such interactions often requires large study populations, which up until now have been scarce.

Thirdly, what interactions exist between treatment and the patient's genetic characteristics? As the report by Hawkins *et al* confirms,⁴ patients with hereditary retinoblastoma who have received radiation exposure are at massively increased risk of developing a subsequent bone tumour.¹⁰ Other genetic characteristics that may interact in this way include p53, ATM, and GST null phenotype.

Fourthly, what interactions exist between treatment and lifestyle? It is clear that lifestyle factors, including tobacco, alcohol, diet, and occupation, can influence the risk of cancer in the general population. It is reasonable to speculate that exposure to therapeutic agents during childhood may modify the impact of these lifestyle factors, resulting in a multiplicative increase in cancer risk. Conversely, it may be that healthy lifestyle behaviours result in a lower treatment related risk.

Studying survivors of childhood cancer can also provide insights into the cause of primary malignancies. For example patients treated with epipodophyllotoxins have an excess risk of biologically distinct secondary acute myeloid leukemia.¹¹ This suggests that environmental exposures (such as diet and drugs) that inhibit topoisomerase-II may be important in the aetiology of leukemia in infants with MLL (mixed lineage leukaemia) gene abnormalities.¹²

Treatment protocols will continue to evolve, with new combinations of drugs and different dose intensity and sequencing, all of which may modify the risk of a second cancer. The ultimate goal is clear—to successfully treat and cure children with cancer while maximising their chances of a long and healthy life. This will need both primary prevention strategies (such as changes in treatment protocols) and secondary prevention

programmes (such as screening). Efforts like those of Hawkins and colleagues to carefully evaluate the experience of previous and future patient cohorts provide data essential for achieving this goal.

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Long term care of older people

Strategic management would stop people going too early to the wrong place

Car manufacturers have responded radically to the challenge of global competition; they have revolutionised assembly through technology, just-in-time inventories, team working, and a focus on quality; they have optimised component supply by forging long term contracts based on mutual help and trust; they have introduced customer focus into relationships with car purchasers. This exemplifies how industry has recognised the need for effective strategic management when crisis looms. Why then, when Britain faces the unprecedented strategic challenge of the long term care of older people, is there increasing evidence of strategic drift? Two issues are of particular concern and may lead to increased costs: they are the poor assessment of eligibility of older people for long term care, and poor quality of care.

Evidence of the present inadequacy of eligibility assessment in Britain is beginning to emerge.¹ A recent audit report disclosed a disturbing level of inappropriate placement, even after poor documentation was allowed for;² only 11% of nursing home residents were definitely appropriate for nursing home care, and 54% possibly appropriate; the rest were probably more suitable for home or residential care. The lifetime cost, estimated by the authors, is £42 250 per misplaced resident.

Social services are responsible for eligibility assessment and must take much of the blame. Assessment methods are neither standardised nor systematic. (The Joseph Rowntree Foundation has commissioned a study of existing methods to improve this.³) The audit also showed that documentation was poor, with the result that the knowledge base of the multidisciplinary team in health care of older people is not being properly

deployed. There was no medical information in 40% of cases, no social information in 70%, no nursing information in 35%, no occupational therapy information in 93%, and no physiotherapy information in 90%.

But social services should not take all the blame. Major responsibility lies within the secondary health care system, since most older people entering long term care come from acute hospitals - 82% in this audit.² The growing focus on acute medicine is marginalising rehabilitation,^{4,5} despite evidence of its effectiveness.

The second likely contributor to high costs is the poor quality of care; documented examples range from failure to preserve individuals' privacy, to inappropriate use of drugs and mismanagement of incontinence.^{2,8} Legislation and inspection, though a necessary protection, are unlikely to ensure high quality care. Other approaches, such as clinical audit which empower staffs,⁹ are now being introduced.

The difficulties with assessing eligibility and ensuring quality indicate the urgent need for some form of strategic review. Strategic management, which aims to match up where you are, what you have, and what you want to do, could bring together disparate information, activities, and stakeholders. It might include several approaches. First, the strategic environment could be evaluated using tools such as PEST analysis (which looks at political, economic, social, and technological factors) and scenario modelling. International comparisons may be useful; in Australia no one enters long term care without seeing a geriatric assessment team; in Japan a 10 year "Gold Plan" is being implemented by the ministry of health and welfare to

tackle the longevity revolution; in Norway the government's health board is developing a major investment plan in specialist health services for older people.

A second approach would be to identify the resources that are available to optimise long term care. These might include the knowledge base (which is apparently not being properly used²), people and their skills, and funding.

Thirdly, in considering the future of long term care, it would be necessary to understand the perspectives of stakeholders: consumers (older people of current and future generations and their families); providers (the long term care industry); purchasers (both social services and the insurance industry); the health service (primary and secondary); the research community; and government.

This audit report tells a tale of perverse incentives, dysfunctional relationships, and inappropriate time horizons. If it is generalisable to the rest of Britain, there is a severe problem with the entry to nursing home care which has long term implications for individuals, organisations, the health of the population, and the national economy. If we continue to adopt what has been described as a "prosthetic" rather than a therapeutic approach to the long term care of older people,¹⁰ the consequences for future generations may well be devastating. There is a need for national strategic development to stop

people going too early to the wrong place. Agreeing a better way forward would be appropriate before the international year of older persons in 1999.

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Promoting environmental health

Needs closer collaboration between the NHS and local government

The British government's white paper, *Health of the Nation*, received a cautious welcome on its publication in 1992.¹ Its critics believed that its approach to health was limited, that it omitted many important issues such as the effects of environment and poverty, and that it implied ditching the World Health Organisation's comprehensive Health For All strategy.² Since then, WHO has met with the European Union in Helsinki in 1994 and approved a model environmental health action plan,³ which Britain has been asked to pilot.⁴ The result gives us a clear view of the British government's segmental approach to Health For All.⁵ It also raises issues about who should do what in promoting environmental health.

Britain's environmental health action plan is a simple list of what the government is doing or planning to do about environmental health.⁵ It is not a new agenda and therefore contains no new policy initiatives. Nor does it feature much about research and development. While some issues (such as air pollution and asthma, or oestrogenic waste and subfertility) are briefly mentioned, the plan does not show how these are prioritised or how funding decisions are to be made. The plan's opacity compares unfavourably with the NHS research and development initiative.⁶

Britain's action plan is only a part of the government's overall strategy for the environment.⁷ It will be supported by a panel of experts on sustainable development,⁸ a national think tank,⁹ a cabinet environment committee to consider the environmental impact of policy proposals, and a parallel public education campaign, "Going for Green." All of this is quite separate from the implementation of *Health of the Nation*. Inevitably, with two separate structures there will be failures of communication. Inevitably, the government's dualistic structure will reinforce the message that *Health of the Nation* is to be separate from environmental health at field level, which could endanger the NHS's influence in environmental health.

Local government will almost certainly take the lead on environmental health at local level, most probably through the environmental improvement programme, Local Agenda 21, that arose from the Earth Summit in Rio de Janeiro in 1992.⁹

This is sensible, but, unless the NHS's role is written into the action plan, uncooperative local authorities may exclude health authorities from the process. The worst possible outcome would be an NHS programme on *Health of the Nation* running independently of local authority environmental programmes, with no cross fertilisation. This is happening already in some parts of the country, where local government initiatives have undermined local Healthy City initiatives,¹⁰ even to the extent of making them non-viable.

So, who should promote health promotion? The action plan is unclear as to whether or not environmental health encompasses individual behaviour. If it does, local authorities will argue that they need their own health specialists, and there will be a split between professionals working on *Health of the Nation* and those involved in implementing the action plan. The most likely result of this would be health promotion specialists defecting to local government.

There is an additional complication. Implementing *Health of the Nation* depends on developing alliances to cover settings like "healthy homes." But environmental issues need community development. This process is familiar to people involved in local government and health promotion, but most doctors will have to learn the new techniques of empowerment if they are to play a meaningful part.¹¹ If they fail to do this they may lose their influence over environmental health and health promotion and possibly even over large chunks of *Health of the Nation*. The separation of the *Health of the Nation* from the environmental health action plan demands that the NHS's role is clearly enunciated with mandatory links to *Health of the Nation*. Then, with appropriate education of health professionals about community development, the programmes can be implemented side by side.

And what of Health For All? Clearly, the British government does not favour the idea of a unified strategy for action on health and the environment. What is more, *Health of the Nation* continues to ignore two important goals of Health for All—equity and subsidiarity. There is little we can do about that; but the environmental health action plan provides an