

examination of transport policies that would promote health and reduce the burden of road traffic.<sup>13</sup> These include improved public transport systems and town planning; a shift away from factors that encourage people to buy and use cars such as out of town shopping and recreation facilities; changes in the tax system, which currently favours car users; and the transfer of freight from road to rail. Such measures would also reduce road accident deaths and noise pollution and create a more humane urban environment.

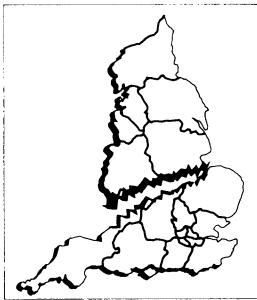
### Problems

There are obvious obstacles and disincentives to achieving these targets. Traffic restraint will be politically unpopular. The private car symbolises personal freedom and social status, and despite evidence that it has a negative influence on the quality of community life it is often used as a measure of standard of living. Powerful lobbies for the motor industry make sure that these images are maintained.

The improvements in terms of individual health are likely to be small and difficult to measure, especially when dealing with such multifactorial conditions as asthma, chronic bronchitis, and ischaemic heart disease. This absence of neatly quantifiable cause and effect could prove an additional disincentive. Progress will have to be monitored in terms of concentrations of the pollutants in the environment.

Whether or not the economic cost is an obstacle depends on the political will of the government and therefore to some extent on the priorities of the electorate. But because reducing air pollution goes hand in hand with efficient use of energy, in the long term there will be benefits for the economy as well as the nation's health.

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## Housing

Stella Lowry

Florence Nightingale understood that "the connection between health and the dwellings of the population is one of the most important that exists," and recent reviews have emphasised that poor housing is still a major threat to public health.<sup>1</sup> No attempt to improve the health of the nation should ignore the benefits of tackling some of our housing problems, but the temptations to do so are great. Although the government acknowledges the importance of housing in its green paper, it fails to set any definite targets (box).<sup>2</sup>

Housing affects health, but in ways that are hard to untangle. The effects of housing may be compounded by those of poverty, age, pre-existing illness, and

personal behaviour. Children living in a damp home may have respiratory problems, but if their parents smoke is it fair to blame the housing conditions for the illness? Living in a high rise block may be unhealthy for a single mother of three but ideal for a young working couple with no dependents. An old person living in cold conditions is at increased risk of illness, but this may be the result of unwillingness to turn on a heater, inability to remember how to do it, insufficient money to pay the fuel bills, or a host of other factors rather than a specific defect in the housing.

Studies of housing and health can rarely show a cause and effect relation. Evidence accumulates slowly and usually applies to populations rather than individuals. It is seldom possible to alter a variable and assess the response. But enough is known about the main associations between housing conditions and health to enable some specific targets to be set. These are best phrased in terms of housing targets rather than health targets, and their effects should be monitored in the same way. Many will not show obvious health effects for years, and if they are introduced on too small a scale their potential benefits for improving the health of the population may be missed.

### Temperature and humidity

Some of the strongest evidence for effects of housing conditions on health concerns the effects of cold damp homes.<sup>3,4</sup> The strength of the evidence has been recognised in court rulings.<sup>5</sup> Yet no specific standards for temperature or indoor humidity are included in the building regulations.

Ideally all homes should be capable of being heated to 21 °C, the winter room temperature recommended by the British Geriatrics Society. The people who are most vulnerable to the effects of cold and damp often

### Green paper focus on housing conditions and homelessness

The overall objective of the government's housing policy is to ensure that decent housing is within reach of all families. Housing policy and programmes continue to give priority to renovation of the housing stock and to securing housing for those who could not otherwise afford decent housing.

Tackling homelessness is a particular priority, not least because of the damage it can cause to people's physical and mental health and wellbeing. Two categories are of particular concern: firstly, single people sleeping rough in the streets (3000-5000), particularly in London, and, secondly, families (11 000) living in bed and breakfast accommodation. Special measures have been introduced to help those sleeping rough in London and to reduce the need for local authorities to use bed and breakfast accommodation; over two years these are expected to provide 16 000 additional family lettings and over 3000 extra places in permanent housing and hostels.



MARK EDWARDS/STILL PICTURES

Without increased availability of adequate socially rented housing more families may be forced to live in tents

live in poor quality homes that are hard to heat, and these groups are often those who can least afford hefty fuel bills. The poor spend about twice as much, as a percentage of their income, on heating as the rich.<sup>6</sup> It is unreasonable to expect people to spend more than 10% of their household income on heating.

Specifying that houses should be capable of being heated to 21 °C by spending not more than 10% of the average household income on fuel would, in the long term, encourage the building of new homes of high structural quality and the proper repair of existing buildings, with obvious benefits to the nation's housing stock and the world's reserves of fossil fuel. In the short term any excess money needed to meet the heating target for a dwelling should be provided by social payments based on individual needs assessments.

#### Indoor air quality

Many of the contaminants of indoor air are generated by the occupants of a building. Incorrect use of heating and cooking equipment can increase the content of carbon dioxide, carbon monoxide, and nitrogen dioxide in a home. Smoking also causes considerable contamination of indoor air. It is unrealistic to set targets for those aspects of indoor air quality that rely so heavily on personal behaviour.

Some pollutants are, however, amenable to action. The suggested targets for temperature would also reduce the number of damp homes and have beneficial effects on the levels of house dust mite antigen and fungal spores in indoor air. Both are known to be important causes of respiratory disease, especially in children.<sup>7,8</sup>

Radon is the indoor air pollutant most amenable to target setting. It accounts for nearly half of the average annual exposure to radiation in Britain. The National Radiological Protection Board estimates that the exposure to the national average domestic concentration (20 Bq/m<sup>3</sup>) carries a 0.3% lifetime risk of developing lung cancer.<sup>9</sup> The board recommends that radon concentrations in new homes should be as low as

possible and certainly not greater than 200 Bq/m<sup>3</sup>. It also advises that action should be taken in existing dwellings if the average concentration of radon is above 200 Bq/m<sup>3</sup>, and this would probably involve more than 75 000 homes. There is no correlation, however, between the distribution of deaths from lung cancer and domestic exposure to radon. It therefore seems unreasonable to set targets for existing dwellings, but because it makes sense to reduce people's total exposure to radiation all new houses should meet the board's guidelines.

#### Accidents at home

Each year 5500 fatal and over 3 million non-fatal accidents occur in British homes. Domestic accidents in England and Wales cost the health service £300 million a year. It is difficult to legislate to prevent many of these because individual behaviour is such a large factor in many accidents and personal freedom is important. Most progress will be made by better public education linked with specific personal advice given opportunistically by health workers and other professionals.

An exception to this general principle is the use of architectural glass in houses. Over 400 000 people are injured by domestic glazing each year. The current regulations and terminology are inadequate and confusing.<sup>10</sup> All architectural glass used in new domestic buildings should be toughened glass, which automatically meets class A requirements of British Standard 6202.

#### Homelessness

In 1989, 162 264 people were accepted as being officially homeless in Britain. The housing charity Shelter estimates that there are two million single homeless people. About 6000 people sleep rough on British streets each night. There are an estimated 1.2 million "hidden homeless" living in overcrowded or unfit conditions but not appearing in the official statistics. The health consequences of homelessness are well documented.<sup>11-13</sup>

Despite recent attempts by the government to increase the number of hostel places available for homeless people the only real solution to these problems is a reversal of attitudes to public sector building and a huge expansion in the number of homes available at low rents. Shelter estimates that about two million families will need a socially rented home in the next five years, and if current trends persist there is likely to be a shortfall of about 600 000 homes.<sup>14</sup> At least 100 000 new homes for rent will be needed each year for the next five years to tackle this crisis.

In conclusion, targets can be set to improve housing in Britain. My suggestions are that:

All homes should be capable of being heated to 21 °C by spending not more than 10% of the average household income (any excess needed should be provided from social funds); new houses should be built to ensure that average indoor concentrations of radon do not exceed 200 Bq/m<sup>3</sup>; all architectural glass used in new homes should be toughened glass meeting British Standard 6202; and public sector building should be increased to provide 100 000 new homes to rent each year for the next five years.

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## Junior Doctors. The New Deal

### Commitment vital for new deal

Stephen Hunter

*This is the first in a series of articles which explore the new deal on junior doctors' hours of work and explain how it will be implemented*

The publication of the new deal on junior doctors' hours is one step in a negotiating process which, for junior doctors at least, began over three years ago.<sup>1</sup> But the problem of the excessive hours of work of junior hospital doctors has been with us for much longer. This series of articles explores some of the elements of the package and explains the mechanisms which have been designed to implement it.

There is overwhelming evidence that the hours of work of junior doctors must be reduced. Juniors have long maintained that long hours not only influence their own health and morale but also that they are damaging to patients. Research into psychological

flexibility in working practices and contractual arrangements and to acknowledge that there is a considerable difference between the working experiences of senior registrars who have a low intensity of specialised on call work and the more junior doctors whose experience is exactly the opposite.

#### Legitimate fears

Consultants have legitimate fears that the burden might simply be transferred to them and these fears are reflected in the package. Certainly the evidence that consultants already work well in excess of their current contracts is well documented.<sup>8</sup> What has to be acknowledged equally, however, is that *Achieving a Balance*<sup>9</sup> and the current package refer to the need for greater flexibility in consultant working practices. It has been assumed that as consultant numbers increase relative to other grades so the proportion of direct patient care, including emergency work, undertaken by consultants would increase. Comparison of indices of consultant workload, however, indicates that despite a marked expansion in consultant numbers the emergency workload per consultant over the same period has fallen rather than risen.<sup>10</sup> There is a need to ensure that the new consultants appointed under this agreement do, in practice, reflect the philosophy inherent in the agreement; this is why the agreement states that they should deal with existing rather than new workload.

Similarly, consultants could facilitate fairly major reductions in juniors' hours by encouraging a move away from the individual consultant firm method of working towards a more team oriented approach, but there is evidence that this is not happening, particularly in teaching hospitals. It is paradoxical that in teaching districts there are more junior doctors and hours of work are longer than in non-teaching districts.<sup>7</sup> The obvious conclusion is that consultants in non-teaching districts use junior medical manpower in a more effective way.

The heads of agreement in December 1990 contained long overdue admission from the medical royal colleges that they could see no reason why a reduction to 72 hours a week should compromise the quality of medical training.<sup>11</sup> This is particularly welcome because the reports of district working parties set up under the earlier initiative on juniors' hours frequently suggested that local college representatives had resisted reductions because it was thought that lower hours would offer insufficient experience for training. This argument has considerable but false attractions. There is no evidence that the quality of training experience relates to the amount of out of hours work done. There is considerable evidence to the contrary in the Dowie report. The suggestion that training in some specialties might have to be longer to accommodate

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distress<sup>2,3</sup> and morale<sup>4</sup> illustrates this and there have been a plethora of reports and verdicts at coroners' inquests supporting the contention that stress associated with sleep deprivation is an important factor in unnecessary morbidity and mortality.<sup>5</sup> This evidence, coupled with an imaginative and effective campaign by junior doctors, overwhelming public sympathy, and 19 out of 20 junior doctors saying they would be prepared to take industrial action in support of reductions in their hours of work,<sup>6</sup> led directly to the current agreements. These were produced by a ministerial working party comprising junior doctors, consultants, representatives of the royal colleges, and NHS management, and chaired by the Minister for Health, Mrs Virginia Bottomley.

But for the complicated and diverse structural and cultural forces at work solutions would have been implemented long ago. The Bottomley working party, chaired by a minister acknowledged by the junior doctors' representatives as being committed and sincere, is only the latest in a long line of initiatives. The current average contracted hours of house officers are 89 a week but the Dowie report suggested that they actually work nine hours more than this. Over 70% of house officers are contracted to work more than 77 hours a week and 30% more than 100 hours.<sup>7</sup> The responsibility for this lies partly with the Department of Health, partly with NHS management, partly with consultants, and partly with junior doctors.

Junior medical staff have sometimes been less than imaginative in acknowledging the diversity of the obstacles to reducing their hours. It is only recently that the Junior Doctors Committee (JDC) has indicated that it would be prepared to explore greater

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