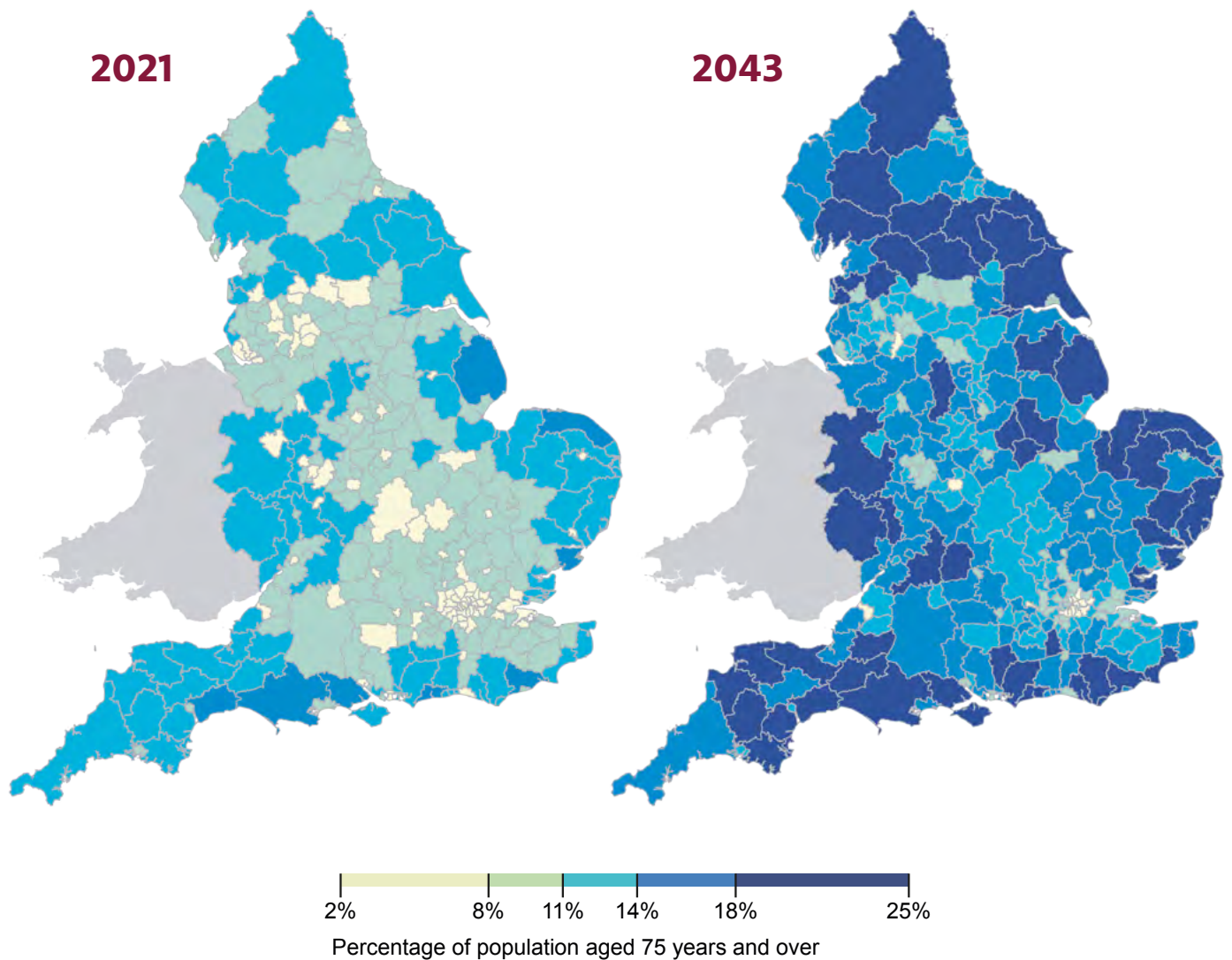


Chief Medical Officer's Annual Report 2023

Health in an Ageing Society

Executive summary and recommendations



Front cover images: Maps of England showing the percentage of the population aged 75 years and over in 2021 and the projected population aged 75 years and over in 2043
Image source: Office for National Statistics

Foreword

One of the triumphs of modern medicine is that the great majority of people live into older age. For many, this is a period of great happiness; freedom to do what they want, the joys of being a grandparent, a respected place in families and in society. At the other extreme, for some older age is a time of great difficulty, with dignity impaired, independence curtailed, and encroaching frailty, discomfort and loneliness. The difference between these two is largely determined by health, physical and mental. Those who enter older age in good health and maintain it to the end have a very different experience to those who rapidly accumulate multiple debilitating or degenerative conditions, living with them for many years.

Older people have essential roles in society, including significant caring responsibilities for younger generations and their peers, and skills and knowledge accumulated over a lifetime. Those living in older age have however always, on average, depended more on family and wider society than they did as young adults and in middle age. Improving and maintaining the health of older adults is a strong social responsibility. The principal reason to support the health of the oldest members of society is for those people themselves. There are, however, additional benefits to partners, family members, health services and wider society if we can minimise the period of ill health and dependence in older age. Even with optimal improvements in health in older age, society needs to provide greater support through health and social care and we need to plan for this as the population ages.

The aim of this report is to concentrate on issues which are about improving the quality of life in an adult's later years, rather than the quantity. Some of the things we can do to allow people to have healthier lives in older age may, as a fortunate by-product, also extend their lifespan, but this report is not concentrating on these areas in particular.

Improving the quality of life can broadly be divided into 1) things which reduce disability and ill health, and 2) things which can be done to adapt the environment to allow an individual with a set amount of disability in older age to live as independent and enjoyable a life as possible. In general, helping people maintain health is the role of public health and medicine. Improving the environment for older adults includes issues around urban planning, building design, social care and aids to independent living. There is of course a lot of overlap; for example, an urban environment which allows older adults to use active transport, especially walking, safely will both improve their current independence and their future health.

The executive summary which follows identifies many of the key issues raised by the report. I would however like to highlight one paragraph each for the general public, policymakers and the medical profession.

For the **general public**, I wish to highlight that most people enter older age, and many remain, in good health. A great many more go through older age in health which is sufficient to have independence and a high quality of life. Most people do not have Alzheimer's or other dementias, or major debilitating conditions, before they die. Older age is often portrayed relentlessly negatively when actually the experience for many in older age is positive. One of the

most satisfying things that doctors experience is caring for women and men of a grand old age facing the end with great serenity and saying 'I've had a good innings' or equivalent. Some of this is due to good luck, but the chances of delaying disease and disability are substantially increased by straightforward measures individuals can take to prevent or significantly delay disease and maintain physical, mental and social activity.

For **policymakers**, the biggest concern I have is that government and professional bodies have not recognised the degree to which the population living in older age is concentrating geographically in the United Kingdom in general, and England specifically. The great majority of people move out of cities and large towns before older age, concentrating geographically in coastal, semi-rural or peripheral areas, often with relatively sparse services and transport links. Manchester, Birmingham and London will age very slowly but areas such as Scarborough, North Norfolk or the south coast are going to age rapidly and predictably. Providing services and environments suitable for older adults in these areas is an absolute priority if we wish to maximise the period all older citizens have in independence. The provision of health and social care also needs to be concentrated in these areas.

For the **medical profession**, wider healthcare professionals and medical scientists I would like to highlight the importance of multiple long-term conditions in older age, often called multimorbidity. This is increasing and will continue to increase in the future. Medical specialisation, specialised NHS provision, NICE guidelines, and medical research are all optimised for single diseases but that is not the lived reality for the great majority of older adults who often transfer very rapidly from having no significant disease states, to several simultaneously. The increasing specialisation of the medical profession runs counter to optimising treatment for this group of largely older citizens and patients. We must address this seriously as a profession.

Overall, this is an optimistic report. The history of the last few decades has been of longer life in a diverse ageing population, but also longer periods of life living with disease and disability. However, this expansion of the period in ill health is not inevitable; compression of morbidity so that people spend less time living with ill health is entirely realistic. If we can push disease out to the right in terms of time so that people develop conditions later, and preferably not at all before they reach their natural end, we can significantly improve the quality of life for older citizens whilst reducing the pressure on health and social care systems. This should be a major aim of policy and medical practice.

In writing this report I benefited greatly from advice from many individuals, specialists and groups around the country, some of whom have kindly authored chapters and others are noted in the acknowledgements section. I would however particularly like to thank Dr Ben Holden who was the editor of this report.

Almost everyone reading this report will know older adults and will grow old themselves. Maximising the health, and therefore the life chances, of older adults should be seen as a major national priority, and one where we can make very significant progress often with relatively straightforward interventions.

Prof. Chris Whitty
Chief Medical Officer for England, 2023

Executive summary

Health in an ageing society

1. **This report is about improving quality of life rather than longevity**

The fact that people are living longer compared to a century ago is a triumph of medicine and public health. It is something to celebrate, but alongside this we have a responsibility in medicine, government and wider society to plan to ensure that older age is as healthy, independent and enjoyable as possible into the future. This report does not aim to advise on how to extend life further, although this may be a positive side-effect of some of the interventions discussed if undertaken systematically. Rather, the focus is on how to maximise the independence, and minimise the time in ill health, between people in England reaching older age and the end of their life.

2. **Ill health and disability in older age is not inevitable**

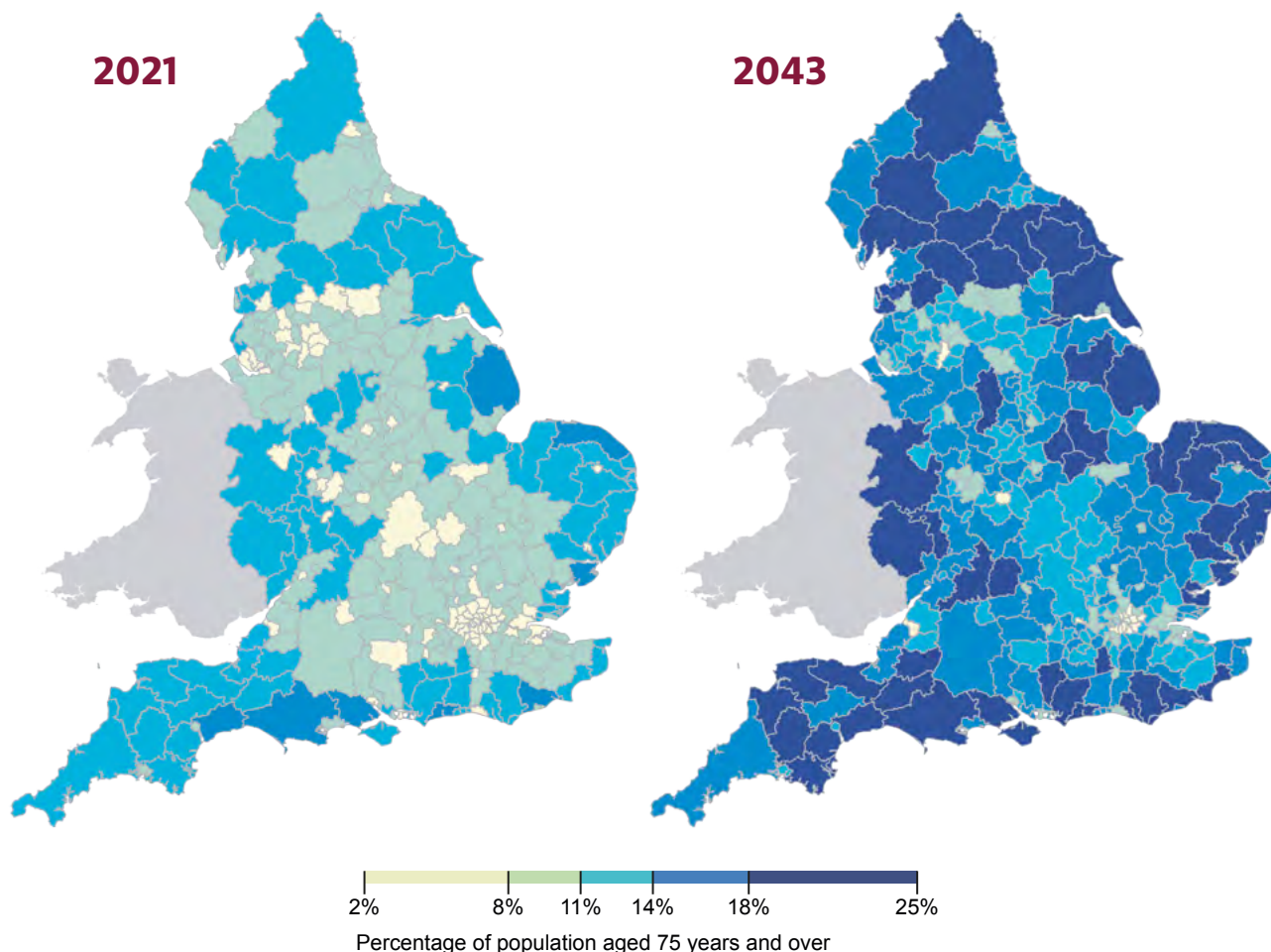
Whilst diseases, long term conditions, and disabilities become more common and accumulate as we become older, they are far from inevitable, even in later years. For example, dementia prevalence in the UK is only around 3% for those aged 70 to 74 years and 11% at 80 to 84 years (in other words, around nine out of ten 80 to 84 year olds do not have dementia); in those aged 90 to 94 years, around seven out of ten will not have dementia.¹ There is often an assumption that people in older age will need a significant amount of care and support, and for many, especially those with frailty, that is true, resulting in a significant loss of independence and often practical and financial strains on families. However, UK census data from 2021 show that around eight in ten people aged over 90 years were not living in care homes and less than 4% of those aged 80 to 84 were in care homes.² There are many straightforward actions that individuals, the NHS and the government can take to reduce risks of dementia, degenerative disease and frailty for future generations still further.

3. **Urban areas are not where the growth in older people is occurring; more peripheral areas are where the increase in need will be seen**

In planning health and social care services, as well as infrastructure, this report makes clear that the geography of older age in the UK is already highly skewed away from large urban areas, and will become more so. A large proportion of people migrate away from cities before they reach older age. The result is that metropolitan areas largely maintain their current demographic, ageing only slowly, while some areas, particularly rural, semi-rural and coastal areas in the periphery, age much faster (Figure 1). The proportion of older adults in some parts of the country will be substantial. At the same time, the proportion of working-age people able to provide care is often reducing in these areas (this is represented by a rising old-age support ratio). Many of these areas are often beautiful and welcoming, but underserved in health care, with less accessible transport links and insufficient infrastructure designed for older adults, including housing. People who have moved to these new areas in later life often do not have the social support networks those born and

bred locally may have. The report gives examples of how local teams from around the country are supporting older adults in some of these areas.

Figure 1: Map of England showing the projected rise in the percentage of the population aged 75 years and over



Source data: Office for National Statistics (ONS), 2021 mid-year estimates by local authority,³ and 2018-based subnational population projections for 2043⁴

4. Maintaining independence both by reducing disease and adapting the environment

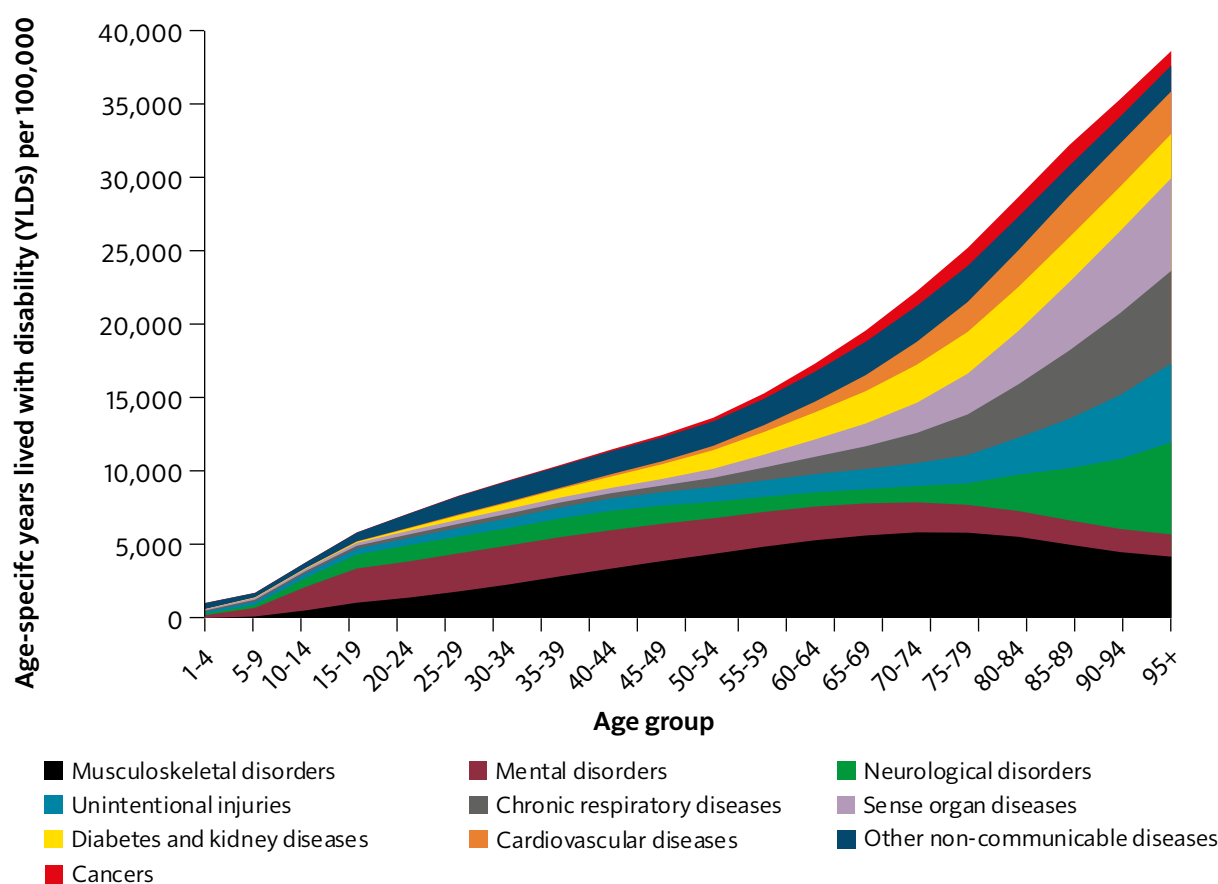
We can maintain people's independence via two broad approaches, which are complementary. The first is to reduce disease, including degenerative disease, to prevent, delay or minimise disability and frailty. A healthier person will maintain their independence longer in any given environment. It is likely they will also have greater enjoyment of life. The second approach is to change the environment so that, for a given level of disability, all people can maintain their independence longer. We must do both.

5. Delaying disease onset enables adults to live for a much shorter proportion of life with significant disability

People experience more ill health (morbidity) and disability in later life (Figure 2). The principal aim of prevention and treatment for those in older age should be to compress the period spent living with ill health by delaying disease onset. Contrary to the assumption by many that as the population grows older the length of time spent in ill health must

inevitably rise, it is possible to compress the period of ill health if we are systematic about delaying disease. If we delay the point at which people get life-limiting disease for as long as possible, disease may occur only shortly before their eventual death, or not at all. Systematically shifting disease out to the right in time can increase people's independence in older age and decrease their period of dependence on others. If someone who dies at 87 years of age would have developed heart failure at age 80, but onset is delayed until age 85, they will live with it restricting their life for 2 years rather than 7; if we can delay disease onset to age 88 it will never be a life-limitation at all.

Figure 2: Causes of years lived with disability across age groups in England, 2019



Morbidity rate by age and top 10 broad causes, age-specific years lived with disability (YLDs), persons, England, 2019

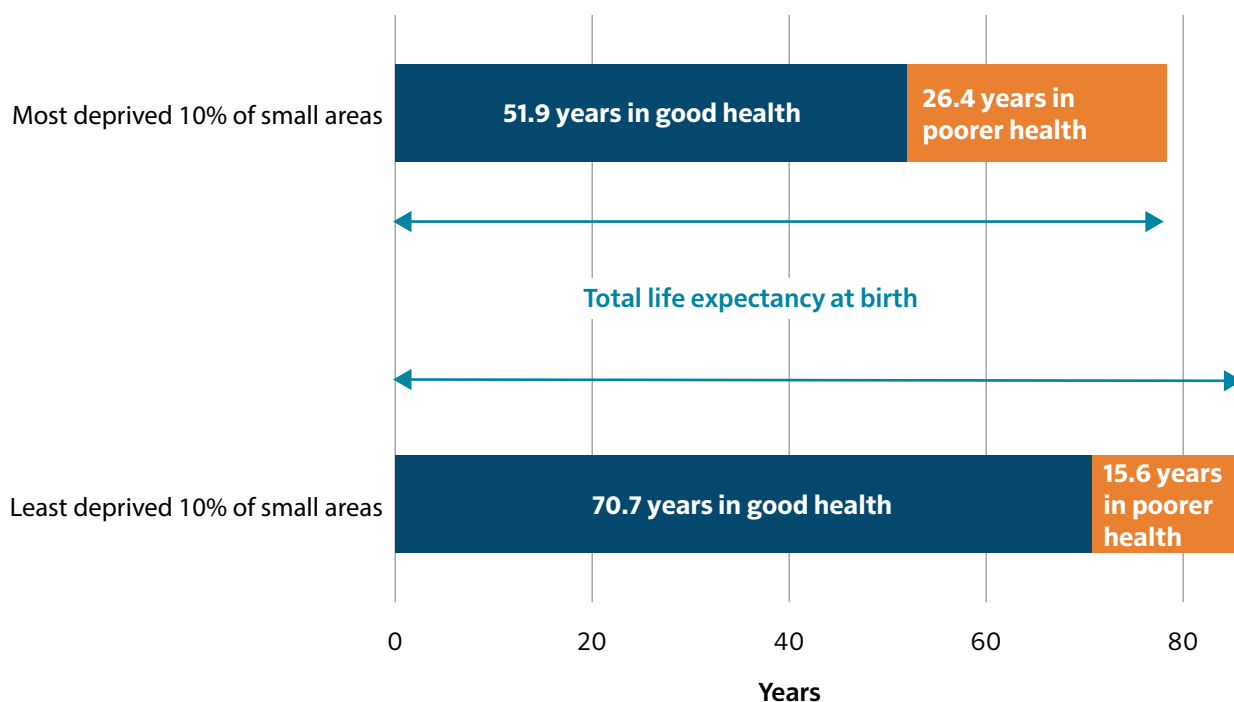
Source data: Global Burden of Disease Study 2019 (GBD 2019), Institute for Health Metrics and Evaluation (2020)⁵ – Used with permission. All rights reserved.

6. The importance of primary prevention by government and secondary prevention by the NHS

Public health measures include both primary prevention by central and local government to reduce risk factors for disease, and secondary prevention by the NHS to slow down early disease. Both can delay, and therefore shorten, the period of life in ill health. The fewer diseases that an individual has, and the shorter the amount of time they have them for, the better their quality of life is likely to be. We all age identically chronologically and eventually die, but biologically some people age substantially faster than others. This inequality in the rate of biological ageing is largely preventable and is affected by the social and economic environments that people live and work in. This can be seen by the significant gap in

effective biological age experienced by those living in poverty and deprivation who experience multiple risk factors across the life course such as exposure to smoking, air pollution and access to green space, compared to those living in the least deprived areas (Figure 3).

Figure 3: Inequality in life expectancy and healthy life expectancy at birth for females in the most and least deprived areas in England, 2018 to 2020

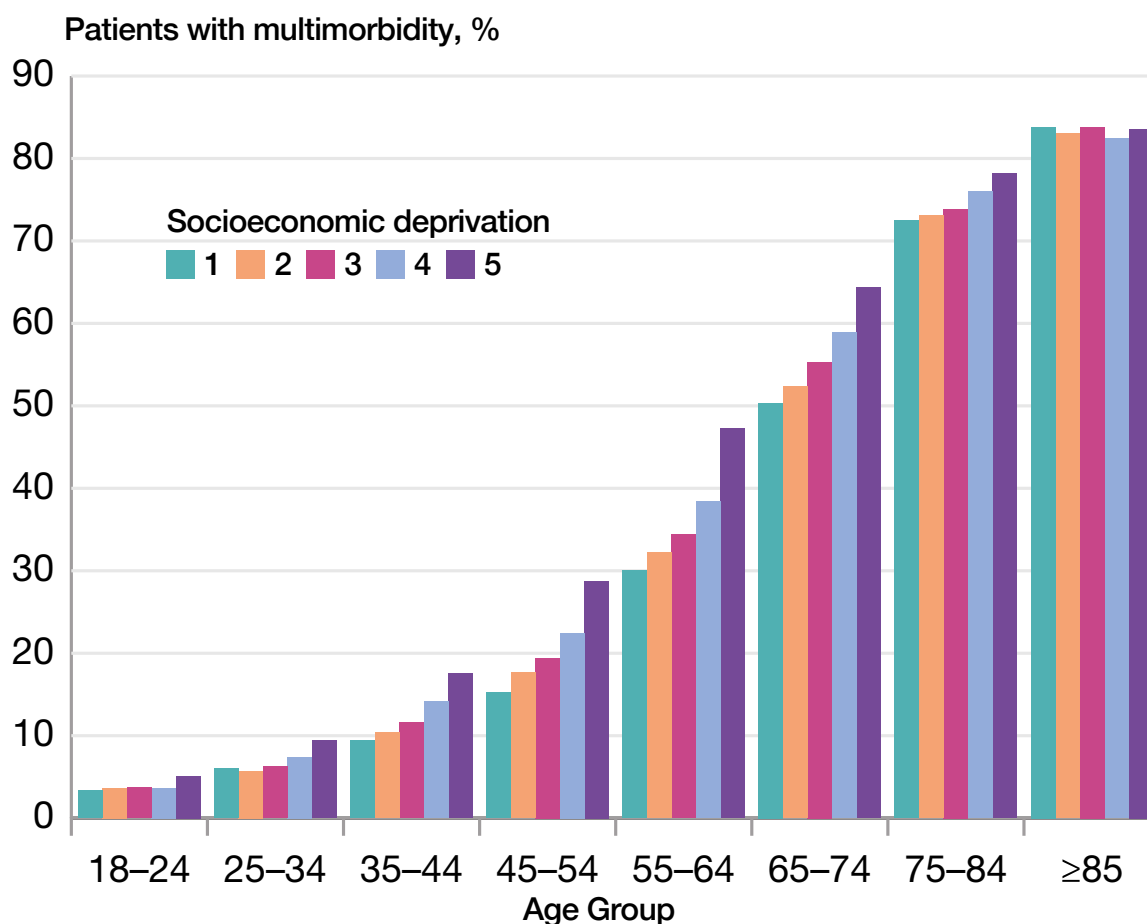


Source data: Office for National Statistics (ONS), Health state life expectancies by national deprivation deciles, England: 2018 to 2020⁶

7. Multimorbidity is increasing; medical science and the medical profession must respond

With older age comes an increasing probability of an accumulation of chronic diseases, sometimes called multimorbidity (Figure 4). These diseases can interact, meaning that an older adult who could have maintained independence and quality of life with one of these diseases struggles to do so with the combination. Much of the medical profession is organised around single diseases or single organ systems in a way that is ill-suited to a future of increasing multimorbidity. People can spend their time going to multiple unrelated specialist clinics, be on several care pathways and are prescribed multiple medications (polypharmacy). Medical science is not yet tackling multimorbidity as effectively as it has single diseases or organ systems. The medical profession and the NHS need to respond to the rise of multimorbidity; further sub-specialising training and clinical care is obviously not the correct response on its own. It is essential that doctors maintain generalist skills alongside their specialist ones.

Figure 4: Prevalence of multimorbidity (2 or more conditions) by age and deprivation



(Index of Multiple Deprivation quintiles: 1 = least deprived, 5 = most deprived)

Source data: Cassell A and others (2018). The epidemiology of multimorbidity in primary care: a retrospective cohort study. *British Journal of General Practice*⁷

Image source: Chief Medical Officer's Annual Report 2020, Health trends and variation in England

8. Frailty overlaps with, but is not the same as, multimorbidity

Frailty is used to describe a state of health experienced by some generally older adults. It describes how some individuals lose their in-built reserves and become increasingly vulnerable to sudden changes in their health, which may be triggered by events such as an infection or change in medication or environment. Clinically, frailty is used to identify the group of older people who have the highest risk of adverse outcomes such as disability, falls, hospital admission, and the need for long-term care. Early identification of frailty can slow its progression and delay loss of independence. Frailty is not the same as multimorbidity, but there is often overlap. It is estimated that around 70% of adults living with frailty have multimorbidity, but less than a fifth of older adults with multimorbidity are living with frailty.⁸ There are inequalities in frailty prevalence, with higher rates and earlier onset in areas of deprivation.

9. Environmental adaptation allows older adults to maintain independence and quality of life

If as a society we wish people with typical disabilities of older age to maintain their independence and quality of life, not heavily dependent on other people or the State, we

need to ensure the environment, and in particular the built environment, is adapted and optimised for them. Since the geographical concentration of older adults is so clearly and predictably going to be in certain parts of the country, we need to improve the infrastructure for older adults and others with disability rapidly in those areas. This includes transport, access to places of leisure and exercise, and housing. Much of the housing stock is designed for younger families rather than older adults, who sometimes live alone. It will be considerably easier to plan and build for this future of a predictable heavy concentration of older adults in particular geographical areas if we do it now, rather than trying to retrofit at scale later. For example, this is far more urgent in parts of Suffolk than it is in central Manchester.

10. Mental health needs in later life are rising

Alongside the projected rise in the number of age-related health conditions such as arthritis, cardiovascular disease, sensory loss, lung disease, and dementia, there is growing concern regarding the rise of mental health conditions in older age. Older adults can have mental health problems such as depression and anxiety, although these often manifest differently in older age. Renewed focus on mental health improvement interventions and services for older adults is key to improving overall quality of life in people's later years.

11. Improving quality of life in older age sometimes means less medicine, not more

It is essential that all patients, but especially those in later old age, are able to have realistic discussions with their doctors about whether more treatment will improve quality of remaining life. Some treatments may extend life but at the expense of reducing its remaining quality and independence; the decision about how to balance these should be the patient's. This needs full and realistic information from their medical advisors. Examples might be major operations, or chemotherapy, or continuing drugs which have side effects and whose principal aim is to extend life, or repeated admissions to hospital. In medicine it is often easier to do more things, even when it is far from clear that quality of life will increase as a result. Over-treatment is as inappropriate as under-treatment in all patients, including older patients. Greater use of advance care plans can help avoid over-treatment especially when out-of-hours doctors and carers may be less familiar with someone's wishes.

12. Research often excludes older adults; they should be the main focus of much of our research

Research often systematically excludes older adults, despite the fact that the great majority of ill health is concentrated in this population. It should not be acceptable, for scientific reasons if no other, to have trials and studies where age or multimorbidity are contraindications to enrolment. There is extremely exciting research into the processes of ageing and how these can be delayed. Although there are significant research programmes on improving the health of older adults, there is a relative dearth of research activity in the older age group. Some areas, such as social care and frailty in older age, and ageing in ethnic minority populations are significantly under researched. There are several research gaps, including into the much greater risk of infections in older adults, outlined in this report.

13. Focus where the need is greatest

If we can achieve shorter periods in ill health and an easier environment for those with disabilities, concentrating on areas of the country where the need is clearly going to be greatest, we can significantly improve the outlook for those in older age. The aim to maintain independence for the longest possible time is achievable if we are systematic in our approach. Conversely, if we choose, ostrich-like, to ignore the growing concentration of older adults and their inevitable healthcare needs in these geographical areas, we are not undertaking proper responsible planning and will have a far harder landing as the population in those areas inexorably age.

Recommendations

- A) Older age is becoming increasingly geographically concentrated in England, and services to prevent disease, treat disease and provide infrastructure need to plan on that basis. This should be seen as a national problem and resources should be directed towards areas of greatest need, which include peripheral, rural and coastal regions of the country. The **NHS, social care, central and local government** must start planning more systematically on the basis of where the population will age in the future, rather than where demand was 10 years ago. This includes building or adapting housing and transport to be appropriate for an older population.
- B) **Central and local government** (the State) have the principal responsibility for environmental factors which can delay or prevent the probability of early ageing (**primary prevention**). Making it easy and attractive for people to exercise throughout their lives is one of the most effective ways of maintaining independence into older age. Reducing smoking, air pollution and exposure to environments that promote obesity are other examples where the State has a major role to play in delaying or preventing ill health and disability over a lifetime and into older age.
- C) Delaying disease to the greatest possible extent, to delay the period of disability in older age, should be the aim of public health and medicine. Science is continuously developing new tools to help do this, but we are often extremely poor at maximising the use of the tools we have. The longer people live with risk factors such as hypertension or high cholesterol the earlier the start of their disabilities will be. **Secondary prevention** is predominantly the responsibility of the **NHS** but is currently under-prioritised. **Screening programmes** help to delay or stop the onset of serious disease and therefore prevent ill health in later life. It is essential that we prioritise secondary prevention and screening services, and to do more to extend these services to groups with reduced access and historically low uptake.
- D) The **medical profession** needs to respond to the inexorable rise of **multimorbidity**. The single most important way to achieve this is to recommit to maintaining generalist skills as doctors specialise. **NHS** organisations also need to minimise the probability that the same person has to attend multiple clinics for a predictable cluster of diseases.

- E) The health and care needs of older adults are often not recognised because the relevant data are not systematically collected or aggregated in one place. For example, epidemiological data on health conditions contributing to disability such as hearing loss and mental health is not routinely available for older adults. To plan appropriately, organisations including the **NHS, Office for National Statistics (ONS), and central and local government** need systematically to collect and share data on the health and care needs of older adults, including by ethnicity, sex and other protected characteristics.
- F) I have put a number of recommendations around research into the chapter on **research for scientists and research funders**. Three in particular are worth highlighting. The first is that it should be unacceptable to have exclusion criteria based on older age or common comorbidities. The second is that research into multimorbidity, frailty and mental health needs to be accelerated. Thirdly, social care research needs to be a core component of health research programmes. The lack of inclusion of social care in health research is a significant gap.

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Editor and chapter authors

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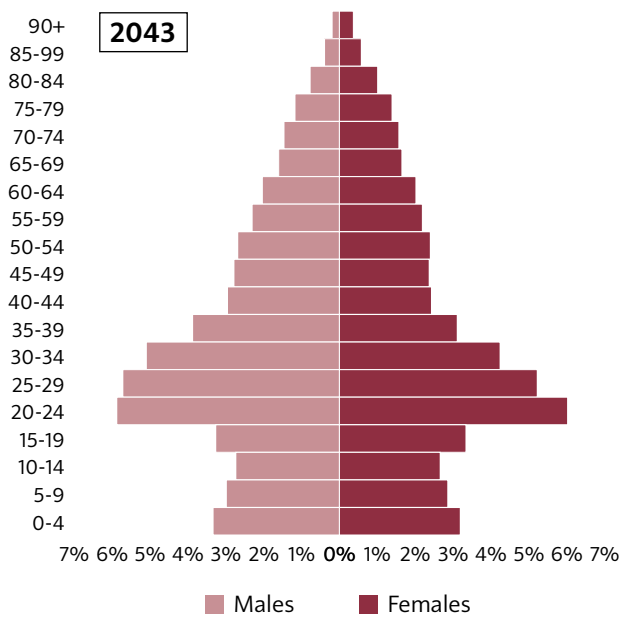
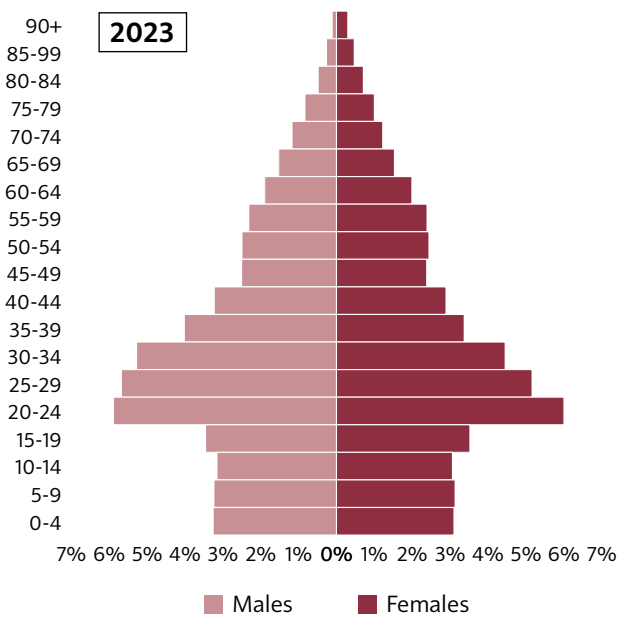
7.2 Can we prevent ageing-related multimorbidity and frailty? The new geroscience approach

Appendix A: Research and innovation

Appendix B: Definitions and data sources

Acknowledgements

Manchester



North Norfolk

