

Health in Europe 6



Ageing in the European Union

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The ageing of European populations presents health, long-term care, and welfare systems with new challenges. Although reports of ageing as a fundamental threat to the welfare state seem exaggerated, societies have to embrace various policy options to improve the robustness of health, long-term care, and welfare systems in Europe and to help people to stay healthy and active in old age. These policy options include prevention and health promotion, better self-care, increased coordination of care, improved management of hospital admissions and discharges, improved systems of long-term care, and new work and pension arrangements. Ageing of the health workforce is another challenge, and policies will need to be pursued that meet the particular needs of older workers (ie, those aged 50 years or older) while recruiting young practitioners.

Introduction

At a time of austerity, concerns about the consequences of further population ageing for the economy and for health and welfare systems are now firmly on political agendas. Although societies need to respond to demographic realities, often concerns about the effect of ageing can be exaggerated, adding to the agendas of some governments to cut back welfare states. A discussion paper¹ by the World Demographic and Ageing Forum, for example, was entitled *A truly impossible*

equation: the future of welfare states in times of demographic ageing. In this Series paper, we ask whether the implications of population ageing for health, long-term care, and welfare systems in the European Union (EU) are really as substantial as often stated and how European societies can prepare to cope with ageing populations.

Population trends

In all EU member states, the proportion of older people has increased in recent decades, because of a combination of low fertility and longer life expectancy. However, there are some variations between countries and time periods in the contributions of these factors. In many Scandinavian countries, for example, late 19th century declines in fertility led to large increases in the proportion of older people in the first half of the 20th century. In southern and eastern Europe, fertility declines were later and swifter than they were in Scandinavian countries, and by the late 20th century, when the proportion of older people (ie, those aged 65 years or older) was at least 10% (and more often 15%) of the population and fertility was low, declines in mortality exerted a greater effect on age structures.

Throughout Europe, mortality among older people has fallen substantially since the 1970s,² and this fall, rather than low fertility, is now the main contributor to population ageing.³ Reduced mortality in older people is largely a result of falling mortality from cardiovascular disease,⁴ which can be attributed to a combination of

Key messages

- Ageing will result in an increasing number of older people (ie, those aged 65 years or older) with various health problems that are more common in older than in younger people—eg, cancer, fractured hips, strokes, dementia; many of these people will have multimorbidities
- However, alarmist perceptions of ageing as a fundamental threat to the European welfare state are greatly overblown, and projected increases in health expenditure because of ageing are slight
- Countries of the European Union should not be complacent in their responses, and health care, long-term care, and welfare systems need to adapt to respond to population ageing
- Health systems should become more age-friendly through active health promotion and disease prevention (for older people and across the life course), enabling better self-care, ensuring capacities of health services, improving coordination of care and management of hospital admissions and discharges, and addressing the ageing of the health workforce
- Across the European Union, the scope for improvement of organisation and coordination of long-term care services is substantial
- Small increases in pensionable age (in line with increases in healthy life expectancy) could offset the effects of ageing on public pension systems, but will need to account for socioeconomic disparities

Search strategy and selection criteria

We searched Medline, PubMed, and Google Scholar for papers published in English with the terms “ageing”, “compression of morbidity”, “policies”, and “health systems” We gave preference to articles published between Jan 1, 2005, and Aug 31, 2012, but also included older, important work. We also reviewed recent reports published by WHO, the Organisation for Economic Co-operation and Development, and the European Union.

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This is the sixth in a **Series** of seven papers about health in Europe

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improved lifestyles, prevention, and treatment.⁵ Improved delivery of health care might have been especially important in decreases in old-age mortality during the 21st century.⁶ Therefore, population ageing can reasonably be described as both an outcome of, and a challenge for, European health systems.

Another element of population dynamics—migration—is also relevant to discussion of ageing populations, and is explored in further detail in the fifth paper of this Series.⁷ Migrants tend to be younger than non-migrants, and so the process of population ageing might be accelerated in countries with high numbers of people who migrate to other countries. Migrants might also rejuvenate destination populations, especially when migrant groups have higher fertility rates than do the populations they join and return to their countries of origin when they retire. However, migrant populations also age, and many migrants stay in their adopted countries after retirement. Fertility rates in migrants tend to converge towards those of host populations, and levels of migration to Europe are far below those needed to offset population ageing.⁸

Since 2000, fertility rates have slightly increased in several European countries, but they are expected to remain close to, or below, 2.1 children per woman, the rate needed for long-term replacement of the population.⁹ Furthermore, projected improvements in adult and old-age mortality imply further population ageing throughout the EU. By 2060, mean life expectancy in the EU is expected to increase by 8.5 years for men (to 84.5 years), and by 6.9 years for women (to 89.0 years), with mortality gaps between new and old EU member states expected to narrow.

Another relevant demographic factor is fluctuating birth rates, in particular the so-called baby boom after World War 2, a result of which is that the cohorts now reaching old age are particularly large. The proportion of people aged 65 years or older in the EU already surpassed that younger than 15 years in 2008; by 2060, twice as many people will be aged 65 years or older as will be younger than 15 years.¹⁰ The rise in the number of very old people (ie, those aged 80 years or older) will be even more pronounced. The proportion of very old people is projected to triple between 2008 and 2060 (appendix).¹⁰

See Online for appendix

The old-age dependency ratio (ie, the ratio of people aged 65 years or older to people aged 15–64 years) is projected to increase from 25.4% to 53.5% between 2008 and 2060, so that, for every person aged 65 years or older, there will be only two people aged 15–64 years (instead of four as previously).¹⁰ Although this indicator is designed to capture the ratio of so-called workers to pensioners, it does not capture who is economically active and who is economically dependent—many people aged 15–64 years are not in employment, and increasing numbers of people aged 65 years or older are still working. In view of these data, the effective economic old-age dependency ratio—ie, the ratio of elderly non-workers to workers—is increasingly used. In the EU, this ratio is projected to rise from 37% in 2007 to 72% in 2060, with important variations between different countries.¹⁰

However, these data should be interpreted in view of how older people are not only recipients of pensions or health care and long-term care; younger old people (usually defined as those aged 65–80 years) provide a large proportion of care for other elderly people (mainly their parents) and their grandchildren, and participate in voluntary and, in some cases, paid work, whereas older old people (ie, those older than 80 years) provide a large proportion of care for their spouses.¹¹

A crucial question in establishment of the effect of ageing on health, long-term care, and welfare systems is whether increased life expectancy is associated with increased time in ill health or postponement of functional limitations and disability.² This effect is often discussed in terms of three possible theories: compression of morbidity,¹² with people staying healthier for longer and being in poor health for shorter periods; expansion of morbidity, with people living longer in poor health;¹³ or dynamic equilibrium,^{14,15} in which the postponement of death is accompanied by delays in disability, so that the relative time in poor health remains the same (panel 1). Evidence about which of these trends dominates is conflicting, largely because of differences in measurements or indicators,^{20,21} but also as a result of differences across countries, and the difficulty in distinguishing between different forms of morbidity and disability.^{22,23} For example, disability could be postponed even when onset of morbidity is not delayed through better management and treatment of chronic disease. Possibly, people report disability less often and more chronic diseases because of better knowledge of their health status.

Overall, the frequency of the most severe levels of disability seems to have decreased substantially in Europe; however, less severe disability has become more common, so that, in general, people tend to stay healthy for longer.² However, Eurostat data²⁴ suggest that, on average, life expectancy in the EU has risen faster in recent years than has healthy life expectancy. Between 2004 and 2009, mean life expectancy at birth in the EU increased from 75.2 to 76.7 years for men and from

Panel 1: Three theories for population ageing

Compression of morbidity: In the 1980s, Fries¹⁶ argued that life expectancy was close to the maximum and that future improvements in medical care and health behaviours would delay morbidity but not mortality, and would lead to a reduction in the number of unhealthy years lived as a proportion of life expectancy.

Expansion of morbidity: Gruenberg¹³ and Kramer¹⁷ argued that, on the contrary, the same medical progress would increase the survival of the frail and lead to an expansion of unhealthy relative to healthy life-years.¹⁸

Dynamic equilibrium: Between these two extreme futures, Manton¹⁹ proposed a dynamic equilibrium, in which increased survival is offset by better control of chronic diseases, keeping the proportion of life lived in good health more or less constant.

81·5 to 82·6 years for women, but healthy life expectancy increased only from 60·9 to 61·6 years for men and from 61·3 to 62·5 years for women. Huge discrepancies exist between countries, with healthy life expectancy in 2010 ranging for men from 52·3 years in Slovakia to 71·7 years in Sweden, and, for women, from 52·1 years in Slovakia to 71·6 years in Malta.²⁴

These data show that life expectancy across the EU is not consistent and that general statements about compression of morbidity should be made with great caution. Findings^{25,26} from some Scandinavian countries (which have high-quality data) show either no improvement or an increase in severe disability rates for the older old people (ie, those aged 80 years or older). A meta-analysis showed that the prevalence of limitations to activity did not fall significantly in the Dutch older population between 1990 and 2007.²⁷ Another study of harmonised European data showed consistent increases in life expectancy in all 13 western European countries studied between 1995 and 2001, but in most countries these increases were not accompanied by a compression of disability.²⁸ A study of trends in severe disability in people aged 65 years or older in 12 countries of the Organisation for Economic Co-operation and Development (OECD) during the 1990s showed evidence of a decrease in disability in elderly people in five of the 12 countries studied—Denmark, Finland, Italy, the Netherlands, and the USA.²⁹ Other data gathered since 2005 also suggest that all three theories about ageing populations (panel 1) can, to varying degrees, be noted in different European countries.

So, how can we make sense of these data? In general, reduction in disability seems to occur when life expectancy does not increase or does so slightly. A close examination of trends in health expectancies (available in 16 countries), suggests that, except for Switzerland, little evidence exists of compression of morbidity or disability in the countries with the longest life expectancies.³⁰ According to a study³¹ by the OECD, the three advanced economies that clearly displayed a compression of disability in older people during the 1990s—ie, Denmark, the Netherlands, and the USA—are those where life expectancy at age 65 years had increased least, largely because of the effects of the 20th century smoking epidemic.³¹

Although evidence supporting the three theories for ageing populations (panel 1) is mixed, responses to population ageing should not be complacent. More people will be afflicted with disorders that are common in older people, such as cancer, fractured hips, strokes, and dementia. In the UK, for example, the number of cases of cancer in people older than 65 years is expected to increase between 2007 and 2030 by 76·2% in men and 67·5% in women, as a result of both population growth and ageing.³² Diabetes is another concern. In surveys done in western Europe between 1990 and 2005, the mean prevalence of diabetes in people aged

70–79 years was about 25%.³³ The combination of ageing populations and the obesity epidemic affecting many European countries means that the number of older patients with diabetes will probably increase substantially. The proportion of people with mental health disorders will also increase. The number of people with dementia is projected to more than double to 14·5 million in the EU between 2010 and 2050—equivalent to 3·3% of the total population and 10·1% of the population aged 65 years or older.³⁴

Apart from a substantial increase in the proportion of people with these disorders, the complexity of health problems will increase. More people will have several comorbidities and chronic diseases and be taking various drugs that potentially interact.^{35–37} People with multimorbidities typically have a higher risk of mortality, use health-care facilities more, and have less quality of life than do people with a single disease.³⁸ This high risk of mortality in people with comorbidities makes health care complex, leads to long stays in hospitals, and increases the need for organisation of multidisciplinary care for patients both within and outside hospitals.³⁹

Implications for health and welfare systems

Increases in age-associated public expenditure in the EU are expected to be largest with respect to pensions (table). Public expenditure on pensions is expected to rise from 10·2% of gross domestic product (GDP) in 2007, to 12·6% by 2060, but with very large variations between member states.¹⁰

Although most long-term care for older people is still provided by family members and friends for free, public spending on long-term care is also expected to increase substantially and is projected to increase from 1·2% to 2·3% of GDP in the EU between 2007 and 2060 (table).¹⁰

The growth in ill health described above does not translate directly into much higher health expenditure because the association between ageing and health expenditure growth is complex. The common assumption that population ageing will drive future health expenditure to unsustainable levels seems to be unjustified.^{40,41} Although older people account for a substantial proportion of health care, other factors, especially technological developments, have a much larger effect on aggregate health-care costs.^{42,43} In the EU, projected increases of health expenditure to 2060 are moderate, and account for only an additional 1·5% of GDP (table).¹⁰ If increases in life expectancy are accompanied by a similar proportion of life in good health (in line with the dynamic equilibrium hypothesis), health expenditure is projected to increase by only 0·7% of GDP.¹⁰

On the basis of Eurostat data for projected population ageing and data from the OECD about per-person health expenditure per age group, we calculated the potential changes in yearly health expenditure per person for 2010–60. Data for per-person health expenditure per age

For data gathered since 2005 see <http://www.eurohex.eu>

For trends in health expectancies see <http://www.reves-network.org>

	Pension		Health care		Long-term care	
	2007 (%)	Change 2007–60 (% of GDP)	2007 (%)	Change 2007–60 (% of GDP)	2007 (%)	Change 2007–60 (% of GDP)
Austria	12.8	0.9	6.5	1.5	1.3	1.2
Belgium	10.0	4.8	7.6	1.2	1.5	1.4
Bulgaria	8.3	3.0	4.7	0.7	0.2	0.2
Cyprus	6.3	11.4	2.7	0.6	0.0	0.0
Czech Republic	7.8	3.3	6.2	2.2	0.2	0.4
Denmark	9.1	0.1	5.9	1.0	0.9	1.4
Estonia	5.6	-0.7	4.9	1.2	0.1	0.1
Finland	10.0	3.3	5.5	1.0	1.8	2.6
France	13.0	1.0	8.1	1.2	1.4	0.8
Germany	10.4	2.3	7.4	1.8	0.9	1.4
Greece	11.7	12.4	5.0	1.4	1.4	2.2
Hungary	10.9	3.0	5.8	1.3	0.3	0.4
Ireland	5.2	6.1	5.8	1.8	0.8	1.3
Italy	14.0	-0.4	5.9	1.1	1.7	1.3
Latvia	5.4	-0.4	3.5	0.6	0.4	0.5
Lithuania	6.8	4.6	4.5	1.1	0.5	0.6
Luxembourg	8.7	15.2	5.8	1.2	1.4	2.0
Malta	7.2	6.2	4.7	3.3	1.0	1.6
Netherlands	6.6	4.0	4.8	1.0	3.4	4.7
Poland	11.6	-2.8	4.0	1.0	0.4	0.7
Portugal	11.4	2.1	7.2	1.9	0.1	0.1
Romania	6.6	9.2	3.5	1.4	0.0	0.0
Slovakia	6.8	3.4	5.0	2.3	0.2	0.4
Slovenia	9.9	8.8	6.6	1.9	1.1	1.8
Spain	8.4	6.7	5.5	1.6	0.5	0.9
Sweden	9.5	-0.1	7.2	0.8	3.5	2.3
UK	6.6	2.7	7.5	1.9	0.8	0.5
European Union	10.2	2.4	6.7	1.5	1.2	1.1

Data are from the European Commission.⁵⁰ GDP=gross domestic product.

Table: Projected increases in age-associated government expenditure as proportion of GDP in the European Union, 2007–60

group were available for the Czech Republic, Germany, Hungary, the Netherlands, and Slovenia. Data for the projected size of age groups were available in 5 year increments, from which we calculated yearly means. Our calculations were based on the assumption that per-person health expenditure in different age groups will be constant in the future, and we did not account for changes in prices. We established that the effect of ageing on per-person health expenditure is neither negligible nor alarming in the selected European countries for which data were available (figure 1). For example, in the Netherlands, the isolated effect of ageing on health expenditure per person is expected to peak between 2020 and 2025, resulting in an ageing-associated growth of 0.9% of mean yearly health expenditure per person, but adding nothing between 2055 and 2060, when the Dutch population is projected to become younger again.

Recognition that ageing is not an inevitable drain on health-care resources is growing.⁴⁴ Research about the

cost of dying shows that proximity of death is a more important predictor of high acute health-care expenditure than is ageing.^{45–47} A large proportion of expenditure on lifetime acute health-care often occurs in the last year of life, particularly in the last few weeks before death.⁴⁸ For example, in the USA, more than 25% of total expenditure by the insurance programme Medicare, in 1994–99, was for patients in the last year of life.⁴⁹

A reason for the apparent paradox of greater illness burden yet constrained increases in expenditure might be that increased survival postpones many deaths to older ages. The cost of dying is actually lower in the older old age groups, which is probably because of a combination of individuals who live the longest being healthier⁵⁰ and ageism in medical practice—ie, rationing of access to health services for older people. Research about the use of health services at old age has shown that use of many types of services peaks at about age 80 years and falls thereafter.^{48,50,51} These findings were supported by those from the Survey of Health, Ageing and Retirement in Europe (panel 2),⁵² which cover 20 000 Europeans aged 50 years or older and showed that use of health services peaks at ages 75–79 years, levels off at 80 years, and decreases in people older than 85 years. However, in most cases such surveys exclude people living in nursing and residential care homes. Furthermore, even when acute medical costs level off somewhat, long-term care costs continue to increase with older age.

Findings that health expenditure is lower in the older old age groups, however, need to be thought of in the context of overall lifetime expenditure, evidence for which is so far scarce.⁵³ Furthermore, observations from cross-sectional studies show that present generations of older people might not behave like previous generations. In the same way that proximity of death is more important than age, belonging to a specific generation might be a more important predictor of health-service use than age. For example, new generations of older people, who might be wealthier or more educated than were previous generations, might have higher expectations in term of quality of life and use of health services. These socioeconomic factors and expectations can lead to higher rates of health-service use for the same level of morbidity, and might explain increases in reported disability.

Finally, to recognise that ageing affects the health workforce is important. Between 1995 and 2000, the proportion of physicians younger than 45 years fell by 20% in the the 27 EU member states, whereas that older than 45 years increased by more than 50%. The mean age of nurses is also rising, and in five EU member states nearly 50% of nurses are now older than 45 years.⁵⁴ The proportion of health workers who are in their 50s or early 60s and will retire very soon is increasing. Thus, challenges, such as ensuring sufficient numbers of health workers and providing conditions for keeping older workers at work, have emerged.⁵⁵

How can health and welfare systems respond?

Responsiveness to ageing

Even when per-person expenditure on health remains constant or decreases, the growing proportion of older people presents some challenges for the sustainability of health and welfare systems, because a declining share of the population might have to bear increasing costs of pensions and public health financing. However, these challenges are not insurmountable. Societies can take measures that increase the chance that additional years of life are spent in good health, improve system efficiency to better cope with the needs of older people, and adopt policies that increase participation of the labour force, for example, by creating suitable working environments.⁵⁶

Health systems can become more age friendly in several ways,⁵⁷ including through improved public health measures, enabling of better self-care, investigation of different ways to organise and provide health services, better integration of services across levels of care, improved management of hospital admissions and discharges, and adaptation to an ageing health workforce.

Health promotion and disease prevention

Population-based interventions to promote health and prevent disease will be crucial to cope with ageing populations.⁵⁷ Evidence is increasing that the promotion of so-called healthy or active ageing not only increases healthy life expectancy and postpones much health expenditure, but also has wider economic benefits (because people who live a long and healthy life have a strong incentive to invest in skill development and are more inclined to stay in the labour force).⁵⁸ Action will implicate primary prevention, including interventions against smoking, alcohol consumption, obesity, sedentary lifestyles, poor diets, and efforts to improve living conditions and care.^{2,59-64}

Smoking remains one of the main causes of premature death and disability in Europe, and quitting has benefits even at older ages. Anti-smoking policies could include smoking cessation programmes and broader policies to reduce tobacco consumption, such as increases in price and enforcement of clean-indoor-air laws.⁶⁵ Excessive alcohol consumption is another common, but often ignored, problem in older people. Alcohol can interact with prescription drugs and make falls more likely. In many countries in Europe, prevention efforts are underdeveloped.⁶⁵

Good-quality living environments, which include not only personal homes and institutions but also neighbourhoods,⁶⁶ are important for healthy ageing. Neighbourhoods conducive to active and healthy ageing include those that have good pavements, cycling paths, public transport, and safe crossings on busy roads, and where primary-health-care centres, swimming pools, shops, libraries, and green spaces for exercise and relaxation are nearby.⁶⁷ Strong social relationships might

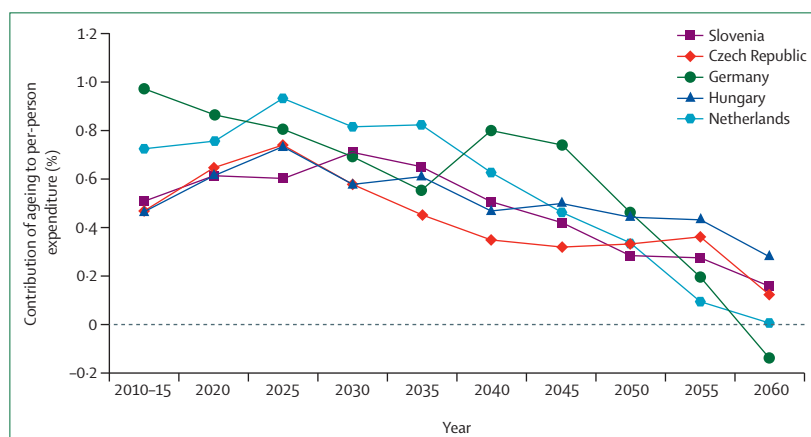


Figure 1: Projected changes in ageing-associated health expenditure per person in selected European countries, 2010-60

Data are 5 year means. Authors' calculations, based on Eurostat data⁶⁴ for projected population ageing and data for health expenditure per age group from the Organisation for Economic Co-operation and Development (unpublished).

Panel 2: Survey of Health, Ageing and Retirement in Europe

The Survey of Health, Ageing and Retirement in Europe (SHARE) was established as the first European Research Infrastructure Consortium. SHARE is a multidisciplinary cross-national nationally representative panel study of individuals aged 50 years or older (ie, those born in 1954 or earlier) that was originally modelled on the US Health and Retirement Survey. The study was done in four phases in 2004, 2006, 2008-09, and 2010-11. The first study included ten European countries and the most recent 16 countries (Israel is also included).

SHARE gathers detailed information about health and function (self-reported and some observer-measured), use of health care, financial circumstances, employment and other activities, and family and social networks. Retrospective questions about life history were included in phase 3.

play a part in the promotion of healthy living and reduction of mortality.^{68,69}

Physical activity might help to lower the risk of dementia, depression, degenerative disease, type 2 diabetes, and hypertension, and limit obesity.⁶⁵ Midlife (age 45-65 years) and older people are the most inactive portion of the population,⁷⁰ but not inevitably. A study⁷¹ in Sweden showed that men who did little exercise at age 50 years but then became more active had the same level of mortality after 10 years as those who had been very active throughout life.⁷¹ Some evidence shows that aerobic physical activities can improve cognitive function.⁷² Physical activity can take many forms, from yoga to swimming, to organised walks,^{67,73} but should ideally be affordable, accessible, and attractive.⁶⁵ Finally, physical rehabilitation improves a range of health outcomes in older people with various degrees of functional limitation, including those in long-term care settings.⁷⁴

Injuries from falls are another important preventable cause of death and disability in older people.⁷⁵ Effective preventive measures include screening for environmental

risk factors (for both people with a history of falls and the general older population) and individual programmes of muscle strengthening and balance training.⁷⁶ Strategies for reducing violence towards older people are also needed, both in family settings and institutions.⁶⁵

Healthy diets and adequate nutrition are important. As with other age groups, consumption of prepackaged and processed foods and obesity are becoming more common in older people.⁶⁵ Eating habits are also associated with bone density and osteoporosis.⁶⁵

Interventions to prevent, postpone, and treat heart disease and stroke are crucial, because these diseases are leading causes of mortality and long-term disability and become more common with increasing age.^{59,77} Although the benefits of treating hypertension have been known since the 1960s, underdiagnosis and inadequate control remain frequent in many countries in Europe.^{78,79} To yield maximum benefit, prevention programmes for older people should not be based on single disease models, which can lead to substitution of one cause of death for another, but rather should include the overall range of diseases targeted by preventive interventions.⁸⁰ These benefits are exemplified by the use of statins to prevent cardiovascular disease. In one of the few trials⁸¹ of statins in older people, a clear but small effect on cardiovascular mortality and morbidity was reported; however, all-cause mortality remained unchanged, because more cases of cancer were diagnosed.

Although many programmes for health promotion and disease prevention will be targeted at older people, most of them would benefit people of all ages. One of the most effective ways to promote healthy ageing is to target young and mid-life adults, helping them to reach their 50s and 60s in good health. Furthermore, evidence from cohort studies increasingly shows that ageing is affected by factors throughout the entire life course, including in utero and very early life. Factors such as socioeconomic position, nutrition, and exercise affect the growth of physical and cognitive capabilities in early life, the peak attained in early adult life, and the timing

and rate of decline thereafter.⁸² By midlife, capability already varies substantially, underscoring that interventions should start earlier in life. A life-course approach to healthy ageing should address intergenerational and contextual factors and recognise the challenge of inferring causality from observational studies.⁸³ However, evidence about when in the life course interventions are most successful is scarce. Although smoking cessation seems to provide immediate benefits, even in older people, interventions to reduce social isolation at very old age might come too late.⁸⁴

Another crucial consideration is that, although attractive and generally useful as a way to increase healthy life-years, increased health promotion and disease prevention will not necessarily help to compress morbidity (ie, reduce unhealthy life-years). Whether a compression of morbidity occurs depends on the balance between reduced morbidity and reduced mortality. In one study,⁸⁵ for example, high levels of physical activity, healthy weight, and never smoking extended total life expectancy and the number of years lived free of cardiovascular disease.⁸⁵ Smoking has more of an effect on mortality than on morbidity, whereas obesity is more closely associated with morbidity than with mortality.⁸⁶ Although smoking cessation can increase life expectancy, tackling obesity would have greater effect on reducing the frequency of disability. Comprehensive and balanced strategies for health promotion and disease prevention and a stronger evidence base for the clinical effectiveness and cost-effectiveness of primary prevention activities in older people are needed.

Self-care

The ability to self-care is a crucial health resource for older people who manage their life in their own homes. Self-care is closely associated with general living conditions, sense of coherence, perceived health, and nutritional state.⁸⁷ Increased health literacy and better access to technology, such as computers and the Internet, can help with the management of chronic disorders and enable patients to engage more effectively in self-care.⁶⁵ However, older people tend to have lower health literacy than do younger people, and thus might not receive the health and social services they need, increasing the risk of adverse health outcomes and costly hospital admissions.⁶⁵ One way to improve health literacy and self-care is through preventive home visits that ensure that older people can look after themselves (panel 3). Additionally, in many European countries assistive technologies to improve the autonomy of people with impairments such as walking difficulties could be used more frequently.⁸⁹

Infrastructure and capacity of health services

The way in which health facilities are built can take account of population ageing. Health facilities need to be

Panel 3: Preventive home visits to older people in Denmark

The programme of preventive home visits to older people in Denmark is an example of good practice. These visits include individualised health checks alongside other aspects of wellbeing and provide an opportunity to address individual needs that help older people to remain independent. Furthermore, they reach older people who are not normally in contact with the health system. In Denmark's largely decentralised health system, these home visits are the responsibility of local authorities. The relevant law was first enacted in 1995, and set out that "[t]he local council shall offer preventive home visits to all citizens having reached the age of 75 and living in the municipality".⁸⁸ So far, the results of the programme are encouraging. Visits are mainly carried out by district nurses, but several other health professionals and social workers also have roles. Assessments have shown the positive effects of the preventive home visits on the functional health status of older people; a 3 year prospective randomised controlled follow-up study⁸⁸ showed that training of home visitors was associated with improved functional ability of older people.

easily accessible, including for people with impaired mobility, and should provide a healing environment for patients and a healthy working environment for staff. Patients with impaired vision will need clear signposting.⁹⁰

Health-care providers who manage disorders that are common in older people (who include providers of mental health care) should anticipate increasing demand. Generally, the workforce providing care for older people should be expanded, and health workers should be trained appropriately. Older patients should have access to geriatric assessments and multidisciplinary care. National standards of care for older people offer a basis to improve care.

Coordination of care

Better coordination of care across health, long-term care, social services, different levels of health care, and various levels of government, is particularly important.⁹¹ Ageing populations have an increasing number of chronic disorders and comorbidities, necessitating the cooperation of providers of social and health services to deliver care safely and efficiently. The management of complex chronic disorders should be improved through a better-trained workforce, supportive information systems, and financing mechanisms that encourage integration rather than fragmentation.^{65,92}

Many older people take more than four drugs, and inappropriate use of drugs is a common cause of accidents and visits to emergency departments.⁶⁵ In Finland, 40–50% of hospital admissions in older people are estimated to result from inappropriate drug use (both because of patients taking drugs incorrectly and doctors prescribing inappropriate drugs).⁶⁷ Better coordination between health-care providers, including pharmacists, use of electronic medical records, home visits, and provision of more information to patients could help to reduce inappropriate drug use and associated hospital admissions.⁶⁵

Management of hospital admissions and discharges

Deterioration in function in older people is often precipitated by an acute episode of illness or injury, and thus many patients are admitted to long-term care institutions directly from hospital rather than from home. Social care interventions, such as community-based health-care and social care services for patients discharged from hospitals, can help to reduce the time older people stay in hospitals and limit admissions to institutional long-term care. Reductions in expensive and potentially destabilising hospital admissions can be achieved through health promotion and disease prevention interventions, such as those targeting nutrition, hygiene, mobility support, and prescription drugs, and regular medical check-ups.⁹³

Ageing of the health workforce

Health systems can take various actions to address the ageing of the health workforce. A two-pronged approach

Panel 4: European Union initiatives

The European Union (EU) has recognised the challenges brought by ageing populations. In 2001, the Stockholm European Council adopted a three-pronged strategy to bring about fast reductions of public debt; increased employment and productivity; and reform of pension, health-care, and long-term-care systems.¹⁰ However, the sovereign debt crisis (ie, a substantial rise in interest rates on debt faced by some governments as a result of the global financial crisis) in 2011–12 showed that several EU member states did not implement these strategic objectives.

Another important EU policy initiative associated with ageing was the Lisbon Strategy for Growth and Jobs, which was launched by the EU in 2000, and relaunched in 2005. This strategy envisaged raising of the mean age of retirement by 5 years to 65 years and an increase of workforce participation at age 55–64 years to 50% by 2010. Although these goals were not quite reached, progress was made, and workforce participation in people aged 55–64 years was 46% in 2010 (figures 2, 3).

The new Europe 2020 strategy, which was launched in 2010, does not have specific targets for people aged 55–64 years, but an EU employment rate of 75% for those aged 20–64 years is one of the five headline indicators.¹⁰¹ In 2011, the EU launched the European Innovation Partnership on Active and Healthy Ageing initiative, the aim of which was to apply innovation to better respond to Europe's ageing societies and add 2 years of good health to the European mean by 2020.¹⁰² 2012 has been designated the European year for active ageing and solidarity between generations; the aim of this initiative was to ensure that older people stay longer in the labour force and remain healthy, active, and autonomous for as long as possible.¹⁰¹ Other EU instruments that are used to encourage a healthy and active ageing population include the European Employment Strategy and the European Social Fund.¹⁰¹

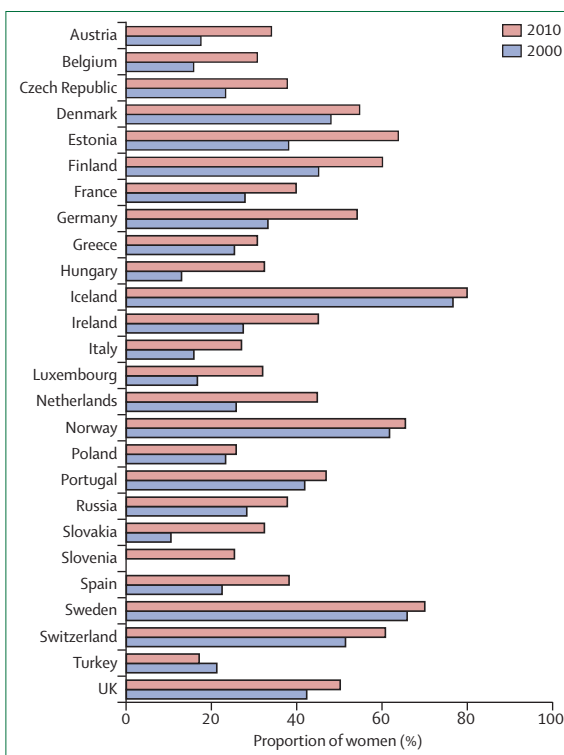


Figure 2: Labour-force participation by European women aged 55–64 years in 2000 and 2010

Data are from OECD;¹⁰⁰ countries included are the European OECD member states. OECD=Organisation for Economic Co-operation and Development.

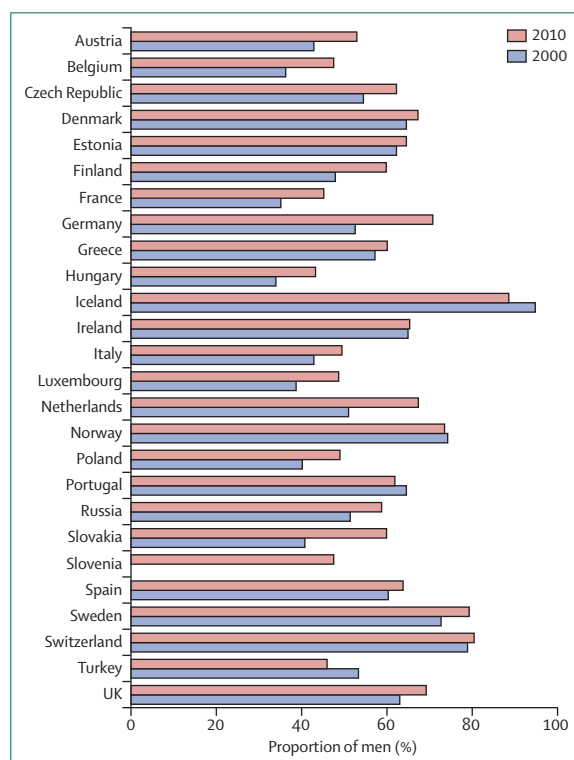


Figure 3: Labour-force participation by European men aged 55–64 years in 2000 and 2010

Data are from OECD;¹⁰³ countries included are European OECD member states. OECD=Organisation for Economic Co-operation and Development.

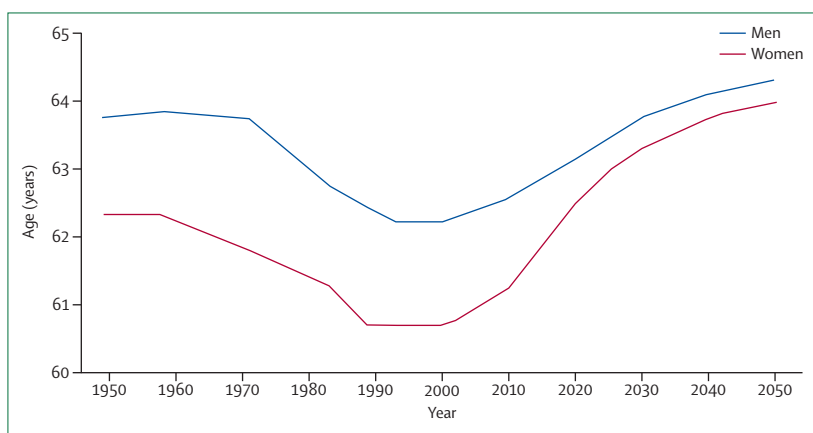


Figure 4: Mean pensionable age in Europe 1949–2050, by sex

Authors' calculations, based on data for pensions from OECD;¹⁰⁴ countries are the European OECD member states. OECD=Organisation for Economic Co-operation and Development.

is needed that educates, recruits, and retains young practitioners, and reinvests in the mature workforce.⁵⁴ Many measures for retaining an ageing workforce will be similar to measures for retaining health professionals in general, and include monetary incentives, improved workforce organisation, and better working conditions, including educational and career opportunities and social support.^{55,94}

Several policies will be particularly important for meeting the needs of older health workers and to prevent burnout—eg, workplace ergonomics and proper equipment (including that for handling patients), flexible work arrangements, family-friendly initiatives, holidays, job redesign, task-shifting.⁵⁵ Flexible working patterns that allow health professionals who have reached pensionable age to continue to work and receive pension benefits might encourage delayed retirement. Several European countries have experimented with different models. France and the UK have enabled health workers who reach the statutory retirement age to continue to work part time while preserving pension entitlements. In France, doctors older than 60 years can be exempted from night and weekend shifts. In Belgium, many hospitals have allowed nurses aged 55 years or older to work 32 h per week and still earn a full-time wage, and retention of nurses has improved.⁵⁵ Different part-time models have been tried in German hospitals, including part-time employment, job sharing, flexible working hours (so-called flexitime), and partly working from home.⁹⁴ Protection from occupational risks through comprehensive occupational health and safety systems is of particular importance for older workers. Generally, stress management and health-promotion programmes and interventions that contribute to healthy lifestyles offer the chance to promote the health of older workers and prolong their working lives.

Improvement of long-term care

Countries in Europe have adopted very different policies in relation to long-term care, partly suggesting different views of the role of the state and the family. Scope for better organisation and coordination of long-term care services seems substantial.⁹⁵ The most important policy options for improvement of long-term care include supported self-care and home-based services that enable older people to remain in their own homes or a home-like environment. Systems of long-term care, including respite-care services, can provide support to relatives, and enable them to look after older people without jeopardising their health or economic status.

Interventions are needed that help to maintain the basic activities of daily living of older people, allow ageing at home, and prevent long-term institutional care.⁹⁶ Appropriate services for older people with chronic disease are essential, and should have a particular focus on care settings, such as home care and day care, and take into account complex disorders. Long-term care, social care, and health care should be integrated at different levels of provision.⁹⁷

Work and pension arrangements

Partly in response to concerns about the effect of ageing, many European countries have started reform of public pension systems, including reduction of the generosity of pension schemes, rises in the statutory retirement age, and restriction of access to early retirement.^{10,67,98–100}

However, many people in Europe stop working before reaching statutory retirement age, and EU policies have aimed to increase participation in the labour force at ages 55–64 years (panel 4). These rates vary substantially across Europe. Rates of participation are generally higher in men than in women, but in most countries rates increased between 2000 and 2010 (figures 2, 3).

Changes to statutory retirement ages are particularly politically controversial. However, that the pensionable age (ie, the age at which people can first draw full benefits without actuarial reduction for early retirement) fell in many European countries in the 1970s and 1980s as life expectancies increased should be noted. Many countries have attempted to increase pensionable ages and reduce the gap between men and women in terms of pensionable ages (figure 4, appendix). However, life expectancy is expected to grow faster than these increases in pensionable age.¹⁰⁴

Minor changes can also yield substantial benefits. Increases in statutory retirement age of 1·2 years every 10 years, in line with expected increases in life expectancy, could stabilise the ratio of workers to non-workers in the EU.¹⁰⁵ Some countries, such as the Czech Republic, Denmark, Hungary, and Portugal, have advanced further in their reforms than have others (such as Belgium), and have sharply reduced the projected increase in public pension expenditure (table).¹⁰

For increased retirement ages to be fair, socioeconomic inequalities in health should be taken into account. Workers in low-income occupations or with little education, or both, not only usually start their working careers younger, but also have shorter median remaining life expectancies at standard retirement ages than do those with high-income occupations or high levels of education.¹⁰⁶ Additionally, their health status at ages 60–70 years is usually worse because of large socioeconomic inequalities in healthy life expectancy.¹⁰⁷ Therefore, differentiation of retirement age by socioeconomic groups might be appropriate and even inevitable.⁸⁶

Employment and retirement policies—which are the result of many factors, and only one of which is related to ageing—can help to make public expenditure sustainable, and can contribute to successful and healthy ageing,¹⁰⁸ at least in professions that are not so physically demanding and when the policies are based on older workers' consent, because working until an older age can maintain social integration and self-esteem.⁶⁵ Absence of social interaction is a risk factor not only for depression but also for cognitive decline, both of which are serious and very costly disabling disorders in older people.¹⁰⁹

New work arrangements (such as those outlined for health workforces) can be crucial, and might allow older people to remain in the workforce, for example on a part-time basis.^{2,63} However, integration into society can also be achieved through participation in communal activities, such as work with charitable or community organisations.⁶⁵

Conclusion

The unprecedented ageing of European populations presents new challenges to health, long-term care, and welfare systems. Irrespective of a potential compression of morbidity, the numbers of older people with cancer, fractured hips, strokes, and dementia will increase, and many older people will have multimorbidities. However, projected increases in health expenditure as a result of ageing are slight and ageing does not present a fundamental threat to the European welfare state. However, many options are available for adaption of health care, long-term care, and welfare systems to better meet the needs of ageing populations.

Contributors

The authors jointly conceived the structure for the paper on the basis of a request from *The Lancet*. BR wrote the first draft, which the other authors subsequently revised. All authors have seen and approved the final paper.

Conflicts of interest

We declare that we have no conflicts of interest.

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