Chapter 1

The world grows old

Introduction

If the 20th century was the period when the Western world turned grey, it is to be hoped that the 21st century will be the time when it wakes up to the new situation and begins to make appropriate plans for services. There is some evidence that this is occurring. The increasing presence of elderly people is now recognized in plays, films, soap operas and comedy series.

The common afflictions of old age are now well recognized, not as a cause for shame and disgrace, but as serious diseases. Examples include the public information about the dementia of ex-President Reagan of the USA and a dramatization of the same disease as it affected the famous philosopher and novelist Iris Murdoch. Middle-aged, middle-class articulate 'children' such as Michael Ignatief, Linda Grant and Margaret Mason have written in detail about the dementing process as it affected their parents, themselves and their families. John Mortimer has described the problems associated with visual impairment in his elderly father and he now writes amusingly about his own infirmities of old age.

The Human Rights Act 1998 (2000) has the potential to offer protection to vulnerable elderly people, especially Articles 2, 3, 8, 10 and 14 (see the following box). This Act applies to all public bodies, i.e. the NHS and Local Authority Social Service Departments.

Human rights act 1998

Article 2 Right to life.
Article 3 Prohibition of torture and inhuman and degrading treatment.
Article 8 Right to respect for private and family life and home.
Article 10 Freedom of expression and right to information.
Article 14 Right not to be discriminated against.

Population trends

There are marked differences between the developed and developing countries, e.g. France took 115 years (1865–1980) to double the proportion of elderly people (7–14%) whereas China's proportion will double between 2000 and 2027. The prime reason for the worldwide increase in the proportion of elderly subjects is the combined effect of declining child mortality and a falling birth rate. Consequences and solutions will depend on the levels of economic and educational development within individual countries. By 2030 most countries will have a similar age structure. See Table 1.1 for the predicted elderly population of 2025.

Developed countries

• There has been a dramatic rise in the elderly throughout the past 100 years, but this is now slowing down (Figure 1.1).

Table 1.1 Predicted elderly population (over 65 years in thousands) in 2025.

China	198,343
India	107,713
Indonesia	24,816
Brazil	21,945
Mexico	12,829
UK	12,912
Nigeria	9,115

• However, the 'old old', i.e. those greater than 75 years of age, are still increasing rapidly. In the UK the over-85s will continue to double every 30 years (1961, 300,000; 1991, 800,000; 2021, 1,500,000).
• A sophisticated medical service is established.
• Specialist services are available for the elderly.
• The rising expectations of the elderly, their supports and carers will result in rising costs.
• Population trends in the UK alone demand a 1% increase in health funding in addition to inflation and costs due to technological development.
• Ethical dilemmas will be more pressing, e.g. the prolongation of death by technological intervention or medicated survival of the young chronically sick and acutely ill, frail, elderly patients.
• Financial consequences of decisions must be calculated and proper provisions must be made to support the choice made. An elderly person costs the health services nine times as much as a young person.
• A century ago, i.e. in 1900, more children under 1 year of age died each year than people under the age of 65 now die each year – see Table 1.2 showing changes in the death rate over time.
• By 2015, in the UK, it is predicted that people over the age of 65 will begin to outnumber those under 16 years of age.
• The Commission on Global Ageing warns of the risk of 'ageing recessions' due to a fall in the size of workforce numbers (labour shortages) plus increased service demands (caring services). The peak risk is expected in 2010, but Japan has already been affected.
• Increasing anxiety exists concerning future poverty in old age, due to shrinkage in state benefits, reluctance of 'the young' to invest in pension schemes and the unreliability of financial services in regard to pension provision.
• Medical training continues to concentrate on increasing super-/sub-specialization, thus leading to practitioners being unable to cope with complex

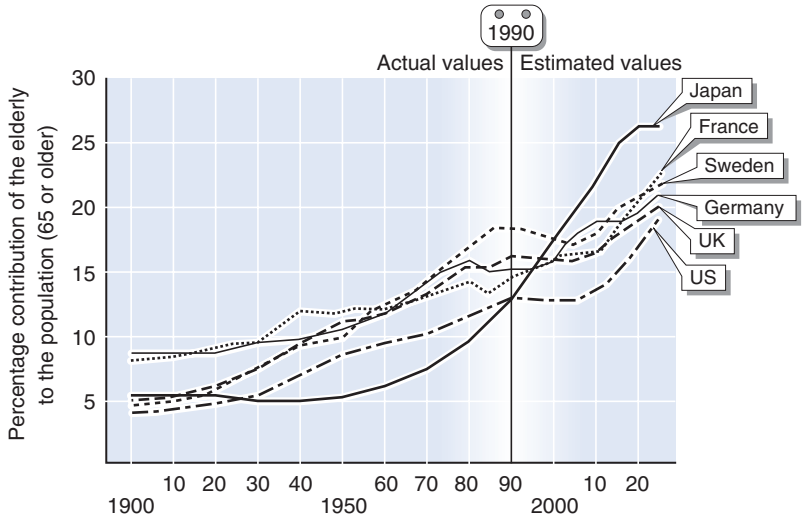

Figure 1.1 Elderly as percentage of population (65 or older).

Table 1.2 UK mortality rates for young and old.

1919	12% of deaths in first year of life; 65% of deaths before the age of 65 years
2002	<1% of deaths in first year of life; 19% of deaths before the age of 65 years

Note: Death, formerly common in infancy and usual before 65 years, is now rare in infancy and unusual before 65 years.

aetiologies (sociological, psychological and medical) and multi-pathology (co-morbidity), and the atypical presentations common in elderly patients, i.e. a mismatch between aspirations of young medics and the needs of their elderly patients.

• Community care is quite rightly individually based and very varied. Comparisons between countries is therefore very difficult because of variations in taxation policy, population density and political climate. It is, however, easier to make comparisons with regard to institutional care, usually in residential or nursing homes. Even here there are wide variations from the UK, with 4% of the persons over 65 years of age in care homes compared with the USA, at almost 6%, and the Netherlands, at almost 11%.

• The historical development of the patterns of care are similar. In all societies, there has always been a heavy reliance on self-sufficiency and family care. In these circumstances, the healthy old and the wealthy old have always faired the best. For the more disadvantaged, there has always been a need to rely on support from non-family members.

• In the 'Old World', this non-family support was originally provided by the church or by occupationally related charities or guilds. In England, the state began to become more prominent in the 17th century with the first Poor Law Act, which provided workhouse care and 'outdoor relief' (through community support, usually financial). This continued until the end of the 19th century. The 20th century saw the beginning of the welfare state – gradually growing in the first half of the century and reaching a peak at mid-century and then declining towards the end of the 1980s. At the time of decline, the general move was away from the provision of services by the state to the regulation of provision of services supplied by other organizations. This regulation has gradually been devolved and often diluted with the central control gradually lost or weakened. This trend has been most marked in the USA, but is now apparent in Australasia and the UK.

• In the USA, 67% of nursing homes are run by profit-making organizations (increasingly large multinational companies). In 1999, one of the largest companies also had large numbers of beds in Europe and Australia. However, the for-profit companies have a worse record for staffing levels (20% less than non-profit-making institutions) and skill mix, and a higher incidence of violations of standards. The regulatory arrangements are clearly failing to improve or even maintain standards. Public control appears to have been lost and for every dollar spent in the for-profit area, less than 26 cents is spent on care.

• In Australia, the proportion of for-profit nursing home beds was historically about 27%, but had risen to 55% by the year 2000. Between 1996 and 2000, the cost of public funding of private nursing homes rose from A$2.5 to A$3.9 billion. The cost of the regulatory system has doubled, but it appears to be weakening as unannounced inspections ceased, reports of inspections became more difficult to obtain and available sanctions were rarely used.

Developing countries

• These countries currently have 50% of the world's elderly population – which will rise to 75% by the year 2020.

• These countries are about to experience a massive and rapid distortion of previous population patterns, the rate of increase in the elderly population will be up to 15 times that of the UK (e.g. in Colombia, the Philippines and Thailand).

• The rising number of elderly people will coincide with falling birth rate, as contraceptive policies become effective.

• Their health services are often primitive, patchy and inappropriate to needs.

• There are many other pressing financial demands for expansion, e.g. education, housing and development of infrastructure.

• Economic dependence on developed countries is restrictive.
• Political instability is common.
• Social structure is likely to be rapidly altered, e.g. by population migration and reduced infant mortality.
• Potentially preventable disabilities acquired in youth will complicate old age.
• The poor will be unable to acquire sufficient wealth to provide for themselves in old age; therefore, the total burden will either fall on the state or will be neglected.
• European studies show that the survival of babies with low birth-weight and reduced growth in the first year leads to poor adult health – especially regarding BP and blood sugar control. This is likely to have significant consequences in India and Southeast Asia in the future.
• Globalization via the World Trade Organization will attempt to maintain high drug costs and introduce insurance schemes that will cherry-pick the affluent or well-off and leave the disadvantaged to the struggling public services. There is also likely to be encouragement of inappropriate 'high-tech' procedures. World trade also tends to encourage development of bad health habits; e.g. smoking tobacco, excess use of alcohol and the recreational use of drugs.
• Population patterns at risk of distortion by epidemics, e.g. HIV/AIDS.
• It is a false assumption that elderly people in undeveloped countries are not a problem because they are so few. They do exist and their life expectancy at 65 years is very similar in both developed and undeveloped countries (see Table 1.3).
• Doctors and nurses training in the undeveloped countries need expertise in elderly care because of the changing demography of their own countries and the tendency for them to be 'poached' by developed countries where they may find themselves confronted by very elderly patients for the first time.

Table 1.3 Life expectancy at 65 years.

	Developed countries (Years)	Undeveloped countries (Years)
Women	19	15
Men	16	12

Population of UK

	1971	1996	2061
<16 years old	25%	21%	17%
>65 years old	13%	16%	24%

In 2015, the population aged <16 years will equal the population aged >65 years.

Population of India

Year 2000 7% over 60 years of age.
Year 2025 12% over 60 years of age.

Ageing in India

The descriptions of facilities for 'care' in this book (as opposed to 'cure') of elderly people will be representative of the Western world, especially of the UK. This is because national variation is great and space is limited. With regard to the less developed countries, information is often very limited and sometimes unreliable. These restrictions apply to information about India, but at least statistics are being collected. To illustrate some of the differences between the East and the West, we have included information from the WHO publication *Ageing in India*, published in 1999. Life expectancy at the age of 60 in India has increased for both men and women between 1961 and 2001 by 3–4 years, and is now 15.2 years for men and 16.4 years for women. The box below shows commonest diseases and disabilities in the elderly population in India. It should be noted that, as is the case worldwide, cardiovascular disease takes pole position. Some 60–75% of elderly people in India are economically dependent, usually on their families. However, the extended family is disappearing and the social status of elderly people is being eroded. Since 1992, an old age pension has been available for those with no means of support at a level of approximately US$1.00 per month. Services for elderly

Disease and disability in the over 60s in India

- Cardiovascular disease commonest cause of death in old age.
- 11 million elderly blind people – 80% due to cataract.
- 60% have hearing impairment.
- 9 million have hypertension.
- 5 million have diabetes.
- 0.35 million have cancer.
- 4 million have mental health problems.

Source: WHO report, ***Ageing in India***, 1999.

people are very few and far between. In 1997, there was reported to be only 354 old people's homes, usually organized by charities.

Ageing in Africa

Ageing in Africa is different to that in other areas. It provides an example of how the unexpected can undermine projections. The effects of AIDS and war are seriously distorting the age patterns of this continent.

Africa is ageing more rapidly than any other region (four times the rate of Europe). In spite of this, life expectancy is falling! The latter is due to 19–25% of the adult population being HIV-positive plus a two-fold increase in child mortality. The surviving elderly grandmothers (head of family in 43% of Zimbabwian families with AIDS orphans) are increasingly left behind in rural areas to care for HIV/AIDS infected children and grandchildren. Meanwhile, fit middle-generation members migrate to the cities. The elderly in Africa are not themselves immune to HIV infection, but exact incidence is unknown. When contracted by an older person, the illness tends to run a more rapidly progressive decline. In addition, they are likely to find themselves without any informal carers or supporters.

The UN reports indicate that half of the teenagers in Africa will die from AIDS. In Botswana about two-thirds of 15 year olds will die before reaching the age of 50.

A WHO Report of 2001 calculated that the annual worldwide rate of war casualties is about one-third of a million, and that over half of these (54%) will occur in Africa and that the majority of victims will be between 15 and 45 years of age.

Ageing in Brazil

Here disability rises with increasing age as elsewhere. The prevalence of the difficulty in walking and performance of personal care is similar to that found in the UK (especially in men). However, those with less education and wealth were almost twice as likely to suffer from disability compared with their peers. Urban dwellers were also more disabled than those in rural areas.

Ageing in Malaysia

This region is not excluded from the worldwide increase in the elderly population (about 2.5% per annum in those over 65 years of age who now total about 1 million or 4.5% of the total population). The current health services are a mixture of private and Government provision based on a network of 13 state general hospitals with Kuala Lumpur General Hospital acting as the tertiary referral centre but with support from the University Teaching Hospitals.

Most general practitioners work on a fee-based system and function as private practitioners. The current emphasis is on acute care with little rehabilitation provision. However, 44% of the patients attending the University Hospital family practice clinic are aged over 60 years. Nationally, there are only nine geriatricans (2004) and most are based in the capital city and concentrate on research and teaching.

A strong nursing service exists but appears reluctant to become involved in elderly care. Most 'care' is provided by family members, but it is becoming increasingly acceptable to place elders within a nursing home after an acute episode of illness.

Global warming

The Kyoto protocol came into force in 2005. It is predicated that if greenhouse gas emissions are not

reduced the health burdens of climate change are likely to double by 2020 (*CMAJ* 2005, **172**, 501–2). Elderly people will not be excluded from these changes. In fact, the experience from France in the 2-week summer heat-wave of 2003 indicates that elderly people are the most vulnerable group. Most deaths occur in people over 70 and within the first few days of a heat-wave. Preventative measures are therefore needed and should be taken when a heat-wave is forecast. The death rate in France showed an estimated excess death rate in August 2003 of 13,600 with perhaps 5000 deaths being caused by the excessive heat. These deaths were not through hyperthermia but due to unbearable stress on already strained homeostatic cardiac and respiratory systems.

There is also a fear that diarrhoeal diseases may become more frequent with higher environmental temperatures. The vulnerability of frail elderly people with their inability to withstand severe and prolonged diarrhoea is well established.

It has been suggested that it will be through the mechanism of extreme climatic events rather than a steady change (2–3°C temperature rise by 2100) which will cause the major stress on the health of vulnerable populations. It should be noted that HelpAge International reported in the 2004 tsunami in Asia that some of the major losses were amongst the elderly section of the population. About 92,000 people over the age of 60 were displaced. In addition, these elderly people appeared to become almost invisible when aid was provided. They were often pushed aside by younger and fitter survivors during the chaotic distribution of relief. Similar experiences were reported from the Orissa cyclone of 1999 and the Gujarat earthquake of 2001. Significant deficiencies also related to the provision of treatment for patients with chronic conditions. Monetary supplements, special diets and psychological support were also lacking, especially for elderly people.

Global poverty

Although the West complains about the detrimental effects of diseases of affluence, the situation on a global scale seems quite different (see Table 1.4). However, affluence in the UK appears to have enhanced the life expectancy difference between the highest and lowest social classes between 1972 and 1999 (see Table 1.6). Comparing continents, there appears to be an association between wealth (gross domestic product – GDP) and life expectancy at birth. Africa being the poorest and with the worst life expectancy. The latter has been reduced by the ravages of AIDS but the global differences persist when the contribution of AIDS is removed (see Table 1.4).

Inter generational strife

This is a potential problem which all must strive to avoid in both developed and under-developed countries. Strains and conflict could arise due to the falling dependency ratio (i.e. fewer working people to support those in need of care). There is the prospect of poverty in old age for the current young due to increased life expectancy but a decline in provision for

Table 1.4 Relationship between wealth and life expectancy at birth in various geographical areas.

		Life expectancy at birth	
	GDP in 2000	With AIDS	Without AIDS
Africa	2	50.6	56.9
Asia	4	67.7	68.3
Latin America and Caribbean	6	71.8	72.3
Oceania	21	74.6	74.6
Europe	14	74.3	74.6
North America	27	77.6	77.9

Table 1.5 Percentages of older people able to perform (ADL) independently at different ages.

	Age	1976 (%)	1991 (%)
Men	75–79	75	90
	85+	57	80
Women	75–79	67	90
	85+	52	80

pension payments (compared with current retirees). There is also an increased expectation of those growing old in the next two decades, e.g. aspiring early retirement with decreased disability levels (see Table 1.5) but still expecting enhanced care services.

Social aspects of ageing

Old age is unfortunately often a time of loss. The potential losses are very varied but are often interrelated, and those that accompany old age are of:

- Health due to increasing pathology.
- Wealth due to termination of employment.
- Companionship following bereavement.
- Independence due to acquired disabilities.
- Homoeostasis due to impairments to autonomic nervous system and renal function.
- Status following retirement and loss of independence.

The above changes and losses may expose the elderly person to the following consequences:

- Unhappiness, grief, depression, suicide (see Chapters 4 and 16).
- Increased incidence of illness.
- Increased risk of accident.
- Poverty.
- Dependence and abuse.
- Malnutrition and subnutrition.
- Hypothermia (see Chapter 12).

Loss of wealth

Income falls on giving up paid employment. Pensions are not normally equivalent to wages and the average pension is approximately 50% of the average working wage for a couple. Disabilities themselves may result in additional costs, e.g. for help, aids and adaptations.

Table 1.6 Widening gap in life expectancy at 65 in the UK, 1972–1999 (in days).

Social class	1972	1999	Increase
I	5200	6388	1188
V	4300	4891	591

The elderly spend a much higher percentage of their total expenditure on essentials, e.g. heating, food and housing, and there is little opportunity to economize. In the UK, the safety net provided by the social security system is complex and difficult and this alone acts as a deterrent to taking up available benefits. Occupational pensions and investment income are increasing in importance, but in the UK 50% of pensioners receive 75% of their income from the state pension.

Retirement

Retirement is a mixed blessing: 20% of workers fear retirement but 50% look forward to it. Retirement is a potential period of loss – of income, status, companionship and self-confidence.

To counteract the disadvantages, there are the following positive aspects of retirement:

- It may occupy one-third of life.
- Many remain fit and healthy for most of this time.
- It is an opportunity to redesign lifestyle and to promote good health.
- Time is available for new or renewed interests, activities and relationships.

But retirement may bring social problems of its own and it is a time when some difficult decisions will have to be made. Dilemmas encountered may include the following:

- Becoming a carer, e.g. of parents or grandchildren early in retirement or of spouse or siblings later on.
- Where to live – it is probably best to stay put where comfortable and well known. If a move is contemplated, earlier is better than later, as the retiree is likely to be fitter and one of a pair.
- What sort of accommodation? Somewhere where independence is possible, even in spite of acquired disabilities.

• Driving – may need to be given up at some stage, so beware of geographical isolation (see Chapters 5 and 16).
• Sex – it is 'allowed' even in very old age so long as it gives pleasure to both partners (see Chapter 13).
• Boredom affects 10% of the retired – another 20% (although not bored) would prefer still to be working. The poor, the disabled, the poorly educated and the isolated are most likely to be dissatisfied with retirement.
• The economic consequences of an expanding population of retired persons dependent on pensions are causing considerable worldwide concern within the developed world. As a consequence, the retirement age may well be gradually increased to 70+ years. In addition, there will also be a need to review the nature of paid employment in later years with consideration of plans to make partial or gradual retirement easier without loss of status, pay or pension rights. Preparation for retirement is vital.
• The increasing frailty and unpredictability of the global financial markets also pose threats to pension provision. The pension aspirations of many current workers may not be met and may be considered a potential threat to world finance.

Recommended physical activity in retirement

• Regular moderate intensity activity for 30 min on most days.
• Short bursts of exertion may have a cumulative effect.
• Start slow and gradually build up intensity and duration.
• If an activity is not provoking symptoms, it is unlikely to be doing harm.
• Generally benefits of activity outweigh risks.
• When activity requires special equipment or clothing, make sure it is appropriate and in good condition.

Some myths of ageing

• *It is a new problem*. No – there have always been elderly people, there are now just more of them. In the past, most people were denied the opportunity of old age by dying young. Now, most babies born in the developed countries can expect to survive into their 80s.
• *All elderly people are decrepit and senile*. No – most live independent lives and mainly in their own homes (96% in the UK).
• *The chronic conditions of old age are untreatable*. No – medical treatment for all ages concerns itself primarily with the management of chronic conditions. The courses of disease can be slowed or modified – e.g. Parkinson's disease or senile dementia of the Alzheimer type – and symptoms can be alleviated – e.g. pain, breathlessness and in deficiency diseases (pernicious anaemia, osteomalacia and myxoedema) normal function can be restored.
• *Natural decline cannot be prevented*. No – regular physical activity in old age can rejuvenate and physical capacity can be improved by 10–15 years. Also, the adoption of a 'healthy lifestyle' in middle age (no smoking, avoidance of obesity and taking regular exercise) can delay the onset and decrease the eventual severity and duration of disability towards the end of life.
• *Treating elderly patients is a waste of money*. No – not to treat is not only inhumane (see Human Rights Act 1998) but often expensive, and neglected problems may lead to longer-term, higher expenditure (i.e. 'care' can be more expensive than 'cure').
• *Care of the elderly is bankrupting the NHS*. No – it is true that elderly people account for more costs within the NHS than the young (except for the management of children). However, most people make few demands on the NHS until the 15 years prior to their death. Costs for this terminal period are similar if death occurs at any age, i.e. 40, 50, 60 years, and so on. In fact, death in very old age may be gentle and not incur the high cost of unrealistic heroics.
• *All elderly people are depressed and lonely, and are better off dead*. No – the majority of elderly people are not depressed. In fact, well-being and contentment may feature in later life more than during the ambitious and frustrated productive years. Although the general population thinks that 90% of elderly people are lonely, only 10% of the elderly consider themselves to be so.

• *The elderly are of no use*. No – they are a valuable resource with experience and, sometimes, wisdom. The majority of carers are elderly and these include grandparents assisting in the rearing of their grandchildren because of absent or working parents. The old are the backbone of the voluntary services.

• *Old patients have a limited future and poor prognosis*. No – life expectancy at 65 years is in excess of 15 years. Survival for 5 years after many surgical and oncological treatments is recorded as a success.