Healthy ageing: the role of health care services

Abstract

The implications of the imminent surge in population ageing for the work of health care services in high-income countries remain unclear. It is widely expected, however, that the prevention and management of chronic disease will increasingly dominate their workload, and that this is likely to require a major shift in the way that care is delivered. This paper argues that the central contribution of health care services to a healthy ageing strategy is to drive improvements in the prevention and management of chronic disease, and it explores some of the implications of this view in the light of evidence mainly from the UK.

SIGNIFICANCE AND IMPLICATIONS OF POPULATION AGEING

Most countries outside sub-Saharan Africa are on the verge of a significant acceleration in population ageing (Figure 1). The numbers of older adults are forecast to increase, mainly because of continuing falls in late-life mortality. The effects of a mid-century baby boom are also, however, significant in many high-income countries, including the UK and the USA. The impact of this absolute growth on the relative size of the older population has been compounded by sharp declines in fertility to below ‘replacement’ levels, especially in Europe and East Asia, and population ageing will proceed farthest and fastest in countries with the lowest fertility.

Policy makers have been worried for some time about the implications for health care services of rapid growth in that segment of the population that is most susceptible to life-threatening or disabling chronic disease. Will it lead to a surge in demand that is large enough to undermine attempts to achieve what has become a paramount goal for health policy in rich countries, namely, to improve the quality of care while avoiding unsustainable increases in spending? In recent years, as projections for a demographically driven surge in demand have been dampened by a considerable body of economic and epidemiological research and analysis, these concerns have been much qualified. Results from many different attempts to model increases in aggregate health spending over the last few decades (nationally and internationally) support the conclusion that growing affluence and technological innovation are much more important as drivers of expenditure trends than ageing. In addition, analyses of the concentration of lifetime health spending for individuals in the last months of life have shown that the impact of population ageing is greatly exaggerated in projections that work directly from current age profiles of expenditure and ignore the tendency of improvements in remaining life expectancy to reduce per capita health spending among older age groups. Even with these qualifications, however, it is still deemed sensible by many analysts to assume that an acceleration in the rate of population ageing will make it more difficult for modern health care systems to provide satisfactory care at a reasonable cost. The case for caution is buttressed by continuing disagreements and uncertainties about how best to explain growth in health spending.

The other main reason for taking a less pessimistic view of the implications of population ageing for health policy is to be found in the evidence for steady improvements in the health status of successive cohorts of older people in some high-income countries. Extrapolations from recent trends in disability-free life expectancy point to likely future improvements in the health status of successive cohorts of older people in some high-income countries. The interpretation of evidence on trends in the health status of older populations is no easy matter, however, and there are enough inconsistencies in results from studies...
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using different measures of health status over different time periods for some commentators to conclude that we simply do not know whether improvements in health expectancies are keeping pace with improvements in life expectancy.11,12 It is nevertheless possible to piece together a consistent story that makes sense of many of the divergences in the evidence. There is, for example, a plausible story to tell about why an expansion of morbidity (diagnosed disease) might accompany a compression of disability;13 or why an expansion of more moderate levels of disability might accompany stable or decreasing rates of severe disability.14,15

There is also evidence from both Europe and Japan of a break in trends in the 1990s: health expectancies at older ages improved until the 1990s, since then they have been mostly stable.16,17 Finally, it is notable that while there has been a compression of disability in some high-income countries (although even this is disputed, especially in the case of the USA),18,19 others have seen either no improvement, or an expansion of disability.20 A recent review of the evidence bearing on precisely these differences concluded rather worryingly that although the countries with the highest life expectancy tend also to have the highest healthy life expectancy, the strongest growth in health expectancies seems to have occurred in countries that are laggards rather than leaders in longevity improvement (e.g. USA, Netherlands, Denmark). In other words, they are catching up.21

Studies of disease incidence and prevalence further complicate an already complicated picture. Results from repeated applications in different countries of the IMPACT model for coronary heart disease (CHD) mortality show that underlying improvements in population health account for about half the massive decline in CHD deaths over the last few decades,22,23,24 and we would expect a decline in the incidence of CHD to have a positive effect on healthy life expectancy as well as life expectancy.25,26 Gains that have been partly driven by big changes in smoking behaviour may, however, be reversed by the increasing prevalence of obesity.27

There are, moreover, at least two major diseases of later life where the evidence for declining incidence seems at best weak, namely cancer and dementia;28,29 and one condition, namely type 2 diabetes, where the central expectation is for age-adjusted incidence rates to increase.30 Hence, we should expect very substantial increases in the numbers of older people requiring treatment and care for these conditions. There is also a growing body of evidence of the impact that improvements in disease-specific mortality have on disease prevalence. In the UK, for example, it seems clear that CHD mortality is falling faster than disease incidence, which points to an increase in the proportion of the older population receiving treatment for a heart condition.31

### Changing Patterns of Chronic Disease

Although most analysts who ask about the implications of population ageing for health services focus exclusively on estimates of the amount of additional ill-health or additional spending that might be attributed to demographic change, its impact on the kinds of health problems that will require the attention of health services may be at least as important. This is most apparent in developing countries that still find themselves in the middle of an epidemiological transition from a situation in which most serious health problems result from infectious and parasitic disease to one in which chronic disease is the main cause of serious ill-health and disability. Improving life expectancy is accompanied with the increasing prevalence of risk factors for chronic disease to generate a growing burden of late-life chronic disease. These countries have to get much better at preventing and managing chronic disease.

As for high-income countries, it seems clear that as a result of population ageing their health systems will also be increasingly dominated by the challenge of complex chronic disorders.32 In this case, however, we have to ask about the epidemiological consequences of continuing increases in average longevity in low-mortality populations. Will these countries find that an epidemic of heart disease has been replaced by an ‘epidemic of frailty’?33 What is significant about this change from the point of view of prevention is that the contribution of those degenerative conditions for which advanced old age is the main single risk factor is increasing relative to the contribution from chronic diseases for which lifestyle and aspects of the social environment are major risk factors.

### The Prevention and Management of Chronic Disease

High-income countries, unlike middle- or low-income countries, have already had several decades to adapt their health
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services to the challenge of chronic disease, most notably in response to the epidemic of heart disease. As well as investing heavily in the development of secondary prevention, most of these countries will have implemented some kind of risk-reduction strategy for the general population. They will have got used to the idea that late-life chronic disease requires a proactive approach to care. They have also had time to accumulate considerable experience in handling the complex connections between different ‘levels’ of care in the treatment of chronic disease, and it seems unlikely that they are not well aware of the importance of coordination between different care settings and types of care. \(^{34}\) None of this implies, however, that they are properly geared up to meet the challenge of complex chronic disorders.

As far as prevention is concerned, there is considerable consensus around the view that the development and implementation of a more effective strategy for age-related disease and disability is one of the main policy challenges associated with population ageing. \(^{35}\) Preventive strategies that succeed in delaying the need for medical intervention to deal with the more serious health problems of later life offer the prospect of considerable benefits to ageing societies. \(^{36}\) As well as helping to contain demographically driven increases in spending on health and long-term care, they would enable individuals to work for longer, and also to be active for longer in providing valued help to their families and local communities.

The view that most high-income countries still have a lot to do if they are to provide effective and patient-centred care for growing numbers of people with chronic disease is widely shared. \(^{32,37}\) The argument is frequently made that health care services in these countries have been built around an acute episodic model of care that is no longer suited to epidemiological circumstances. Services have to learn to provide person-centred rather than disease-centred care. They have to get better at proactively seeking need rather than responding to demand, at involving patients in their own care, and at using alternative care settings to hospitals. The balance between prevention and treatment is still tilted too much towards reactive interventions. This does not mean simply that more should be done to prevent the onset of chronic disease in people who do not have it. The point is rather that the management of people with chronic disease should involve a proactive and preventive approach to the provision of care. This interdependence of prevention and management in chronic disease care is made explicit in a widely cited summary of its aims, which are ‘to enhance functional status, minimise distressing symptoms, prolong life through secondary prevention and enhance quality of life’. \(^{38}\)

**STRATEGIES FOR HEALTHY AGEING?**

Although definitions of healthy ageing vary (by taking a more or less extended view of health-related quality of life), the core idea is that a successful healthy-ageing strategy should add ‘life to years as well as years to life’. \(^{39,40,41}\) It has to prevent diseases that are disabling but not life-threatening, as well as diseases that are life-threatening. Disease prevention is, moreover, only part of the challenge. A successful strategy must also reduce the impact of chronic disease on the lives of people who have it. Although it is now acknowledged that prevention is, moreover, only part of the challenge. A successful strategy must also reduce the impact of chronic disease on the lives of people who have it. Although it is now acknowledged that a truly comprehensive healthy ageing strategy should include interventions at all ages, \(^{42}\) including the earliest years of life, their content is often conceived more narrowly with a focus on older age groups. \(^{39}\) The tripartite structure in Figure 2 outlines the three main components of this more age-specific content: better choices by individuals; better health care technologies and; better health care delivery systems.

Government, and this cannot be left to health services alone, has to find ways of encouraging and enabling people to become more effective agents in looking after their own health. It is well understood, furthermore, that simply providing people with information and exhorting them to take responsibility will not work. \(^{43}\) If governments want people to make better choices, they have to think about modifying social environments that constrain choice, as well as the balance of incentives and disincentives that shape default choices over a wide range of health-related behaviours. This component of a healthy ageing strategy will inevitably build on

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**Figure 2**

**Three components of a healthy-ageing strategy**

- Encouraging and supporting self-efficacy in health
- New technologies and advances in medicines
- Pro active health and social care

- Preventing onset of age-related disease and disability
- Minimizing impact of age-related disease and disability

Healthy ageing
established primary prevention programmes that target known risk factors for heart disease, cancer and diabetes.\textsuperscript{44} To be applicable to the circumstances of most older adults, however, it has to extend its remit to include people with chronic disease and functional impairments as well those without. How this might be done is well illustrated by recent attempts to formulate policies to improve and maintain health and mental ‘capital’ across the life course,\textsuperscript{45} as well as in policy discourse about improving health literacy\textsuperscript{46} and patient engagement.\textsuperscript{47}

The second component in a healthy-ageing strategy is the promotion and diffusion of biomedical and technological innovation. There is a reasonable expectation that new technologies and drugs will help to minimise the impact of chronic disease on the lives of people who have it, either by halting or slowing down the progression of disease or by restoring function where it has been impaired or lost.\textsuperscript{57} There is, in addition, the prospect of interventions that target (i.e. slow down) the ageing process rather than disease processes, and for many analysts and researchers, investment in this line of research offers the best chance of: (1) making substantial gains in healthy (or disability-free) life expectancy; and (2) containing demographically driven increases in health spending.\textsuperscript{48,49}

The final component in a healthy-ageing strategy is the reconfiguration or redesign of health care delivery systems for people with age-related disease and disability.\textsuperscript{7} The conviction that there are considerable gains to be made with existing health technologies is part and parcel of the view that many ageing societies with advanced and high-spending health care systems have a long way to go in improving the management and care of people with chronic health problems. Although the investment in this case is not in new technologies but in organizational change, there is nonetheless investment to be made, and this includes not just the costs of organizational ‘transition’, but also the costs of becoming more proactive in identifying and managing need.

**EFFECTIVENESS IN THE PREVENTION AND MANAGEMENT OF CHRONIC DISEASE**

Health care services have a role to play in all three components of the strategy. As well as having a part to play in primary prevention it also falls to them to ensure the uptake and appropriate use of new technologies. However, when it comes to redesigning the way in which health care is delivered for people with age-related disease and disability, they clearly move centre stage. Although much is made of the potential economic benefits of adopting a more proactive approach to the prevention and management of chronic disease in the older population,\textsuperscript{50} there would be little point in giving these changes a leading role to play in a healthy ageing strategy if this were the only rationale for driving through the relevant organizational changes. There is a general expectation that investment in the right kind of ‘upstream’ care will not only reduce costs incurred in providing ‘downstream’ care in the form of hospital admissions (or indeed care home admissions), but it will also lead to improved effectiveness and equity in the prevention and management of chronic disease among the older population.

This expectation has to be evaluated in the light of existing efforts in the UK and most other developed countries to improve preventive care for chronic disease. They have already invested heavily (often by introducing appropriate incentives for providers) in the detection and control of known risk factors for heart disease, as well as in the early identification and treatment for cancer. More recently, the rapidly increasing prevalence of type 2 diabetes has pushed health care services into making analogous investments in improving case-finding and proactive care. Nor can there be much doubt that these efforts have paid off. In the UK rates of detection and treatment for hypertension in the older population have improved considerably since the 1980s and 1990s,\textsuperscript{51} certainly enough to overturn the ‘rule of halves’,\textsuperscript{57} although it has been more difficult to achieve desired levels of optimal control.\textsuperscript{52-54} Evidence on the impact of the Quality Outcomes Framework (QOF) on the quality of preventive care does, however, suggest that here too there have been improvements.\textsuperscript{55} There is good evidence, furthermore, that the UK primary care system has got better at controlling blood pressure in people with diagnosed cardiovascular disease,\textsuperscript{56} and in this group at least, old age is no longer so strongly associated with poor control.\textsuperscript{57}

The fact that the story is broadly positive does not mean that there is no scope for making further health gains by doing more of the same and doing it better. In the UK, for example, there is concern over low levels of routine drug treatment as secondary prevention for people with stroke,\textsuperscript{58} and low rates of referral of older people for cardiac rehabilitation.\textsuperscript{59} Undiagnosed diabetes, moreover, remains a serious problem. It has been estimated that approximately 40% of cases in the older population are undiagnosed,\textsuperscript{60,61} although there are signs of improvement in a more recent study using data from the English Longitudinal Study of Ageing,\textsuperscript{62} and undiagnosed disease seems to be quite rare in the ‘older-old’ population.\textsuperscript{63} This is not to say, however, that there is a general consensus about the merits of efforts to extend the application of established models of risk reduction for chronic disease—especially drug treatment to control risk factors—to a still larger proportion of the older population, especially the older-old. Doubts about this strategy have been raised, not only in relation to the widespread prescribing of statins in this population,\textsuperscript{64} but also concerning the detection and treatment of hypertension. The high prevalence of hypertension in the older population (>65% in the UK) means that there is a good cost-effectiveness case for putting additional resources into forms of primary prevention that would reduce prevalence,\textsuperscript{65,66} instead of using them to expand the capacity of health services to reduce risk by providing effective drug treatment.\textsuperscript{67} The case for more vigorous efforts at primary prevention has received further support by the finding that decreases in blood pressure in the last 20 years have been largely confined to medication users.\textsuperscript{68}
Another important question to ask about this third component of a healthy-ageing strategy is whether—and how—health services should be extending their view of the kinds of health problem that preventive care has to address. The main argument here is that there are significant health gains to be made by delivering more proactive care to the ‘older-old’ population. Increasing longevity offers new challenges and opportunities for preventive care by focusing on the needs of a target population characterised by a lack of physiological resilience and recuperative power as well as by a high degree of vulnerability to various kinds of acute complication incident on multiple chronic conditions. Health services have to get better at delivering the kind of ‘patient-centred’ chronic disease care that merges prevention and clinical management,37 and they also have to get better at early intervention to prevent or reverse the onset of frailty.69 These requirements are given added urgency by the fact that this population is at high risk of unplanned hospital admissions and readmissions, which is why their rapidly increasing numbers threaten to generate serious workload problems for the acute sector.

It is one thing, however, to urge health services to combine a more proactive approach to care for the ‘older-old’ population with a more extended view of the content of preventive care, and quite another to specify how this should be done. Although there is a strong groundswell of opinion in favour of a broad reorientation of health services to a chronic care paradigm, and it is possible to piece together the outlines of a strategy for achieving the desired change,37 the evidence base for the selection of detailed prescriptions remains rather thin.32 This conclusion seems, moreover, to apply with special force to the older-old population.70

**EQUITY IN THE PREVENTION AND MANAGEMENT OF CHRONIC DISEASE**

Since more proactive services do not wait for people to present themselves with problems, they should facilitate the development of more equitable access to effective chronic disease care. Distributional concerns have acquired increasing prominence in the formulation of healthy-ageing policy in recent years, mainly because socio-economic differentials in various measures of late-life health (risk factor prevalence, morbidity and disability as well as mortality) have persisted against a backdrop of improvement in population average measures of health.40 Although it is generally accepted that the task of reducing inequalities in healthy ageing involves policy and institutional changes that extend beyond health services themselves, it is also accepted that the provision of services for the prevention and management of chronic disease may be socially patterned in spite of universal health insurance coverage. If these services do indeed make a difference to health outcomes, and provision is socially patterned, then efforts to improve equitable access should have a significant impact on the distribution of outcomes. And there is evidence to suggest that this is now happening in preventive care for CHD.71

Evidence on the social patterning of provision for chronic disease care in the UK is complex. Although lower socio-economic status (SES) is associated with heavier use of general practitioner (GP) services, there has also been a long-standing problem with the relative quality of primary care in more deprived areas. There are plenty of ‘ecological’ studies reporting evidence of inequalities in care between GP practices in more- and less-deprived areas. Since the introduction of appropriate provider incentives in the QOF however, these do seem to have narrowed.56,72 Survey studies of older individuals (mostly quite recent), on the other hand, have not found much evidence of an association between individual SES and the quality of preventive care provided by GPs for cardiovascular disease54,73,74 or diabetes51 or secondary prevention for stroke.56 So, for example, SES in older people is not linked with quality of care indicators such as the likelihood of having a recent blood pressure check or treatment for hypertension or its effective control.

Evidence on the uptake of various preventive services offered to older people presents a rather different picture, however. Recent analysis of participation in a national screening programme for colorectal cancer found a striking SES gradient.75 Similar results have been reported for flu vaccinations and various non-medical health checks for which payment may be required.75 The final layer of evidence on the social patterning of provision for chronic disease care is provided by a variety of studies looking at access to rehabilitative care and specialist care, and it is important to stress that even within Europe the problem is not at all peculiar to the UK.76 As far as the UK itself is concerned, the broad conclusion is that people with lower SES use specialist services less intensively relative to need than people with higher SES.77 This finding has been replicated by a recent study looking exclusively at the older population,78 as well as various studies looking at particular specialist services, including cardiac rehabilitation,58 remedial cardiac surgery,79 and joint replacement surgery.80

**CONCLUSION**

Broad consensus about the essential components of a healthy ageing strategy leaves plenty of room for disagreement about the details of their content as well as the balance to be struck between them. There is no reason to think that all ageing societies will see eye to eye when it comes to spending on biomedical innovation or the scope and limits of government action in changing incentives for different kinds of health-related behaviours. The precise extent and shape of the role of health services in the pursuit of a healthy ageing strategy will depend on how such issues are settled. What I have tried to highlight here is, first, the importance of a reorientation of health services to a chronic care paradigm, although it has to be acknowledged that there is uncertainty about the means required to effect this; and second, the importance of equity in the provision of health care, even if it turns out to have a relatively small impact on securing a more equal distribution of health outcomes.
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