for the supply of goods and services where it is proven that this represents good value'. Another said that its board was supportive of local suppliers as long as the probity and value for money conditions were met. Other trusts seem to recognise that they might reap a health dividend by supporting the local economy. For example, one London trust's board maintains that the trust has a role to play in regeneration,

and that a healthy local economy contributes to creating a healthy community. Its supply strategy and implementation plan states that it will encourage the use of all suppliers, including local ones. Local purchasing is one of 22 indicators that it suggests will open procurement opportunities up to competition. The procurement team has analysed which services are most appropriately supplied locally, such as transport and funeral services, clinical and domestic waste disposal, and security.

The potential for local procurement to satisfy a range of social objectives is demonstrated by a social enterprise called the First Step Trust, based in London, the Midlands and the north west of England. Social enterprises and social firms provide work for people who are disadvantaged in the labour market, and offer training and employment in a supportive workplace environment. They can attract funding from regeneration agencies and the European Social Fund, yet they have to compete in the market place like any other firm and be financially viable.[25] The First Step Trust is run by people who have a mental illness or learning disability, who have drug or alcohol recovery problems, or who are ex-offenders. They often find it difficult to enter the job market, as they may be unable to show a stable or recent employment record. The firm offers a supportive environment to its employees, but also competes successfully for local authority contracts such as painting and decorating, catering for events and meetings, and grounds maintenance. It is able to demonstrate reduced rates of reoffending and of admissions to hospital. People who are employed enjoy better health than those who are not. By seeking out social enterprises, supporting their development and informing them about the health care market, trusts may be able to satisfy their local procurement objectives and at the same time reduce ill health and demands on the health service.

Trusts wanting to encourage local suppliers to enter the health care market must sometimes make a concerted effort to reach potential suppliers and make them aware of the opportunities. One trust will use local suppliers if they are listed in the national framework contracts, but will also seek them out in the Yellow Pages and the local Thomson directory and ring them up to encourage them to submit a bid. Another trust had first to discover how its local suppliers were organised before it could reach them. The trust had recently retendered a contract for taxi services. It advertised in the *OJEC*, but received only two responses. It wanted at least six tenders and so advertised locally – but this time it got no responses, and neither did a further advertisement in the *Government Opportunities* magazine. The procurement officer then tried the taxi trade journals. An advertisement in the *Private Hire and Courier* journal received enquiries from ten companies, mostly local. Some of the companies did not have the administrative backup necessary to put in a formal tender application, but the procurement officer was finally able to evaluate half a dozen applications.

Making the NHS market place more transparent and accessible is a significant first step to lowering entry barriers for local firms. Other agencies can also encourage this process: for example, the London Development Agency and London Business Link help to develop businesses so that they can support the regional economy. They are interested in supporting businesses wanting to enter the health service market. At a local level, enterprise agencies support small firms so that they can compete for business from large institutions such as the NHS. Trusts can also approach these agencies to help them identify local suppliers.

Making the NHS market place more transparent and accessible is a significant first step to lowering entry barriers for local firms.

Developing local markets for the NHS is still a relatively untried strategy, which may well be undermined by wider trends in health service purchasing strategies.

PASA has a target of increasing its share of the total procurement expenditure of trusts from 20 per cent in 2001 to 35 per cent by 2005. This may encourage centralisation and a preference for national over local contracts. A drive towards efficiency and best value in purchasing is encouraging a shift towards fewer suppliers and larger, longer-term contracts within the NHS. PASA is encouraging trusts to form collaborative purchasing consortia to enhance their buying power and negotiating muscle, and trusts themselves are reducing the number of suppliers. This may squeeze out small suppliers and low-value contracts, thus undermining the policies of individual trusts to consider local suppliers where possible. However, it may equally well encourage environmentally preferable purchasing, as PASA has the power to persuade large suppliers to be more environmentally responsible and to develop environmentally sensitive products. Trusts can rely on PASA to filter national contracts through environmental criteria.

Environmentally preferable procurement

PASA is tackling environmental issues in two ways. Firstly, as part of the 'Greening of the NHS programme, it assessed its own operations, developed an environmental policy and was certified to ISO 14001 (an internationally accredited environmental management tool) in June 2000. It has since published its first corporate report describing its progress on environmental issues.[26] Secondly, as part of its environmental management strategy, PASA is assessing the environmental impact of its purchasing practices. It is hoping to create a register of environmentally preferable products or services, which it defines as 'those that are less harmful to human health and the environment when compared with competing products that serve the same purpose'. PASA has set up three working groups to look at the role, knowledge and needs of three groups in the health service supply chain – PASA buyers, NHS suppliers and NHS purchasing professionals and users – so that they can be helped to improve their environmental procurement performance. It also surveyed each group in 2001.

The survey of PASA buyers – the employees who evaluate tenders – found that 56 per cent were unaware of environmental issues and 40 per cent did not know whether products contained controversial substances.[27] PASA is committed to extending the use of whole-life costing in the evaluation of tenders. The survey showed that some buyers considered running costs as well as price, but only infrequently were disposal, recycling, refurbishment, administrative and other indirect costs taken into account. Indirect costs were rarely considered because capital purchase budgets were held separately from maintenance budgets, so there was little incentive to assess, for example, the cost of energy consumption of one item compared with that of another.[28] PASA is also committed to incorporating environmental clauses into all tender specifications. It plans to introduce whole-life costing for large equipment, though not for fast-moving consumer goods. It will ask manufacturers to submit details of the purchase price, running costs, training costs and disposal costs of their products in their tender applications.

PASA's survey of suppliers had a 60 per cent response rate. It found that 86 per cent of top management placed some importance on their organisation's environmental performance, but that only 11 per cent were ISO 14001/EMAS certified and that just nine per cent had published an environmental report. Sixty-four per cent did not make any environmental claims about their products, and among those that did, only three per cent complied with recognised standards. Eighteen per cent made no effort to reduce the quantity of packaging applied to

Many procurement officers believed that environmentally sensitive procurement was likely to be more expensive, but Lewisham found that it was cost neutral or offered savings.

products supplied to the health service.[29] This is similar to the findings of a study of 12 international medical instrument manufacturers, which showed that they paid little attention to environmental issues and focused only on the safety and performance of their products.[30] PASA intends to enter into dialogue with strategically significant suppliers to persuade them to improve their environmental performance and so reduce their own costs and the costs to the NHS.

The survey of NHS trusts was still in progress at the time of writing. Initial perusal of replies suggested that trusts were willing to include environmental criteria in their procurement policies, but needed resources and training to enable them to do this. Some trusts assumed that national contracts were already filtered according to environmental specifications. Interviews with London trusts also found that few had introduced environmental criteria for purchasing, and many had no plans to do so. Most of the acute, mental health, community health and primary care trusts interviewed did not include environmental criteria in purchasing, and the purchasing officer was not necessarily aware if the trust had an environmental policy. Procurement officers had not received training in environmental policy and green purchasing. Although they were willing to consider environmental factors, their purchasing criteria were led by clinical effectiveness, quality, price and value for money.

St George's, Newham and Lewisham Hospital Trusts are beginning to introduce environmental criteria into purchasing. Lewisham's Supplies Services Manager explained: 'The trust has an environmental policy and now expects contractors to abide by it. We ask contractors for a copy of their own policies and ask if they are working to an environmental management system accreditation, but we can't exclude a supplier on the basis of their environmental performance because EU law does not allow it.'[31] This manager had just audited tender applications for a pest control contract, which could affect the local environment and human health. The trust had asked potential contractors for details of their environmental policies, which was relevant to the service being purchased and for assessing whether the contractor could comply with the trust's environmental policy, as well as with the usual requirements concerning quality, price and references.

Many procurement officers believed that environmentally sensitive procurement was likely to be more expensive, but Lewisham found that it was cost neutral or offered savings. Recycled photocopier paper, for example, was more expensive than ordinary paper, but the next best environmental option – paper made from accredited sustainable forests – was cost neutral. The trust now also bought recycled toner cartridges for its printers and photocopiers, and sent the used cartridges back to the manufacturer for recycling. It spent about £20,000 a year on toner cartridges, but using recycled ones offered a saving of £6000.

Lewisham has also used its procurement strategy to create a safer and healthier working environment. In 1999 the trust decided to remove mercury thermometers and sphygmomanometers from its wards. It felt that the dangers of spillage to ward and maintenance staff were too great and that spillage kits were too expensive. The trust began by replacing equipment sent for repair with a non-mercury equivalent. This was followed by a general mercury amnesty to persuade employees to hand in the remaining equipment. The process of clearing the hospital took about 18 months. The trust has no record of how much mercury it carried, but it may have been as much as 18kg.[32] Acute trusts in London may carry as much as 726kg.[33]

Trusts wanting to introduce environmental criteria to procurement felt they had to rely on PASA to filter products and put pressure on suppliers. They are a ready audience for the environmentally preferable products and service contracts already negotiated by PASA, which include the following:

- Recycling and reuse of prosthetic limbs, the reconditioning and reuse of wheelchairs and of hearing aids. These contracts, PASA suggests, allow savings in the use of natural resources, support government guidelines on waste management – which give preference to reuse and recycling over disposal – and may offer considerable price savings. Reconditioned wheelchairs, for example, are half the price of a new model.[34]

- Disposal and recycling of special and hazardous waste. Used engine oil is collected by one supplier at no extra cost, and then re-refined, recycled and sold on again. Several tyre suppliers will, for a payment, dispose of used tyres, either for regrooving and reuse or for shredding and inclusion in tarmac mixture (a response to the EC Landfill Directive that will ban the disposal of tyres to landfill in the near future). Some suppliers of computer equipment collect used toner cartridges for free; others offer a rebate system and then recycle them.[35]

- 'Green' electricity. The Cabinet Committee on the Environment has set a target of 5 per cent of electricity claimed from renewable sources by March 2003, rising to 10 per cent by March 2008. In January 2002, PASA negotiated a new contract that will supply 20 per cent of electricity to the NHS from renewable sources without a price premium. Guy's and St Thomas's Hospital Trust and Camden and Islington Community and Mental Health Trust have already decided to take up the contract.[36] PASA itself will source 100 per cent of electricity from renewable sources.

Possible future directions

The review of NHS procurement strategy suggests that PASA is introducing policy and practices to support contracts with small and medium sized businesses, and for goods and services that are preferable in environmental terms. However, trust procurement activity in London suggests that few are yet developing opportunities for buying locally and buying green. Real and imagined barriers exist, but can be overcome. To encourage a move towards purchasing policies that support health improvement and sustainable development, we make the following recommendations:

- Government should explicitly recognise that public procurement has a role to play in meeting social, economic and environmental objectives, especially those related to health improvement and sustainable development.
- Trusts need to make explicit the role that procurement can play in supporting the local economy, promoting sustainable development and enabling health improvement. Procurement should become part of a trust's corporate strategy.
- Procurement officers should explore the opportunities for increasing their use of local suppliers within the provisions of the EC rules and domestic policy and regulations.
- Trusts should develop environmental policies approved at board level and apply them throughout the organisation, including to procurement. They can

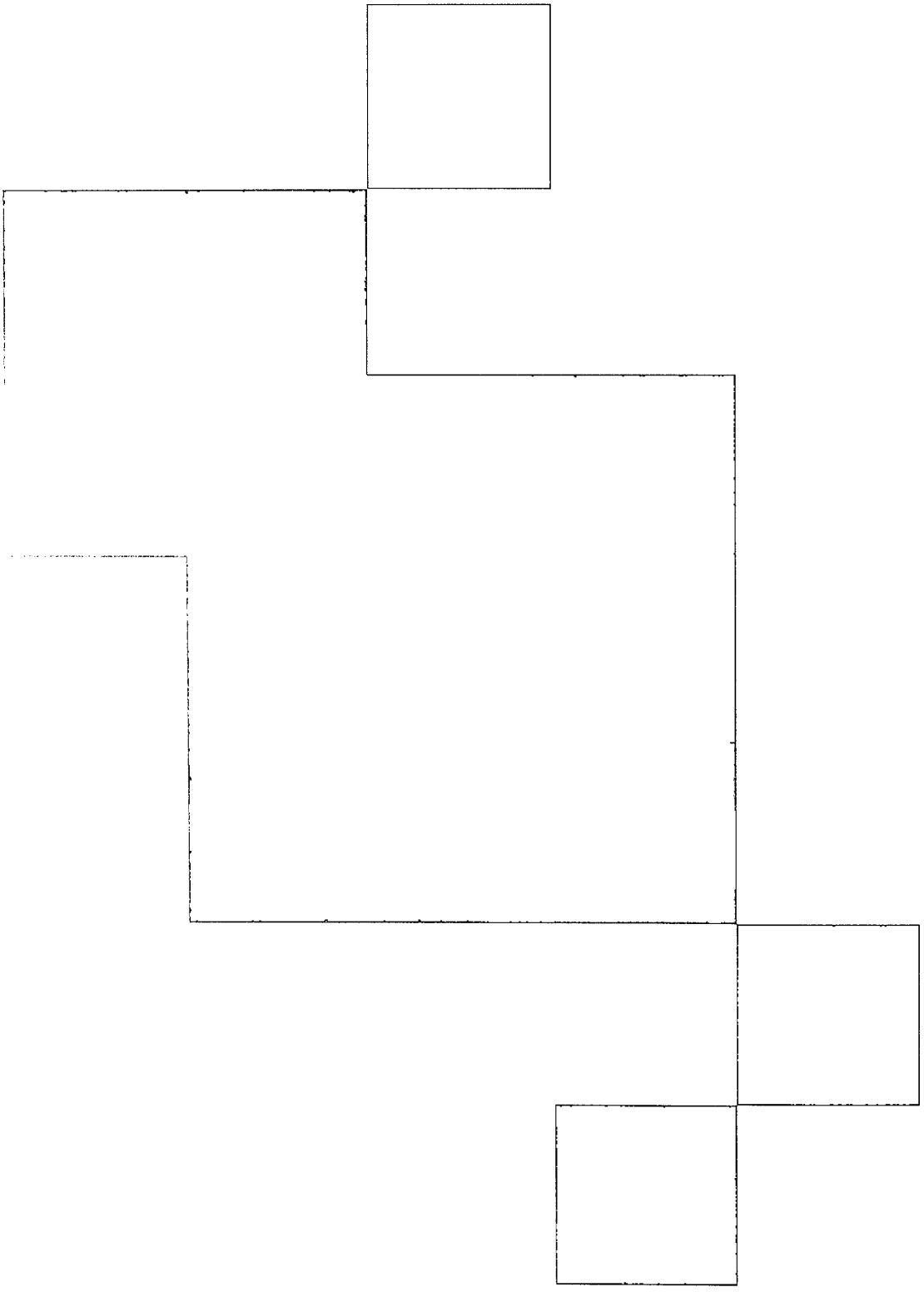
Used engine oil is collected by one supplier at no extra cost, and then re-refined, recycled and sold on again.

As an organisation, the NHS can make choices about how and what it purchases to influence the health of individuals and communities.

then devise an environmental purchasing policy reflecting their organisation's strategic aims and incorporating specific environmental and sustainable development aims.

- Trusts can improve their environmental performance through their purchasing practice, by shifting from purchase price to whole-life cost assessment when evaluating tenders.
- PASA should work with the Office of Government Commerce to develop ways of creating an attractive environment for small firms.
- Procurement officers should identify the barriers that might make it difficult for local businesses – which are usually small businesses – to bid for contracts. For example, trusts should examine their contractual procedures to establish which financial requirements are really necessary.
- Procurement officers should consider how they might encourage local suppliers to bid for contracts: for example, by researching the local market and arranging meetings between firms and buyers.
- Local Business Links should help local companies to overcome the barriers to entering the health service market. The social enterprise support sector should perform the same role for social enterprises and social firms. The support could include: workshops on preparing effective bids; encouraging working relationships between suppliers, such as supplier consortia; and acting as a central co-ordinating point for local public sector contracts.
- Trusts should consider using their purchasing power to require contractors to employ a certain proportion of local labour or a certain number of unemployed people. PASA should also explore this possibility within national contracts.
- Procurement officers should receive training in environmental purchasing, so that they understand the strategic importance of their role and have the skills to word tender specifications appropriately. Secondments to settings such as local government or utilities would enable them to share knowledge acquired in other sectors.

It is evident that the procurement strategy of the NHS can have an impact on the health of individuals and communities, whether through stimulation of the local economy and job markets, or through the environmental impact of the goods and services used in the health care environment. One of the founding principles of the health service is to improve the nation's health. This is often interpreted in a clinical sense – as more medicines, more operations and more screenings – but it should also mean that, as an organisation, the NHS can make choices about how and what it purchases to influence the health of individuals and communities.



3. Buying childcare

The NHS is investing heavily in childcare to help recruit and retain its workforce. Childcare not only enables NHS employees to combine parenting and paid employment – it is also a route to better health and opportunities for children and stronger local economies.

Ailish Byrne and Teresa Edmans

Buying childcare

For the first time in its history, the NHS is making a concerted effort to provide childcare for its employees. Sarah Mullally, Chief Nursing Officer, recently pointed out that childcare is an issue for everyone in the health service. More than three quarters of NHS staff are women and two in three of them have caring responsibilities. A quarter of the health service workforce – some 250,000 employees – have dependent children.[1]

Childcare can have an important influence on the health of children and their parents, directly and indirectly. It can also play a critical role in strengthening local economies. This chapter argues that the NHS could use its power as a purchaser of childcare to improve health, to help recruit and retain employees and to contribute to economic regeneration. We look first at levels of need and investment. We then set out briefly the reasons why childcare has a role to play in health improvement and sustainable development. We next examine the barriers to effective implementation of childcare for the NHS. Finally we consider how these barriers may be overcome.

NHS childcare provision is currently undergoing significant change, with many developments in flux and in their early stages. There is limited data or documentation available. Our analysis is informed by a review of the available literature, including the 14 successful London health trust bids (2001) for funding for nursery developments on health service sites.[2]

Childcare, health and sustainability

Why childcare matters for health

There is strong evidence of the importance of preschool educational provision for the health of children and families and of the role it can play in efforts to reduce inequalities and social exclusion, which ultimately improve health.[3]

European comparisons suggest that childcare is more urgently needed in the UK than in other countries. For example, approximately 25 per cent of children in the UK live in lone-parent families compared with 13 per cent in Europe. The UK stands out for the long hours fathers work, and it has the highest levels of child poverty in Europe (26 per cent compared with an EU average of 20 per cent in 1996).[4] It also has comparatively poor provision for parental leave. As the Chair of Daycare Trust notes: 'It's time to move childcare on from being seen as a welfare-to-work issue to one that is about those who can benefit most – children.'[5] Aside from the benefits to the well-being of children, there are also wider health benefits. Childcare can help relieve anxiety and stress for parents and carers, and can make it possible to combine caring responsibilities with paid employment.[6] Emotional and economic security are acknowledged determinants of health.

More than three quarters of NHS staff are women and two in three of them have caring responsibilities. A quarter of the health service workforce – 250,000 employees – have dependent children.

A bid for childcare funds from a central London hospital trust points out that childcare would not only save money but would also enhance clinical benefit through ensuring greater continuity of experience and care.[7] Continuing staff

The Department of Health has acknowledged that the NHS, as a major employer, should be at the forefront of national developments to improve the quality, affordability and accessibility of childcare.

shortages and high staff-turnover rates in the NHS have a significant negative impact on employee morale and organisational cultures.

Why NHS childcare matters to local economic sustainability

Childcare can play a pivotal role in regeneration. It can help to develop the health, well-being and employability of the next generation. It is a major source of employment and makes it possible for parents to undertake training and paid work. In disadvantaged neighbourhoods, where a high proportion of families are headed by lone parents, and where traditional patterns of employment are declining or lost, childcare provides an essential foundation for sustained economic and social renewal. It follows that, to be effective, childcare must be sustainable.

The NHS is not just a provider of health services; it is also a large functioning business in its own right, with significant potential to enhance local economies. London consumes one fifth of the total health service budget, approximately £7 billion. The NHS employs over 140,000 people in the capital, some 5.5 per cent of the total London workforce.[8] The Department of Health has acknowledged that the NHS, as a major employer, should be at the forefront of national developments to improve the quality, affordability and accessibility of childcare.[9] There is already a wealth of experience in the field – in local voluntary sector organisations, community groups and childcare networks. Local people, women in particular, fill most of the childcare jobs, and it is important to consider how the health service could collaborate with existing as well as potential providers for mutual benefit.

Regeneration funding targets the most deprived areas in the UK. In an effort to 'join up' policy, the new NHS childcare initiatives are being piloted, mainly in areas in receipt of significant regeneration funding, creating opportunities to tie the childcare schemes to broader area-based initiatives. These include Sure Start, New Deal for Communities (NDC) and Single Regeneration Budget (SRB) programmes, all of which are time limited for up to ten years. They are all expected to tackle deprivation and promote social inclusion by influencing the way local services are provided and the allocation of local public sector budgets.

Numerous regeneration initiatives, including those mentioned above, have childcare as a major component of their programmes and could constitute valuable partners for the NHS. More than 55 possible funding streams incorporate childcare development within them, including the Neighbourhood Nurseries Initiative (£203 million), the New Opportunities Fund childcare programme (£400 million) and Sure Start (£1 million capital money per programme).

The NHS could add value to its childcare provision by strengthening links with local childcare initiatives, which potentially could both increase the number of places available and extend the range of provision. In return, the health service could offer more secure funding and, possibly, premises to local childcare providers, thereby helping them to develop childcare provision that better meets local needs and at the same time increasing local job opportunities.

Childcare is now the second fastest growing area of employment in the UK. Employment within childcare can be attractive for reasons of location – for example, childminding in one's own home – because it offers flexible hours and part-time possibilities and because it often meets the staff's own childcare needs. Furthermore, training and qualifications can often be gained on the job.

Significance of childcare for staff recruitment and retention

NHS staffing shortfalls are estimated at between 8000 and 22,000 nurse vacancies nationally, combined with severe and worsening recruitment and retention problems among GPs and other professionals. In inner city hospitals, staff turnover rates are up to 40 per cent, and it is anticipated that the rate of retirement among nurses will have almost doubled between the late 1990s and 2005.[10]

The gender profile of the health workforce intensifies childcare needs. More than four in five nursing employees and half of all medical students are women. The proportion of newly qualified GPs who are women has increased from 39 per cent in 1981 to more than 55 per cent today. According to a recent BMA survey, more than three quarters of GPs in the UK in their 20s and early 30s are women. The survey also indicates that the number of GPs could be increased significantly if childcare in the health service improved.[11] A recent King's Fund report warned against the dangers of relying on staff loyalty as a substitute for improving the working lives of nurses,[12] and a number of smaller-scale studies confirm this.[13] There is well-documented evidence of the importance of childcare to NHS employees.[14]

The cost to the NHS of failing to recruit and retain employees is enormous. It spends approximately £2 billion a year on training health care professionals and approximately £2 billion on agency staff. A one per cent reduction in nursing turnover could save the health service over £15 million a year. Each time a nurse leaves a job, the replacement costs the NHS £5000. The NHS increasingly has to compete for its workforce: around 136,000 nurses now work in the private sector, where many employers are developing family-friendly working arrangements. Inadequate childcare provision increases rates of staff absence. It is estimated that a one per cent reduction in sick leave could save the health service £140 million a year.[15] Childcare provision outside the health sector is generally scarce, intolerant of NHS shifts, unaffordable and otherwise inaccessible to health service employees.

Childcare provision is more than a technical and managerial issue for the NHS. It raises crucial questions about how different components of life are valued and the quality of working conditions.[16] Health Secretary Alan Milburn has declared the importance of developing the health service as a values based system.[17] *Improving Working Lives* (IWL), a Government strategy, launched in October 2000, sets out a model of good practice against which all health service employers will be measured. 'A clear, open commitment to making the NHS a better place to work', it says, 'will enable organisations to think through the values and characteristics they want to promote.'[18] The aim is to make the NHS more attractive to employees.

A one per cent reduction in nursing turnover could save the health service over £15 million a year. Each time a nurse leaves a job, the replacement costs the NHS £5000.

The current picture

Government approach

Regeneration and renewal, along with the modernisation of the health service and local government, are cornerstones of Government policy to tackle deprivation and promote social inclusion. Regeneration is about developing the social and physical environment, encouraging locally based enterprise, improving public services and building the skills and employability of local people.

Recent Government initiatives reflect an increased commitment to wider anti-poverty and health improvement initiatives, of which childcare often forms a part. For example, childcare is central to the Sure Start programmes that are a key part of the Government's strategy to end child poverty by 2020. Sure Start aims to transform the life chances of younger children and acknowledges that 'all children, no matter what their background, deserve the highest quality childcare'.[19] The rationale underlying the programme is 'evidence that early, comprehensive and sustained support for children can help them succeed at school and help reduce crime, unemployment and teenage pregnancy and other social and economic problems.'[20]

NHS investment in childcare

For the first time within the NHS, a strategy has been developed which aims to provide one million new childcare places for employees by 2004. National criteria have been established to aid funding allocations, and health trusts have been invited to bid for earmarked funding to extend on-site nursery facilities through the regional offices. The Government has committed £77 million in the first year (2001–2) for 150 on-site/workplace nurseries, providing capital funding to extend existing services (up to £300,000 for 50 new subsidised places) or to build new facilities. Childcare subsidies are also available, averaging £30 per place per week.[21] Additional investment is likely to extend the range and scope of the NHS Childcare Strategy. This is consistent with the Department of Health's IWL strategy, which has stressed the need for 'more flexibility and more supportive, family friendly working and training practices.'[22]

It is also consistent with a broader national trend that has seen childcare accorded greater official recognition and elevated in priority across sectors.[23] The National Childcare Strategy[24] and the first ever National Childcare Month in June 2002 are illustrations of this trend. The National Childcare Strategy has been described as providing 'an opportunity to grow a new and dynamic industry which can meet the needs of working parents but which can also provide employment and socially responsible business opportunities'.[25] In 2001 there was a threefold increase in government spending on childcare.[26]

Labour promised in its 2001 election manifesto that during the current Parliament every NHS employer would offer 'more flexible working hours for staff and especially nurses', childcare provision would be improved and targeted subsidies for childcare would be offered to health service employees.[27] A childcare toolkit for the NHS was published in June 2001.[28] Health trusts are expected to provide employees who need it with access to a childcare co-ordinator by April 2003.[29]

The National Childcare Strategy has been described as providing 'an opportunity to grow a new and dynamic industry which can meet the needs of working parents but which can also provide employment and socially responsible business opportunities'.

Local developments

Our research suggests that people at various levels within individual trusts are beginning to take the need for childcare seriously. A south London mental health trust admits in its bid for childcare funds that if it 'does not look towards providing a workplace nursery it may well place itself outside of the employment market'.[30] A west London hospital trust refers to senior-level discussions about changing shift patterns to accommodate staff childcare needs.[31]

Developments include the extension of existing facilities, setting up multi-purpose childcare centres, improved provision for babies and younger children, and

St Bartholomew's and The London Hospital Trust currently offers 50 childcare places, and a further 53 are being made available. However, two in three of its workforce are women, including 2371 aged 20–40 years, and approximately 200 women apply for maternity leave every year.

increased holiday play scheme and emergency cover places. The criteria for the funding of nurseries in the health service identify the elements that should be developed, including the extension of opening hours. Childcare co-ordinators either have been or are being appointed. The wide remit of the co-ordinators includes informing parents about local childcare provision and funding options, as well as working at a more strategic level.

Areas of difficulty

Notwithstanding the importance of these ventures, there are considerable difficulties associated with providing childcare in ways that also strengthen local economies.

Volume of demand

There is a huge demand for childcare, which the funding so far pledged cannot easily meet. Most existing provision is heavily oversubscribed, with long waiting lists,[32] as is childcare provision outside the NHS. Places for infants under 24 months are particularly scarce, making it difficult for women to return from maternity leave. Of those who do return, many do so part time, often for childcare reasons.

At present, evening and weekend provision is only patchy, and holiday play schemes, where they exist, are vastly oversubscribed. Emergency childcare is rare at best, despite considerable demand. In addition, trusts are worried about meeting the added demand for childcare arising when NHS services are relocated because of closures and redevelopments, which in some instances is already significant.[33] New residential developments are also increasing general demand for childcare in areas like Newham. Childcare provided outside the NHS remains largely inaccessible to health service employees because of the high level of demand and prohibitive costs.[34]

The gap between demand and supply is such that the scale of the changes necessary can hardly be overstated. The figures speak for themselves. For example, St Bartholomew's and The London Hospital Trust currently offers 50 childcare places, and a further 53 are being made available. However, two in three of its workforce are women, including 2371 aged 20-40 years, and approximately 200 women apply for maternity leave every year. Lewisham NHS Trust currently offers 50 places and is developing another, but these cater for only 2 per cent of its workforce. Bromley Hospitals note that demand for childcare outstrips supply approximately tenfold. These examples are typical of the wider picture.

Complex needs of the NHS workforce

Patterns of work within the NHS mean that childcare needs are especially complex. Opening hours need to fit in with shift patterns and provide weekend and (more) holiday play scheme places and emergency cover. Moreover, among such a large and diverse workforce, it is inevitable that childcare needs and preferences will vary considerably. The Department of Health acknowledges the need to respect the right of individuals to make choices about their own work-life balance by developing appropriate working and training patterns to help employees manage their personal and professional lives.[35] Many health trusts are spread over several sites, making the provision of childcare even more complex.

Shortage of childcare workers

In spite of the speed at which the childcare sector is growing in the UK, little thought appears to have been given to where its workforce will come from. For the Government to meet its target of a million new childcare places by 2004, up to 300,000 more qualified childcare workers will be needed over the next four years.[36] Poor pay, conditions and career prospects can make childcare an unattractive career option. Recruitment and retention problems are already more serious for childcare than for nursing or teaching. The NHS already relies too heavily on agency staff for childcare provision – a matter that it cannot afford to overlook.[37]

About 97 per cent of childcare workers are women and more than two thirds are aged under 30.[38] Average pay for childcare is £11,000 a year, and more than 80 per cent of childcare workers earn less than £13,000 – lower than the rates for gardening and cleaning.[39] The significance of these figures should not be underestimated, particularly in view of the growing demand and the need to develop a high quality and sustainable workforce.[40] Experience suggests that caution should be exercised when contracting out services, if sustainable development is to be taken seriously. According to research into low paid workers in east London, 'the process of contracting out has driven down the pay and conditions of staff providing many public services ... private contractors are able to bring in new employees on inferior terms and conditions.'[41]

High costs of childcare

There are widely shared concerns about the cost of providing childcare within the NHS. Babies and younger children demand higher staff ratios, increasing the costs of provision. It is for these age groups that there is least provision and greatest demand at present. Childcare for health service employees is often subsidised by making a proportion of places available (at a higher cost) to non-NHS families. But as demand for childcare for NHS employees grows, it is becoming harder to keep places open for non-NHS employees. This is fuelling anxiety about how trusts will maintain their current staff subsidies and, in some cases, their self-financing status.

Childcare funding options need to be reviewed to take into account the large gap between demand and supply, alongside the issues of quality, accessibility and equity. In the UK where, unlike the rest of Europe, there is a heavy preponderance of private sector providers,[42] parents typically pay 93 per cent of total costs, compared with the 25–30 per cent generally paid by parents elsewhere. Average UK childcare costs are prohibitive: in London around £120 per week for children under two, rising to £149 per week, or over £7500 per child per year.[43] This puts the average NHS childcare subsidy of £30 per child per week into perspective, and illustrates why many trusts have developed their own staff childcare subsidy schemes. However, the childcare component of the Working Families Tax Credit should help to alleviate this problem for some employees.[44]

Babies and younger children demand higher staff ratios, increasing the costs of provision. It is for these age groups that there is least provision and greatest demand at present.

Relationship with other funders and providers

There are difficult choices to be made about the location and management of childcare, and about how partnerships are negotiated (if at all) with other funding sources and with providers in the field. Should a trust go it alone, or should it form a partnership with other funded programmes trying to develop childcare? Should it

Some trusts report that they recruit employees from overseas – many of whom are unable to bring their families to the UK – partly for childcare reasons. The ethics of this practice, as well as its sustainability, are questionable.

provide childcare directly, contract the task out to another organisation, or work in partnership with existing providers in the field? Such choices may strongly influence the shape, quality and long-term survival of childcare services in an area. This in turn will affect the strength and sustainability of local economies.

The first wave of NHS childcare provision in 2001–2 focused on hospital-based nurseries, largely excluding primary care trusts. This could be seen as a missed opportunity to link up capital money (one-off spending, often to construct buildings) with other Government programmes that have funds available for childcare development.[45] Encouragingly, however, all 11 NHS childcare development bids currently in process are partnership bids.[46]

There is evidence that trusts are beginning to develop childcare partnerships with regeneration schemes, some of which are accompanied by funding. For example, a project funded through the Single Regeneration Budget in Tower Hamlets is intended to meet the needs of St Bartholomew's and the London Hospital's employees. Guy's and St Thomas's are receiving childcare staff training and support from the Early Years Development Partnership.

Inevitably, the question of childcare provision for health service employees cannot be considered in isolation from other, more fundamental changes in the sector. Trusts are in a state of flux, and may not be in the best position to take a considered, long-term view of how best to locate and manage childcare to ensure high quality, appropriate and sustainable services. The limited evidence available indicates that there is a fairly even split between the number of London trusts opting for in-house management and those opting to contract out childcare provision. The latter includes contracting out to charitable as well as private providers. Several trusts who state a preference for contracting out services say they will continue to be involved: for example, by contributing to management or providing premises. While some trusts say they prefer in-house management for reasons of cost effectiveness and quality, others justify private sector management on the grounds of affordability, flexibility, potential for emergency cover and the passing on of financial liability and risk.

Of the 14 London health trusts studied, only one mentioned in its childcare bid the promotion of local employment, through building links with the local college to develop related courses and placements.[47] Some trusts report that they recruit employees from overseas – many of whom are unable to bring their families to the UK – partly for childcare reasons.[48] The ethics of this practice, as well as its sustainability, are questionable.

Fragility of local providers

Where trusts do not enter into partnerships with local providers, there is a danger that NHS initiatives will undermine these providers, especially if they are small voluntary organisations. Many local authorities that previously gave financial support to voluntary and community groups are now advising them to develop income generation strategies – that is, to become more financially independent. The short-term nature of most of the funding currently available for childcare can make it hard for small local providers to keep going unless they team up with larger, more firmly established organisations. One way of doing this would be to provide services to NHS trusts. Procurement rules may inhibit contractual partnerships between statutory sector bodies and small local organisations,

including social firms, community businesses and social enterprises – but, as discussed in Chapter Two, these obstacles are not insuperable.

Possible future directions

The best hope lies in taking a long-term approach, focused on building sustainable local services over time, rather than succumbing to short-term crisis management. Local regeneration can be seen as critical to addressing health service staff shortages as it can help to meet childcare needs. Such an approach would require the NHS to take the following steps:

- where possible, to link up with Government-funded programmes aimed at providing childcare and strengthening local economies
- to invest in the development of appropriate skills at a local level, so that childcare workers can be 'grown' locally and, where possible, can work with local childcare providers
- to strengthen links with local skills councils and colleges, in order to train childcare workers and health service employees
- to participate substantially in Early Years Childcare Development Partnerships (EYCDPs), which are the main vehicle for local childcare partnerships and are responsible for implementing the National Childcare Strategy across the country.[49] These partnerships not only make it possible to share information, resources and experience, but also enable partners to share the potential risks, costs and benefits
- to review and renegotiate procurement rules and guidance, to remove the barriers faced by social firms and community-based enterprises that are otherwise capable of providing childcare
- to help to build the capacity and long-term viability of local childcare providers: for example, by investing in training, providing facilities, putting them in touch with EYCDPs, Business Links and other sources of information and advice, and encouraging them to spread their customer base so that they do not rely solely on contracts with one organisation
- to bring about a major cultural shift in the health service as a whole towards more family-friendly working conditions and cultures, as advocated by IWL.[50] Evolving childcare initiatives should be integral to the procurement policies and practices of trusts, as well as their strategies for recruiting and retaining staff.

Building a supportive environment

The success of the NHS in developing effective childcare will depend, to some extent, on how far it is operating within a supportive environment. The UK currently lags behind many other European countries, where childcare forms 'a key part of the economic and social infrastructure that families take for granted.'[51] Fragmented but related initiatives need to be better co-ordinated, so that the National Childcare Strategy does not risk becoming 'a collection of well meaning initiatives'.[52] There is a case for reviewing costs and charging practices,[53] as well as funding levels. In the UK, parents typically pay almost four times the costs paid

If childcare can play a pivotal role in meeting two of the Government's main objectives – local regeneration and effective health services – it should be more highly valued and better paid.

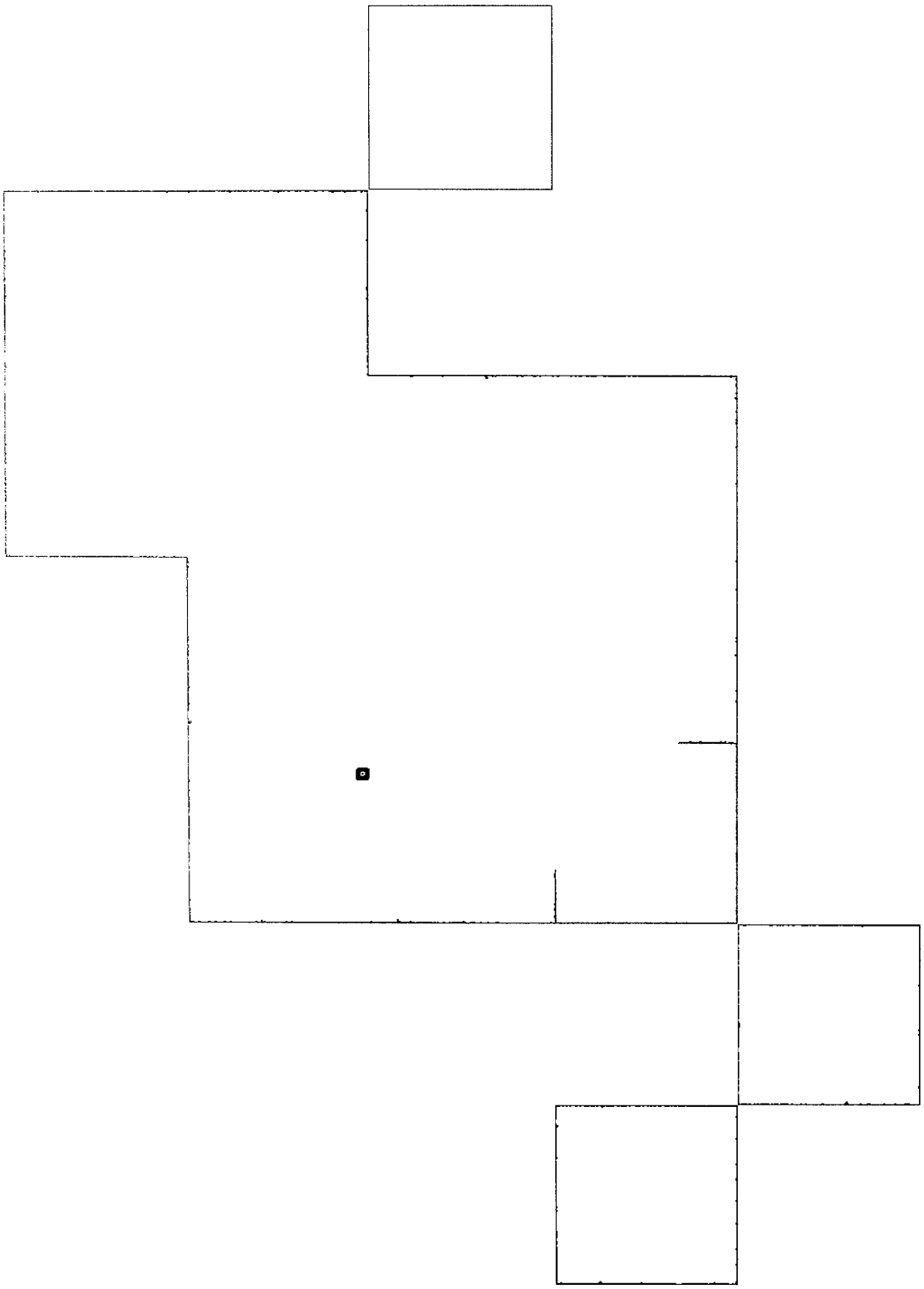
by parents elsewhere in Europe, where there is far more publicly funded childcare provision.[54] The Daycare Trust emphasises that 'services for children need to be seen as publicly-funded services, not as simply a market or an employee perk.'[55]

Incentives to join the childcare workforce must also be reviewed. If, as we have argued, childcare can play a pivotal role in meeting two of the Government's main objectives – local regeneration and effective health services – it should be more highly valued and better paid. For its part, the childcare sector must consider its own development needs. It may well benefit voluntary and community sector childcare providers to collaborate more closely, perhaps joining together to form social firms, community businesses or social enterprises. All of these use trading activities to achieve social goals and to ensure financial self-sufficiency. Support may be available from regeneration programmes, the business sector and government departments: for example, the Department for Transport, Local Government and the Regions and the Department of Trade and Industry have committed resources to social enterprise. Social Enterprise London has received government funding to develop a small number of childcare social enterprise pilots in the capital, including some with links to the NHS.[56]

Destructive cycle or virtuous circle

The urgent need to recruit and retain employees, combined with the high level of demand for childcare, threatens to drive trusts towards unsustainable, stop-gap responses, such as recruiting from abroad, rather than measures designed to achieve high-quality, accessible and affordable childcare in the longer term. It is easy to envisage a dysfunctional system, with fragmented and insecure funding and low-paid childcare workers providing patchy services of variable quality that simply fails to meet the diverse needs of health service employees, who then leave (or fail to enter) health service jobs because they cannot satisfactorily combine paid work with caring responsibilities. The NHS would continue to suffer from acute staffing shortages, further undermining public confidence and fuelling the flight of better-off patients to privately funded alternatives. Meanwhile, large numbers of people – mainly women, and including lone parents – would lose an opportunity to enter the labour market and would continue to live in poverty without having the means to improve their lives. This would increase their vulnerability to ill health and demands on the NHS would continue to rise.

Alternatively, the NHS could use its power and resources to help build up local childcare services. It could invest in training and employment opportunities for women (and men) in childcare and other health-related jobs. It could enter into partnerships with Government-funded schemes aimed at building local economies, helping to make the current patchwork of initiatives more coherent and substantial – and therefore more effective. It could become an important driver of measures to promote childcare, not as an exclusive preserve of the health service, but as a resource to be shared with other employers. It could help to raise standards of care and increase the confidence of parents in childcare provision so that more people would make themselves available for NHS jobs. It could help to create conditions favourable to sustained economic development and higher levels of income in disadvantaged neighbourhoods. With more childcare, more opportunities and more jobs, there would be lower levels of anxiety, depression and other forms of mental distress, and lower levels of physical ill health. We might then witness, instead of inexorable decline or unsatisfactory stasis, a virtuous circle bringing benefits to all parties.



4. Buying food

The NHS is the largest single purchaser of food in the country, spending £500 million a year feeding patients, employees and visitors. By developing a rounded, long-term strategy for purchasing and managing food, the NHS can save money, reduce environmental damage, create jobs in areas of need, promote staff health and hasten patient recovery.

Helen Casstles, Jonathon Porritt, Angela Towers and Claire Wilding

Buying food

Food has a critical influence on health. There is strong evidence of the importance of a healthy diet for promoting good health, and of the links between diet and serious illnesses such as coronary heart disease and certain cancers. Influencing diet is an essential part of any strategy for health improvement.

When we consider the vast amounts of food purchased by the NHS – over 300 million meals a year across the UK[1] – it is possible to detect important direct and indirect links between food, health and sustainable development. These occur at all points along the food chain and, in our view, need to be taken into account in procurement policies.

This chapter introduces work undertaken by the Sustainable Development Commission[2] to identify ways in which the NHS could contribute more to sustainable development through its purchasing of food – and how the way the health service buys food could work to improve health in the broadest sense. It provides an introduction to our work and early findings. A full report will be available later in 2002.[3] The focus on the NHS means we are particularly interested in highlighting the links between health and sustainable development, and in exploring the health impacts of procurement. But we aim to outline dimensions of sustainable food procurement that will be relevant not only to the NHS but to other public bodies, including local authorities and Government departments, and even to private companies. In later work, we hope to look at procurement at other points of the food chain, with contractors and producers.

Food, health and sustainability

Conventional economics suggest that free trade systems generate maximum wealth by encouraging food production where it can be carried out most efficiently. The role of public bodies – including national governments – should simply be to ensure that the external impacts of food production and distribution are properly taken into account by purchasers. So, in a perfect world, the external costs of any damaging effects of food production and supply systems, such as the impacts of transport, would be reflected in prices.

When we consider the vast amounts of food purchased by the NHS – over 300 million meals a year across the UK – it is possible to detect important direct and indirect links between food, health and sustainable development.

In the real world, of course, food and other products are not purchased in a perfect market place. This is due to inappropriate regulatory barriers, such as the Common Agricultural Policy, and inadequate economic instruments, such as levels of fuel tax and the lack of tax on aviation fuel. Taken together, these regulatory and economic frameworks can lead to price signals that do not properly reflect the full social costs and benefits of alternative food sources. It is therefore legitimate for public bodies to try to achieve a better fit between their core aims and their purchasing activities by developing policies that encourage more sustainable food supply systems.

Food and health are inextricably linked. Not only does food have a direct impact on health, as a consequence of diet, nutrition and food safety, but the way in

Current NHS expenditure on food is around £500 million per annum. Over 300 million meals are served each year in approximately 1200 hospitals.

which food is produced and processed is becoming increasingly important. Intensive farming methods used to produce 'cheap' food can result in pollution, soil degradation, overuse of energy and water resources and loss of biodiversity. Consumers are becoming increasingly concerned about how food is produced and what has happened on its route from farm to fork. Food 'scares' such as BSE, foot and mouth disease, the use of genetically modified organisms (GMOs), antibiotic treatment of farm animals, pesticide residues, animal welfare, rural issues and environmental concerns have all played a part in changing public opinion. Consumers, whether buying food in the retail sector to prepare and eat at home, or dining as the customer of a caterer (leisure or institutional), have a right to expect safe and healthy food produced with due concern for human health, the environment and animal welfare. The world's population is forecast to reach around 8 billion by the year 2020 – a rise of 50 per cent in 18 years. It therefore becomes even more important to bring about rapid and significant improvements in the food supply chain if we are to achieve secure access to food for all in the long term.

A sustainable food supply and procurement system is one that contributes to the overall objectives of sustainable development and delivers the best possible combination of environmental, social and economic benefits. The links between environment and public health are explicitly recognised by the NHS Purchasing and Supply Agency (PASA) in its environmental policy: 'The NHS Purchasing and Supply Agency accepts its responsibility to reduce the adverse, and increase the beneficial, environmental impacts of its activities, products and services through recognition and support of ... the link between public health and the environment.'[4]

The current picture

Public sector food consumption

The public sector, and the NHS in particular, is a major purchaser of food in the UK. There is potential for sustainable food procurement policies to have a positive impact on the health of people in the UK – thereby raising the possibility of reducing demand on the health service in the long term. We discuss the mechanisms for doing this below.

Food procurement could also play an important role in integrating the principles of sustainable development within trusts, purchasing organisations and health departments in the whole of the UK. Current NHS expenditure on food is around £500 million per annum. Over 300 million meals are served each year in approximately 1200 hospitals.[5] This includes:

- 250,000 litres of orange juice
- 12.3 million loaves of bread
- 61 million litres of milk
- 1.1 million kg of butter
- 1.3 million chicken legs
- 13.5 million kg of potatoes.[6]

The type of food purchased by trusts and hospitals depends upon the methods used for food production and cooking. These include:

- 'cook-serve', where raw materials are prepared and cooked in hospital kitchens

- 'cook-chill/freeze' where food and meals are prepared in advance, then either chilled or frozen and reheated when required. This is done either in-house or by buying in from a commercial supplier
- a combination of the above systems.

An increasing number of trusts (between a third and a half) use pre-prepared meals, currently spending approximately £60 million in England. There are some 375 NHS trusts in England, each with its own budget. The average spending on food and beverages per patient per day is:

- £2.20 for a cook-serve production system
- £3.70 for cook-chill/freeze meals bought from a commercial supplier
- £2.40 for cook-chill/freeze meals made on site
- £2.70 for a hybrid production system.

However, levels of spending vary considerably within each method of production: for example, trusts using a cook-serve system spend between £1.24 and £5.88.[7] However, providing a service for patients may account for less than half the activity of a hospital catering department, as most hospitals also provide food for employees and visitors. These activities are often revenue generating and may subsidise the patient meal service.

The Government recently commissioned a Better Hospital Food plan at a cost of £40 million, involving Lloyd Grossman and a team of celebrity chefs. This aims to reduce waste by extending the range of meals available to patients and improving the quality of the food and its nutritional content.

Trusts are free to purchase through whatever route they prefer. In England, all the trusts use PASA to some degree, especially for products that are used in large quantities. PASA negotiates national framework contracts with a range of different suppliers. Trusts are free to choose from any of the contractors on the framework. Currently about £250 million is spent through PASA on food products. Other methods of food procurement used by trusts are local contracts – in other words, negotiated by an individual trust – and 'spot buys': typically, one-off purchases for special items or ingredients.

Key issues

The Government recently commissioned a Better Hospital Food plan at a cost of £40 million, involving Lloyd Grossman and a team of celebrity chefs. This aims to reduce waste by extending the range of meals available to patients and improving the quality of the food and its nutritional content.

The issues involved in developing a healthy, sustainable food procurement policy for the NHS are complex and sometimes contradictory. They must be carefully considered so that trade offs can be made to achieve optimal results.

- Value for money. Keeping costs down is of prime importance for food purchasers. Within the health sector, money not spent on food procurement is available for the provision of core health services. If a narrow view of the value of food prevails – one that does not account for its wider influence on economic, social and environmental factors – trust managers are likely to give priority to cheap food rather than to procurement practices that contribute to sustainable development.

- The UK economy. The UK food sector as a whole represents around eight per cent of gross domestic product (GDP). Of this, farming accounts for one per cent.[8] A shift towards procuring more food from overseas would have obvious impacts upon employment and the economy. However, as food processing is a

The value of the hospital food wasted annually in England is £45 million, and if labour and overheads are added, the cost rises to £144 million.

more economically significant activity for the UK than food production, sourcing unprocessed food from overseas will have less of an impact than importing prepared food.

- Local economies. The large amounts spent by public bodies on food procurement could have a major impact on the viability of local economies, particularly where there are high levels of unemployment and deprivation, as discussed in earlier chapters. The character of the farmed landscape can also be important to local economies, as it supports the tourist industry.

- Impacts on less-developed countries. Trade in food with less-developed countries is a complex issue, and its impacts on sustainability may vary from commodity to commodity. Government policy broadly favours trade liberalisation as a mechanism for raising living standards in poor countries. Less-developed countries certainly view this trade as valuable for their economies. However, in some cases the benefits of producing food for an overseas market may not bring improvements to the welfare of local populations. A recent UN report on the world's 48 poorest countries showed that, although they had opened their economies to exports and imports, poverty had deepened.[9] Some argue that cash cropping in developing countries undermines domestic food supply.

- Transport. Much imported fresh food is transported by air, thus causing the emission of substantial amounts of carbon dioxide. Short-haul flights release 25 times more carbon dioxide per kilometre than transport via large lorries. The food supply system accounts for up to 40 per cent of all UK road freight.[10] Between 1978 and 1999, transportation of food increased by 16 per cent, with the average distance increasing by 50 per cent. Transport causes air pollution and contributes to climate change. It also has social impacts, including noise pollution and the severance of social networks when large roads cut through neighbourhoods.

- Waste. There is a very high level of food wastage in hospitals. This has economic as well as environmental implications. The value of the hospital food wasted annually in England is £45 million, and if labour and overheads are added, the cost rises to £144 million. In a large hospital, the annual wastage of food might cost up to £250,000, estimated to be enough to feed 80 families for a year.[11] The Better Hospital Food plan, mentioned above, is aiming to reduce this waste. Wastage also occurs during transport – although packaging limits this by protecting food and preventing spoilage. However, manufacturing the packaging itself uses energy and creates pollution, and the vast majority of it is not recycled, but ends up in landfill. The longer the supply chain and the more it involves processing, the more packaging is used.

- Employment. In the farming sector, incomes have plummeted and many jobs have been lost. A report in October 2001 by Deloitte & Touche showed that the average profit recorded nationally for a 500-acre farm was just £2500. In addition, 51,000 farmers and farm workers lost their jobs between 1999 and 2001.[12] The food processing industry is another important source of employment, especially in disadvantaged areas.

- Local distinctiveness. Particular types of farming are important for local distinctiveness: for example, the landscape of the Lake District depends upon

the continuation of sheep farming. The distinctive character of the area where people live is an important component of social sustainability. In the Lake District and elsewhere, it is also important economically, as it encourages tourism.

- Food and diet. The links between diet and health are well documented. Diet-related diseases impose a huge direct and indirect cost on the nation. A poor diet contributes to coronary heart disease, stroke, diabetes, certain cancers, obesity and tooth decay. Healthier diets would help reduce the incidence of these conditions, leading to an improvement in the health of the population and financial gains for both the health service and the economy as a whole.

DIET AND HEALTH

- Between 30 and 40 per cent of all cancers are directly linked to diet, weight and lifestyle.[13]
- Obesity is increasing alarmingly in the UK. The number of obese people has trebled over the last 20 years and if the rise continues at current rates, more than one in four adults will be obese by the year 2010.[14]
- Common problems linked to obesity are heart disease, Type 2 diabetes, high blood pressure and osteoarthritis.
- Obesity and its associated diseases are estimated to cost the NHS at least £500 million per year in treatment costs, to be responsible for 18 million sick days per year and to have a further impact on the economy of around £2 billion in terms of lost output.[15]
- Circulatory diseases, of which coronary heart disease is the most common, are estimated to cost the NHS and the personal social service some £3.8 billion annually, to account for the loss of 35 million working days each year and to cost industry more than £3 billion a year.[16]

- Food safety. This is of paramount importance to all food suppliers. Arguably, procuring food from a range of small local suppliers makes it more difficult to ensure food safety than when procuring food from a nationally accredited major supplier. On the other hand, fewer steps in the supply chain could mean fewer opportunities for mistakes to occur. There is also a chance that local suppliers will demonstrate more accountability in their business practices because they are better known in their local communities.
- Deprivation. Poverty and unemployment have strong links with ill health, as we have seen in Chapter One. Food procurement policies could play a role in supporting regeneration by providing jobs in deprived areas.

A poor diet contributes to coronary heart disease, stroke, diabetes, certain cancers, obesity and tooth decay.

- Nutrition. There is evidence that transport and storage of food can affect its nutritional value. Some losses of nutrients, particularly Vitamin C, Vitamin A, riboflavin and Vitamin E, occur even under excellent storage conditions.[17]
- Organic food. There has been some debate over whether organic food provides benefits to health. Sir John Krebs, Chair of the Food Standards Agency, has

stated that there is insufficient research evidence to suggest that organic food is more beneficial to health than conventionally produced food.[18] However, this statement has been challenged by research that shows higher levels of vitamin C and essential minerals in organic food; and a recent study found organic vegetable soups to contain higher levels of salicylic acid, which protects against bowel cancer and hardening of the arteries.[19]

- Road accidents. In 1998, heavy goods vehicles (HGVs) were involved in 14,526 accidents, causing 576 deaths, 2692 serious injuries and 15,430 slight injuries.[20] Most long-distance movement of food involves the use of HGVs. Reductions in the number and length of journeys, combined with other road safety measures, are likely to reduce the risk to health from traffic accidents.

- Pollution. Pollution can affect health at farm level, through the use of pesticides, nitrates and antibiotics; during transport, from air pollution; and at the point of consumption, from waste disposal. Air pollution from transport is a major problem – it was estimated that in 1997 the deaths of between 12,000 and 24,000 vulnerable people were brought forward by air pollution.[21]

Table 1 shows the range of sustainability impacts that need to be considered in food procurement policies. For simplicity, they have been split into the categories of economic, environmental, social and health. Of course, many of the factors influence more than one of these categories.

TABLE 1: SUMMARY OF FACTORS RELEVANT TO SUSTAINABLE DEVELOPMENT THROUGHOUT THE FOOD CHAIN

STAGE	ECONOMIC	ENVIRONMENTAL	SOCIAL	HEALTH
Production	Farming not a major industry in the UK Food export important for many less developed countries Traditional landscapes created by farming important for tourism Externalities: e.g. cost to water companies of removing nitrates from drinking water	Soil degradation, air and water pollution, climate change emissions, biodiversity impacts Much energy used in creating fertilisers Farming creates the traditional landscapes of the UK	Regional character and local distinctiveness Importance of farming-related employment to some rural communities Animal welfare considerations	Exposure of workers to pesticides Use of antibiotics leading to resistance Positive indirect health impacts associated with employment
Processing	Major industry in the UK	Waste created Water use and waste water Energy use	Potential source of employment in deprived areas	Positive health impacts associated with employment
Transport	Makes up 40 per cent of UK road freight – hence very important to haulage business	Emissions leading to climate change Food wasted during transportation	Noise pollution Impact of traffic upon communities Employment	Possible nutrient loss due to long distance transport Air pollution Road accidents
Consumption	Cost to consumer Waste	Food waste Energy used to cook, chill or freeze	Food important for local/cultural identity Employment of caterers	Health impacts of diet

Source: Sustainable Development Commission, 2002

Possible future directions

Is local food the answer?

Local food has recently become a major issue, with some seeing its use as perfectly in tune with the principles of sustainable development. There is a range of opinion on what 'local food' means, and no clear definition of the word 'local'. Local food can refer to food that is grown, processed and sold locally; food that is characteristic of a locality or region; or food that comes from the UK rather than from abroad. The 'proximity principle' is sometimes mentioned, which means consuming food at the nearest possible point to its production.

The potential benefits of local food include:

- reconnecting consumers and producers, leading to a better understanding of food and farming
- reduced transport, and hence reduced environmental impacts
- strengthening the local economy
- strengthening community ties and community identity
- preserving local culture
- reducing the need for preservatives and additives, as the food does not need to last so long
- educating people about the links between food and the conditions needed to produce it.

However, there are also negative impacts associated with local food procurement. These include:

- loss of income to less-developed countries
- loss of income to other areas of the UK specialising in particular types of farming
- less varied supply of food, limited to UK seasons
- less reliable food supply.

EC procurement legislation presents a major obstacle, as it aims to ensure fair competition between suppliers in the EU and does not permit discrimination against overseas suppliers on the basis of reducing 'food miles'. The Sustainable Development Commission is particularly interested in the potential for changing food distribution systems so as to reduce greenhouse gas emissions from transport.[22]

EC procurement legislation aims to ensure fair competition between suppliers in the EU and does not permit discrimination against overseas suppliers on the basis of reducing 'food miles'.

Striking a balance

The central challenge of sustainable development is to balance different needs and interests so as to achieve the best possible results in the medium and long term for the economy, for society and for the environment. The following section looks at some of the most complex issues surrounding food procurement decisions.

Tensions to be resolved

- Cost. If food is not valued for its influence on health or sustainable development, and if the NHS itself does not attach any significance to health

There is nothing to be gained from adopting a healthy and sustainable approach to food procurement in the NHS if patients, employees and visitors don't like the meals they are offered and refuse to eat them.

or sustainability, then the pressure to buy the food that is cheapest will be irresistible. Whole-life costing (which includes the indirect effects) can often demonstrate value for money in broader terms. However, the acute short-term financial pressures afflicting most NHS trusts will mean that they are likely to be deterred by the costs associated with a more sustainable food procurement policy. Cost may militate against purchasing food that meets higher environmental, nutritional or animal welfare standards. As mentioned above, money not spent on food procurement will be available for the provision of core health services.

- Local sourcing versus supporting disadvantaged areas. The arguments for sourcing food locally are explored in more detail above, and include reducing transport and stimulating local economies. However, this needs to be weighed against supporting the economies of less-developed countries or of disadvantaged areas in the UK. For example, hill sheep farmers in Cumbria or potato growers in Lincolnshire could be disadvantaged if local sourcing encouraged the farming of these products in other parts of the country.

- Reducing 'food miles' versus dependable supply. Purchasing more food locally could mean a greater seasonality in menus, which would tend to be based on the fruit and vegetables in season in the UK. Some see this as a positive factor, as it improves people's understanding of food production. However, balanced against this is the need to have a dependable supply of healthy foods all the year round. This will affect the degree to which local sourcing is possible.

- 'Good' food versus popular food. There is nothing to be gained from adopting a healthy and sustainable approach to food procurement in the NHS if patients, employees and visitors don't like the meals they are offered and refuse to eat them. Changes must be carefully negotiated with service users, including employees, so that they are sensitive to cultural preferences and build on an understanding of how eating habits can be altered over time.

Mutual benefits to be fostered

In spite of the many unresolved conflicts of interests outlined above, there are also opportunities for mutual benefit. For example:

- Reducing waste. Reducing the amount of food thrown away and cutting the cost of disposing of packaging to landfill are beneficial both environmentally and economically.

- Contributing to regeneration. If food procurement can contribute to regeneration by creating employment in areas of need, this can improve the health of the population in the long term – meaning cost savings for hospitals.

- Contributing to the healing environment. Nourishing meals can help patients recover and minimise the time they spend in hospital, thus freeing up beds and reducing pressures on NHS waiting times.

- Healthy staff. If the food provided for NHS employees is attractive and nutritious, there will be long-term benefits in the form of less sick absence. This could be particularly important for low-paid employees, who may have less access to a healthy diet.[23]

MENU OF AIMS FOR FOOD PROCUREMENT POLICIES

Economic aims

- secure value for money
- reduce waste
- encourage new markets for sustainable foods
- contribute to healthy local economies
- contribute to global economic development

Environmental aims

- reduce degradation of natural resources by adopting cleaner processes and technologies
- reduce energy input
- protect or enhance natural resources and biodiversity
- reduce waste (food and packaging)
- reduce water use
- reduce packaging

Social aims

- raise awareness of the benefits of healthy foods
- increase access to, and availability of, healthy food – particularly for lower income groups
- strengthen communities
- contribute to global food security for all
- reduce inequalities
- meet the needs of the local community – including employment
- ensure stakeholder involvement and input at all stages
- improve animal welfare
- consider staff training
- rekindle the value of good food: that is, food produced with regard for the environment and animal welfare – healthy food

Health aims

- improve nutrition
- maintain or improve food safety and quality
- protect consumers from negative impacts of pesticides and nitrates
- reduce use of antibiotics
- reduce use of additives in prepared meals (artificial flavourings, preservatives etc)
- reduce fat, salt, sugar etc in pre-prepared ready meals and convenience foods
- positively influence the diets of employees and customers

Source: Sustainable Development Commission, 2002

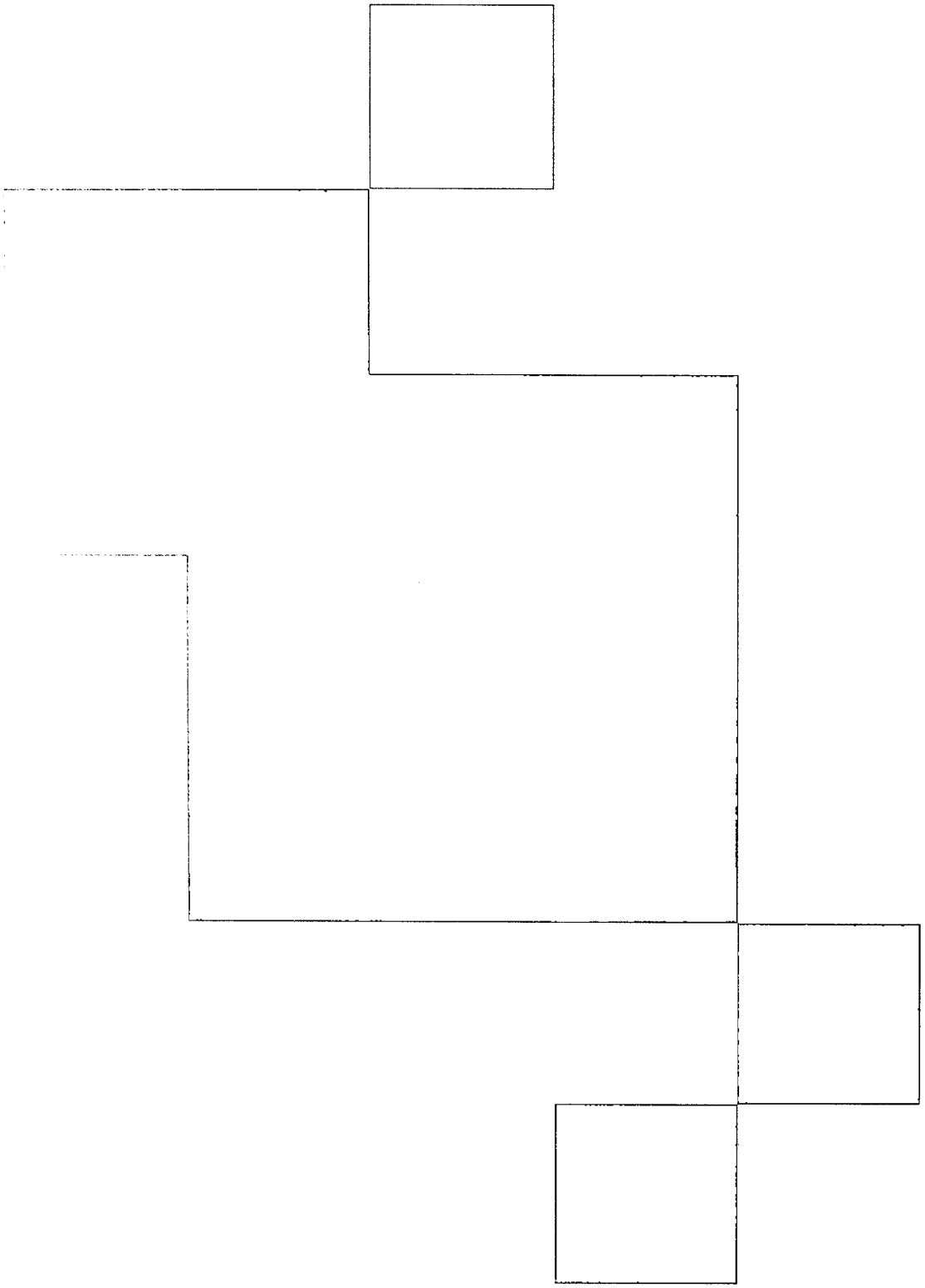
Early conclusions

The NHS is a major purchaser of food, and so has the potential to make important contributions to sustainable development and health improvement through its food procurement policies. Some early conclusions from our work so far are:

- Trusts should consider the economic, social and environmental impacts of their food purchasing, and decide which of them are particularly important to their core aims.

- All public bodies should seek to maximise the mutual benefits outlined above.
- Environmental criteria should be included in tender documents and purchasing specifications; these should include energy efficiency and waste minimisation.
- The food served in NHS establishments should be of a high standard – and this should be made known to the patients, employees and others who are invited to eat it.
- Purchasers should discuss sustainable development with their suppliers, and encourage them to meet sustainable development objectives where possible.
- The quality and character of meals should be decided in consultation with the people who are expected to eat them.

We have listed a range of possible objectives for food procurement policies (see box on page 67). However, there are tensions between some of the objectives that need to be resolved. It is for individual organisations – local authorities, hospital trusts, government departments or private companies – to determine their own priorities among these objectives. But it is sensible for sustainable procurement policies to reflect the aims of the organisation. In the case of the NHS, a central aim is to improve the health of the population of the UK. This chapter has highlighted the health issues related to food procurement that we should like to see at the centre of the purchasing policies of NHS trusts.



5. Waste

The NHS produces 600,000 tonnes of waste a year and spends £42 million disposing of it. By reducing waste, it can help to reduce energy consumption, safeguard natural resources, save money and minimise health hazards associated with landfill and incineration. These practices have yet to become routine across the NHS.

Karen Jochelson

Waste

We live in a wasteful society. We extract virgin resources rather than recycle, we waste many of our raw materials in the process of manufacture – and then, when we have used an item, we simply throw it away. Most waste in the UK goes to landfill, but sites are rapidly filling up, especially in south east England, and there are moves to build more incinerators. In 2000, the Government published a White Paper, *Waste Strategy 2000 for England and Wales*,[1] which prioritised waste reduction, recycling and energy recovery over disposal, and suggested ways of using public procurement to create markets in recycled goods. NHS trusts have tended to focus on segregating their waste streams to reduce the costs of disposal, and have devoted far less attention to implementing other waste minimisation strategies. This chapter summarises the evidence for the environmental and health impact of landfill and incineration waste disposal methods and the progress of the NHS towards implementing waste reduction schemes.

Waste, health and sustainability

The volume of waste

Waste is not just the end result of consumption. It is integral to the way we extract new raw materials, rather than using existing, recycled ones. It is also part of the way we manufacture goods: for every tonne of products we buy, ten tonnes of resources are used in their manufacture.[2] So the process of creating waste is far larger than our commonsense understanding that waste is the residue we dispose of because we no longer have a use for it. England and Wales produce more than 400 million tonnes of waste every year, of which 106 million tonnes is from households, commerce and industry. Only one third of the waste from industry and commerce is recycled or composted.[3]

The NHS is no different from the society around it. It produces 600,000 tonnes of waste a year of which 408,900 tonnes is clinical, infectious and pharmaceutical waste.[4] This includes, for example, blood bags, human tissue, infectious material, cytotoxic waste and used syringes. The volume of waste escalates once domestic waste is added. Nationally, the NHS produces 200,000 tonnes of domestic waste a year, which includes material such as paper, bottles, cans and kitchen scraps.[5] In London alone, NHS hospitals produce about 413 tonnes of clinical and domestic waste per week and 21,500 tonnes per year.[6] An ordinary elephant weighs about six tonnes, so this is equal to about 69 elephants' worth of waste in a week, and 3580 elephants in a year.

The NHS nationally produces 600,000 tonnes of clinical, infectious, pharmaceutical and domestic waste each year, and spends £42 million a year disposing of it all.

Disposing of waste is expensive. Clinical waste disposal costs from £220 to £450 per tonne. Pharmaceutical and cytotoxic waste disposal costs between £420 and £1200 per tonne. Domestic waste disposal costs between £40 and £80 per tonne. The average disposal cost of one bag of clinical waste is about 90 pence, compared to just 15 pence for one bag of domestic waste.[7] In 1999–2000, the NHS spent £42 millions on waste disposal: £31 millions for the disposal of clinical waste and £11 millions for the disposal of domestic waste.[8]

TABLE 2: RECYCLABLE ITEMS BOUGHT BY ACUTE TRUSTS IN LONDON

ITEM	NO. USED BY LONDON ACUTE HOSPITALS
Toner cartridges	13,412
Batteries	567,408
Disposable cups	32,806,470
Paper (in tonnes)	23,109

Source: base figures supplied by a south London hospital. Author calculated ratios of each item to number of beds for the hospital, and then calculated the likely number of items for an estimated 20,633 acute beds in London

The impact of landfill and incineration

In the UK, 70 per cent of waste is sent to landfill and 20 per cent is incinerated.[9] Most hospital domestic waste goes to landfill. Clinical waste is incinerated. There are 11 incinerators in the UK,[10] and proposals to build another 20 to 70 more to compensate for the shortage of landfill space.[11] One study suggests about 80 per cent of the UK population lives within two km of a current or closed landfill site.[12]

Social impact

Incineration and landfill have a social cost and create fewer jobs compared with recycling.[13] One report estimated that 25,000–45,000 new jobs could be created if Government met its household recycling targets by 2010.[14] Another report, on recycling in London, suggested that meeting the targets could create 7,000 new jobs in the city.[15]

Environmental impact

Landfill and waste incineration also exact an environmental cost. Both methods destroy finite primary resources that could be recycled. We seldom use recycled materials, yet it takes more energy to process and manufacture goods from virgin resources. For example, the amount of energy used to make one new aluminium can will make 20 cans from recycled material. The energy saved by recycling one can would run a 100-watt bulb for 20 hours. Using virgin resources also means losing their ecological role. For example, when we harvest trees for paper, rather than using recycled paper, we lose their ecological function: one tree can filter up to 27kg of pollutants from the air each year.[16] Modern incinerators can use the heat they produce to generate electricity, but this still does not avoid the waste of resources.

Incinerators and landfill are also polluting. Landfill sites produce methane and carbon dioxide (CO_2), greenhouse gases that contribute to climate change. Toxic chemicals deposited in landfill sites include volatile organic compounds, pesticides, solvents and heavy metals. Modern incinerators that are properly operated are less polluting than their predecessors, yet they can still release particulate matter, carbon monoxide, acidic gases and acidic particles, metals (cadmium, lead, mercury, chromium, arsenic, beryllium) and organic compounds (dioxins, furans, polychlorinated biphenyls and polycyclic aromatic hydrocarbons). Incinerators also produce a residue of fly ash and bottom ash, which is usually landfilled and can contain dioxins. Human contact with the pollutants deposited in landfill sites may occur through the dispersal of contaminated air or soil by leaching, run off or the agency of animals and birds.

The health impact

There is some evidence for the potential health impact of waste disposal schemes. Landfill sites have been associated with an increased risk of mothers having babies with congenital abnormalities or low birth weight,[17] although this evidence is contested.[18] Studies of workers at incinerator plants, populations living near incinerators and an egg and poultry farm near an incinerator show evidence of the exposure of people and farm animals to dioxins, organic compounds, heavy metals and mutagenic compounds.[19] Although clinical waste incineration represents a relatively small proportion of all dioxin releases in the UK annually, it is mainly responsible for the dioxin emissions from waste incineration plants.[20]

In the UK, 70 per cent of waste is sent to landfill and 20 per cent is incinerated.

The health impacts of pollutants released by incinerators include respiratory disease and impaired lung function, neurobehavioural changes, haematological effects, cardiovascular effects, gastrointestinal and liver abnormalities and reproductive and foetal developmental effects.[21] Some of these pollutants have been shown to affect the health of individuals exposed to high concentrations, though not necessarily as a direct result of exposure to emissions from waste incineration.

Studies of the health risks associated with incineration or landfill are difficult to interpret. A critical review of the literature on the health impact of incineration by the US National Academy of Sciences points to lapses in research design – such as small samples, potentially confounding factors and reporting bias – that make interpretation of the data and generalising from the findings problematic. The review also suggests that it is difficult to attribute health effects to particular pollutants, since many studies measure effects that are small, occur infrequently, take many years to appear and may occur not in the exposed individuals but in their offspring during infancy, childhood or adulthood.[22] Nevertheless, the studies that do exist present a worrying picture.

PVC AND DIOXIN

If PVC is incinerated incorrectly, one of the by-products formed is dioxin. PVC is a plastic widely used in health care environments in equipment such as IV bags, plasma collection bags, sharps containers, catheters, drip chambers, enteral feeding devices, haemodialysis equipment, inflatable splints, laboratory equipment, medical gloves, packaging, patient ID bracelets, respiratory therapy products, stationery supplies, tubing and thermal blankets.[23] Dioxin is resistant to chemical or physical breakdown so it accumulates in the environment and enters the human population through the consumption of dairy and beef products; fish, pork, chicken and eggs are also implicated.

Dioxin has a range of impacts on human health.[24] It is carcinogenic. It affects human development *in utero*, and can lead to birth defects, foetal death, impaired neurological development and subsequent cognitive deficits, and altered sexual development. It is implicated in male and female reproductive dysfunction, leading to reduced sperm count, testicular atrophy and feminised hormonal responses in males, and decreased fertility, ovarian dysfunction and endometriosis in females. It is also associated with immune system suppression, and disruption of hormonal processes involving insulin, thyroid and steroid hormones.

The US Environmental Protection Agency estimates that an acceptable level of exposure to dioxin is 0.006 picograms*/kg/day. This is equal to one droplet of dioxin in 600,000 train carriages of water. More recent estimates suggest that 0.01 picograms/kg/day is acceptable, although humans probably consume 300–600 times this amount every day.[25]

Estimates on the amount of dioxin released by the incineration of clinical waste in the UK range from:
a) 12–37g TEQy/year (out of a total released from waste incineration of 14–38 TEQ+/year)[26] to
b) 0.99–18.3g TEQ/year (out of a total of 122–199g TEQ/year).[27]

*A picogram is a millionth of a gram
+TEQ or Toxic Equivalent is a measure of dioxin-like toxicity

Government waste strategy aims to reduce waste, reuse materials, recover value from waste and only as a last resort to dispose of waste through landfill or incineration.

The current picture

Government approach

In 1990, the publication of *This Common Inheritance: Britain's Environmental Strategy* signalled the Government's intention to incorporate the principles of sustainable development into its policies in a range of areas, including waste management.[28] The Environmental Protection Act 1990, stricter EU directives on waste and a 1995 White Paper *Making Waste Work* created a new framework for waste management that aimed to minimise the volume of waste, recover value from waste and pass the cost of waste disposal onto the polluter.[29] Many of these principles were incorporated into the most recent White Paper, *Waste Strategy 2000 for England and Wales*, which sets out a strategy for waste management that supports the Government's sustainable development strategy.

The strategy is also informed by European legislation – especially the Landfill Directive, which sets targets for reducing the amount of waste sent to landfill – and European regulations for segregating hazardous and non-hazardous waste. *Waste Strategy 2000* acknowledges the environmental impact of waste, the continuing growth in the volume of waste and the scarcity of landfill space. It proposes breaking the link between economic growth and more waste, by using raw materials more intensively and reducing the volume of waste. This means waste management policies aimed at, in order of priority: reducing waste, reusing goods, recovering value from waste through recycling, composting and energy recovery, and as a last resort only, disposing of waste through landfill or incineration. The Government believes that a more sustainable approach to resource productivity and waste management will conserve environmental resources, increase employment opportunities and enhance business competitiveness.[30]

Waste Strategy 2000 recommended: stimulating the creation of new markets in recycled and reusable materials; the public procurement of recycled products to pump prime new markets; introducing producer responsibility for waste; using the landfill tax escalator to deter waste producers and local authorities from sending waste to landfill; and landfill tax credit schemes to encourage an increase in recycling, especially of household waste.

The Government has set several targets for reducing waste. It intends to:

- reduce the amount of industrial and commercial waste landfilled to 85 per cent of 1998 levels by 2005: that is, from 42 million to 36 million tonnes
- reduce the amount of biodegradable municipal waste landfilled to 75 per cent of 1995 levels by 2010, to 50 per cent by 2013 and to 35 per cent by 2020
- recover value from 40 per cent of municipal waste (through recycling, composting or energy recovery) by 2005, from 45 per cent by 2010 and from 67 per cent by 2015
- recover value from 25 per cent of household waste (through recycling or composting) by 2005, then from 30 per cent by 2010 and from 33 per cent by 2015 (currently only 9 per cent is recycled and 8 per cent is used for energy recovery).

If these targets are met, there will be savings of between 0.1 and 0.4 million tonnes of carbon in national greenhouse gas emissions.[31]

Domestic waste produced by the NHS is disposed of as municipal waste. The efforts of local authorities and waste disposal contractors to meet these new targets will have an impact on the NHS.

OPPORTUNITIES FOR RECYCLING

London Remade is a strategic partnership between the business sector, London boroughs, regional government, waste management companies and the voluntary sector. Its aim is to develop new markets and secondary industries based on the reprocessing and reuse of London's recycled materials. The potential for recycling can be seen from the following examples:

- Since 1993, Patagonia Inc has manufactured a range of sportswear products made from Synchilla fibres spun from recycled plastic bottles. It takes 25 two-litre plastic water bottles to make one fleece.
- RMC Aggregates has developed Glasphalt, a roadbase material using up to 30 per cent recycled glass.
- Excel Industries manufactures thermal and acoustic insulation (Warmcell RF) for domestic and industrial buildings from 100 per cent recycled newsprint.
- London Day Aggregates converts bottles back into sand used for paving applications. This will not be subject to a new tax on virgin aggregate.

Source: www.londonremade.com

NHS developments

Regulatory changes

The NHS began to look at waste management strategy in 1990 as a result of two pieces of legislation. The Community Care Act abolished Crown immunity, which had protected hospitals from prosecution under environmental regulations. The Environmental Protection Act introduced new regulations on incineration. Both Acts took effect in April 1991. Until then, most hospitals had disposed of their clinical waste cheaply in their own incinerators. These no longer met the Environmental Protection Act standards. Hospitals had to decide whether to build new and upgraded facilities with other trusts or private contractors, or to contract out waste disposal. In either case, the Environmental Protection Act imposed a 'duty of care' on hospitals, making them responsible for the safe and lawful disposal of clinical waste, at the risk of committing a criminal offence.

In their waste management strategies, trusts have focused on developing appropriate waste disposal systems to satisfy legal requirements and reduce the costs of disposal.

Problems encountered

All the trusts interviewed for this research have had problems with enforcing waste segregation on the wards.[32] Domestic waste may be deposited in clinical waste bags, to be disposed of at a higher cost. Waste bags are sometimes left lying about in wards or in corridors. Employees fail to appreciate the rationale for waste segregation or the careful disposal of clinical waste. Recycling, where it exists, is haphazard and not consistent throughout a trust. Only a few trusts have a Waste Management Officer to monitor waste segregation and volume, educate staff and develop a system for collecting material for recycling.

The hospitals that developed an effective waste management strategy were able to segregate domestic and clinical waste, thus reducing the volume of clinical waste consigned for incineration.

These problems are not dissimilar to those described in a 1997 Audit Commission report on the management of hospital waste.[33] This also stated that hospitals found it hard to develop waste segregation systems. Clinical waste was often improperly stored, with bags piled in public corridors and sharps bins overflowing with used syringes. Improper disposal of sharps can be dangerous, and various studies showed a 4–10 per cent incidence of sharps injuries among domestic staff and porters, who were most likely to be injured when transporting waste bags. These employees usually have the lowest uptake of hepatitis B vaccination, and so are vulnerable to infection.[34] Domestic waste was also placed in clinical waste bags, increasing the costs of disposal. Employees were unaware of the costs of disposal borne by the hospital.

The Audit Commission report found a wide variation in the volume of waste produced by hospitals.[35] The hospitals that developed an effective waste management strategy were able to segregate domestic and clinical waste, thus reducing the volume of clinical waste consigned for incineration.[36] Where waste-management policies existed, they included:

- segregation of clinical and domestic waste by colour of disposal containers
- provision of sufficient waste containers
- education of employees about the costs and disposal of domestic and clinical waste
- single-handling policy, with locked bins to prevent spillage and injury
- use of compactors to reduce volume of waste
- recycling of paper, glass and aluminium tins
- composting of garden waste
- introduction of reusable equipment that can be sterilised safely, cheaply and quickly, thus reducing clinical waste.

Reducing waste

When hospitals reduce the volume of waste through these measures, they reduce their disposal costs. For example, when the Manchester Royal Infirmary (Central Manchester Healthcare NHS Trust) introduced waste segregation and the recycling of paper and cardboard, it found that it could recycle 242 tonnes of materials annually, thus saving £14,000 in landfill costs. The Macclesfield District General Hosptial (East Cheshire Trust) reduced the waste it sent to landfill from 540 tonnes in 1996/97 to 381 tonnes in 1998/99 with its costs of landfill waste dropping from £33,000 to £18,810 over the same period.[37]

Government waste strategy, at least since the mid-1990s, has emphasised the 'waste hierarchy', prioritising waste reduction, reuse, recycling, composting and energy recovery over disposal. Yet no trusts interviewed for this study had systematic policies that followed these criteria. Some sites have collection points for paper, aluminium cans and glass bottles. Some local authorities collect these materials without charge, whereas others demand payment. Where trusts have to pay for collection, they claim that it makes recycling schemes too expensive for them – even though recycling reduces the volume of material entering the waste stream, and hence the costs of disposal.

Although trusts may have developed waste segregation policies, they did not necessarily show the same enthusiasm for recycling policies. In the past, according to the new waste management officer for the Lewisham Hospital Trust,

recycling efforts were piecemeal, usually championed by individuals with a passion for environmental issues and dependent upon the willingness of staff to take bags of recyclable material to a central collecting station. There was no officer to take final responsibility for the scheme, which eventually fell apart. Now the trust is hoping to develop a recycling system across the hospital, devoting the same attention to consistency as its waste segregation policy receives.[38]

Efforts to recycle by individual trusts can also be undermined by lack of interest among suppliers. The Whittington Hospital in north London tried to negotiate with a manufacturer to take back packaging, but the firm refused because its packing machines would only work with new cardboard. Several London trusts, such as Newham, Great Ormond Street and Lewisham, acknowledged that individual trusts had no negotiating muscle and needed to rely on PASA, which could use the bargaining power of national contracts to develop environmentally friendly, waste-minimising relationships with national and international suppliers.[39]

Waste management and procurement

Waste management and procurement officers seldom collaborate, yet procurement choices do influence the type and volume of waste created. Recycling can reduce the volume and cost of the waste stream, the costs of procurement and the environmental impact of purchasing decisions.

Trusts that recognise the link between waste management and procurement can take advantage of contracts to ensure that their environmental policy is applied consistently across the organisation. By recycling and by buying recycled products, hospitals can reduce both their environmental impact and their waste disposal costs. For example:

- PASA has 'recycle-and-reuse' contracts with suppliers of prosthetic limbs, wheelchairs and hearing aids. It also has recycling contracts for waste engine oil, cooking oil, lead, acid batteries and tyres.[40]

- Lewisham Hospital Trust is trying to introduce a hospital-wide policy of recycling paper and photocopier and printer toner cartridges, thus bringing together waste and procurement policy.[41] The trust has decided against buying recycled paper because it is too expensive, but has chosen paper from sustainable forests because it is a cheaper but still sustainable alternative to paper from virgin forests. Similarly, empty toner cartridges are centrally collected and sent for recycling, and the trust buys recycled toner cartridges. These procurement decisions have been cost neutral, or in the case of the recycled toners, they have saved the trust about £6000 a year in purchasing costs, and possibly more by reducing the volume of waste and the costs of disposal. Efforts to work with suppliers to reduce the amount of waste have been less successful.

Recycling can reduce the volume and cost of the waste stream, the costs of procurement and the environmental impact of purchasing decisions.

- Great Ormond Street recycled 2.85 tonnes of paper, which it calculated was the equivalent of preventing 44 trees from being cut down – enough to convert the CO_2 emissions of 2.5 cars back into oxygen. Lewisham Hospital calculated that it bought 728 tonnes of paper a year. If it recycled all of this, it would prevent 11,220 trees from being cut down – enough to convert back into oxygen the CO_2 emissions of 748 cars, or the emissions arising from energy use in 280 typical houses.[42]

Trusts can reduce waste by employing reusable rather than disposable equipment. More than 60 per cent of operations are carried out with reusable products.

- Albany Medical Center, a 500-bed research hospital in upstate New York, USA, developed a programme that eventually allowed it to recycle 43 per cent of its waste. Part of the programme was a distillation unit that recycled alcohol, formalin, xylene, mineral spirits and paint into pure and usable products. The unit was expected to reduce the hospital's production of hazardous chemical waste from 29 tonnes to 6 tonnes. It cost $75,000 to build, but saved $250,000 per year in disposal and chemical purchasing costs. In its first two years, the distillery recycled over 20,000kg of alcohol, over 11,000kg of xylene, nearly 6000kg of formalin and nearly 1500kg of paint thinner.[43]

- The New England Medical Center Hospital also operates a distillation unit for xylene, so that only 5 per cent is disposed of as hazardous waste, saving the hospital $16,000 a year. The hospital found that the labour costs for collecting and discarding the product and for distilling it were the same. The hospital plans to expand its recycling efforts to ethanol and formalin.[44]

Other initiatives

Trusts can also reduce waste by employing reusable rather than disposable equipment. More than 60 per cent of operations are carried out with reusable products,[45] but fears about cross-infection and the difficulties of sterilisation to prevent the spread of serious diseases such as new variant CJD are encouraging a trend towards single-use clinical equipment. This will drive up the costs of procurement and waste disposal considerably.

Hospitals can also educate their patients into adopting more environmentally friendly behaviour. For example, nappies and incontinence pads make up 4 per cent of municipal waste and contain plastics that are difficult to dispose of. Only 10 per cent of UK parents use reusable nappies and the disposal of throw-away nappies costs £40 million per year.

- In 1999, with support from Hertfordshire County Council, the Groundwork Trust and the Hertfordshire Landfill Partnership, the maternity department of Lister Hospital in Stevenage began offering a reusable nappy laundering service to new parents. This was estimated to save the hospital over £5000 a year in waste disposal charges and, by encouraging parents to try alternatives to conventional disposable nappies once the babies had returned home, indirectly helped to reduce municipal waste disposal costs as well.[46]

Possible future directions

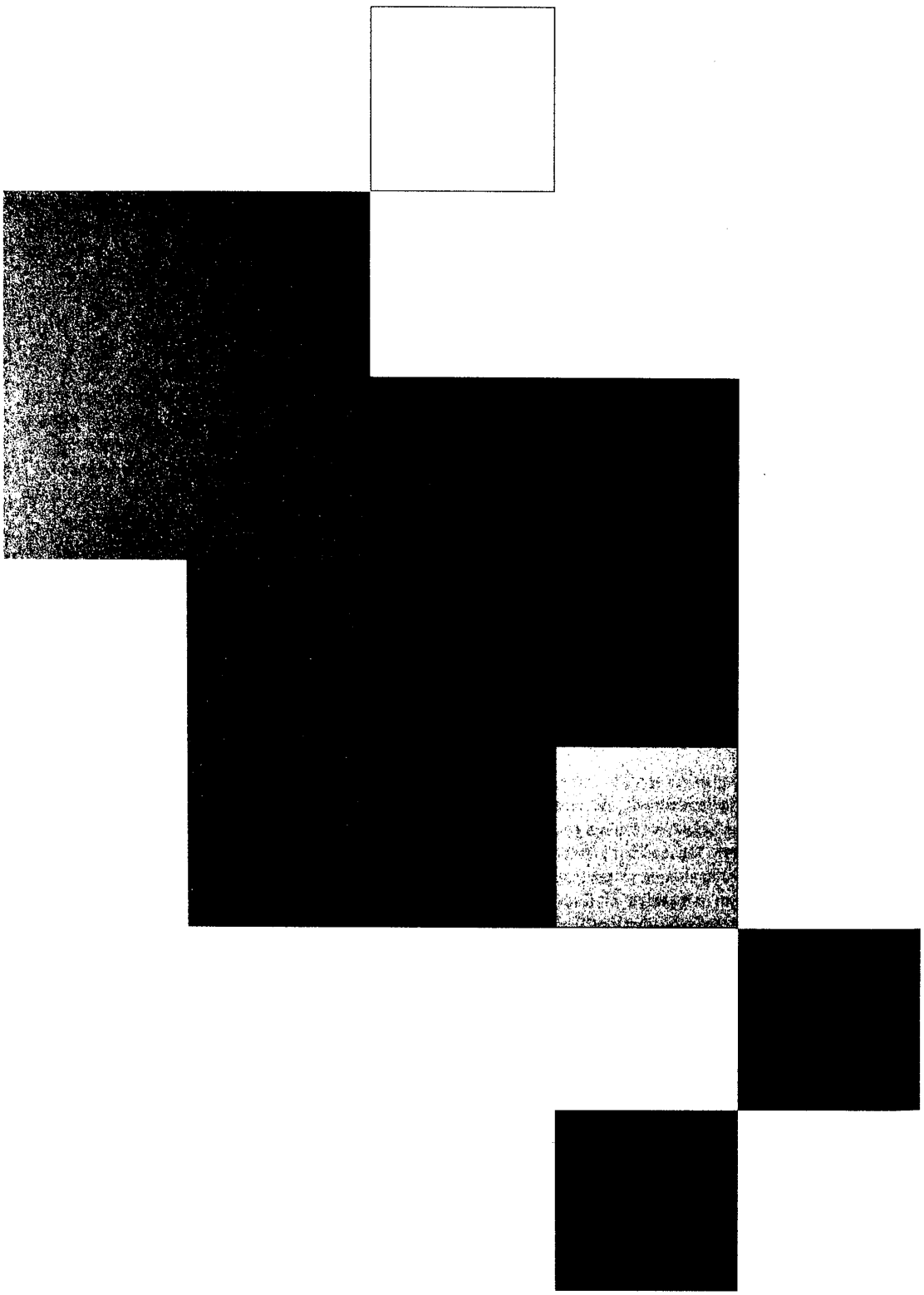
In the 1990s waste strategy in the NHS focused on satisfying the new legal requirements for incineration and organising and limiting the amount of waste sent to landfill. However, it seems to have done little to 'design out' waste. *Waste Strategy 2000* recommends a more concentrated effort to reduce waste at the point of manufacture, use and disposal. This involves thinking about:

- setting targets for the reduction, recycling, reuse and composting of waste
- stricter segregation of waste streams
- examining the supply chain into health facilities and the use of materials within facilities to identify where to reduce waste
- working with suppliers to reduce waste
- identifying recyclable equipment and establishing a return supply chain with

suppliers
- evaluating the environmental management systems used by waste management subcontractors.

These measures can help to reduce the volume of waste and to redirect waste material into recycling industries, where it can be reused to manufacture other products. Procurement officers and national procurement contracts should therefore begin, to the extent that procurement rules allow, to source goods made from recycled materials. Procurement officers will require training in 'green' procurement and the impact of procurement on waste management. However, this integration of procurement and waste management requires environmental strategies to be consistently applied across the whole trust, and not just piecemeal.

By reducing the amount of waste created, redirecting waste into recycling and buying recycled goods, the health care sector can begin to make a real impact on waste reduction. This will not only alleviate the environmental and health impacts of waste disposal but may also lead to the creation of more jobs, as recycling industries are labour intensive. Creating jobs, improving the environment and reducing the health impact of waste disposal can invigorate local economies and have a beneficial impact on the health of individuals and communities.



6. Travel

The NHS is a major cause of road travel, which contributes to ill health through accidents and air pollution, as well as to global warming and environmental damage. It could reduce these risks through more accessible location of health services, discouraging private car use and encouraging the use of public transport, walking and cycling.

Karen Jochelson

Travel

By 2000, more than 17 million people in the UK – 70 per cent of those in employment – usually travelled to work by car. Only 8 per cent travelled by bus and 6 per cent by rail, while 11 per cent walked, 3 per cent cycled and 1 per cent rode motorcycles.[1] A steady increase in car use has been aided by Government policy, which for several decades encouraged road building. The NHS is a significant cause of travel, as employees, visitors and patients travel to and from NHS sites. Moreover, travel makes a significant contribution to ill health – through road accidents and air pollution – and so adds to the demand for health services. In 1998 the Government published *A New Deal for Transport*[2], which proposed a series of measures to reduce car usage and encourage a shift towards public transport, cycling and walking. The report suggested that key public institutions, such as hospitals, could spearhead this new policy by developing Green Transport Plans.

This chapter summarises the evidence for the economic, environmental and health impact of travel patterns in Britain, examines Government policy on transport management and assesses progress towards implementing green travel plans in the NHS, particularly in London.

Travel, health and sustainability

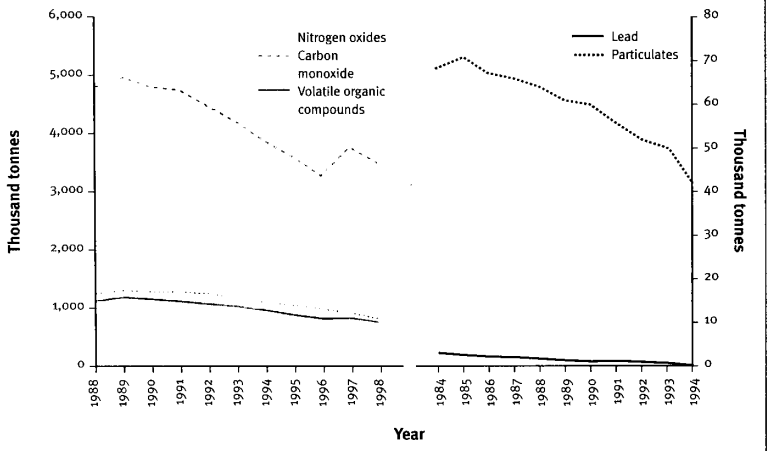
Environment

Today, most people travel to work by car, usually alone, even though many do not use their car as part of their work. Gradually transport planners have realised that the exponential growth in traffic cannot be matched by a similar increase in road capacity. Rather than solving congestion problems, more roads contribute to greater car usage, resulting in more congestion. This system exacts an economic and environmental toll. The Confederation of British Industry (CBI) estimates that traffic congestion costs UK industry £15–20 billion annually.[3]

Transport is the fastest growing source of carbon dioxide (CO_2) in the UK. CO_2 is a greenhouse gas implicated in global warming. In 1984, transport contributed 84 per cent of the 31 million tonnes of CO_2 emissions worldwide. By 1994, this proportion had risen to 87 per cent; in other words, 34 million out of 39 million tonnes.[3] Traffic also gives off volatile organic compounds and nitrogen oxides, which by interacting with sunlight, produce ground-level ozone – also implicated in climate change. In 1998, road transport produced 38 per cent of volatile organic compounds, or 747,000 tonnes out of 1,958,000 tonnes.[5] Road transport also affects air quality. Over the past decade, air quality has improved, due firstly to regulations reducing the amount of lead permissible in petrol, and secondly to new EC emission standards for new cars and the fitting of catalytic converters, which reduce the emission of nitrogen oxides, carbon monoxide and volatile organic compounds. However, projected increases in traffic will wipe out any benefits already gained.

Transport contributes 34 million tonnes of carbon dioxide – 87 per cent of total CO_2 emissions in the UK.

4 **THE DECLINE IN ABSOLUTE QUANTITIES OF VARIOUS KINDS OF VEHICLE EMISSIONS OVER THE PAST TEN YEARS**



Source: Department of Transport, *Transport Statistics Great Britain 1996*. London: HMSO 41–43

Health

Transport planners' concerns about the economic and environmental costs of our current transport system have been complemented by a growing body of evidence about the detrimental impact transport has had on health. Numerous studies suggest that air pollution is an aggravating, rather than a casual factor, in ill health and in earlier deaths (see Table 3). Currently air pollution causes 12,000 to 24,000 premature deaths nationally each year and a similar number of hospital admissions. Scaled down for London this means perhaps 2000 deaths, mainly of older people, brought forward by weeks or months.[6] In London alone in 1997, there were also 46,000 road traffic casualties, of which 6700 were serious and 276 fatal.[7] Traffic noise and congestion also exact a health toll. Traffic noise is associated with the disruption of memory, attention and problem solving abilities. Busy roads hinder independence in children and undermine neighbourhood social support networks and so have an impact on the health of communities and mental health of individuals.

Economics

The health impact of our reliance on private transport also has an economic cost. One estimate puts the cost of pollution-related health problems in London at £7 million per year.[8] Another estimate suggests that each admission to hospital for respiratory problems that could be avoided, could save the NHS £1400 to £2500.[9] This would put the cost of pollution-related admissions nationally at £17–£60 million. Traffic accidents in 1997 were estimated to cost the NHS over £420 million per year.[10] Another study suggested that in 1998 traffic accidents in London cost the NHS £93 million.[11]

Reducing the number of road accidents and improving air quality might not only have an environmental impact, but might also reduce the pressure on the NHS and release health resources for other needs – a first step towards making the health care system sustainable.

TABLE 3: HEALTH IMPACT OF ROAD TRANSPORT IN THE UK BY SUBSTANCE/ISSUE

SUBSTANCE/ ISSUE	UK ROAD TRANSPORT CONTRIBUTION TO AIR QUALITY (1996)	ANNUAL EFFECT ON DEATHS AND HOSPITAL ADMISSIONS IN UK	REMARKS
Particulate matter	24% of particles (PM)	PM contributes to 10,500 hospital admissions for respiratory problems and the probable earlier deaths of 8100 people in urban areas	Smaller particles reach deep parts of lungs. Concentration of particulate matter is associated with increases in respiratory ailments, reduced lung function, aggravated asthma, and increased hospital admissions and deaths due to respiratory and cardiovascular disease.
Nitrogen oxides	47% of nitrogen oxides and 30% of non-methane volatile organic compounds	Between 700 and 12,500 deaths (dependent on the threshold level for ozone) brought forward due to the impact of ozone; additional or brought-forward hospital admissions range between 500 and 9900	Nitrogen dioxide can precipitate or exacerbate asthma. Chemical reaction between sunlight, nitrogen oxides and volatile organic compounds produces ground-level ozone, which affects lung function. Ozone exposure may also increase asthmatics' sensitivity to allergens.
Volatile organic compounds	64% of benzene and 68% of 1,3-butadiene	No quantified estimates available	Long-term exposure associated with leukaemia, genotoxic damage (that is, to DNA) and various cancers. Controversy exists over the carcinogenic potential of low levels of benzene.
Carbon monoxide	71% of carbon monoxide	No quantified estimates available	Reduces the oxygen-carrying capacity of the blood. Can precipitate angina in people susceptible. Affects hospital admissions and death rates due to cardiovascular disease. Reduces mental performance, causing confusion and reduced co-ordination.
Sulphur dioxide	2% of sulphur dioxide (public power combustion contributes 65%)	Contributes to the advancement of 3500 deaths in the urban population in the UK annually, and brings forward an additional 3500 hospital admissions for respiratory causes	Acute effects include reductions in lung function and increased hospital admissions and deaths for people over 65 from respiratory and cardiovascular causes. Chronic effects include respiratory illnesses in children and respiratory symptoms in adults. Asthmatics are more susceptible.
Lead	57% per cent of lead in air in 1998, down from 84% ten years earlier	No quantified estimates available	Can damage the nervous system, kidneys and haemoglobin production. High lead levels in children are associated with behavioural and concentration problems.

Sources:
UK road transport contribution: *National Atmospheric Emissions Inventory*, 1999, cited in Health Education Authority. *Environment and health: air pollution.* London: Health Education Authority, 2000: 12
Annual effect on deaths: Committee on the Medical Effects of Air Pollutants (COMEAP), Department of Health. *The quantification of the effects of air pollution on health in the United Kingdom: executive summary.* London: The Stationery Office, 1998: Table 1.1. www.doh.gov.uk/hef/airpol/airpolz.htm
Remarks: The data on health impacts is drawn from the following: Dora C. A different route to health: implications of transport policies. BMJ 1999; 318: 1686–9. Katsouyanni K et al. 'Short-term effects of ambient sulphur dioxide and particulate matter in death rates in 12 European cities: result from time series data from the APHEA project'. BMJ 1997; 314: 1658. Health Education Authority. *Environment and health: air pollution.* London: HEA, 2000: 8–10. Wolff S P, Gilham C J. 'Public health versus public policy? An appraisal of British urban transport policy'. Public Health 1991; 105(3): 217–28. Schwartz J. 'Health effects of air pollution from traffic: ozone and particulate matter'. In: Fletcher T, McMichael A J, editors. *Health at the crossroads: transport policy and urban health.* London: Wiley, 1997: 61–82

Government transport policy aims to encourage the use of public transport, walking and cycling and to reduce the environmental and health impact of transport.

The current picture

Government approach

In 1998 the Government published the White Paper *A New Deal for Transport*, which changed the focus of transport planning. To reduce car usage, the intention was now to manage demand by providing access to alternative forms of transport – public transport, cycling, walking – and to reduce the need to travel by linking transport and land planning. The report was one of the first to make explicit links between transport and its health effects and was also supported by the Government's sustainable development strategy.

The link between land use and transport planning was elaborated in Planning *Policy Guidance Note 13* (PPG 13) on transport: 'By shaping the pattern of development and influencing the location, scale, density, design and mix of land uses, planning can help to reduce the need to travel, reduce the length of journeys and make it safer and easier for people to access jobs, shopping, leisure facilities and services by public transport, walking and cycling.'[12]

PPG 13 suggests that local authorities should situate generators of travel demand, such as workplaces, housing developments and retail and leisure services, near public transport interchanges to encourage a shift away from cars. Schools, health centres, local convenience shops, branch libraries, offices of the local authority and service providers should be accessible by walking and cycling, and the availability of parking should be reduced. In this way, land-use planning could reduce the growth in the number and length of car journeys, promote social inclusion and revitalise towns and cities as places in which to live and work. The planning guidance supports the Road Traffic Reduction Act 1997, which instructs highway authorities to specify targets for reducing road traffic and cutting the rate of growth.

To encourage greener commuting, the Government has introduced a series of tax-free employee benefits.[13] No tax is applied to 'green' benefits provided by employers, such as the provision of employee works buses with 17 or more seats or subsidies to public bus services used by employees for travel to work, provided the fare is the same as for a member of the public. Employers can pay employees up to 20 pence per mile travelled by bicycle for business purposes, or employees can claim this tax relief themselves. Employers can also provide tax-free loans for bicycles and cycling safety equipment used by their staff to get to work.

To measure the progress of this new transport strategy, the Government has set national targets to:

- double cycling by 2002 from a 1996 base and double it again by 2012
- reverse the decline in walking
- encourage use of public transport
- introduce green transport plans for key government buildings and major employers.[14]

It also has a series of environmental targets that will be affected by any shifts in transport usage. It has committed itself to:

- reduce CO_2 emissions by 20 per cent by 2010
- meet National Air Quality Strategy targets on a range of air pollutants by 2005
- meet EU vehicle and fuel quality standards to reduce toxic emissions and noise from new vehicles, and to improve fuel efficiency and reduce CO_2 emissions from vehicles by more than a third by 2010.

Finally, changes in transport patterns will have an impact on people's health by enabling them to lead more active lifestyles in a healthier environment. The Government has committed itself to:

- improving road safety
- meeting targets set out in *Saving Lives: Our Healthier Nation* to reduce all accidents by one fifth by 2010, and reduce death rates from heart disease and strokes amongst people under 65 by a third by 2010.

The NHS and green travel plans

A New Deal for Transport highlighted the role that public institutions, such as schools and hospitals, could play in spearheading this new policy. It stated that the Government was 'particularly keen that hospitals are seen to be taking the lead in changing travel habits. By the very nature of their work, hospitals should be sending the right message to their communities on acting responsibly on health issues. We would like to see all hospitals producing green transport plans.'[15]

PPG 13 similarly highlighted the role of schools and hospitals as 'major generators of travel,' which 'should be located so as to maximise their accessibility by public transport, walking and cycling.' New health facilities, it proposed, 'should be planned to maximise accessibility by non-car modes of transport'.[16]

The shift in national transport and land-usage policy has been matched by growing pressure on car parking space at hospital sites. Increasing car ownership and the centralisation of specialist health facilities have attracted greater numbers of employees and patients to sites. Traffic and overspill parking are unpopular with local residents. Hospital car parks are expensive to run and divert scarce resources from patient care; expanding car parks only attracts more traffic. National surveys show that over three quarters of journeys to local hospitals by health service users are by car, as are about half of visits to GPs and pharmacies[17] (see Figure 5).

Health trusts have begun to look at green travel plans in order to change the way people travel to health sites. The plans try to encourage walking, cycling, car sharing and travelling by public transport, and to discourage driving alone.

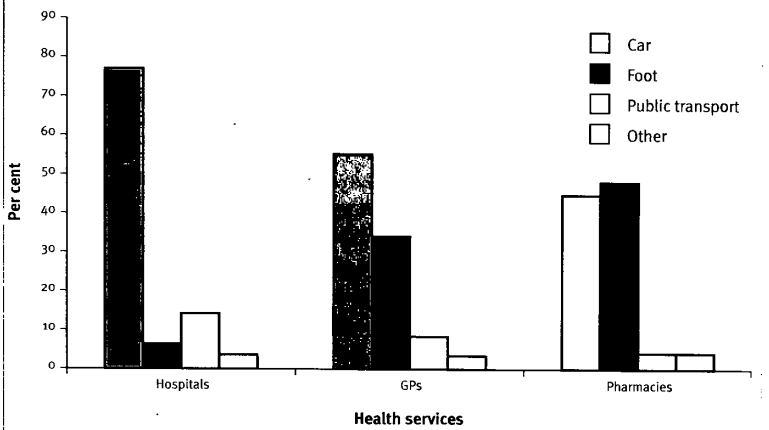
Health trusts have begun to look at green travel plans in order to change the way people travel to health sites. The plans try to encourage walking, cycling, car sharing and travelling by public transport, and to discourage driving alone.

Travel surveys

Interviews with acute trusts in London showed that many sites either had or were developing transport policies.[18] The first step was to survey employee, patient and visitor travel patterns to the trust site.

London travel patterns differ slightly from national trends. In central London only 13 per cent commute by car (in outer London this rises to 68 per cent) and a higher proportion depend on bus, rail or underground.[19] This is reflected in travel

5 TRAVEL TO HEALTH SERVICES BY USERS, 2000



Source: Office for National Statistics, *Social Trends No 31*, London: The Stationery Office, 2001, Table 12.4

patterns to London hospitals. Some central London hospitals had virtually no parking at all. For example:

- Great Ormond Street, with a staff of 2200, has a 110-space car park used largely by clinicians working on different sites.
- Chelsea and Westminster, which also employs 2200, has 180 car spaces reserved for senior managers and clinicians.

Nevertheless, surveys of travel patterns at hospitals in inner and outer London show that while many employees use public transport, cycle or walk, many still depend on a car for their sole use. For example:

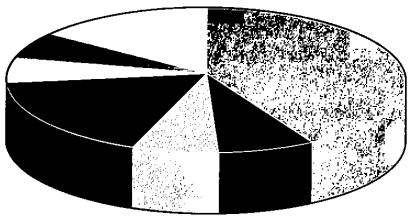
- A survey conducted by the Whittington Hospital Trust in north west London showed that 43 per cent of its employees travelled to work alone in their cars, and that of these 60 per cent did not use their car for work duties.[20] As for visitors to Whittington, 30 per cent arrived in a car on their own, although 40 per cent arrived by bus.
- A similar survey by Lewisham Hospital Trust in south London showed that 46 per cent travelled by car.[21] Surveys of visitor travel to these two sites also showed a heavy reliance on cars. Some 27 per cent came alone in a car, and 29 per cent travelled by bus.

In most cases the efforts of trusts to develop a green travel plan were the result of local authorities making it a condition of planning permission for new developments. This follows a national trend: a report for the DETR in 2000 showed that while in 1998 some 25 local authorities reported using planning conditions, by 2000 the total had increased to 152 authorities.[22] In London, individual boroughs have set their own targets for reducing traffic and signed up to a London-wide reduction of 15 per cent in traffic levels by 2010.[23]

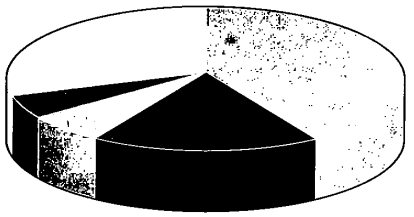
However, neither local authorities nor trusts appeared to monitor the impact of a travel plan or its effectiveness once it was introduced. And many interviewees commented that while their hospital might have a green travel plan, parking permits were still seen as a necessary part of the job. One chief executive whose

6 MODES OF TRAVEL BY STAFF TO LEWISHAM AND WHITTINGTON HOSPITALS

STAFF TRAVEL TO LEWISHAM HOSPITAL, 2001



STAFF TRAVEL TO WHITTINGTON HOSPITAL, 2001



trust was developing a green travel plan and applying for permission to expand car parking facilities near the site, said: 'Our consultant medical staff work on several sites. We need to attract and keep the brightest staff and access to a car park is a key benefit.'[24]

Green travel plans

An example of a well-developed and well-monitored green travel plan outside London is that at Addenbrooke's Hospital,[25] which lies three miles from the centre of Cambridge. The hospital has a staff of 5000 but only 3365 car spaces, of which 2475 are reserved for employees. The lack of car parking spaces and the planned hospital expansion forced the trust to look at travel alternatives. By 1997 it had developed the Access to Addenbrooke's scheme. The scheme reduced the availability of car parking spaces to staff who lived locally or had alternative means of transport. Employees who car-shared were given preferential access to the car park, and could rely on an emergency 'get you home' service. To encourage cycling, the trust offered interest-free loans for bicycles and mopeds, provided training for new or inexpert cyclists, improved parking, roads and showering facilities and offered a cycle repair service. To encourage use of public transport, Addenbrooke's liaised with the local and county councils and with bus companies on developing bus routes, better timetabling and better waiting facilities, and sold cheaper weekly tickets. To encourage patients and visitors to use public transport, travel information was sent out with appointment schedules. The impact of the Access to Addenbrooke's scheme was evident in changed travel behaviour. Between 1993 and 1999, car usage among employees dropped from 74 per cent to 60 per cent, cycling increased from 17 per cent to 21 per cent and bus usage also climbed from 4 per cent to 12 per cent.

A travel plan at Addenbrooke's Hospital in Cambridge reduced car usage by 14 per cent, and increased cycling by 4 per cent and bus usage by 8 per cent.

Travel plans have also been developed by some large employers in the private sector. Pfizer,[26] a pharmaceutical company based in Kent, offers staff financial incentives to leave their cars at home. Car parks are expensive to develop and maintain, and since employers bear the cost, are in effect a hidden financial perk. At Pfizer, 'greener' commuters do not subsidise the travel preferences of other

Institutions can make huge cost savings from simple efficiencies, such as computerised load matching (using the same lorries for deliveries and collections from sites): a 1993 study found that over a quarter of lorry kilometres were undertaken without a load.

employees, but obtain a reward for changing their own behaviour and relieving the company of the cost of providing a parking space. Employees who travel to work on foot or by public transport, bicycle or motorcycle can currently claim credit of £2 per day, or up to £40 a month. Car sharers claim points depending on the number of people in a car, while single-occupancy cars receive no credit.

Other health service, local authority and corporate travel plans have offered a range of incentives to persuade people to use alternative transport. These include:

- differential charges for parking (for example, car sharers pay less)
- withdrawal of parking permits from people living within cycling or walking distance of a health facility or with good access to public transport
- enabling employees who use bicycles for work purposes to claim a mileage allowance
- offering a higher mileage allowance to employees who use cars with a smaller engine capacity or that run on liquid petroleum gas
- interest-free and tax-free loans for bus or rail season tickets.[27]

Freight and fleet management

Green travel plans have focused on staff and visitor travel to hospital sites, but hospitals also attract traffic as a result of the delivery of supplies and the collection of waste. The GLA's draft transport strategy plans to minimise the environmental impact of freight, delivery and servicing in London by encouraging efficiency, a shift from road to rail and water transport, and cleaner vehicles. NHS Logistics (the health service's national storage, distribution and wholesaling service) has adopted an environmental policy. It is currently experimenting with reusable delivery containers to reduce packaging waste and with consolidated deliveries to cut the number of deliveries to clients and ensure its delivery vehicles are used to full capacity, but it has no immediate plans to develop a low-emission fleet.[28]

A report by Friends of the Earth suggests that institutions can make huge cost savings from simple efficiencies, such as computerised load matching (using the same lorries for deliveries and collections from sites): the report references a 1993 study, which found that over a quarter of lorry kilometres were undertaken without a load. In response the report suggested that companies might also try to reduce the volume of goods through design, or reduce packaging to increase the amount of freight delivered in one load.[29]

An NHS Estates report suggests that trusts can rationalise the number of products and suppliers, reduce the number of ordering points, optimise order quantities and maximise the use of consolidated deliveries as a way of creating a more sustainable freight and supplies management policy.[30] A few hospitals have worked with their suppliers to develop more sustainable delivery plans. For example:

- Great Ormond Street Hospital, on a congested inner-city site with only one entry point for materials delivery, formerly received deliveries from different manufacturers and stored inventory on site. Now it has reassigned the storage space for health records, freeing up space for outpatients, reduced stock on site and set up a 24-hour order and delivery system. It uses NHS Logistics to make full-lorry deliveries, thus reducing the number of deliveries to the site,

and has developed a precise system for the number and timing of deliveries, thus preventing site congestion.[31]

- Newham Hospital Trust is working with its suppliers to check whether they use clean, lead-free diesel. Suppliers must now switch off their engines when delivering.[32]

Trusts usually have a small fleet of cars that they either own or lease, and these could be covered by a green travel policy too. Trusts can choose vehicles that use fuel more efficiently and emit less CO_2, as these can have cost advantages. Liquid Petroleum Gas (LPG) vehicles can be cheaper and cleaner to run compared to diesel or lead-replacement petrol vehicles. In future, new cars are likely to taxed on the basis of their carbon dioxide emissions, and company car taxation too will probably be based on carbon dioxide emissions rather than mileage.[33]

However, interviews showed that without a service infrastructure, trusts are reluctant to act. Several acute trusts had considered using LPG vehicles, but had decided against it as there were no local refilling facilities. The trusts saw investing in a refilling facility that other trusts could use as outside their core activities.[34] One primary care trust had acquired four vehicles that could be converted to LPG, but had then decided against installing a refilling station because of financial pressures. So the trust was left with vehicles that were more expensive to run than the diesels it would otherwise have chosen – until by chance a local petrol station introduced a LPG service.[35]

Trusts can also examine ways of greening leased transport. St George's Hospital Trust contracts out non-emergency patient transport. As part of its tender specifications, it asked for proof of the contractor's environmental policies. Both of the suppliers it considered were applying for ISO14001 accreditation.[36] So the trust was able to choose a contractor that offered quality and value for money, and whose service was in line with the hospital's new environmental policy.

Possible future directions

Integrated transport and land-use management could lead to more sustainable and healthier transport policies. No studies have been made of the health impact of green travel plans at a local or national level, but it is hoped that they will lead to:

- reduced noise, pollution, CO_2 emissions and accidents
- healthier employees as a result of regular exercise
- more equitable access to services
- the development of new job markets (one study estimated that the new transport strategy could generate 165,000 new jobs nationally by 2010).[37]

Integrated transport and land-use management could lead to more sustainable and healthier transport policies.

However, even the best green transport plans will be undermined if people still find that travelling alone in their cars is cheaper, more reliable and more pleasant. Surveys of attitudes to car use in Britain show that ever fewer people feel that they can replace short car journeys with journeys by bus or walking.[38] This suggests the need for a concerted publicity campaign to persuade people to think about the choices they are making. Green travel plans can help commuters to change their behaviour by limiting car parking availability at work and suggesting environmentally cleaner and healthier travel alternatives. Local plans need to be backed up by a series of incentives and disincentives that help to change commuting behaviour. For example:

Trusts need to work on two fronts, first by negotiating with local transport providers to create a better service, and second by changing the assumptions of employees about their 'rights' to parking places and travel choices.

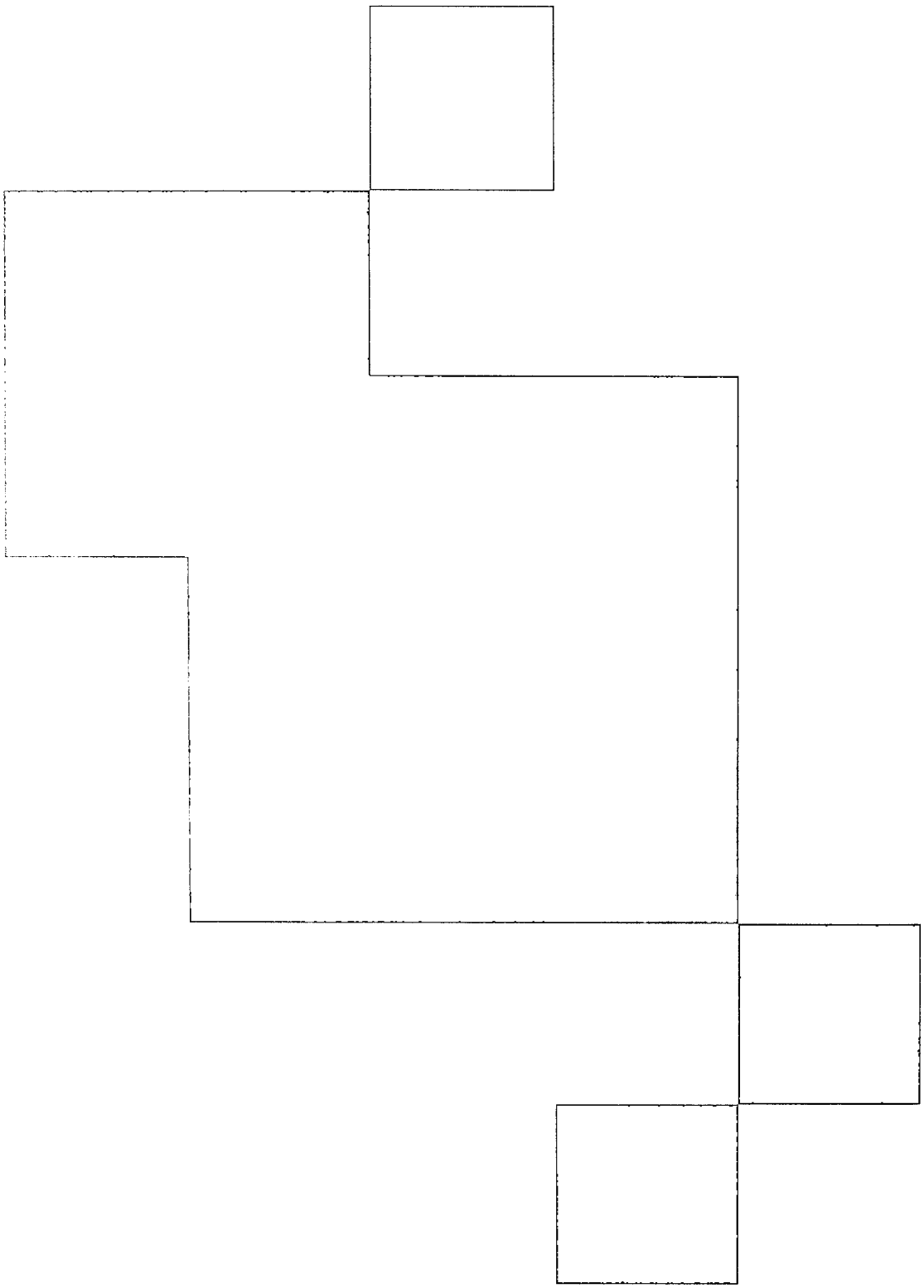
- investing in and modernising the public transport infrastructure
- keeping the costs of public transport affordable
- introducing tax incentives to promote greener travel choices and penalise unnecessary car use.

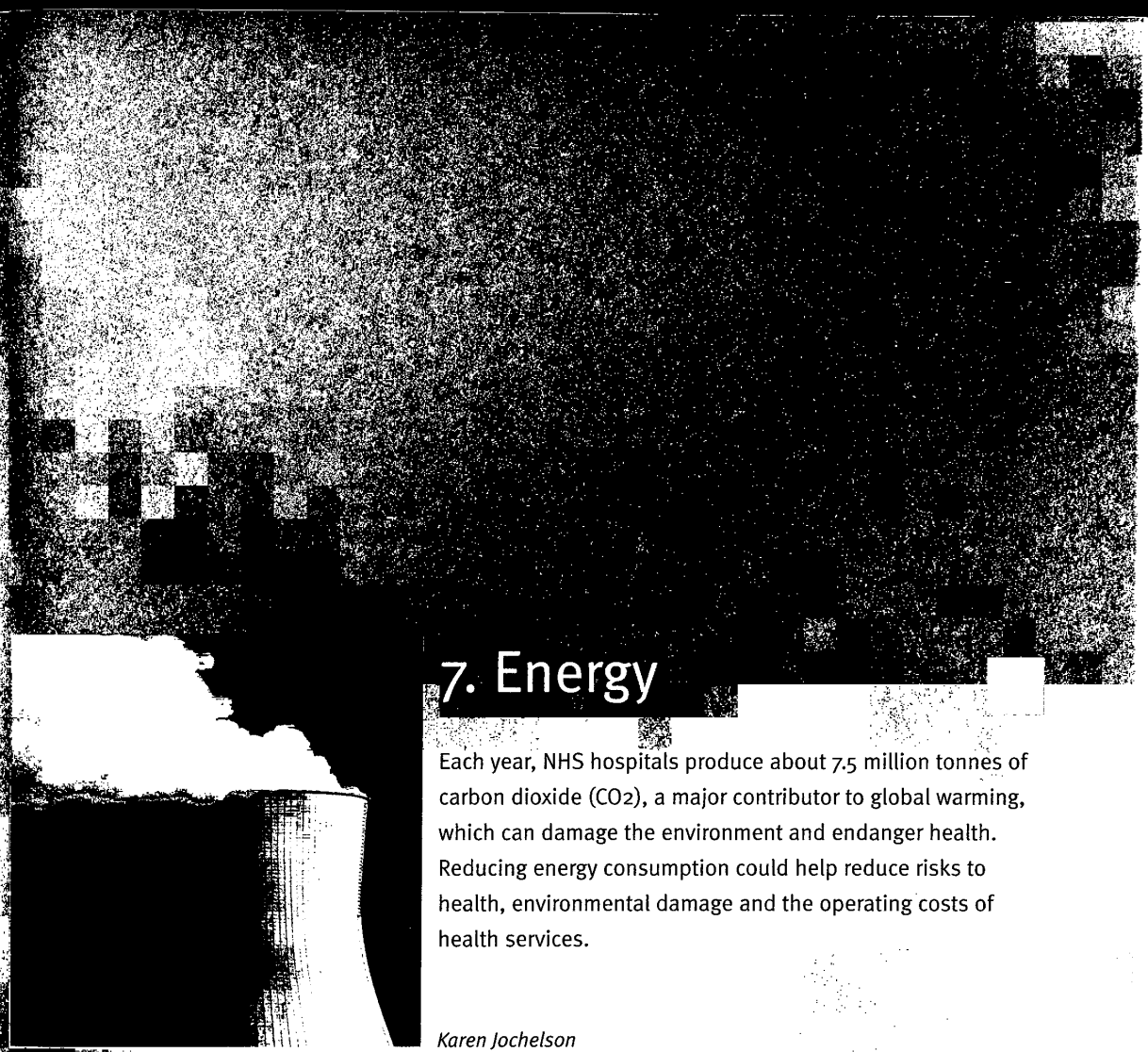
Many trusts are drawing up transport plans, but as we have seen, this is largely under pressure from local authorities. There is a long way between creating a policy to satisfy planning conditions and actually implementing the policy. Trusts need to work on two fronts, first by negotiating with local transport providers to create a better service, and second by changing the assumptions of employees about their 'rights' to parking places and travel choices. This requires a commitment of resources, and the most successful travel plans have been led by a specially appointed officer. While this might appear an unnecessary cost, the true costs of car-based travelling and parking provision are seldom factored into budgets. Trusts also need to monitor the impact of their transport plans, as without such assessment there is no way of judging the success or limitations of a policy.

Few trusts have examined their supplies and logistics services. Rationalising their ordering and delivery can help to reduce the cost and volume of inventory, while also reducing the transport burden of numerous small and unco-ordinated deliveries.

Finally, trusts need to examine the criteria by which they manage their own fleets or contract out their transport requirements. Where trusts have an environmental policy, the criteria should be applied to the choice of vehicle and choice of subcontractor, within the Government's procurement guidelines (see Chapter Two).

Green travel plans are a first step towards healthier and more sustainable travel behaviour in the UK, and as a significant national employer the NHS has an important role to play. As employees and patients choose to walk or cycle to health facilities, or use public transport, each person will in their own small way improve their own health and the environment of their local area. If green travel plans contribute to reducing the environmental and health impact of our car-based economy, then gradually the burden of ill health associated with transport may lighten and release NHS resources for other, more intractable health problems.





7. Energy

Each year, NHS hospitals produce about 7.5 million tonnes of carbon dioxide (CO_2), a major contributor to global warming, which can damage the environment and endanger health. Reducing energy consumption could help reduce risks to health, environmental damage and the operating costs of health services.

Karen Jochelson

Energy

The UK depends on energy produced from gas, coal, oil and nuclear power, fossil fuels are not only inefficient but also generate greenhouse gases that contribute to global warming. The UK Government is a signatory to the Kyoto Protocol, which requires it to reduce carbon emissions. The health sector is a significant consumer of energy, but has committed itself to reducing its consumption. This chapter summarises the environmental and health impacts of energy use and the challenges facing acute and primary care trusts moving towards lower energy consumption.

Energy, health and sustainability

International comparison of volume of emissions

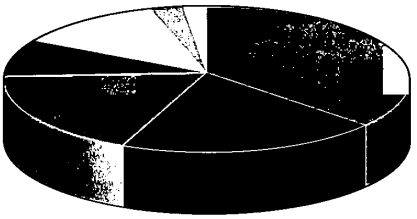
We produce energy by burning oil, gas or coal to generate electricity. Conventional electricity generation plants are inefficient, and lose heat and energy in the transmission process. Energy use and transport systems also contribute to the volume of CO2 we emit. CO2 is the most significant of the greenhouses gases, which also include methane, nitrous oxide and chlorofluorocarbons (CFCs). The USA leads the CO2 emission tables, producing 5.85 tonnes per person per year, compared to Europe's 2.31 tonnes. The UK emits 2.92 tonnes per person per year;[1] of this, about 51 per cent comes from the operation and construction of buildings – 46 per cent from heating, lighting and ventilation and 5 per cent from building construction – and 30 per cent from transportation.[2]

Hospitals as users of energy

Hospitals are intensive users of energy, and it is both the design and operation of their buildings that are the causes. There has been a shift towards deeper-plan buildings that use more electricity for lighting, pumps and fans than the shallow plan, naturally ventilated buildings they replace. The energy consumption of hospitals has also risen as a result of the more intensive use of sophisticated medical and IT equipment. In 1991 the NHS was estimated to have used 54 million gigajoules of energy, or 1.6 per cent of the UK total.[3] Since then the NHS has reduced its energy consumption, and now it uses 46 million gigajoules, or 0.64 per cent of the national total.[4] A typical hospital uses most of its energy to run lighting, ventilation and lifts.[5] Electricity accounts for about 20 per cent of a hospital's energy consumption, 60 per cent of its energy costs and about 30 per cent of its CO2 emissions.[6] A typical acute hospital consumes energy equivalent to 16 tonnes of CO2 per bed space per year or a total of about 8700 cubic metres of CO2 – enough to fill over 60 six-bed wards.[7] With about 23,650 acute beds, London would produce about 378,400 tonnes of CO2 per year – enough to fill 1,419,000 six-bed wards. In the UK the energy used by the health sector produces about 7.5 million tonnes of CO2 per year.[8]

Energy used by hospitals produces about 7.5 million tonnes of CO2 per year.

7 ENERGY USE IN A TYPICAL HOSPTIAL



Source: Chris Hall (BRE), *The Avoidance of Energy Waste in the NHS*, London Regional Office Estates/Facilities Seminar for NHS Trusts and PCTs, 4 Sept 2001

Greenhouse gases

CO_2 is the gas that causes about 60 per cent of the human-induced 'greenhouse effect'; the others include methane, nitrous oxide and chlorofluorocarbons (CFCs). The atmospheric concentration of CO_2 has increased by 31 per cent since 1750, and is now at its highest for 400,000 years. Three quarters of CO_2 emissions in the past 20 years have been caused by burning fossil fuel. Ozone-depleting gases such as CFCs are now increasing more slowly since they were banned by the Montreal Protocol, but their substitutes are also greenhouse gases. Although global warming disputed, there is plenty of evidence for it: average global temperatures have increased; glaciers, Arctic Sea ice and snow cover are retreating; agricultural growing seasons are lengthening; and the ozone hole is widening.[9]

Climate change and health

Worldwide position

A growing international literature explores the impact of climate change on health. McMichael, Haines and Epstein[10] show how climate change will influence food production by affecting soil conditions, water supply, fertilisation patterns and pest activity. Reduced food supplies will contribute to malnutrition. Changes in land use will affect the distribution of disease carriers, such as rodents and insects, while climate change will influence their range and, the timing and intensity of disease outbreaks. Already there is evidence that mosquitoes, which carry malaria, dengue fever, yellow fever and various types of encephalitis, are spreading into areas that were formerly too cool for their survival. Rises in sea level will displace communities living on the coast or on small islands, leading to economic and social disruption, more overcrowding and an increase in associated diseases, such as tuberculosis, and more mental ill health as individuals suffer personal and communal stress.

UK position

An expert group on climate change and health brought together by the Department of Health has assessed the likely impact of climate change on health in the UK.[11] The nation is certainly experiencing higher average temperatures: the past decade has seen four of the five hottest years since 1659. Sea levels around the coasts are also rising. The likely impact of climate change on the UK will be warmer but wetter winters, and warmer and drier summers. More frequent winter gales and a rise in sea levels may cause severe flooding in low-lying areas.[12] The expert group concludes that global warming will have benefits and costs for health in the UK.

On the positive side:

- The UK has Europe's highest rate of excess deaths in winter, with an estimated 60,000–80,000 per annum. Assuming that temperature plays a significant role in winter death rates, the expert group estimates that by 2050 the total will perhaps have declined by 20,000 per year.
- If the level of air pollution in the UK continues to decline, then a reduction in deaths and illnesses related to air pollution is likely.

On the negative side:

- Heat-related deaths in summer could increase to around 2800 a year.
- Cases of food poisoning linked to warm weather have been increasing rapidly, and currently stand at about 100,000 cases per year. An increase of about 10,000 cases by 2050 is predicted.
- By 2050, indigenous malaria caused by Plasmodium vivax could return, especially in low-lying salt marsh districts. However, the more dangerous Plasmodium falciparum is unlikely to establish itself, as weather conditions are unsuitable.
- The likely increase in severe winter gales will cause deaths and severe injuries from flying debris, falling trees or collapsing buildings.

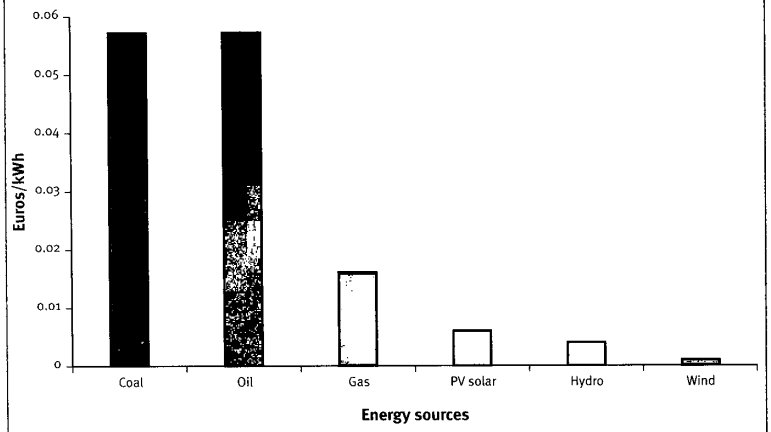
The expert group also assessed the health impact of ozone depletion. This has led to increased ultraviolet radiation, with consequences for human health:

- The growth in ultraviolet (UV) radiation could lead to an increase in skin cancer and eye damage unless individuals try to limit their exposure. If emissions remain at today's levels, the UK could expect 30,000 extra cases of skin cancer per year by 2050. If the commitments of the Copenhagen Amendments are met, this could be reduced to 5000 extra cases per year.
- The expert group also predicts 2000 excess cases of cataracts per year by 2050.
- Increased radiation can undermine the immune system and might have an effect on some viral, bacterial, parasitic and fungal infections, as well as infections that have a phase in the skin, like malaria and leprosy.
- Ultraviolet radiation contributes to photochemical smog and can increase ground-level ozone, which can aggravate respiratory conditions. The expert group expects several thousand more associated deaths and several thousand more episodes of illness per year.
- More UV radiation might have an impact on the ecosystem and food production.[13]

Global warming may reduce winter deaths, but is likely to increase summer deaths, cases of food poisoning, skin cancer and cataracts.

Global climate change and stratospheric ozone depletion, together with chemical pollution, acid rain and the reduction and fragmentation of habitats, are also threatening biodiversity in species-rich areas such as tropical rain forests and coral reefs. Biodiversity may seem unrelated to the practice of medicine, but it is of direct importance. Degradation of these habitats means we are losing plants, animals and micro-organisms, including many still undiscovered, that may contain valuable new medicines. Only about 1.5 million species have been identified, but there are thought to be ten or even 100 times that number. Over millennia of evolution, species have developed chemicals that have allowed them to fight infections, tumours and other diseases – chemicals that have become some of today's most important pharmaceutical agents. Species also offer research models

8 HEALTH COSTS OF ENERGY



Source: 'Costing power in a different light', *Green Futures*, Nov/Dec 2001, p.13

for understanding unique physiologies that can help to prevent ill health in humans.[14]

Climate change will clearly exact a health cost in the future. A recent European Commission study stimates the current financial costs of different change sources of energy on public and occupational health, material damage and climate change. If we measure how much it costs to produce electricity, then coal, oil and gas are relatively cheap, but they exact a higher cost on health than renewable sources of energy.[15]

The current picture

Government approach

International commitments

Over the past decade, an international understanding has gradually been reached that countries will need to limit their impact on the environment if they are to alleviate the consequences of climate change:

- In 1987 the Montreal Protocol committed signatories to phasing out chlorofluorocarbons, halons and other synthetic chemicals that damage the stratospheric ozone layer protecting life on earth from harmful ultraviolet radiation.

- In 1992 the United Nations Framework Convention on Climate Change, which proposed that developed countries should reduce their greenhouse gas emissions, was agreed at the Earth Summit in Rio de Janeiro.

- In 1997 some 30 governments signed up to the Kyoto Protocol, which required industrial countries to reduce CO2 emissions by 12.5 per cent below 1990 levels by 2008–2012, in the hope of stabilising the atmospheric concentrations of greenhouse gases. The UK is among the countries committed to the protocol, and has set its own more ambitious target of reducing CO2 emissions by 20 per cent by 2010.

The UK plans to reduce its CO2 emissions by 20 per cent by 2010.

UK developments

To achieve its target, the UK government has set out to stimulate the take-up of low-carbon technologies by business, to encourage the growth of renewable energy to ten per cent of the energy market, to cut transport emissions and to promote energy efficiency in the domestic, business and public sectors.

The Climate Change Levy became effective from 1 April 2001. It is not a tax, but a charge on the amount and type of energy used,[16] and its cost is recycled by a 0.3 per cent reduction in all employers' National Insurance contributions. Institutions can claim exemption from the levy if, for example, they use electricity supplied from renewable energy or use government certified combined heat and power plants. Consumers in energy intensive sectors who sign up to energy-saving targets agreed between the Government and the sector association are eligible for an 80 per cent discount on the levy. The aim of the levy is to encourage industry, commerce, agriculture and the public sector to cut energy costs and protect the environment.[17]

In its assessment of the UK's energy policy, the Sustainable Development Commission applauded the Government for being likely to meet its Kyoto targets for 2010, largely because of the shift to gas. However, it was critical of the Government's performance on stimulating the renewable market and believed it did not have regulations in place to facilitate the further reduction of CO2 emissions.[18]

NHS developments

Overview

The health sector has a long history of concern about energy efficiency. In 1990 the Department of Health set the NHS a target of 15 per cent energy savings by 1995. This was driven by a concern to reduce expenditure on energy: at the time, the health service in England spent £227 million on energy, and electricity, which accounted for about 20 per cent of energy consumption, represented 50–60 per cent of its energy costs.[19] The target was later revised to reducing energy use by 20 per cent by 2000 – an objective that the NHS largely met. Its most recent energy costs were £196 million.[20] In support of the Government's Climate Change Programme, the NHS now has to meet new mandatory targets.[21] It has agreed to:

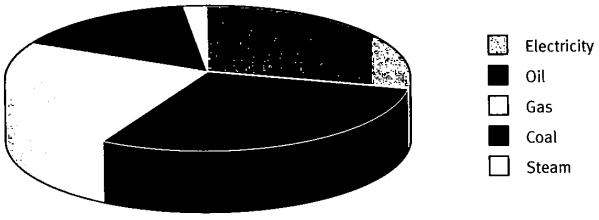
- reduce primary energy use by 15 per cent over ten years to March 2010
- achieve energy targets of 35–55 GJ per 100 cubic metres for new buildings
- achieve energy targets of 55–65 GJ per 100 cubic metres for refurbished buildings.

Attitudes to energy management

A survey conducted in 2001 for the Government's Energy Efficiency Best Practice Programme found that more than 80 per cent of NHS trust chief executives and finance directors knew that they could save money by being more energy efficient, but that few were treating it as a priority.[22] This attitude was also evident from interviews conducted with acute and primary health care trusts in London.[23] Some acute hospital trusts had an energy policy and an energy manager to push an energy reduction strategy through the organisation. For example:

9 **PERCENTAGE OF CO_2 PRODUCED BY THE DIFFERENT FUELS USED BY THE NHS**

ENERGY USED BY HOSPITALS PRODUCES ABOUT 7.5 MILLIONS TONNES OF CO_2 PER YEAR, OF WHICH: 29% IS DUE TO ELECTRICITY, 29% TO OIL, 24% TO GAS, 16% TO COAL AND 2% TO STEAM



Source: 'Costing power in a different light', *Green Futures*, Nov/Dec 2001, p. 13

- The Royal Free Hampstead Hospital and St George's Healthcare NHS Trusts both had sophisticated energy management and monitoring systems, and were now considering devolving energy budgets to make each department accountable for its energy consumption.[24]

However, many trusts believe that their capital and maintenance budgets are too small to allow energy efficiency investments. Other trusts had lost their energy managers in staff cutbacks or had no energy policies at all. So, for example, one trust mentioned installing double-glazed windows, not for their energy saving potential, but 'because we saved on maintenance for cleaning'. Another explained that, in the absence of an overall energy policy, planning was shaped by short-term demand: 'Energy schemes have to fight with other bids for money. We have to answer how quickly we will get payback if we invest. In the health system, for construction projects especially, we tend to go for what is cheapest to build, rather than what is cost effective to maintain in the long run. We focus on capital costs, not revenue savings, so it is hard to justify investments.'[25]

Attitudes to energy management among mental health, community health and primary care trusts ranged from limited interest to lack of interest. For example:

- Community Health South London had no policy, but recognised that energy management was important to the environment and to cost-effective management.[26]

- Other trusts did not believe it was a priority, as their focus, as one primary care trust chief executive said, was 'getting a decent health care system in place'. All these trusts believed that their capital and maintenance budgets were too small to permit energy-efficient investments.

- A Director of Planning for a south London trust believed that, regardless of the potential savings from energy efficiency, his trust did not have the resources to consider it: 'We spend our time just trying to stop things from falling down. We already need to get a 3 per cent cost saving per annum, about £3 million. We can't pin this on energy saving, and would have to spend money we don't have to get savings in any case. We can't just cut our waste. We need to be given more money just to run the system. We are trying to provide a service with inadequate means. The reality of our energy system is figuring out which radiator is going to explode.'

The lack of resources meant that energy-conscious trusts felt restricted to no-cost initiatives such as advertisements, bulletins and seminars.[27]

The problems these trusts have in finding financial resources for energy efficiency initiatives are compounded by their operating over many small and scattered sites and their lack of estates personnel. The Community Health Trust South London until recently had an estates department of three people responsible for 40 sites. The department was now larger, but looked after 67 premises on 55 sites across three boroughs.[28] Southwest London and St George's Mental Health Care Trust worked over 40 small and widely scattered sites.

Low-energy sites

Examples of low-energy hospitals and health centres demonstrate the potential benefits to the environment, health and trust finances:

- St Mary's Hospital on the Isle of Wight was designed as a showcase low-energy hospital.[29] To reduce energy consumption, it used thermal insulation for the building fabric, water systems and cooking appliances, installed double glazing and low-energy lighting and recovered heat from its gas-driven combined heat and power system. Its CO2 emissions for 1997 were 3141 tonnes, compared with 4853 tonnes for a similar but traditionally designed hospital.

- Wansbeck General Hospital in Northumberland was also designed for low-energy operation and depends on wind energy. Over three years the hospital saved £273,000 and emitted 6000 fewer tonnes of CO2.[30] NHS Estates concluded that energy-efficient design can result in energy consumption 50 per cent lower than that of a conventionally designed hospital of similar function. Lower energy consumption meant lower energy costs, less maintenance and a saving of 1500 tonnes of CO2 per annum for a typical 300-bed acute hospital. Better controls over temperature and humidity in the hospital also created more comfortable ambient conditions for employees and patients.[31]

- Greenwich Millennium Village is a showcase development inspired by Government policies on sustainable urban development, sustainable environmental impact and the importance of integrated primary health care. It is built on a decontaminated brownfield site, and the housing, primary school and GP health centre are designed to reduce energy and water consumption and CO2 emissions.[32] When fully occupied, the health centre will offer a range of services including a minor operating theatre, X-ray room, district nursing service, physiotherapy and pharmacy.

  To reduce energy use, the centre is highly insulated, has double- and triple-glazed windows and a sophisticated temperature control system. The floor is made of hollow concrete panels, which distribute air through the building. In summer, cool air is drawn in at night and circulates through the building. In winter, the building is heated through heat exchange between the used, warmer air and fresh, cooler air, by solar gain and by the incidental heat from the equipment and people in the building. The building only came into operation in 2001, so energy-use statistics were not available at the time of writing, but the architects expect to recoup the slightly higher building costs from lower maintenance costs.

Low-energy hospitals consume less energy, have lower energy bills and emit less CO2.

Better insulation and energy management systems can reduce electricity consumption for heating, ventilation and air conditioning systems by 50 per cent.

Combined heat and power systems

The Government has been keen to encourage energy-intensive institutions to install combined heat and power (CHP) systems. Over the past decade several hospital trusts have done so, realising that they could reduce their energy bills by producing their own energy from gas rather than buying electricity from the grid. Recently, as gas prices have risen, the financial feasibility of CHP systems is less clear cut, though the environmental benefits are still evident. For example:

- The Royal Free Hampstead Hospital in north west London installed a CHP system in 1995.[33] The hospital, built in the 1970s, is an energy-intensive building consisting of a tower block and 50 lifts, and lacking natural ventilation. It is a single site, so CHP was cost effective. The gas-driven CHP unit generates electricity to meet the hospital's needs, and the waste heat that is usually lost is used to heat water, create steam for sterilising and heat the building. In summer the steam is vented to chillers, which cool the building. The scheme has had a positive environmental impact: it is more energy efficient than buying energy from the grid; gas is cleaner; the trust disposed of old chillers which used CFCs; and CO_2 emissions have been reduced from about 40,000 tonnes before installation to 26,000 tonnes now. The scheme has also had a positive financial impact: it cost £4–5 million, but since the trust saves about £872,000 a year, the expense has easily been recouped. The trust is also exempt from the Climate Change Levy and has benefited from the reduction in employer national insurance contributions.

  In addition to the CHP system, the Royal Free Trust has introduced energy-saving measures ranging from sophisticated building management systems that monitor temperature to energy-efficient lighting and lighting operated by movement detectors for infrequently visited areas. These smaller investments can bring large financial savings and energy efficiencies. Building Research Establishment (BRE) studies show that simply introducing more efficient modern lighting can give energy savings of up to 50 per cent over lighting systems only ten years old. Better insulation and energy management systems can reduce electricity consumption for heating, ventilation and air conditioning systems by 50 per cent. And making energy efficiency a criterion for the procurement process can result in financial savings too. Take ordinary personal computers, for example:

  A typical PC with a printer consumes 400 kWh (kilowatt) a year if switched on for 40 hours a week, 50 weeks a year. Using Energy Star equipment that powers down a computer to save electricity, or simply switching off a monitor, can reduce electricity consumption to 120 kWh per year.[34] For acute hospitals in London, this would mean reducing electricity consumption by computers from 11,409,600 kWh – equivalent to the energy used by 3260 households – to 3,422,880 kWh a year. This saving is equivalent to the amount of energy used to run 2282 households.[35]

Private Finance Initiatives

As argued in Chapter Eight, Private Finance Initiatives (PFI) have the potential to encourage energy efficiency in building design and operation. In England there are 148 approved health service PFI schemes with an approximate capital value of £4.5 billion.[36]

In theory, PFI schemes should encourage energy efficiency, since valuing a building or piece of equipment over its lifespan seems to promote whole-life costing: that is, valuing the operating and maintenance costs as well as the capital costs of buildings and equipment.

There are cases where PFI has been used to replace capital equipment without drawing on existing trust capital funding, and in a way that promotes energy efficiency. For example:

- Hemel Hempstead General Hospital used an energy services contract (ESCO) under a PFI to finance the replacement of old, inefficient boilers and the redevelopment of its boiler house. The private company installed and owned the new boilers and agreed to operate and maintain the plant for ten years. The pricing structure of the contract gives the ESCO an incentive to operate efficiently. Its fixed costs are recovered from the sale of the first 100 lbs of steam, and remaining costs are recovered from the marginal cost of gas and water treatment. It gets no benefit from an increased demand for energy. So it needs to operate efficiently or else lose money.

  For the trust, the scheme was cheaper than a capital purchase option, and it did not use the hospital's existing capital funding. It was able to contract out a non-core activity and transfer risk to the ESCO. The new plant provided 25 per cent more steam than the original, and despite the increased heat demand, its total energy costs remained the same. Energy cost per square metre fell by 12 per cent and carbon emissions per square metre fell by 33 per cent.[37]

- Other hospitals that set up leasing schemes in the early 1990s include the Ida Darwin Hospital in Cambridge and the MayDay Hospital in Croydon.[38]

Hawkin, Lovins and Lovins, innovative environmentalists in the USA, suggest that leasing a service (the provision of warmth and coolness, in this case) rather than acquiring goods (the physical plant) could help bring about a shift towards an economy that rewards an efficient use of resources, and promotes resource productivity through recycling and remanufacture.[39]

Sustainable development principles can also be made part of the design and construction ethos of PFI new build projects. For example:

- The Princess Margaret Hospital in Swindon is a new acute hospital. The PFI contract was won by Carillion, a construction and hospital management services company, which worked with The Natural Step, an education and training organisation, to embed sustainable development principles into the project. The decision to build the hospital on a greenfield site could not be changed, but other sustainable development principles were brought into play. Energy efficiency was a top priority, so the hospital is shallow planned, allowing it to benefit from natural ventilation and daylight, and the designers specified additional insulation, which meant the number of radiators could be reduced. The additional cost of the insulation was cancelled out by the savings on the cost of the radiators, and this, together with the building design, meant that the whole-life running costs of the heating are lower. The building also produces 20–40 per cent less CO_2 than a traditional hospital of equivalent size.[40]

In theory, PFI schemes should encourage energy efficiency, since valuing a building or piece of equipment over its lifespan seems to promote whole-life costing.

Energy efficiency and good design need to be ranked equally with health service needs at the earliest stages of a PFI project, to promote innovative ways of building and managing low-energy hospitals.

During the construction process, efforts were also made to reduce waste by segregating and recycling construction materials. The waste minimisation strategy decreased landfill tax and transport costs for the contractors, lessened the ecological impact of construction and reduced suppliers' manufacturing costs. The project also tried to reduce staff travel by employing local labour and encouraging car sharing.[41]

These examples are the exception rather than the norm. Energy efficiency and good design need to be ranked equally with health service needs at the earliest stages of a PFI project, to promote innovative ways of building and managing low-energy hospitals.

Renewable energy

The use of renewable energy does not seem to have been widely discussed among the trusts interviewed in London. PASA has negotiated a national 'green' energy contract (at no extra cost over traditional energy contracts) from 2002. Many trust-facilities managers automatically dismissed green energy contracts as 'too expensive' and were unaware of the new competitive terms. Only one manager was enthusiastic about the possibilities of using cheap, clean and renewable energy for NHS trusts:

- The Newham Hospital Trust's Site and Facilities Manager envisaged using solar panels to generate energy for the south-facing hospital, and was also interested in the possibility of using wind energy to generate power for the hospital, two schools and a mental health unit in the immediate vicinity. 'We would like to be the first NHS site in the country to use wind energy,' he remarked, 'but people are short sighted and wary of risks. They don't realise that as we expand over 30 years our energy costs would be minimal. We need to be innovative and think for the long term.'[42]

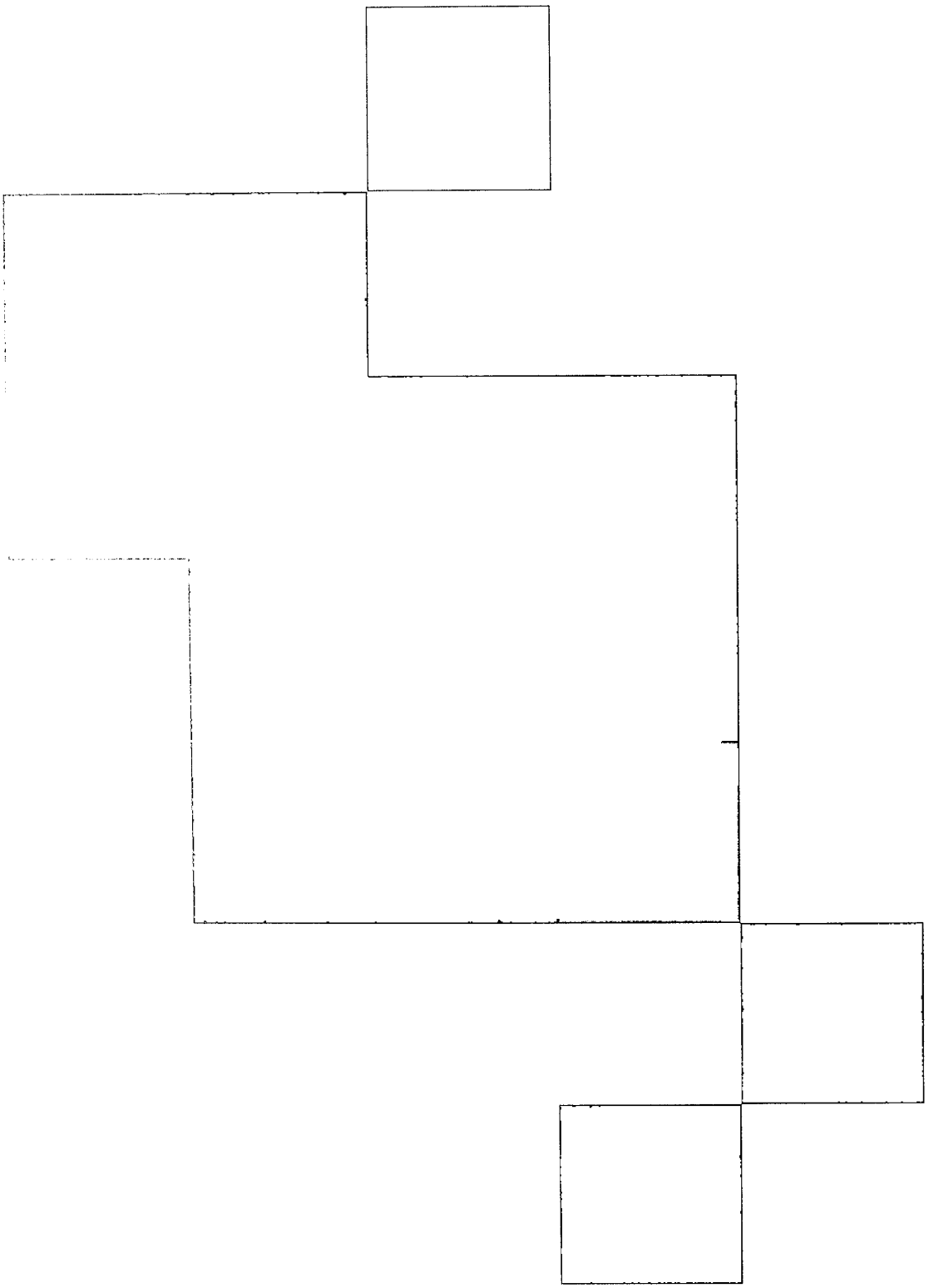
Possible future directions

The Government is committed to modernising the NHS, and the infrastructure built or refurbished now will be with us for decades, so good design and energy efficiency should be priorities. Despite the NHS's public commitment to reducing energy usage, implementation is made difficult by the trusts' shortage of financial and human resources, and by the lack of a strategic perspective that can accept slightly higher capital costs or innovative design for the sake of lower maintenance costs in the long term. If this situation is to change, the NHS will need to:

- take an holistic approach to building design, looking at the impact of capital decisions on long-term revenue costs: that is, whole-life costing
- link capital and maintenance budgets to achieve value for money–energy investments
- think about energy use early on in the design process, so that, for example, site orientation and building design can maximise light, passive solar heating and natural ventilation and reduce reliance on electric lighting and air conditioning. Adequate insulation can also reduce energy wastage and maximise the effectiveness of heating and ventilation systems.[43]

- introduce minimum building-performance standards that encourage a shift to low-energy design
- install CHP systems where appropriate.
- select energy-efficient IT and other equipment
- purchase green energy from renewable resources.

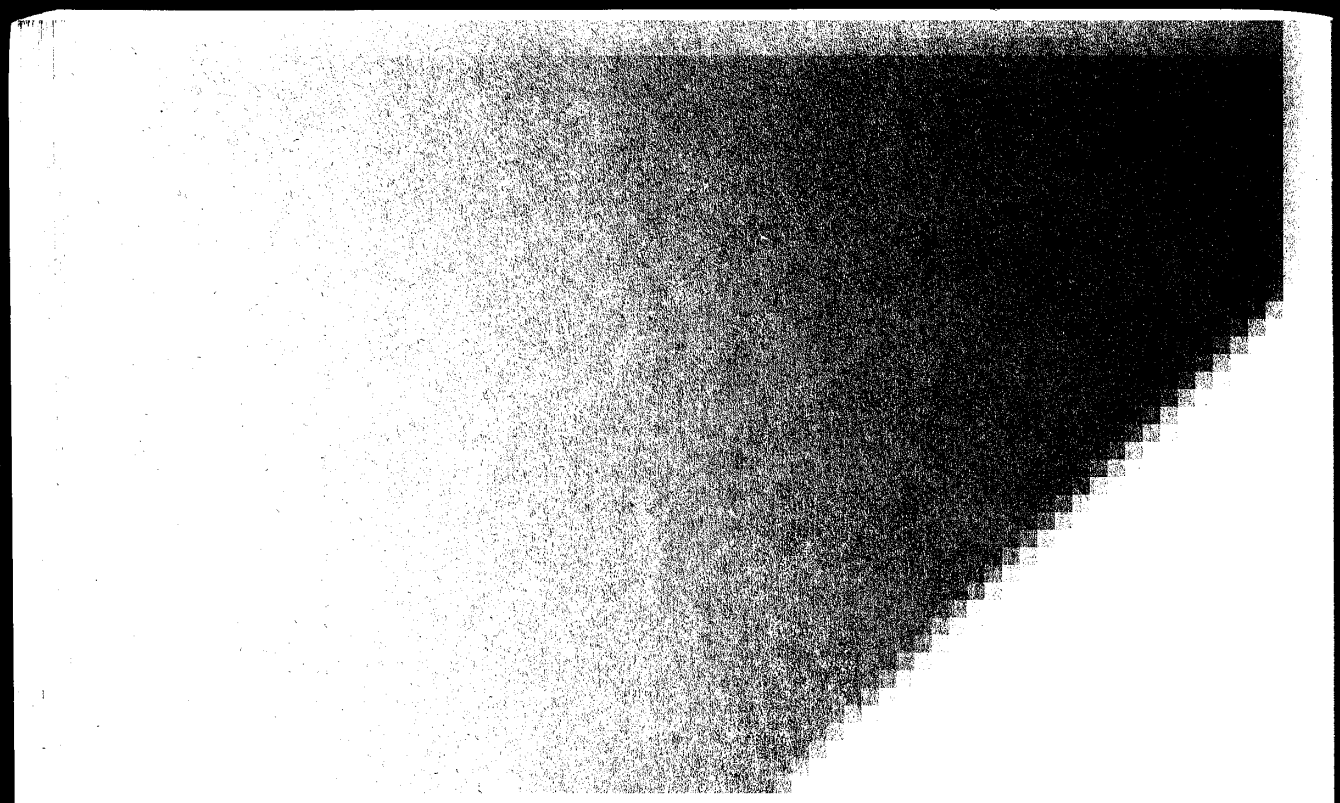
Norman Foster and Partners, the eminent architectural firm, defines sustainable design as 'creating buildings that are energy efficient, healthy, comfortable, flexible in use and designed for long life.' Others define it as the creation and management of healthy buildings based upon resource efficient and ecological principles.[44] Creating healthy, energy efficient buildings can not only reduce operating costs, but also promote health and retain staff, and so contribute to more effective performance by health services. These arguments are further developed in the next chapter.



8. Building

The Government has embarked on a massive building programme, funded through the Private Finance Initiative (PFI). By linking all phases of provision and maintenance within a long-term financial framework, PFI creates incentives to design in measures that are health enhancing and sustainable. But this must happen at the earliest stage of every project.

David Fell and Karen Jochelson



Building

After decades of under-investment, the Government has committed itself to rebuilding and refurbishing the physical fabric of the NHS in partnership with the private sector.[1] The main mechanism for this is the Private Finance Initiative (PFI). In 2001 there were 148 PFI schemes approved for the NHS in England, with an approximate capital value of £4.5 billion.[2] A great deal more are now anticipated.

At the same time, the concept of sustainable development – that we need to consider the social, economic and environmental consequences of our actions and how they might affect generations after us – is beginning to influence policy-making in government and the business world.[3] It is appropriate, then, to expect that new buildings commissioned by the NHS should not merely be built well, but that they should benefit us all, be built with due respect for the environment, be economically practical and be capable of being adapted to changing circumstances over several decades.

This chapter builds on work undertaken in London on behalf of the NHS London Region and a 'promoter group' of concerned organisations and individuals.[4] It seeks to show that the structure of PFI provides the scope formally to incorporate the principles of sustainable development into the process of procuring and developing buildings for the health service. Because the precise meaning of sustainable development – although it is embedded in a wide range of Government policies, including those governing the NHS – is elusive and evolving, and because its practical implications are not yet fully understood, this work remains experimental. But it is sufficient to show that the notion of sustainable development can be embodied within the framework of the PFI – indeed, the new framework offers a distinct advantage over the old.

PFI schemes typically involve a long-term contract of up to 35 years between the NHS and a private company or consortium. The contractor undertakes to design, build and finance the development to the specifications of the NHS. The contract usually includes building maintenance and may also cover support services such as cleaning and catering.

New buildings commissioned by the NHS should not merely be built well, but should benefit us all, be built with due respect for the environment, be economically practical and be capable of being adapted to changing circumstances over several decades.

By linking all the phases of hospital provision – designing, building and operating – these contracts create an incentive to provide and maintain health care facilities with an eye to their whole-life costs. The central argument of this chapter is that this approach can, and should be, broadened out to take into account the much wider range of factors inherent in the concept of sustainable development.

Building, health and sustainability

Guiding principles

PFI may be a contentious mechanism, but it is here to stay. Sustainable development may be difficult to define, but its practical implications are becoming clearer. If a PFI project is to promote sustainable development, planners need to

Doing more with less should be the leading principle applied to land use, building design, materials selection, waste reduction, water conservation and energy efficiency.

begin with a set of guiding principles in mind (beyond the clinical needs a project will serve) to shape the design, construction and maintenance of the intended building.

The Rocky Mountain Institute, a US not-for-profit research consultancy that promotes the 'efficient and restorative use of resources', gives this view of 'green development': 'Successful green developments are different from conventional developments. Whether or not they look different, they have different effects on their surroundings and use resources and materials in different ways. The key difference, however ... is a difference in approach that the development team uses. It is a process of creating a vision and then carrying out that vision through integrated planning and design.'[5]

That vision depends on whole-system thinking, with architects, engineers and interior designers working together to identify connections between the different elements of a building and finding solutions that address multiple problems. Design issues need to be considered from the start, as sustainable development performance goals and environmental building features cannot be added as a last-minute afterthought. The planning team must also be focused on how to get the greatest benefits for the client at the least cost in financial, social and environmental terms, and these costs need to be evaluated over time. Finally, a team needs to bring together users, the building developers and the people who will manage the building after its completion, to ensure that they all agree on and understand the practical impact of the way a building will work.

To design and construct a sustainable building, architects, building contractors and facilities managers need to consider:

- Location. Reusing already-developed land, or brownfield sites, is ecologically preferable, and in keeping with the Government's spatial development strategy.
- The relationship between a building and its site. Designers can use the natural features of a site to provide storm-water management, erosion control and roadway design, for example, rather than simply imposing these without environmental considerations.
- The orientation of a building. Exposure to sunlight, shade from surrounding vegetation or protection from wind can reduce the need for mechanical heating and ventilation systems and allow passive heating and cooling systems.
- Resource efficiency. Doing more with less should be the leading principle applied to land use, building design, materials selection, waste reduction, water conservation and energy efficiency.
- Accessibility and mobility. Location and design should encourage walking and cycling, allow safe access and be linked to green travel plans.
- Waste minimisation. During the construction process and over the life of the building, the creation of waste should be minimised, recycling encouraged and toxic waste disposed of safely.
- Community involvement. Developers need to listen to what the community and the users say about the development; where appropriate, local labour and local suppliers should be used.
- Whole-life costing. The social, financial and environmental costs and benefits of goods, materials and design should be taken into account, and should include their running and disposal costs, not simply the purchase price.

This approach to the design and construction of buildings may bring financial benefits. For example, relying on the land's natural features for storm-water sewers can reduce capital costs, while eliminating mechanical heating and ventilation systems through smart design will reduce the operating costs of a building.

Health and productivity of the workforce

Good design has been shown to have an impact on the health of people who work in a building. Endotoxins released by moulds, fungi and particulates from improperly sealed building materials in mechanical ventilation systems, together with inadequate ventilation, lead to poor air quality and can cause 'sick building syndrome'.[6] Common symptoms include:

- mucous membrane irritation (eye and throat irritation, cough)
- neurotoxic effects (headaches, fatigue, lack of concentration)
- respiratory symptoms (shortness of breath, cough, wheeze)
- skin symptoms (rash, pruritis, dryness)
- chemosensory changes (enhanced or abnormal odour perception, visual disturbances).

Good design also improves workforce productivity. The Rocky Mountain Institute reports productivity gains of 6–16 per cent in buildings that have energy efficient design. Managers report less absenteeism and an improved quality of work. For example, a US Post Office mail processing centre in Reno, Nevada, underwent a $300,000 retrofit to improve energy efficiency. The combined energy and maintenance savings came to about $50,000 a year, which gave the project a six-year payback. But the Post Office reaped an unexpected benefit in improvements in employee productivity: output at mail sorting machines increased by 6 per cent and sorting errors dropped radically. These improvements were worth $400,000 to $500,000 a year, giving the project a payback of seven months.[7]

Newham General Hospital reports improved staff morale and retention following redesign of the hospital. In 1998 a new management team was brought in to reorganise the hospital. The physical environment was in poor repair, and funds were immediately allocated to repair roof leaks that regularly closed down wards, to landscape the site and to create internal courtyards for staff and patient use. The hospital was redecorated with soft rather than stark colours and lighting, artworks were commissioned from local artists, and a new roof – modelled on the Guggenheim Museum in Bilbao – gave an entirely new look to the building and signified the new management ethos. The results were evident in staff surveys. When employees were asked in 2001 whether they felt valued and thought the environment was clean and looked after, 78 per cent said yes, compared to 22 per cent three years previously. And in 2001 just 15 per cent said they would consider leaving the Trust, compared to 45 per cent in 1999.[8]

Endotoxins released by moulds, fungi and particulates from improperly sealed building materials in mechanical ventilation systems, together with inadequate ventilation, lead to poor air quality and can cause 'sick building syndrome'.

Patient well-being and recovery

Several studies suggest that building design also has an effect on patient well-being and recovery rates. One study found that patients recovering from surgery who had rooms with windows overlooking trees had shorter post-operative stays and took fewer strong analgesics than patients whose rooms looked out on to a brick wall.[9]

One study found that patients recovering from surgery who had rooms with windows overlooking trees had shorter post-operative stays and took fewer strong analgesics than patients whose rooms looked out on to a brick wall.

Another study showed that increased bedroom privacy and 'away spaces' in common areas reduced verbal and physical agitation, aggression and paranoid delusions for people with Alzheimer's disease and related dementias.[10] An overview of the literature on how the built environment affects patient medical outcomes concluded that light intensity, light-wave frequency, heat, humidity, temperature, noise and window views had an impact on stress, sleep patterns and patient recovery.[11] Hospitals with patient gardens have also found that these appear to:

- reduce anxiety and stress for patients, visitors and employees
- reduce patient depression, especially if the garden encourages exercise
- offer a higher quality of life for chronic and terminal patients
- increase patient mobility, independence and satisfaction
- enhance staff job satisfaction.[12]

The current picture

Public–private partnership and the PFI

Public–private partnership (PPP), one expression of which is the Private Finance Initiative (PFI), is a key Government policy for improving the quality and cost effectiveness of public services. The avowed purpose is not only to attract private sector investment in capital projects, but to enlist the full range of private sector management, commercial and creative skills in providing public services and facilities.

So far, PFI has been considered principally as a more efficient method of securing (narrowly defined) value for money within the health service. However, by bringing together capital and revenue considerations, PFI marks an important change from traditional methods of procurement in the public sector. As we have noted, it invites consideration of whole-life costs across a range of factors, and makes it possible to offset possibly higher initial capital expenditure against long-run returns from lower operating costs. It is possible in PFI contracts to make explicit reference to issues such as waste management, energy efficiency and even 'externalities' (such as, for example, the wider environmental impact of transport or the air quality impacts of on-site energy generation).

In this context, value for money moves beyond a mere consideration of pounds and pence. So long as the relative importance of the different factors is transparent both to PFI contractors and funding agencies, decision makers are entitled to accept bids which, at first sight, may appear more 'expensive' but offer value for money over the long term.

The local authority model

Accepting such bids has its complications, but there is a close analogy in a nearby area of public expenditure: local authority funding. After many years during which compulsory competitive tendering (CCT) required local authorities to accept the lowest priced bid for the provision of contracted-out services, the move to Best Value, and the new duty to promote well-being, permits local authorities to take account of the wider impact of their decisions. It is now legitimate, for example, for a local authority to accept a bid from a more expensive provider, perhaps based locally, because of the wider benefits to the locality that will arise from awarding the contract.

New guidance has emerged from the Association of London Government[13] on how the principles of sustainable development can be incorporated into this new regime – and the situation is very similar for PFI in the NHS. It is not so much that these things cannot be done, but that they have not been done so far. PFI is a relatively new and complex arrangement, and its potential has not yet been fully exploited.

The approach of private contractors

One major concern about PFI is that private-sector contractors will make a profit – directly or indirectly – from the delivery of public services that are paid for out of public funds, and that this is an inappropriate use of taxpayers' money. The Government accepts that private firms should make a profit, and should be able to do so from PFI. The policy is based upon a view that the greater efficiencies – from procurement, management and so on – produced under the pressure of the profit motive will outweigh the cost to the public purse of a normal profit margin.

A further possible concern when considering how to incorporate sustainable development into the specifications for a PFI contract is that potential contractors will be deterred from submitting bids. According to this argument, contractors will either conclude that the inclusion of sustainability criteria renders it impossible to make a profit or that sustainability is just too 'difficult' for the private sector, and they will look elsewhere for projects. Of course, if bidders are deterred, there may not be enough competition to ensure that full value for money has been obtained.

However, there is little evidence to support this view. Private-sector organisations are under increasing pressure from investors and non-governmental organisations to report on the social, environmental and economic impacts of their activities, and to measure their performance in these areas over time. The idea of corporate social responsibility is gaining ground across sectors, creating a new ethical climate within which the NHS operates. The Main Contractors Group (MCG) – which represents 23 of the top construction companies in the UK, each with a turnover in excess of £200 million, and between them carrying out over £20 billion worth of construction work each year – is in regular dialogue with the NHS. They have jointly developed a design development protocol for PFI schemes that makes reference to a number of sustainability issues. More importantly, many large contractors are quite explicit about their commitment to environmental and sustainability issues, and go much further than the MCG as a whole. Contractors such as Carillion, Bovis Lend Lease and Ove Arup evidently take both sustainability and profit very seriously. A question that remains, however, is how far financial risks are effectively transferred from the public to the private sector.

Innovation and the effect of multiple pressures

Specifications for PFI schemes are based on the belief that the private sector and the bidding process will naturally introduce innovation. Guidance on the preparation of an outline business case (one of the stages in preparing a PFI bid) suggests that project 'specifications should concentrate on what must be achieved, rather than how to achieve it' and that the private sector 'will then be given scope to decide how the services should be provided'. The assumption is that this will encourage innovation and cost effectiveness.[14]

In practice, however, there are multiple pressures at work when a PFI deal is put into operation, and these may lead to unimaginative and unsustainable outcomes.

Much depends on what terms are specified at the outset. Trusts themselves naturally focus on the goal of delivering health care and remaining within budget. They may be unwilling to extend their terms of reference beyond this, or may not have the expertise to do so even if they wished. Chris Hall, Principal Health and PFI Consultant for the Building Research Establishment, points out that it may not be the building contractor who has to bear the long-term costs of a building, but the facilities management company. So, for example, if the contractor wants to ensure that they do not incur penalties by failing to meet strict NHS temperature control targets, they may install radiators and air conditioners and ignore low-energy design principles such as relying on building orientation, natural ventilation or active shading. Then the facilities management company, often not part of the design team, has to bear the greater long-term costs of these decisions.[15] According to Stephen King, Head of Public Affairs at the Commission for Architecture and the Built Environment (CABE), a consortium concerned with designing a building at low cost may ignore the way design can deliver comfort, privacy, dignity and an attractive environment. Yet these factors can lower a trust's clinical and staff costs by promoting quicker patient recovery or helping to retain employees.[16] Hall and King both stress that energy efficiency and design need to be considered alongside health service needs at the earliest stages of a project, to promote innovative ways of building and managing more sustainable hospitals.

In principle, the special purposes vehicles – the formal term for the organisations that contract to provide hospitals – should ensure that these various requirements are reconciled so as to produce the best overall result. In practice, it appears that they do not. The same appears to be true of the public sector comparator (PSC), which assesses the value for money of PFI schemes. King suggests that the PSC tends not to factor in the long-term benefits of good design, or its social and environmental impacts. Assessment is based on figures derived from past projects, so costs and benefits associated with innovation cannot easily be included.[17]

The task is to find ways of making the best use of the framework offered by the PFI. At the minimum, this means ensuring that project specifications take into account the needs of sustainable development. In general, the private sector, in its desire to win contracts, will offer to deliver what the client wants. And if the client wants sustainable hospitals, then the market should – in theory – be able to find a profitable way of doing it. This leaves open the question of whether incentives are strong enough to ensure that trusts themselves adopt the principles of sustainable development and make appropriate demands on their contractors.

A consortium concerned with designing a building at low cost may ignore the way design can deliver comfort, privacy, dignity and an attractive environment. Yet it is these factors that can lower a trust's clinical and staff costs by promoting quicker patient recovery or helping to retain employees.

Links with regeneration

There is considerable synergy between the sustainable development agenda and the public health agenda that seeks to improve health, especially in disadvantaged areas. NHS trusts have a key role to play in area-based regeneration. This includes providing deprived areas with better health care facilities and helping to improve economic conditions by providing employment, building community facilities and supporting local enterprise through local sourcing and procurement of goods and services. Increasingly, approaches to area-based regeneration and neighbourhood renewal, at national, regional and local levels, are moving away from ad hoc interventions to improve the material environment towards a whole-system approach integrating economic, social and environmental measures. This may encourage trusts to consider sustainable development when they are negotiating PFI deals.

In an increasing number of building projects – not just within the NHS but across different sectors – factors that may contribute to sustainable development are being seriously addressed, for example: transport, waste and recycling, health outcomes, energy use, local sourcing and employment, and water consumption.

Developments in the NHS

In an increasing number of building projects – not just within the NHS but across different sectors – factors that may contribute to sustainable development are being seriously addressed, for example: transport, waste and recycling, health outcomes, energy use, local sourcing and employment, and water consumption. Few individual schemes address all these factors, but between them the examples listed below – some completed, some still underway – cover the whole range.

St Mary's Hospital, Isle of Wight

The hospital was built to demonstrate how energy consumption could be reduced in new and existing hospitals. As noted in the previous chapter, results show that St Mary's achieved a 50 per cent saving in fuel energy by its third year of occupation, saving approximately £150,000 and reducing CO2 emission by some 3500 tonnes.

Wansbeck General Hospital, Northumberland

Over the three years since the hospital has implemented its low-energy design features, it has saved £273,300 and reduced CO2 emission by some 5800 tonnes. It is estimated that if these levels of energy reduction were achieved throughout the NHS, the total savings would exceed £200 million annually.

Princess Margaret Hospital Relocation Project, Swindon

This PFI programme is a demonstration project for the M4I (Movement for Innovation)[18] and it is unique in the way that social and economic considerations have been included alongside environmental factors in its design and construction. The key features are:

- Local community involvement was considered before construction began, leading to the employment of local contractors and labour. A special officer was appointed to manage community relations, which included addressing any concerns within the community during the actual construction phase.
- The preparation of a Sustainable Action Plan led to identified savings of almost £1 million by the end of the construction period, as well as additional savings for subcontractors and suppliers. This helped to offset the negative environmental effects of locating the hospital on an out-of-town greenfield site.
- The project is significant for demonstrating the potential benefits of sustainable construction practices. During construction, efforts were made to reduce waste by segregating and recycling. Four hundred tonnes of paper and cardboard were composted and 400 tonnes of timber recycled for reuse on site. Plasterboard offcuts, which made up 20 per cent of waste by volume and cost, were placed in special containers and collected for recycling by suppliers when they delivered fresh plasterboard sheets. The waste minimisation strategy reduced landfill tax and transport costs for the contractors, lessened the ecological impact of construction and decreased the manufacturing costs of suppliers. The project also tried to reduce staff travel by employing local labour and encouraging car sharing[21] (see Chapter 7).

Bart's and The London Hospital are appointing a full-time officer to oversee the sustainability and regeneration work, and to ensure that it is not merely an 'add-on' but an integral part of every aspect of the design, specification and execution of the redevelopment.

According to Carillion's project manager for Princess Margaret Hospital, 'The beauty of PFI is that it focuses on the whole-life cost. I can assure you that it's good economics for us to invest in sustainable construction practices.'

Norfolk and Norwich University Hospital (NNUH)

One of the largest regional hospitals to be constructed under the PFI, NNUH incorporates a number of aspects of good sustainability practice, focusing on the idea that good building can design affect patient outcomes. Key sustainable design features include maximum use of natural ventilation (which creates a cleaner, healthier feeling) and tree planting, both to shelter exposed areas (maximising thermal efficiency) and to boost patient recovery times.

Whipp's Cross Hospital redevelopment

Still at an early stage, this large-scale PFI project has identified sustainable development and regeneration as key objectives to be incorporated into the redevelopment process from the very beginning. Early initiatives include close partnership working with a range of key local stakeholders, extensive consultation with local communities, and sponsoring research students to investigate life-cycle costings of key components of the expected building fabric.

St Bartholemew's and The London Hospital redevelopment

This is also a major PFI scheme in its early stages, where the need to incorporate sustainable development and regeneration has been identified at the start. Bart's and The London Hospital are appointing a full-time officer to the project team to oversee the sustainability and regeneration work, and to ensure that it is not merely an 'add-on' but an integral part of every aspect of the design, specification and execution of the redevelopment.

Examples from outside the NHS

Wessex Water HQ

Wessex Water HQ shows that the use of recycled materials, energy-efficient design and the reduction of waste can sensibly be delivered in fully commercial conditions. The building, described as 'the greenest office in the UK', won the British Construction Industry Building of the Year Award. It includes:

- energy-efficient equipment throughout the building
- a sustainable approach to materials specification
- surface water collected from the roof and grounds to supply the irrigation system and 95 per cent of toilet-flushing requirements
- a shuttle bus service for all employees, reducing car use.

Great Notley Primary School, Essex

Demonstrating that sustainable development is not just about big buildings, this school example was built as the result of an international competition organised by the Design Council to develop a prototype sustainable school building that could be created for the standard school budget. A considerable amount of time went into consumer consultation and research into the local community's needs

for the new school. The tight budget challenged the developers, but there were still a number of sustainable design features, including the use of local suppliers and a 'green roof' planted with sedums, which need very little maintenance, provide insulation and offer a microhabitat for small animals.

Possible future directions

A powerful combination of circumstances suggests that the time is right to incorporate sustainable development fully into the capital development programme of the NHS. These circumstances are:

- a national policy environment that promotes sustainable development, health improvement and economic regeneration
- a series of NHS strategies and policies that embrace sustainable development, health improvement and partnership in regeneration schemes
- a large-scale investment programme, operating through the PFI, that for the first time links capital and revenue expenditure
- a long-term financial framework for the PFI that can be extended to include economic, social and environmental impacts
- a growing recognition that purchasing power, through procurement, can be used to work towards achieving these objectives.

Incorporating sustainable development involves addressing economic, social and environmental goals, and making the links between sustainability and the determinants of health. It can – and should – be an integral part of the design, construction and operation of hospitals in the health service. As well as reducing costs, there is potential for reducing health risks and liabilities, improving performance, demonstrating corporate responsibility and implementing Government policy. Sustainable development can be pursued in ways that are timely, affordable, practical and less risky than traditional approaches.

The long-term nature of PFI contracts creates space to explore and exploit sustainability opportunities. The concept of whole-life thinking in planning, designing and maintaining an estate can result in long-term efficiencies and performance improvement.

The long-term nature of PFI contracts creates space in which to explore and exploit the opportunities of sustainability. The concept of whole-life thinking in planning, designing and maintaining an estate can result in long-term efficiencies and performance improvement.

In many respects, the technical challenges of building more sustainable and health-enhancing facilities have now been solved, and an accommodating regulatory framework is in place. The new challenge is to bring about the necessary changes in behaviour – the mindsets and the management – and this may be the hardest task of all.

The discipline of including the principles of sustainable development in policy and practice is still relatively new. We need to turn current examples of good practice into routine behaviour. This chapter has shown that there are already good and practical examples of how it can be done. If applied across the whole range of NHS capital development in the next few years, the principles of sustainable development can make a real difference to London and the UK, benefiting its economy, its social conditions, its environmental quality – and the health and well-being of its citizens.

Endnotes

Introduction

[1] On average, a person in social classes IV and V incurs £150 per year more than someone in classes I and II. This is attributed to more consultations and higher levels of drug treatment, particularly repeat prescriptions. 18.7 per cent of the population were from social classes IV and V in 1999, which brings the additional cost up to more than £1 billion. The total NHS expenditure for general practice for 1999, including pharmaceutical services, was £10.4 billion. Sources: (i) Worral A, Rea J N, Ben-Shlomo Y. 'Counting the cost of social disadvantage in primary care: retrospective analysis of patient data'. *British Medical Journal* 1997; 314: 38. (ii) OPCS. *Morbidity Statistics from General Practice: Fourth national survey 1991–2*, 1995. Labour Force Survey. ONS, 2000. (iii) *Compendium of Health Statistics*, 13th edition. OHE, 2001.

[2] *Independent Inquiry into Inequalities in Health: The Acheson report.* London: The Stationery Office, 1998.

[3] *A Better Quality of Life. A strategy for sustainable development for the UK.* Cm 4345. DETR, May 1999: para 4.6.

[4] NHS Estates. *Sustainable Development in the NHS.* London: The Stationery Office, 2001: 6.

[5] DETR Sustainable Development Factsheets. *The Government's Sustainable Development Strategy: What does it mean for the UK health sector?* DETR, 1999.

[6] Department of Health. *Saving Lives: Our healthier nation.* London: The Stationery Office, 1999.

[7] *Building a Future for All.* London: Labour Party, 2000.

[8] NHS Executive London Regional Office. *Employment Improves Your Health.* London: NHSE, 2002. Available at www.london.nhs.uk

[9] Unpublished interviews with London trusts. London: King's Fund, 2001–2.

[10] Abbott S, Florin D, Fulop N, Gillam S. *Primary Care Groups and Trusts: Improving health.* London: King's Fund, 2001.
Wilkin D, Gillam S, Coleman A, editors. *The National Tracker Survey of Primary Care Groups and Trusts: Modernizing the NHS 2000/2001.* London: National Primary Care Research and Development Centre/King's Fund, 2001.

1. Employment

[1] Travers T, Glaister S, Graham G. *Capital Asset: London's healthy contribution to jobs and services.* London: NHS Executive, 2000.

[2] *NHS Confederation Evidence to Pay Review Body 1998/99.* London: NHS Executive, 1999.

[3] Royal College of Nursing and Queen Margaret University College Edinburgh. *Making Up the Difference: A review of the UK nursing labour market in 2000.* London: Royal College of Nursing, 2000.

[4] Bardsley M *et al. The Health of Londoners.* London: King's Fund, updated by London Research Centre, 1998.

[5] Department of Health. *Saving Lives: Our healthier nation.* London: The Stationery Office, 1999.

[6] Department of Health. *The NHS Plan – A plan for investment, a plan for reform.* London: The Stationery Office, 2000.

[7] Commission for Racial Equality. *Statutory Code of Practice on the Duty to Promote Race Equality.* Consultative document, December 2001–February 2002.

[8] London Skills Forecasting Unit. *Ethnic Capital.* 2001.

[9] Levenson R, Edmans T. *Working for Health: The NHS as an employer and its role in regeneration.* London: King's Fund, 2001.

[10] NHS Executive London Regional Office. *Employment Improves Your Health.* London: NHSE, 2002. Available at: www.london.nhs.uk

[11] NHS London Regional Office 2002. *Op.cit.*

[12] *Ibid.* Vol 1 gives detailed information about the partnerships and alliances needed to make progress, and about funding sources.

[13] NHS Executive 2000. *Getting People on Board.* London: NHSE, 2000.

2. Purchasing

[1] Davey A. 'NHS PASA environmental strategy'. Presentation at Sustainability in Public Services, 27 November 2001.

[2] Annual financial returns of NHS Trusts (London region) for the financial year 2000–01.

[3] American College of Nurse-Midwives. 'Health Care Without Harm'. *Green Birthdays* 2001: 19.

[4] Lowry S. 'Housing and health: indoor air quality'. *BMJ* 1989; 299: 1388–90.

[5] Redlich C A, Sparer J, Cullen M R. 'Sick building syndrome'. *The Lancet* 1997; 349: 1013–16.

[6] Further details of the type of chemicals and their health consequences can be found in: American College of Nurse-Midwives 2001: 15–17. *Op.cit.*

[7] Rocky Mountain Institute. *Green Development: Integrating ecology and real estate.* Chichester: Wiley, 2000: 17–18.

[8] Sources of PVC in hospitals are listed at: www.sustainablehospitals.org/HTMLSrc/IP_PVC.html

[9] Health Care Without Harm and Environmental Working Group. *'Greening' Hospitals: On analysis of pollution prevention in America's top hospitals*. Environmental Working Group/Tides Centre, 1998: 15–17. Allsopp M, Costner P, Johnston P. *Incineration and Human Health: State of knowledge of the impacts of waste incinerators on human health.* 2001: 72–5.

[10] Department of Environment, Transport and the Regions. *A Better Quality of Life: A strategy for sustainable development for the UK.* London: The Stationery Office, May 1999: para. 4.6.

[11] Department of Health. *Tackling Health Inequalities: Consultation on a plan for delivery.* London: DoH, 2001.

[12] Department for Environment, Food and Rural Affairs. *Greening Government.* First annual report of the Green Ministers Committee 1989/1999.
Department for Environment, Food and Rural Affairs. *Greening Government.* Second annual report of the Green Ministers Committee 2000.

[13] NHS Estates. *The New Environmental Strategy for the Health Service.* April 2001: 12.

[14] *Health Services Circular* HSC, 1999/143.

[15] Each NHS trust sets its own guidelines on contract values, which determine when procurement officers must ask for a quotation or formal tender from a number of suppliers.

[16] HM Treasury. *Procurement Policy Guidelines*, annex 22.2. Available at: www.ogc.gov.uk/ogc/procurement. nsf/pages/HMTreasuryProcurementGuidance.

[17] *Ibid.*

[18] Byatt I. *Delivering Better Services for Citizens: A review of local government procurement in England.* Department of Transport, Local Government and the Regions/Local Government Association, 2001.

[19] For example, the Local Government Act 1988 prohibits consideration of non-commercial matters; the Competition Act 1998 places restrictions on preferential treatment and constraints on trade and the European Commission prohibits actions that would damage fair and open competition.

[20] Commission of the European Communities. *Interpretative communication of the Commission on the Community law applicable to public procurement and the possibilities for integrating social considerations into public procurement.* COM (2001) 566.

[21] HM Treasury and Department of Transport, Local Government and the Regions. *Environmental Issues in Purchasing: A note.* Available at: www.ogc.gov.uk

[22] Byatt I, 2001. *Op.cit.*

[23] NHS Purchasing and Supply Agency. *A Strategy Towards Improving Relations and Communications with Suppliers – Review and update.* London: PASA, 2000.

[24] Office of Government Commerce. *Supplier Financial Appraisal Guidance.* OGC, 2001.

[25] Social Enterprise London. *Introducing Social Enterprise.* London: SEL, 2001.

[26] NHS Purchasing and Supply Agency. *Environmental Report 2000/01.* London: PASA, 2001: 11.

[27] Davey A, 2001. *Op.cit.*

[28] NHS Purchasing and Supply Agency, 2001: 13. *Op.cit.*

[29] NHS Purchasing and Supply Agency. *Executive Summary – NHS PASA supplier environmental performance appraisal questionnaire, 2002*: 310.

[30] Most medical firms score low in the green league. *ENDS Environment Daily* 551; 14 June 1999.

[31] Interview with Vicki Hamilton, Supplies Services Manager, The Lewisham Hospital Trust, Nov 2001.

[32] Lewisham estimated that it had one sphygmomanometer for every three beds, and each nurse had her own thermometer. For a 600-bed hospital, this meant 200 sphygmomanometers, each containing 85.2g of mercury. And with a staff of 975, this meant 975 thermometers each containing 1.4g of mercury (mercury weights provided by Adrian Cosser and Sons, which manufactures sphygmomanometers, and the Zeal Group, who manufacture clinical thermometers).

33 Using the Lewisham figures as a model, the number of sphygmomanometers for 23,654 acute beds in London was estimated at 7885, and the number of nursing staff was estimated at 38,358.

34 NHS Purchasing and Supply Agency, 2001: 11. *Op.cit.*

35 NHS Purchasing and Supply Agency. *Strategic Report into the Activity of the NHS Purchasing and Supply Agency in the Waste Management Market.* London: PASA, July 2001: 26–27.

36 NHS Purchasing and Supply Agency. *'NHS electricity goes Green'*. Press release, January 2002; Diane Brent, Associate Director, Estates and Facilities, Camden and Islington Community Health Services NHS Trust.

3. Buying childcare

1 Sarah Mullally, Chief Nursing Officer, Department of Health. Presentation on 'The Next Steps for the NHS Childcare Strategy', at Investing in Our Future: Making the NHS Childcare Strategy Work. London NHS/Daycare Trust Conference, 14 March 2002.

2 The first two waves were in January 2001 and August 2001, and further bids are in progress. In London, 14 bids were successful in 2001 and developments are under way. A further 11 have been funded for 2002–03. Interestingly, first-round bids seem generally to have been forwarded solely by the trusts themselves: in other words, not in conjunction with existing or prospective childcare partners. The quality of the bids, which are unpublished, appears to vary widely, and there are considerable gaps in terms of the childcare-related data on which the bids are based. This serves to illustrate the wider lack of comprehensive data available on childcare-related issues in the NHS.

3 See, for example: (i) Acheson D. *Report of the Independent Inquiry into Inequalities in Health.* London: Stationery Office, 1998. Recommendation 2 states: 'We recommend a high priority is given to policies aimed at improving health and reducing health inequalities in women of childbearing age, expectant mothers and young children'. (ii) Roberts H. *What Works in Reducing Inequalities in Child Health.* Essex: Barnardo's, 2000: ch.3. (iii) Beresford P *et al. Poverty First hand: Poor people speak for themselves.* London: Child Poverty Action Group, 1999: 164.

4 Moss P. *The UK at the Crossroads: Towards an early years European partnership*. Facing the future: policy papers. London: Daycare Trust, September 2001: 2–3.

5 Harker L in *Childcare Now* Winter/Spring 2002. London: Daycare Trust.

6 National Childcare Commission. *Report of the Childcare Commission: Looking to the future for children and Families.* London: Kids' Club Network (Trading) Ltd, 29 January 2001.

7 UCLH bid for workplace nursery funding, 2001: 4 (unpublished).

8 Travers T, Glaister S, Graham G. *Capital Asset: London's healthy contribution to jobs and services.* London: NHS Executive, 2000.

9 Department of Health. *Improving Working Lives in the NHS: Consultation booklet.* London: DoH, November 1999.

10 From around 5500 a year in the late 1990s to more than 10,000 by 2005. Meadows S, Levenson R, Baeza J. *The Last Straw: Explaining the NHS nursing shortage.* London: King's Fund, 2000.

11 'GP shortage is set to worsen'. *Health Service Journal* 10 January 2002: 8.

12 Meadows S, Levenson R, Baeza J, 2000: Executive summary. *Op.cit.*

13 Little systematic research has been carried out into childcare issues for NHS staff. However, numerous small-scale studies have been carried out by different trusts in the past two years, as is evident from the successful (unpublished) childcare bids. Many trust bids explicitly state that improved childcare facilities for staff would play a significant role in making them more attractive to staff and, therefore, a more competitive employer. They note the potential cost savings in terms of recruitment, training and agency expenditure.

14 All trust bids studied testify to this. See also Meadows S, Levenson R, Baeza J, 2000, *op.cit.*, which found the lack of family-friendly policies to be an important factor in nurses leaving NHS employment.

15 Department of Health, 1999. *Op.cit.*: 2. The lack of emergency child cover, and the urgent need to provide it, is explicitly recognised by virtually all trusts in their (unpublished) 2001 childcare bids.

16 Moss P. *The UK at the Crossroads: Towards an early years European partnership*. Facing the future: policy papers. London: Daycare Trust, September 2001.

17 Speech by Alan Milburn, Secretary of State for Health to the New Health Network. DoH, 15 January 2002.

18 Department of Health, 1997: 7. *Op.cit. Improving working lives* aims to ensure that more flexible and supportive working arrangements are developed within the NHS, to promote staff welfare and help them to achieve a healthy work–life balance. It commits every NHS employer to offering a range of flexible employment opportunities. As Debbie Mellor, Head of NHS Employment at the DoH recently stated, IWL more fundamentally aims at cultural change, more creative and innovative solutions and greater staff ownership and involvement (talk at Investing in Our Future: Making the NHS Childcare Strategy Work. London NHS/Daycare Trust Conference, 14 March 2002). See www.doh.gov.uk/iwl

[19] Department for Education and Skills. *Sure Start: Making a difference for children and families.* London: DfES, 2001: Foreword by ministers.

[20] *Ibid*: 8

[21] Littlehales G, NHS Childcare Strategy Coordinator. *Childcare News* Issue 1; Winter 2001/02. This appears minimal, as is evident from current trust subsidy schemes, which range from approximately £4 to £50 per child per week.

[22] As acknowledged, 'the NHS needs to establish a strong reputation as a good employer. Too few of our existing staff are willing to recommend a career in the health services'. Department of Health, 1999: 2–4. *Op.cit.*

[23] See, for example, www.dti.gov.uk (search 'childcare'); and www.childcarelink.gov.uk

[24] The National Childcare Strategy was launched in 1998 to tackle the shortage of high-quality, affordable childcare in the UK. At least £200 million has been invested in the strategy in 2001–02, making childcare the second fastest growing area of employment (*Delivering Better Working Lives Together. Good practice guide: flexible working and childcare in maternity services*. Daycare Trust, 2002). The aims of the strategy are: to recruit and retain more staff by providing high-quality, affordable and accessible childcare; to offer all parents advice and support through a childcare co-ordinator; and to inform parents about the financial help available for childcare costs, in particular working families tax credit (*Your Guide to Choosing Childcare*. Daycare Trust/NHS, 2002).

[25] Wilkinson H. 'Opportunities for Growth'. *The Guardian.* 21 January 2002.

[26] Through the Neighbourhood Nurseries initiative, with 900 new nurseries planned in the most disadvantaged communities, improvements in childcare tax credit, financial help for student parents, takeover of regulation by OFSTED, 55 funding streams and more early excellence centres (Daycare Trust Annual Report 2001: 1).

[27] *Ambitions for Britain: Labour general election manifesto.* London: Labour Party, 2001.

[28] The *NHS Childcare Toolkit* is a user-friendly guide to the NHS Childcare Strategy. It clarifies the practical implications of policy developments, including how to apply for funding for childcare provision, different childcare options, benefiting from other initiatives such as New Deal, management issues and potential tax implications. Produced by the DoH and Daycare Trust, April 2001.

[29] Department of Health. *'More NHS nurses, more NHS beds'.* Press release, 12 December 2001. In some instances, existing nursery manager roles are being expanded into childcare co-ordinator roles (for example, Lewisham NHS Trust). Co-ordinator roles include acting as adviser and advocate for parents working in the NHS, co-ordinating nursery places and helping to ensure support for school-age children.

[30] South West London and St George's Mental Health NHS Trust bid for workplace nursery funding, 2001: 6 (unpublished).

[31] Hammersmith Hospitals NHS Trust bid for workplace nursery funding, 2001: 6 (unpublished).

[32] For example, in 2001 Ealing had a waiting list of 67, of whom 44 are under two years old. Great Ormond Street had 82 staff on the waiting list in 2001. UCLH waiting list was 16–18 months. Guy's & St Thomas' Hospitals had a list of 94. Demand exceeded supply by six times at the Royal Free Hospital in Hampstead.

[33] For example, UCLH, where the nursery that opened in 1991 for 1000 staff has not been extended, even though there are now some 5000 staff (UCLH childcare bid, 2001, unpublished). In St George's, a hospital closure and the related relocation will add to the existing waiting list of 106 children (2001, *ibid*, unpublished).

[34] For example, in Ealing this is £30–£44.50 per day, with waiting lists of 6–18 months. In Middlesex, the 27 borough day nurseries have waiting lists of 6–12 months and average fees of £100–£200 per week, with demand growing, WMUH bid for workplace nursery funding, unpublished.

[35] Department of Health. *Improving Working Lives Standard: NHS employers committed to improving the working lives of people who work in the NHS.* September 2000, www.doh.gov.uk/iwl/index.htm. *The NHS Childcare Toolkit* (DoH/Daycare Trust, April 2001) is part of this broader IWL package.

[36] Government figures suggest a need for 150,000 more, while in 2001 the Childcare Commission reported that 300,000 childcare workers would be needed over this period (Wilkinson H. 'Opportunities for growth'. *The Guardian.* 21 January 2002).

[37] 'Who will care? Recruiting the next generation of the childcare workforce'. In *Thinking Big: Childcare for all.* Policy paper 4. London: Daycare Trust, September 2001.

[38] *Childwise*, Issue 10, Winter 2001/02. London: Daycare Trust. The largely 'invisible' and unrecognised unofficial childcare workforce – in other words, relatives – is also primarily female.

[39] *Thinking Big: Childcare for all*, 2001. *Op.cit.*

[40] Research into low-waged people in east London (typically cleaners) demonstrates how families in the capital cannot survive on the minimum wage or benefits, which fall far short of compensating for the price of housing, transport and childcare in London (Wills J. *Mapping Low Pay in East London*. London: UNISON/Queen Mary, University of London, September 2001).

[41] *Ibid*: 2.

[42] *Ibid.*

[43] *Childcare News*, Issue 2, Spring 2002. London: Daycare Trust.

[44] The Working Families Tax Credit offers financial assistance for families on low and middle incomes. It provides childcare tax credit of up to 70 per cent of eligible childcare costs, up to a maximum of £135 per child per week, or £200 for two or more children. See www.daycaretrust.org.uk/CTC.htm and www.opportunity-links.org.uk/wftc/wftcinfo.htm

[45] As mentioned above, these include Sure Start, the Neighbourhood Nurseries Initiative for preschool children in disadvantaged areas, New Opportunities Fund, New Deal for Communities (NDC) and Single Regeneration Budget (SRB) programmes. Sometimes all these schemes are found in one area: the London borough of Newham is an example.

[46] They are joint bids, but must be on NHS land. Personal communication, Delyth Lloyd-Evans, Childcare Development Manager, NHS London Region.

[47] West Middlesex University Hospital bid for workplace nursery funding, July 2001 (unpublished).

[48] Given that there are now targets for the NHS to recruit staff from overseas, it seems safe to assume that this practice is widespread.

[49]There are now 150 EYDCPs in England, working to develop more accessible and affordable childcare.

[50] As recently emphasised by Debbie Mellor, Head of NHS Employment at the DoH. 'Investing in Our Future: Making the NHS Childcare Strategy Work'. London NHS/Daycare Trust Conference, 14 March 2002.

[51] Daycare Trust. *Annual report 2001*: 2.

[52] Harker L, 2002. *Op.cit.* See also Wilkinson H, 2002. *Op.cit.*, and Daycare Trust, 2002. *Ibid.*

[53] Costs are far higher than those faced by parents elsewhere in Europe, and nursery costs are rising – up around 10 per cent on 2001 (*Childcare News*, Issue 2, Spring 2002. London: Daycare Trust/NHS). In Newham, for example, NHS staff spend between £60 and £750 per month on childcare (Newham Health Partnership 2001 bid for workplace nursery funding. Unpublished).

[54] Harker L. *2002. Op.cit.* Moss P, *Op.cit.*: 5.

[55] Harker L, *ibid.*

[56] SEL is a London-based social enterprise development organisation. It is shortly to publish *How to Market a Multi-stakeholder Social Enterprise* (2002), a practical guide to establishing and running childcare social enterprises in multi-stakeholder environments.

4. Buying food

[1] Department of Health. *The NHS Plan: A plan for investment, a plan for reform*. London: The Stationery Office, 2000: section 4.16.

[2] The Sustainable Development Commission was launched in October 2000. Its role is to advocate sustainable development across all sectors in the UK, review progress towards it and build consensus on the actions needed if further progress is to be achieved. The Commission has 24 members from all sectors of society – business, NGOs, local and regional government, academia – and all parts of the UK.

[3] Sustainable Development Commission reports are available at: www.sd-commission.gov.uk. Hard copies are also available free of charge.

[4] Available on the NHS Purchasing and Supply Agency website: www.pasa.doh.gov.uk/environment/aep.stm

[5] Department of Health, 2000. *Op.cit.*

[6] NHS Magazine, February 2001, see: www.nhs.uk/nhsmagazine/default/asp

[7] Audit Commission. *NHS Catering Review*. London: Audit Commission, 2001.

[8] Policy Commission on the Future of Farming and Food. *Farming and Food: A sustainable future*. London: The Commission, 2002.

[9] United Nations Commission on Trade and Development. *Least Developed Countries Report*. New York and Geneva: UNCTAD, 2000.

[10] SUSTAIN/Elm Farm Research Centre. *Eating Oil: Food supply in a changing climate*. London, 2001.

[11] NHS Estates. *Reducing food waste in the NHS*. London: The Stationery Office, 2000: 3.

[12] Deloitte & Touche Food and Agriculture Group. *Survey of Farm Incomes*. October 2001. Also available at: www.deloitte.co.uk

[13] World Cancer Research Fund. *Food, Nutrition and the Prevention of Cancer: A global perspective*. Geneva: The WCR Fund, 1997.

[14] National Audit Office. *Tackling Obesity in England*. London: NAO, February 2001.

[15] *Ibid.*

[16] Department of Health. *National Service Framework on Coronary Heart Disease*. Available at:

www.doh.gov. uk/pub/docs/doh/coronary.pdf

[17] Bender D A, Bender A E. *Nutrition Reference Handbook*. Oxford: Oxford University Press, 1997, quoted in SUSTAIN/Elm Farm Research Centre, 2001. *Op.cit.*
Ministry of Agriculture, Fisheries and Food. *Manual of Nutrition*. 10th edition. London: The Stationery Office, 1996, quoted in SUSTAIN/Elm Farm Research Centre. *Ibid.*

[18] Food Standards Agency. *Response to Soil Association Report*. 7 August 2001.

[19] Soil Association, www.soilassociation.org.uk/sa/saweb.nsf/librarytitles/Health13032002.html
Evidence on vitamin C and essential minerals: Worthington V. *Nutritional quality of organic versus conventional fruits, vegetables and grains*, 2001; and Heaton S. *Organic farming, food quality and human health*, 2001. Research on salicylic acid by Baxter G J *et al*. 'Salicylic acid in soups prepared from organically and non-organically produced vegetables'. *European Journal of Nutrition* 2001; 40(6): 289–92.

[20] Department of Transport, Environment and the Regions. *Transport Statistics* 1998. London: The Stationery Office, 1999.

[21] Department of Health. Committee on the Medical Effects of Air Pollutants (COMEAP). *The Quantification of the Effects of Air Pollution on Health in the United Kingdom*. London: DoH, 1998.

[22] SDC is investigating this more fully through the Wise Moves project, co-ordinated by Transport 2000. See the Transport 2000 website at: www.transport2000.org.uk/campaigns/WiseMoves.htm

[23] The National Food Survey has shown that people from low-income families have, on average, far less healthy diets than their higher-income counterparts (Ministry of Agriculture, Fisheries and Food, *National Food Survey*, London: The Stationery Office, 1999). Surveys show that a significant number of NHS employees may fall into the low-income category; about 45 per cent of NHS staff have a basic salary of less than £15,000 and approximately 14 per cent have a basic salary of less than £10,000 (Department of Health. *August 2000 Earnings Survey*. London: The Stationery Office, 2001).

5. Waste

[1] Department of Environment, Transport and the Regions. *Waste Strategy 2000 for England and Wales*. London: The Stationery Office, 2000.

[2] Friends of the Earth. *Waste: Don't burn it or bury it: alternatives to landfill and incineration*. Briefing sheet, 1997. Available at: www.foe.org.uk/campaigns/waste/information/newdburn.html

[3] Department of Environment, Transport and the Regions. *Op.cit.* Part 1

[4] Neil Gillan, Regional Waste Strategy Manager, Environment Agency. Personal communication, 11 December 2001.

[5] DoH, ERIC returns, 1999/2000.

[6] Based on the Audit Commission's estimate that an average acute hospital of 500 beds produces more than 10 tonnes of waste a week and an estimate of 20,633 for the number of acute hospital beds in London. Audit Commission, 1997. *Op.cit.*

[7] PASA. *Strategic Report into the Activity of the NHS Purchasing and Supply Agency in the Waste Management Market*, July 2001: 24–25.

[8] DoH, ERIC returns, 1999/2000.

[9] Friends of the Earth, 1997. *Op.cit.*

[10] Elliot P, Eaton N, Shaddick G, Carter R. 'Cancer incidence near municipal solid waste incinerators in Great Britain. Part 2: Histopathological and case-note review of primary liver cancer cases'. *British Journal of Cancer 2000*; 82 (5): 1103–6.

[11] Waller D. 'Burning issue'. *The Guardian* (Society), 23 May 2001: 8–9.

[12] Elliott P, Briggs D, Morris S, de Hoogh C, Hurt C, Kold Jensen T, Maitland I, Richardson S, Wakefield J, Jarup L. 'Risk of adverse birth outcomes in populations living near landfill sites'. *BMJ* 2001; 323: 363–8.

[13] Friends of the Earth. 'Briefing: Up in Smoke. Why Friends of the Earth opposes incineration', 1998: 5. Available at: www.foe.co.uk/resource/briefings/up_in_smoke.html

[14] Wastewatch. *'Recycling initiatives will create jobs, new report finds'*. 2 December 1999. Available at: www.wastewatch.org.uk/nws-evt/jobsfw.htm

[15] Murray R, Dolphin G, Ackerly P. *Reinventing Waste: Towards a London waste strategy*. London: Ecologika, 1998: xxxi–xxxii.

[16] Healthcare Without Harm. *Going Green: A resource kit for pollution prevention in health care*. Recycling factsheet, 2001.

[17] Fielder H M P, Poon-king C M, Palmer S R, Moss N, Coleman G. 'Assessment of impact on health of residents living near the Nant-y-Gwyddon landfill site: retrospective analysis'. *BMJ* 2000; 320: 19–23.
Elliott P, Briggs D, Morris S, de Hoogh C, Hurt C, Kold Jensen T, Maitland I, Richardson S, Wakefield J, Jarup L. 'Risk of adverse birth outcomes in populations living near landfill sites'. *BMJ* 2001; 323: 363–8.

[18] Roberts D, Redfearn A, Dockerty J. 'Health effects of landfill sites: whether results are assertions or evidence is unclear'. *BMJ* 2000; 320: 1541.
McNamee R. 'Does exposure to landfill waste harm the fetus?' *BMJ* 2001; 323: 351–2.

[19] Allsopp M, Costner P, Johnston P (Greenpeace Research Laboratories, University of Essex). 'Incineration and human health: state of knowledge of the impacts of waste incinerators on human health: Executive summary'. *Environmental Science and Pollution Research International* 2001; 8 (2): 141–5. Full report available at: http://dx.doi.org.10.1065/ehs2001.02.007.pdf pp.18–23, 24–34.
Lovett A A, Foxall C D, Creaser C S, Chewe D. 'PCB and PCDD/DF concentrations in egg and poultry meat samples from known urban and rural locations in Wales and England'. *Chemosphere* 1998; 37 (9–12): 1671–85.

[20] Dyke P H, Foan C, Wenborn M, Coleman P J. 'A review of dioxin releases to land and water in the UK'. *The Science of the Total Environment* 1997; 207(2,3): 119–31.
Alcock R, Gemmill R, Jones K. 'An updated UK PCDD/F atmospheric emission inventory based on a recent emissions measurement programme'. *Organohalogen Compounds* 1998; 36: 105–8.

[21] Committee on Health Effects of Waste Incineration. *Waste incineration and public health*. Washington DC: National Academy Press, 2000: ch.5.

[22] *Ibid.*

[23] Sources of PVC in hospitals: www.sustainablehospitals.org/HTMLSrc/IP_PVC.html

[24] Health Care Without Harm and Environmental Working Group. *'Greening' Hospitals: An analysis of pollution prevention in America's top hospitals*. Environmental Working Group/The Tides Centre, 1998: 16–17. For more detailed data see Rossi M, Schettler T. 'PVC and health care'. In: *Setting Healthcare's Environmental Agenda: Papers and proceedings from the October 16, 2000 conference*. Health Care Without Harm, 2000. Solomon G M, Schettler T. Environment and health: 6. Endocrine disruption and potential human health implications. *Canadian Medical Association Journal* 2000; 163(11): 1471–6.
Allsopp M, Costner P, Johnston P. *Incineration and Human Health: State of knowledge of the impacts of waste incinerators on human health*. 2001.

[25] EPA, cited in Health Care Without Harm Working Group, 1998. *Op.cit.*

[26] Dyke P H, Foan C, Wenborn M, Coleman P J. 'A review of dioxin releases to land and water in the UK'. *The Science of the Total Environment* 1997; 207(2,3): 119–31, at 124.

[27] Alcock R, Gemmill R, Jones K. 'An updated UK PCDD/F atmospheric emission inventory based on a recent emissions measurement programme'. *Organohalogen Compounds* 1998; 36: 105–8.

[28] Department of the Environment. *This Common Inheritance: Britain's environmental strategy*. London: The Stationery Office, 1990.

[29] Department of the Environment. *Making Waste Work: A strategy for sustainable waste management in England and Wales*. London: The Stationery Office, 1995.

[30] Department of Environment, Transport and the Regions. *Waste Strategy 2000, Parts 1 and 2*. London: The Stationery Office, 2000.

[31] Department of Environment, Transport and the Regions. *Waste strategy 2000, Part 2*. London: The Stationery Office, 2000: para. 2.18.

[32] The author requested interviews with 45 primary care, community health, mental health and acute care trusts in London, and interviewed a total of 21 trusts (five primary care trusts, two community health, two mental health trusts and 12 acute trusts) in London between November 2001 and January 2002.

[33] Audit Commission. *Getting Sorted: The safe and economic management of hospital waste*. London: the Commission, 1997.

[34] Gyawali P, Rice P S, Tilzey A J. Exposure to blood borne viruses and the hepatitis B vaccination status among healthcare workers in inner London. *Occupational and Environmental Medicine* 1998; 55(8): 570–2.
Smedley J, Coggon D, Heap D, Ross A. Management of Sharps Injuries and Contamination Incidents in Health Care workers: An audit in the Wessex and Oxford regions. *Occupational Medicine* 1995; 45(5): 273–5.
Chapman J, Verow P, Poole C J M. Comment. *Occupational Medicine*, 1996; 46(5): 382. Audit Commission. *Getting Sorted: The safe and economic management of hospital waste*. London: the Commission, 1997: 25.

[35] Audit Commission, 1997. *Op.cit.*: 13.

[36] NHS Estates. *Healthcare Waste Minimisation: A compendium of good practice*. London: The Stationery Office, 2000.

[37] NHS Estates, 2000. *Op.cit.*: 14–17.

[38] Shaun Swaby, Lewisham NHS Hospital Trust, Estates.

[39] Hugh Steward, General Manager for Sites and Facilities, Newham Healthcare NHS Trust; Paul Tourville, Deputy Director of Operational Services, Great Ormond Street Hospital for Children NHS Trust; Vicki Hamilton, Supplies Services Manager, Lewisham NHS Hospital Trust, Estates.

40 NHS Purchasing and Supply Agency. *Strategic report into the activity of the NHS Purchasing and Supply Agency in the waste management market.* PASA, 2001: 26–7.

41 Lewisham NHS Hospital Trust: Shaun Swaby, Estates; Vicki Hamilton, Supplies Services Manager.

42 Lewisham NHS Hospital Trust: Vicki Hamilton, Supplies Services Manager. Great Ormond Street Hospital for Children NHS Trust: Paul Tourville, Deputy Director of Operational Services. Conversion factor: 15 trees convert the CO_2 emissions of a typical car back into oxygen and 40 trees convert the CO_2 emissions from energy use in a typical house back into oxygen (Edwards B with Hyett P. *Rough Guide to Sustainability*. London: RIBA, 2001: 26).

43 Health Care Without Harm and Environmental Working Group, 1998. *Op.cit.*: 27.

44 *Ibid*: 28–9.

45 NHS Purchasing and Supply Agency, 2001. *Op.cit.*: 30.

46 NHS Estates. *Sustainable Development in the NHS*. London: The Stationery Office, 2001: 49.

6. Travel

1 Department of Environment, Transport and the Regions. *Transport Statistics: Travel to work.* Personal travel factsheet 3. March 2001.

2 Department of Environment, Transport and the Regions. *A New Deal for Transport: Better for everyone.* London: The Stationery Office, 1998.

3 Jenkins T, McLaren D. *Less Traffic, More Jobs: The direct employment impacts of developing a sustainable transport system in the UK.* London: Friends of the Earth Trust, 1997: 7.

4 *Ibid.* 3–4.

5 Department of Environment, Transport and the Regions. *Transport Statistics Great Britain 2000.* 26th edition. London: The Stationery Office, 2000: Table 2.8.

6 McCarthy M. *Environment, Pollution and Health in London: A report for the Health Strategy for London.* London: NHS Executive London Region, 1999: 8.

7 Department of Health. *Determinants of Health: Transport. Fatal and serious road casualties 1997.* See: www.doh.gov.uk/london/hsslid16.htm

8 Glaister S, Graham D, Hoskins E. *Transport and Health in London: a report for the NHS Executive, London Region.* October 1999. See: www.doh.gov.uk/london/hstrat1.htm: 4.

9 Department of Health ad hoc group on the economic appraisal of the health effects of air pollutants. *Economic appraisal of the health effects of air pollution report*, 1999: Table 1. See also: www.doh.gov.uk/hef/airpol/eareport.htm

10 See: www.lho.org.uk/hil/transport.htm

11 Glaister S, Graham D, Hoskins E, 1999. *Op.cit.*

12 Department of Environment, Transport and the Regions. *Planning Policy Guidance Note (PPG) 13: Transport.* London: DETR, 2001: para. 3.

13 NHS Estates. *Sustainable Development in the NHS*. London: Stationery Office, 2001: 52.

14 Department of Environment, Transport and the Regions, 1998. *Op.cit.*

15 *Ibid.*

16 Department of Environment, Transport and the Regions. *Planning Policy Guidance Note (PPG) 13: Transport.* London: DETR, 2001: paras.38–9.

17 Office for National Statistics. *Social Trends No 31.* London: Stationery Office, 2001: Table 12.4.

18 The author requested interviews with 45 primary care, community health, mental health and acute care trusts in London, and interviewed a total of 21 trusts (five primary care trusts, two community health, two mental health trusts and 12 acute trusts) in London between November 2001 and January 2002.

19 Department of Environment, Transport and the Regions. *Transport Statistics: Travel to work.* Personal Travel factsheet 3. March 2001.

20 Philip Ient, Director of Facilities, The Whittington Hospital Trust.

21 Sustainable Transport Strategy, Lewisham Hospital, 2001.

22 Department of Environment, Transport and the Regions. *Take Up and Effectiveness of Travel Plans and Travel Awareness Campaigns*. London: Stationery Office, 2001: paras 6.10, 6.22.

23 London Planning Advisory Committee. *Supplementary Advice on a Strategy for Road Traffic Reduction in London*. London: LPAC, 1999.

24 Trevor Campbell-Davis, Chief Executive, The Whittington Hospital Trust.

25 Interview, Roger Cutting, June 2001. *Access to Addenbrooke's: An operational plan for the period 2000–2005*. Cambridge: Addenbrooke's, 2000.

[26] Pfizer. *Check-in. Cash-out. Your guide to the Pfizer parking cash-out system.* 2001.

[27] Transport 2000 Trust. *The Healthy Transport Toolkit: A guide to reducing car trips to NHS facilities.* London: The Trust, 1998.

[28] Interviews with Tony White and David Mansfield, NHS Logistics, 31 October 2001.

[29] Jenkins T, McLaren D. *Less Traffic, More Jobs: The direct employment impacts of developing a sustainable transport system in the UK.* London: Friends of the Earth Trust, 1997: 35–7.

[30] NHS Estates, 2001. *Op.cit.*: 54.

[31] Paul Tourville, Deputy Director of Operational Services, Great Ormond Street Hospital for Children NHS Trust.

[32] Hugh Steward, General Manager for Sites and Facilities, Newham Healthcare NHS Trust.

[33] NHS Estates, 2001. *Op.cit.*: 63.

[34] Hugh Steward, General Manager for Sites and Facilities, Newham Healthcare NHS Trust; Philip Ient, Director of Facilities, The Whittington Hospital Trust; David Bates, Assistant Facilities Manager, Bart's and The London Hospital.

[35] Gerry Bushell, Estates and Capital Development Manager, Havering Primary Care Trust.

[36] Margaret Morrison, Environment Officer, St George's Healthcare NHS Trust.

[37] Jenkins T, McLaren D, 1997. *Op.cit.*: Executive Summary, ch. 4.

[38] Office for National Statistics. *Social Trends No 31.* London: The Stationery Office, 2001: Table 12.12.

7. Energy

[1] Edwards B with Hyett P. *Rough Guide to Sustainability.* London: RIBA, 2001: 4.

[2] Industry and agriculture are responsible for the remaining 19 per cent. Edwards B with Hyett P, 2001. *Ibid*: 25.

[3] Audit Commission. *Saving Energy in the NHS* 1991; 2(March): 2.

[4] DoH, Estate Return Information Collection (ERIC), 1999–2000 returns.

[5] Hall C, Building Research Establishment. *The Avoidance of Energy Waste in the NHS.* NHSE London Regional Office Estates/Facilities Seminar for NHS Trusts and PCTs, 4 Sept 2001.

[6] Building Research Establishment, BRECSU. *Electricity Savings in Hospitals: A guide for energy and estate managers.* Best practice guide 54. Watford: BRE, 1993: 1.
Building Research Establishment, BRECSU. *Energy Efficiency in Hospitals: A pathfinder for management and staff.* General information leaflet 57. Watford: BRE, 2001: 2.

[7] Building Research Establishment, BRECSU. *Energy Consumption in Hospitals.* DETR energy consumption guide 72. Watford: BRE, 1999: 5.

[8] Building Research Establishment, BRECSU, 2001. *Op.cit.*: 2.

[9] IPPC. *A Report of Working Group 1 of the Intergovernmental Panel on Climate Change: Summary for policy makers*: 2, 4, 7. See: www.ipcc.ch/pub/spm22-01.pdf

[10] McMichael A J, Haines A. 'Global Climate Change: The potential effects on health'. *BMJ* 1997; 315: 805–9.
Haines A, McMichael A J, Epstein P R. 'Environment and health: 2. Global climate change and health'. *Canadian Medical Association Journal* 2000; 163(6): 729–34.
Epstein P R. 'Is global warming harmful to health?' *Scientific American* August 2000.
Epstein P R. 'Climate, ecology and human health'. *Consequences* 1997; 3(2): 3–19.
McMichael A J, Haines A, Slooff R, Kovats S, editors. *Climate change and human health.* Geneva: World Health Organisation, 1996: ch.8.

[11] Department of Health. *Health Effects of Climate Change in the UK: An expert review for comment.* London: The Stationery Office, 2001. For a similar discussion for Europe, see Kovats R S, Haines A, Stanwell-Smith R, Martens P, Menne B, Bertollini R. 'Climate Change and Human Health in Europe'. *BMJ* 1999; 318: 1682–5.

[12] Department of Health, 2001. *Op.cit.*: 21–8.

[13] On this issue see also: de Gruijl F R, van der Leun J C. Environment and health: 3. 'Ozone depletion and ultraviolet radiation'. *Canadian Medical Association Journal* 2000; 163(7): 851–5.
Breslin K. 'Climate Change: Beyond sunburn'. *Environmental Health Perspectives* 1994; 102(5): 440–3.
Longstreth J, de Gruijl F R, Kripke M L, Abseck S, Arnold F, Slaper H I, Velders G, Takizawa Y, van der Leun J C. 'Health risks'. *Journal of Photochemistry and Photobiology B: Biology* 1998; 46: 20–39.
Anon. 'Executive summary'. *Journal of Photochemistry and Photobiology B: Biology* 1998; 46: 1–4;

[14] Chivian E. Environment and health: 7. 'Species Loss and Ecosystem Disruption – The implications for human health'. *Canadian Medical Association Journal* 2001; 164(1): 66–9.

[15] 'Costing power in a different light'. Green Futures, Nov/Dec 2001: p. 13.

[16] Levy rates are 0.15 p/kWh for gas, 0.43 p/kWh for electricity, 0.96 p/kWh for Liquid Petrolium Gas (LPG) and 1.17 p/kWh for coal.

[17] The levy is intended to collect £1.1 billion per annum, and will be used to fund (i) the Carbon Trust, which supports innovative, energy efficient technology; (ii) the Enhanced Capital Allowance Scheme, which allows companies to depreciate capital assets against profit, and can be applied to measures which will improve energy efficiency; (iii) provision of advice.

[18] Sustainable Development Commission. *Energy Policy for Sustainable Development*. London: the Commission, 2001: pt.3.

[19] Audit Commission. *Saving Energy in the NHS, Number 2*. London: the Commission, 1991: 2.
Building Research Establishment, BRECSU. *Energy Consumption in Hospitals*. Energy consumption guide 72. Watford: BRE, 1999: 4.
Building Research Establishment, BRECSU, 2001. *Op.cit.*: 2.

[20] DoH, ERIC returns, 1999/2000.

[21] Department of Health. *New Energy Efficiency Targets: Climate change programme*. Circular. DoH, April 2001.

[22] Rowland R. A source of energy info. *Hospital Development* 2001; 29: 34.

[23] The author requested interviews with 45 primary care, community health, mental health and acute care trusts in London, and interviewed 21 trusts (five primary care trusts, two community health, two mental health trusts and 12 acute trusts) in London between November 2001 and January 2002.

[24] David Svensen, Estates Manager, Royal Free Hampstead NHS Trust; Margaret Morrison, Environment Officer, St George's Healthcare NHS Trust.

[25] Philip Ient, Director of Facilities, The Whittington Hospital NHS Trust.

[26] Janet Davies, Director of Corporate Development, Community Health Trust South London.

[27] Gerry Bushell, Estates and Capital Development Manager, Havering Primary Care Trust.

[28] Janet Davies, Director of Corporate Development, Community Health Trust South London.

[29] NHS Estates. *Low Energy Hospitals: St Mary's Hospital, Isle of Wight: final report*. London: Stationery Office, 1997.

[30] Department of Environment, Transport and the Regions. *The Government's Sustainable Development Strategy: What does it mean for the UK health sector?* Sustainable development factsheets. 22 September 1999. Available at: www.environment.dtlr.gov.uk/sustainable/factsheets/health/index.htm

[31] NHS Estates. *Achieving Energy Efficiency in New Hospitals*. London: Stationery Office, 1994: 3.

[32] Interview with Jeffrey Lee, English Partnership.

[33] David Svensen, Estates Manager, Royal Free Hampstead NHS Trust.

[34] Building Research Establishment, 1999. *Op.cit.*: 8–10.

[35] *Ibid*. This estimates that there are 1.4 PCs per bed space in acute hospitals. Using an estimate of 20,374 acute beds in London (*Medical information systems, NHS*. 2002 edition, 228–41), this means about 28,524 computers in London's acute hospitals. Friends of the Earth estimates that the average UK household uses 3,200 to 3,500 kWh/year of energy, and these calculations were based on the higher figure.

[36] Audit Commission. *Building for the Future: The management of procurement under the private finance initiative*. London: the Commission, 2001: 10.

[37] Building Research Establishment, BRECSU. *Energy Services at Hemel Hempstead General Hospital*. Good practice case study 386. Watford: BRE, 2000.

[38] Cross M. 'Money for nothing'. *Health Service Journal* 1992; supplement 102 (5320), 17 September: 5–6.
Cross M. 'Powers that be'. *Health Service Journal* 1995; 105 (5449), 20 April: 11–12.

[39] Hawken P, Lovins A B, Lovins L H. *Natural Capitalism: The next industrial revolution*. London: Earthscan, 1999: 16–17.

[40] NHS Estates. *Sustainable Development in the NHS*. London: The Stationery Office, 2001: 37–9.

[41] Carillion. *On Being a Good Neighbour: Moving towards sustainable construction*. Carillion corporate literature: 12, 16–18.

[42] Hugh Steward, General Manager for Sites and Facilities, Newham Healthcare NHS Trust.

[43] Building Research Establishment, BRECSU, 1999. *Op.cit.*: 8–10.

[44] Edwards B with Hyett P, 2001. *Op.cit.*: 7.

8. Building

[1] NHS Estates. *Sustainable Development in the NHS*. London: The Stationery Office, 2001.

[2] Audit Commission. *Building for the Future: The management of procurement under the private finance initiative*. London: the Commission, 2001: 10.

[3] Department of Environment, Transport and the Regions. *A Better Quality of Life: UK sustainable development strategy*. London: The Stationery Office, 1999.

[4] NHS Executive London Region; AECOM/Maunsell plc; Environment Agency; Forum for the Future; The Natural Step; King's Fund; London First; Dr Robin Stott, Lewisham Hospitals NHS Trust.

[5] Rocky Mountain Institute. *Green Development: Integrating ecology and real estate*. Chichester: Wiley, 2000: 28.

[6] Redlich C A, Sparer J, Cullen M R. 'Sick Building Syndrome'. *The Lancet* 1997; 349: 1013–6.

[7] Rocky Mountain Institute. *Green Development: Integrating ecology and real estate*. Chichester: Wiley, 2000: 17–18.

[8] Interview with Hugh Steward, General Manager for Sites and Facilities, Newham Healthcare NHS Trust.

[9] Ulrich R. 'View through a window may influence recovery from surgery'. *Science* 1984; 224: 420–1.

[10] Regnier V. 'Alzheimer's Special Care Units'. *Places* 1998; 12(1): 38–41.

[11] Rubin H R, Owens A J. *Progress Report: An investigation to determine whether the built environment affects patients' medical outcomes*. Martinez, CA: Centre for Health Design, 1996.

[12] Marcus C C, Barnes M, editors. *Healing Gardens: Therapeutic benefits and design recommendations*. Chichester: Wiley, 1999: ch. 2.
Marcus C C, Barnes M. *Gardens in Healthcare Facilities: Uses, therapeutic benefits and design recommendations*. Martinez, CA: Centre for Healthcare Design, 1995.

[13] Association of London Government. *Best Value and Sustainable Development*. London: ALG, 2001.

[14] NHS Executive. *Public Private Partnerships in the National Health Service: Private finance initiative*. Leeds: NHSE, 2001: 37–8.

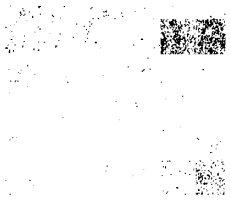
[15] Interview with Chris Hall, Principal Health and PFI Consultant, Building Research Establishment, 30 January 2002.

[16] Interview with Stephen King, Head of Public Affairs, Commission for Architecture and the Built Environment (CABE), 31 January 2002. Radford D. After the gold rush. *Hospital Development* 2001; 29: 11–14.

[17] Interview with Stephen King. *Op.cit*.

[18] See Movement for Innovation: www.m4i.org.uk

[19] Carillion. *On Being a Good Neighbour: Moving towards sustainable construction*. Carillion promotional literature: 12, 16–18.



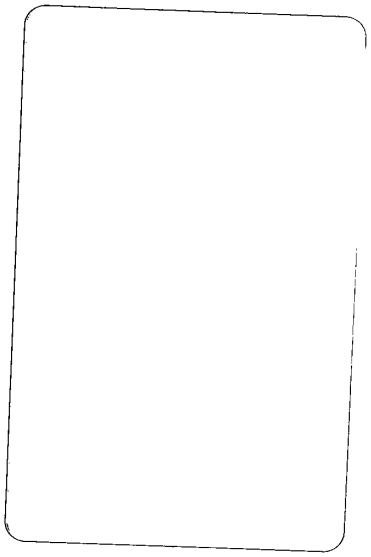
Acknowledgements

Many thanks to all those who helped us develop the ideas for this book, including Yve Buckland, Richard Parish and Dominic Harrison from the Health Development Agency, Dr Gabriel Scally and Gareth Jones from the Department of Health and Dr Sue Atkinson from the Department of Health London Region.

We are especially grateful to the London Regeneration Network, to Professor Charles Easmon of the Department of Health London Region and to Professor Christine Beasley. Their pioneering work and invaluable insights helped us with the employment chapter.

For invaluable assistance with the chapter on purchasing policy, our thanks to Chris Purcell, Regional Liaison Manager; John Warrington, Head of Research and Innovation and Andy Davey, Head of Policy, Environment and Risk Management, all at the NHS Purchasing and Supplies Agency. We also thank Sue Hurrell, Competitions Strategy Manager at the Office of Government Commerce and Shiraaz Essop, Service Manager with the NHS Logistics Authority.

Thanks also to Delyth Lloyd-Evans, Childcare Development Manager at the Department of Health London Region, for her useful comments on the childcare chapter, to all those from London NHS trusts interviewed for the chapters on waste, travel and energy, and to Dr Robin Stott from Lewisham Hospital, for his contribution to the chapter on building.



King's Fund

11–13 CAVENDISH SQUARE
LONDON W1G 0AN
INFO **020 7307 2568**
SWITCHBOARD **020 7307 2400**
www.kingsfund.org.uk

The King's Fund is an independent charitable foundation working for better health, especially in London. We carry out research, policy analysis and development activities, working on our own, in partnerships, and through grants. We are a major resource to people working in health, offering leadership and education courses; seminars and workshops; publications; information and library services; a specialist bookshop; and conference and meeting facilities.

CLAIMING THE HEALTH DIVIDEND: UNLOCKING THE BENEFITS OF NHS SPENDING

The NHS is the largest single organisation in the UK. Its potential impact on the environment, our health, and the fabric of our lives is huge – whether as employer, purchaser of goods and services, cause of travel, producer of waste, consumer of energy or commissioner of building works.

Claiming the Health Dividend **shows how the NHS can put this corporate muscle and spending power to work for health improvement and sustainable development – and in doing so ensure its own long-term viability. It goes beyond short-term discussions on crisis management in health care to open up a major debate on how the NHS can use its resources more wisely to sustain health in the long term.**

It argues that the NHS can – and must – make better use of its resources to reduce inequalities, build stronger local economies and safeguard the environment for the benefit of whole communities. To do this, it will need to tackle the challenge of raising service standards, and changing attitudes and patterns of behaviour in all of its corporate activities.

Claiming the Health Dividend **evaluates eight key areas where the NHS has significant environmental, social and economic impacts:**

- **employment**
- **purchasing policy**
- **childcare**
- **food**
- **waste**
- **travel**
- **energy**
- **building.**

It assesses current policy and practice under each heading, and identifies barriers to change and how these might be overcome.

Claiming the Health Dividend **will be invaluable reading for people with an interest in the links between health and sustainable development, including policy-makers, health service managers, contractors and service users.**

ISBN 1-85717-464-X