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FINANCING LONG-TERM CARE IN GREAT BRITAIN

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ABSTRACT

This paper is concerned with the current and future financing of long-term care (LTC). This is defined as the provision of nursing and care services to those adults who are incapable, to some degree, of looking after themselves, but excluding short-term convalescent care. The current position is summarised, covering the demand and supply of LTC, how it is currently financed, new developments and consumer attitudes. The paper then goes on to consider future developments. Possible patterns of future demand, covering likely needs and costs are given. Consideration is then given as to how future demand may be financed.

The paper discusses some of the initiatives that might be undertaken to encourage proper planning by both the State and individuals and concludes that the actuarial profession should have a significant role to play in communicating the issues and evaluating solutions.

KEYWORDS

Long-Term Care; Disability; Projections; Actuarial Initiatives

Every man desires to live long; but no man would be old.

Jonathan Swift

1. INTRODUCTION

1.1 An ageing population is now a widely recognised phenomenon throughout most of the developed world. Demographic projections indicate that, in Great Britain over the next 40 years, the number of people above current State pension age will increase by around 50%, while the population below this age may be much as it is now[1].

1.2 These changes are likely to have a profound impact on our society in a number of areas. In particular there will be significantly increased demands on medical services, relatively fewer workers and a less youthful orientation in general. One of the most important features will be the increased demand for long-term care (LTC). We would define LTC itself as the provision of nursing and care services to people who are incapable, to a greater or lesser degree, of looking after themselves. Short-term convalescent care is excluded.

1.3 There are also influences which are likely to affect the supply of LTC.

Society is increasingly looking to provide care in the community rather than in institutions. There is a belief that providing community care as opposed to institutional care improves the quality of life of the disabled. The 1990 National Health Service and Community Care Act has, at last, been fully implemented. This gives local authorities total responsibility for the provision of care, but it will be funded out of a budget set by central government. Non-care costs, e.g. residential costs, cannot be met out of this budget, and this is likely to increase the move away from institutionalisation.

1.4 As has always been the case, much care is provided informally, i.e. by family and friends without payment. Changes have been taking place in society which have already affected the availability of this source of care provision and will continue to do so in the future. An example of this is the wider geographic spread of families; adult children tend to live further away from their parents.

1.5 All of these forces indicate that the financing of LTC, already an important issue, will become increasingly so in the future. Unfortunately, the general public is largely unaware of either the true costs involved or what the impact of these influences will be. It is clear that government policy in this area needs to take account of the longer-term considerations.

1.6 There has already been a significant rise in the elderly population. For instance, the number of over-85s has increased by around 400,000 in the last 20 years, not far short of the projected increase over the next 20. However, it is far from clear that society was prepared for this. For instance, Income Support payments to fund nursing and residential house fees escalated from some £10m in 1979 to £2.5 billion in 1992[2]. There is no indication that this occurred in any planned or controlled way. Society has coped, but it might have coped better with some informed forecasting.

1.7 The actuarial profession is well placed to make an important contribution in this area. Data are available which provide a basis for exploring future scenarios, and we can, therefore, indicate the likely effect of the various influences, and can consider the possible consequences of different courses of action in the future. This paper is intended to be a starting point to this process. As will be seen, the quality of information that is currently available is certainly not what would be desired.

1.8 Further, no matter what the quality of the data available is, we do not underestimate the problems in trying to make meaningful projections covering the next 40 years. The changes in society over the past few decades have been remarkable, and the pace of change seems ever increasing; but we should endeavour to bring a little of our scientific method to much of the uninformed crystal ball gazing which is occurring.

1.9 There is plenty of scope for future investigations to improve our knowledge. In this paper we are concerned with making best use of what is available, with the objective of giving informed comment on what the future may hold. Inevitably this paper asks more questions than it answers.

1.10 Section 2 summarises the current position with regard to the demand and supply of LTC, financing options and consumer attitudes.

1.11 In Section 3, a model is suggested for studying how demand for LTC may change in the future. Various scenarios of projected demand and cost over the next 40 years are presented. Consideration is given to the factors that will affect supply.

1.12 Section 4 considers the financial implications of the model with other trends. In particular, it looks at the likely ability of different sectors to finance LTC, and looks at a number of possible initiatives.

1.13 Section 5 considers possible ways forward from here, both in terms of the actuarial contribution to the debate and further investigations that may be carried out.

1.14 Key findings in the paper are:

—There will be a substantial increase in the demand for LTC. The value of LTC required is likely to increase, *in real terms*, from some £40 billion p.a. now to at least £60 billion p.a., and quite possibly to over £100 billion p.a., over the next 40 years.

—Over three-quarters of LTC is currently provided free of charge by family and friends. It does not seem likely that this sector will be able to maintain its share in the future if care of adequate quality is to be provided.

—The State may also be reluctant to continue to finance its current share of LTC as the demand increases.

—This all points to private payment for LTC needing to increase by significantly more than that required to maintain the private sector's share of funding in real terms.

—The elderly will be relatively more wealthy in the future, and a greater number may be able to pay for the care they require. However, for most it is unlikely that their income, mainly from pensions, will ever be sufficient to meet a substantial part of the cost, given current arrangements.

—It is important that these issues are anticipated, and initiatives are undertaken to encourage proper planning by both the State and individuals.

2. Current Situation

2.1 *The Demand for Long-Term Care*

2.1.1 A precise definition of what constitutes a need for LTC is not straightforward.

2.1.2 LTC needs may arise suddenly, following some traumatic event or acute illness. They may also develop more gradually as a result of degenerative disease and the ageing process. There is often a lack of a clear dividing line between one quantum of care and another, although particular events, such as hospitalisation, may act as a trigger for recognising the need for LTC. To confuse the situation further, whilst LTC requirements often tend to increase over time for any particular person, there may well be periods of remission. Also, the same level of disability can imply different care needs for different individuals. So we have a concept that is rather difficult to measure.

2.1.3 Nevertheless, there is a need to assess LTC needs objectively, and accordingly methods have been developed to do so. Examples are the Barthel ADL index (detailed in Appendix A) and the disability categories used by the Office of Population Censuses and Surveys (OPCS)[3]. The Barthel index measures the ability to perform ten activities of daily living (ADL), including bowel and bladder functioning, grooming, use of the toilet, feeding, transferring, mobility, dressing, using stairs and bathing. Different levels of ability for each ADL are scored, and the total gives an indication of the overall care requirements of the individual. It is commonly used by health care professionals in Great Britain, but it does not have universal acceptance. As far as we are aware there is no nationwide standard of measurement of disability for benefit assessment.

2.1.4 The OPCS categories were devised to enable a nationwide survey of long-term disability to be undertaken, and will be considered further below.

2.1.5 In addition to the purely physical disabilities that require care, cognitive or mental impairment needs to be considered. Alzheimer's Disease and other forms of senile dementia can give rise to situations where individuals are physically able, but their mental condition may make them a danger to themselves or others. Therefore care, possibly continuous, will be required for such people. Objective assessment of mental impairment is even more difficult than physical disability. However, mental status questionnaires have been devised in an attempt to do so.

2.1.6 The most severe cases, whether physical or mental, are the most straightforward to measure, and are also the simplest to cost. The real problems come with an adequate definition to cover the wide spectrum of intermediate care needs and associated costs.

2.1.7 There is also a lack of adequate data describing the prevalence of LTC needs. Information may be available from such places as nursing homes and local authority social services departments on numbers of people receiving care. Unfortunately, there are serious drawbacks to using such information as a basis for modelling care nationwide:

—The information is fragmented; it is held locally in many places and may not be easily accessible.
—There is no universal definition of different levels of need.
—Perhaps most importantly, only information on those who have been professionally assessed will be available. Most care is actually provided by family and friends—informal care—for which no detailed information on needs is available.

2.1.8 An alternative to measuring the need for LTC is to look at the level of long-term disability. A nationwide survey, referred to earlier in the section, was undertaken by the OPCS in the mid-1980s on the prevalence of long-term disability in Great Britain. The survey went into considerable detail to derive objective and comprehensive measures of disability covering both mental and physical impairments. This resulted in classifying the disabled into 10 levels of

disability. The description of the classification system, together with the helpful pen-pictures of typical cases, enable the different categories of disability to be hypothecated to different care levels. A broad correlation between need for care and level of disability, with the numbers of each, are as in Table 1:

Table 1

OPCS category	Likely care need	Estimated number of disabled lives in G.B. in 1985 (thousands) 16-59	60+	Estimated prevalence rate (%) 16-59	60+
1-2	Low—occasional	667	1,371	2·1	12·0
3-5	Moderate, probably less than daily	716	1,446	2·2	12·6
6-8	Regular, probably daily	422	1,005	1·3	8·8
9-10	Continuous	121	454	0·4	4·0

2.1.9 Table 1 demonstrates the steep rise in prevalence of disability with age, and hence simply illustrates the fact that a significant increase in the elderly population will bring about a significant rise in those requiring care. Whilst there are many younger disabled lives, such as the congenitally handicapped and accident victims, the focus of this paper is primarily on the elderly disabled. This is because of:

—the increase in the elderly population relative to the younger,
—the skewness of the prevalence of disability by age, and
—the relatively greater prevalence of severe disability by age.

2.2 *Supply of Long-Term Care*

2.2.1 The supply of LTC can be divided into 5 main categories:

—State institutions,
—private institutions,
—charity-run institutions,
—professional homecare, and
—family and friends.

2.2.2 *The State*

State provision of care places is through the NHS or through local authorities.

2.2.2.1 *National Health Service*

2.2.2.1.1 The NHS provides long-term nursing care through beds for the geriatric and mentally ill within NHS hospitals. In March 1992 the NHS provided approximately 65,000 places through these facilities[2], somewhat lower than the level of provision in 1970 (75,000).

2.2.2.1.2 In view of the current changes going on in the NHS, there is an

expectation that some of these places will be closed, with private providers or non-profit organisations being encouraged to develop alternative accommodation.

2.2.2.2 *Local authorities*

2.2.2.2.1 Local authorities provided approximately 104,000 residential places in 1992[(2)] compared to a peak of 137,000 in the mid-1980s. Residential homes generally provide lower levels of care (e.g. not skilled nursing care) than nursing homes.

2.2.2.2.2 However, the 1990 National Health Service and Community Care Act means that local authorities are unlikely to continue to provide residential home places themselves. Only care costs can be met from the budget provided by central government, and individuals will not be able to claim Income Support to fund places in local authority-run homes. Thus, the cost of running such places would have to fall upon the local authorities' general budget, and given the continuing squeeze on local government finances, this is likely to be unacceptable.

2.2.2.2.3 Therefore, the trend of local authorities divesting themselves of direct provision of residential home places is likely to accelerate with the full implementation of the Act this year. This is being done, either by setting up non-profit companies or trusts, or by transferring homes to the private sector.

2.2.3 *Private providers*

2.2.3.1 This sector has grown rapidly—with places increasing from 38,000 (nursing) and 85,000 (residential) in 1985 to 153,000 and 162,000 respectively in 1992[(2)]. The range of providers varies from the traditional husband and wife as owner/managers of a single home, to companies quoted on the Stock Exchange, but it is generally a very fragmented industry, dominated by small-scale providers. In 1991 there were 4,400 private nursing homes and over 9,000 private residential homes—48% of nursing homes have less than 30 places; only 14% have more than 50. If major providers are defined as owning three or more homes, then there are about 175 such providers, who account for only 15% of the private providers' supply of places.

2.2.3.2 This sector is still growing, and with the transfer of places from local authority provision, it is likely to continue to grow. It may be that the controllers of the care budget, the local authorities, will force reduced costs through economies of scale, and thus there may be more of a move to larger homes. Countering this may be consumer demand requiring smaller, more personal, homes. If run by owner-managers they may well have relatively low costs and rate of return requirements.

2.2.3.3 Current low property prices point to the potential for substantial growth in the private provider market.

2.2.4 *Charity (or non-profit) providers*

2.2.4.1 This is the smallest sector, currently providing nearly 14,000 nursing home places in 1991, up from 8,000 in 1987[2]. Residential home places have stayed relatively constant at around 47,000. With local authorities looking to transfer homes to trust or non-profit organisations, this sector should continue to grow.

2.2.5 *Professional homecare*

2.2.5.1 The bulk of formal home-care services are provided by local and health authorities. These include home helps, meals on wheels, aids and adaptions, day care and home nursing. The involvement of the private sector in this area is still very limited, but it is likely that this could expand quickly with the full implementation of the Community Care Act. This will be due to both an expansion in the size of the homecare market, and also local authorities looking to contract services out to the private sector.

2.2.6 *Informal homecare*

2.2.6.1 Care at home by family and friends has traditionally been the major source of LTC supply in most societies. This is probably still the case today, with the possible exception of the most severely disabled, who are more likely to be in institutional care. Reliable figures on the supply of informal care are hard to come by. A study, undertaken as part of the 1985 General Household Survey[4], indicated that some 3% of the adult population—around 1·5 million people—spent more than 20 hours per week on caring for somebody.

2.3 *Current Financing Options for Long-Term Care*

2.3.1 There are three possible sources of finance for an individual's long-term care:

—from the public sector,
—from voluntary organisations, and
—from their own resources or those of their family.

2.3.2 *Public sector*

2.3.2.1 *Income Support*

2.3.2.1.1 There is a wide range of disability and social security benefits available, and the conditions relating to them are complex. However, until recently the principal benefit payable to the elderly has been Income Support. In the year commencing 1 April 1993, the weekly benefit was set at £280 (£315 in Greater London) for nursing home residents and £185 (£210 in Greater London) for those living in residential care homes. These amounts cover around 85% of the average cost of a single room. In addition, a personal allowance of £12.65 per week is payable.

2.3.2.1.2 Income Support is means tested, with the amount paid being sufficient to bring total income (including pensions) up to the benefit level. Capital over £3,000 is brought into the equation. A person is not eligible if their capital exceeds £8,000. A single or widowed person who moves into a care home from the house they own would generally not be eligible. Income Support may be reduced if it is believed that assets have been transferred to relatives to induce eligibility to State benefits. In 1992, some 70% of the occupants of private and voluntary care homes depended upon Income Support for the payment of fees[2].

2.3.2.1.3 New residents of homes will not be eligible for Income Support in respect of care needs under the provisions of the Community Care Act.

2.3.2.2 *National Health Service provision*

2.3.2.2.1 The NHS provides long-stay wards for geriatric and psychogeriatric care with no direct cost to the patient, although State pensions will be withheld.

2.3.2.3 *The Community Care Act*

2.3.2.3.1 Since April 1993, local authorities have had full responsibility for the assessment and public sector funding of care.

2.3.2.3.2 The practical effects of this legislation are intended to include:

—a shift from State provision of care to private provision,
—a shift from institutional to home care, and
—a shift from demand-led financing to budget-restricted financing.

2.3.2.3.3 Local authorities have now been allotted a budget by central government which can only be used to cover care costs. There will be a Special Transitional Grant (£612m for 1993/4 including implementation costs) in addition to the ordinary personal social services allocations channelled through the Revenue Support Grant. The intention is that no further care costs should be made by the State, although individuals will continue to be eligible for other social security benefits. 85% of the Special Transitional Grant must be spent on independent, probably mainly private, care provision[5].

2.3.2.3.4 Local authorities are responsible for assessing the care needs of individuals and ensuring that these needs are met in the most appropriate way. The intention is that as much of this care as possible should be provided in the community, i.e. in the usual home of the person needing care.

2.3.2.3.5 This suggests that only those requiring a fairly high level of care should be in a nursing home. Residential homes, which tend to provide a much lower level of care than nursing homes, will be unlikely to generate sufficient care costs for each resident to fulfil this requirement. So, local authority-run residential homes will not be funded out of the care budget.

2.3.2.3.6 The options for local authorities which wish to continue running residential homes would be to charge fees on a commercial basis or pay for them

out of their general budget. Given the lack of expertise in commercial management and the squeeze on local authority finances, these options seem unlikely to be attractive. We can, therefore, expect to see local authorities moving out of the business of running residential homes.

2.3.2.3.7 Local authorities will have complete responsibility for the care budget. They estimate that the total annual amount allocated is some £200–£300m lower than they think is required. Careful assessment of care needs will, therefore, be needed, and it is to be expected that there may be some difficult decisions to make over the allocation of resources. Another interesting problem may be how care and non-care costs are split. As they are potentially paid from different sources, there may well be differences of opinion as to the correct levels of each.

2.3.2.3.8 Those already resident in nursing and residential homes will continue to receive their existing benefits. For new claimants, local authorities will assess the care need and make payments where deemed necessary to top up other social security benefits.

2.3.2.3.9 With regard to homecare, the local authorities spent some £1.5 billion on home helps, day care, etc. and the health authorities a further £1 billion on nursing services in 1992[2]. Local authorities are empowered to make a charge for these services, but they have not to date used this power to the full. Where charges have been made, the cost has often been subsidised. The new regime will mean that the authorities are more likely to charge for services where possible.

2.3.3 *Voluntary organisations*

2.3.3.1 There are a number of charities which will help pay for geriatric care in particular cases of hardship. This might be, for instance, when a person faces eviction from a home, or if there is a dispute over eligibility to Income Support.

2.3.3.2 Some voluntary organisations are directly involved in the provision of care to specific groups (e.g. members of a particular trade), and to this extent will be involved in financing care.

2.3.4 *Private sector*

2.3.4.1 *Own income*

2.3.4.1.1 Pensioners are less wealthy than the general population. Less than 10% of them would have sufficient income to pay for residential nursing care out of their own resources[6].

2.3.4.2 *Own assets*

2.3.4.2.1 Few pensioners have any significant assets other than their home. The prevalence of home ownership among the elderly is as in Table 2[7].

Table 2

Age of head of household	Percentage owning house outright	Percentage owning house with mortgage
65–69	53	8
70–79	50	4
80+	51	2

2.3.4.2.2 This indicates that around half of pensioners do have wealth available in the form of housing property which, given the right circumstances, might fund LTC. In practice, the use of this asset is limited for the following reasons:

—equity release schemes are not widely used,
—there may well be a partner living there, making a sale difficult,
—the current state of the housing market, and
—the desire of the elderly to pass wealth to their family may deter them from this possibility.

2.3.4.2.3 As at May 1992, some 26% of those in private care homes paid their own fees in full[2], and it seems likely that capital raised from house sales is a significant contributor.

2.3.4.3 *Equity release schemes*

2.3.4.3.1 Equity release schemes are designed to provide an elderly homeowner with an income by releasing all or some of the value of the house.

2.3.4.3.2 The methods available are:

(1) *Re-mortgages*, including interest only mortgages. Such schemes rely on tax relief on the interest payment to make them truly effective. Two problems are that for certain types of scheme such relief may not be available, and government policy is clearly to reduce such tax benefits in the future.
(2) *Home reversion schemes*. These involve the sale and lease back of the property. The homeowner loses his interest in any future appreciation in the value of the house. Commercial terms available have not generally been perceived as attractive by the homeowner.
(3) *Home income plans*. A loan against the property is used to purchase an annuity. In some cases the mismatch between the variable interest rate loan and fixed interest rate annuity has caused severe problems with this type of arrangement. A variant of this product, where the annuity was replaced by an equity-linked investment, has done severe damage to the credibility of all forms of equity release schemes. The effectiveness of home income plans also depends very much on the availability of mortgage interest tax relief.

2.3.4.4 *Long-term care insurance*

2.3.4.4.1 LTC insurance allows those who may need to finance care from their own resources to plan for this contingency. In practice it can have many guises, but, essentially, there are annuity and insurance versions.

2.3.4.4.2 The annuity version is purchased by a single payment at the time a person requires LTC (perhaps, but not limited to, moving into a nursing home), and pays a regular benefit that may be indexed at a specific rate during the lifetime of the annuitant. By agreement with a nursing home, the annuitant can effectively be guaranteed that the capital invested in the annuity will purchase all future care costs whilst a resident of the home. Normally the prospective annuitant will be eligible for enhanced terms due to their poor state of health, which can result in an attractive product.

2.3.4.4.3 The insurance versions involve pre-funding the cost of care, and, in concept, they are much the same as permanent health insurance (PHI) contracts. For LTC insurance, the trigger for benefit payment will be the inabilty to perform a specified number of activities of daily living without the help of another person. There will be a deferred period, and then a benefit is payable until death, recovery or for a specified term.

2.3.4.4.4 Premiums may be either regular or single. The nature of the risk and uncertainties of the pricing models mean that to date all available plans have reviewable premiums or benefits. Indexation of premiums and benefits is often available.

2.3.4.4.5 The actual products available take a variety of forms. They may offer a stand alone disability benefit, or may also include surrender or death benefits. They may be presented as unit-linked products, or non-linked (but reviewable). The LTC benefit may also be offered as a rider with other benefits. To date in the U.K., LTC insurance has been offered as a rider to flexible whole life, PHI, critical illness and pension annuity plans. This last option allowed a personal pension plan holder to elect at retirement (subject to underwriting) to take a lower pension which increases if the disability conditions are fulfilled. Unfortunately, the Inland Revenue has now decided that this is no longer a permissible benefit. Employer sponsored arrangements are available, although these are essentially individually underwritten stand alone contracts rather than true group covers.

2.3.4.4.6 Products have been available for around 2 years, and market penetration is very low. There are several factors contributing to this situation, including the current recession, the perceived cost/benefit relationship and lack of awareness of the need for such insurance.

2.4 *The Consumer*

2.4.1 *Consumer attitudes*

2.4.1.1 Consumer research on attitudes to LTC and the role of the State and private sector in financing should be central to the development of any LTC strategy. Research that has been undertaken[8] suggests the following:

(1) People are concerned about provision of health care in general, and about the future of the NHS.

(2) People do not generally think about LTC needs arising in later life. The 'it won't happen to me' syndrome is all too common. Exceptions to this are those around retirement age and older, who may already be starting to experience some of the problems of ageing, and those who have had first-hand experience of arranging LTC for a relative or friend.
(3) There is a view that the State 'will provide', either through the NHS or the social security system. There is little realisation that NHS geriatric provision is very limited. Also, it is not generally appreciated that State provision is barely at a safety net level, and will only be given when assets have been spent down considerably.
(4) There is little appreciation of the true costs of providing LTC privately.
(5) People are concerned about depending on their family for support. Many do not want to be a burden.
(6) The more the issues are discussed with people, the more aware they become, and the more receptive they are to advance planning to mitigate possible problems. LTC insurance is seen as a potential solution, but there are fears that it will be expensive.

2.4.1.2 None of these are particularly surprising, but they do provide clear evidence of the problems in making individuals face up to the issues involved. All life and health insurers are already well aware of the public's general reluctance to provide themselves with adequate protection in the event of death or disability. The potential problems associated with LTC are so far in the future for most people, that there is even less reason for them to want to make provision.

2.4.1.3 The reality is that, without initiatives by both the State and the private sector, people will continue to be uninformed and ill-prepared for disability in old age. Whether intentionally or not, the State has played a key role in the development of other markets such as pensions and medical expenses insurance. This is summarised in Appendix B. It is likely that the State will play a key role in determining how the LTC insurance market develops.

2.4.2 *Consumer protection*

2.4.2.1 Wherever consumers are seen to be particularly vulnerable there are concerns for adequate consumer protection. This is particularly so where the consumers are both elderly and disabled.

2.4.2.2 Consumer protection falls into two distinct areas; first the provision of care, and secondly the sale of financial products.

2.4.2.3 *Care provision*

2.4.2.3.1 The provision of care is a highly fragmented industry with only a few major private suppliers, and, consequently, consumer protection is all the more important. The various Registered Homes Acts (RHA) provide the legislative framework for local authorities to govern the operation of residential and nursing homes, and the Nurses Agencies Act (NAA) requires registration of nursing agencies in England and Wales. However, these Acts do not provide a

framework for regulation of the whole care provision industry, not least because:

—There is different legislation for Scotland.
—Homes for less than 4 people are excluded from the RHA.
—NAA covers nursing services, but not personal care services.
—There is no regulation of sheltered housing or close care facilities.
—There are difficulties in using RHA to enforce closure of unsatisfactory homes.
—There are differing standards between local authorities.

2.4.2.3.2 Further consumer protection has been achieved by the establishment of national bodies representing the various segments of the industry and their development of codes of practice, e.g.:

—British Federation of Care Home Proprietors,
—United Kingdom Home Carers Association, and
—The House Builders' Federation code of practice for sheltered housing.

2.4.2.3.3 However, without adequate funding, it is difficult to see how these codes of practice can be enforced satisfactorily.

2.4.2.3.4 One area of particular interest is the Continuing Care Conference, which is a coalition of private and voluntary organisations involved in LTC, including care providers, charities and insurers. This is the first organisation bringing together both care providers and financial services, and one of the issues they are campaigning for is a national accreditation scheme for care providers.

2.4.2.4 *Financial products*

2.4.2.4.1 Consumer protection for the sale of certain financial products is governed by the Financial Services Act (FSA). Nonetheless, despite the FSA, there have been some well-publicised cases of inappropriate products being sold as equity release schemes, which have done much to damage the credibility of this area of the market. Further consumer protection, preferably self-regulated, is likely to be needed as new financial products emerge. One example is the Code of Conduct drawn up by the Association of British Insurers governing the sale of LTC insurance and annuity plans. This code of conduct has the backing of all those currently involved in such sales.

2.4.2.4.2 There is, perhaps, a need for a more consistent approach to financial products and services overall, but this is territory outside the scope of this paper.

3. Future Demand and Supply of Long-Term Care

3.1 In this section, models projecting the demand for LTC and possible future costs over the next 40 years are described. The overall picture is built up as follows:

Section 3.2—the demand, in terms of numbers disabled and prevalence rates, for LTC in the future.

Section 3.3—the current total value of LTC, split by institutional care, professional homecare and informal care.
Section 3.4—the current proportion of LTC funded by the private and State sectors.
Section 3.5—the effect of the Community Care Act.
Section 3.6—the projected future value of LTC.
Section 3.7—consideration of factors affecting the supply of LTC.

3.2 *Projected Demand*

3.2.1 *Existing projections*

3.2.1.1 To date, projections of the numbers of those who are likely to require LTC have been fairly simplistic. The most commonly quoted statistics are either the increase in the number of those above a certain age over a given number of years, or perhaps a more succinct and dramatic figure, the change in the dependency ratio. This is the ratio of children and those of pensionable age to the number of working age. It provides a crude indicator of the relationship between the need for care and the ability to finance care. In his most recent population projection[1], the Government Actuary indicated that the dependency ratio would move from 64% to 80% over the next 40 years, this increase being entirely due to increased numbers of the elderly.

3.2.1.2 As care needs increase with age, there will be some correlation between this indicator and changes in care need. However, it is not a direct measure of the projected demand for care. To do this some commentators, for example the Henley Centre[9], have tried to quantify future demand by multiplying the age-banded OPCS proportions disabled by the projected population. On this basis they estimate that there could be around 6·4 million people over 60 with at least some care need in 2029 compared with around 4·4 million now.

3.2.1.3 This might be viewed as a reasonable estimate, but it does depend on the assumption that the age-specific proportion needing care remains unchanged. The General Household Survey has been asking questions on the prevalence of long-standing illness since 1972, and their results do show an increase in those reporting long-standing illness for all age groups. It is certainly the case that changes in life expectancy, level of health, habits such as smoking, and medical advances will affect the level of disability, and thus care need in the future. However, it is not at all obvious how a prevalence rate can be adjusted for these factors. The relationship between overall life expectancy and healthy life expectancy (however it might be measured) is not clear. As the former improves, how does the latter change relative to it? A better understanding of the underlying dynamics is likely to be gained by considering a multistate model and the factors that affect the transition probabilities between the states. Unfortunately, there are very little data available to build such a model directly.

3.2.2 *A practical model*

3.2.2.1 The most useful information which we came across consisted of the OPCS prevalence rates and some studies on impaired life mortality. There is a

little information on incidence of care, but it is localised, subjective, and depends on the supply of care. There is no information known in the U.K. on transition probabilities between different levels of disability or care need. There are some data from the U.S.A.[10], but we feel that their applicability to Great Britain is very questionable.

3.2.2.2 It was decided, therefore, to simplify the multistate model to a series of three-state models. The states are healthy, disabled and dead, and there are separate series of models to cover the different levels of disability. An assumption was made that the probability of recovery (transfer from disabled to healthy) is zero. In the context of these projections this is not unreasonable when long-term disability, particularly among the elderly, is being considered. The model then reduces to, for each cohort of lives born in a particular year:

$$l^d_x = (1 - q^d_{x-1})\, l^d_{x-1} + i_{x-1}\, l^h_{x-1}\, (1 - q^h_{x-1}/2)\, (1 - q^d_{x-1}/2)$$

where l^d_x is the number of disabled lives aged x (known by consideration of the prevalence rates) and q^d_x represents disabled life mortality which may be estimated (see below). The superscript h denotes healthy lives, the mortality of which will be consistent with the q^d_x assumption for a given level of aggregate mortality. It is thus possible to solve for i_x, the disability incidence rate.

3.2.2.3 There are some studies to provide broad estimates for impaired life mortality. For instance, both Donaldson[11] and Booth[12] report studies of local populations categorised by ability to perform a number of ADLs, and the observed mortality rates. These are in broad age bands, but are reasonably consistent and give some basis for estimating mortality appropriate to the disability levels implied by the OPCS categories.

3.2.2.4 The OPCS study has been used as the basis for prevalence rates. One assumption is that the rates from the 1985 survey are applicable to the base projection year 1991. Also, it can be argued that cohort prevalence rates should have been used as the starting point for a model such as this, with the rates related to those born in a particular year. As a matter of necessity we have used secular prevalence rates, measured at a particular point in time. The underlying assumption is that there is no difference between the two. The model itself contradicts this—it results in prevalence rates that change over time, and thus different cohorts produce different rates; but as a first approximation, we believe the use of secular rates is justifiable.

3.2.2.5 Incidence rates for 1991 were calculated, using the assumptions on prevalence rates and impaired life mortality. The projections were then undertaken, allowing incidence and mortality rates to vary over time. This allows separate consideration of the influences upon these factors, and how these combine to alter the relative prevalence of disability in the future.

3.2.2.6 If incidence and mortality rates remain constant over time, then prevalence rates will remain constant. So, in this context, it does not matter what basis for impaired life mortality is chosen—the answers are the same. Low disabled life mortality for a given prevalence rate implies low incidence rates.

Conversely, high disabled life mortality is associated with high incidence rates to give the same prevalence rate.

3.2.2.7 It is also the case that, if mortality and incidence rates are allowed to vary over time, the results are not particularly sensitive to the starting assumption for q_x^d (and hence the implied value for i_x).

3.2.2.8 Given the relative insensitivities and lack of data, a simple model has been used for impaired life mortality. Mortality of such lives is assumed to be related to age (but to a lesser extent than for normal lives) and degree of disability. Certainly for seriously disabled elderly lives, it would appear that severity of disability can outweigh age to a large degree. The model used is, therefore, of the form $(aq+b)$, where a and b are both between 0 and 1, and q is normal population mortality. The levels chosen give a reasonable fit to the observed mortality data at older ages (65 and above), but the fit at younger ages is not good. This was not felt to be important in the context of this model, given the focus on elderly lives and the insensitivity of this assumption.

3.2.2.9 The 1991-based population projections allow for some significant improvements in mortality at older ages (see Appendix C). It was considered reasonable to relate changes in disabled life mortality to the same base. It is arguable whether the disabled will experience a better or worse improvement than the population. Given generally improving care facilities and increasing likelihood of palliative treatments, it was felt that, on balance, a greater improvement was more likely. For this reason the central projection was performed assuming disabled life mortality improvements of 1·5 times that of the general population. A more sophisticated model would allow variation in this factor according to level of disability, but it was felt that there were insufficient data. This improvement in mortality implies a gradual increase in age specific disability prevalence rates.

3.2.2.10 Increased life expectancy, healthier lifestyles and medical advances all indicate an increase in healthy life expectancy. The link between mortality and morbidity is far from clear. However, it seems likely that increased life expectancy may lead to some of those who would have died living in a less healthy state. Thus, while improvements in the incidence of morbidity may be postulated, perhaps they are unlikely to be as great as improvements in mortality. The mortality improvements used by the Government Actuary vary by age and year to allow for period and cohort effects. We have taken a simpler approach for disability incidence rates, and a central assumption was made that improvements of 0·5% p.a. in incidence rates would be attained.

3.2.2.11 Full details of the assumptions made and the projected demand, given different scenarios, are given in Appendix D. The next section considers some of these results in a little more detail.

3.2.3 *Some results from the model*

3.2.3.1 On the central projection basis the numbers of disabled in the future are as in Tables 3 and 4.

Table 3

Number of disabled adults in thousands

Care need	1991	2001	2011	2021	2031
Low	2,117	2,127	2,265	2,452	2,556
Moderate	2,233	2,245	2,389	2,590	2,745
Regular	1,479	1,527	1,675	1,861	2,058
Continuous	596	695	834	988	1,184
Total	6,425	6,594	7,163	7,891	8,543

Table 4

Number of disabled adults over 60 in thousands

Care need	1991	2001	2011	2021	2031
Low	1,451	1,403	1,549	1,737	1,943
Moderate	1,532	1,491	1,653	1,856	2,107
Regular	1,074	1,097	1,260	1,450	1,691
Continuous	482	575	720	872	1,080
Total	4,539	4,566	5,182	5,915	6,821

3.2.3.2 Two points emerge from this:

(1) The increase in the number of disabled over a 40-year period is actually greater among the elderly than for the population as a whole (2.28 million against 2.12 million). The difference is not significant, given the model, but it does make clear that the rise in the number needing care is likely to come totally from the elderly population, and thus the focus should be on this sector.

(2) There is virtually no change for the next 10 years, then the numbers start to grow significantly. This is again mirroring, to a large extent, the age structure.

3.2.3.3 To set these figures in context, they should be related to the changes in population as a whole. For example, looking at those requiring continuous care, the projected change in prevalence rates is as in Table 5:

Table 5

	All age long-term disability prevalence rates per thousand				
	1991	2001	2011	2021	2031
Adult disabled/Adult population	14	16	19	21	26
Disabled 60+/Adult population	12	13	16	19	23
Disabled 60+/Adult population under 60	16	18	23	28	37

The ratio of disabled to the total population gives a measure of the impact of the increase in care required on the population able to supply that care—

proportionately nearly twice current resources per capita will be required to provide continuous care in 40 years' time, assuming no change in the efficiency of those resources or the nature of care given. Relating the elderly disabled to the working population, the situation is worse. The relative burden on the economically active will be some 230% of what it is currently.

3.2.3.4 A number of different scenarios were considered. Full details are given in Appendix D, but the range of results from the various projections is summarised in Table 6.

Table 6

1000 × Disabled over 60/Population between 20 and 60

Annual decrease in q_x^d	Annual decrease in i_x (%)	All categories of care				
		1991	2001	2011	2021	2031
1·5 × OPCS	0·5	151	147	166	192	237
None	0·5	151	138	145	158	190
1 × OPCS	0·5	151	144	160	181	222
2 × OPCS	0·5	151	149	173	201	250
1·5 × OPCS	0	151	148	172	204	259
1·5 × OPCS	1	151	145	161	180	216
1·5 × OPCS	2	151	142	150	159	179

Annual decrease in q_x^d	Annual decrease in i_x (%)	Continuous care only				
		1991	2001	2011	2021	2031
1·5 × OPCS	0·5	16	18	23	28	37
None	0·5	16	16	16	18	22
1 × OPCS	0·5	16	18	21	25	32
2 × OPCS	0·5	16	19	26	32	44
1·5 × OPCS	0	16	19	25	32	44
1·5 × OPCS	1	16	18	21	25	32
1·5 × OPCS	2	16	17	18	20	23

3.2.3.5 As can be seen, for all scenarios the all category ratio actually falls over the next 10 years, reflecting a modest growth in the working population against those with some care need, although this reverses for all scenarios further into the future. The strong correlation of those requiring continuous care with the very old ensures that, in all cases, there is a steady increase in this care dependency ratio.

3.2.3.6 The different scenarios illustrate the effect of changing separately the impaired life mortality and incidence rate assumptions. Impaired life mortality has been varied by different multiples (between zero and twice) of that assumed in the official Government Actuary's population projections. At one extreme is the assumption that there is no change in impaired life mortality. This represents a relative worsening when compared with the general population. There is no

obvious reason why this should be the case. The implication is that the number of disabled is rather less than if some improvement is allowed.

3.2.3.7 The projection assuming impaired life mortality improves at the same rate as the Government Actuary's projection simply shows the position where population and disabled life mortality change at the same rate. Impaired life mortality improving at twice the rate applied to the general population is the furthest that we have gone. As can be seen, the effect, particularly on the numbers requiring continuous care, is quite marked.

3.2.3.8 With regard to incidence rates, improvements of between nil and 2% p.a. were considered. Again, nil improvement should be an extreme assumption. The effect of the various changes mentioned earlier should mean that the onset of disability in the future is generally no earlier than at present. To obtain incidence rate improvements of the order of 1% or 2% p.a. is consistent with, say, the eradication of one or both of the major reasons for care in the elderly—senile dementia and arthritis. Since cures do not appear to be on the horizon, and, if found, take some time to implement and take effect, certainly a 2% improvement would seem to be a very optimistic assumption.

3.2.3.9 It can be seen that, for those requiring continuous care, where costs are greatest, the range of results vary by a factor of two after 40 years. The variation in those requiring any care is rather less.

3.3 *Current Total Value of Long-Term Care*

3.3.1 In order to build a comprehensive model of the future costs of LTC, it is necessary to establish the current values of care provided. Unfortunately, the value of formal and informal care is usually measured in two different currencies. A monetary value can be assigned to formal care. Informal care is, by definition, not paid for, and is thus not easily valued in monetary terms. If measured at all, it might be done so in terms of hours of labour.

3.3.2 The market value of all institutional care provided in the U.K. is estimated to be some £7·0 billion as at March 1992[2]. The same source gives an estimate of the amount spent on professional homecare as at April 1992 as £3·1 billion. This includes an estimate of the amount spent in the 'grey' economy, that is care provided through the private sector and paid for privately, there being no central database of such transactions.

3.3.3 By far the most difficult sector to put a value on is care provided informally, i.e. not paid for. It clearly has a value greater than zero. One possible approach might be to consider the opportunity cost of economic production foregone. This is very difficult to quantify. Many informal carers would not otherwise be economically active (many are pensioners themselves), while for those that are, it is not obvious how their economic potential might be estimated.

3.3.4 Another approach is to calculate what the cost of paying for the same amount of formal care would be. This values informal care at the same rate as formal. Of course this is an overestimate; if all informal carers tried to charge

current market rates for their labour, unit costs would fall dramatically. However, as long as this point is borne in mind, it is a useful approach to take, as it does allow direct comparability between the amount of paid and free care provided. It thus provides a method for comparing how the balance between the two might change in the future.

3.3.5 The starting point is the amount of informal care provided. If we assume that the proportions of informal carers from the 1985 General Household Survey[4] can be applied to 1991 populations, there are 6·1 million people providing some informal care, of which 1·6 million provide at least 20 hours a week. Approximately 20% of carers have two or more dependants, while 25% of dependants have more than one carer (20% of those requiring more than 20 hours care per week). These factors are assumed to cancel out, leaving a 1 to 1 relationship between the number of carers and those for whom care is provided. This is broadly corroborated by the following:

(1) The total 1991 adult population with some level of long standing disability is estimated to be over 6·4 million. The sum of total informal carers estimated above and the number of places in institutions is 6·6 million[2]. This assumes that all those who receive professional homecare also receive some level of informal care—probably not unreasonable.
(2) The total 1991 adult population requiring regular or continuous care (OPCS categories 6–10) is just under 2·1 million. This compares well with the sum of places in institutions and carers who provide more than 20 hours' care per week, which is around 2·2 million.

3.3.6 Local authority hourly rates for basic formal care are around £7. The actual costs does depend on the type of care, for instance skilled nursing care could cost £10 per hour or more. Conversely, cheaper basic care may be available in certain regions. Nevertheless, we have assumed all informal care is valued at a constant rate. This is partly due to lack of data making it difficult to justify anything more complex. It also means that the informal provision parts of the model can be simply re-expressed in non-monetary terms.

3.3.7 In particular, it should be noted that any conclusions drawn about the change in informal care alone are independent of monetary considerations; a doubling in value can be equally taken as a doubling in the amount of care supplied. It is only when we consider the implications of transferring provision from one sector to the other that a monetary value for informal care is required.

3.3.8 £7 per hour probably represents a conservative estimate of the cost of providing informal care at current market rates. If we further assume that those who provide more than 20 hours' care provide an average 30 hours, and the rest provide 10, then the total annual value of informal care is:

$$(1{\cdot}6 \times 30 + (6{\cdot}1 - 1{\cdot}6) \times 10) \times 7 \times 52 = £33{\cdot}9 \text{ billion.}$$

This compares with an estimate based on methodology used by the Family Policy Studies Centre of £39·1 billion[2].

3.3.9 Summing all care provision to obtain an estimate for the total value of care in 1991:

	£bn
Institutional care	7·0
Professional homecare	3·1
Informal care	33·9
	44·0

Therefore, we estimate the total value of LTC provided in 1991 to be in the region of £44 billion. The purpose of this estimate is two-fold. Firstly, it provides a basis for allocating the proportion of LTC financed by the State and private sectors, and also that provided informally. This is shown in Section 3.4. Secondly, it provides a rough check for the model developed in Section 3.6 to project the value of LTC in the future.

3.4 *Current Funding of Long-Term Care*

3.4.1 The total cost of care may be split by who pays. In 1991 the State paid the following towards LTC[2]:

	£m
NHS hospitals	1,496
Income Support	2,530
Local authority and NHS homecare	2,400
	6,426

Individuals or their families paid:

	£m
Balance of institutional care	2,987
Private homecare and local authority costs recouped	692
	3,679

3.4.2 As a proportion of the £44·0 billion total, therefore, the State funded 15% of the care, the private sector paid for 8% and the remaining 77% was provided free by the informal carers. It is this significant imbalance between formal and informal care which is likely to cause serious problems as the demand for LTC increases.

3.5 *The Effect of Care in the Community*

3.5.1 It is too early to judge what the effect of the full implementation of the Community Care Act will have. Central government will determine local authority budgets, and the amounts allocated will be the major determinant of State spending on LTC. The intention is that private sector provision will be increased, with funding coming from the care budget if insufficient private means are available; but the move from a demand-led to a budget-restricted system will mean that it is more likely that the proportion of funding from the State will fall rather than rise.

3.5.2 Increased availability of community care may lead to greater interest in improved equity mechanisms to provide the financing of this care. It may also mean fewer individuals selling their homes in order to finance institutional care.

3.5.3 Accordingly, the effects of this legislation have not been taken into account directly in the projections below, although the likely effects are considered when looking at the long-term influences on funding.

3.6 *Projected Value of Long-Term Care*

3.6.1 It is assumed that care needs by level of disability are as follows:

(1) Low need (OPCS categories 1–2)—5 hours per week. The reality is that there will be significant variation from individual to individual, but 90% of carers provide care at least 1 day per week[4].
(2) Moderate need (OPCS categories 3–5)—15 hours per week.
(3) Regular need (OPCS categories 6–8)—30 hours per week.
(4) Continuous need (OPCS categories 9–10)—45 hours per week. The cost of a place in a nursing home is approximately the same as 45 hours per week professional homecare.

3.6.2 The total costs assumed in the model are, therefore, based on 1991 populations (Table 7):

Table 7

	Number ('000s)		Annual cost at £7 per hour (£m)	
Care need	16+	60+	16+	60+
Low	2,117	1,451	3,853	2,641
Moderate	2,233	1,532	12,190	8,365
Regular	1,479	1,072	16,155	11,728
Continuous	596	482	9,767	7,895
Total	6,425	4,539	41,964	30,629

3.6.3 The total for all ages compares with £44 billion previously estimated as the total value of care provided. A value for LTC of £42 billion amounts to some 7·3% of gross national product (GNP) (£574 billion in 1991), although, of course, only a quarter of this represents some form of monetary payment.

3.6.4 The model can be applied to the demographic projections undertaken to estimate future care costs. It was felt that the most straightforward approach would be to consider the cost projection in terms of constant GNP. Historically, GNP and average earnings have changed at roughly the same rate (as indeed might be expected in the long run). Since provision of LTC is still primarily labour intensive, it might be expected that unit costs will change in line with earnings.

3.6.5 It might be argued that, as the demand for LTC increases relative to the supply, carers' wages will increase by more than the national average. In this case

LTC costs will increase in real terms. Technological advances may reduce the dependence on labour, although the effect on overall costs is unclear.

3.6.6 On balance, it was felt that a central projection assuming LTC costs stay constant in real GNP terms would be appropriate. Further projections, assuming a 1% p.a. increase and decrease, respectively, were also undertaken. The full results are given in Appendix E, but are summarised in Table 8.

Table 8

Total cost of LTC assuming unit costs constant in GNP terms based on central mortality and incidence rate assumptions

	Amount at constant cost (£bn)	Percentage of GNP	Cost per adult person of working age (£)
1991	42	7·3	1,345
2001	44	7·7	1,365
2011	49	8·5	1,485
2021	55	9·6	1,689
2031	62	10·8	2,014

3.6.7 If costs are assumed to grow at 1% p.a. less than GNP, the cost per adult in 2031 falls to £1353. For a 1% p.a. increase, it increases to £3000, giving a total value of £92 billion, or 16% of GNP. For the worst scenario tested, a 1% p.a. increase in real costs combined with no improvement in inception rates, the projected value in 2031 is £102 billion.

3.7 *Future Supply of Long-Term Care*

3.7.1 In addition to the increased future demand, there are a number of factors which are likely to affect future supply of LTC.

3.7.2 Broadly, the population of working age is not projected to change significantly over the next 40 years[1]. However, the potential for this population to supply or finance the future increased demand for LTC will be affected by factors such as:

—the overall level of unemployment,
—shifts in employment patterns between industries,
—changes in productivity, through technological advances or otherwise,
—immigration above the levels assumed in the OPCS projections; historically, significant shortage of labour has been met by increased immigration,
—availability of those with the appropriate skills, and
—availability and cost of development capital.

3.7.3 We are currently seeing a shift of the financing of all manner of services from the State to the private sector, and care provision is no exception. This is both economically and politically inspired, and it is notoriously difficult to predict future political directions. It does seem more likely than not, though, that

the trend to private provision will continue. So the State may well not be prepared even to maintain current levels of financing care in the long term, let alone increase it.

3.7.4 If the current philosophy is maintained, more homecare will be required. Some will be provided by professional carers, but, as ever, the majority of this care will be provided informally. How well placed will the family be to provide such care? Social trends are likely to reduce their propensity to provide such care. These trends include:

—increasing propensity of females to work,
—reducing size of families,
—increase in divorce rates; this could mean both more single people in retirement, and fewer daughters-in-law prepared to give care, and
—greater mobility, with the children of the elderly living further away from their parents.

3.7.5 Nursing care provision is a labour intensive industry, and has traditionally been provided primarily by women. The gradual reduction in the ratio of younger females to the elderly in the population at large is likely to constrain the growth in LTC supply or increase its cost. Changes in the NHS could also affect the supply of trained nurses.

3.7.6 The changes in future supply of LTC are particularly difficult to quantify, and we have not attempted to do so here. In general, the LTC market is likely to be demand-led. With relatively low entry barriers, supply should catch up with demand. The relevant trends are considered in the next section and the implications of issues discussed so far are examined.

4. Implications

4.1.1 On the assumptions set out in the appendices, our central projection of total value of LTC suggests it will increase by £20 billion in real terms over the next 40 years, which is equivalent to a 47% (from 7·3% to 10·8%) increase as a proportion of GNP. A more pessimistic scenario indicated a rise of around £60 billion, representing an increase of around 150% over the period.

4.1.2 How can society finance this substantial projected increase in total cost of LTC?

4.1.3 Essentially, any increase in the resources required to provide LTC must be met from one or more of the following sources:

—the State,
—private finances,
—informal provision.

4.1.4 The potential for each of those to meet its share of the increased demand is considered separately in the next 3 sections. We then go on to consider the scope for joint initiatives and co-operation between these sectors.

4.2 *State Funding*

4.2.1 In 1991, State spending on LTC accounted for 2·6% of total State expenditure (£244 billion in 1991). In Section 3.4, it was estimated that this equates to 15% of the total value of LTC.

4.2.2 If the State was to maintain this share of the total value of LTC in the future, and if State spending remains a constant proportion of GNP, then the share of total State spending would rise to 3·8% by 2031.

4.2.3 If the private and informal sources of LTC were unable to maintain their share of the total increase in the value of LTC, then the State's share would need to increase. A doubling of the State's share to 30% would necessitate State spending on LTC to increase to 7·6% of total State spending.

4.2.4 If the informal sector is unable to support any increase in its contribution to the total value of LTC, and if the whole of this increase were to fall on the State, then the State's share of the total value would increase to 39%, which would account for 10% of total State spending.

4.2.5 Over the last 20 years, State spending has tended to increase as a proportion of GNP. The demographic trends will have other impacts on State finances, such as increased provision of pension and social security benefits, increased demands for NHS provision and a reduced tax base for income tax. The State has already taken action to reduce the prospective burden of State pensions and may not wish to replace this by an increasing burden of LTC costs.

4.2.6 The two options for the State to fund the increased cost of LTC are either a pay-as-you-go approach, along the lines of the National Insurance scheme, or a pre-funded scheme. On the figures above, the latter would have to commence soon to enable the cost to be spread. However, for a pre-funded compulsory insurance fund, the assets of the fund would need to be ring-fenced. This presents difficulties itself, and has not always been successful when tried elsewhere. Political necessity inevitably tends to delay increased taxation, and, as such, is likely to favour the pay-as-you-go approach.

4.2.7 The problem with pay-as-you-go schemes is that current tax payers are always financing current recipients of the benefit with no guarantee that future tax payers will fund their benefits when required, especially if costs to the tax payer became out of hand.

4.2.8 Given the increasing demand, the State must consider how much of this burden it is prepared to carry, and how it is to be funded. There is an argument that the State should consider sufficient funding to provide a minimum level of benefit for all. Given the escalation in costs involved, the better approach may well be implementing a compulsory pre-funded arrangement.

4.3 *Private Finances*

4.3.1 Private finances paid for only 8% of total value of LTC in 1991. Individuals who wish to pay as they go for LTC are likely to have two main resources—home ownership and pensions. Possible mechanisms for providing appropriate funds in the future include savings and insurance arrangements.

4.3.2 *Utilising house values*

4.3.2.1 Currently, some 66% of households own their home. It would not, therefore, be unreasonable to assume that over the next 40 years the proportion of the elderly owning their home will rise from around 50% to close to 70%.

4.3.2.2 The possibility of financing LTC via home ownership has already been explored in detail by Benjamin[13]. He has made a good argument for pooling house assets and using the pool to fund LTC as required. Despite some practical problems, this does seem a concept worthy of further development.

4.3.2.3 We have estimated that the average LTC cost per disabled life is currently a little under £7,000 p.a. Given that the average house sale price is currently a little under £55,000, this would, at first sight, suggest that home ownership can contribute significantly to funding the cost of LTC.

4.3.2.4 However, there are a number of problems with this argument:

(1) The average LTC cost is low, because it includes costs incurred by those with low levels of care needs. Such individuals will want to be cared for in their own homes, so will not want to sell their home to purchase care. Recent problems with equity-release schemes have been well publicised, and, allied to the gradual elimination of mortgage interest tax relief in recent years, it is not clear that such schemes have a future unless the financial services industry (with help from the State?) can make them more attractive.
(2) How will the relative value of houses and the cost of LTC vary in the future? Given the increase in demand for LTC and the increasing number of houses being sold by the elderly, the relative values may well move adversely. It could be argued that house prices tend to move broadly in line with national average earnings. Given that LTC costs are labour intensive, they might rise similarly, but the increased demand for LTC could lead to LTC costs rising faster than earnings.
(3) A house is an illiquid asset, and, as has recently been seen, house prices can fall. It can be difficult to sell in a depressed market. This is of no help if you need to enter a nursing home at short notice.

4.3.2.5 It should be remembered that some 30% of the elderly are unlikely to own a home. This group is also least likely to have other financial assets or income to fund LTC.

4.3.3 *Pensions*

4.3.3.1 Over 60% of full-time employees have some form of occupational pension arrangement. A further 19% have had a personal pension arrangement, possibly now lapsed[14]. The proportion of the total population of working age (including part-timers and the unemployed) with a pension arrangement will be rather lower. Even for those with private pension arrangements, the average annual income is not likely to be high.

4.3.3.2 Overall, around £9 billion was paid as private pensions and annuities

in 1991. Given a total population over State retirement age of 9·4 million, the average annual income from this source is around £1,000[15].

4.3.3.3 There are currently twice as many females over the age of 75 as males. In many cases females will be drawing a pension in respect of their husband's employment. In these circumstances, the widow's pension will tend to be only two-thirds or an even lower proportion of their spouse's pension.

4.3.3.4 Against this, the cost of full-time LTC is expensive. The nationwide average for 1993 is around £16,000 p.a., with significant regional variations. Even if all were to retire on two-thirds final salary, a ten-fold increase, this would only result in a pension of around £10,000 p.a. on average, rather less for widows. Whilst this would cover a reasonable level of homecare, for most people there would still be a large shortfall to make up if full-time care was required.

4.3.3.5 There seems to be a belief, in certain circles, that the personal pension revolution will help to resolve this. It seems unlikely to us that pension arrangements, with benefits as currently structured, will be able to fund a substantial part of LTC costs, although they may well make some contribution for many.

4.3.4 *Savings schemes*

4.3.4.1 One method of pre-funding LTC costs that has been suggested is encouraging people to save for the ultimate rainy day. There are three major weaknesses to this idea:

—It is effectively a pension arrangement without the tax advantages.
—It is expensive to accumulate a sum sufficiently large to meet all contingencies.
—It is very inefficient; wealth is put by for something which, for many people, will never happen.

4.3.5 *Insurance*

4.3.5.1 LTC insurance is very much in its infancy in the U.K. It does overcome some of the weaknesses of savings arrangements, as it is a more efficient use of wealth and will be cheaper; but it is still too early to say what its eventual market penetration might be. Its rate of growth will be linked to:

(1) the ability of the State and informal carers to bear their share of the projected increase in LTC demand,
(2) increasing public awareness of LTC needs, and
(3) the ability of insurers to develop products that meet consumers' needs for affordability, and give them confidence that suitable benefits will be payable when needed.

4.4 *Informal Provision*

4.4.1 Currently, informal provision accounts for some 77% of total LTC. The cynical view might be that, if the State and private finances will not provide additional resources, then by default, informal provision will have to make up

any shortfall. Nevertheless, we suggest that the social trends outlined earlier could mean that informal provision is more likely to reduce from its current level than to increase to meet future demand. If the other two sectors cannot make up the shortfall, it is quite possible that the overall shrinkage in care availability will mean lower quality care.

4.4.2 If we examine the breakdown of the projected increase in the value of LTC by level of disability (from Appendix E, central projection) we obtain Table 9:

Table 9

Change in cost of LTC by level of disability

	1991		2031		
	Estimated cost (£bn)	Percentage of total	Estimated cost (£bn)	Percentage of total	Percentage increase
Continuous	9·8	23	19·4	32	98
Regular	16·2	39	22·5	37	39
Moderate	12·2	29	15·0	24	23
Low	3·9	9	4·7	8	21
Total	42·0	100	61·5	100	46

4.4.3 This clearly shows that the projected increase in LTC costs will be heavily weighted to the more serious levels of disability. About half the total increase is due to the rise in continuous care needs. This is precisely the segment where informal care will be of little or no use.

4.4.4 Two scenarios might be as follows:

(1) Informal care will maintain its share of non-continuous care, but all the increase in continuous care will have to be met from the other two sectors. Thus informal care will increase by around 25% over the next 40 years. This will mean:

—informal care will fall from 77% to 66% of overall provision,
—this shortfall is, in real terms, about £7 billion,
—if the State makes up the shortfall, its share will rise from 15% of £42 billion to 26% of £61·5 billion, a real increase of 154%, and
—if the private sector makes up the shortfall, its share will rise from 8% to 19%, a real increase of 248%.

(2) Informal care will not be able to increase its provision at all. This is rather pessimistic, but may be taken as reflecting overall static supply in this area. This will mean:

—informal care will fall from 77% to 53%,
—this shortfall is, in real terms, about £15 billion,
—if the State makes up the shortfall its share will rise from 15% to 39%, a real increase of 281%, and
—if the private sector makes up the shortfall, its share will rise from 8% to 32%, a real increase of 486%.

4.4.5 If the supply of informal care actually falls, or one of the more pessimistic projection scenarios is followed through, the results are even more alarming.

4.4.6 This gearing effect shows clearly that the likely inability of the informal sector to meet its share of the increased demand will have a disproportionate effect on the other two sectors.

4.4.7 If future increases in LTC demand are left to the informal sector, there must be an increasing risk of insufficient LTC, with consequent poor living conditions for the disabled elderly.

4.5 *Joint Initiatives*

4.5.1 No one sector is likely to be able to meet the projected increase in demand for LTC on its own. This would indicate that there must be a partnership between two or more of the sectors to provide for the increase in demand for LTC.

4.5.2 *The State and informal provision*

4.5.2.1 The informal sector currently provides the bulk of LTC, with relatively little assistance from the State. It must be in the State's interest to help maintain this sector's contribution. However, the State is unlikely to provide a substantial level of financial support, as it would nullify the financial benefit to the State of informal provision.

4.5.2.2 Possible areas of State support could include:

(1) Assistance in training informal carers.
(2) Financial support for temporary replacements to enable carers to have a break (respite care).
(3) Contributions to charities supporting carers, on the grounds that charities can target support more effectively than the State. This is a principle that the State has accepted elsewhere, e.g. housing associations.
(4) Financial assistance to cover domestic equipment to assist carers.
(5) Increased attendance allowances or tax rebates, although the latter will have no impact where carers do not earn.
(6) Compel employers to allow paid leave to provide care.

4.5.3 *The State and the private sector*

4.5.3.1 It is in the interests of the State to encourage the private sector to finance LTC. One way of doing this would be simply to provide incentives to pay for care at the point of delivery, for instance by giving tax relief on any payments made for LTC. More imaginative ways, which will encourage people to plan ahead, will be through the use of insurance or pension arrangements.

4.5.3.2 *Long-term care insurance*

4.5.3.2.1 Under current tax treatment premiums are not eligible for tax relief, but they can under certain circumstances be rolled up in a gross insurance fund.

4.5.3.2.2 If benefits are paid to the policyholder in the form of regular payments, they are usually subject to income tax. If paid direct to a care provider, it is believed that they will be paid free of tax. However, there is no clear guidance from the authorities, and each company must make an individual approach.

4.5.3.2.3 If the State wishes to encourage private financing of LTC through insurance, it could consider one or more of the following options:

(1) A clear statement that LTC insurance benefits paid to a care provider will be free of tax.

(2) Allowing benefits, paid under enhanced annuity products in respect of care, to be free of tax. The insurance industry could assist the State, in developing a definitive set of acceptable policy conditions, to ensure that any concession is not abused. For the State, this tax concession has the merits that it focuses tax relief at the right time (i.e. when LTC costs are incurred) and on the right people (i.e. those who actually are disabled).

(3) Allowing all LTC insurance benefits to be tax-free, even if paid to the policyholder. The requirement that benefits can only be tax-free if in the form of care is a constraint on product design and increases administration costs. This will widen consumer choice and encourage informal care. Again, it should be possible to define appropriate policy conditions to avoid abuse. In the short term this would have little impact on the State's finances.

(4) Introducing relief from income tax for premiums paid on LTC insurance plans. This would undoubtedly increase the marketability of these products dramatically, so increasing the number of providers quickly, and raising awareness of the issue in the public arena.

It is difficult to argue for tax relief purely on the grounds that relief provided will ultimately be paid back out of State benefits not claimed. The overlap between those who would claim State benefits and those who could, or would, make provision through insurance, even with tax relief, is always likely to be small. This point is argued in a paper sponsored by the Department of Health[16].

A better argument is that it could quickly provide a real incentive to private sector development and raise awareness. People may then act sooner rather than later or not at all. This will increase the chances of adequate care being affordable from private resources, and could well have a significant effect ultimately on the relative amount of LTC funded by the State and private sectors. This should be seen as an alternative to the above options. There is a clear parallel with the tax status of approved pension arrangements here.

Existing tax incentives for arrangements such as tax-exempt savings accounts, personal equity plans and pensions all encourage individuals to increase the quantity, not the quality, of their savings. There is a real problem that, even those with significant assets at retirement, may not be able to afford LTC 20 years later. Perhaps there is an argument for transferring some

of the existing reliefs to LTC products, which, it may be argued, are better focused.

However, even if there was no net cost to the State, drawbacks may be perceived. The State has, with a few exceptions, been reducing or eliminating tax reliefs. It has concerns about tax reliefs being abused by product developments that are designed primarily to exploit a tax concession granted for a social purpose. The history of life assurance premium relief and pension contribution tax relief is littered with examples of new product designs followed by a tightening of the tax rules. The insurance industry needs to demonstrate to the State that it could come up with a proposal that is not open to significant abuse.

(5) If the State was to implement a compulsory pre-funded arrangement, there would also be scope for passing the contributions to private insurers. Thus, a system of rebates may be put in place, as was done with the introduction of personal pensions and transfer of the SERPS liability.

(6) Integrating with State benefits by not means testing if some specified level of private provision has been made. Examples of this are given in Section 4.5.3.5.

4.5.3.3 *Equity release arrangements*

4.5.3.3.1 As we have seen, there have been problems with equity release arrangements, and it is not clear that they provide, in their current form, a satisfactory solution. There is an argument for an extension of the availability of tax relief on these schemes, to encourage the use of the value of the home to pay for care in the home. This does seem a worthy cause, and it is to be hoped that the industry can come up with sound proposals to allay the fears that many hold about such schemes.

4.5.3.4 *Pensions*

4.5.3.4.1 Turning to pensions, one approach could be to allow pensioners at retirement to defer an element of their pension in a tax-exempt fund with the right to take an increase in benefit in the event of LTC being required for the pensioner or their spouse. To date, one insurer had taken this approach with a personal pension plan, but approval for the arrangement was subsequently withdrawn. Current legislation does not allow such an arrangement for defined benefit schemes.

4.5.3.4.2 It is, in fact, a logical extension of the underlying rationale for all pension arrangements—to provide adequate income to meet needs in retirement. It is no longer sufficient to assume that these needs are adequately met by a level, or even index-linked benefit.

4.5.3.4.3 Such a benefit could be incorporated as an option in all approved pension arrangements, whether defined benefit or defined contribution. Whilst the cost to the State would probably be less than the options in Section 4.5.3.2, it

would increase the proportion of the population that could make a contribution to their own LTC costs.

4.5.3.4.4 A more radical approach might be to make it compulsory that any pension provided from an approved pension plan must contain an appropriate uplift to increase the pension to a level which would provide a significant contribution to full care costs in the event of the pensioner requiring continuous care.

4.5.3.4.5 Another option would be to increase the maximum spouse's pension to the same level as the prime pension, and/or require a minimum spouse's pension entitlement under all approved pension arrangements. As widows will be the majority of those requiring LTC, such a move would increase their ability to contribute to the cost of LTC. Of course, given the likely future level of the average pension, such an arrangement would still not be sufficient to pay for full-time care for most people.

4.5.3.5 *Overseas developments*

4.5.3.5.1 Great Britain is not alone in facing these demographic changes. Over the next 40 years, all the developed countries, including the United States of America, Japan and Western Europe, will see the same trends, although at different paces and to differing extents.

4.5.3.5.2 Undoubtedly, different approaches will be tried, and this will give the U.K. the opportunity to learn from other countries' successes and failures. A brief outline of some current developments is set out in Appendix F.

4.5.3.5.3 Currently, some of the most interesting approaches are those adopted by certain U.S. states[17].

4.5.3.5.4 For instance, the proposed New York State scheme guarantees LTC for all individuals who have purchased a State certified LTC insurance plan and have exhausted the benefits of the plan (through reaching the aggregate benefit limit or through exceeding the maximum benefit period). A key point is that the subsequent State LTC provision is not means tested.

4.5.3.5.5 Such a scheme offers distinct advantages to the State, the individual and the insurer:

—The State encourages provision of private LTC with the long-term aim of reducing State LTC costs. Administration costs are also reduced by avoiding the need to police the LTC claimant to check whether there has been transfer of assets to relatives in order that the claimant can satisfy the means test and receive State benefits. The State can also exercise some control over the quality of the insurance arrangements through the certification process, although this would primarily be used to minimise any State benefits to be paid while the LTC plan is in force.

—The individual can guarantee his future needs and, at the same time, protect his assets for his dependants without the need to adopt any complicated avoidance schemes to qualify for State benefits. Such avoidance carries the attendant risk that it may be declared illegal retrospectively.

—The insurer can design LTC plans with fixed benefit periods or aggregate benefit limits. This, more limited, liability should enable the insurer to produce a more affordable insurance plan which could appeal to a wider segment of the market.

—The scheme offers a practical solution to the problem of encouraging private LTC provision cost-effectively (and with the minimum of supervision), while retaining State provision for the needy.

5. The Way Forward

5.1 This paper has attempted to shed some light on the future need for LTC, its method of provision and the likely costs. Section 3 shows that, under reasonable assumptions, the demand for LTC is likely to increase substantially over the next 40 years. Section 4 then argues that it is unlikely that the informal provision of care can expand at the same rate without affecting the quality of care. The State may also be increasingly reluctant to increase its share of costs. The conclusion is that private care provision will have to increase by a rather greater amount than that needed to maintain its share. Increasing prosperity of the elderly population and, in particular, the use of house values will go some way to meeting this need. However, this is unlikely to be enough, and it is likely that it will be necessary to make advance provision for LTC needs. Greater private care provision is also likely to lead to further financial regulation to protect the interests of the consumer.

5.2 Actuarial interest in LTC in the U.K. is comparatively recent. The authors believe that actuaries have much to contribute to the LTC debate, and should be actively participating in a number of areas.

5.3 Some of the areas in which actuaries should be getting actively involved now include:

—Influencing pensions legislation to enable benefits to be provided in their most suitable form.

—Working with the relevant authorities on incentives that may be appropriate to encourage forward planning. Advice on suitable definitions of disability or care need will be required.

—Working with economists, planners and others, to allow proper consideration of possible future scenarios and the implications of different courses of action. Perhaps the profession should initiate a cross-disciplinary working party to develop further some of the work in this paper.

—Developing joint private/public sector initiatives.

—Close contact with the geriatricians and carers to get a better appreciation of the key factors affecting disability incidence and mortality rates.

—Data collection and analysis. Some further thoughts on this are given in Appendix G.

—Advising on practical and effective consumer protection matters, both to government and consumers themselves.

—Refining demographic projections, and, in particular, including disability trends.
—Providing professional guidance to organisations developing any form of pre-funding arrangement (whether insurance products or others) on pricing, design and reserving issues.
—Working with property developers, financiers and others on the development of suitable mechanisms for funding care needs using property values, both through property sales and equity release mechanisms.
—Working with local authorities on care budgets and resource allocation.

5.4 Individual actuaries are making limited progress in some of these areas, but there is clearly scope for much more to be done. In addition, the profession as a whole needs to be seen to be taking co-ordinated and coherent action on many of the issues. This particularly applies to developing close ties with relevant authorities and other professions.

5.5. In summary, there are a number of real opportunities for the profession to play a leading role in both:

—influencing policy on the provision and funding of the expected increase in LTC needs, and
—the collection and analysis of relevant data.

5.6 The advantages to society of comprehensive actuarial input should be clear. We need to make the non-actuarial world aware of this. The advantages to the profession of such an increased role are:

(1) that by contributing to the debate, and making our specialist skills available to identify and resolve problems, the profession will enhance its public profile,
(2) the development of further links with government, local authorities, universities and charities, and
(3) that the Institute is seen to be guiding the profession in an area of considerable actuarial uncertainty, and assisting in the development of a new market.

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APPENDIX A

BARTHEL ACTIVITIES OF DAILY LIVING INDEX (BAI)

Function	Score	Description
Bowels	0	Incontinent (or needs to be given enema)
	1	Occasional accident (once a week)
	2	Continent
Bladder	0	Incontinent, or catheterised and unable to manage
	1	Occasional accident (maximum once per 24 hours)
	2	Continent (for more than 7 days)
Grooming	0	Needs help with personal care: face, hair, teeth, shaving
	1	Independent (implements provided)
Toilet use	0	Dependent
	1	Needs some help, but can do something alone
	2	Independent (on and off, wiping, dressing)
Feeding	0	Unable
	1	Needs help in cutting, spreading butter, etc.
	2	Independent (food provided within reach)
Transfer	0	Unable—no sitting balance
	1	Major help (physical, 1 or 2 people), can sit
	2	Minor help (verbal or physical)
	3	Independent
Mobility	0	Immobile
	1	Wheelchair independent, including corners, etc.
	2	Walks with help of one person (verbal or physical)
	3	Independent
Dressing	0	Dependent
	1	Needs help, but can do about half unaided
	2	Independent (including buttons, zips, laces, etc.)
Stairs	0	Unable
	1	Needs help (verbal, physical, carrying aid)
	2	Independent up and down
Bathing	0	Dependent
	1	Independent(Bath: must get in and out unsupervised and wash self. Shower: unsupervised/unaided)

Levels of ability in each category are scored, and the total gives an indication of the overall care requirements of the individual.

APPENDIX B

THE INFLUENCE OF THE STATE ON OTHER MARKETS

This appendix briefly examines the influence of the State on the pensions, savings and investment and medical expenses markets.

B.1 *The Pensions Market*

B.1.1 The State has a high regard for the provision of a pension after retirement. In addition to providing a basic flat rate pension and an earnings related pension under the Social Security Pensions Act 1975, it also actively encourages private provision by offering significant taxation advantages to approved pension schemes.

B.1.2 With these advantages, it has been necessary to regulate pension schemes to ensure that the taxation privileges are not abused. Examples of such controls are restrictions on the nature of benefits offered by approved schemes, regulations as to self-investment, limitations on the maximum benefits available from an approved scheme, restrictions on pension scheme surpluses and the capping of pensions benefits.

B.1.3 As well as actively encouraging private pension schemes, the State has exerted considerable influence over the quality of the benefits to be provided. Examples are the quantity and quality tests for contracting out of SERPS, the preservation requirements and the leading role of the public sector schemes in increasing pensions in the course of payment in line with increases in the cost of living.

B.1.4 The State has also encouraged the public to take a personal interest in providing for their retirement. Initially this was through policies for the self-employed, the requirement for schemes to offer an additional voluntary contribution (AVC) facility and providing a member who leaves a pension scheme the opportunity to transfer the value of his preserved benefits to the scheme of his new employer or to an insurance policy of his choice.

B.1.5 More recently, the issues of portability and freedom of choice have become more important, and the State has responded to this, and also the desire to reduce the expected future costs of SERPS, by passing legislation permitting free-standing AVCs and personal pensions. With the introduction of this legislation the State has single-handedly created an enormous new market.

B.2 *The Individual Savings and Investment Market*

B.2.1 The State has also played a major role in the development of the individual investment and savings market for a variety of reasons, including:

—the protection of the investor,
—political objectives, and
—the social objective of encouraging long-term saving.

B.2.2 The Financial Services Act 1986 is a clear demonstration of the State's role and determination in influencing the development of the market for the protection of the investor.

B.2.3 Examples of the political objectives of the State's influence on the market are the widening of share ownership by the introduction of personal equity plans (PEPs) and the encouragement of the formation of small companies by the introduction of business expansion schemes.

B.2.4 Historically, the presence of life assurance premium relief to encourage savings through insurance policies, save-as-you-earn schemes and, more recently, the introduction of tax exempt special savings accounts (TESSAs) are all examples of the State's influence on the market to encourage long-term savings.

B.2.5 The State also influences the market to control the economy and to finance the public sector borrowing requirement. Manipulation of interest rates, new gilt issues and the privatisation of State-owned companies are examples of this.

B.3 *The Medical Expenses Market*

B.3.1 Since the establishment of the Welfare State, medical treatment has primarily been provided free by the State to all individuals regardless of wealth, and the cost of the NHS was funded out of general taxation. This has resulted in a health service superior to that provided by many other countries.

B.3.2 With the extensive benefits of the NHS, the penetration of the U.K. market by private medical insurance (PMI) has been slow compared with, for example, the U.S.A., where there is no NHS. The attraction of PMI has been to higher income groups able to afford the premiums, who value the promise of a superior service and, in particular, reduced waiting times. Sales have been, and continue to be, limited by the high cost of insurance, exacerbated by medical expenses rising at a rate substantially in excess of both the retail price index and national average earnings. The lack of any 'rebate' from the State for those purchasing PMI means that the policyholder is effectively 'paying twice' for health care.

B.3.3 More recently, concern over the lengthening NHS waiting lists and the rising cost of the NHS has led to increased opportunities for PMI, and a number of insurance companies have entered the PMI market—previously dominated by the provident associations. However, without a rebate, and with the NHS acting as an 'insurer of the last resort', the PMI market will continue to be limited.

B.3.4 Statistics show that much of the NHS costs are spent on providing medical treatment for the elderly, and, in an attempt to control costs by encouraging private provision, the State introduced tax relief on PMI premiums for the elderly. This has been largely unsuccessful, due to:

(1) the prohibitive cost of insurance at these ages,
(2) the tight restrictions on policy design for eligible plans, and

(3) increases due to medical inflation effectively negated the savings due to tax relief.

Nonetheless, it does show the beginnings of a political will to control the costs of the NHS by encouraging private provision.

B.4 *Summary*

B.4.1 The State has played a key role in the development of the pensions and investment markets. Through the Welfare State, it has unintentionally restricted the development of the private sector markets for medical expenses. However, more recently, because of increasing costs, the State has shown a willingness to share the responsibility in these areas with the private sector.

APPENDIX C

ANNUAL PERCENTAGE MORTALITY IMPROVEMENTS ASSUMED IN THE OFFICIAL 1991-BASED POPULATION PROJECTIONS

Age last birthday	1991–92 to 1992–93		2001–02 to 2002–03		2011–12 to 2012–13		2021–22 to 2022–23		2031–32 to 2032–33	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
32	−2·0	−0·7	0·1	−0·0	0·1	−0·1	0·0	0·1	—	—
42	−1·9	−0·5	−0·3	−1·7	1·1	0·1	0·6	0·1	—	—
52	2·3	3·2	−1·0	−1·0	0·3	−0·1	0·7	0·9	—	—
62	3·8	2·0	2·1	2·1	0·0	−0·1	0·2	0·3	—	—
72	1·9	1·6	2·3	1·4	1·4	1·8	0·0	-	—	—
82	1·0	2·0	1·1	1·3	1·9	1·2	1·1	1·7	—	—
92	0·8	1·4	0·6	1·3	0·9	0·9	1·6	1·0	1·0	1·5

APPENDIX D

PROJECTED DEMAND FOR LONG-TERM CARE

ASSUMPTIONS

(1) *Population mortality*—as OPCS 1991-based projections[1].

(2) *Disability prevalence rates*

(a) For 1991, those published in the OPCS study of the prevalence of disability among adults[3]. It is assumed that there is a correlation between level of disability and LTC need as follows:

OPCS disability category	LTC need
1–2	Low
3–5	Moderate
6–8	Regular
9–10	Continuous

(b) For future years, prevalence rates are generated by the model.

(3) *Disabled life mortality*

(a) For 1991, equal to $(aq+b)$, where q is population mortality and a and b depend on degree of disability and on sex as follows:

OPCS disability category	Male		Female	
	a	*b*	*a*	*b*
1–10	0·9	0·03	0·9	0·02
3–10	0·85	0·05	0·85	0·04
6–10	0·8	0·12	0·8	0·09
9–10	0·5	0·35	0·5	0·25

(b) For future years, varies according to scenario, detailed below.

(4) *Incidence rates*

(a) For 1991, incidence rates are implied by other assumptions.

(b) For future years, vary according to scenario, detailed below.

Basis A (Central Projection)

Disabled life mortality improves at 1·5 times the rate of population mortality (1·5 × OPCS).

Incidence rates decrease by 0·5% p.a.

	OPCS Category	Adults disabled in thousands 1991	2001	2011	2021	2031
All adults	1–10	6,425	6,593	7,163	7,890	8,543
	3–10	4,308	4,466	4,898	5,439	5,987
	6–10	2,076	2,221	2,509	2,849	3,243
	9–10	596	695	834	988	1,184
Adults 60+	1–10	4,539	4,566	5,182	5,915	6,821
	3–10	3,088	3,163	3,633	4,178	4,878
	6–10	1,556	1,672	1,980	2,322	2,771
	9–10	482	575	720	872	1,080

	OPCS Category	Number disabled per thousand population 1991	2001	2011	2021	2031
All disabled adults / Adult population	1–10	154	153	161	171	185
	3–10	103	104	110	118	130
	6–10	50	52	56	62	70
	9–10	14	16	19	21	26
Disabled adults 60+ / Adult population	1–10	109	106	116	128	148
	3–10	74	74	81	91	106
	6–10	37	39	44	50	60
	9–10	12	13	16	19	23
Disabled adults 60+ / Population 20–60	1–10	151	147	166	192	237
	3–10	103	102	117	135	169
	6–10	52	54	64	75	96
	9–10	16	18	23	28	37

Basis B

Disabled life mortality does not change.
Incidence rates decrease by 0·5% p.a.

	OPCS Category	Number disabled per thousand population 1991	2001	2011	2021	2031
All disabled adults / Adult population	1–10	154	147	146	149	155
	3–10	103	99	98	99	104
	6–10	50	48	47	48	51
	9–10	14	14	14	14	16
Disabled adults 60+ / Adult population	1–10	109	100	101	106	118
	3–10	74	69	69	72	80
	6–10	37	35	35	36	41
	9–10	12	11	11	12	14
Disabled adults 60+ / Population 20–60	1–10	151	138	145	158	190
	3–10	103	95	99	107	129
	6–10	52	48	50	54	66
	9–10	16	16	16	18	22

Basis C

Disabled life mortality improves at the same rate as OPCS.
Incidence rates decrease by 0·5% p.a.

	OPCS Category	Number disabled per thousand population 1991	2001	2011	2021	2031
All disabled adults / Adult population	1–10	154	152	156	164	176
	3–10	103	102	106	112	121
	6–10	50	50	53	57	64
	9–10	14	15	17	19	22
Disabled adults 60+ / Adult population	1–10	109	104	112	122	139
	3–10	74	72	77	85	98
	6–10	37	38	41	46	54
	9–10	12	13	15	16	20
Disabled adults 60+ / Population 20–60	1–10	151	144	160	181	222
	3–10	103	99	111	126	156
	6–10	52	52	59	68	86
	9–10	16	18	21	24	32

Basis D

Disabled life mortality improves at twice OPCS.
Incidence rates decrease by 0·5% p.a.

	OPCS Category	Number disabled per thousand population 1991	2001	2011	2021	2031
All disabled adults / Adult population	1–10	154	155	165	178	193
	3–10	103	106	113	124	137
	6–10	50	53	59	66	76
	9–10	14	17	20	24	29
Disabled adults 60+ / Adult population	1–10	109	108	121	135	156
	3–10	74	75	85	96	113
	6–10	37	40	47	55	66
	9–10	12	14	18	22	27
Disabled adults 60+ / Population 20–60	1–10	151	149	173	201	250
	3–10	103	104	122	144	181
	6–10	52	55	68	82	106
	9–10	16	19	26	32	44

Basis E

Disabled life mortality improves at 1·5 × OPCS.
Incidence rates do not change.

	OPCS Category	Number disabled per thousand population 1991	2001	2011	2021	2031
All disabled adults / Adult population	1–10	154	155	167	183	203
	3–10	103	105	115	127	144
	6–10	50	53	59	68	80
	9–10	14	17	20	24	30
Disabled adults 60+ / Adult population	1–10	109	108	120	137	161
	3–10	74	75	85	98	117
	6–10	37	40	47	55	68
	9–10	12	14	17	21	27
Disabled adults 60+ / Population 20–60	1–10	151	148	172	204	259
	3–10	103	103	122	146	188
	6–10	52	55	67	83	109
	9–10	16	19	25	32	44

Basis F

Disabled life mortality improves at 1·5 × OPCS.
Incidence rates decrease by 1·0% p.a.

	OPCS Category	Number disabled per thousand population 1991	2001	2011	2021	2031
All disabled adults / Adult population	1–10	154	152	155	161	169
	3–10	103	102	105	110	117
	6–10	50	51	53	57	62
	9–10	14	16	17	19	22
Disabled adults 60+ / Adult population	1–10	109	105	112	121	135
	3–10	74	73	78	84	95
	6–10	37	38	42	46	53
	9–10	12	13	15	17	20
Disabled adults 60+ / Population 20–60	1–10	151	145	161	180	216
	3–10	103	100	112	126	152
	6–10	52	53	60	68	84
	9–10	16	18	21	25	32

Basis G

Disabled life mortality improves at 1·5 × OPCS.
Incidence rates decrease by 2·0% p.a.

	OPCS Category	Number disabled per thousand population 1991	2001	2011	2021	2031
All disabled adults / Adult population	1–10	154	148	144	141	140
	3–10	103	100	97	95	95
	6–10	50	49	48	47	48
	9–10	14	15	15	15	16
Disabled adults 60+ / Adult population	1–10	109	103	105	106	112
	3–10	74	70	72	73	77
	6–10	37	36	37	38	40
	9–10	12	12	13	13	14
Disabled adults 60+ / Population 20–60	1–10	151	142	150	159	179
	3–10	103	97	103	108	123
	6–10	52	50	54	57	65
	9–10	16	17	18	20	23

APPENDIX E

PROJECTED COST OF LONG-TERM CARE

ASSUMPTIONS

(1) Care costs are £7 per hour on average in 1991.
(2) Care needs in hours per week are:

Low need—5 hours per week,
Moderate need—15 hours per week,
Regular need—30 hours per week, and
Continuous need—45 hours per week.

All projections are total value of LTC in Great Britain in £ billions at 1991 prices (assuming constant GNP).

BASIS A

Disabled life mortality improves at 1·5 × OPCS.
Incidence rates decrease by 0·5% p.a.

Real change in care costs p.a.	Care need	1991 (£bn)	2001 (£bn)	2011 (£bn)	2021 (£bn)	2031 (£bn)
0	Low	9·8	11·4	13·7	16·2	19·4
	Moderate	16·2	16·7	18·3	20·3	22·5
	Regular	12·2	12·3	13·0	14·1	15·0
	Continuous	3·9	3·9	4·1	4·5	4·7
	Total	42·0	44·2	49·1	55·1	61·5
+1%	Low	9·8	12·6	16·7	21·8	28·8
	Moderate	16·2	18·4	22·3	27·4	33·5
	Regular	12·2	13·5	15·9	19·1	22·3
	Continuous	3·9	4·3	5·0	6·0	6·9
	Total	42·0	48·8	59·9	74·3	91·6
−1%	Low	9·8	10·3	11·2	12·0	13·0
	Moderate	16·2	15·1	15·0	15·1	15·1
	Regular	12·2	11·1	10·7	10·5	10·1
	Continuous	3·9	3·5	3·4	3·3	3·1
	Total	42·0	40·0	40·3	40·9	41·3

Basis B

Disabled life mortality does not change.
Incidence rates decrease by 0·5% p.a.

Real change in care costs p.a.	Care need	1991 (£bn)	2001 (£bn)	2011 (£bn)	2021 (£bn)	2031 (£bn)
0	Low	9·8	9·9	10·3	10·8	11·8
	Moderate	16·2	15·8	16·2	16·9	17·8
	Regular	12·2	12·0	12·3	12·9	13·3
	Continuous	3·9	3·8	3·9	4·2	4·3
	Total	42·0	41·5	42·6	44·7	47·3
+1%	Low	9·8	11·0	12·5	14·6	17·6
	Moderate	16·2	17·5	19·7	22·7	26·5
	Regular	12·2	13·6	15·0	17·4	19·9
	Continuous	3·9	4·2	4·8	5·6	6·4
	Total	42·0	45·9	52·0	60·3	70·5
−1%	Low	9·8	9·0	8·4	8·0	8·0
	Moderate	16·2	14·3	13·2	12·5	12·0
	Regular	12·2	10·8	10·0	9·6	9·0
	Continuous	3·9	3·4	3·2	3·1	2·9
	Total	42·0	37·6	34·9	33·2	31·8

Basis C

Disabled life mortality improves at the same rate as OPCS.
Incidence rates decrease by 0·5% p.a.

Real change in care costs p.a.	Care need	1991 (£bn)	2001 (£bn)	2011 (£bn)	2021 (£bn)	2031 (£bn)
0	Low	9·8	10·9	12·5	14·3	16·7
	Moderate	16·2	16·4	17·6	19·3	21·1
	Regular	12·2	12·2	12·8	13·8	14·6
	Continuous	3·9	3·8	4·1	4·4	4·6
	Total	42·0	43·3	47·0	51·7	56·8
+1%	Low	9·8	12·0	15·2	19·2	24·8
	Moderate	16·2	18·1	21·5	26·0	31·3
	Regular	12·2	13·4	15·6	18·6	21·7
	Continuous	3·9	4·3	5·0	5·9	6·8
	Total	42·0	47·8	57·3	69·7	84·6
−1%	Low	9·8	9·9	10·2	10·6	11·2
	Moderate	16·2	14·9	14·4	14·3	14·1
	Regular	12·2	11·0	10·5	10·2	9·8
	Continuous	3·9	3·5	3·3	3·3	3·1
	Total	42·0	39·2	38·5	38·4	38·2

Basis D

Disabled life mortality improves at twice OPCS.
Incidence rates decrease by 0·5% p.a.

Real change in care costs p.a.	Care need	1991 (£bn)	2001 (£bn)	2011 (£bn)	2021 (£bn)	2031 (£bn)
0	Low	9·8	11·9	14·9	18·2	22·3
	Moderate	16·2	16·9	18·9	21·3	23·7
	Regular	12·2	12·3	13·2	14·4	15·3
	Continuous	3·9	3·9	4·2	4·5	4·7
	Total	42·0	45·0	51·2	58·4	66·0
+1%	Low	9·8	13·1	18·2	24·5	33·2
	Moderate	16·2	18·7	23·0	28·7	35·3
	Regular	12·2	13·6	16·2	19·4	22·8
	Continuous	3·9	4·3	5·1	6·1	7·0
	Total	42·0	49·7	62·4	78·7	98·3
−1%	Low	9·8	10·7	12·2	13·5	15·0
	Moderate	16·2	15·3	15·5	15·8	16·0
	Regular	12·2	11·2	10·8	10·7	10·3
	Continuous	3·9	3·5	3·4	3·4	3·2
	Total	42·0	40·8	41·2	43·3	44·3

Basis E

Disabled life mortality improves at 1·5 × OPCS.
Incidence rates do not change.

Real change in care costs p.a.	Care need	1991 (£bn)	2001 (£bn)	2011 (£bn)	2021 (£bn)	2031 (£bn)
0	Low	9·8	11·7	14·7	18·1	22·7
	Moderate	16·2	16·9	19·1	22·0	25·0
	Regular	12·2	12·4	13·4	14·9	16·2
	Continuous	3·9	3·9	4·2	4·7	5·0
	Total	42·0	45·0	51·5	59·7	68·9
+1%	Low	9·8	13·0	17·9	24·5	33·8
	Moderate	16·2	18·7	23·3	30·0	37·3
	Regular	12·2	13·7	16·4	20·1	24·1
	Continuous	3·9	4·3	5·2	6·3	7·4
	Total	42·0	49·6	62·8	80·5	102·5
−1%	Low	9·8	10·6	12·0	13·5	15·2
	Moderate	16·2	15·3	15·7	16·3	16·8
	Regular	12·2	11·2	11·0	11·1	10·9
	Continuous	3·9	3·5	3·5	3·5	3·3
	Total	42·0	40·7	42·2	44·3	46·3

Basis F

Disabled life mortality improves at 1·5 × OPCS.
Incidence rates decrease by 1% p.a.

Real change in care costs p.a.	Care need	1991 (£bn)	2001 (£bn)	2011 (£bn)	2021 (£bn)	2031 (£bn)
0	Low	9·8	11·0	12·7	14·4	16·6
	Moderate	16·2	16·4	17·5	18·8	20·1
	Regular	12·2	12·2	12·7	13·4	13·8
	Continuous	3·9	3·8	4·0	4·3	4·4
	Total	42·0	43·5	46·9	50·9	54·9
+1%	Low	9·8	12·2	15·5	19·4	24·7
	Moderate	16·2	18·1	21·4	25·4	30·0
	Regular	12·2	13·4	15·5	18·0	20·6
	Continuous	3·9	4·2	4·9	5·7	6·5
	Total	42·0	48·0	57·2	68·6	81·8
−1%	Low	9·8	10·0	10·4	10·7	11·1
	Moderate	16·2	14·9	14·3	14·0	13·5
	Regular	12·2	11·0	10·4	9·9	9·3
	Continuous	3·9	3·5	3·3	3·2	2·9
	Total	42·0	39·3	38·4	37·8	36·9

Basis G

Disabled life mortality improves at 1·5 × OPCS.
Incidence rates decrease by 2% p.a.

Real change in care costs p.a.	Care need	1991 (£bn)	2001 (£bn)	2011 (£bn)	2021 (£bn)	2031 (£bn)
0	Low	9·8	10·4	11·0	11·5	12·1
	Moderate	16·2	15·9	16·0	16·1	16·1
	Regular	12·2	11·9	12·0	12·0	11·8
	Continuous	3·9	3·8	3·8	3·9	3·8
	Total	42·0	42·1	42·8	43·5	43·8
+1%	Low	9·8	11·5	13·5	15·5	18·1
	Moderate	16·2	17·6	19·6	21·7	24·0
	Regular	12·2	13·2	14·6	16·2	17·5
	Continuous	3·9	4·2	4·7	5·2	5·6
	Total	42·0	46·5	52·3	58·6	65·2
−1%	Low	9·8	9·4	9·0	8·5	8·1
	Moderate	16·2	14·4	13·1	12·0	10·8
	Regular	12·2	10·8	9·8	8·9	7·9
	Continuous	3·9	3·4	3·1	2·9	2·5
	Total	42·0	38·1	35·1	32·3	29·4

APPENDIX F

THE RELATIONSHIP BETWEEN THE STATE AND PRIVATE SECTORS IN FUNDING LONG-TERM CARE OVERSEAS

Examples of the approach taken in 3 other countries are as follows:

F.1 *American Experience*

F.1.1 In the U.S.A., Medicaid and Medicare programmes exist. Medicaid is a joint Federal and State welfare programme for the provision of health care to the poor, whilst Medicare is a State programme for the provision of health care to senior citizens.

F.1.2 In 1985 the cost of Medicaid (a means tested benefit) totalled $15 billion; by 1989 this had risen to $21 billion. It is estimated that one-third of people paying for their own nursing costs rely upon Medicaid within 1 year.

F.1.3 Medicare provides fairly modest benefits for those receiving so-called skilled nursing care: 100% of the LTC costs for the first 20 days, $81·50 per day for the next 80 days and nothing thereafter (1992 figures). These costs are only paid if the person had been hospitalised for 2 days prior to entering a nursing home. Further, Medicare is only paid for in-patient skilled nursing care, which is a very high level of nursing care that will not be needed by the vast majority of individuals. Medicare pays nothing for custodial long-term nursing care, i.e. limited basic care to assist with activities of daily living such as eating, washing, etc.

F.1.4 In the period from 1988 to 1991, the Robert Wood Johnson Foundation financed research in 8 states into the financing of LTC, with the aim of bringing about a partnership between the public and private sectors[17]. The primary aim was that the cost of Medicaid to the state would fall after the enaction of the new financing method. The intention is to encourage people, specifically middle-income individuals, to purchase LTC insurance for themselves, knowing that they will not need to 'spend down', i.e. divest themselves of their assets, before Medicaid must be relied upon.

F.1.5 The State of Connecticut initiative means that an individual who purchases a state-certified LTC insurance plan (stringent consumer protection and policy standards must be met in order for the plan to be certified) for $100,000 (say) would become eligible for Medicaid (once the benefits under the LTC policy benefits have been exhausted) when he/she has assets of up to $100,000 in excess of the usual Medicaid rules. As of March 1993, 5 insurance companies are writing this type of businesss.

F.1.6 The State of New York has also introduced a programme. Under this programme, once the benefits from the LTC insurance policy cease (minimum 3 years' nursing home care or 6 years' home care) the individual is eligible for Medicaid irrespective of asset wealth.

F.1.7 Indiana has also introduced a plan (similar to the Connecticut plan), and California is expected to launch one soon.

F.2 *German Experience*

F.2.1 The current situation in Germany is that an individual is only eligible for State benefits to finance the cost of LTC if that person is so impoverished as to be unable to afford the cost of such care themselves. In the event of persons receiving income from the State, then they will be denied the vast majority of the State old age pension benefits that they receive.

F.2.2 As the problem of financing an ageing society is more acute in Germany (current fertility rate in Western Germany being 1·4) than in many other countries, the issue of LTC financing has been under consideration by Parliament since 1991. Parliament has decided that, from 1994, a compulsory LTC insurance scheme will be introduced. Those individuals who cannot opt out of the State (acute) medical scheme will be required to join the State LTC insurance scheme. Those who have the right to opt out (irrespective of whether or not they have exercised it) will be allowed to opt out of the State scheme if, and only if, they join a private insurance scheme. Initially, the only benefit insured under the State scheme will be a home care benefit of up to 1,200 DM per month. From 1996 nursing home benefits will be incorporated, with benefits of up to 2,100 DM per month. This does not cover the cost of accommodation and food. It is estimated that the cost, in current money terms, of the full scheme is 25 billion DM p.a. The social scheme will be financed on a pay-as-you-go basis, with the contribution rate from 1994 being 1% of earnings up to 5,400 DM per month (split 50:50 between the employee and employer) and probably 1·7% from 1996. To reduce the effective cost to the employer, Parliament is debating the possibility of either reducing the number of public holidays or imposing a waiting period before an individual becomes eligible to sick pay from the employer.

F.3 *Dutch Experience*

F.3.1 Compulsory LTC insurance, covering all citizens, was introduced in the Netherlands in 1968. Before compulsory insurance was introduced, nursing care costs that were not of an acute nature (e.g. LTC nursing) were not met by the State medical scheme, and thus had to be fully borne by the patient (with there being a safety net for the poor).

F.3.2 The scheme required employers to pay the contributions for their employees; self-employed people pay the costs themselves; and old-age pensioners are insured without being required to pay a contribution.

F.3.3 All insured persons were entitled to a place in a State-registered nursing home from the day they became in need of such care.

F.3.4 The introduction of the compulsory LTC insurance and construction of new nursing homes triggered a demand hitherto unknown. In 1980, in an attempt to slow down the explosive rise in costs, an income-related deductible for patients was introduced. The maximum deductible—Fl 1,350 per month—ensures that those in need of nursing care still have 10% of their income for private purposes.

APPENDIX G

DATA INVESTIGATIONS

G.1 This paper represents the first detailed attempt to project the U.K. population's LTC needs, taking into account changing mortality and disability incidence rates. However, relevant U.K. data are scarce, and although more are available from foreign sources (primarily the U.S.A.), they are still very limited. Furthermore, there is considerable uncertainty as to how applicable the foreign data would be to the U.K. market. Consequently, much could be done to provide more detailed base data relevant to the U.K.

G.2 Data required are as follows:

—rates of population mortality,
—rates of mortality for disabled lives by degree of disability,
—disability incidence rates by degree of disability and transitional probabilities between levels of disability, and
—likely future trends in incidence and mortality rates.

G.3 Although there are considerable data on population mortality and the likely future trends, U.K. information on mortality rates by disability is scarce, and, when available, is often not in a suitable form for further analysis. Data on U.K. disability incidence rates and future trends are even more scarce, and are usually in the form of prevalence rates (requiring the incidence rates to be derived).

G.4 In order to provide more information on disabled mortality rates, the profession, preferably with the co-operation of the State, local authorities and universities, could investigate and collate the various sources currently available—primarily medical papers and NHS statistics. However, due to the differing objectives of the medical profession, the data have not always been presented in the best format for actuarial use. Attempts could be made to obtain the base data, analyse and present the data in a form suitable for further projections.

G.5 The profession could commission further investigations into disabled mortality. For example, several medical papers which investigate various aspects of disability (unrelated to mortality) start off by collecting data on a sample population. Disability is usually assessed against one or more standard activities of daily living tests. It should be possible to carry out follow-up research on the mortality experience of the test sample by examining the records of the nursing homes or local authority involved. If necessary, the death certificates for the local area can be examined. Such an investigation would provide useful additional data on disabled mortality at a comparatively low cost.

G.6 A more ambitious data collection project, but likely to be of more benefit, would be a continuous census survey for a large area (perhaps one or more local

health authorities). All patients receiving LTC from the local authority, nursing and residential homes and private home care agencies would be briefly examined and information gathered on age, sex, socio-economic group, nature and level of disability. It will be particularly useful to obtain information on home care, and, if possible, information on informal care provision would also be highly desirable. Subsequent surveys would begin to provide further information on disabled mortality and disability transition rates. In addition, the new entrant rate would, in conjunction with the population data for the local area, provide useful information on incidence rates. Practically, this form of survey could only be carried out in conjunction with the Department of Health or local authorities.

G.7 As well as providing key information to improve the accuracy of projections of numbers of future disabled, the data would also be of some assistance in the pricing and valuation of LTC insurance products.

ABSTRACT OF THE DISCUSSION

Mr S. R. Nuttall (introducing the paper): It is well known that there will continue to be a significant increase in the number of elderly in this country, as in many others. As the elderly are heavy users of long-term care, the demand for care will clearly rise. Other changes in society mean that overall the financial impact of these trends is likely to be considerable, yet there has been very little public actuarial debate on these issues. This is somewhat surprising, as the combination of population changes, morbidity considerations, costs and uncertainty should be ideally suited to our skills.

The paper is intended to be more of a catalyst for future work and debate rather than an end in itself. The model we have used to project the future cost of care is a simplistic one, reflecting the lack of adequate data; yet it does show clearly the effect of one of the key issues, the current heavy reliance on informal, unpaid care. If this sector cannot bear its share of the increasing cost, there could be a tremendous gearing effect on the finances of the State and private sectors.

Apart from further research to improve the projections, actuaries should also be able to identify solutions and their financial impact. A range of financing mechanisms are required, covering both those who will be able to make choices and those who will be largely reliant on the State. We can also play a leading role in communicating the issues and improving the levels of awareness. Real awareness amongst the public of the likely impact of these changes in the future is very low. We can provide professional advice on likely future trends to enable informed decisions to be made. We also need to be proactive in working with others interested in these matters, such as the policymakers, think tanks, health care professionals and planners. We need to be able to anticipate events. A small number of actuaries are taking some of these issues forward, but there is, probably, much more that we as a profession could and should be doing.

Mr D. Stratford (opening the discussion): Long-term care is a topic which will become increasingly important to the actuarial profession over the coming years. The paper has certainly proved that, whatever reasonable assumptions are made, the need for long-term care will increase in the future. It is easy to criticise the data and some of the assumptions used, but the authors have already acknowledged the shortcomings of the data. I urge people to concentrate on the messages arising rather than paying too much detail to the individual assumptions. However, there is one omission, caused by the data, that could have a significant impact on results; and that is the variability of the need for care by social class. We know from mortality investigations that people in the higher social classes generally have lower mortality, but does this mean that the need for care will be greater or lower in these social classes? I am not sure, but certainly the ability to finance that care would be greater in the higher social classes.

Having covered the future need for long-term care, the paper then addresses the thornier issue of how this will be met. Not surprisingly, the bulk of current care provision is informal care. I expect that this will continue in the future, as this is what many patients and their families would prefer.

The paper suggests that the State is unlikely to bear a proportionate share of the increase in long-term care in the future, and that informal care may increase at a greater rate. I believe that this will have a hidden cost for the State, as the health of carers may well suffer, particularly as the invalidity of the patient worsens. This would place extra demands on the already stretched National Health Service.

Problems will arise when informal care is impractical or insufficient, or both. Professional assistance will be required, and this will need financing. The paper highlights two main resources which could provide this on a pay-as-you-go basis: home ownership and pensions. I would like to suggest inheritances as a third such resource. In the future I see inheritances increasing in value, as a greater proportion of the population will have their own homes to leave to their descendants.

A possible source of finance is long-term care insurance. We have seen a handful of insurance companies launch products, but sales to-date have been rather low. I am not surprised by this, as I would anticipate that, for most people, providing for income when elderly and in good health would be a higher priority than providing for income when elderly and in poor health. Yet many of the

population are reluctant to provide adequately for the former in spite of the tax advantages currently on offer; so, why should we expect them to take out long-term care insurance? The logical solution, perhaps, is to add long-term care insurance as a rider or an option on pensions, but the one attempt to do this has seen approval withdrawn, as mentioned in Section 4.5.

That brings me to the role of the State. Whilst the effects of an ageing population on State finances have been acknowledged as far as pensions are concerned, there has been little, if any, public acknowledgement of the effects on care for the elderly. The withdrawal of approval for the pensions option suggests that there is currently little intention of encouraging insurance as a means of financing long-term care. A policy statement to clarify the Government's position would assist, as would confirmation of whether policy benefits are tax free if paid direct to a care provider.

On a personal level, I have had experience of the need for long-term care, because my mother suffered from Alzheimer's Disease and needed professional care for the last years of her life. At the time I assumed what, I am sure, many people would still assume—that the State would provide. How wrong I was! I know that this sample of one has little statistical validity, so recently I asked some actuarial students within my own organisation what they thought. They were unanimous—the State will provide. If members of the actuarial profession think this way, can we really expect the general public to think differently? I therefore believe that we need to educate ourselves before trying too hard to educate the general public in long-term care, and I suggest that a starting point would be to introduce this excellent paper into the syllabus for future examinations.

I also believe that the actuarial profession can assist by continuing research into long-term care, preferably in partnership with the State. In particular, much could be done to improve the data, as outlined in Appendix G. I would add investigating the need for care by social class as another key area. The profession must be proactive in ensuring that research into long-term care continues until the long-term care 'time bomb' is more widely appreciated.

Mr L. M. Eagles: A major conclusion of this paper is found in the second sentence of § 5.1. "Section 3 shows that, under reasonable assumptions, the demand for LTC is likely to increase substantially over the next 40 years." However, I suggest that this conclusion arises partly because the authors assume that, while improvements in the incidence of morbidity may be postulated, they are unlikely to be as great as improvements in mortality. This is true of all the bases they used for the projections, except, possibly, basis G. However, in a lecture at the International Congress of Actuaries in 1992, M. Jacques Légaré referred to the alternative theory advanced by Dr Fries, that at some point, which could be now, improvements in mortality only occur to the extent that there are greater reductions in the incidence of morbidity. Fries worked on U.S. data, and noted an increasingly rectangular survival curve with no detectable changes in the maximum age of those dying in a year, year-on-year—and he looked at data from 1837 onwards. In this situation, only postponement of the onset of chronic disease is likely to increase the expectation of life. Hence, there is a compression of morbidity. At present we cannot sensibly choose between these two alternatives with regard to the relative rates of improvement of mortality and morbidity. There are either not sufficient data, or we do not have the right tools to analyse the data that are available. Hence I would postulate a much wider funnel of doubt than do the authors. I agree that the large figures they produce are possible, but so are alternative smaller figures. Moreover, it is a funnel of doubt which we need, as a profession, to point out to public health planners and medical researchers, because it has important implications for the direction of medical research budgets. It may be that society will decide whether to aim for improved mortality or improved morbidity.

I endorse strongly the authors' and the opener's suggestions for cross-disciplinary working and contacts of all kinds. Long-term care is a vital subject, and we as a profession have much to contribute; we need to co-operate with the other professions working in this area, with the doctors, the economists and the planners.

There is a considerable problem now for those currently needing and having to finance long-term care. We need to help the insurance industry—and possibly the finance industry in general—to develop further plans which can convert savings or assets into care, such as that presented by the late Professor Sidney Benjamin.

Insurance plans developed for future care must recognise the uncertainties, and apportion the costs

and the risks equitably, if they are to be sold successfully. This leads possibly to developing plans which balance different risks, for example critical illness and long-term care, over the whole of life. It could also lead us to reconsider the with-profits principle as a true sharing of risk between policyholder and company, a technique which, unfortunately, is in danger of being forgotten.

Mr C. S. S. Lyon: This paper confronts us with a major social and financial issue, which has all the makings of a highly explosive time bomb.

One of the problems we have in evaluating the provision of long-term care is the paucity of appropriate statistics. For example, the OPCS survey, referred to in the paper, used a very broad base of impairment, and, as a result, tells us very little about those at the apex of the pyramid who are most in need of long-term care.

A point which must always be borne in mind is that people can only receive paid care—as distinct from informal care—if the finance is available. To the extent that this is not put up by central or local government or by a charity, it has to be found by the disabled person or his or her family. Few such people are in a position to pay hundreds of pounds a week for very long. In the absence of sufficient support from public funds, the result is all too often an excessive reliance on unpaid care at home by family and friends. This can lead to great stress within the family and, in many cases, to a breakdown in the health of one of its members—usually a spouse or a daughter.

I want, therefore, to talk about the experience of the Independent Living Fund, which was set up in 1988 by the present Government in partnership with one of the disability charities (the Disablement Income Group). Its aim was to enable severely disabled people of very limited means to employ domestic or personal care at home, and so avoid residential care. Most people, if able to choose, prefer to live at home rather than in an institution. The Fund was designed to have a life of five years and to bridge the gap between the replacement of Supplementary Benefit by Income Support and the introduction of Community Care. I was one of the ten trustees of the Fund and also its treasurer.

The eligibility for help from the Fund was essentially limited to people receiving Attendance Allowance, who were either on Income Support or would have been entitled to Income Support if their care needs had been taken into account. Each eligible applicant's care needs which could not reasonably be met by existing informal arrangements were assessed by one of the many self-employed visiting social workers recruited and trained for the purpose. The social worker's report was considered by the Fund's staff in Nottingham, who also calculated the extent, if any, to which the applicant already had income deemed to be available to pay for care. If appropriate, an offer of assistance with care costs up to a specified weekly amount was then made and implemented, upon confirmation from the applicant that arrangements were in place for the care to be provided. Difficult cases and questions of principle were referred to the trustees, who also considered appeals from clients against decisions of the staff.

The Fund was financed wholly by the Department of Social Security, and was initially staffed entirely by people seconded by the Department. Nobody had any clear idea how many people might be eligible to benefit from it, though the Department measured the number in hundreds rather than thousands, and the finance available in the first year was set at £5 m. However, demand built up rapidly. After less than two years, by which time the number of applications exceeded 450 a week, the trustees suspended taking new applications for several months while negotiations were held with the Department about an increase in the budget. When the Fund reopened, new applications were restricted to people receiving Attendance Allowance at the higher rate—originally to have been at the higher or lower rate—and aged between 16 and 74, though the upper age limit, which was strongly resented, was removed in the following year as a result of a substantial increase in Government funding. By the time the Fund terminated in March 1993 it was making regular payments to 21,500 severely disabled people. Half of these payments were £75 a week or less; the average was £115—by that I mean the arithmetic mean; nearly 3% were over £400 a week. The final year's budget was £98 m, of which less than 3% was spent on administration. I think it is fair to say that the Treasury was alarmed by the cost of meeting the need that the Fund was continuing to uncover.

It will not be a surprise that almost 60% of the Fund's clients were women. More unexpected at first sight is that only 20% of clients were over age 75; indeed, two-thirds were under age 65. The pattern is slightly distorted by the fact that applications from the over-75s were excluded for about eight

months in 1990–91, but I think the conclusion to be drawn is that younger disabled people are in a better position than the elderly to benefit from care at home. Indeed, the great majority of residential homes are for the elderly.

The opener referred to possibilities of variation of the incidence of long-term care by social class. The geographical distribution of ILF claimants shows quite clearly that the likelihood of having become an ILF client was much less in rural areas than it was in inner cities, and, although I would hesitate to draw a definite conclusion from that, it may well support what the opener was saying.

I have dealt with the ILF at some length because, unfortunately, the paper fails to mention it. Several research reports were produced during its lifetime. One of these—'Making Community Care a Reality', by Ann Kestenbaum—is, in effect, a history of the Fund viewed from within, and in an appendix the Social Worker's Report Form is reproduced. I believe that this form, developed by the Fund, provides a more sophisticated approach to the assessment of care needs than the Barthel Index reproduced in Appendix A of the paper. Another report—'Caring for Severely Disabled People: Care Providers and Their Costs', by Victoria Phillips of The Centre for Socio-Legal Studies at Wolfson College, Oxford—takes a sample of the ILF's database, analyses the care received and compares it with the cost of local authority residential care.

What of the future of this initiative? The Government has replaced the ILF by two new funds: the Independent Living (Extension) Fund, which has taken over the former Fund's clientele; and the Independent Living (1993) Fund, which considers new applications. However, such applications will only be considered if the local authority is committed to spending not less than £200 per week in providing a care package for the applicant, and its first-year budget is only £4 m. Bearing in mind that barely half of the old Fund's clients were receiving any formal services at home from either their local authority or their district health authority, the cultural change required if the new arrangements are to be effective is formidable. Not the least of the problems is that local authorities are not permitted to make cash payments to clients in the way that the ILF did, and this, of course, will deprive them of the management of their own care.

Mr N. F. Silby: The models that the authors develop in the paper are necessarily very imperfect. The key point, however, is that on a range of parameters the model results lead one to the same conclusions—that over the medium to longer term, the demand for long-term care will grow, quite likely by a substantial amount. As the authors point out, it is important to plan now for the issues that this will raise and, in particular, how future long-term care costs will be financed.

On the question of insurance products to meet the need for long-term care, I suspect that relatively few people will be able and willing to pay premiums to pre-fund long-term care insurance. The example of pensions is not particularly encouraging. Very many people look forward to retirement, knowing their existing pensions provisions will be insufficient to meet their aspirations, and yet still fail to make adequate additional provision by means of additional contributions or personal pensions. Similarly, there will be large numbers of people who will not make adequate provision for long-term care—something which they hope will never happen to them, something about which they do not want even to think, and, as the authors point out, something which will never happen for a lot of people.

There will, of course, be exceptions to this. One may be the individual in employment who is concerned that he or she may have to give up employment in order to care for an elderly parent. In this circumstance, an individual may choose to purchase long-term care insurance for the parent in order to ensure that he or she has the ability to remain in employment. Another important example is likely to be individuals—and there are probably going to be a growing number of these—who have personal experience, perhaps by seeing a close relative, of the hardship involved when an elderly relative requires long-term care. These individuals will have a greater consciousness of the risk and may well wish to insure against it.

From the insurer's perspective, long-term care on a pre-funded basis is likely to be a market which grows steadily rather than spectacularly, so that insurers will need to take a long-term view. It may be that, for many insurers, employer-sponsored arrangements are a more profitable market than individual arrangements.

Many people requiring long-term care will only really deal with the issue when they are confronted

with a crisis. In these circumstances, many will need to fall back on the capital value in their house in order to finance long-term care. When an elderly person living alone needs to enter a nursing home, the sale of their house, with the proceeds used to purchase an ill-health retirement annuity, as discussed by the authors, may be very appropriate. However, where the individual requiring nursing care has a spouse or would prefer to remain at home, and this is feasible, the sale of the house is inappropriate. In these circumstances home reversion schemes do have a role to play. The paper notes that there have been problems with certain equity release arrangements. Most of this has been associated with schemes where the policyholder has been exposed to the risk of fluctuating interest rates and the performance of an equity-based fund. It is possible to design home reversion schemes which do not carry such risks, but there is a confusion in the mind of the public, and I think that those involved should work to remedy this confusion.

In Section 4.5.3.4 the authors discuss the possibility of structuring pensions benefits to increase in the event of long-term care being required for a pensioner or spouse. Such an arrangement may well have a number of attractions for those with substantial amounts of pensions, but for those with low levels of pensions this approach may well result in the reduction of a pension benefit which is already too low. In addition, if enhanced long-term care benefit becomes payable, its only effect on low pensions may be to reduce entitlement to support from the State. I would certainly oppose the suggestion made in § 4.5.3.4.4 that it should be compulsory for a pension provided from an approved pension plan to contain an uplift to provide for the cost of long-term care. I believe that a better way would be to adopt a targeted approach, whereby employers who wish to assist those on lower pensions to obtain a higher quality of care than provided by the State without undermining entitlement to State benefits, could use a discretionary scheme to top up the benefit provided by the State.

Mr R. D. Campbell: On my way here I passed some 20 homeless young people begging in the streets. In 30 years' time, when I shall be 70, they will be in a position to get their own back on the generation that put them in their present circumstances. On that basis, a pay-as-you-go system for long-term care is not a reliable method of financing it.

I found that Appendix A, describing the Barthel Index, revealed a significant weakness. While the first 10 Activities of Daily Living which measure the need for long-term care are described, the 11th one—namely, the ability to get to the polling station unaided and thus demand long-term care—is not mentioned at all! I think that the share of the national cake that is to be consumed in long-term care for a particular generation needs to be decided in advance, in so far as it can be, by that generation and, for those in employment, pre-funded by investment in real assets. Anything else leaves us exposed to the needs and wants of the younger generation. Investment in assets that are wealth generating at the time of draw down is vital for a robust system, independent of political interference.

I am not so pessimistic about the use of pensions. I think that pre-funding should take place mainly through pension funds and similar sponsored vehicles, and be invested in industry and commerce. The Government can do two things to help this process along. The first is to extend the definition of relevant benefits, so that the marketplace can decide whether it wishes to expand pension funding to cover long-term care. If that step is a modest success, then the Government could allow gradual incentives for employers and employees to undertake the guaranteeing of long-term care benefits through these funds. The first step does not need any financial encouragement from the Government. The quantum of tax relief available to the funds need not be increased, merely allocated to a wider range of benefits. If these steps result in the better off providing for their own long-term care in a structured way, then there will be more State funding to go round for those who are not able to do so.

Such arrangements would need a flexible and responsive insurance industry ready to provide risk-bearing products. These products would be purchased by collective funds and, to a much lesser extent, by individuals. However, these ideas will not help the current generation of the elderly, many of whom can look only to their housing assets to help them.

Mr M. D. Werth: This is a timely paper, as this is the 'European Year of Older People and Solidarity Between Generations'. 'Solidarity' means unity or sharing of responsibilities. Unfortunately there is no solidarity when it comes to facing the financial burden of long-term care. Those needing long-term

care must face the financial consequences alone. The State, and therefore the general taxpayer, or the next generation, offer no solidarity to the individual until he or she has been almost financially crippled.

The paper is also timely because the Government is carrying out a full scale review of Social Security. In the Secretary of State for Social Security, Mr Peter Lilley's report 'The Growth of Social Security', he reiterates one of Beveridge's key principles, that of partnership between the State and the individual. Unfortunately this is not possible with long-term care under the current Community Care Act, because it provides no defined benefits with which to integrate additional benefits. Beveridge goes on to say that "in establishing a national minimum (provided by the State), it should leave room and encouragement for voluntary action to provide more than the minimum". Once again this is not possible under the Community Care Act. Any private benefits count pound-for-pound against State benefits. We, therefore, need to encourage the State to work with us in partnership to create a structure of minimum State benefits which promote individual responsibility, forward planning and a constructive method of private top-up. The approaches adopted by some U.S. states and Germany are worth considering.

The problem with any form of private provision is one of educating people about their individual responsibilities and promoting a widespread take-up. Long-term care insurance is probably more important than private medical insurance. Whilst private medical insurance would succeed with 15% population coverage, long-term care insurance would not, as there is no fall-back alternative, equivalent, in the case of private medical insurance, to the National Health Service.

It would appear that one of the few methods of ensuring a rapid expansion of private long-term care insurance is through pensions—as we have heard already. However, pensions regulations have made minimal progress towards recognising the increased financial needs of the disabled elderly. It is necessary to establish two facts:

(1) As people reach advanced old age their income needs to increase. This is already recognised in the Income Support rules, which pay an enhanced pensioner premium and then a higher pensioner premium for ages over 75 and 80 respectively.
(2) For those who need long-term care, the income they require will be considerably higher than those who do not. This is a particular interest of mine, as I was involved in the pensions product whose design embraced both these objectives and paid increased benefits on advanced old age and on long-term care. Unfortunately authorisation was withdrawn by the Inland Revenue, and we have requested an open discussion on this issue; unfortunately, at this time, to no avail.

There are other routes for private provision other than pensions, but these may prove slower to develop and will not reach such a wide audience. I believe that long-term care should be a relevant pension benefit just as life cover is and permanent disability benefits are prior to retirement.

Whilst some forward planning may be possible for the next generation of elderly, it does not offer a practical solution for those already in their seventies. The only universal solution for this group is the use of home equity. Equity release schemes are consistent with, and financially support, the Government's aim of promoting domiciliary care. However, there are financial disincentives which need to be addressed and eliminated:

(1) Whilst the capital value of the home is exempt from both income support and domiciliary care means tests, the income generated from the home counts pound-for-pound against State benefits; this is equivalent to 100% taxation up to the income support limits. In fact, given the loss of other State benefits, the marginal tax can exceed 100%.
(2) The capital in the home is exempt from capital gains tax, and up to £150,000 is exempt from inheritance tax. However, the income generated from it is not.

These anomalies need to be addressed.

Mr J. Shah: The authors rightly point out that, from a political and fiscal point of view, the Government will be reluctant to provide tax relief on new types of investment and insurance products. However, we already have a large number of tax efficient products which are sufficiently flexible to provide an array of benefits, including long-term care products, which they do not provide

at the moment. For instance, benefits from a pension, such as a lump sum, or the annuity from it, can be ear-marked especially for long-term care in the same way as they are sometimes ear-marked to pay off a mortgage. Alternatively, other non-life assurance products, such as PEPs and TESSAs, could be made more flexible by providing the investor with a choice of uses for the proceeds, including funding for long-term care, instead of just a cash sum. So the way forward should be to build on these existing products. We should not seek to narrow product design by introducing another niche product with limited flexibility, but to broaden it by making existing products adaptable to long-term care purposes. Such an approach would also have the benefit of making the provision of an otherwise distant and unpalatable contingency much more acceptable.

Separate issues that have been taxing our profession and our industry in recent years are mis-selling and compliance. I should like to see our profession taking a leading role in these issues with respect to long-term care. For instance, how should the consumer prioritise his or her long-term care insurance needs against other savings and insurance needs?

I support the development of standard definitions for benefits. This should help to provide a better understanding and protection for the customer. Communicating the benefits and the costs of long-term products is clearly important if the customer is to reach a reasoned decision to invest what may be a large slice of his or her earnings.

Mr C. Redman, F.F.A.: It is clear from the paper that there will be a large increase in the demand for care services in the future. This is not just because of the increasing numbers of frail elderly in our society, but, most particularly, because of changing social patterns and family structures. Raised expectations from new generations of the elderly will fuel the demand for formal care services.

It is interesting that both of the main political parties are considering some increase in responsibility for the individual to make more provision for his or her own welfare. The Secretary of State for Social Security, in the Mais Lecture to the City University Business School in June 1993, said, "Generating jobs, opportunities, skills and the means to save for future needs can do far more to achieve the objectives of Social Security policy than could any feasible enhancements to our Welfare State". The Labour Party's Commission on Social Justice has recently produced a report which says, "What the Government can do for the people is limited, but there are no limits to what the people can be enabled to achieve for themselves".

Actuaries must develop the products necessary to meet the needs and aspirations of individuals and to complement State provision. There are four important points which I should like to emphasise on the design of suitable products:

(1) *Should products be linked to pensions?*

Some form of employee benefit insurance plan written alongside pensions offers a very good long-term solution. However, because eligibility to membership and provision are linked to employment, this does not help those approaching retirement or those who have already retired. If we are going to help those people who will need nursing cover over the next 20–25 years, then we need plans that can be taken out by those between ages 55 and 80. This means pre-funded plans not related to pension schemes, as those in this age group are already too old to contribute to, and benefit from, a pensions solution. In addition, we clearly need to see the development of bona fide, efficient home equity release plans. It has long been the policy of both Conservative and Labour Governments to means test income support benefits for residential care. Research indicates that, of the 120,000 people entering residential care each year, an estimated 40,000 sell their properties to pay for the care, realising £2 billion p.a. If such care is to be provided for the elderly at home, as part of the community, then many old people will have to raise finance in an efficient way against the value of their major asset, that is their home.

(2) *Product standards*

We must develop good product standards. Poor products and selling practices were a great scandal which held back the early development of the U.S. long-term care market. There are mandatory product standards, developed by the National Association of Insurance Commissioners, which ensure that customers in the U.S.A. now get a fair deal. We need to adopt some of these in the U.K. We need to make sure, as they do, that products not only cover physical disability, but also cover

Alzheimer's and other forms of dementia. We need to ensure that our products do not have any unfair gatekeepers, such as prior hospitalisation, which may prevent valid claims being met. Trigger points for claims need to be clearly written in a way which can be interpreted and measured by the medical profession. This will give the policyholder the confidence that claims can be properly assessed, and, when they do occur, they will be paid. Proper inflation proofing must be offered on all of our products, and there must not be any unreasonable exclusions. Actuaries can ensure that products sold here are actually suited to their purpose.

(3) *Tax treatment of long-term care insurance*
If long-term care insurance is to enjoy the favourable tax treatment as set out in the paper, then benefits must be restricted to the provision of care. I certainly do not agree with the authors that benefits should be allowed to be paid tax free to policyholders, as outlined in § 4.5.3.2.3.

(4) *Are pay-as-you-go schemes appropriate?*
Pay-as-you-go schemes, whether on a State or insured basis, are not appropriate for this type of cover, particularly as the numbers in work able to shoulder the burden will fall dramatically over the next 30 or 40 years, relative to the number of elderly. Long-term care insurance plans must all be written as long-term insurances. They must be guaranteed, renewable products, with premiums related to the age at entry. This is the only way forward.

Mr H. W. Froggatt: Much of the paper concentrates on care for old age. However, I should like to outline a small project which is providing long-term care for a different sector of the population—those with learning difficulties. I believe that, potentially, the mechanics of this particular project could be used to meet the long-term care needs of people with other disabilities.

People with learning disabilities should be allowed to live as independent lives as their abilities permit. Often this is not met by remaining with their parents. There is, however, a shortage of suitable residential places for such people for whom this particular form of provision would be appropriate.

For the project which I am describing, a group of parents got together and put up money to finance the provision of places. The vehicle used was a company limited by shares. The parents subscribed share capital which was used to fund the purchase and alterations of a suitable property into a small residential home. It is intended that the home will be an on-going long-term care facility for the community. Initially places were linked to an appropriately sized holding of shares, and by suitable vetting of potential residents by the company. The home is run by the company, which employs the staff, pays the bills, etc. Its income is derived from the various disability and other allowances to which residents are entitled. The two people who devised the scheme provide management help through a management services arrangement.

In April 1993 the source of funding moved from the DSS to the local authorities. All funding for existing residents was safeguarded, but any future residents who did not bring protected funding with them would be required to purchase care through their care manager and local authority. To be eligible to provide such care, a care provider needs to contract to provide care with the local authority. Initially the relevant local authority expressed doubts about contracting out with a company of this form. However, it now seems keen to do so, subject only to some clarification that the company will be operated on a non-profit-making basis. In this form, the arrangement would appear to be consistent with suggestions which have recently been made for reforming charities.

So far two homes have been set up under the project. My second son—the reason for my interest—is in the second home. This has 15 residents. The share capital of the company is £540,000 and this home has been open for just over a year. The first home has 18 residents and has been running for four years. A third, and final, home under this project is currently being planned.

The homes demonstrate that there are two elements to the cost of long-term care: the cost of setting up the provision; and the cost of running it. If the need is increasing and facilities are not currently available to meet projected future requirements, then the authorities may welcome initiatives similar to the homes which I have described. In most cases the residents will not have money of their own, so will neither be able to finance the setting up nor the purchase of a place, nor the on-going cost. It is the parents or other interested parties that need either to be insured against having to make this sort of provision or to be helped to save or borrow the initial costs of provision of places.

Although these arrangements are intended to provide a home for life, nothing is certain. Residents are not currently capable of independent living in the community. Some are sufficiently able to be capable of developing appropriate skills to do this. They would then move on either elsewhere, into more independent houses or into accommodation supported by the facilities of one or more of the homes. Equally, the needs of some residents may increase beyond the capabilities of their home. They may have to be removed and placed in other establishments with the facilities to cope, but this is a situation no different from any other family situation. Residents may also leave voluntarily, with the agreement of all parties concerned.

The shares relevant to residents leaving can be sold by the parents or shareholders to provide for similar or other arrangements for the leaving residents. The shares would be purchased by parents or representatives of approved incoming residents. A similar situation can apply when a resident dies. However, a number of shareholders have left their shares in their wills to charity to facilitate the best use of the long-term care places which they have helped to create.

The increasing care requirements arising as the residents age are also a problem, to which some thought has been given. The current hope is that, by pooling resources from the three homes, it will be possible to cater for the increased needs from having an increased proportion of elderly residents. The current age distribution of the residents is about 20–55.

I like to think that arrangements of this type will enable contributions to be made to the efficient provision of future long-term care needs in Great Britain, particularly in terms of setting up the provisions which will be needed in future, but which do not yet exist. Clearly, it could form only part of the total provision, and there are some interesting problems in forecasting what size that part could realistically be.

Mr R. H. Plumb: The industry will need to have professional awareness of specific standards being required in policies, in policy definitions and in the policy benefits provided in long-term care insurance or in insurances of a similar nature. We have seen an excellent start to this in an allied field, in critical illness. I would hope that this can be advocated in the area of long-term care.

We also need political awareness. There is no quick-fix for us in this country. The demographics are against us. The decisions we take now will actually only alleviate the problems that we know about as actuaries. We know that the demographics are stable for about 10 years or so, but in about 15 years the demographics go against us in terms of care, on our current state of knowledge. There is then going to be a tremendous demand for formal care services. We also need to see the elimination of some of the financial penalties that are around, and to consider carefully the effect of the crippling contribution taken from current capital by the State in order to qualify for Income Support. We have a lack of political awareness, as evidenced by the withdrawing of Revenue support for the pension plan referred to earlier.

When I started in the business many years ago the granting of a pension was considered sufficient for an elderly person to live on after a lifetime of endeavour. The older people in the office used to tell me about expectations of life which were much shorter, but then many of the elderly lived with their children. Now the elderly are living longer (I have 15 relatives over the age of 75), and on their own in many cases. Therefore, the use of a second pension, of a second supplementary benefit, is required.

There are other things that we need to think about in the context of political awareness, for instance the simplification of taxation. Taxation for the elderly is different to that for the ordinary population. I know that the subject of the paper is financing long-term care; but if you take the financing in its general form, it means not only financing in monetary terms, but in all the other things concerned in long-term care. This is required in the arena of political awareness.

We also need to raise public awareness. The State is viewed, not as the insurer of last resort, but as *the* insurer. There is a general lack of investment by the public in this country in long-term investment plans. We must invest and finance quality of life. Quality means mobility and it means systematic training of carers.

Mr S. Burgess (a visitor): At my charity, Help the Aged, we receive something like 150–200 calls every day and many more written requests for information, expressing concerns. Increasingly, the most important of these concerns is simply, "How can I afford to look after myself?" and are being

expressed by older people and people who care for and about older people. This is not surprising. In the current economy we see house prices and the return on conservative investments going down. Most older people put their money in the building society. Also, many people are being forced into retirement ever earlier in the current wave of redundancies, etc. Often they have lower pensions than they would have received had they been able to stay in work until normal retirement age. There are continuing question marks over State funding. Will it be there? There is also nervousness about the equity release schemes which received so much criticism recently. It is a sad statement, I fear, that rather than looking forward to a long retirement, many older people today in Britain are scared about living longer, because they fear that they will not be able to live a decent life.

In the field of long-term care (a modest interest beside our general care activities), we in Help the Aged are trying to do our part. We run about 18 care facilities of one sort or another—residential homes and sheltered homes. We run many more smaller homes of just three or four flatlets. We also have a gifted housing plan—60 people being looked after in their own homes; in all this covers something like 600 to 800 people, a very small drop in a very large ocean.

Recently, a 5-minute spot on Radio 4's 'Money Box' generated something like 300 calls from people who were basically begging to give their houses to the charity in return for being looked after. They were not worried about leaving their homes to their children, or whoever, they just wanted to give their houses away. "Please look after me. I cannot look after my own house. I cannot look after myself." We have had to suspend the scheme at the moment while we figure out just how we can finance this sort of situation. We are also looking at how we can promote schemes like our gifted housing plan, or other schemes, which can fund the care for elderly people.

If you, as actuaries, are approaching care from a financial perspective, we are trying to approach finance from a care perspective. We welcome this initiative, and we should like to find ways of working with you in order to find ways of addressing one of the most important—if not the most important—financial and social issue of our time.

Mr T. G. Arthur: When we consider schemes like equity release plans, we may have to forget the State, even as a facilitator, because all these schemes depend on tax relief. Any kind of borrowing or lending scheme has severe tax implications. Whether it is done for home, equity, or anything else, tax is part of the system. I do not think that we have to rely on special reliefs to get efficiency out of equity release type plans. There are ways in which the drawbacks of these plans can be avoided, and some of the improved plans are already on the market.

Regarding insurance plans, these have to be genuine insurance plans, which are not the same as retirement plans. The contingency in question is probably still relatively unlikely in any individual case, so it makes sense to use group insurance. I think people will save to look after themselves if they have got time to do so. The problem is that the climate of opinion, for the past 40 years, has been quite against this. The opener pointed out that the people who have to be educated first are the actuaries, before we can get on to the rest of the population.

We need to continue to work to produce better insurance products. To me one of the problems in the insurance market at the moment is that it is impossible to buy an insurance policy which does not have a get-out clause, either in terms of reviewing the premiums or reviewing the benefits. I have been trying to find a single premium policy which will cover long-term care, and I cannot find one which does not have a get-out clause in terms of reviewing the benefits. I cannot understand how life assurance and general insurance could ever have got off the ground if they all had to wait for the experience to tell them that they could offer policies on terms which definitely made a profit. Where are the entrepreneurs here? I am waiting with baited breath to see a good policy.

Mr M. Templeman (a visitor): I am Director of the Financial Institutions Division of the Inland Revenue, which looks after, among other things, insurance.

Concerning the relationship between long-term care and pensions; it has been, as far as I perceive it, the policy of Ministers for the past seven years that the pensions reliefs are very generous and should be kept as closely confined as possible. There have been a whole series of legislative changes to that end. Our belief is that there is no wish among Ministers to extend the pensions reliefs to anything new, particularly to long-term care.

Long-term care does not work as a pensions relief. With pensions, essentially, you get relief up front and then the benefits are taxed. You cannot tax a long-term care benefit because, if the man needs £100 a week and you take 25% off, then he has only £75. You then have a problem of him finding the tax on his benefit; so we do not see that as being a particularly fruitful way to go.

Someone asked that we would confirm that, where long-term care benefits from a policy are paid direct to the provider, there is no tax liability. I can confirm that that is so. Oddly, if they are paid directly to the individual, then there is a tax liability. Some people may find it somewhat anomalous that, where the benefits provide for care in an institution, tax does not arise; where it is provided in their own home, say by a relative, it does. That is the way the law is at the moment.

We, in the Inland Revenue, do not see ourselves as the villains in the saga of home income plans. We have yet to come across a home income plan that adds up, with or without tax, apart from those which are so blatantly tax favoured that we are effectively paying for them. The way Ministers would look at any proposal of this kind is that these plans have a very bad name. They would want cast-iron assurances that they are not associating themselves with something that is going to have the very bad publicity that such schemes had in the past. If anyone can think of a really good scheme that will work in present conditions, I am only too happy to listen.

Mr L. Kreitzman (a visitor): I represent the Henley Centre for Forecasting. A call was made in the paper for cross-disciplinary activity. There have been several assumptions made, and there have been several anecdotal remarks made by previous speakers which actually do not stand up. If you look at the situation in England and, to some extent, in Wales, in a social context, there has been a considerable body of work that has looked at the whole relationship of the older members of the community to the rest, notably by Laslett in Cambridge and Todd in France. This has shown that, in England in particular, there has never been any 'golden age' of multi-generational households, nor has there ever been very much respect for older people. So, we are starting from a cultural basis which is somewhat loaded. There are great difficulties regarding awareness and attitudes towards later life. This has been a negative factor in our society for many years, and is one of the reasons that makes any activity in this particular area extremely difficult.

Next, we have individual responses. We have heard of the need for awareness, but people are aware. They know, but they do not do the things that a rational individual perhaps might do. We have heard remarks, such as, "We must educate people", "We must make them aware". Somebody from the outside might say, "Let us look at the history; let us look at the record". Is it, perhaps, the supply side that is the problem, the nature of the activity? Is it the way in which relatively simple products—on the whole life insurance is a relatively simple product, a fairly obvious promise; a pension is also a fairly obvious promise—have been bound up with a distribution system, a supply system, a regulatory system, which have made it extremely difficult for people to express their awareness in relatively simple ways by putting their hands in their pockets and saying, "I will pay that, and that is what I will get later."

I began as a natural scientist, and then became a social scientist. In social science you ask questions and you get anecdotes. In social science the collective word for anecdote is data, and I hear more anecdotes in this discussion.

I now want to consider Gompertz Law. Has it ever been tested at the really high ages? No. It is an assumption. One of the things that has been raised is whether or not we are going to compress morbidity. It is an interesting issue, introduced by Fries in 1980. The point about compression of morbidity is that you need a fixed point, otherwise compression is difficult. Fries suggests that there is a fixed point to the life span. Others say, "What do you base it on?" and suggest that mortality at later life follows Gompertz Law. For evidence we need a population of really old people, but this is difficult to find. Scientists have looked at the question from another way and suggested looking at other species. They found a homogeneous population—of fruit flies. First, the fruit flies were bred and then the females were sterilised. A life table was constructed from a population of 1 million of these flies, and each day account was taken of how many were dead. A curve was constructed, and what they found was that it was not exponential. At the higher end it actually peaked and came down. The implication is that, in fruit flies at any rate, there is no fixed point. This does not mean that it is true in humans, but it might be.

Scientists are looking now at another species, and will try several. If they get enough information there will be some indication whether one of the assumptions here might not be the case—that life expectancy, life extension, may not be fixed at, say 85 plus or minus three or four years, which is the central tenet of the Fries proposal. This cross-disciplinary activity, looking at the social side, at the scientific side, at the individual, is a requirement in this extremely important issue. Everybody is involved.

The increase in the really elderly over the last 20 years is the same in numerical terms as the increase will be in the next 20 years. A policy-maker might say, "You managed". The argument is how well we managed. That is a judgement about value, about how, as a society, we actually look after the older members of that community. The record is not good.

I welcome the fact that the Institute of Actuaries is going to take a lead in this area. It has a position and prestige which will count. This is an issue which will take time to resolve. The problem has been running for many years. The rewards are going to be great in commercial terms. They will also be great in social and individual emotional terms.

Mr R. E. Brimblecombe: I hope my fellow actuaries in the room will feel duly rapped over the knuckles by Mr Kreitzman on the question of data. However, I welcome his thoughts that this subject is really one of the major issues facing society in this country over the next 10 or 15 years. The more we can have a multi-disciplinary approach to solving the problems the better the solutions will be. I know that the actuarial profession wants to play its part in taking the subject forward.

Providing long-term care insurance products should be a golden opportunity for insurance companies; but the products must be very carefully thought through. Product design is very important. Products must be readily understood and must meet needs. Insurance companies must not be seen to be risk averse. There is an increasing trend for insurance companies, not just in long-term care products, but in other products, to be risk averse. If our predecessors, some 230 years ago, had been risk averse and not willing to enter into long-term contracts, the insurance industry might never have survived in this country. Would the actuarial profession ever have been born? We must take risks. Some insurance companies are prepared to write non-profit deferred annuities which could last, perhaps, for over 80 years; yet they seem to be risk averse in this particular area. Contracts must be guaranteed renewable, and cover under long-term care products must not be seen to be at an inadequate level or, indeed, run out when the need is still there. Selling and marketing practices must be controlled. I am sure the insurance industry does not want to see another problem like the home income plan equity release schemes.

I disagree with the authors that we should plead for tax relief on long-term care products. I do not think that it is very likely in the current political climate, and I do not think that it is necessary, as we are really meeting a need for the 1990s and into the next century. However, I would make a plea for the use of pension products to fund long-term care. No extra tax relief is involved. Mr Templeman has commented about getting tax back on payments, but surely that can be achieved by, perhaps, taxing the notional benefits of long-term care in the same way as benefits in kind are taxed on a notional basis.

Society in the 1990s has moved on from 20 or 30 years ago. People are mobile, and they change jobs more frequently. It seems absurd to me that, in the 1990s, pension schemes, whether they be occupational schemes run by companies or personal pensions, basically have to provide a fixed income—it may escalate or be index-linked, but it is a regular income from a fixed date. Surely we can find a way of allowing for benefits under pension schemes to be paid as and when they are needed, not necessarily as a regular income, but perhaps altering part to be deferred and then paid to meet long-term care or meet requirements when people are really old. The Inland Revenue would get their tax back. I suggest such a simple move would, at a stroke, provide more flexibility for society as a whole to satisfy its changing needs, and, at the same time, would relieve State spending on the health side, by passing much more of the cost on to the private sector.

Mr H. H. Scurfield: I want to speak on the basis of some personal experience rather than very actuarially. I am glad to see the profession setting out and quantifying some of this enormous problem that is ahead of us. There are various ways whereby solutions can be found to help what used

to be more of a family responsibility, but with mobility of families and the growing numbers of older people, the family can no longer contain the problem.

My wife has worked for an organisation called 'Crossroads', which exists to help more older people to live longer at home. It is helped by the State who provide expenses, but the people who do the work, the caring, do it in their own time. My experience has been working with a hospice of which I am now Chairman, and I am amazed, in a county such as Shropshire, to find that £800,000 can be found in voluntary donations every year for the hospice. In addition, there are 250 people working actively as volunteers to help provide the care in the hospice, and another 600 who help to raise the money, all voluntarily. We provide mainly in-patient care and some day care. We take the view that we can help solve a short-term problem, pain control and respite, so that people can live longer at home, and perhaps help them again very much towards the end. However, our role is also to help with the education of the primary providers of help, so that the old and infirm can live longer where it is comfortable, at home. There should be a better organisation for providing informal care for such as 'Crossroads' or hospice volunteers.

Having retired from full-time employment, I am entering into what is called the *troisième age*. We are in a demographic state where there are very many more people in this *troisième age*. I suggest that many of these people would be willing to provide some sort of help in various ways. They do not all need to be trained. People could visit the homes where there is someone who needs some help, not necessarily medical, so that they will be able to stay there for longer. I believe that with more management, more organisation and more leadership, very much more could be done on this front.

Mr P. A. C. Seymour (closing the discussion): I see two distinct themes running through this paper and discussion. The first is, do we have any consensus on the scope of the problem of long-term care, and the second is, what solutions seem the most promising? What seems to be the best balance between the State, private and what has been called the informal provision?

On the matter of the scope of the problem, with one exception everybody thought there was, indeed, a problem. The exception was Mr Eagles, talking about the squaring of the mortality curve. I heard Mr Kreitzman telling him why that might not be so. However, I think it was appropriate to draw our attention to the fact that there might be a wider funnel of doubt than we might think. Society could itself also dictate the direction in which things go, by putting a greater emphasis on the quality of life rather than on life itself. Broadly speaking, however, everybody was very much of the view that we have serious problems.

I was struck by Mr Froggatt's remarks about his own experiences on learning disability. The solution he described was an excellent example of what one might call a partnership between the private and public sector. He emphasised the point about the capital that start-ups would require in trying to meet some of these needs.

As to the solutions, the consensus, as you might think, is not so strong. There were two apparent themes: the home income plan theme for immediate need and release of capital; and the pension theme. We should record our appreciation of the work that Professor Sidney Benjamin did originally in this area, because he was very keen personally on the development of the home income plan. It is a great shame that the standards of practice in that area have given it such a bad name that it may not recover, but I think that we can all agree that it is, in its structural sense, an extremely desirable line to pursue.

The personal pensions matter was less well agreed. Mr Campbell was quite keen on it, while others were lukewarm. Mr Brimblecombe said that one could change things quite simply without causing the need for major legislative upheaval. I agree, but like Mr Arthur I draw a clear distinction between insuring the risk and simply saving up money which you may or may not use. The method of saving up money is expensive and inefficient, as the authors point out.

Actuaries have probably become risk averse. Here we have to deal with real risks, and also base those risks and the assessment thereof on very unsatisfactory data. One Government minister I spoke to expressed the view that the risk was uninsurable, and hence could only be taken by the State. Mr Plumb has indicated that the public might agree. That seems too gloomy to me. There is much private capital from re-insurers and others which is ready to finance that risk. We actuaries, as the long list of ideas at the end of the paper suggests, can do much to build better risk-assessment systems.

Insurance is always fraught with the problems of its small print, of what is and what is not covered. Here too we can play a role. I was pleased to see a reference to the work of the Continuing Care Conference, of which I am currently Chairman, in promoting the need for standards, both financial and caring. The ABI has now started work in that area for insurers. Retaining customer confidence in this emotive area will be absolutely crucial to our success.

To me, a clear message comes through. The issue must be addressed fairly urgently, and the private sector must be encouraged to get its resources mobilised in partnership with the State. Personally, I favour the pensions route. The structure exists already to provide some insurance under that umbrella—death and disability, for example. So why not include other important insurance elements? Employers are well placed to get the message across.

We, as a profession, have much to do, and, wearing my hat as the Chairman of our Joint Health and Care Committee, some of that may fall to me to organise. I look forward to the continuing contribution of the working party, and to working alongside the other professions. Much of the value that we can bring in this area of healthcare will involve us in liaison with other professions. That is a trend very much to be welcomed.

The President (Mr L. J. Martin): I too found the paper topical, timely, clear and important, but intensely human. It is a paper which, I hope, will have a wide circulation outside the actuarial profession. I felt that the breadth of points that we heard in our discussion underlines the enormous amount of fundamental social thought, of financial proposals and financial projections that remain to be made over many years into the future.

The paper not only has described the present scene in this country, as we are becoming aware of it ourselves here in the actuarial profession, but has clearly forecast the likely future, albeit with a fairly wide expanding funnel of doubt. It has drawn attention to the fact that the profession is well placed to make an important contribution in this area. It underlines the fact that this is, of course, merely a starting point.

The key findings in § 1.14 show that the private sector share of costs is almost bound to rise. I hope that the paper will be read carefully as a whole, and that, in this connection, reference will be made particularly also to the whole of Section 4.5. In this section attention is drawn to the possibility of taxation incentives, and the possible extension of the approval of pension arrangements to include long-term care. I firmly believe that these incentives are capable of achievement.

Reference has also been made to the useful likely long-term productivity of new home income plans and equity release plans. They have had a bad history, but I am sure that in the future we will help to produce workable plans of this kind. Paragraphs 5.3 and 5.4 also bring out areas in which we, as a profession, should be extending ourselves in this wider field. I very much support this.

The eight authors are to be congratulated and thanked for their substantial work in preparing this paper and for bringing it to us. I cannot let the occasion pass without expressing, not only my own thanks, but that of the profession as a whole to Mr Seymour, who is Chairman of the Health and Care Committee and who has directed it with so much enthusiasm and energy, and very much so to the eight authors who have brought this excellent paper to us this evening.

Mr P. L. Gatenby (replying): The opener raised a very important point, using his own experience—that is public awareness. Many people only realise the high cost of care and that they do not have sufficient funds when it is too late. I feel that, following the work that we have carried out, the Institute should take a lead in raising public awareness.

A number of speakers mentioned our admission that the model could be improved in the light of more sophisticated data. We outlined, in Appendix G, that we feel that there is a need for an ambitious data collection project. This will need support from organisations outside of the profession.

As part of increasing our knowledge, we would welcome information on any long-term care schemes such as those outlined by Mr Lyon and Mr Froggatt, which may provide useful information and data.

A number of speakers talked about some of the products and financing options. There are, maybe, four main areas which we need to consider further. One is pensions and pension arrangements.

Another is insurance schemes. A further one would be savings schemes in general. The most important for the current batch of older people are equity release schemes. The working party now intends to investigate each of these options in more detail, and will report on the viability of the different financing options at a later date. Many of these areas will require input from interested parties outside of the profession. Mr Kreitzman said that cross-disciplinary initiatives certainly are required.

I thank Mr Templeman for confirming the tax treatment of current long-term care products, and for giving us a feeling of what we are up against for future products. We believe that tax relief is not the big issue so far as the State and long-term care goes. The real issue is better integration with State benefits. One area that has not been mentioned in much detail is the current position regarding State benefits. If people buy long-term care insurance policies, they may well lose whatever State benefits they would have received. There is enormous potential for integrating insurance products with State benefits.

There is much more work for the working party to do. We shall probably need to split into sub-groups to look at the different issues. In view of the amount of work, we would welcome any further volunteers to join the group, especially people with experience in some of the areas that perhaps members of the party currently do not have. The main developments that the working party would like to see are these:

(1) We feel that the Institute should take a lead in raising public awareness.
(2) We must make sure that, as a profession, our skills are used on multi-disciplinary groups that are set up to tackle the problems.
(3) We are going to investigate further the financial options, and we need to bring in experts from other fields to help in that work.
(4) We need to improve our model and our data collection, and again do further research, bringing in people from outside of the profession.

WRITTEN CONTRIBUTION

The authors subsequently wrote: The opener mentioned that one area that the paper did not comment on was the variability in need for care by social class. There are indeed reasons for believing that there will be such variations, although the working party has found little hard data to help quantify the effect. It is certainly an area that we shall examine more closely in the future.

The opener also mentioned that inheritance might provide a significant private source of funding for long-term care on a pay-as-you-go basis. In fact, some evidence suggests that the amount of inherited wealth is actually not as great as some might think, due to the elderly spending their assets to provide long-term care for themselves rather than passing them on as an inheritance.

Mr Arthur claimed that the insurance industry is lacking in entrepreneurial spirit in not offering guaranteed long-term care insurance products. Firstly, with only one exception all products currently on the market are long-term policies, non-cancellable by the insurer. Secondly, while most of these do allow the insurer to review premiums or benefits, this does not allow a guaranteed profit! One can only use the reviewability mechanism to correct underpricing to a limited extent. There is no reason why guaranteed-rate products should not be offered, but, given the current state of knowledge on the pricing side, actuarial prudence would suggest a significant additional margin in the premiums which can be returned by profit-sharing should experience turn out to be rather lighter. This is, indeed, how life assurance written on a sound basis started. Unfortunately it seems unlikely today that the consumer will pay the premiums required for the guarantee, even with the potential for profit-sharing. So the emphasis for those pioneering this market is the use of sensible product design to keep premiums as low as possible consistent with sound actuarial principles.

Mr Templeman made the comment that long-term care does not work as a pensions tax relief. In fact, it does not really matter if you do not get relief on premiums, with the benefit emerging also not taxed (as he confirmed is currently the case) or relief on premiums is granted, but the benefit is taxable as income, as with pensions. There may be some tax arbitrage possibilities, but these should be slight. We need to pursue this point further with the relevant authorities.