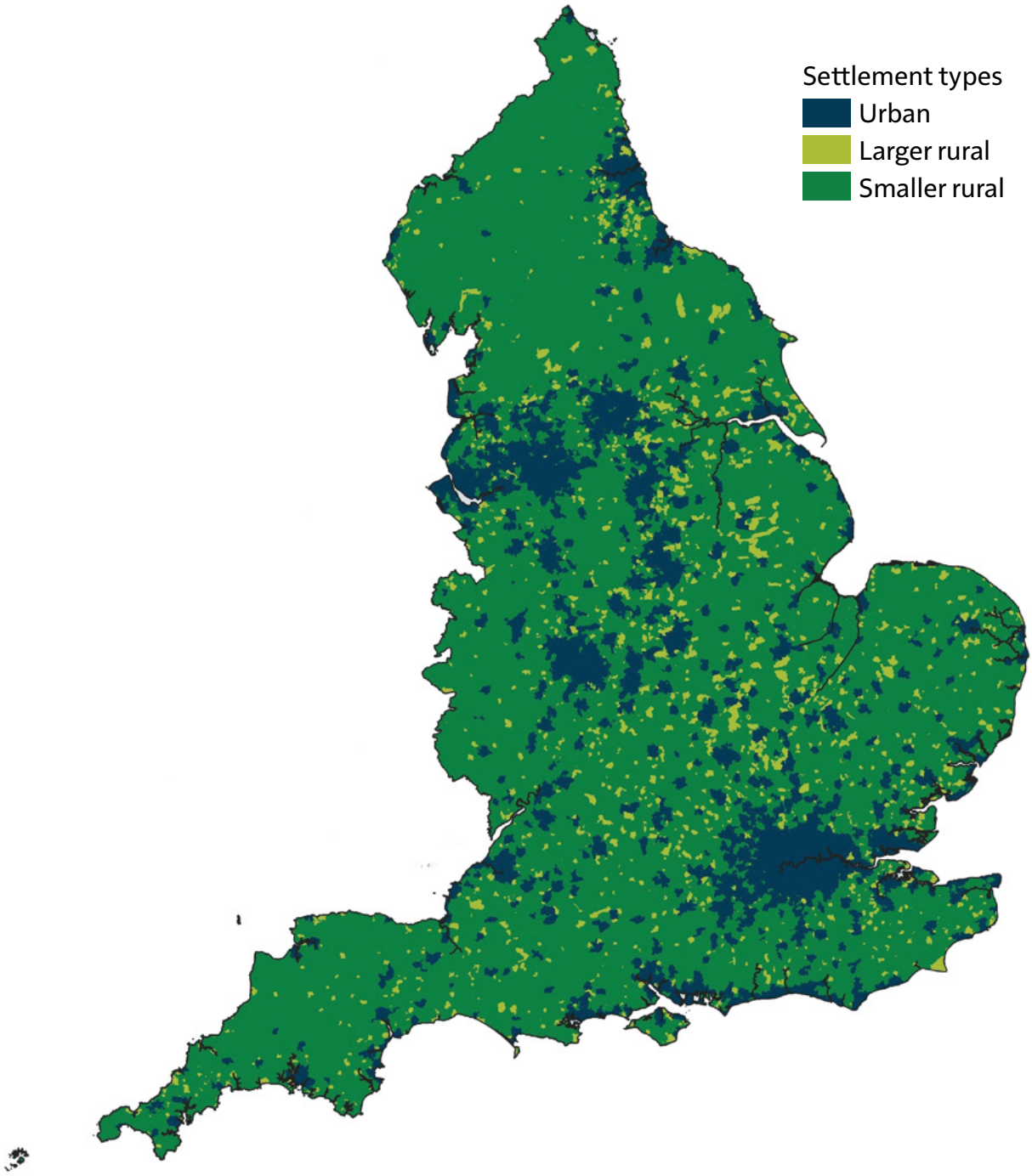
Chief Medical Officer's Annual Report 2026

Health in Rural Areas and Small Towns



"Map of the 2021 Rural-Urban Classification Output Area settlement type, England." Office for National Statistics licensed under the Open Government Licence v3.0. Contains OS data © Crown copyright and database right 2026.

Foreword

Whilst most people in England live in cities, the great majority of the country's landmass is rural, populated with people living in small towns or scattered communities. The urban majority depend on rural England, often without giving it much thought except as a very beautiful place for leisure – which it is. Some critical sectors rely on rural areas including agriculture and forestry, much of the armed forces, and several industries which need to be sited away from cities or require large amounts of land. Families associated with several of these sectors have particular health challenges.

Many people move from cities to small commuter towns when they start families or retire to rural areas, whilst young adults often leave rural areas for cities to study or work. Due to this internal migration the rural population is significantly older on average than in the cities. The rural and small town population is therefore not an urban population more widely dispersed, but systematically different in a number of ways important for health and healthcare provision.

Rural poverty is often unseen, poorly measured, averaged out with more affluent areas or not registered in national statistics. Work in some important rural sectors including farming and tourism can be seasonal and low paid. Limited or non-existent public transport makes access to a car and being able to drive often essential for work.

The sparser population also means that healthcare is more spread out, with even primary care often distant and secondary care a day's round trip. There is also less capacity to sustain specialist services which are common in cities. The lack of regular public transport is one of the key challenges of providing health and social care in rural areas. Those who do not have a car or cannot drive due to illness may find accessing general practices difficult and secondary care (for example outpatient clinics) even more so. Social care and health workers often rely on public transport. If people cannot drive safely this can be much more isolating than in cities with dense public transport networks.

Set against these challenges rural areas also have some significant inbuilt advantages for health. Communities are often stable and very supportive. Air pollution is usually minimal. There is the potential to access beautiful spaces for physical activity, although getting to the jumping off point frequently requires a car as walking and cycling safely on winding, pavement-less roads with fast traffic is hard even for the young and fit.

General practice is even more clearly the bedrock of healthcare provision in rural and small town settings than in cities. Attracting healthcare staff can in some areas be very difficult, especially if they have young families. Rural and remote practice can require a wider range of skills and ability to work with minimal backup from secondary care hospitals compared to city-based colleagues. Many GPs, nurses and others working in rural areas love the professional breadth and community-based care this brings, but current training often does not prepare them for this kind of medicine.

We have the opportunity to improve health and provision of care in rural areas and small towns for now. We also have to plan for the future, when the rural and small town population will be

getting significantly older, whilst the major cities retain their current, younger demographic structure.

In the immediate future we must explore the potential for new opportunities including telemedicine to make the provision of some aspects of healthcare more accessible to those with limited transport a long way from secondary care. We also need to ensure we are training and supporting enough primary care medical and nursing staff to be able and want to provide care in rural and small town settings.

For **national policymakers** we need to recognise the ageing of the rural population makes this a national, not just a local, issue to solve, and find better ways to address the health impact of rural poverty.

For those **leading the NHS and public health** we must avoid assuming that models of healthcare which work in cities can simply be translated to a rural or small town setting. Training and systems need to reflect the different realities of providing healthcare in these settings.

For those undertaking the nationally important role of **working in rural health** we need to work together to harness new technologies as well as ensure the voice of rural health is heard in decision-making.

Improving rural health is entirely possible, and should be seen as a national investment in the future as well as the here and now.

Finally I would like to thank the many people across the country who helped in the preparation of this report, and in particular the editor Dr. Alex Thompson.

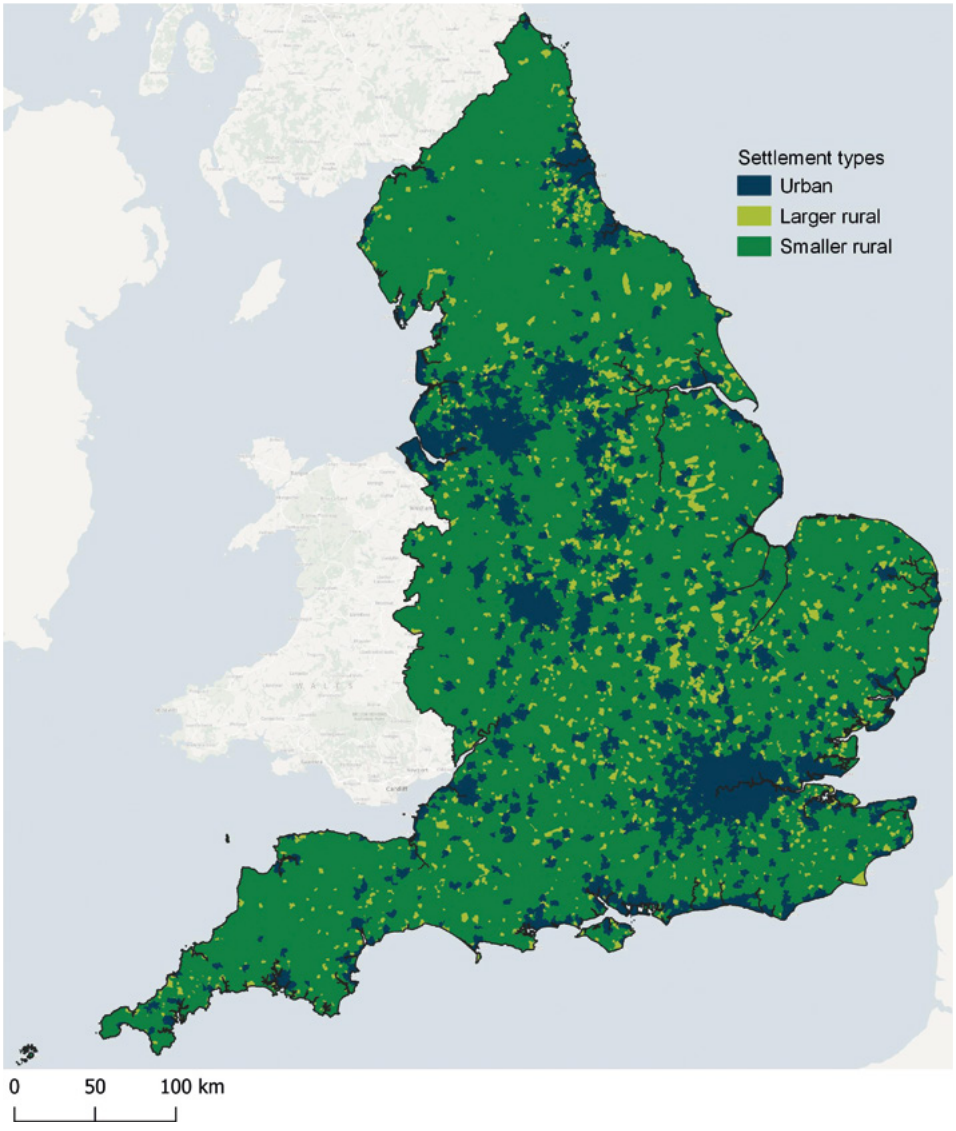
Prof. Chris Whitty
Chief Medical Officer for England

Executive summary

1. **Urban areas depend on rural areas and small towns, which make up most of the landmass of England. Challenges of rural and small town health should be seen as a national, not just a local, issue.**

   Many key industries, including agriculture, forestry, and military bases, need to be sited away from major cities. These include polluting and higher-risk industries and many forms of leisure, which all depend on rural areas. The permanently younger demographic shape of the major cities depends on the migration of older citizens to smaller towns. The health of rural and small town England is therefore a resource on which the rest of the country depends – and should be treated as a national not just a local issue.

Figure 1: Map of the 2021 Rural-Urban Classification (RUC) Output Area settlement type, England.

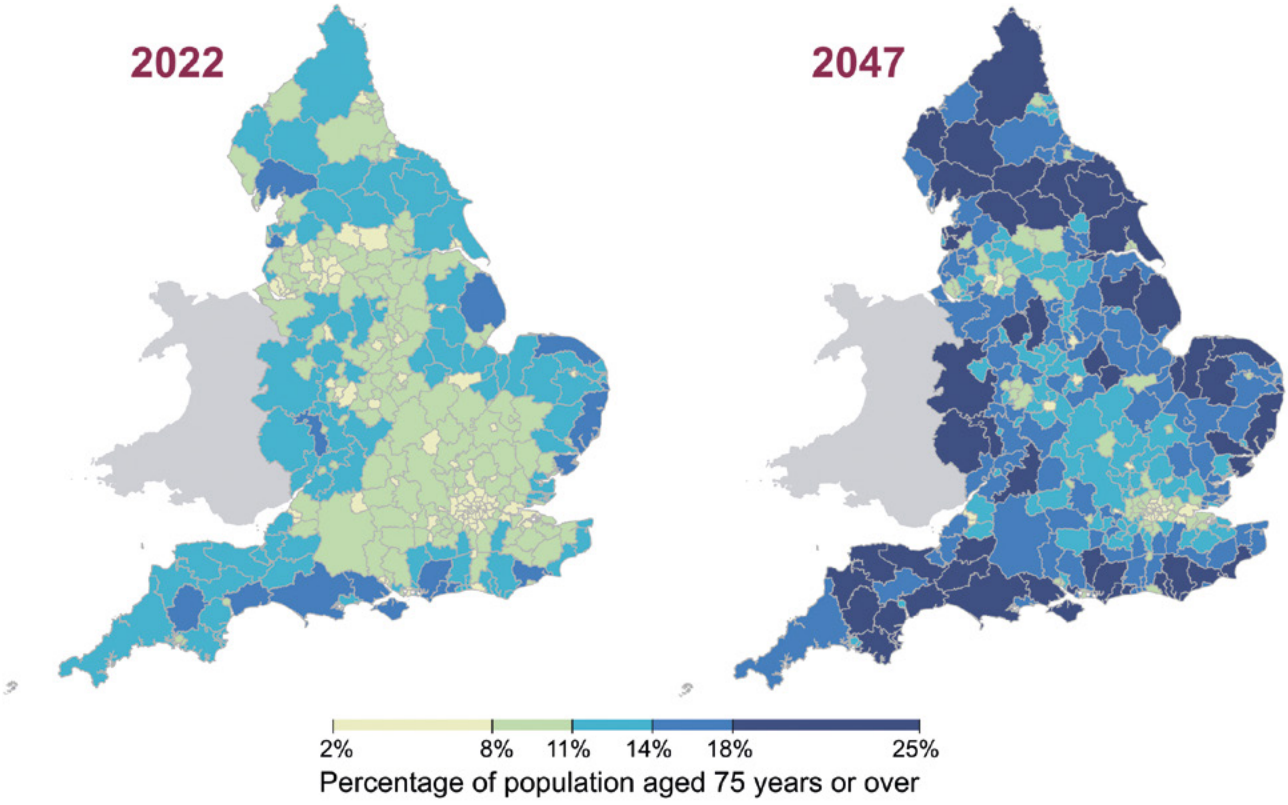


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2. Rural populations are generally older, and ageing more quickly, than urban populations.

In England the geography of older age is highly skewed away from the large urban areas (Figures 2 and 3), and this is likely to continue to skew further in the coming years. This process is driven by internal migration. Many people migrate away from cities before reaching older age, meaning that while metropolitan areas largely maintain their current demographic, small towns and rural settings are ageing at a much faster rate. In 2024 the percentage of adults aged 65 years and older in smaller rural settings was 28%, compared with only 12% in London (Figure 4). Different population age-structures carry both significant implications for health and social care need, and also compound many of the health risks described in this report, such as challenges physically accessing healthcare services and unsuitable housing for older people.

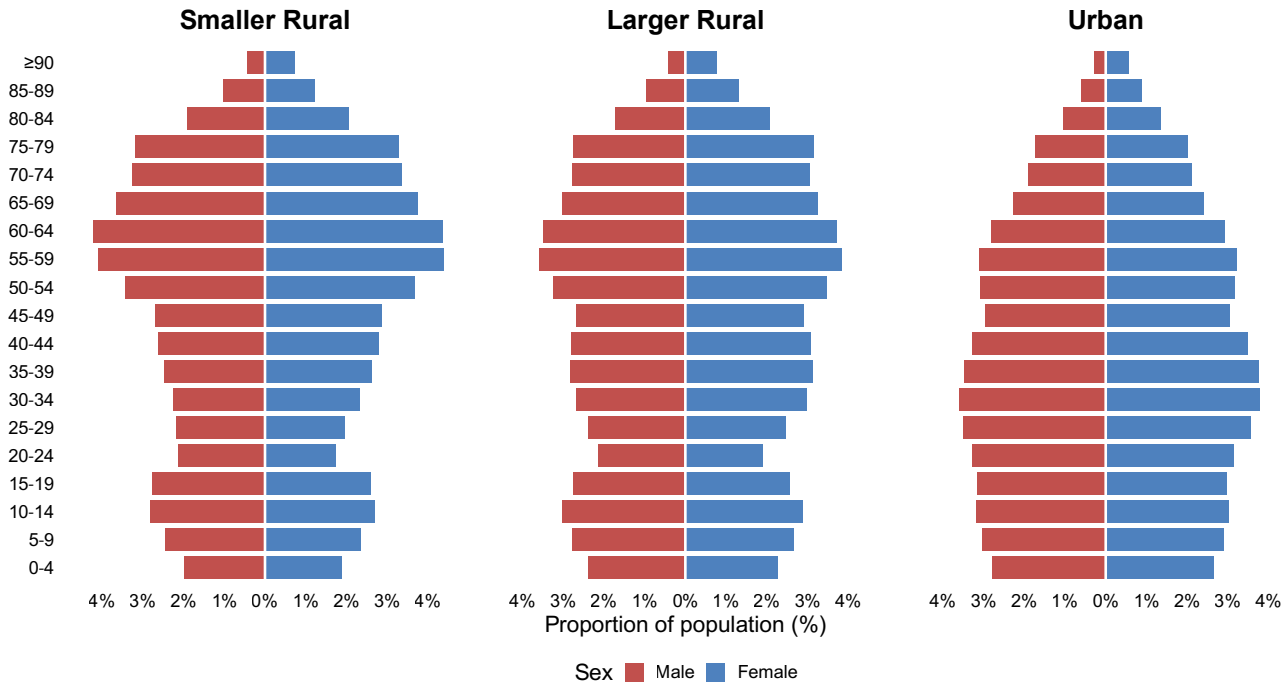
Figure 2: Maps of England showing the projected change in the percentage of the population aged 75 years or over, by local authority.



Data displayed are the 2022-based subnational population projections for England and do not reflect subsequent revisions to the mid-year population estimates for England.

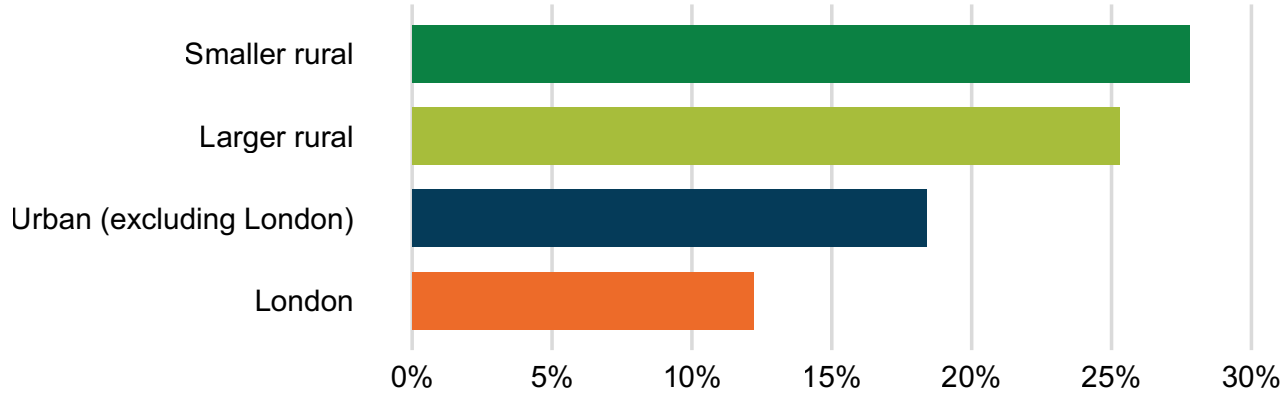
Source: Office for National Statistics licensed under the Open Government Licence v3.0. OS data © Crown copyright and database right 2026.

Figure 3: Population pyramids for England by RUC 2021, 2024 mid-year population estimates.



Source: Office for National Statistics, mid-year population estimates, 2024.

Figure 4: Proportion of the population aged 65 and over, by 2021 RUC, England, based on 2024 mid-year estimates.



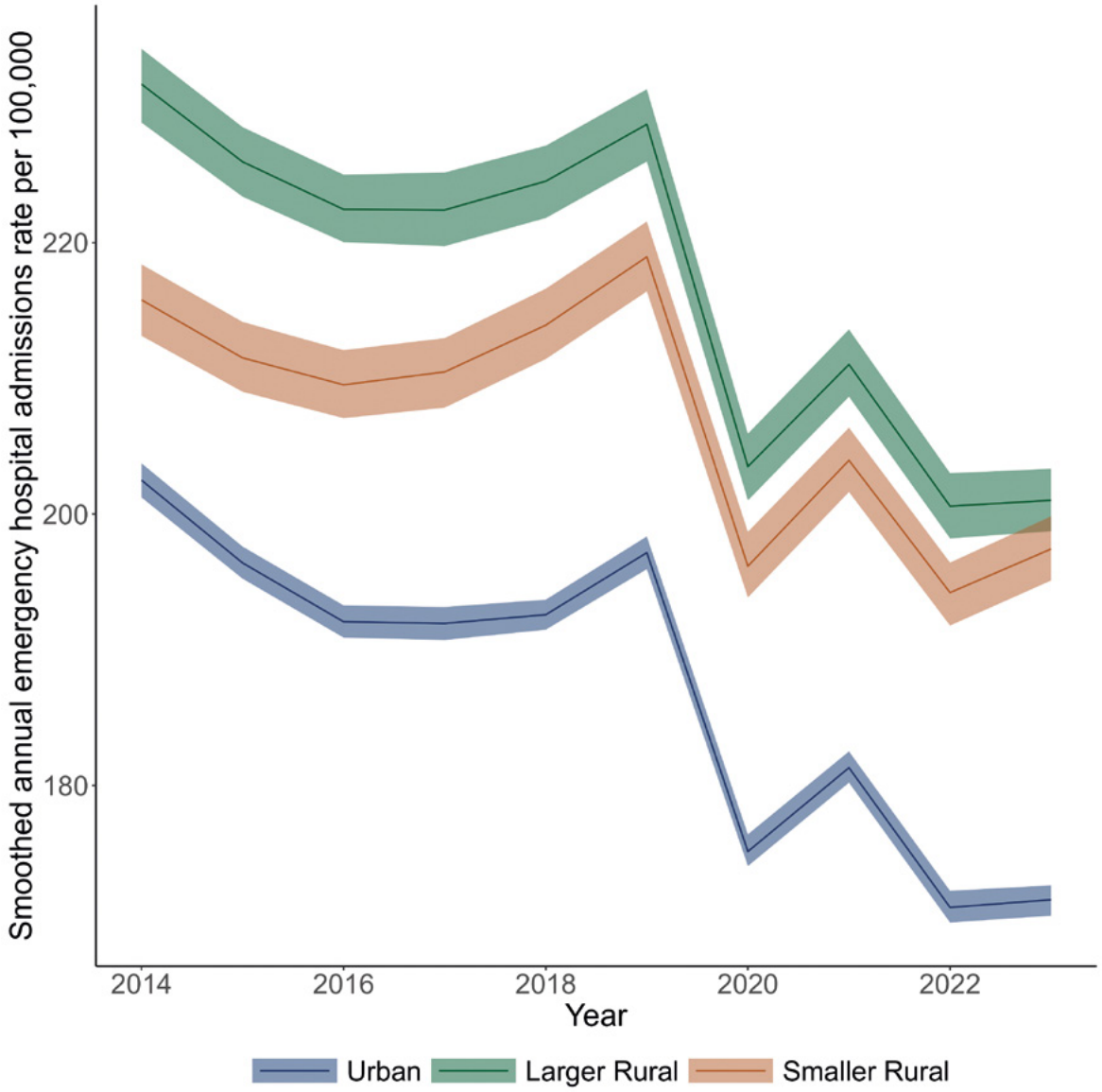
Source: Data taken from the Department for Environment, Food and Rural Affairs, Statistical Digest of Rural England – Population, 2026.

3. The ageing population in small towns and rural areas carries significant implications for health and social care need.

As discussed in the previous Chief Medical Officer (CMO) report on health in an ageing society (2023), diseases, long-term conditions and disabilities are not an inevitable part of the ageing process. However, many medical conditions are more common in older adults, and their health and social care needs are predictably different from those of younger adults and children. Since higher proportions of older adults reside in rural areas and many small towns, these differences in clinical need also cluster by geographical area (Figure 5).

Per head of population there is more need for healthcare in rural areas and small towns than in cities because of the older age group. Local provision of healthcare services must be informed by, and reflect, these differences in clinical need.

Figure 5: Smoothed unadjusted annual emergency hospital admission rates for Ischaemic Heart Disease and 95% credible intervals per 100,000 population by geographical area, England, 2014 to 2023.



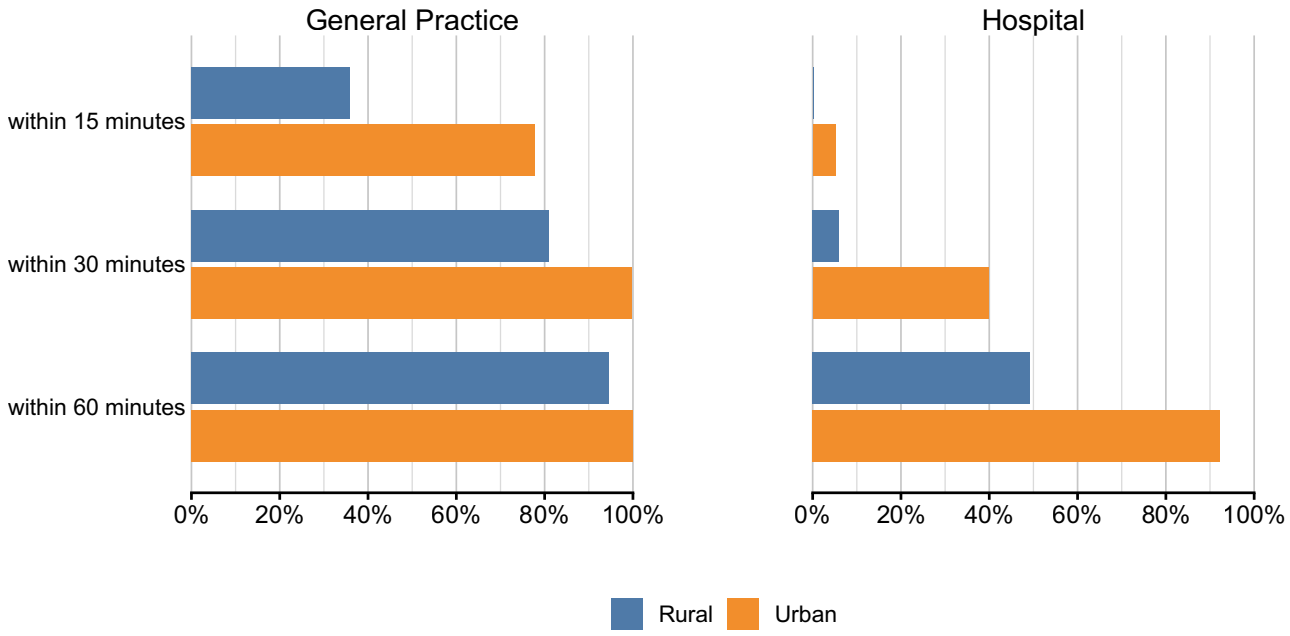
Source: UK Small Area Health Statistics Unit.

4. Sparser populations in rural areas and many small towns face significant challenges physically accessing healthcare services, especially if reliant on public transport.

Challenges physically accessing healthcare services relate both to the longer distances from residence to service ('as the crow flies'), and the more limited local public transport infrastructure (as the bus drives – Figure 6). Some of these challenges can either be overcome through careful planning (for example, organising a routine appointment around a trip into town for shopping), or mitigated through ownership of private transport.

However, the cost of maintaining private transport may be prohibitive for some residents of more deprived rural and small town communities, who already face additional barriers to healthcare access. The risks are particularly acute in medical emergencies, when even short delays can contribute to significantly poorer health outcomes.

Figure 6: Percentage of households able to access key health services within different journey times, by public transport/walking, by 2011 RUC, England, 2019.

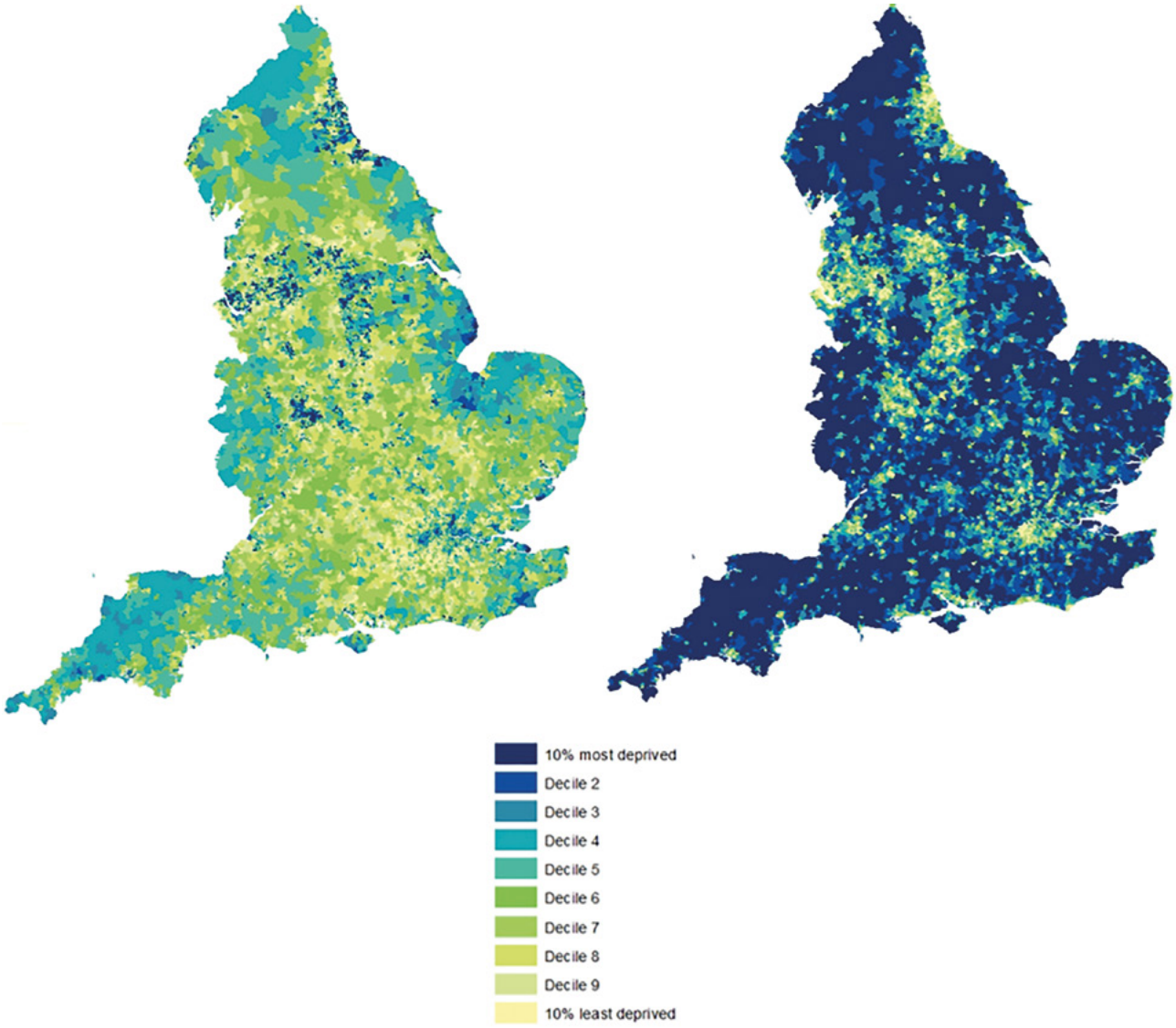


Source: Data taken from the Department for Environment, Food and Rural Affairs, Statistical Digest of Rural England: 5 – Connectivity and Accessibility.

5. Deprivation remains a significant determinant of health in rural settings but can look very different to deprivation in the major conurbations, and is often hidden in national statistics.

Throughout England residents of more deprived communities have shorter life expectancies, and shorter healthy life expectancies, than populations in less deprived settings. However, there are important differences between urban and rural areas in how deprivation both manifests and appears in standard statistics. Geographical isolation, for instance, is a much more prominent factor in rural deprivation (Figure 7), and this can have significant implications for young people in education and seeking employment opportunities. Standard measures used to describe areas in terms of their relative deprivation, such as the Index of Multiple Deprivation, may not be reported down to a sufficiently granular level to capture deprivation in sparser rural settings, with concentrated pockets of more deprived neighbourhoods being averaged out. Challenges in sufficiently capturing and describing rural deprivation holds back public health progress in more deprived rural communities, as significant need is missed.

Figure 7: Comparing the overall Index of Multiple Deprivation (L) and Barriers to Housing and Services Indices of Deprivation Domain (R), England, 2025.



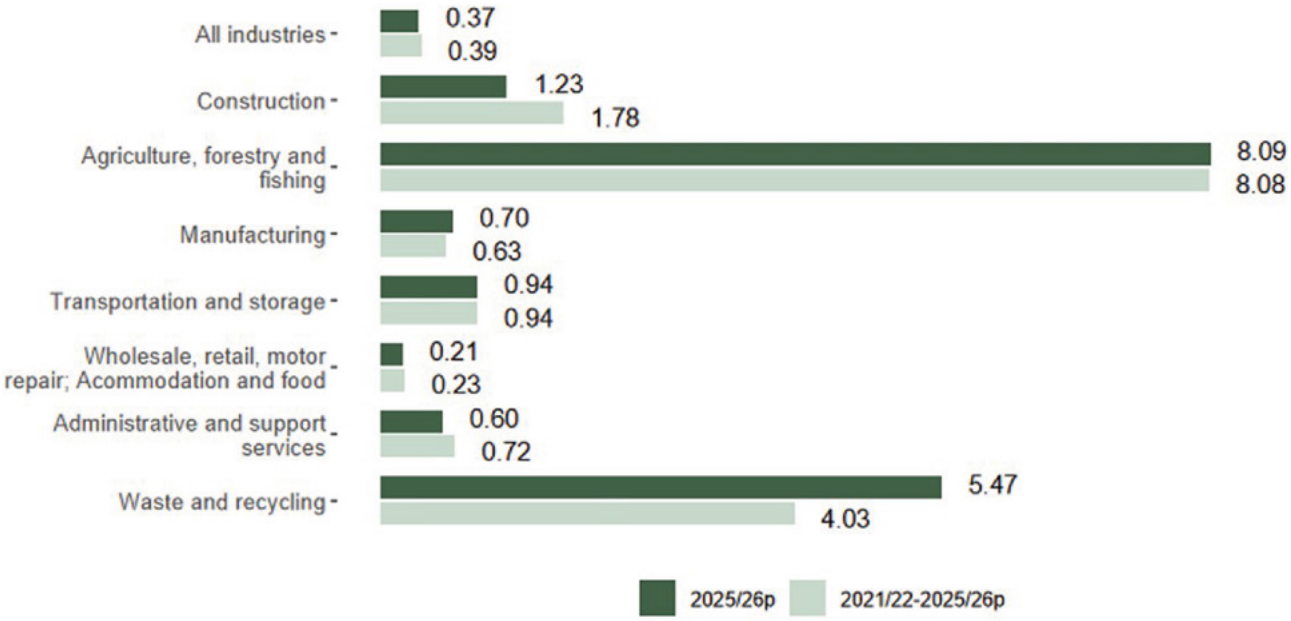
Source: Data taken from Ministry of Housing, Communities and Local Government, 2025. Maps produced by Hampshire Public Health Intelligence Team. ® Crown copyright and database rights 2025 Ordnance Survey 100019180.

6. Agricultural communities have distinct patterns of health risk and face additional barriers to healthcare access.

Agricultural workers face unique risks to their health and wellbeing. Working days are typically long and may involve exposure to powerful machinery, animals and chemical agents. The family nature of farming businesses means these risks may extend beyond individual workers to include their spouses, partners, parents and children. In addition to the physical health risks, poor mental health has been identified as an important and often hidden challenge in these communities. This may reflect some of the unique pressures on farmers, particularly in smaller, family-run farms, in which the farmer's workplace, home and social and family life are all closely entwined. Despite being at higher risk for multiple physical and mental health issues, these communities face significant barriers accessing healthcare services. They may struggle to adapt their working life around rigid provision of

healthcare (for instance, taking time off for a routine appointment during lambing season), and have historically been poorly understood and supported by urban-centric healthcare provision models.

Figure 8: The rate of fatal injuries to workers per 100,000, by selected main industry group in Great Britain, 2025/26p and annual average for 2021/22 to 2025/26p.



p = provisional. Industry is defined using the 2007 SIC. *Agriculture, Forestry and Fishing* is defined by Section A. Fatal injuries are those that the relevant enforcing authority (namely Health and Safety Executive, Local authorities, Office of Rail and Road or Office for Nuclear Regulation) have judged as reportable under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR).

Source: Image taken from the Health and Safety Executive, Work-related fatal injuries in Great Britain, 2026, Figure 3.

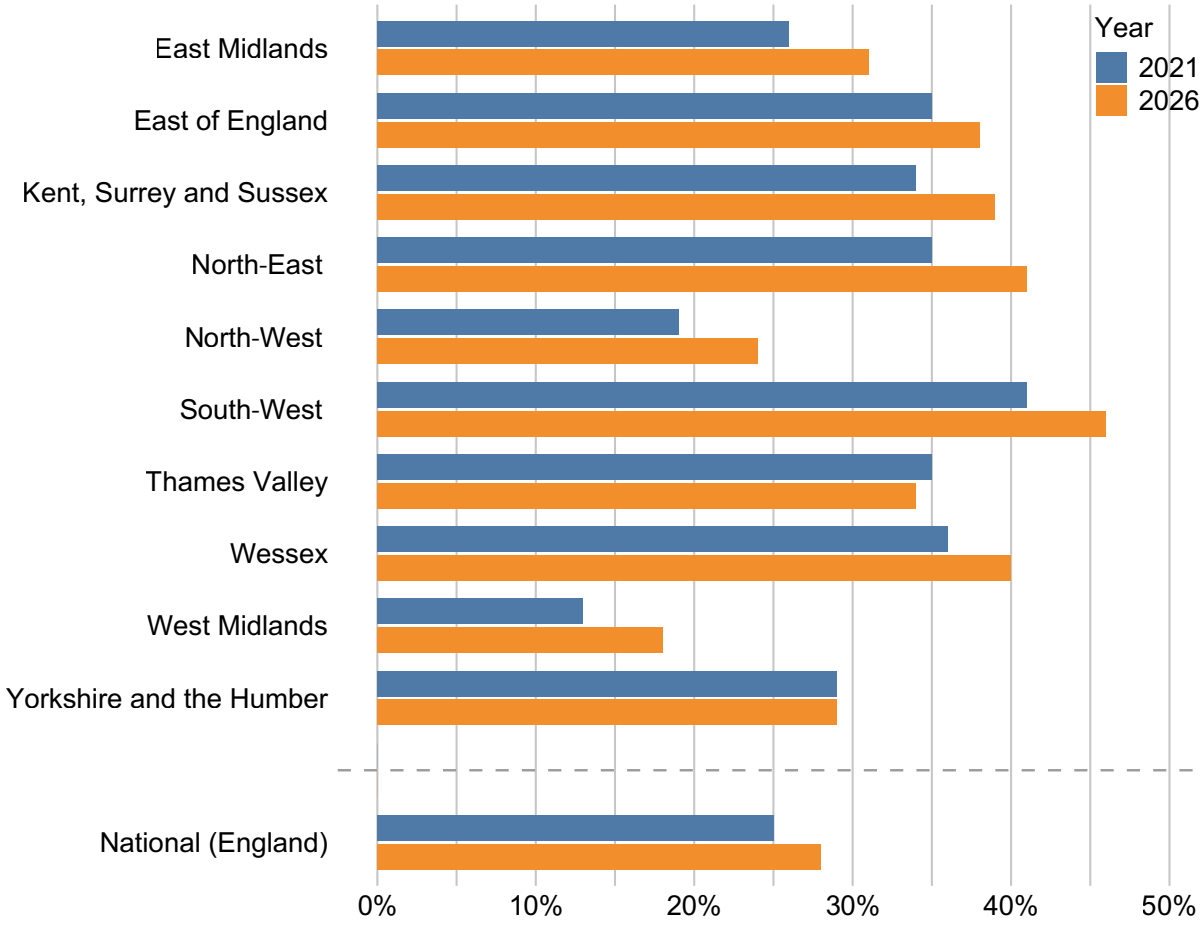
7. Military communities, often stationed in England's rural areas, have unique healthcare needs and the highly mobile nature of their employment poses additional challenges to healthcare governance and clinical commissioning.

The Armed Forces Covenant is a national commitment that service personnel, reservists, veterans and their families, should not be disadvantaged because of service life. For instance, a member of the armed forces on a waiting list to see a specialist in one area should not be moved to the back of the queue if they relocate to another setting while awaiting review. The frequent movement of personnel across administrative boundaries including national (devolved administrations), local authority, and Integrated Care Board footprints, poses a logistical and administrative challenge to joined up healthcare provision for serving personnel. Interoperability challenges between Defence Primary Healthcare and NHS secondary care services also remain. Effective local partnership working and explicit consideration of military communities in NHS service design can help mitigate these challenges.

8. The geography and economy of small towns and rural areas has significant implications for the recruitment, training, and practice of the health and social care workforce.

Healthcare services in many of England's small towns and rural settings face significant challenges in their workforce recruitment. This has left many services in a state of perpetual fragility, in which the loss of even one or two staff members could place the viability of the service under threat. Healthcare professionals practising in these areas also face unique challenges. These may include a broader scope of clinical work arising from reduced local access to secondary care and specialist services, greater travel requirements, professional isolation, and more limited local opportunities for career progression. However, practitioners in rural settings also report greater opportunities to become embedded within local communities, while a less transient resident population facilitates greater continuity of care. Medical school and postgraduate training is often optimised for city practice with few or no rural or small town placements. The expansion of training rotations (Figure 9) and medical student placements within small town and rural settings offers opportunities to start to address some of these challenges in the long-term, although there is much work left to be done.

Figure 9: Percentage of GP trainees undertaking a placement in a small town or rural setting by region, 2021 and 2026.



Small town here defined as a settlement with a population of fewer than 30,000 residents and without an acute NHS trust.
Source: NHS England, 2026.

9. **Opportunities for digital healthcare and telemedicine are improving and are likely to continue improving in the future. However, rural populations – which have some of the greatest opportunities to benefit from these approaches – face the most significant challenges in accessing them.**

   Because of the difficulties of physical access outlined above, telemedicine and digital services have the potential to have even greater impact in rural areas and small towns than large urban areas where physical access is easier. Telemedicine and digital services are increasingly a part of modern healthcare delivery. Improvements in the availability of high-quality broadband, and an increasing familiarity with digital service provision, mean that opportunities to deliver safe and high-quality digital healthcare are currently the greatest they have been and will likely continue to improve. As telemedicine approaches are expanded in urban and rural settings, care will be needed to ensure patients needing or preferring in-person services in small towns and rural areas are still able to access these.

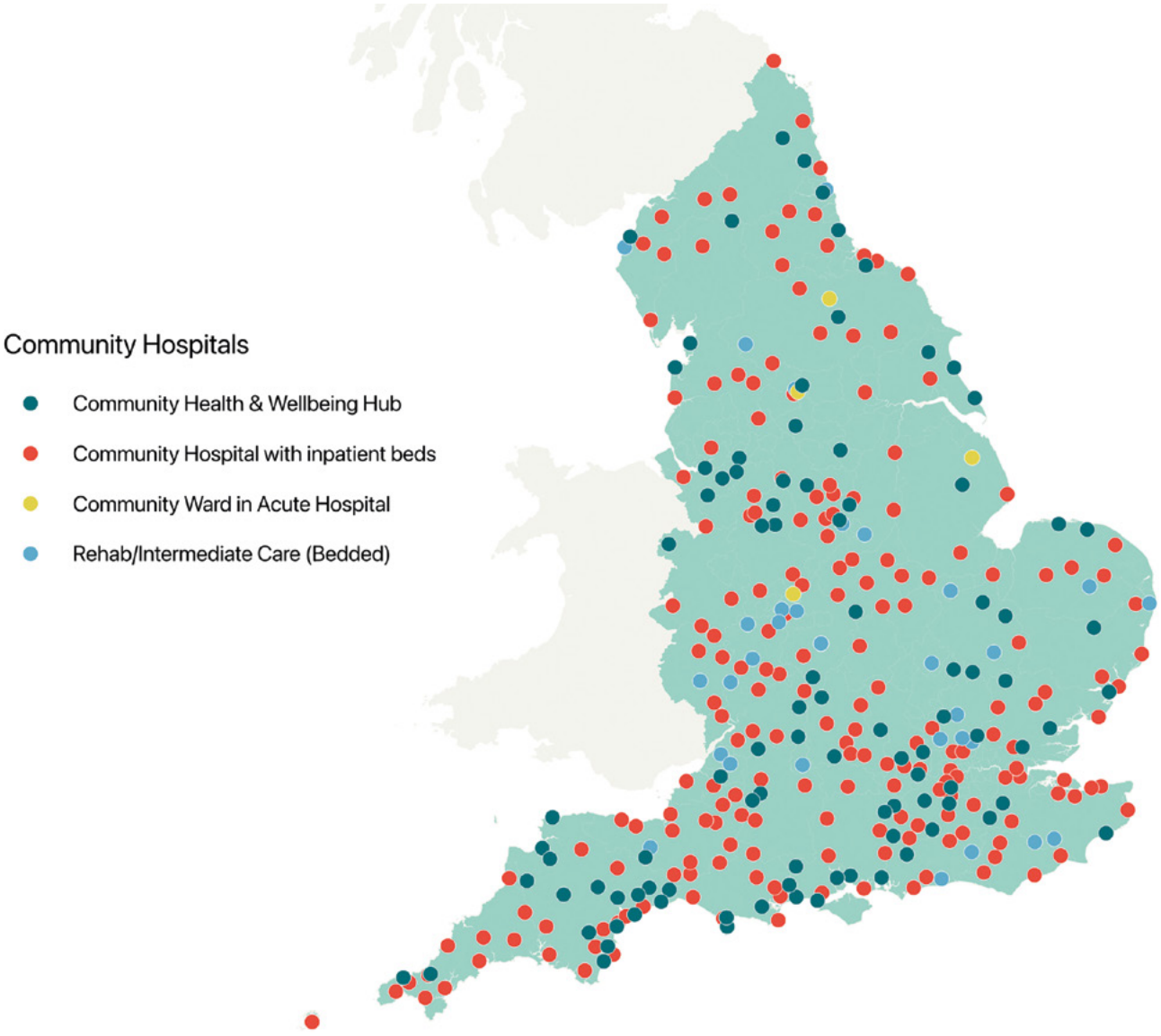
10. **Current approaches to healthcare research often do not sufficiently account for rurality in their design, with evidence better describing urban populations.**

    Geographical constraints, both real and perceived, have historically reduced meaningful engagement of rural populations in clinical research. This applies both to formal academic research undertaken by (usually city-based) universities and research institutions, and the piloting of services by the NHS and government. Poorer engagement and participation of rural communities in clinical research results in evidence that better describes urban, rather than rural, populations. Consequently, policymakers and healthcare leaders may be poorly served in their efforts to make evidence-based decisions that best serve the health of both their urban and rural communities.

11. **Community hospitals often have an important role in settings where large secondary care hospitals are distant.**

    Community hospitals are small local hospitals that provide a range of services which may include community beds, rehabilitation and intermediate care, outpatient clinics, minor injuries units, X-ray departments, maternity services, and more. The community hospital network is an important way of delivering this outpatient and inpatient care in settings where transport difficulties make accessing large city-based hospitals difficult for patients, carers and relatives. They are often highly valued by their local communities.

Figure 10: Map of different community hospital settings throughout England, March 2026, provisional data.



Locations are based on provisional data provided by the Community Hospitals Association.

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Recommendations

Overall recommendations

This report makes a number of high-level recommendations intended for a range of local and national government departments, healthcare, public health, and research institutions. Each has a role to play in supporting the health of communities in small towns and rural settings. More specific recommendations can be found within the individual chapters of this report which reflect the views of their respective chapter authors.

1. **Healthcare services in rural areas and small towns must be planned and designed locally in alignment with the clinical need of their local populations, but central government and the NHS must recognise the particular challenges of rural areas and small towns as a national responsibility.** The increasing concentration of older adults in rural and small town England has, and increasingly will, lead to predictable patterns of increased healthcare need relative to major conurbations. The NHS must plan specifically for the current and projected health needs of their rural and small town populations, which are systematically different from cities. Local decision-makers and commissioners, in partnership with their communities, are uniquely placed to tailor service provision to local needs, and they must be supported and empowered to do so as part of devolution. This does not however absolve national government of responsibility for planning for the predictable increasing future health challenges of rural areas and small towns.

2. **Sparse populations and limited public transport infrastructure in rural areas pose significant challenges to equitable healthcare access. We can reduce, but not eliminate, these challenges, including through flexible appointments and telemedicine.** For the NHS, routine and planned healthcare services serving more remote areas should be flexible and adapt their appointment provision to reflect local needs. This may mean giving patients living a long way from secondary care later or more choice in their appointment scheduling, allowing them to align appointments with complex public transport availability. The health needs of agricultural workers should be met more flexibly (see below). In many of England's small towns and rural settings both formal and informal community transport provision is helping to meet this need, and these local approaches should be supported. For national and local government, initiatives which improve and strengthen local public transport infrastructure from rural areas and small towns to places where healthcare is provided offer a direct way of reducing inequity in healthcare access, but transport policy is beyond the scope of this report.

3. **We should accelerate telemedicine and digital services in rural areas and small towns.** The increasing availability of high-quality broadband in many rural settings, alongside increasing public familiarity with digital-service provision, mean that telemedicine and digital care may offer a reasonable alternative to in-person appointments in many cases. Telemedicine is not a panacea, and the use of telemedicine must be clinically reasonable – delivered by appropriately trained clinical staff and in a context where physical examination

is not required – and acceptable to the patient. Telemedicine to a local centre (such as GP surgery or library) where patients can be supported may be better than telemedicine to the home for many patients.

4. **Improving our ability to identify and measure rural deprivation will help ensure public health resource is targeted towards those who will benefit most.** Current standard measures for describing areas by relative levels of deprivation are urban-optimised and reported at an insufficiently granular geographical level to capture many areas of localised rural deprivation due to sparser populations. In the short-term, local public health teams can meet these gaps through careful use of local qualitative and quantitative insights, often gained through local partnerships and community engagement. In the longer term, improving statistical measures of rural deprivation should remain a priority for both government bodies, such as ONS and the NHS, and academic partners.

5. **Urban models for the recruitment, training, and practice of health and social care staff sometimes translate poorly into rural settings, and require adaptation for these environments.** National healthcare leaders need to plan to deliver workforces that facilitate service provision aligned with local clinical need. Healthcare professionals are more likely to work and settle near where they have trained, and so meeting this need will mean ongoing expansion of rural placements for both undergraduate and postgraduate medical and wider healthcare staff. For professional bodies and educational institutions, challenges to rural practice, including professional isolation and a perceived lack of training and career development opportunities, must be addressed, and advancing digital education technologies alongside the expansion of medical school locations to more semi-rural and rural settings should help mitigate these issues.

Specific additional recommendations

1. The challenges of **rural housing** – often older, more poorly insulated properties – are compounded by a population that is generally older and so less resilient to the health risks associated with unsuitable housing. Home building projects in rural settings should align with the demographic projections for the local area which are typically growth in older but not younger populations, and all homes in these areas should be capable of being adapted for older residents. Efforts to bring older rural properties up to modern health standards through retrofitting and insulation should continue and will offer public health benefits.

2. **General practices** are the backbone of health service provision in rural areas and small towns. We must ensure that sufficient numbers of GP trainees receive appropriate training to practise in a rural area. Rural and small town GPs should be involved in commissioning decisions in their local area, as they know the needs of their local population.

3. **Agricultural communities** have historically been poorly understood and underserved by healthcare services. A creative and flexible approach to engaging these communities, for instance flexibility in appointment times or outreach offers within local agricultural events, such as marts, should help improve service access. The comparatively high rate of fatal and major injuries to agricultural workers in the workplace is a serious concern and addressing

this should be a public health priority. Mental health outreach services to agricultural communities should be supported.

4. A high proportion of **military personnel and their families** are based in rural areas and their needs must be planned for. Improving digital and clinical interoperability between defence and the NHS systems will help ensure that the Armed Forces Covenant – committing that military personnel and their families are not disadvantaged as a result of their military service – is met. This could include establishing shared standards for medical records, results, clinical handover, and referral tracking.

5. For the general public, **zoonotic diseases** (infections caught directly or via vectors from animals) remain a small but real risk in England's more rural settings. If you live in, or have been to, a rural area and have an infection serious enough to see a doctor it is sensible to say you have been to a rural area as these infections are rare and may not otherwise be considered.

6. For **research funders and academic institutions**, efforts to facilitate greater participation of rural communities in clinical research will help avoid urban-biased research evidence that translates poorly into rural settings.

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6 Epidemiological analysis of chronic disease in rural and urban communities in England, 2014 to 2023

Bethan Davies, Connor Gascoigne, Lea Anna Cozzucoli, Paul Elliott, Marta Blangiardo

7 Zoonoses in a rural environment

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8 Agricultural communities

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13 Effective approaches to health research in rural environments

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Appendix

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1. Understanding health in small towns and rural areas

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Contributors: Justine Fitzpatrick, Paul Fryers, Ed Klodawski, Cameron Stewart, Stephen Hall. Office for National Statistics: Geography, International and LGR team and the Geospatial team.

Introduction

England has a largely rural landscape. Rural areas make up about 85% of the land mass and are home to around 9.7 million of England's residents (~17% of the population).[1] While most of England's land mass comes under the umbrella heading of 'rural', within this geography there are a wide breadth of locations that look very different from each other. These include National Parks and National Landscapes, and small residential market towns, villages and hamlets. Some of these places are affluent, rich in physical beauty and possessing many characteristics promoting good health and wellbeing. However, in some areas a real, deep and enduring deprivation, together with all the trappings of poorer health, may linger behind the myth of the '*rural idyll*'.[2] In addition to issues of physical geography, issues of employment, transport, housing and delivery of healthcare are significantly different to the conurbations. Some sectors of the economy – most obviously farming but also much of the armed forces and industries requiring land – are based in rural and small town parts of England. All of these mean many aspects of health and healthcare are different in rural and small town England.

What are 'small towns' and 'rural' areas?

The differences between 'rural' areas highlight some of the historical and ongoing challenges of producing a unifying and meaningful definition of rurality. It has led to the aphorism "if you've seen one rural place, you've seen one rural place".[3,4]

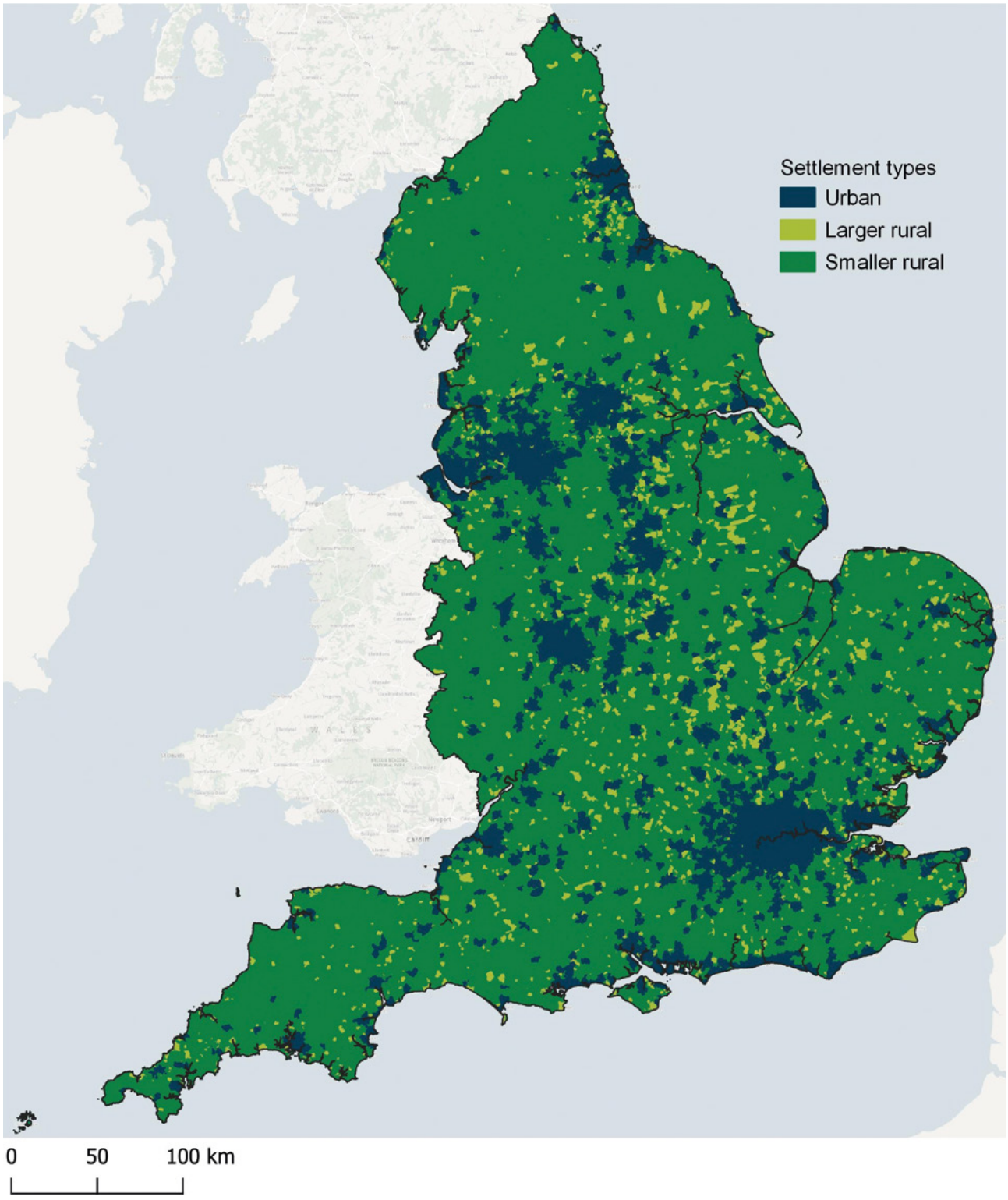
However, among the variety of definitions available 2 common themes tend to emerge:

- **Sparsity.** These are areas with a low population density. Compared with cities and large towns, fewer people live in these areas relative to the land mass.
- **Remoteness.** These are areas at a further distance from key services. This distance may be purely geographical ('as the crow flies') or reflect practical barriers to access (for example, being poorly connected to otherwise nearby towns or cities).

In this report we have aimed to align our working definitions with those most widely used in the English context. The Rural-Urban Classification (RUC) was last updated in 2021.[5] The current classification allocates Output Areas (OAs) to one of three categories: smaller rural, larger rural and urban (see Figure 1), based primarily on their population size and density. Further

breakdowns considering distance from nearby conurbations are also available. Any deviation from the 2021 RUC definitions within this report are highlighted and explained within individual chapters.

Figure 1: Map of the 2021 RUC OA settlement type, England.



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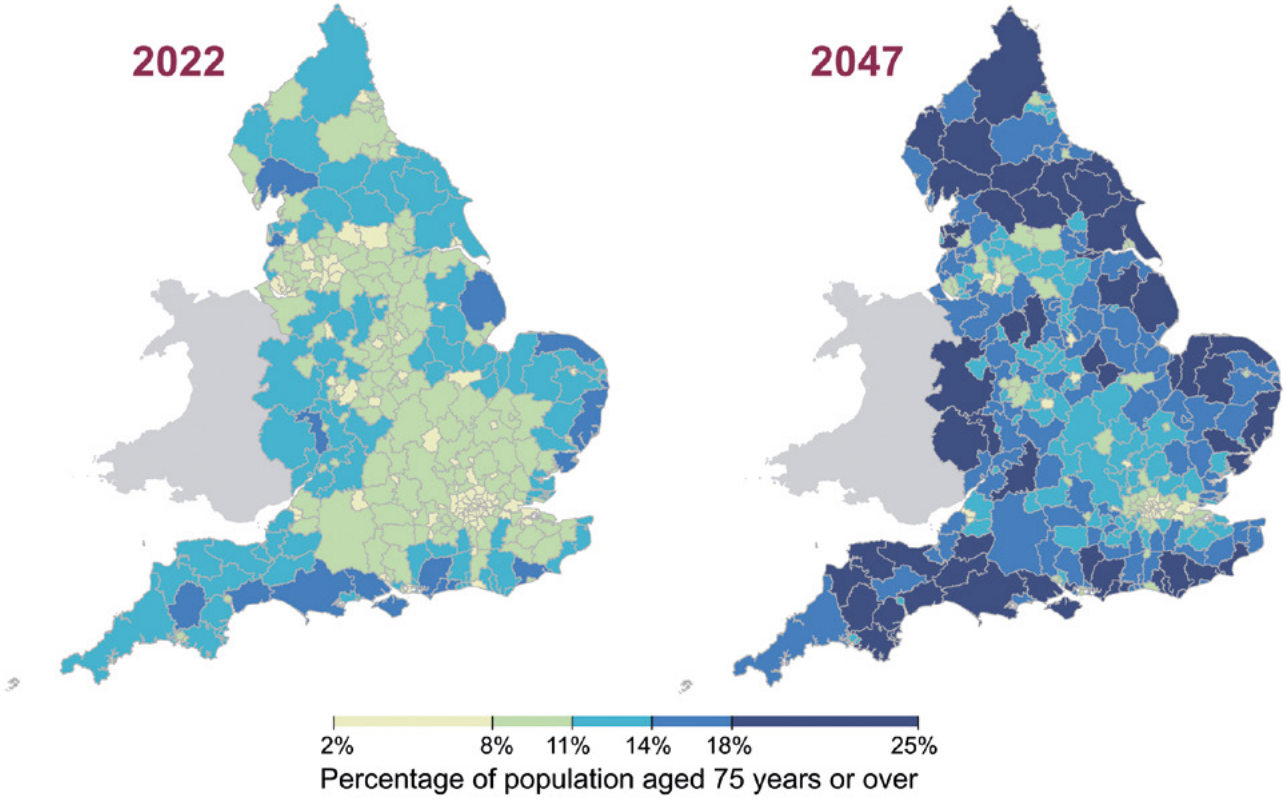
While the 2021 RUC provides useful categories for defining rurality, small towns may not neatly fit within this taxonomy. Depending on their population size and density some small towns may be categorised as 'Larger Rural' while others may be considered 'Urban'. Rather than create a quantitatively defined category of small town, in this chapter we present data on a few exemplar small towns from across the country. Acknowledging that definitions of 'small' will vary, we have limited our examples to towns with a population between 5,000 and 29,999 residents. To note, this differs slightly from the Office for National Statistics (ONS) definition of a 'Small' Built-Up Area (BUA).[6]

Demographic trends

Rural populations are proportionally older than urban populations

Rural areas have higher numbers of older adults relative to their total population size, so often have a significantly higher proportion of the population in older age. By comparison, the major conurbations have higher absolute numbers of older adults, but they typically make up smaller proportions of the total population. This is visualised in the England heat maps (Figure 2) and the population pyramids below (Figures 3 and 4).

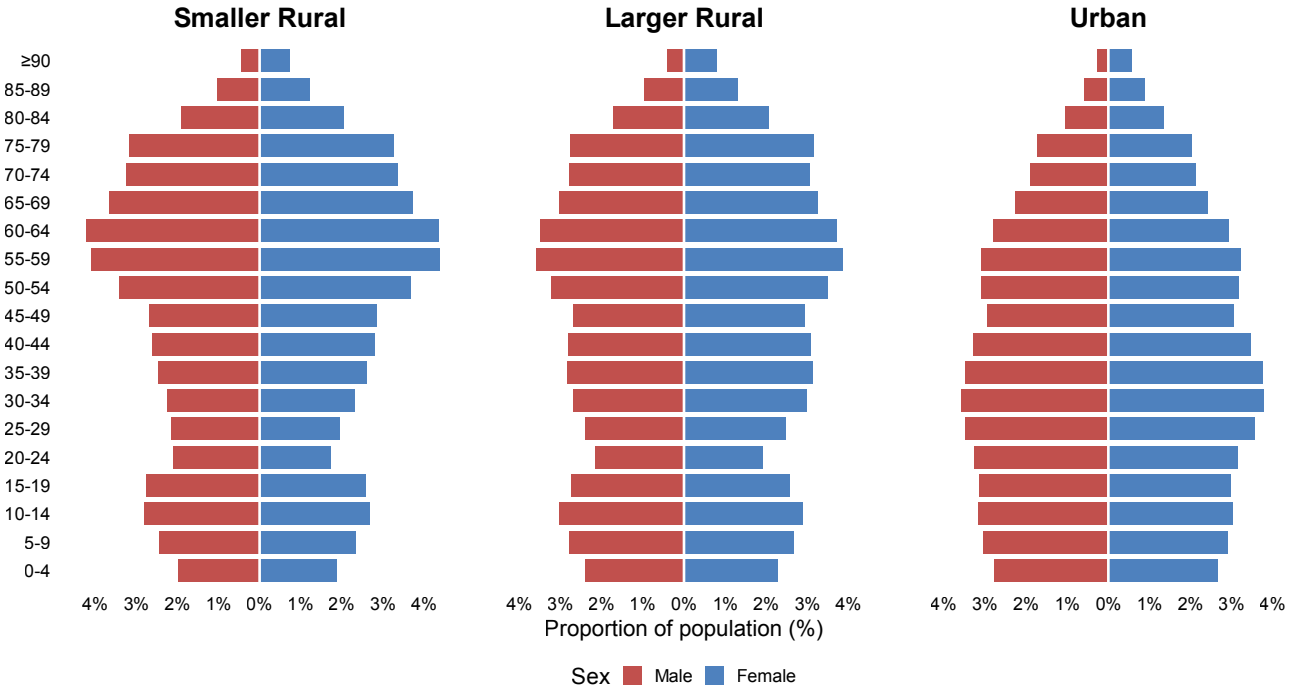
Figure 2: Maps of England showing the projected change in the percentage of the population aged 75 years or over, by local authority.



Data displayed are as in the 2022 subnational population projections for England and do not reflect subsequent revisions to the mid-year population estimates for England.

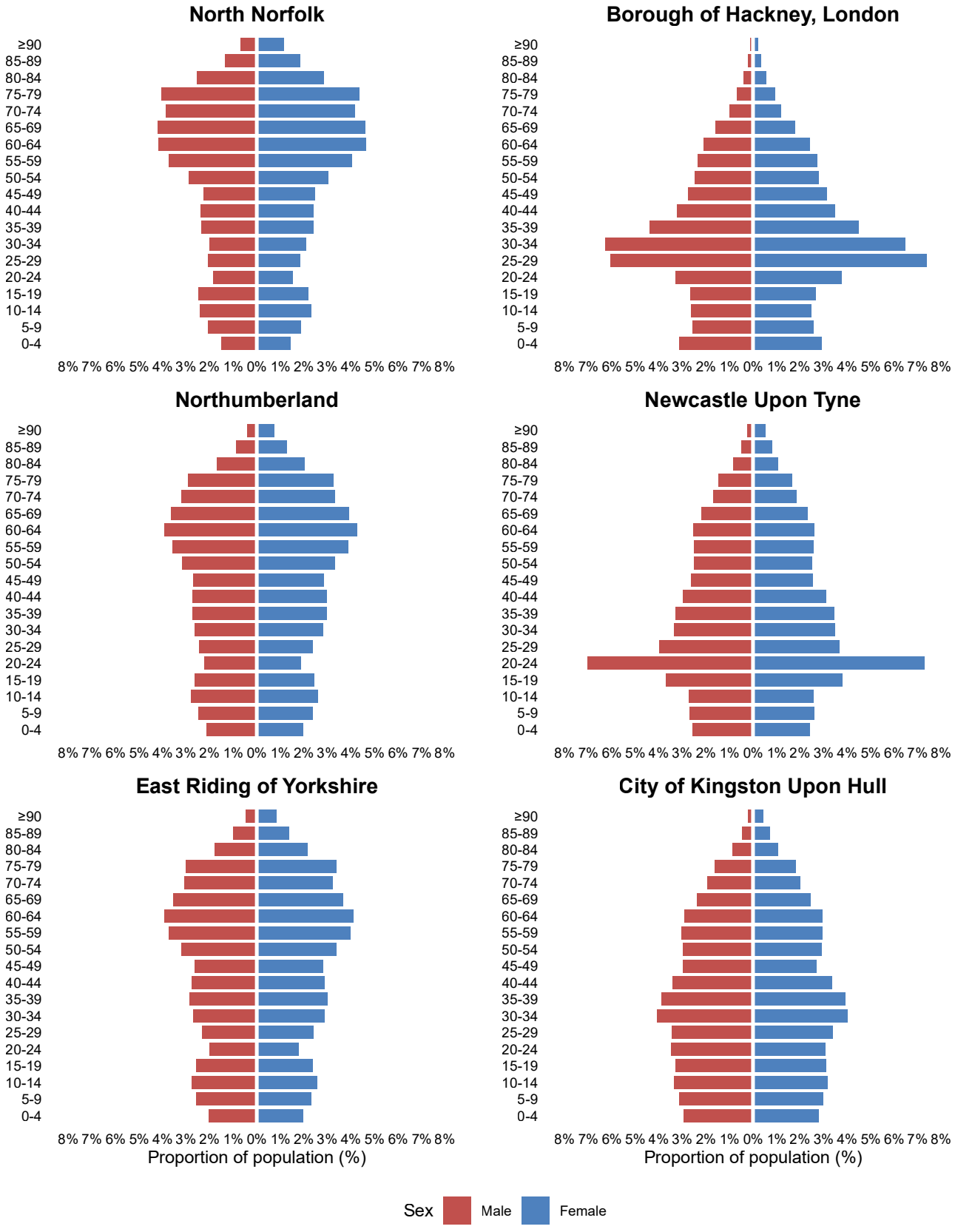
Source: Office for National Statistics licensed under the Open Government License v3.0. OS data © Crown copyright and database right 2026.

Figure 3: Population pyramids for England by RUC 2021, 2024 mid-year population estimates.



Source: Office for National Statistics, mid-year population estimates, 2024.

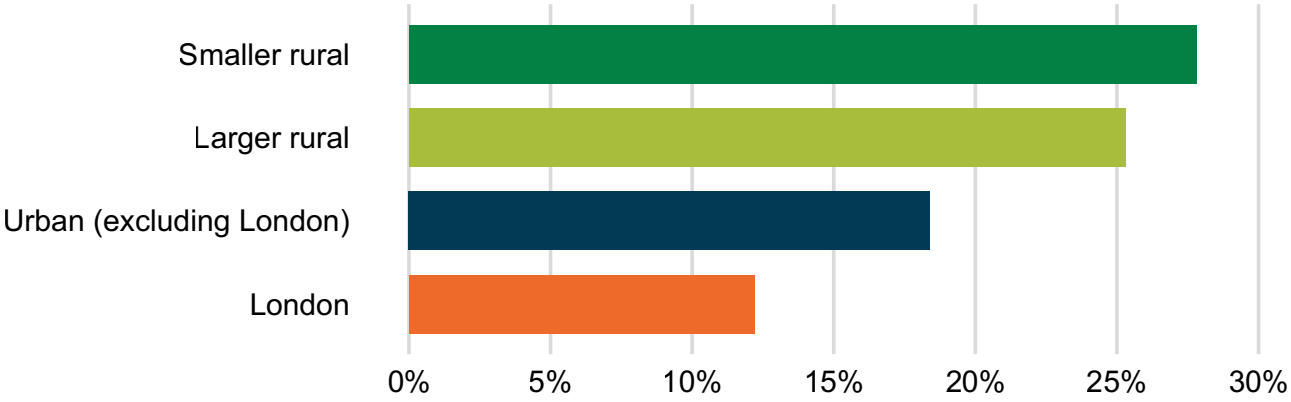
Figure 4: Population pyramids for different rural and urban districts and authorities in England, 2025 mid-year population estimates.



Source: Office for National Statistics, mid-year population estimates, 2025.

In smaller rural settings the percentage of adults aged 65 and over is 28% compared with only 12% in London (Figure 5).[7]

Figure 5: Proportion of the population aged 65 and over, by 2021 RUC of LSOAs, England, based on 2024 mid-year estimates.

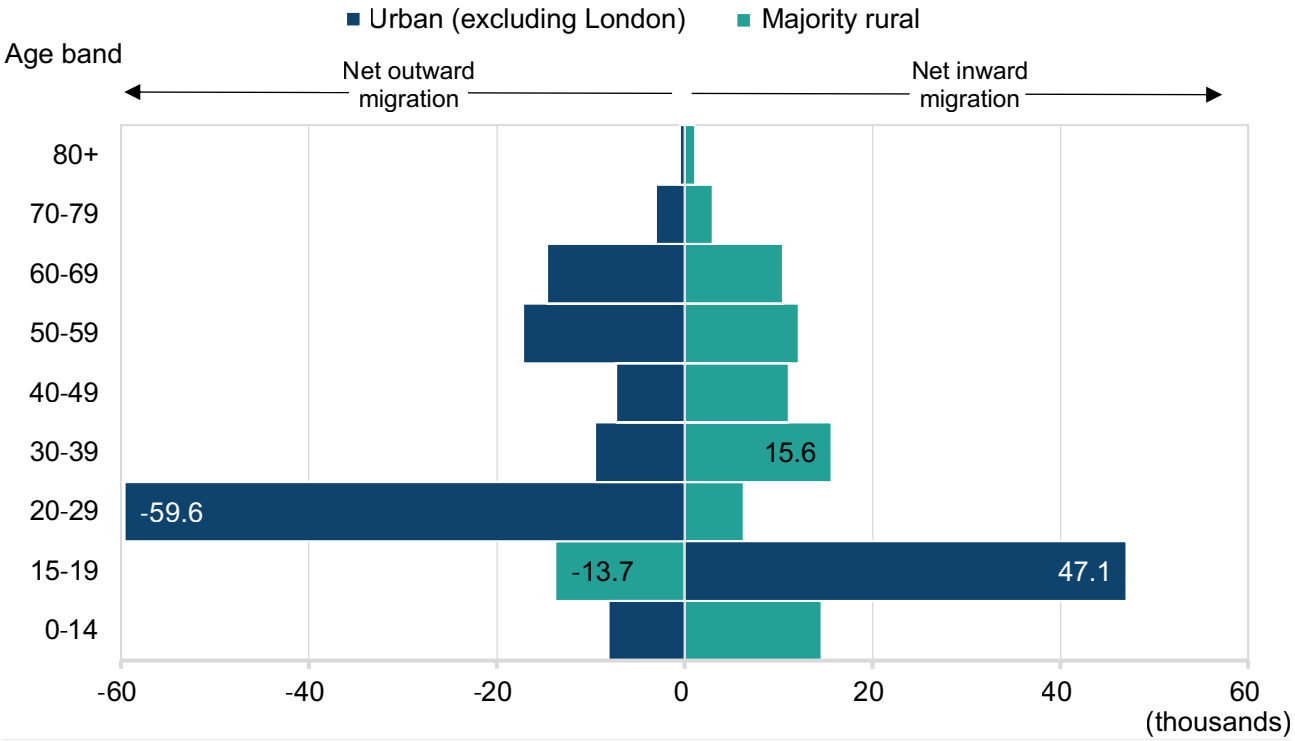


Source: Data taken from the Department for Environment, Food and Rural Affairs, Statistical Digest of Rural England – Population, 2026.

Rural populations are often ageing faster than urban populations

The rate at which populations age varies throughout England. These differences are largely driven by internal migration – individuals and families relocating within England. In general, cities import younger adults for studying or working, and export adults in middle age and older. Figure 6 presents net internal migration figures for local authorities classed as either urban (excluding London) or majority rural in 2023.[8] Overall, the 15-19 age group moves, in large numbers, from rural to urban areas, while the net movement of all other age groups is from urban to rural areas.

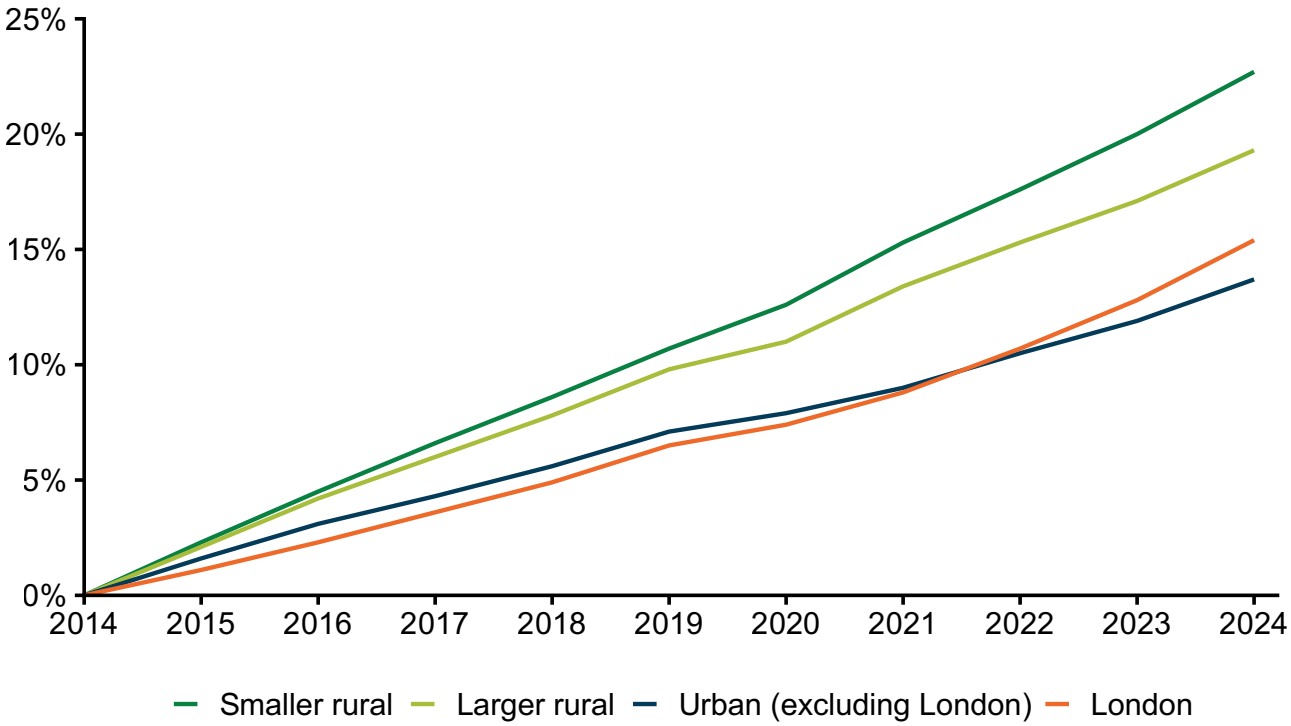
Figure 6: Net internal migration for majority rural authorities and urban authorities outside of London in England, by age band, using the 2021 RUC, year ending June 2023.



Source: Image taken from the Department for Environment, Food and Rural Affairs, Statistical Digest of Rural England – Population, 2026. Available under the Open Government Licence v3.0.

Consequently, major towns and cities are, in general, ageing more slowly than populations in England's rural and coastal areas. Figure 7 shows the percentage increase in the proportion of the population aged 65 and over by rural-urban categories. While absolute numbers of older adults remain highest in the cities, over the 2014 to 2024 period smaller rural areas have seen the highest relative increase of adults aged 65 and over, at around 22.7%.[9] Urban populations have seen the smallest relative increase (~13.7%).[10]

Figure 7: Percentage increase in the size of the usual resident population aged 65 and over, by 2021 RUC of LSOAs in England, based on mid-year estimates, 2014 to 2024.

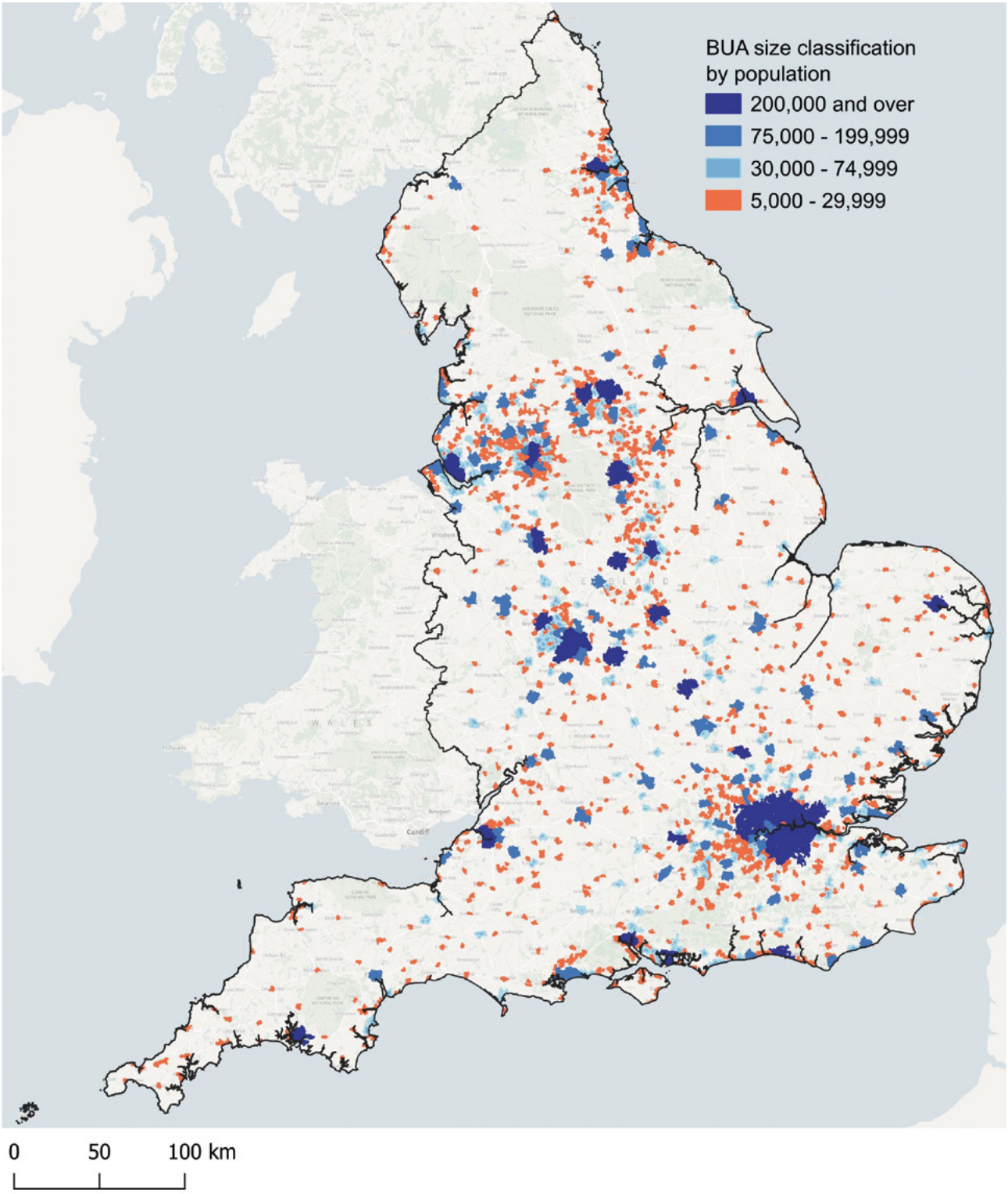


Source: Data taken from the Department for Environment, Food and Rural Affairs, Statistical Digest of Rural England – Population, 2026.

Small town demographics vary according to their local economy and connectivity

The geographical context of England's small towns can have significant implications for the local residents' ability to access healthcare services (see Chapter 3). Figure 8 shows the distribution of BUAs throughout England. Many smaller towns exist in the orbit of a major conurbation, and this is shown in their clustering around the large urban centres like London or Manchester. Conversely, in the more rural counties we can see isolated small towns that do not benefit from easy access to a larger town or city. Instead, these towns may themselves provide the nearest accessible services to a range of villages and hamlets in a surrounding rural hinterland.[11] Ultimately, these towns may serve populations in significant excess of their formally recognised population size.

Figure 8: Built-Up Areas in England by resident population, 2021.

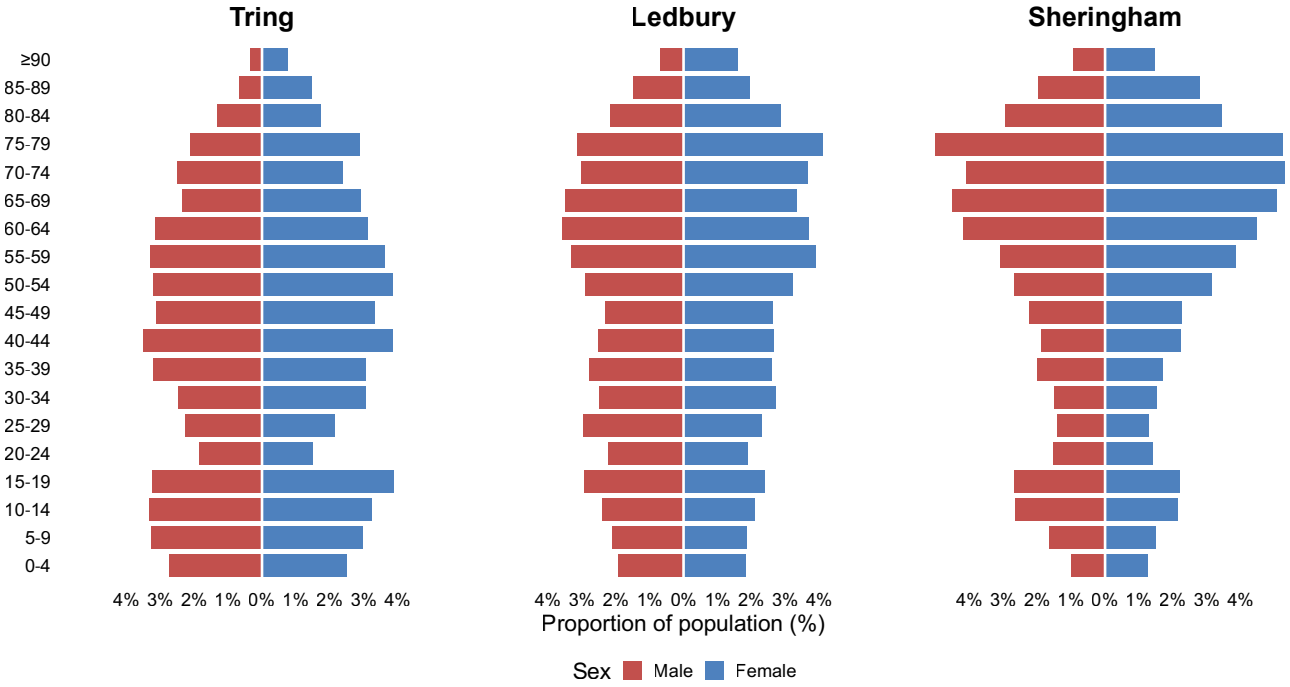


Caveat: Census 2021 usual resident population, London BUAs are the London Boroughs, the BUA size classification varies from the ONS BUA size classification as 'Small' and 'Medium' categories have different population thresholds.

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Small towns in England can exhibit markedly different population structures that reflect their local economy and connectivity to the major conurbations. Figure 9 presents population pyramids for 3 small towns (Sheringham, Tring and Ledbury). Sheringham is a coastal town in Norfolk, Ledbury is a market town in rural Herefordshire, and Tring is a commuter town in Hertfordshire. Sheringham has one of the oldest population structures in England, with 42.7% over the age of 65. Conversely, with good commuter access to the London job market, Tring has a population that skews more towards younger, working-age adults and families. The market town of Ledbury lies somewhere in between the two.

Figure 9: Population pyramids for different small towns in England, 2024 mid-year population estimates.



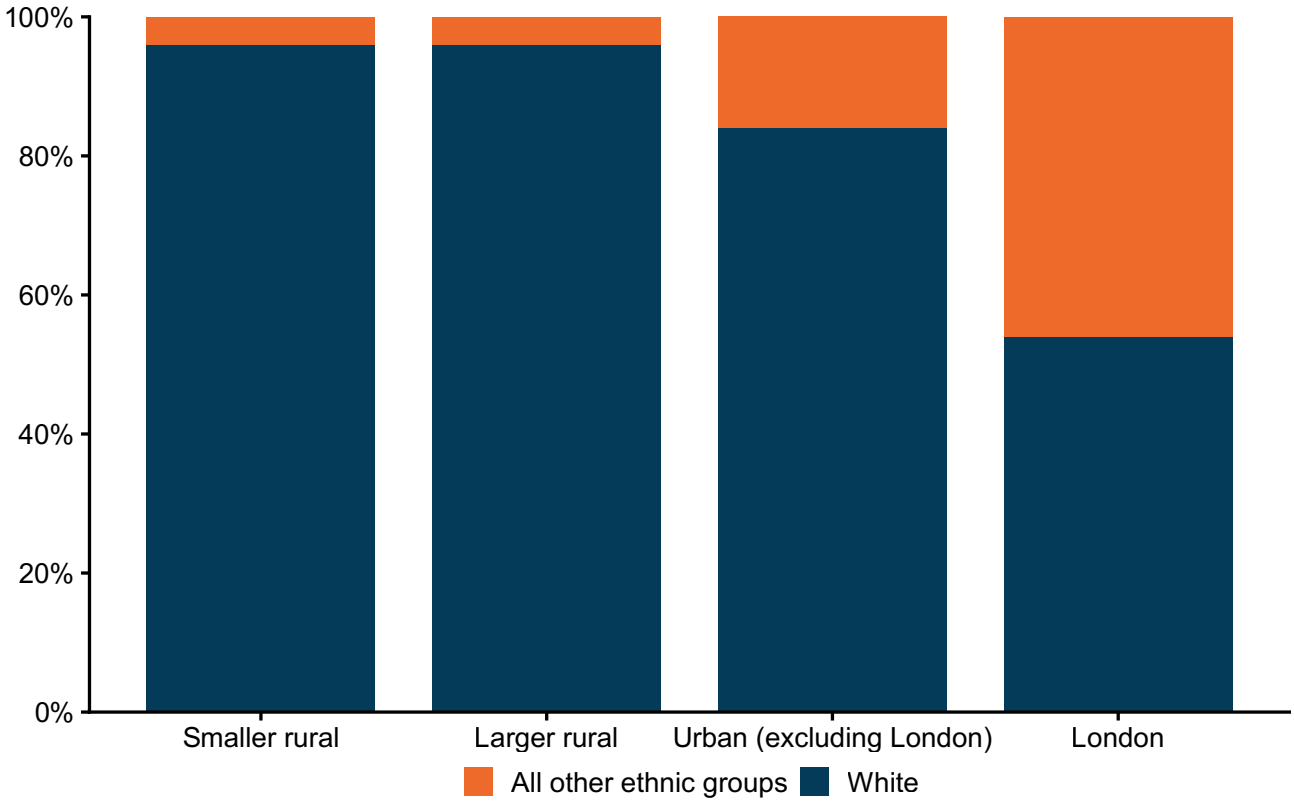
Source: Office for National Statistics, mid-year population estimates, 2024.

Further, many of England's small towns, rural and coastal communities have fluctuating population sizes during different seasons of the year. This may be driven by both tourism and seasonal workers.[12] At the extreme, local population sizes may increase significantly during these periods. For instance, Somerset has a resident population size of approximately 588,000 people.[13] This population size is estimated to grow by around 200,000 people during the 5-day Glastonbury music festival, carrying positive implications for the local economy, while also generating increased demand for healthcare and local services.[14] While festivals and major events may bring their own resources to support the health of attendees,[15] the more gradual and sustained influx of tourists to England's coastal and rural areas over the summer months – without additional resource or infrastructure – may put a significant strain on local healthcare services.

Rural areas are less ethnically diverse than major towns and cities

Compared to the major conurbations, England's rural areas are notably less ethnically diverse. Figure 10 presents statistics on ethnicity in areas across England, using 'White' or 'All other ethnic groups' categories, with data taken from the 2021 UK census.[16] For both smaller and larger rural settlements, 96% of the resident population identified themselves as White.[17]

Figure 10: Proportion of the population by ethnic group and settlement type, 2021 RUC, England, 2021.



Source: Data taken from the Department for Environment, Food and Rural Affairs, Statistical Digest of Rural England – Population, 2026.

The only ethnic minority group at relatively higher proportions in rural compared to urban populations were those identifying as 'White: Gypsy or Irish Traveller'.[18,19] At the 2021 census around 15,800 people living in rural settlements identified themselves as 'White: Gypsy or Irish Traveller'. This was equivalent to <1% of the rural population, but around 25% of the total 'White: Gypsy or Irish Traveller' population in England.[20] Populations identifying as Gypsy or Irish Traveller are known to face significant barriers to accessing health services and experience significant inequalities in health outcomes.[21,22]

Health trends

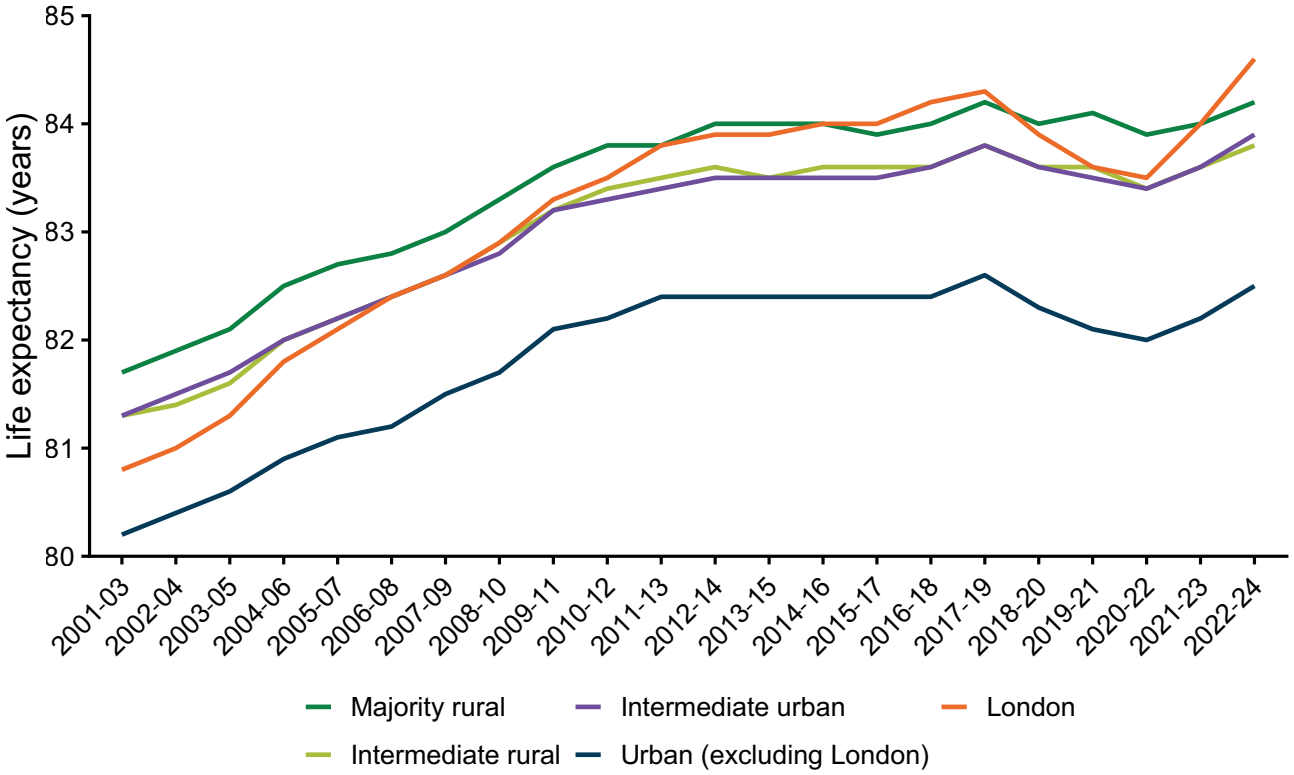
Rural populations live longer on average

Life expectancy has increased significantly over the last 200 years.[23] People born in England in the 1840s could expect to survive, on average, into their early 40s. Significant improvements in public health, sanitation and clinical medicine, mean that a baby born today could be expected to nearly double the longevity of their mid-19th century ancestors.

However, significant variation in life expectancy by sex or deprivation continues to persist.[24,25] For females, average life expectancy is 3-4 years higher than males, and those living in the most deprived parts of the country have a significantly shorter life expectancy than those in the least deprived.

Variation in life expectancy is also reported by physical geography. Figure 11 presents average life expectancy over time for females by geographical category. The average life expectancy for females was lowest for those living in 'Urban (excluding London)' local authorities between 2001-03 and 2022-24. Average life expectancy in London increased over the time period, although some caution is needed since large transient populations in the city pose challenges to the accurate estimation of life expectancy.[26]

Figure 11: Female life expectancy at birth, England, by Local Authority Area classified using the 2021 RUC.



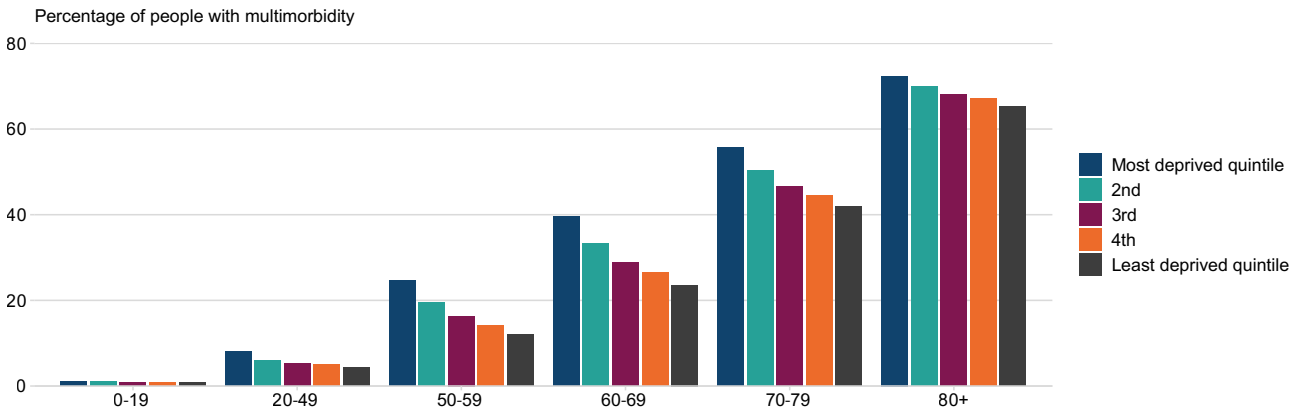
Source: Data taken from the Department for Environment, Food and Rural Affairs, Statistical Digest of Rural England – Health and Wellbeing, 2026.

Differences in life expectancy by geographical area arise for a variety of reasons, including demographic differences and differences in the distribution of deprivation – a key determinant of health – between settings. Further, looking at averages alone can hide significant inequalities in life expectancy. Some more deprived rural areas may have a lower life expectancy, while less deprived urban areas may have a greater life expectancy.

An ageing population in small towns and rural areas carries implications for health and social care

While ill health is not inevitable in older age,[27] adults may accumulate long-term conditions, and a greater need for care and support, as they get older. Figure 12 presents the proportion of the population with 2 or more long-term conditions – 'multimorbidity' – by both age and Index of Multiple Deprivation (IMD) quintile. The proportion of adults with multiple long-term conditions increases with age and with level of deprivation.

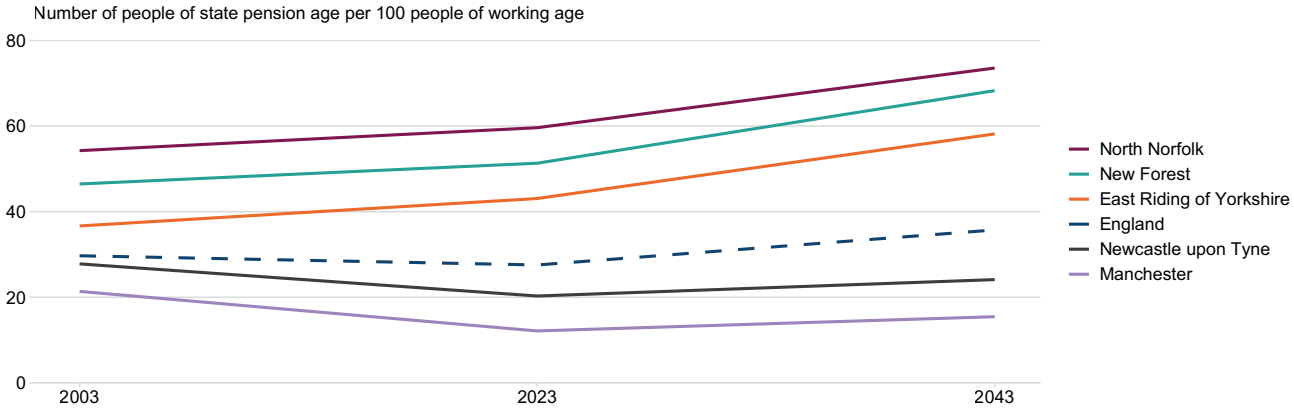
Figure 12: Proportion of population with 2 or more long-term conditions by age-group and IMD quintile, England, 2020.



Source: Chief Medical Officer Report: Health Trends and Variations in England, 2025. Available under the Open Government Licence v3.0. Original data taken from Valabhji J, Barron E, Pratt A et al. Prevalence of multiple long-term conditions (multimorbidity) in England: a whole population study of over 60 million people.[28]

Meeting the increasing demands for health and social care for older adults requires a pool of local working-age adults from which health and social care professionals can be drawn. However, populations in small towns and rural areas generally have fewer adults of working age relative to the size of their older population. Figure 13 compares old-age dependency ratios, the number of people of state pension age per 100 people of working age, for different rural and urban local authority settings.

Figure 13: Historic and projected old-age dependency ratios for 5 local authority districts, compared with the England average, 2003, 2023 and 2043.



Figures are adjusted to account for changes in the State Pension age: 60 for women and 65 for men in 2003, 66 for both sexes in 2023, 67 for both sexes in 2043.

Source: Chief Medical Officer Report: Health Trends and Variations in England, 2025. Available under the Open Government Licence v3.0. Data available at GOV.uk: Old age dependency ratio supplementary analysis.

The urban local authorities shown have, and are projected to retain, lower old-age dependency ratios. Conversely, the more rural local authorities shown have higher old-age dependency ratios that are projected to rise further in the coming decades.

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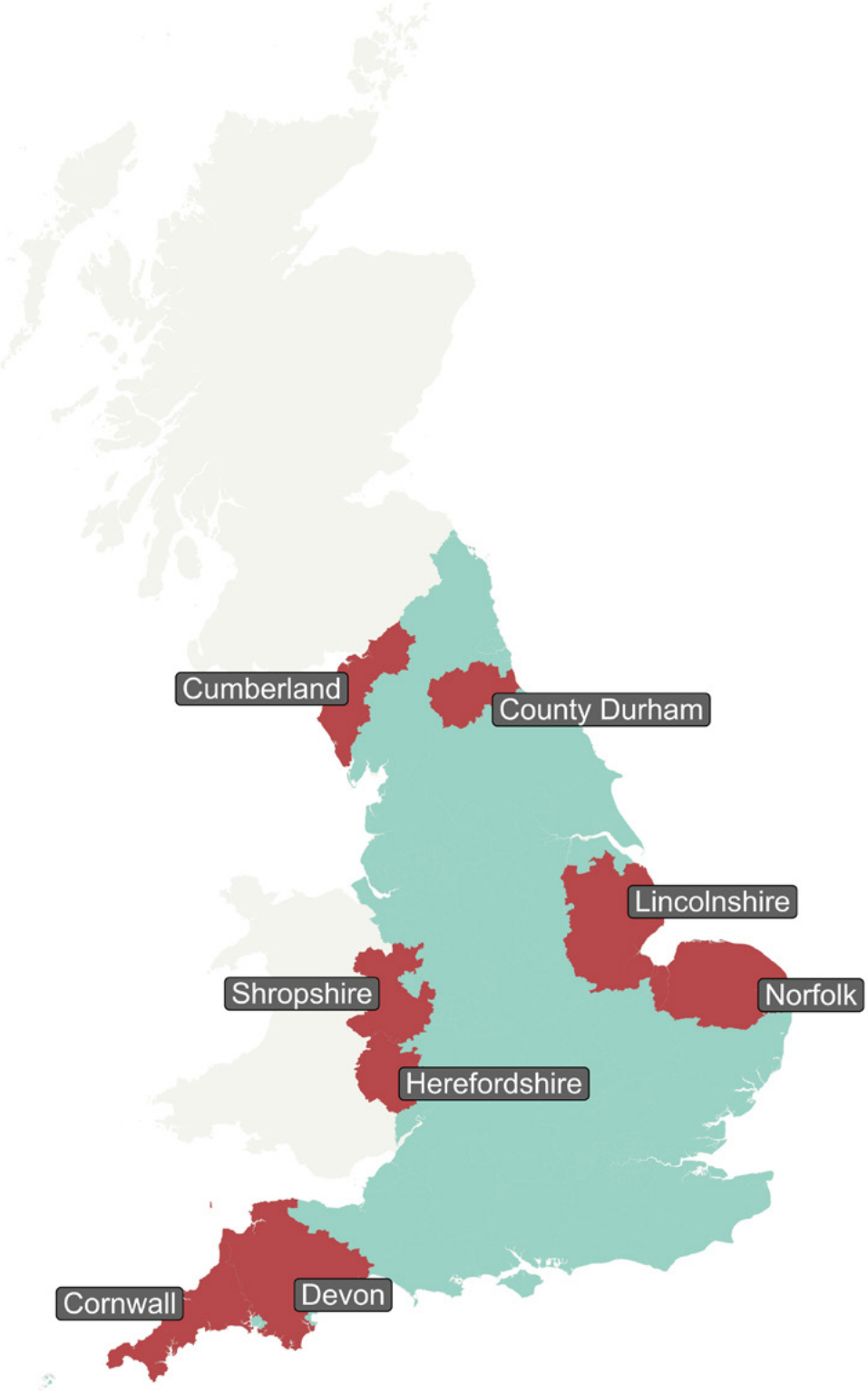
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2. Local authority context

In this chapter local authority public health teams describe the challenges and opportunities of delivering public health services in rural communities.



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2.1 Cumberland Council

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Kirsty Mills – Service Manager, Health and Social Wellbeing System, Cumberland Council
Ali Bragg – Senior Analyst, Cumberland Council



Navvies Bridge, Workington, crosses the River Derwent. Locals know it affectionately as 'Navvies Bridge' because 'navvies' was the old term for the labourers who built railways and heavy infrastructure in Victorian Britain. Several bridges in Workington were damaged or destroyed in the 2009 Cumbria floods. The bridge shown is a modern replacement opened in September 2011.
Source: Cumberland Council.

Background

Cumberland is a large and diverse area located in the North West of England, combining urban centres, coastal communities and extensive rural landscapes. Established as a unitary authority in April 2023, it brings together the former districts of Allerdale, Carlisle and Copeland along with Cumbria County Council, creating a strong foundation for collaboration and system-wide working.

Covering approximately 3,012 square kilometres, Cumberland is one of the largest local authority areas in England. Its geography is a key strength, encompassing internationally recognised landscapes such as parts of the Lake District National Park, the Solway Coast and historic sites including Hadrian's Wall. This rich natural and cultural environment contributes to a strong sense of place.[1]

Cumberland is home to around 280,500 people living across a mix of towns, market villages and rural communities. Over half of the population live in rural areas, reflecting the area's distinctive character and strong community connections.[2,3]

The local economy is diverse and resilient, with strengths in energy and nuclear decommissioning, alongside manufacturing, engineering, agriculture and food production. The visitor economy is also a major asset, supporting employment and local businesses through tourism linked to the area's landscapes, coastline and heritage.[4]

Overall, Cumberland offers a unique combination of opportunity and community strength, providing an excellent context for innovation, partnership working and positive outcomes for local people.

Demographics

Cumberland has a distinctive demographic profile, shaped by its rural geography, coastal towns and industrial communities. Compared to England, Cumberland has an older population; there are fewer children aged 0-15 years (16.5%; 46,292 children) compared with 18.4% nationally. There are also fewer people of working age (16-64 years) in Cumberland (59.5%; 166,852 people) compared with 62.9% nationally. However, there are higher proportions of older people (aged 65 years and over) living in Cumberland (24.0%; 67,351 people) compared to 18.7% nationally.

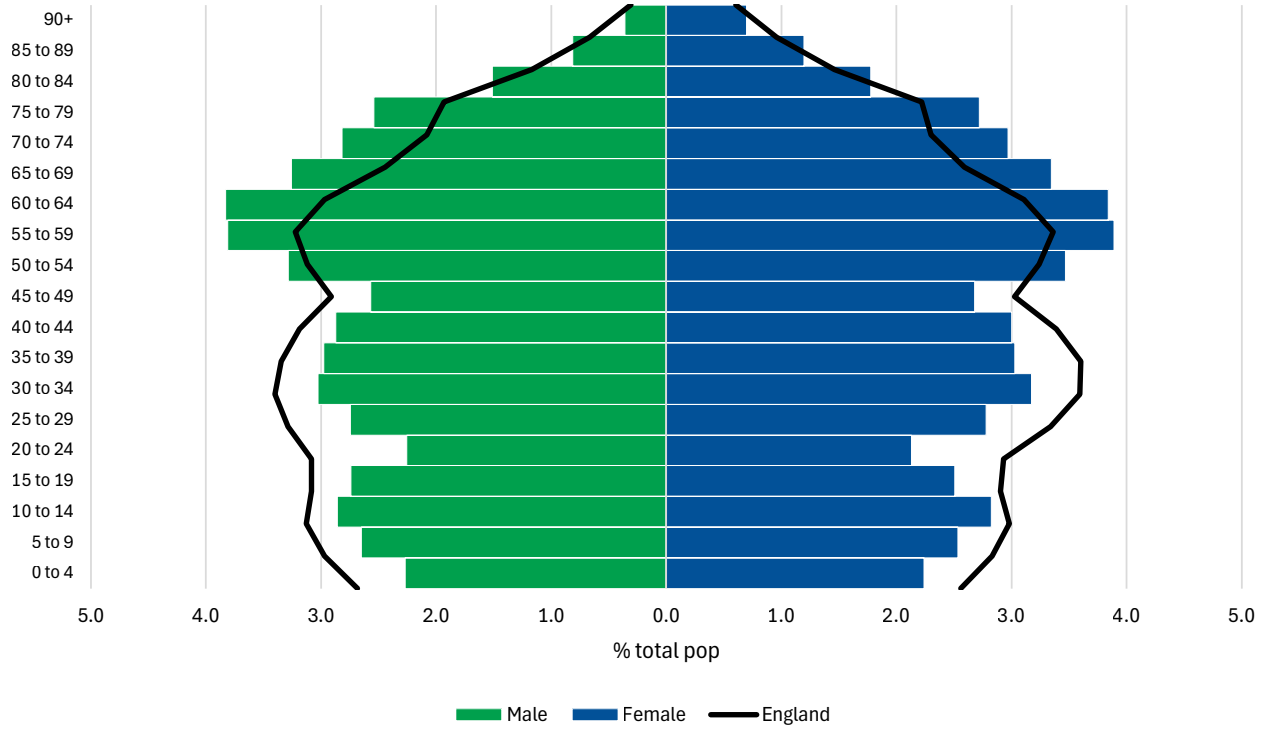
This pattern is particularly evident in rural and coastal areas, reflecting long-term trends of younger adults moving away for education or employment while older residents remain.

Over the last 10 years, Cumberland's overall population has increased by just 2.3% compared to 7.2% nationally. During that time, the number of children aged 0-15 years has risen slightly (+0.5%); the number of working age people has fallen (-1.8%); and the number of those aged 65+ has increased (+15.8%). The increase in older people reflects the national picture, however, at national level the population has increased across all age groups.

The ageing population trend is expected to continue, from 2022 to 2032:[5]

- the number of children (0-15 years) is projected to decrease by 12.7% (-5,800)
- the number of 65+ year olds is projected to increase by 21.6% (+14,000) – a slightly higher increase than nationally (England +20.9%)
- The population aged 16-64 is projected to decrease by 1.5% (-2,400) which contrasts to a projected growth of 5.5% nationally

Figure 1: Cumberland population age profile, 2024.



Source: Office for National Statistics, 2024 mid-year population estimates.

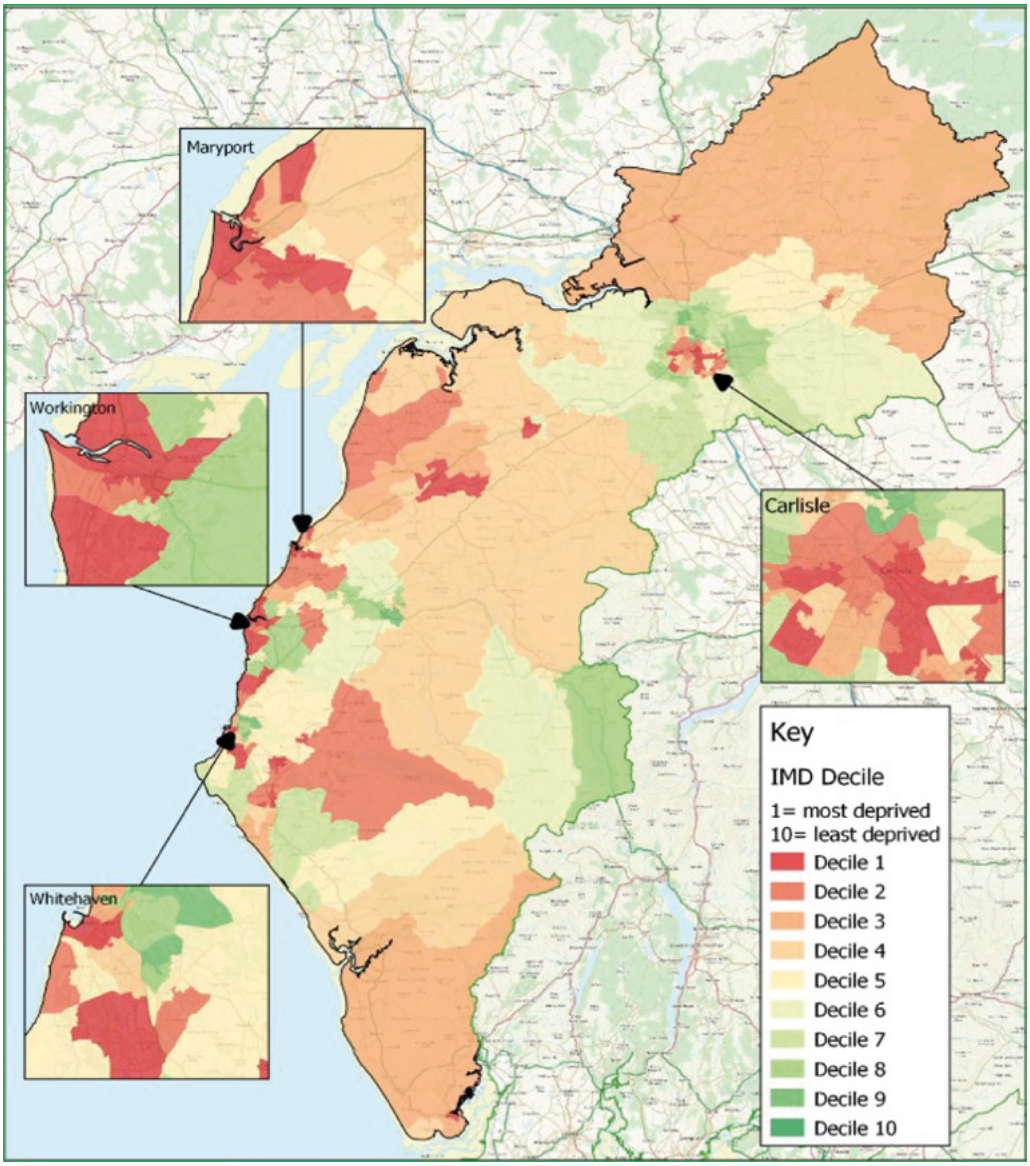
Cumberland's population is not as ethnically diverse as the rest of England, with a low proportion of residents from ethnic minority groups. At the time of the 2021 Census, 95.1% of Cumberland's residents identified their ethnic group as 'White British' which compares to 73.5% nationally. Just 4.9% of residents in Cumberland identified as being from ethnic minority backgrounds compared to 26.5% in England. Although the proportion of ethnic minority residents has increased in Cumberland over the last 2 censuses, it has been at a much slower rate than the rest of England.

Educational attainment varies across the authority. While many residents have strong vocational, technical and trade-based skills aligned to key local industries, the proportion of adults holding degree-level qualifications is lower than the England average in several communities. Some areas also experience a higher proportion of residents with no formal qualifications, contributing to inequalities in employment and income.[6]

Cumberland experiences marked internal inequalities. The Index of Multiple Deprivation (IMD) 2025 highlights pockets of significant deprivation, particularly in west Cumberland, including Workington and Whitehaven. Around 28,800 residents (10.3%) live in the most deprived communities, with 18 neighbourhoods in the 10% most deprived nationally. These areas typically face higher child poverty, lower educational attainment, higher unemployment and poorer health outcomes. In contrast, around 10,900 people (3.9%) live in 7 of the least deprived communities.

Overall, Cumberland ranks 95th out of 296 local authorities on the IMD. It is relatively more deprived in health, education, employment and living environment, but less so in housing, income and crime.

Figure 2: Cumberland – Deprivation Deciles by Lower layer Super Output Area.



Source: Ministry of Housing, Communities and Local Government. Crown copyright and database rights 2025 Ordnance Survey Licence AC0000861732.

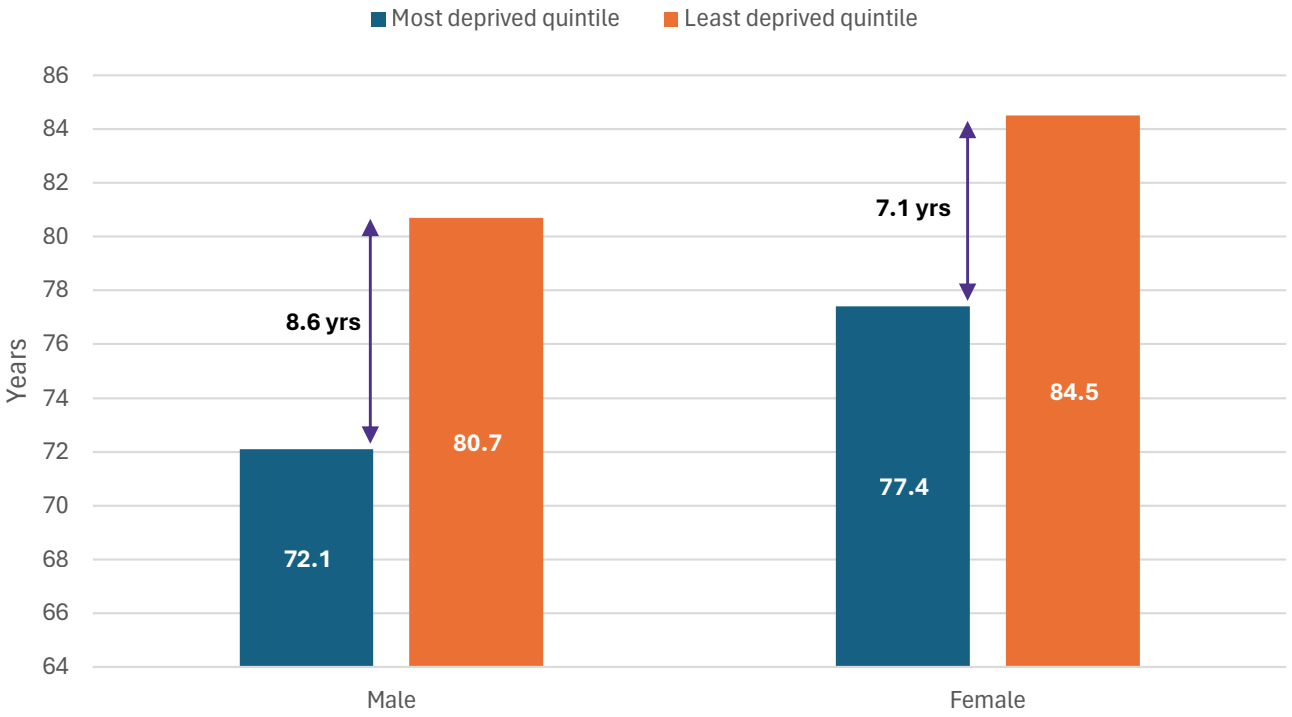
Key challenges

Income, employment and education inequalities drive differences in psychosocial wellbeing and life expectancy. In Cumberland (2022–23), external causes such as injury, poisoning and suicide were the main contributors to the life expectancy gap between the most and least deprived groups.[7]

Life expectancy varies significantly across Cumberland and is below the national average (77.4 vs 79.1 years for males; 81.5 vs 83.1 years for females). Across Cumberland, there are inequalities in life expectancy between those living in the most deprived areas compared to the least deprived. A male born in the most deprived areas of Cumberland can expect to live 8.6 years less than those born in the least deprived; a female born in the most deprived areas can expect to live 7.1 years less than those born in the least deprived.[8]

Healthy life expectancy is also lower locally. Men spend around 59 years in good health and 18.8 in poor health, while women spend 60 years in good health and 21.6 in poor health. Although it has declined over time, there has been a slight recent improvement, unlike the continued decline nationally.

Figure 3: Life expectancy in the most and least deprived quintiles of Cumberland, 2022-23.



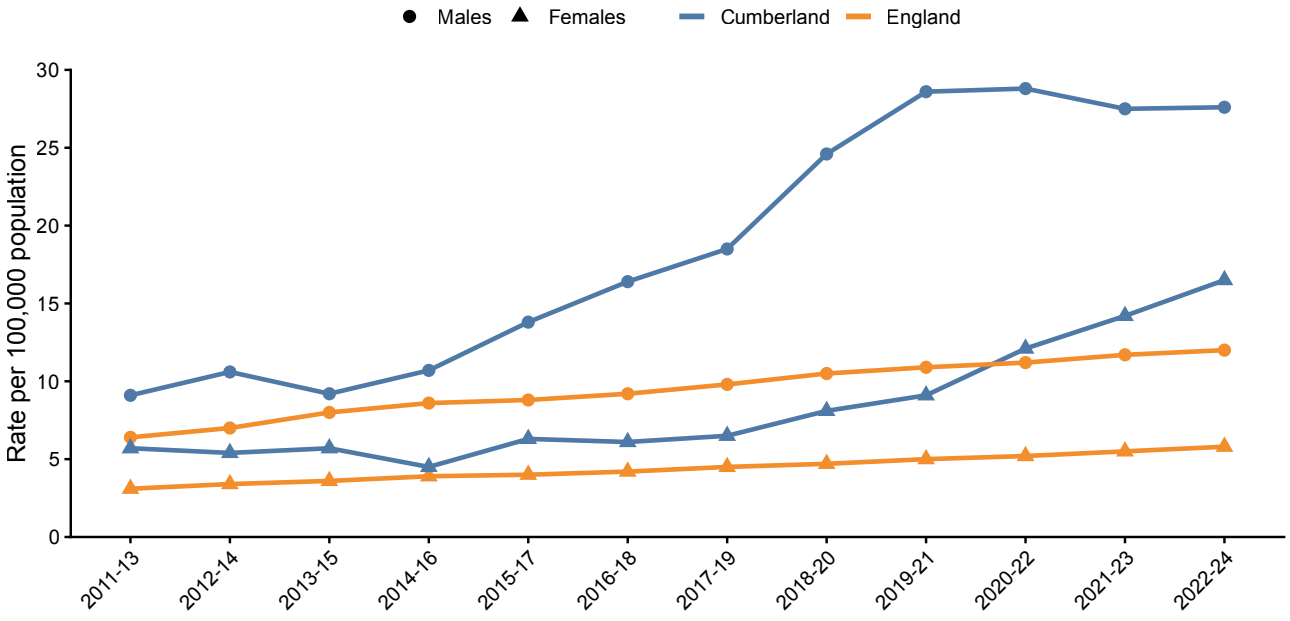
Source: Office for Health Improvement and Disparities, Segment Tool, 2022-23.

Drug and alcohol misuse is a significant concern in Cumberland, where drug-related death rates are more than double the national average. Between 2022 and 2024, there were 164 deaths, equating to 21.9 per 100,000, compared to 8.8 per 100,000 in England. Nationally, men aged 40–49 are at highest risk. In Cumberland, rates are higher in males (27.6 per 100,000) than females (16.5 per 100,000). Overall, drug-related deaths have risen faster in Cumberland than in England. While male rates have remained relatively stable in recent years, deaths among females have increased notably and are now significantly above national levels.

Suicide is a significant cause of death both nationally and in Cumberland, and is a key indicator linked to underlying mental ill health. Cumberland has the highest suicide rate in the Northwest region and the third highest rate nationally across England.[9] During 2022-24, there were 137 suicides in Cumberland (in people aged 10 years and over) equating to a rate of 19.4 per 100,000. This is almost double the England average of 10.9 per 100,000. Men are at a greater risk of death by suicide with rates significantly higher in men than women both nationally and in Cumberland. The suicide rate in males in Cumberland is 28.2 (England: 16.8 per 100,000) compared to 11.2 for females (England: 5.5 per 100,000).

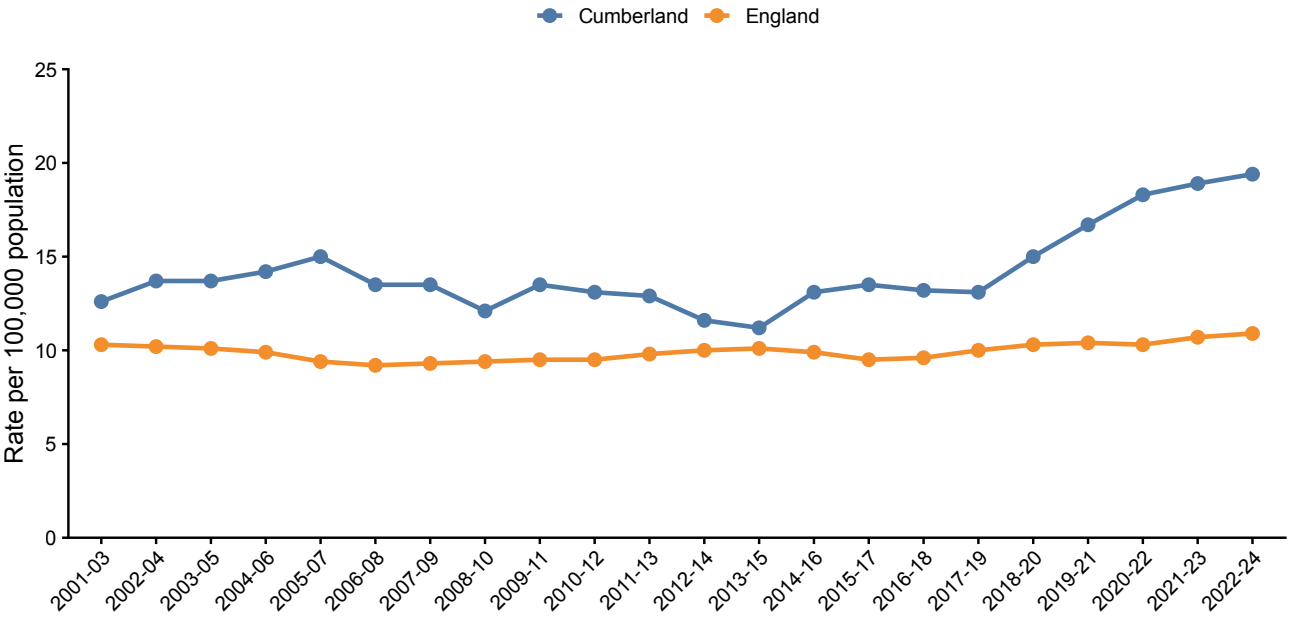
Tackling the wider determinants of poor psychosocial wellbeing is therefore an important public health priority for Cumberland.

Figure 4: Drug-related deaths, age-standardised rates per 100,000 in Cumberland and England, 2011-13 to 2022-24.



Source: Office for National Statistics.

Figure 5: Deaths by suicide, age-standardised rates per 100,000 in Cumberland and England, 2001 to 2024.



Source: Data taken from Fingertips, Office for Health Improvement and Disparities.

Key assets

In Cumberland, we are committed to creating person-centred, place-based services that recognise psychosocial wellbeing is shaped by a wide range of interconnected factors. These include life experiences, social relationships, access to opportunities and the quality of the environments in which people live, learn and work. We also recognise the significant influence of our strong industrial and agricultural heritage, which continues to shape identity, resilience and a sense of belonging across our communities.

Our approach builds on a broad range of local assets that support health and wellbeing. These include strong community and voluntary sector organisations, active local networks, green and blue spaces, cultural and heritage assets and trusted relationships within neighbourhoods. Primary care, social care, and partnership working across the wider health and care system further strengthen this asset base, alongside local employers, education settings and community hubs that provide opportunities for connection and support.

A key asset within this system is the Health and Wellbeing Service, located within Public Health. The service consists of place-based teams of Health and Wellbeing Coaches (HAWCs) and Health and Wellbeing Officers (HAWOs), who work alongside communities to provide tailored, strength-based support. The service focuses on empowering individuals and families with multiple and/or complex needs, using a behaviour change approach that builds resilience and independence. Much of this work supports residents living with long-term health conditions, experiences of trauma, social isolation and barriers to accessing traditional services.

During 2025, the service received 1,005 referrals. At the point of referral:

- 95% of people reported moderate to severe depression
- 93% reported moderate to severe anxiety
- 87% reported feeling lonely or isolated

Following support from the service (with duration based on individual need):

- 78% reported feeling happier
- 75% reported feeling more resilient
- 76% said their depression levels had improved
- 56% felt less lonely or isolated

These outcomes demonstrate the value of combining professional support with the wider strengths and assets within communities. By continuing to invest in both system-wide and community-level assets, Cumberland is building a more preventative, connected and resilient approach to improving population health and reducing inequalities.

Vision for the future

Building on the success of the Health and Wellbeing Service, our vision for the future is to continue to embed strength and needs-based models of support that utilise coaching techniques – both within the public health team and beyond.

The Public Health Annual Report for 2023/4 focused on mental health and neurodiversity, and emphasised the need to de-medicalise our approach to these challenges.[10] It highlighted the importance of trauma-informed services and the role that support such as health and wellbeing coaching could play in transforming people's lives. As a result we have built trauma awareness training into the development of the team.

HAWCs are also supporting Hope Haven, a new approach to the provision of mental health services in Whitehaven that builds on the direction of travel outlined in the Public Health Annual Report. They are embedded within a pilot Neurodiversity and Emotional Wellbeing Service for children and young people that was established in direct response to a recommendation within the report. We have also built specialist stop smoking provision into the health and wellbeing team, who are incorporating the coaching approach into the support they offer.

We have shown the success of this approach and now aim to build it into the heart of both the new Neighbourhood Health Programme and Cumberland Council's emerging prevention-focused customer services system.

Workington

Workington is a coastal town in west Cumberland, located at the mouth of the River Derwent, with a population of approximately 25,000. The town serves as a key service and employment hub for surrounding rural villages and coastal communities, many of which experience limited public transport, geographic isolation and reduced access to health and wellbeing services. Workington has a strong local identity shaped by its industrial heritage and close-knit neighbourhoods. While employment today is largely centred around health, retail, manufacturing and energy, pockets of deprivation remain, particularly linked to poor transport connectivity, isolation and service poverty in outlying rural areas.

As part of the Health and Wellbeing Team's work within Workington and surrounding rural communities, the Health and Wellbeing Team supported the development of an Art for Wellbeing Group. The group brings together individuals who have experienced crisis, trauma and adversity, many of whom are socially isolated or living in areas with limited community infrastructure. The group provides a safe, welcoming space where participants can connect with others, build confidence, increase self-esteem and develop a sense of identity and belonging through a shared creative activity.

Artwork produced through the group has become a powerful way for individuals to express experiences of isolation, loss and service poverty common within rural and coastal communities. Themes emerging from the artwork include loneliness, distance from services, reliance on limited transport links and the emotional impact of living in communities where support can feel inaccessible. Crucially, the artwork also reflects recovery, mutual support and hope, demonstrating the impact of connection and creativity on mental wellbeing.

Transport is a significant barrier for many participants, with some individuals living several bus journeys away from the venue and facing infrequent or costly public transport options. Rather than this becoming a limiting factor, the group itself evolved into a source of practical and emotional support. Participants began coordinating car-sharing, travelling together on public transport and checking in on one another, demonstrating strong community spirit and peer-led problem solving.

The artwork below captures the feelings of a group member before and after their involvement with the Health and Wellbeing Service. This case study highlights how place-based, asset-based approaches can help overcome rural and coastal barriers, reducing isolation and enabling people to access support through trust, creativity and community connection.[11]





Source: Cumberland Council.

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2.2 Devon County Council

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Source: Photo by Emily Underworld on Unsplash.

Background

Devon stretches across 2,687 square miles of breathtaking countryside, 2 dramatic coastlines and a collection of nationally protected landscapes along with UNESCO designated treasures that draw visitors from around the world. More than 842,000 people call the county home, living alongside rare and globally important species and benefiting from an impressive network of walking and cycling routes. The land itself fuels a thriving and evolving agrifood sector: Devon produces around 30% of the UK's dairy output and is celebrated internationally for its world class food and drink. Tourism remains one of the county's economic powerhouses, while the creative, digital, clean energy and marine sectors are rapidly expanding.

Devon's economy is defined by low unemployment, high levels of business start-ups and a strong entrepreneurial spirit. With 98% of local enterprises classed as small or micro-businesses, the county's economy is built on agility and innovation. Key industries – including tourism, agri-food and health and social care – support nearly half of all local jobs and generate £8.7 billion each year. Apprenticeship participation is strong and continues to grow, helping to equip residents with skills for the future.

The county's population is also becoming more diverse. Today, 7.4% of residents identify as belonging to ethnically diverse communities and a vibrant LGBT+ population plays an active role in shaping Devon's cultural and social identity. This growing diversity is strengthening the county's ability to design public services that are more inclusive, responsive and reflective of the people they serve.

Demographics

Devon is home to more than 842,000 people and has one of the oldest population profiles in England. Over a quarter of residents (26.3%) are aged 65 or above, compared with 18.7% nationally, and 3.7% are aged 85 and over, compared with 2.5% nationally. This rapidly growing older population (19.3% increase in those aged 65 and over in last 10 years vs 15.5% nationally) is placing increasing pressure on local health and care services. Working age adults (20 to 64 year-olds) now account for just over half of all residents, while children and young people make up around 20%. These patterns reflect longstanding trends: older adults tend to move into the county for its quality of life, while many younger people leave in search of education, employment and housing opportunities elsewhere.

The county is among the least ethnically diverse upper tier authorities in England: 92.6% of residents identify as White British, with small but growing Asian, Mixed, Black and Other ethnic communities. Most people were born in the UK (92.9%), and 96.8% of households use English as their main language – factors that shape approaches to cultural competency and inclusive service design.

Educational attainment across Devon is generally strong. Almost one third (32.9%) of adults hold a Level 4 qualification or higher, outperforming many rural and coastal areas. However, 15.6% of residents have no formal qualifications, highlighting persistent educational inequalities. Apprenticeships play an important role in the local skills system, with 6.2% of people reporting an apprenticeship as their highest qualification, reflecting the county's technical, rural and land-based employment sectors.

Figure 1: Devon population profile compared to England, 2024.



Source: Data taken from the Office for National Statistics, mid-year population estimates, 2024.

Devon's economic activity mirrors its ageing population. Almost 1 in 3 adults are retired. Among working age residents, 52.7% are in employment and unemployment remains low at 1.8%. Part-time work is common, influenced by seasonal industries, caring roles and rural geography. Major employment sectors include health and social care, retail and hospitality, education and construction, with strong representation across professional and skilled trade occupations.

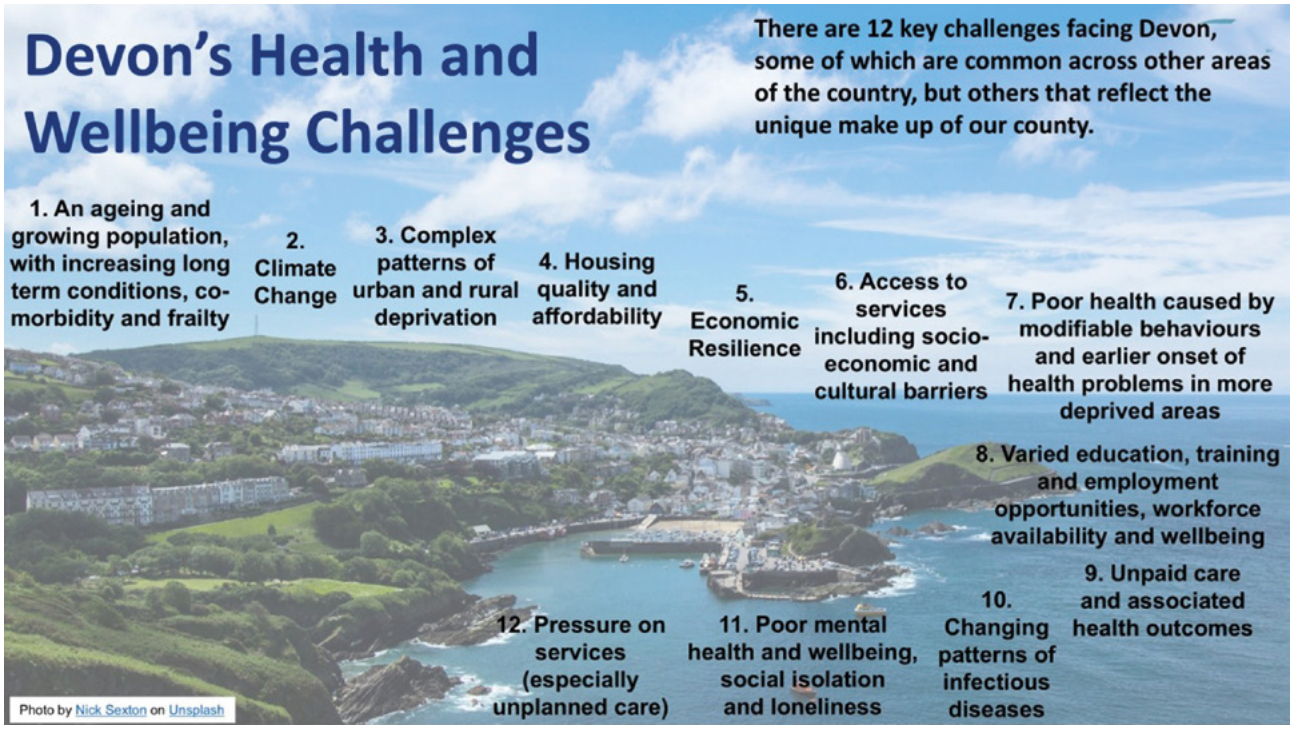
Key Challenges

Devon's public health priorities are being shaped by mounting housing pressures, a rapidly changing population and longstanding inequalities that cut across its urban centres, coastal towns and rural communities. At the heart of these challenges is housing: affordability and quality remain urgent concerns. Local earnings sit below the national average, yet house prices have risen to 9 times the typical local wage, placing significant strain on residents. Nearly half of the population live in homes with poor indoor environmental conditions, more than a quarter struggle to access essential services, and homelessness rates are among the highest in the South-West, particularly in Exeter and North Devon.

Despite many health indicators comparing favourably with national benchmarks, deep inequalities persist. In some parts of Devon, people can expect to live up to 15 years longer than those in the most disadvantaged areas: a stark divide most visible in rural and coastal communities. Rates of suicide and self-harm exceed national levels, highlighting the continuing

need for targeted mental health support. While overall child poverty is lower than the national figure, it sits slightly above the South-West average, and young people often face insecure and seasonal work that limits future opportunities and stability. There remains a persistent gap in good level of development in children starting school (46.3% for children eligible for free school meals compared to 69.7% for other children).

Figure 2: Devon's 12 challenges from the Integrated Care System's (ICS) Integrated Care Strategy, 2022-27.[1]

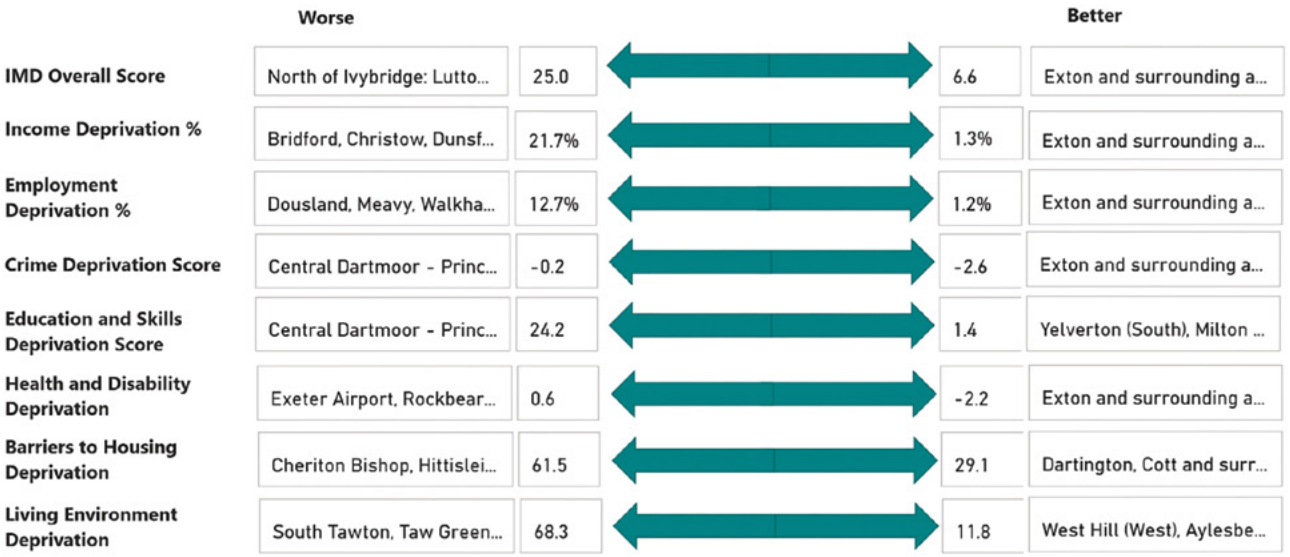


Source: 12 challenges taken from the ICS integrated care strategy. Photo by Nick Sexton on Unsplash.

Devon County Council's geography includes remote rural villages, coastal settlements and growing urban hubs, all with their own distinct pressures. The county faces growing pressures from climate change. For instance, flood and storm damage to homes, businesses and infrastructure, including particularly vulnerable railway links, is becoming more frequent and severe.

Deprivation is more obvious in larger towns, but many rural communities experience 'nested deprivation', pockets of severe hardship alongside affluence which is masked by data averages. Without strong local insight, issues such as substandard housing, digital exclusion and limited access to services can easily remain hidden. Yet many challenges are shared across rural towns: limited public transport, a shortage of affordable housing and fewer opportunities for stable employment. All these elements directly influence health, access to care and people's ability to take part in community life. This is highlighted in Figure 3, which shows how significant the inequalities gap is for smaller rural areas which are located near to major cities and towns.

Figure 3: Indices of Deprivation 2025 inequalities gap for smaller rural areas near major Devon cities or towns.



Source: Devon County Council, JSNA Area Profiler.

Demographic change adds further pressure, with an older age profile and more rapid population growth than England. This shift, occurring around 15 years ahead of the national trend, is increasing demand for adult social care, healthcare services, adapted housing and accessible transport, while a shrinking working age population affects the county's economic resilience.

Economic and educational inequalities also continue to shape outcomes. Productivity and earnings remain below national averages, some town centres are experiencing reduced footfall and rising vacancy rates, and groups such as care experienced young people and adults with disabilities continue to face significant barriers to education, training and employment.

Key assets

As England's first rural Combined County Authority (CCA), the Devon and Torbay CCA is embedding a health-in-all-policies approach across employment, skills, housing and transport, supporting improved outcomes for those in greatest need. The commitment and leadership shown by the CCA is a major asset: developing a thriving, inclusive and sustainable economy is essential to reducing inequities and improving health and wellbeing.

As a county with world renowned green and blue environments the residents and visitors to Devon have good access to natural environments and spaces to enjoy. This provides good opportunities for wellbeing through leisure, physical activity and valuing the diverse ecosystems. There are strong community and academic voices for the co-benefits to health of adaptation to climate change, and environmental protection. These include the European Centre for the Environment and Human Health, The School for Public Health Environments Research at Exeter (SPHERE) and the Centre for Net Positive Health and Climate Solutions at the University of Exeter.

Devon's Voluntary, Community and Social Enterprise (VCSE) sector is another significant strength. It delivers a wide range of activity, with many small, community-based organisations providing holistic support that statutory services alone cannot. Despite limited financial reserves and capacity, VCSE organisations remain a vital source of resilience, social connection and practical help for residents.

The VCSE Alliance brings together voluntary, community and social enterprise organisations to represent community voice, support co-production and enable more joined-up working with local authorities and health partners.

Local Care Partnerships (LCPs) have enabled targeted, place-based projects addressing the wider determinants of health. In Eastern Devon, for example, community-led initiatives such as All About The Place strengthened local voice and participation, alongside system action on tobacco dependence and housing quality.

A strong example of coordinated collaboration across councils is the successful STaR project (Support to Rough Sleepers and those at risk of rough sleeping with alcohol or drug dependency). It has brought together outreach, navigation and treatment teams to support individuals with complex needs, reducing duplication and complementing the Homelessness Prevention Strategy.

Vision for the future

Our Devon Joint Health and Wellbeing Strategy 2026-2035 Joint Strategic Needs Assessment – Devon Health and Wellbeing[2] has been shaped by partners across Devon and focuses on 4 priority areas we believe can make the most difference to people's health and wellbeing. One of our four priority areas is *Rural Areas and Access to Services* which formally recognises the specific Health and Wellbeing challenges in our rural and coastal areas. This sits alongside the other priority areas: Mental Health and Wellbeing; Start Well, Live Well; and Housing. We want each of these priority areas to use CORE principles to shape how actions are taken forward. The CORE principles are: Caring for people and places; Opportunities for All; Roots for Life; and Engage and Empower.

As part of the principle *Engage and Empower* we want to improve how we work with our communities to shape our services around their needs, and as a Public Health team we want to address systematic inequalities. To address these elements we have used the latest Index of Multiple Deprivation 2025 data to identify the 30% most deprived Lower layer Super Output Areas nationally. We have then grouped these by place and created 14 Priority Places by urban, coastal and rural areas. Our vision for the future is to work with our partners across Devon to prioritise our efforts and resources to these Priority Places and work closely with communities to seek opportunities for test-learn-grow approaches.

Ilfracombe Poverty Truth Commission

Ilfracombe is an isolated rural coastal town in North Devon with an estimated population of 11,000. The town's economy is dominated by tourism and seasonal employment, and poor-quality transport and highway links contribute to relative isolation. Ilfracombe has longstanding challenges associated with deprivation, including poor quality housing and limited access to education and skills development, which continue to influence health outcomes locally. To address these issues the Ilfracombe Poverty Truth Commission (PTC) was established: a partnership designed to address the structural drivers of poverty and their impact on health and wellbeing.

The PTC was initiated by the One Northern Devon Local Care Partnership and led by the Royal Devon University Healthcare NHS Foundation Trust in response to rising poverty, increasing inequality and evidence of residents falling between existing services.[3] The PTC brought together 2 groups of commissioners: 10 residents with lived experience of poverty 'Community Commissioners' and 12 senior leaders 'Civic Commissioners' representing a range of organisations. The model aimed to establish equal partnership between those who use services and those who design them.

Over a 12-month period, commissioners engaged in structured dialogue, shared analysis and joint problem solving. This process highlighted system behaviours that were unintentionally creating harm including rigid eligibility criteria, fragmented services and organisational cultures that often resulted in 'door closed' responses. These insights allowed partners to reframe poverty as a systemic and structural issue, rather than an individual circumstance.

The commissioners agreed 3 priority themes and worked together on change initiatives. These included a co-designed 'Ilfracombe Healthy Homes' retrofit specification for new council owned properties; the reinstatement of adult education and practical skills courses in the town for the first time in 2 decades; expansion of Job centre outreach; and the development of an integrated 'Campus' model to support more coordinated and accessible local services. The Commission also produced a set of 'Humanise Principles' to guide more relational and dignity-based practice across organisations, supported by new staff development resources aimed at reducing stigma and improving frontline responses.

The Ilfracombe Healthy Homes project pilots a potential solution to some of the identified housing issues. Ilfracombe has many small bedsits and units of accommodation that provide poor quality, unmaintained and unhealthy living conditions for residents. So far, the project has seen the District Council purchase 3 properties with the aim to renovate them into healthy homes and re-let them as quality self-contained flats. The PTC provided the driving force for the project, inputting into the design and specification to ensure that these homes are healthy community assets.

The PTC has seen improvements in cross-system trust and informal collaboration, and lived experience becoming recognised as an essential form of expertise within local decision-making. The PTC will embed this work through the multi-agency One Ilfracombe Partnership with meetings to maintain momentum, accountability and commitment for the development of an integrated 'Campus' model to support more coordinated and accessible local services. The PTC has established the conditions necessary for sustained, systemwide change and test neighbourhood health approaches.[4]



Tree artwork painted by Community Commissioner: Facing the roots of poverty together, local charities and the poverty truth commission create strength, allowing progress to branch out and for positive outcomes to fruit.

Source: Ilfracombe Poverty Truth Commission, reproduced with permission.



Community Commissioners and Civic Commissioners make up the Poverty Truth Commission.

Source: Ilfracombe Poverty Truth Commission, reproduced with permission.

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2.3 Durham County Council

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Durham Dales Heather Moorland
Source: Durham County Council.

Background

County Durham is a large and predominantly rural county and is the 10th largest upper tier local authority in England by population. While Durham City and the larger towns serve as key centres, around 2 in 5 residents live in rural areas. Home to approximately 540,000 people, the county encompasses a rich mix of traditional market towns, 20th century new towns, rural villages and the historic cathedral city, all of which contribute to County Durham's distinctive character.[1]

County Durham's remarkably diverse geography includes the North Sea coastline to the east, where former industrial mining communities are evolving through regeneration and environmental improvement. Moving inland, the landscape transitions into rolling farmland and historic market towns as well as Durham City, home to Durham University, consistently ranked within the top 5 universities in the UK. Further west, the environment becomes increasingly rugged, culminating in the Durham Dales, an area of outstanding natural beauty.

County Durham has strong economic foundations such as large manufacturing and education sectors, innovative and growing businesses, an improving visitor offer and beautiful landscapes and heritage. But as a rural county, people need help to access education, training and work and to start and grow businesses. The county's Inclusive Economic Strategy is working to build on these solid foundations and ensure the economy is more inclusive and greener for all.[2]

This breadth of geography shapes a wide range of economic, social and environmental contexts within a single local authority area. County Durham has successfully embraced this diversity, and its people are recognised for their resilience, pride and strong sense of community.



Low Force Waterfall
Source: Durham County Council.

Demographics

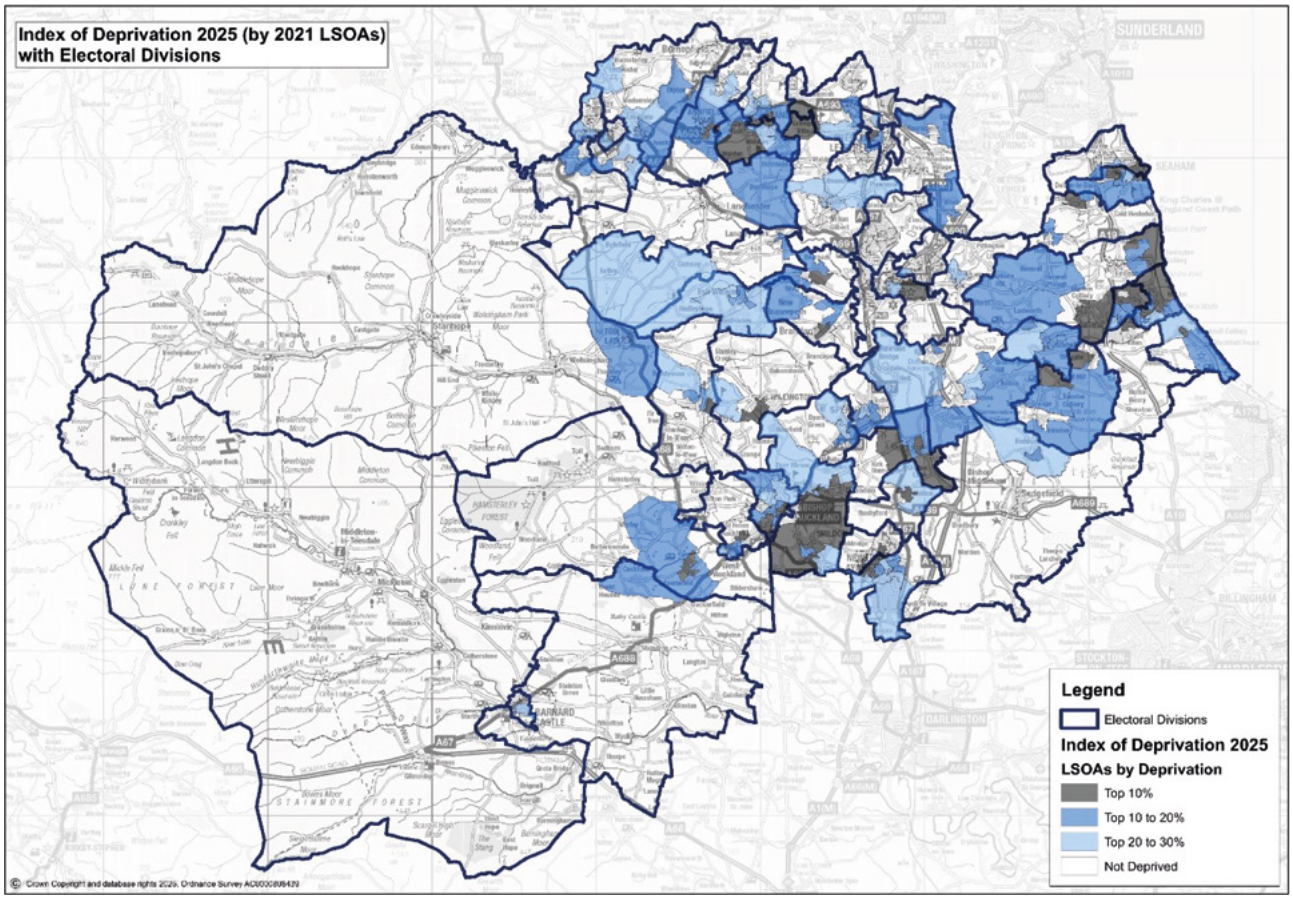
County Durham's demographic profile presents a complex mix of strengths and challenges that shape local priorities. The county has seen relatively slow population growth, alongside an ageing population. This older age structure brings pressures on health and social care, while relatively static working-age numbers may affect the future labour supply. At the same time, County Durham's longstanding communities, stable population base and strong local identity offer significant assets, supporting resilience and cohesion across its diverse rural and urban areas.[3]

Durham has an older age profile than England as a whole, with a higher proportion of residents aged 65 and over (22% compared with 19% nationally).[4] Historically, County Durham has been less ethnically diverse than many other parts of England. In the 2021 Census only 3.2% of the population identified as an ethnicity other than White, compared to 19% across England. The Census also recorded around 1,000 Gypsy, Roma or Irish Traveller (GRT) residents in County Durham. However, locally we know County Durham has a long GRT cultural history indicating that this is underreported in the official statistics.[5]

County Durham experiences relatively high levels of deprivation, ranking 40th out of 153 upper-tier local authorities in the Index of Multiple Deprivation (IMD) 2025. Seven County Durham Middle layer Super Output Areas (MSOAs) are ranked among the top 10 most deprived rural areas in England.

Over half of County Durham residents live in the 30% most deprived Lower layer Super Output Areas (LSOAs) nationally. Of these, approximately 15% live in the 10% most deprived areas, with a smaller but significant proportion also living in the 1% most deprived areas nationally. This is detailed in Figure 1 below.

Figure 1: Deprivation in County Durham, by Electoral Division (Index of Deprivation 2025).



Source: Adapted by Durham County Council Public Health Intelligence Team. Crown copyright and database rights 2025. Ordnance Survey AC0000808439.

Unemployment rates are broadly in line with regional averages at around 4%. However, the county has higher-than-average levels of economic inactivity. Around a third of this is linked to long-term sickness, exceeding national and regional averages. This has provided opportunities to deliver hyper-local holistic and targeted interventions where real impact is being seen within disadvantaged communities.

Key challenges

County Durham faces considerable health inequalities with local life expectancy for men and women significantly lower than the England average. These inequalities are most pronounced in communities experiencing higher levels of deprivation, where premature mortality rates are substantially higher. The impact of this is stark: women in the most deprived areas live 8.8 years fewer, and men 10.2 years fewer, than those in the least deprived parts of the county. This pattern of disadvantage is mirrored in health outcomes across the county with clear disparities between different communities.[6]

Progress has been achieved in some areas, particularly within the tobacco agenda. Over the past decade, smoking prevalence has fallen by 11.5 percentage points, dropping from 20.3% in 2014 to 8.8% in 2024. Tobacco dependency in pregnancy (TDiP) has also seen a substantial improvement, reducing by 9.2 percentage points, from 18% in 2014/15 to 8.8% in 2024/25.

While challenges remain, this progress has significantly narrowed the gap with the England average.[7]

However, there remain many indicators where County Durham continues to perform less well including alcohol-related hospital admissions for those aged under 18, childhood obesity and long-term mental ill health. Insights from the Joint Strategic Needs and Assets Assessment (JSNAA) and the recent County Durham Adult Health and Wellbeing Survey highlight what factors make the biggest contribution to lives being cut short. These findings emphasise the significant impact of the wider determinants of health and reinforce the need for strong preventative interventions that target the conditions shaping people's long-term wellbeing.[8]

In response to these entrenched inequalities, the County Durham Health and Wellbeing Board has identified 4 key public health priorities.[9] These priorities target the biggest contributors to poor health outcomes and the largest drivers of the life expectancy gap:

- Making smoking history – reducing tobacco harm and supporting a smokefree generation.
- Enabling healthy weight – creating supportive environments and targeted interventions to reduce obesity.
- Improving mental health, resilience and wellbeing – strengthening protective factors and widening access to support.
- Reducing alcohol harms – addressing high-risk drinking and its effects on individuals, families and communities.

These priorities guide collective action across the system, with strong links to partnerships focused on the wider determinants of health including housing, environment, poverty and economy, ensuring the greatest impact on improving health and reducing inequalities for people across County Durham.

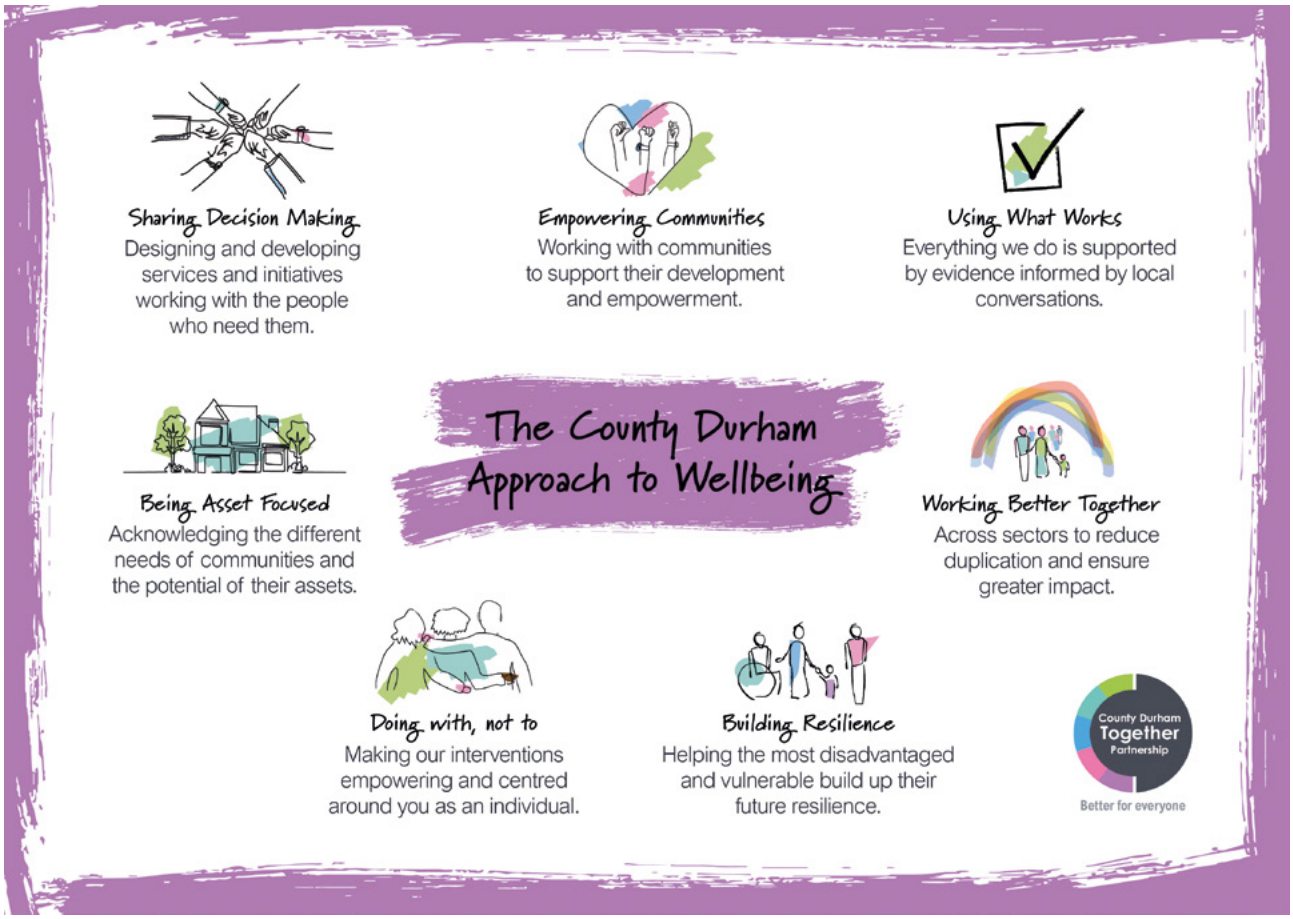
Key assets

County Durham has many natural assets in the form of the county's rich landscapes and cultural heritage from the Durham Dales and North Sea coastline to Durham Cathedral and major attractions such as Kynren, a large-scale outdoor performance that brings 2,000 years of British history to life. Alongside this are strong community assets, trusted partnerships and an active Voluntary, Community and Social Enterprise (VCSE) sector that together underpin a shared commitment to health and wellbeing, with the County Durham Together partnership uniting public, voluntary and community organisations to drive collaborative, place-based action.

The size and scale can be a challenge within County Durham but 12 Local Networks across the county give people the opportunity to work together to enhance quality of life in their community. An evidence-led approach supports the work to understanding need and targeting action. Tools like the Durham Index of Need (DIoN)[10] and the county's Adult Health and Wellbeing Survey[11] provide hyper-local insight into deprivation, health outcomes and wider determinants. This enables a collective understanding at a local level allowing more precise, place-based interventions.

A defining strength is County Durham's Approach to Wellbeing, which centres communities in decision-making. This asset-based model values the capabilities that already exist within neighbourhoods, supports co-production and strengthens community voice across service design and delivery. The model is detailed in Figure 2 below.

Figure 2: The County Durham Approach to Wellbeing.[12]



Source: Durham County Council.

REACH (Research and Engagement across Communities and Health) County Durham has strengthened local research capacity, secured external investment and enabled deeper collaboration with academic partners. It has also created practical mechanisms for involving communities in shaping research on the wider determinants of health.

Together, these assets, our people, places, data, research capacity and partnership culture, create the conditions for effective, community-powered action on health and wellbeing across County Durham.



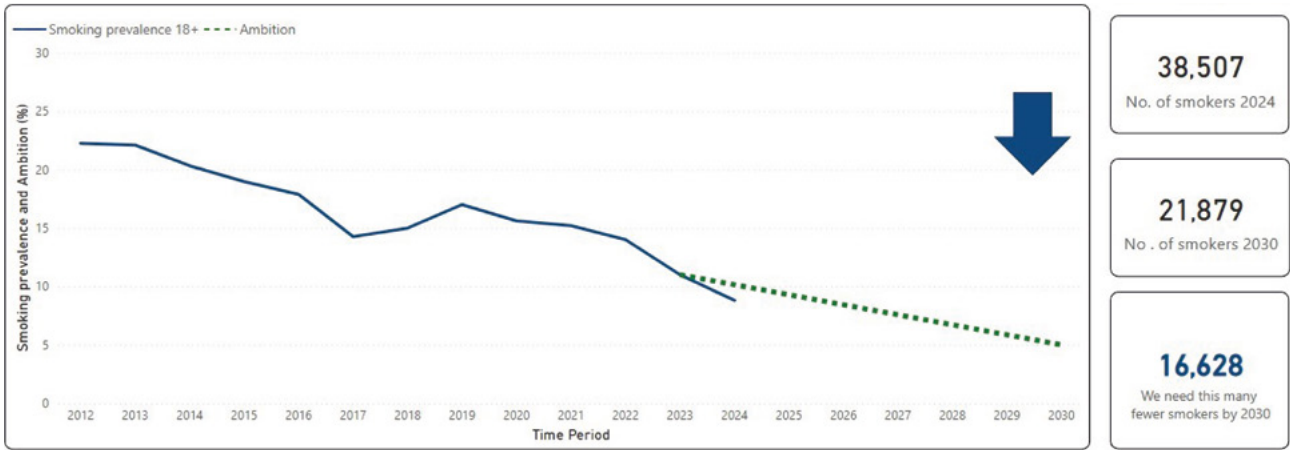
Community Action Team Blackhall Colliery
Source: Durham County Council.

Vision for the future

Six strategic ambitions have been developed in direct response to modelled long-term illness projections for County Durham.[13] The analysis showed that without significant change, more than 86,000 people, around 1 in 5 residents, could be living with major illness by 2040, with the steepest rises expected in the most deprived communities. These findings highlighted the scale of future pressures and the urgent need for focused, preventative action. Therefore, these projections have been translated into a clear set of local ambitions designed to reduce unfair differences in health and wellbeing across the county.[14]

Collaborative working with partnerships, including the Health and Wellbeing Board,[15] has agreed 6 shared ambitions that are meaningful, measurable and relevant across the system. These ambitions are designed to demonstrate clear progress over time. For example, our local tobacco data shows a sustained reduction in smoking prevalence, reflecting the impact of coordinated action. However, it also highlights ongoing inequities, particularly among more deprived communities and priority groups, where rates remain significantly higher. This underlines both the progress achieved and the challenges we must continue to address (Figure 3).

Figure 3: Smoking prevalence ambition progress chart.[16]



Source: Durham County Council Public Health Intelligence Team.

Progress will be monitored through a combination of forecast modelling, routine data from Durham Insight, updates to the JSNAA and ongoing community-based insight. This evidence-driven approach, grounded in the County Durham Approach to Wellbeing, ensures our ambitions remain focused on reducing unfair differences in outcomes and reversing the projected rise in major illness.

Our 6 shared ambitions include:

1. Reduce self-reported high anxiety to 10% or less. This equates to around 53,000 fewer people.
2. Reduce the number of people living with obesity to less than 1 in 5. This equates to around 61,000 fewer adults.
3. Reduce the number of people smoking to 5%. This equates to around 28,300 fewer smokers.
4. Reduce alcohol-specific deaths by 20%. This equates to around 20 fewer alcohol-specific deaths per year.
5. Reduce under-18 conceptions by half. This equates to around 80 fewer conceptions.
6. Increase levels of breastfeeding at 6 to 8 weeks to 2 in 3 mothers. This equates to 1,400 more women breastfeeding.

The case study below provides a focus on a small town setting, exploring how the principles above can have an impact at a local level.

Horden



St. Mary's Church and Surrounding Horden

Source: Durham County Council.

Horden is a coastal former mining village in the east of County Durham with an estimated population of around 7,163 (2024). Surrounded by a rural hinterland, including the nationally significant landscape of Castle Eden Dene to the north, Horden is well connected to the wider region by road and by rail following the reopening of its railway station in 2020. Despite its strong sense of place and community identity, Horden has faced longstanding socioeconomic challenges following the closure of Horden Colliery in 1987. This industrial decline has contributed to lower than average health outcomes, reduced home ownership and the gradual loss of essential local amenities such as police and fire stations, a secondary school, shops and cinema.

The impact of these inequalities is reflected starkly in health outcomes. Healthy life expectancy in Horden is just 51 years for males and 52 years for females, below the County Durham averages of 56 and 55 years respectively.

Horden is also in the top 10% in the county (in terms of need) for the following: year 6 overweight and obese, coronary heart disease prevalence, fuel poverty, free childcare eligibility, pupils with special educational needs support, good level of development (age 5), free school meal eligibility, carers allowance, council benefits and respiratory disease emergency admissions. These disparities illustrate not only the cumulative effect of deprivation but also the need for hyper-local, integrated approaches to supporting residents' health and wellbeing.

One such local approach is the Horden Together Partnership (HTP),[17] a place-based, multi-agency model designed to support adults experiencing multiple and overlapping inequalities, including poor physical and mental health, substance use, housing instability and involvement in crime. HTP brings together more than 60 organisations, working alongside Durham County Council to offer person-centred, holistic support within the community. This means issues are addressed early and in a coordinated way, reducing the need for referrals into specialist or statutory services.

HTP is underpinned by the Making Every Adult Matter (MEAM) framework, a nationally evaluated model for supporting those exposed to multiple disadvantage and to drive system change.[18]

Each person supported by the HTP receives tailored, responsive care enabled by the strong connectivity between partners. The model works across 3 overlapping areas – People, Place and Community – to deliver coordinated, context-sensitive interventions. This system-wide approach recognises the complexity of residents' lives and aims to build long-term resilience by working with, and within, the community.

An independent evaluation of the HTP, funded by the National Institute for Health and Care Research and conducted at the University of Edinburgh, is currently underway.[19]

Initial findings show that the HTP is delivering person-centred early intervention and mitigation that is reducing harm across the community. As a result, this place-based, system-wide intervention is providing significant social return on investment. These evaluation findings will inform future delivery of HTP in Horden and are potentially transferable to other mission-critical neighbourhoods in County Durham and beyond.



Multi-agency Horden litter pick.

Source: Durham County Council.

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2.4 Herefordshire County Council

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Source: "The River Wye from Symonds Yat Rock" by Anguskirk is licensed under CC BY-NC-ND 2.0.

Background

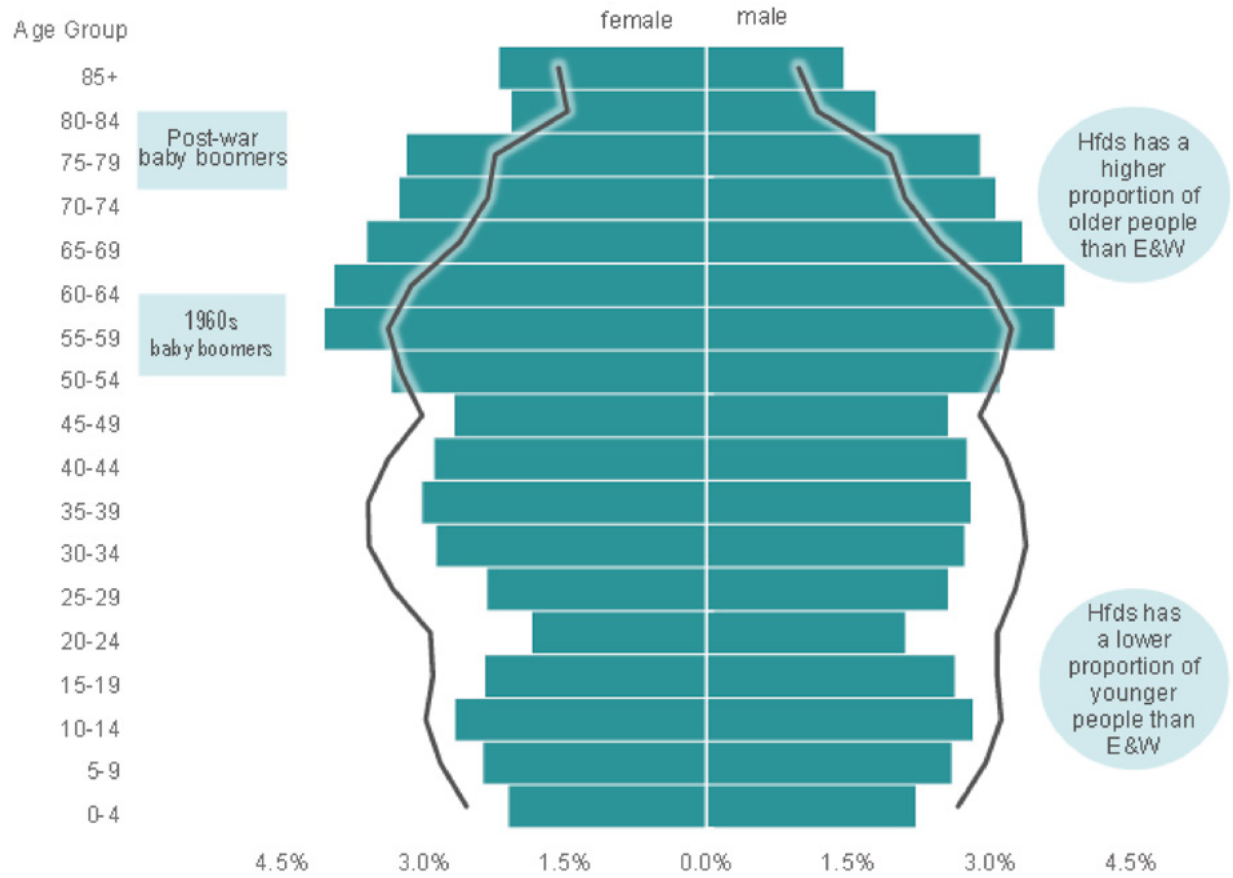
Herefordshire, located along England's border with Wales, is one of the country's most beautiful, rural and sparsely populated counties. It is framed by the rugged Black Mountains to the west and the graceful Malvern Hills to the east, with the River Wye winding unhurriedly across it. Celebrated for its rolling hills, orchards and black-and-white timbered villages, the county is centred around the historic city of Hereford. It offers historic sites, 2 Areas of Outstanding Natural Beauty (AONB), 5 charming market towns and award-winning food and drink (including its world-famous cider!).

Demographics

Herefordshire is the 4th least densely populated county in England, with a population of just over 190,000 scattered across 842 square miles. 43% of residents live in the most rural 'village and dispersed' areas.[1] Overall, deprivation and poverty is relatively low compared to the rest of England, but there are persistent pockets in the city and market towns.

Although life expectancy in Herefordshire is higher than the England average, the gap is narrowing and people born in the most deprived areas of the county can expect to live around 4 fewer years than in the least deprived parts.[2]

Figure 1: Herefordshire population pyramid, 2024 mid-year population estimates.

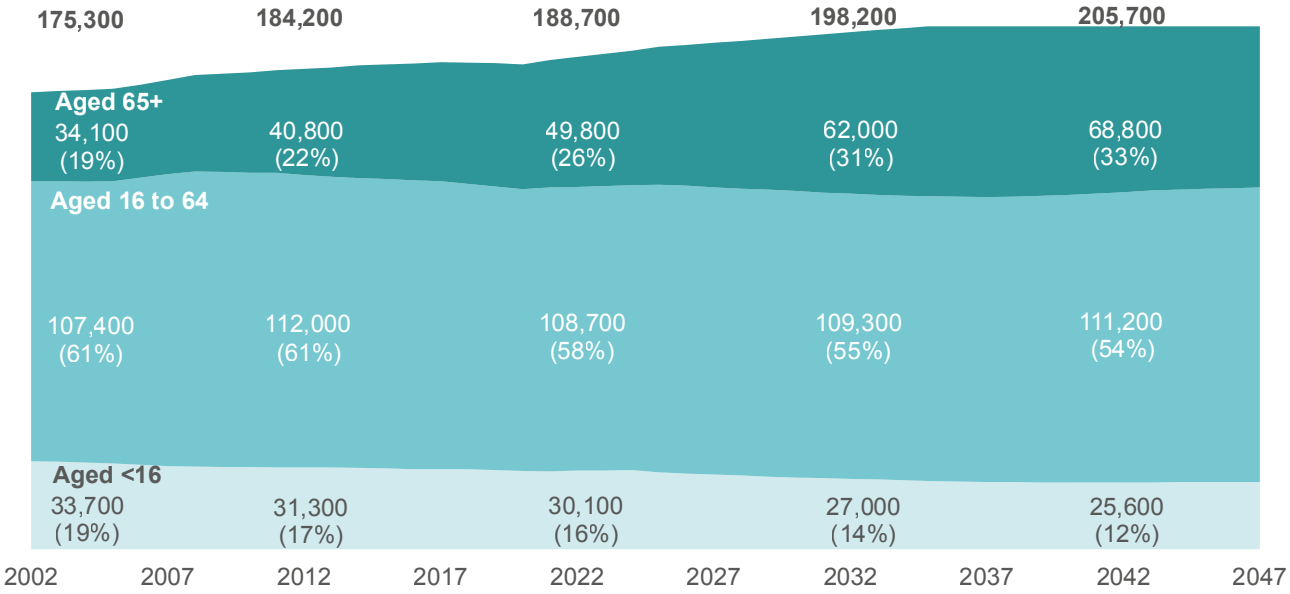


Hfds = Herefordshire. E&W = England and Wales

Source: 2024 mid-year population estimates for UK, ONS.

Herefordshire's age structure remains older than the national population (the average age of 48 is 8 years older than England's – see Figure 1),[3] and the older age groups are growing at the fastest rate (see Figure 2). Current estimates suggest that by 2041 a third of the county's population are likely to be aged over 65,[4] with implications for the economy and for health and care services.

Figure 2: Population projections for Herefordshire.



Source: Trend-based population projections, Greater London Authority, 2024.

The December 2024 update to the National Planning Policy Framework[5] has recently set new mandatory housing targets for the county. A total of over 27,000 homes are planned over the next 20 years, with the effects on population size yet to be fully modelled.

Herefordshire has a proud military heritage and is home to a significant population of serving personnel and their families, as well as armed forces veterans. A larger proportion of the adult population of Herefordshire are veterans than the England average – 6% of the adult population in Herefordshire, compared to 4% nationally.[6]

Key assets and challenges

Herefordshire has a strong sense of community and local identity, and the county is a nature-rich and attractive place to live. However, this can mask some of the less visible challenges to population health and the hidden inequalities which exist.

Starting well

Although our ageing population is a well-recognised challenge in Herefordshire, the health and wellbeing of our 30,300 residents under the age of 16 also remains important, and providing the 'Best Start in Life' is one of our key priorities. Although children in Herefordshire generally thrive and rates of child poverty are lower than the national average, there remain some areas of focus for improvement.

For example, the Public Health Outcomes Framework (PHOF) shows that visually obvious dental decay among 5-year-olds in the county has been consistently above the national average for many years (currently 31.3% versus 22.4% nationally)[7]. Since 2021 the council has been developing a 'Supervised Toothbrushing' programme targeting early years settings in the more deprived areas of the county. This has gone from strength to strength, involving 60 settings across Herefordshire, with a hugely positive reception from children, parents and settings.

Living well

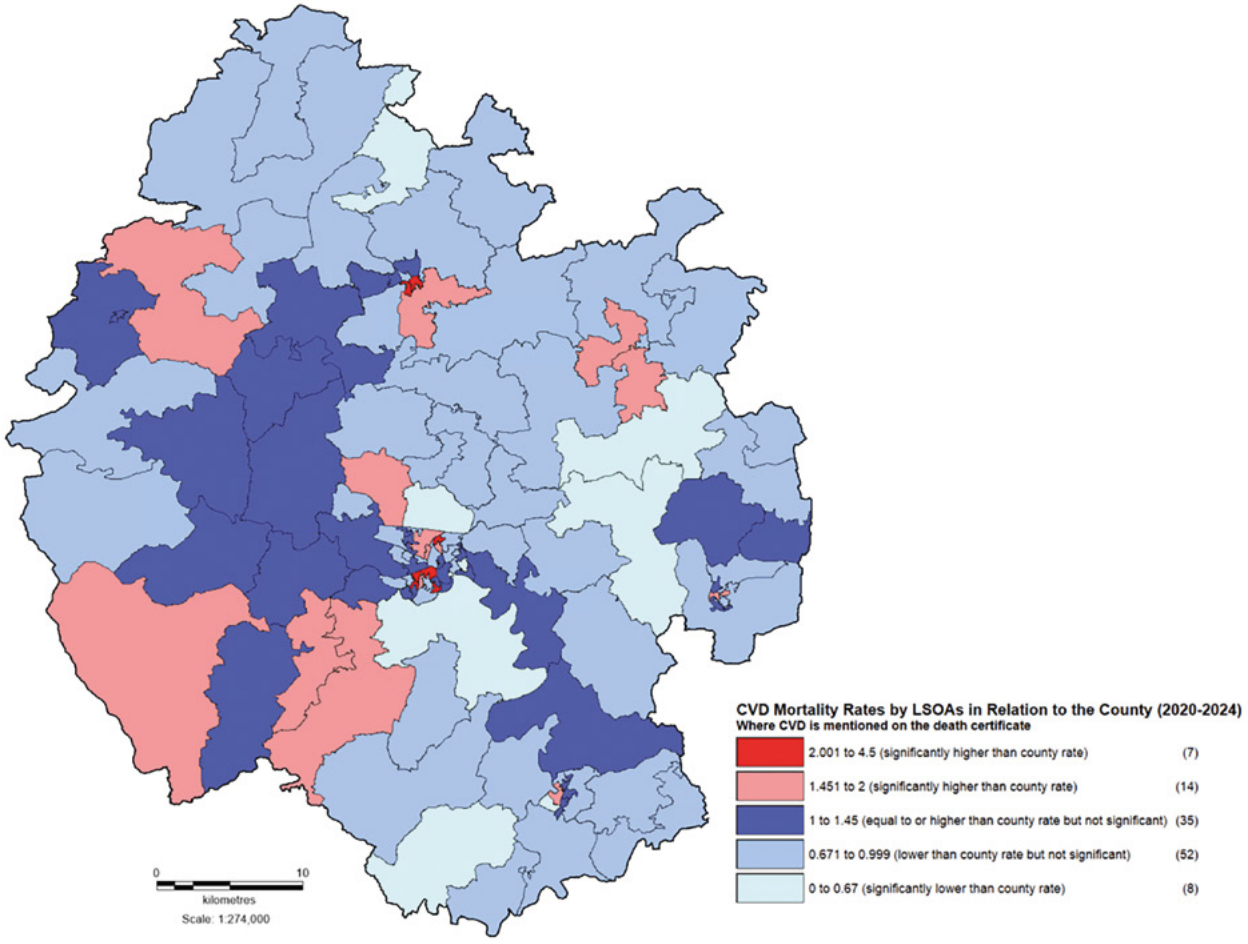
Herefordshire's sweeping rural landscapes, winding rivers and nationally protected areas offer residents an exceptional natural playground. From woodland trails to open hilltops, the county's environment invites people outdoors – supporting active lifestyles, strengthening social connection and providing the restorative spaces that are so vital for mental wellbeing.

However, access to green spaces is not equal. Although Herefordshire scores higher than the national average for access, it does not meet the Fields in Trust Green Space Index minimum standard, with 30.5% of residents having no accessible green space within a 10-minute walk of their home.[8]

Shaped by the natural environment, agriculture is a cornerstone of Herefordshire's economy, heritage and communities. In 2024, 9,000 jobs were in agriculture-related occupations: 10% of all employment, compared to just over 1% nationally.[9] Many of these jobs form part of the relatively low-skill, low-wage economy, which can act as a barrier to economic growth and social mobility. Combined with the nature of housing stock (dominated by large, older properties), this means that housing affordability (the 2nd worst in the West Midlands) is a long-standing issue, as is fuel poverty.[10]

One of the largest causes of morbidity and mortality across Herefordshire (and nationally) is cardiovascular disease (CVD).[11] While headline PHOF indicators suggest a similar burden of disease to nationally, a recent Health Needs Assessment[12] examining the prevalence of CVD at Lower layer Super Output Area (LSOA) level has shown considerable variation across the county (see Figure 3). The LSOA with the highest levels of CVD was found to have a rate of hospital admission for CVD nearly twice the county average, and a CVD mortality rate of over 4 times the average.

Figure 3: Cardiovascular disease mortality for Lower layer Super Output Areas (LSOAs) in Herefordshire.



Source: Herefordshire Council AC0000850532 (2025). Reproduced with permission.

NHS Health Checks are a cornerstone of CVD prevention, and we have introduced new targeted health checks alongside the universal offer. Population health data has been employed to preferentially invite those with greater need who have less routine contact with health services (especially working-age male smokers from more deprived postcodes), with behavioural insights employed to encourage attendance.

Herefordshire has taken part in the national Workplace Health Check pilot programme, with over 2,000 checks undertaken as of March 2026, and the decision taken locally to continue the scheme beyond the pilot period. This has enabled the development of stronger relationships between Public Health and local employers, providing further important opportunities for health promotion (for example, through our WorkWell and Healthy Lifestyles services).

Ageing well

Herefordshire performs well across most Adult Social Care Outcomes Framework measures, particularly in service user quality of life. For instance, the county is ranked highest nationally for the proportion of service users reporting that they had as much social contact as they would like.[13] However, with an ageing population and more complex care needs, the Market Position Statement 2020-2025[14] recognises pressures such as rising costs, market fragility and uncertainties around future demand.

Social isolation of carers remains a priority with only 21.4% of adult carers locally feeling they have as much social contact as they would like (compared to 30% nationally).[15]

We are launching this year our new 'Prevention in Adult Social Care Strategy', with ambitious plans across areas like improving Voluntary, Community and Social Enterprise involvement in the social care 'front door', increasing the use of 'Technology Enabled Care', reducing carer isolation and improving reablement services.

To meet the needs of our growing population living with dementia, Herefordshire's 'Fit for Life' programme plays an important role locally: by creating welcoming, dementia-aware community spaces, it helps older residents stay active and connected while giving individuals and families the confidence to recognise early memory concerns and seek timely diagnosis and support. It is delivered through local community venues, leisure providers and voluntary sector partners, with a focus on keeping people active, reducing isolation and maintaining independence.

Strong partnerships

Partnership working is strong in Herefordshire, and we benefit from having several organisations sharing the same footprint – with one local authority, one acute/community provider, one mental health trust (shared with neighbouring Worcestershire) and one 'mature' GP federation with strong GP leadership.

An important innovation in the county has been the development of the One Herefordshire Health and Care Partnership (1H) – a formal collaboration between these main health and social care organisations, which focuses on integrating services, improving population health and coordinating delivery across organisations. This pioneering partnership was shortlisted in the prestigious 2023 Health Service Journal Awards for its approach to integrated care.

The work undertaken by 1H has included the development of a Community Integrated Response Hub (CIRH), one of the county's most practical and effective pieces of integrated working. The CIRH provides a single 'front door' and joined-up route for rapid community support, bringing health, social care and voluntary partners together to keep people safe and independent at home. It is a key asset for the county, reducing hospital pressures and enabling genuinely integrated, place-based care.

Connected communities

Despite a strong sense of community in Herefordshire, its rurality and dispersed population pose challenges for keeping people connected and reducing social isolation. Public transport options are limited and there is a resultant heavy reliance on car travel on a network of B and C roads. This means that most areas outside of the city and market towns rank among the most deprived in England in terms of geographical barriers to services.[16]

Technology offers opportunities to make it easier for people to access services, and there has been significant investment in recent years in infrastructure to improve connectivity – but there remains a clear digital divide, with around 10% of adult residents reporting not using the internet in the last 3 months.[17]

Herefordshire Council's 'Talk Community' is the county's flagship model for community-led support, prevention and wellbeing. Through its 75 volunteer-run 'community hubs' it connects residents, voluntary groups, businesses and public services into a single, joined-up network that helps people stay well, independent and connected to their communities.

The last year has also seen the launch of its team of local 'Community Connectors' who can provide one-to-one support where needed to help residents stay connected, confident and independent by linking them with local activities, services and community resources.

The Talk Community approach also involves 'Community Action Networks'. These are geographically based networks (often aligned to market towns or clusters of rural parishes) that provide a structured space for public voice, third sector and statutory services to come together, share experiences and identify local challenges. By fostering collaboration, they help to create more joined-up, holistic services that reflect local needs, turning community energy into practical action.

Vision for the future

In September 2025 Herefordshire was announced as one of the 43 pilot sites for the National Neighbourhood Health Implementation Programme, and since then work has continued at pace to build on our strong foundations and meet the challenge of developing a true Neighbourhood Health Service across one of the country's most rural footprints.

Our ambition is for Neighbourhood health to provide even greater momentum to strengthening community ties, tackling health inequalities, supporting prevention and building the social and economic resilience that underpins long-term health and wellbeing.

Ledbury

The market town of Ledbury provides an example of how local communities can thrive in our rural county.

This historic market town in eastern Herefordshire, with a population of around 9,000, serves as an important hub for surrounding rural villages and agricultural communities. While the town benefits from a strong identity, heritage tourism and a diverse local economy, its rurality brings familiar challenges. Public transport is limited, and acute hospital services are located 20 miles away in Hereford, creating barriers to timely access for some residents.

Despite these constraints, Ledbury demonstrates how small towns can deliver strong community health and wellbeing through coordinated local action. The town's voluntary, community, faith and civic organisations work together as an interconnected network, sharing knowledge, referring residents between services and aligning their efforts around prevention and early intervention.

A number of local organisations form the backbone of this collaborative approach. Ledbury Food Bank, for example, works closely with housing providers and community partners to ensure individuals experiencing financial hardship receive support that extends beyond food provision, linking them to advice on housing, debt and wellbeing. Community Action Ledbury plays an equally vital role through its volunteer-led transport service, enabling residents, particularly older people and those without a car, to reach medical appointments and essential services in an area with limited public transport.

Community spaces are used creatively to promote social connection and wellbeing. Ledbury Rugby Club hosts a Talk Community Hub and activities such as Wellbeing Walks and a Veterans' Breakfast, strengthening both physical and social health. Support for children and families is bolstered by organisations such as LEAF (Locally Encouraging All to Flourish – a community wellbeing charity based in the town) and by a funded youth offer jointly developed by Ledbury Community Hub and the Town Council, providing safe environments for social engagement and emotional resilience building. Initiatives such as Places of Welcome at Ledbury Methodist Church further reduce loneliness by offering informal social spaces and early signposting. These activities are reinforced through well-attended Talk Community Network meetings, where partners collaborate on shared local challenges.

Ledbury's strength lies in this mature culture of partnership: a collective, community-led approach that ensures residents remain connected, supported and able to thrive.

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2.5 Konsel Kernow/Cornwall Council

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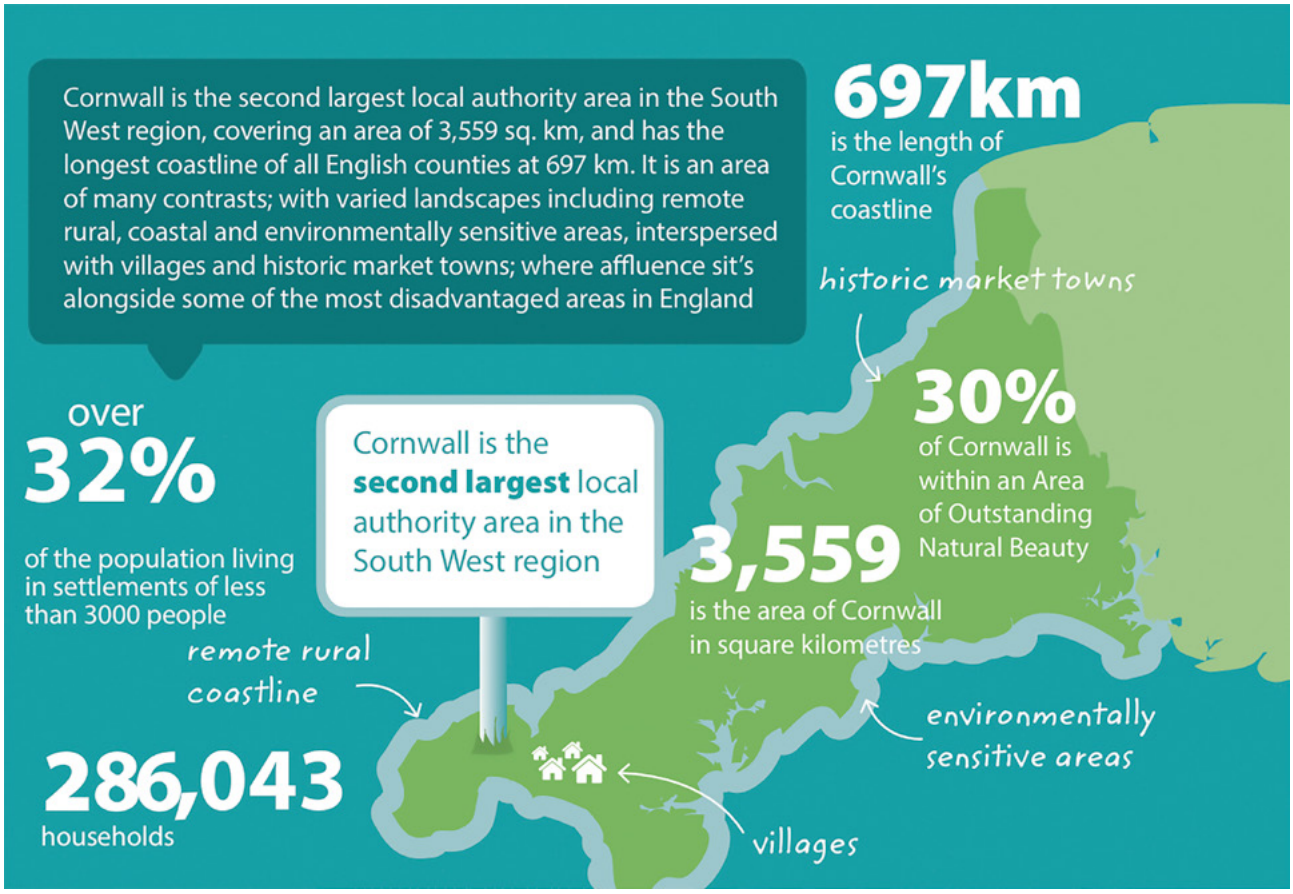


View from Carn Brea, Cornwall
Source: Cornwall Council.

Background

Cornwall is a place of natural beauty, rich cultural heritage and proud communities, home to over 580,000 people.[1] Villages and historic market towns are interspersed across rural and coastal landscapes (Figure 1), shaping a dispersed pattern of settlement. Once recognised as one of the world's most important mining districts, Cornwall's history is deeply embedded alongside these natural assets, which together attract over 4 million overnight visitors each year, with tourism a cornerstone of Cornwall's economy.[2]

Figure 1: Cornwall's geography and population.



Source: Cornwall Council.

A dispersed rural landscape

Over 90% of Cornwall is rural, with around 32% of the population living in settlements of fewer than 3,000 people.[3] Population density is among the lowest 15% of local authorities in England, with approximately 161 people/km^2, compared with a national average of 441.[4]

Cornwall has no major urban centre but is characterised by a number of small towns, each with its own character and distinctiveness shaped by local histories. These serve as crucial hubs for services, education and employment opportunities for surrounding rural areas and have higher proportions of children and young people, playing an important role in shaping children's health and wellbeing.[5]

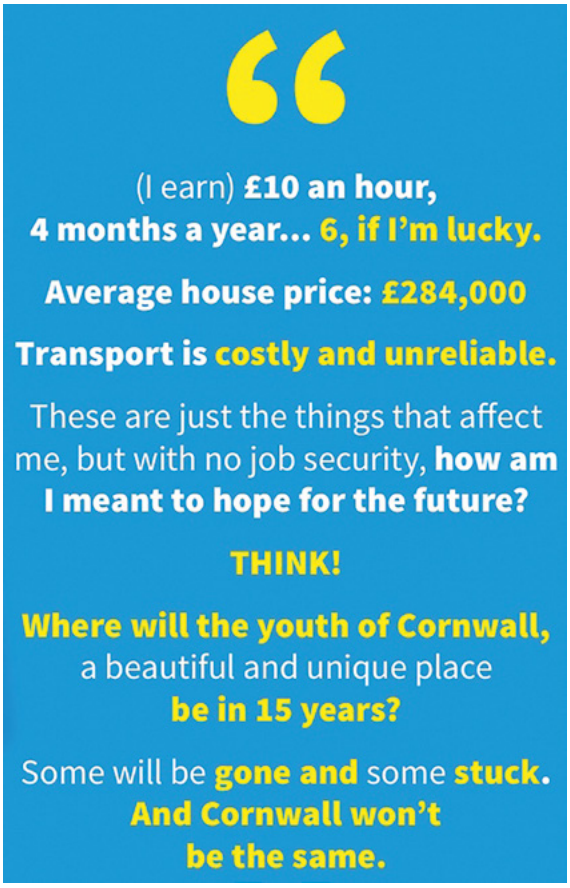
From history to present

In the 1800s, Cornwall was a globally significant mining region, producing two-thirds of the world's supply of copper, with around 25% of Cornwall's population employed in mining.[6] The discovery of copper and tin elsewhere led to saturated markets and subsequent widespread mine closures in the late-1800s. In the absence of economic diversification, this triggered the 'Great Emigration', with an estimated 250,000 people, predominantly young men, leaving Cornwall between 1841 and 1901 in search of better wages and working conditions.[7] Parallels can be seen today, with high levels of outward migration in Cornwall among 16-to-24 year olds reflecting ongoing challenges related to education, housing and employment.[8]

Cornwall's last working tin mine, South Crofty, closed in 1998, bringing an end to 4,000 years of tin mining in the county. The collapse of Cornish mining has left a lasting legacy of economic deprivation in former mining communities, contributing to a pattern of concentrated deprivation in the central belt of Cornwall.

Today, Cornwall's economy is dominated by agriculture and tourism. With £2 billion of visitor spend annually, tourism comprises 15% of the Cornish economy.[9] The COVID-19 pandemic exposed Cornwall's reliance on tourism, and vulnerability to external shocks due to limited economic diversification. This shapes young people's career aspirations, opportunities and decisions about staying or leaving Cornwall (Figure 2).

Figure 2: Voice of a young person from Camborne, Cornwall.

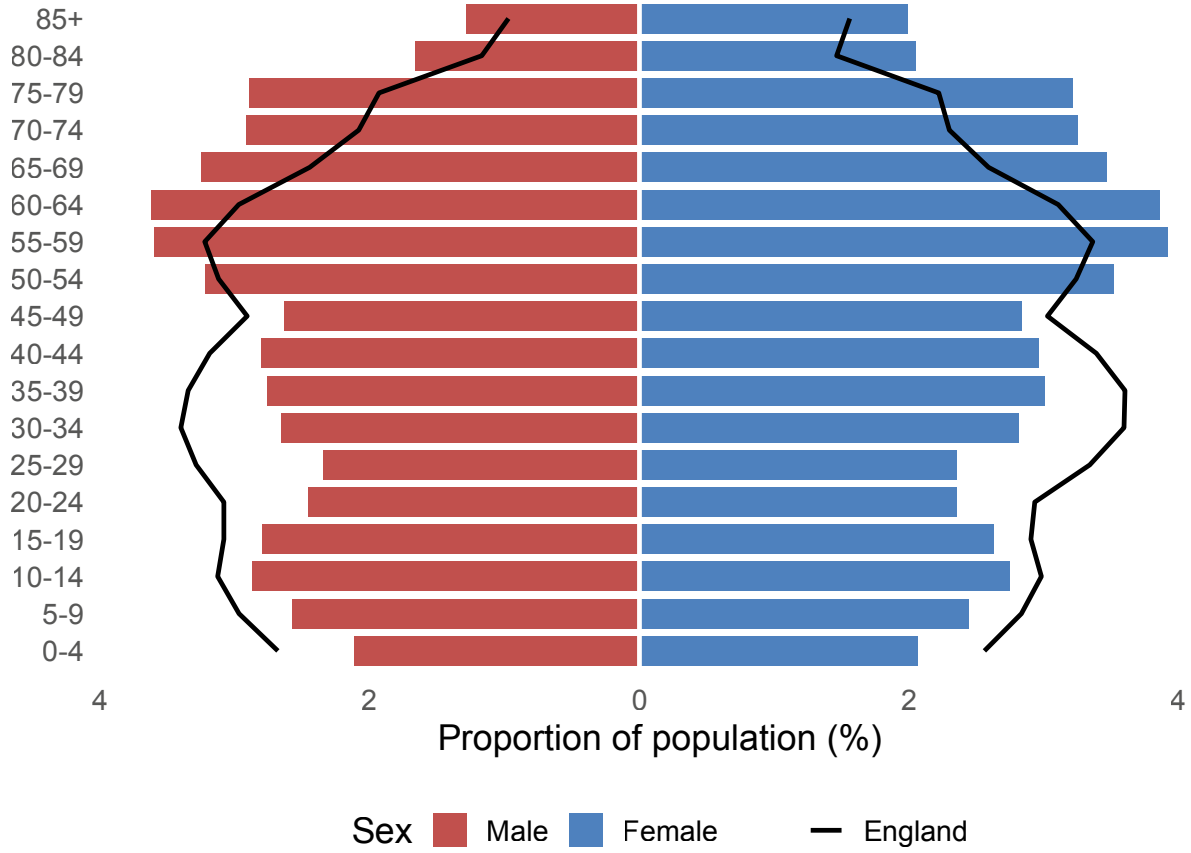


Source: Cornwall and the Isles of Scilly Director of Public Health Report 2025/26. Engagement undertaken by Action for Children.

Demographics and key challenges

Cornwall has an older age profile compared to England (Figure 3). The median age in Cornwall in 2024 was 48 years, compared to 40.2 years in England.[10] 18% of Cornwall's population identify as Cornish and data from the 2022 School Census shows 42% of children identifying as Cornish.[11]

Figure 3: Age profile of Cornwall compared to England, ONS 2024.



Source: Office for National Statistics, Population estimates for England and Wales: mid-2024.

Deprivation and poverty

Although Cornwall ranks 86 out of 296 local authorities for overall multiple deprivation, disparities are significant.[12] Eleven neighbourhoods fall within the 10% most deprived nationally, and 10% of the population live in the 20% most deprived neighbourhoods. Cornwall ranks among the 10% most deprived local authorities for Barriers to Housing and Services, and among the 15% most deprived for the Living Environment domain.

Cornwall's dispersed population means that poverty often exists alongside affluence within the same neighbourhoods, creating an averaging effect that 'hides' pockets of disadvantage. Rural-specific challenges such as 'rural premiums', seasonal employment and lower uptake of certain benefits linked to self-reliance and stigma, are not fully captured within Index of Multiple Deprivation domains.

Cornwall has the second highest rate of child poverty in the South West, with over 1 in 5 children (22.9%) living in relative poverty, higher than the England average (21.9%).[13] Behind these figures are parents who are faced with impossible decisions to meet their children's basic needs. In Cornwall, parents have described feeling judged because of their circumstances.[14] These harmful attitudes are often internalised, leading to guilt and a sense of failure, acting as powerful barriers, contributing to social isolation, worsening mental health and preventing families from seeking support (Figure 4).

Figure 4: Creative illustration of parents' and carers' experiences of poverty in the Camborne, Pool, Redruth area of Cornwall.



Source: Cornwall and the Isles of Scilly Director of Public Health Report 2025/26. Engagement undertaken by Penlee Family Project and Transformation CPR and artwork produced by Davydenko-Orlova Nataliia.

Education, skills and employment

Education is fundamental for providing the skills, knowledge and attributes that support people to secure good jobs, and poor educational attainment is linked to worse health outcomes over a lifetime.[15] Children and young people from the lowest income backgrounds in Cornwall have lower attainment at every stage of education, with gaps emerging by 5-years old.

The proportion of young people aged 16-to-17 years old not in education, employment or training in Cornwall is 6.7%, higher than the national average (5.6%).[16] Travel costs and limited public transport restrict post-16 choices, particularly for low-income families, and the dominance of small enterprises restricts capacity to employ full-time apprentices. Progression to higher education is lower (24.7% compared to 38.2% across England),[17] reducing access to high-value, health-promoting employment.

Secure, fairly paid jobs with opportunities to learn and progress can positively support physical and mental wellbeing. Cornwall has a high concentration of jobs in low-wage, low-productivity sectors, including tourism, retail and social care.[18] Median weekly pay is 91.4% of the England average, with 38,000 employees in Cornwall paid below the real living wage in 2025.[19] Work does not provide a guaranteed route out of poverty for families in Cornwall, with 7 in 10 children living in poverty having at least one parent in work.[20] This highlights the importance not just of employment, but of access to secure, adequately paid work.

Housing

Cornwall faces an affordable housing crisis. In 2025, 23,720 households were registered with Homechoice (the service for letting social housing) and 818 households in Cornwall were living in temporary accommodation, affecting 792 children.[21] High levels of second-home ownership exacerbate pressures, with an estimated 13,140 second homes and 2,652 long-term empty properties across Cornwall.[22]

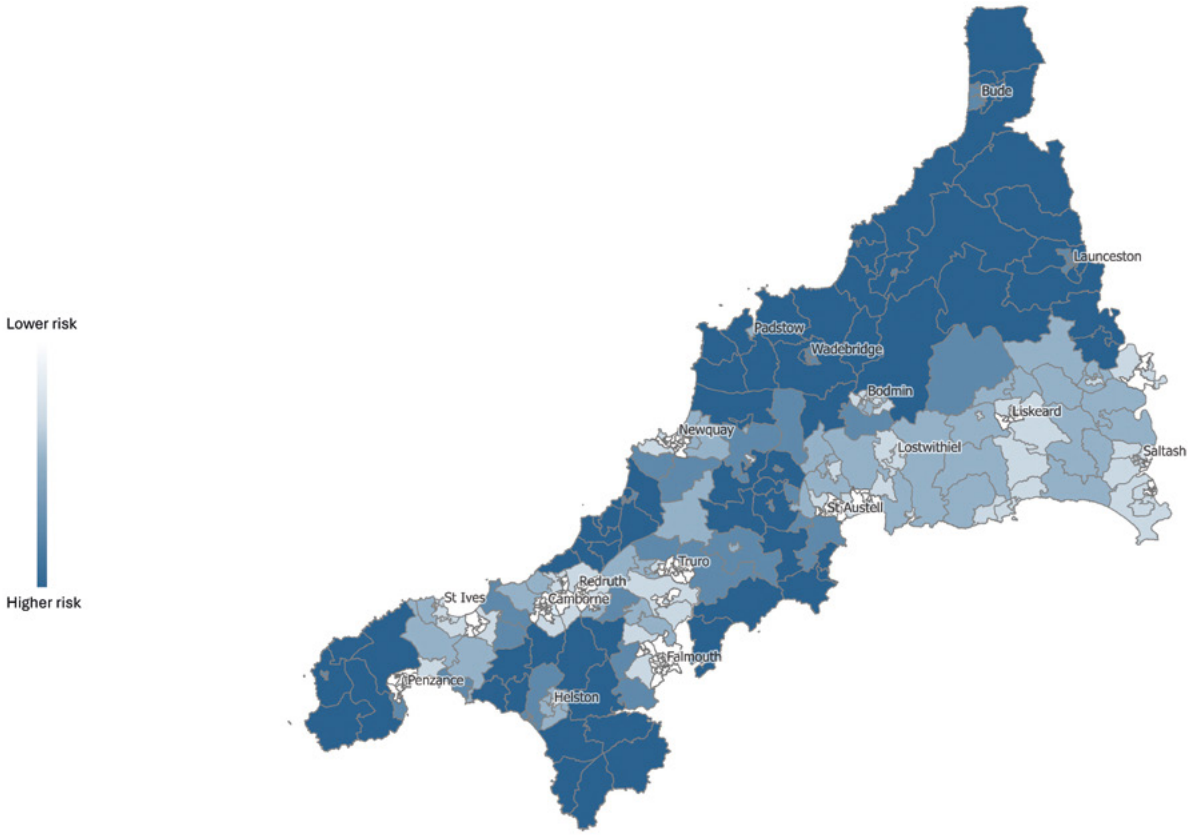
Although the average house price in Cornwall (£332,399) is lower than the England average (£355,490), affordability remains a significant issue.[23] Homes in Cornwall cost 8.86 times average annual earnings, compared with 7.6 across England.[24] Private rents rose to an average of £1,004 in 2026, an increase of 5.4% from £952 in 2025 (faster than the regional average),[25] limiting young people's ability to live independently.

Cornwall's housing stock is older and less energy-efficient than average. Over a quarter of homes were built before 1900 (15% in England), and 64% have an EPC rating below C.[26] Almost half (46%) of homes in Cornwall are off-grid for mains gas (14.8% in England). Around 34,500 households rely on oil heating,[27] leaving them outside the protection of the national energy price cap, exposing many households in Cornwall to sudden global shocks, including the USA-Iran conflict. Fuel poverty affects 12.2% of all households in Cornwall (11.4% in England).[28] Homes that are cold due to fuel poverty exacerbate health inequalities.

Transport

In rural areas, transport plays a crucial role in maintaining access to work, social opportunities and health-supporting facilities such as schools, parks, libraries and healthcare centres. While better in Cornwall's small towns, significant areas experience public transport exclusion (Figure 5). Car ownership represents a necessity rather than affluence and is often described as a 'rural tax'. In Cornwall, only 15% of households have no access to a car or van, markedly lower than the England average of 24%, reflecting reliance on private vehicles.[29]

Figure 5: Public transport exclusion in Cornwall by Lower layer Super Output Area.



An overall public transport exclusion metric by Lower layer Super Output Area (LSOA) is calculated by adding together the percentage metrics already calculated and dividing by all: Bus Stations/Hubs, Coach Stops, Bus Stops, Railway Stations, Ferries (Car-Pedestrian).

Source: Cornwall Council.

Effective links to London and other major economic hubs are essential for business competitiveness, inward investment and productivity. Rail and wider transport infrastructure influence business investment decisions, the ability to attract and retain skilled workers and the availability of career pathways for young people. Cornwall has limited national connectivity, constraining economic growth and reinforcing a labour market that is weighted towards lower-paid, lower-skilled employment.

Figure 6: Voice of a young person from Camborne, Cornwall, highlighting challenges related to employment, housing and connectivity.



Source: Cornwall and the Isles of Scilly Director of Public Health Report 2025/26. Engagement undertaken by Action for Children.

Key assets

People and communities

Cornwall's motto "Onen hag Oll" ("One and All"), embodies the spirit of the Cornish nation. Cornwall's greatest asset has long been its people, rooted in a strong, distinctive Cornish identity. This unique identity was recognised in 2014,[30] alongside the Welsh, Scottish and Irish, and the Cornish language, Kernwek, was more recently recognised under Part III of the European Charter for Regional or Minority Languages.[31]

This sense of national pride and belonging in Cornwall is reflected across Cornwall's rural and small town communities, through high levels of civic participation and social contribution. Over one-third of Cornwall's resident population take part in volunteering,[32] higher than the national average of 17%. The Voluntary, Community and Social Enterprise (VCSE) sector accounts for 9% of the workforce, compared with 3% nationally and Cornwall has higher rates of unpaid carers. These factors highlight the integral role that communities play in sustaining local services and supporting Cornwall's distinctive way of life.

Figure 7: Themes of transport, sustainability, community and place in Cornwall.



Source: Cornwall Council

Neighbourhood health

Cornwall's early adoption of neighbourhood health is a significant asset, given its rural geography, dispersed population and long travel times. Cornwall is the only local authority/ Integrated Care Board footprint with 100% coverage by integrated neighbourhood teams (INTs), embedding neighbourhood working as the default approach. This enables partners from organisations across the local authority, NHS, education and VCSE sectors to work together through strong place-based leadership and shared relationships.

In rural and small town contexts, where access to services and connectivity are persistent challenges, INTs provide a practical mechanism for bringing prevention, early support and coordinated care closer to communities. This supports data-informed prioritisation at neighbourhood level, allowing resource allocation according to local need, while harnessing Cornwall's strong community, voluntary and environmental assets.

Headstart Kernow

Central to Cornwall being a caring place for families where children build a bright future is a commitment to promoting positive mental health. HeadStart Kernow is a key asset providing a locally focused emotional health promotion programme that delivers resources and activities, alongside early intervention support, empowering children and young people and strengthening their sense of connection and belonging. The programme combines a needs-led, evidence-based approach with sustained engagement and co-production with children and young people.

The universal programme is structured around 3 core themes that reflect the multifaceted nature of mental health promotion:

- System-wide workforce education, training and collaboration.
- Trauma-informed, multimedia self-help resources, information and support directly for children and young people.
- Guidance and resources for parents and carers.

Vision for the future

Cornwall should be a place where every child and young person feels they belong and thrive where they live. There should be equal opportunities for children across Cornwall, regardless of geography or poverty. Children and young people should be able to see a future for themselves in Cornwall, one that includes access to sustainable, skilled employment, a living wage, affordable housing and reliable connectivity.

Economic development, alongside investment into connectivity, is central to achieving this vision. Improved connectivity can unlock higher-skilled employment and career pathways within Cornwall, supporting a more diverse economy that shifts away from reliance on seasonal, low-paid work. This will help create a realistic and attractive future for young people who want to remain in Cornwall. Alongside this, there is a need for affordable housing for those living and working locally, with sustainable and efficient home heating solutions.

Valuing local place and shifting services into the community are essential enablers in achieving this vision. Communities across Cornwall have strong but varied assets and are best placed to understand and shape the services and support they need. A true place-based approach, working in partnership with communities and creating environments that enable people to live healthy and fulfilling lives, will help Cornwall realise its ambition to be a place where everyone, including every child and young person, feels they belong and can thrive.

Camborne

Camborne, home to around 24,395 people, is the largest parish in Cornwall and reflects the county's diverse character, combining urban areas with surrounding villages and sparsely populated rural landscapes.[33] Camborne town has a rich industrial heritage and a proud place in global history. It was here that Richard Trevithick built and tested his pioneering steam carriage, the 'Puffing Devil', an innovation that laid the foundations for modern rail and road transport that is still celebrated through Trevithick Day.



Trevithick Day, Camborne

Source: PR4Photos for Camborne Town Council.

Camborne has experienced significant economic and social challenges following the decline of traditional mining industries. The town faces high levels of deprivation, with 3 of its 13 LSOAs among the 10% most deprived in England, and 29.8% of children and young people aged 0-to-19 living in relative poverty. Residents have lower levels of formal skills and qualifications, higher economic inactivity and higher exposure to health risks such as fast food, gambling and tobacco outlets. While house prices are lower than the Cornwall average, affordability remains an issue relative to local incomes.

Despite these challenges, Camborne has strong community pride, resilience and identity, with exceptionally high levels of volunteering and civic participation.[34] Ongoing challenges related to deprivation and place continue to shape health and wellbeing outcomes for residents and drive inequalities. The unique blend of strengths and challenges highlights the importance of place-based approaches that respond to local context and address the complex, interconnected drivers of inequality. Needs-led, locally informed practice is therefore a priority for services, and building on this strong foundation will be key to achieving sustained and meaningful change.

Camborne Youth Group

The Camborne Youth Group was established in 2025 by Camborne's Town Mayor to support 30 young people aged 11 to 14 living in central Camborne. These young residents were identified as being at higher risk of health, educational and social inequalities, experiencing elevated behavioural needs, special educational needs and disabilities and educational disengagement.

Healthy Cornwall, a countywide, all-age health promotion service, developed trusted relationships with the groups. Initial resistance, linked to limited resources and some young people's negative experiences of outside agencies, was reduced by continuity with local staff. This fostered a fun, supportive and compassionate environment. In response to the group's needs and interests, a 12-week cookery programme was developed using the Jamie Oliver Ministry of Food guidance. Young people worked in small groups to develop practical cooking skills and share meals together, culminating in a family Christmas celebration meal which strengthened family engagement while celebrating the young people's achievements.



Source: Healthy Cornwall.

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2.6 Lincolnshire County Council

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View over Grantham showing the town's historic skyline and surrounding countryside.
Source: Lincolnshire County Council.

Background

Lincolnshire is known for its wide, uninterrupted views across a distinctive mix of fens, marshes and rolling Wolds; by the character of its market towns; the appeal of its beautiful coastline; and a deep sense of heritage and local pride. Together, these qualities make the county an inviting place to live and work for its 790,000 residents spread across 5,921km².[1] They also shape the everyday realities of health, access and opportunity for the people who call Lincolnshire home.

Lincolnshire is a working county, with a diverse and resilient economy shaped by world class food production and processing, strong manufacturing and a vibrant small business base that anchors communities across a wide geography.

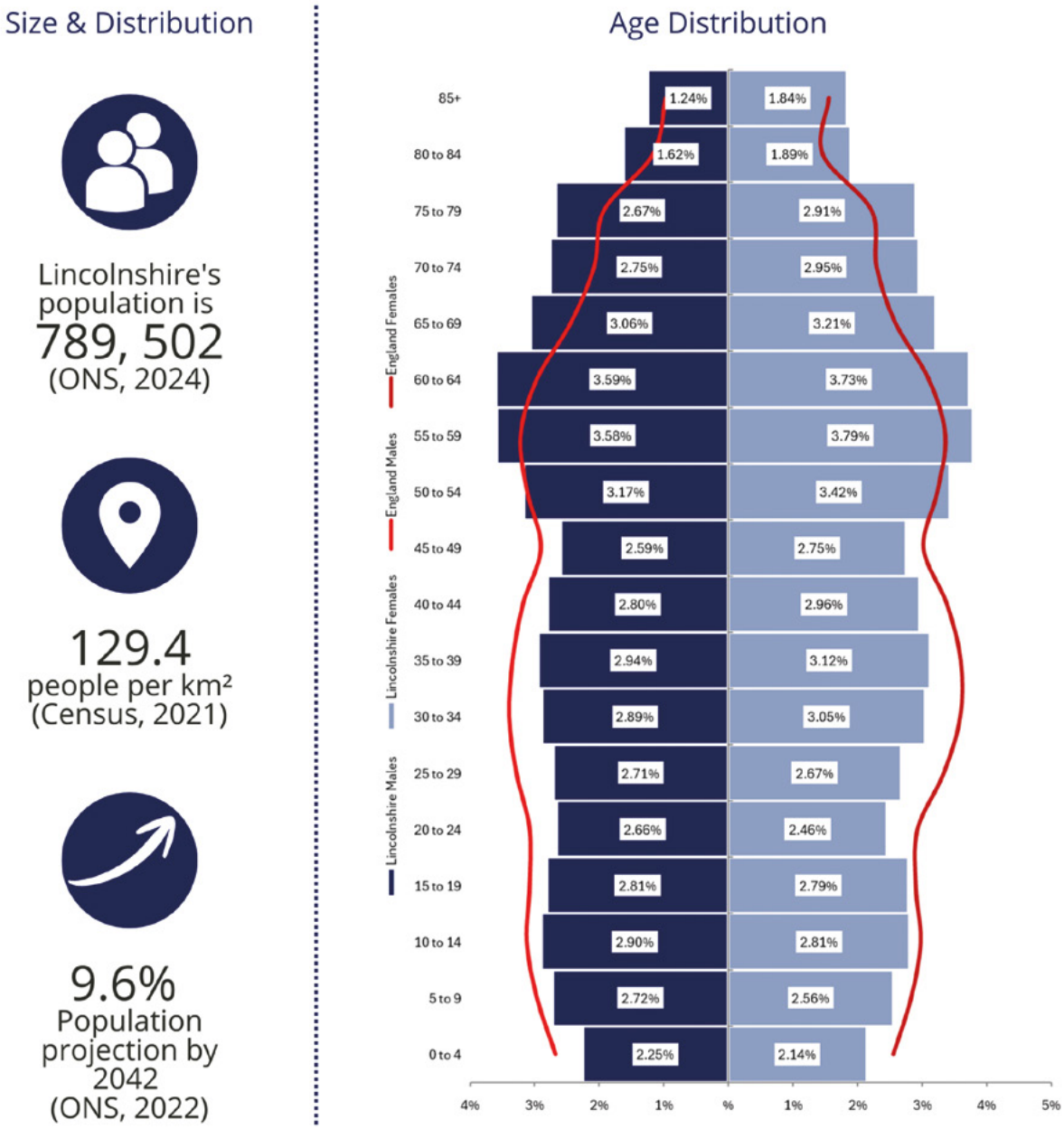
The county's identity is increasingly shaped by its expanding knowledge and health ecosystem. A growing university presence with a medical school supports local talent development, while Lincoln is home to internationally recognised research on rural and coastal health inequalities. Together, these resources help create a clear picture of the challenges and design solutions that fit the county's distinct geography and population.

Demographics

Lincolnshire's beautiful landscapes continue to attract people throughout their lives. This includes many who choose to retire to the county, particularly to market towns which combine rural appeal with the amenities needed to support people as their independence reduces. As a result, Lincolnshire now has an older population profile than the national average, with 24% of residents aged 65 or over. Children and young people make up around 21% of the population, and working-age adults a further 55%.[2] Looking ahead, demographic change will be a defining force. By 2043, the population of older adults is projected to grow by 41%, and the number of residents aged 85 and over is expected to double.[3] People are living longer, which is an achievement, but many of these extra years are not spent in good health. This has important implications for health and care planning, independent living and the future workforce.

Almost half (48%) of Lincolnshire's population live in rural areas, with these residents distributed evenly between rural towns and smaller, more dispersed settlements. More than half (53%) of those living in rural areas are over a 30-minute drive from a major town or city.[4] As with many rural counties, Lincolnshire remains predominantly White British (89.2%). However, recent years have brought modest growth in minority ethnic communities, particularly in Lincoln, Boston and South Holland.[5]

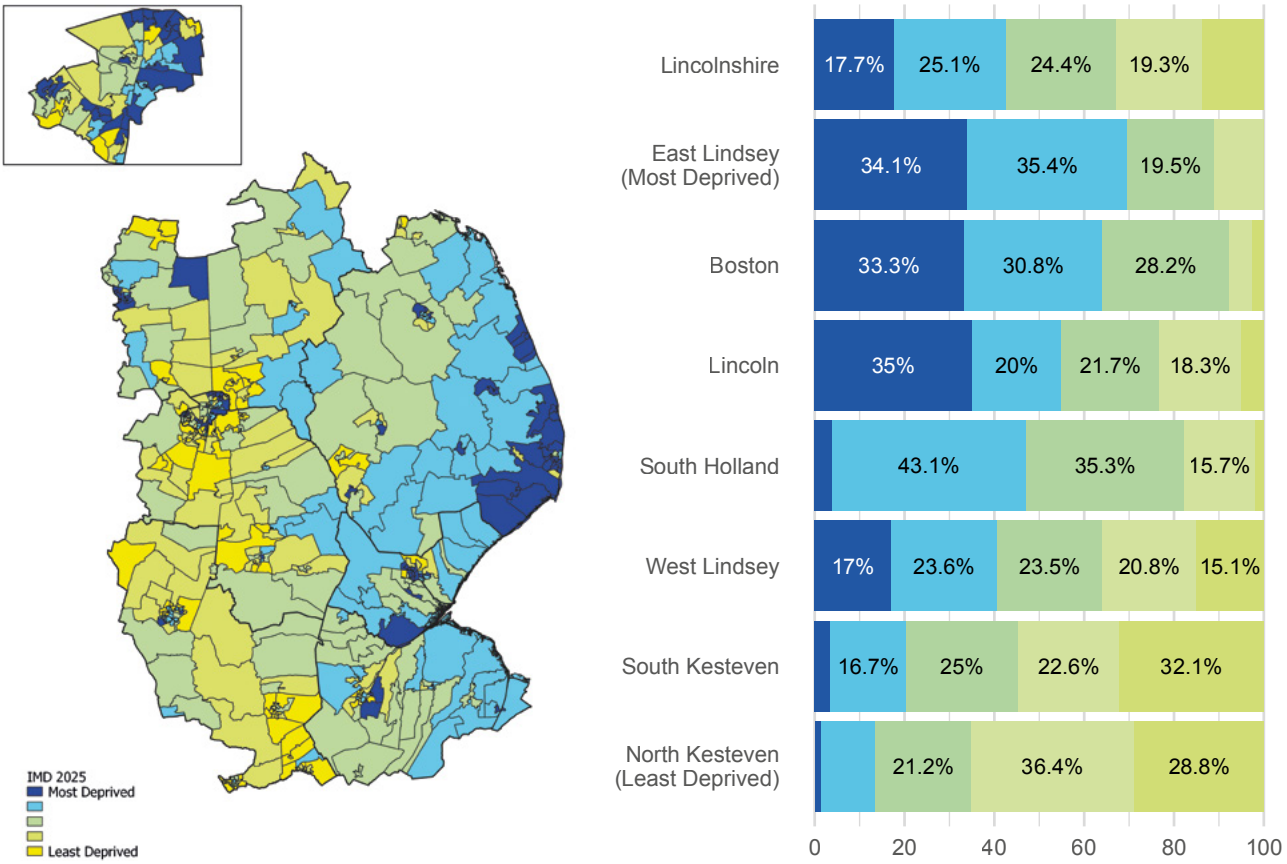
Figure 1: The size and distribution of Lincolnshire's population.[6]



Source: Lincolnshire County Council, Joint Strategic Needs Assessment, 2025.

Lincolnshire has also become relatively more deprived as a county compared to others, and inequalities are pronounced within its borders. There are 6 Lower layer Super Output Areas within the 1% most deprived nationally. Around 17% of residents live in the 20% most deprived communities nationally;[7] and one Primary Care Network serves a population where 52% of registered residents live in the most deprived quintile nationally.[8] People living in these areas are more likely to spend more years in poorer health, develop multimorbidity and die younger.[9]

Figure 2: Distribution of deprivation across Lincolnshire.[10]



Source: Ministry of Housing, Communities and Local Government. English Indices of Deprivation 2025 (IMD25): Statistical Release. 2025.

Education and skills vary across the county. A higher proportion of adults in the east have no formal qualifications,[11] which strongly influences employment opportunities and long-term health. This area also has a strong agricultural and tourism heritage, where insecure, lower-paid or seasonal work is common and can impact health in ways comparable to unemployment.[12]

Key challenges

Access and service delivery in rural communities

As a rural county made up of many small settlements rather than large empty expanses, Lincolnshire faces challenges that differ from those of other rural areas. The sheer dispersal of communities across a large geography makes local service delivery complex and relatively costly. For context, East Lindsey – just one of Lincolnshire's 7 districts – is the same size as Greater London.[13]

For many residents, distance and poor connectivity make attending even simple appointments challenging and costly, particularly for those without private transport. Training, education, employment, leisure and healthcare access may be particularly difficult for people who cannot drive, or those who live in single car-households. Rural residents with long-term health issues and lone pensioners are also prone to feeling isolated.[14] Small towns can act as essential access

points for these residents across large rural catchment areas. These towns often face the challenge of an ageing population, but without the infrastructure, funding or investment more typically available in larger towns or cities. Recognising this, partners are developing Neighbourhood Health approaches and drawing on evidence from the Lincoln Institute for Rural and Coastal Health (LIRCH)[15] to bring care closer to home and minimise access barriers.

As with many rural areas, recruitment and retention of skilled health and care staff remains difficult. This has prompted investment in university-linked training pathways and initiatives such as the Lincolnshire Institute of Dental and Oral Health to address acute shortages of professionals and improve access to services. Digital solutions can improve access and convenience for people in rural and remote areas, but digital exclusion remains a significant risk due to limited access and capabilities. Around 1 in 5 Lincolnshire residents (21.3%) live in the most digitally deprived areas, based on Lincolnshire's adaptation of the Digital Exclusion Risk Index.[16] In these communities limited access, skills or confidence can reduce the benefits of online care.[17] As the county offers more virtual and hybrid services, there is a collective responsibility to ensure these models reduce rather than widen inequalities.

Deprivation and living environments

As in many counties, the local Joint Strategic Needs Assessment highlights significant differences in health outcomes between the most and least deprived communities. Deprivation remains one of the main determinants of life expectancy and healthy life expectancy. For example, men in the least deprived areas live nearly a decade longer than those in the most deprived, with a 7-year gap for women.[18] These patterns reflect the cumulative impact of secure work, quality housing and the wider environment over a life course. Deprived neighbourhoods can be found in and around Lincolnshire's market towns, for example parts of Gainsborough, which has some of the highest levels of deprivation nationally.

Lincolnshire is becoming relatively more deprived compared to other areas across the country, with recent trends showing rising pressures around housing and crime,[19] both of which can impact people's wellbeing. In rural and market towns, housing is less affordable, and historically less energy efficient and older, often relying on more expensive heating.[20] These conditions increase the risk of overcrowding, homelessness and fuel poverty, which can affect mental and respiratory health, reduce engagement with preventative care and contribute to winter mortality or spread of infectious diseases.

Demographic pressures

Lincolnshire's beautiful coast and rural areas have long drawn people back in later life, creating a steady inward flow of older adults. While this enriches many communities, it also increases demand for health and care services. The outward migration of young people seeking secure, higher paid employment and greater leisure opportunities intensifies this imbalance between a shrinking working-age population and rising demand. Around 27% of residents aged 65 and over report difficulty with daily activities due to long-term illness[21] and many live with multiple conditions;[22] challenges that are particularly concentrated in more deprived areas.[23] Lincolnshire's rural strategic partnership with the Centre for Ageing Better is supporting this

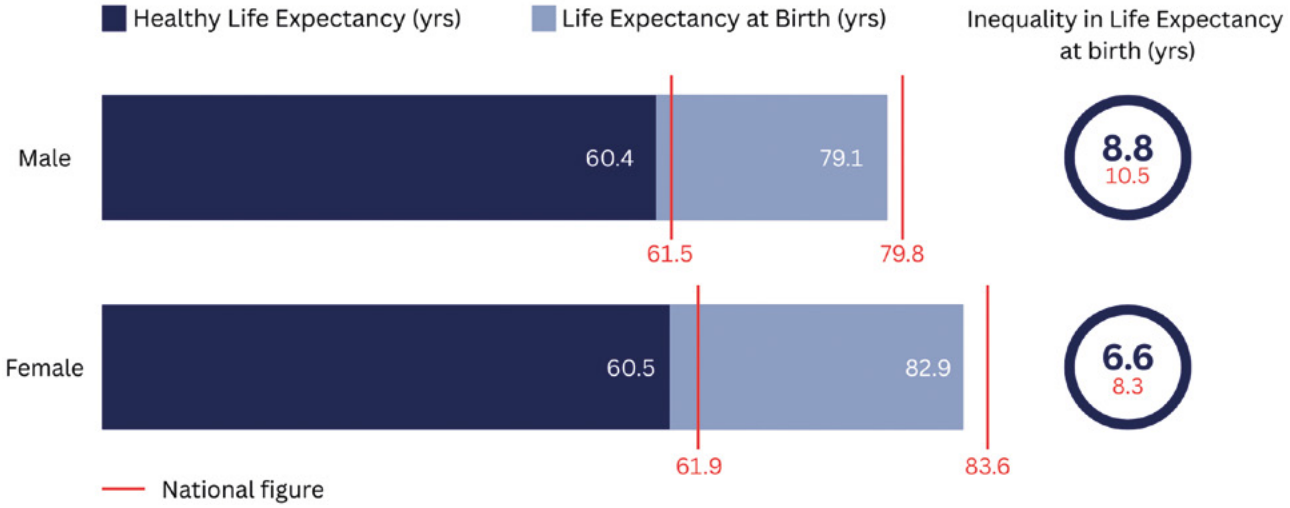
population, including the UK's first age-friendly district. Supporting independence, promoting healthy ageing and recognising the vital role of unpaid carers are also crucial to the Joint Health and Wellbeing Strategy for Lincolnshire, helping older residents remain well and connected in the communities they value.

Lincolnshire's population trends are further complicated in several market towns where seasonal agricultural work and the presence of military communities create continual population flux. Some individuals are not formally registered locally, making it difficult to capture an accurate picture of the true population or their health needs.

Lifestyle behaviours and health outcomes

Like many rural counties, Lincolnshire's picture is mixed: life expectancy is improving yet many residents spend almost 2 decades in poor health. Much of this is caused by modifiable risk factors including smoking, high blood pressure, excess weight, high blood sugar and high cholesterol. These account for a significant proportion of disability and early mortality.[24] Preventable mortality is most concentrated in Lincolnshire's areas of highest income deprivation, with the greatest rates found along the east coast and in larger market towns including Boston, Grantham, Sleaford, Gainsborough and Spalding.[25]

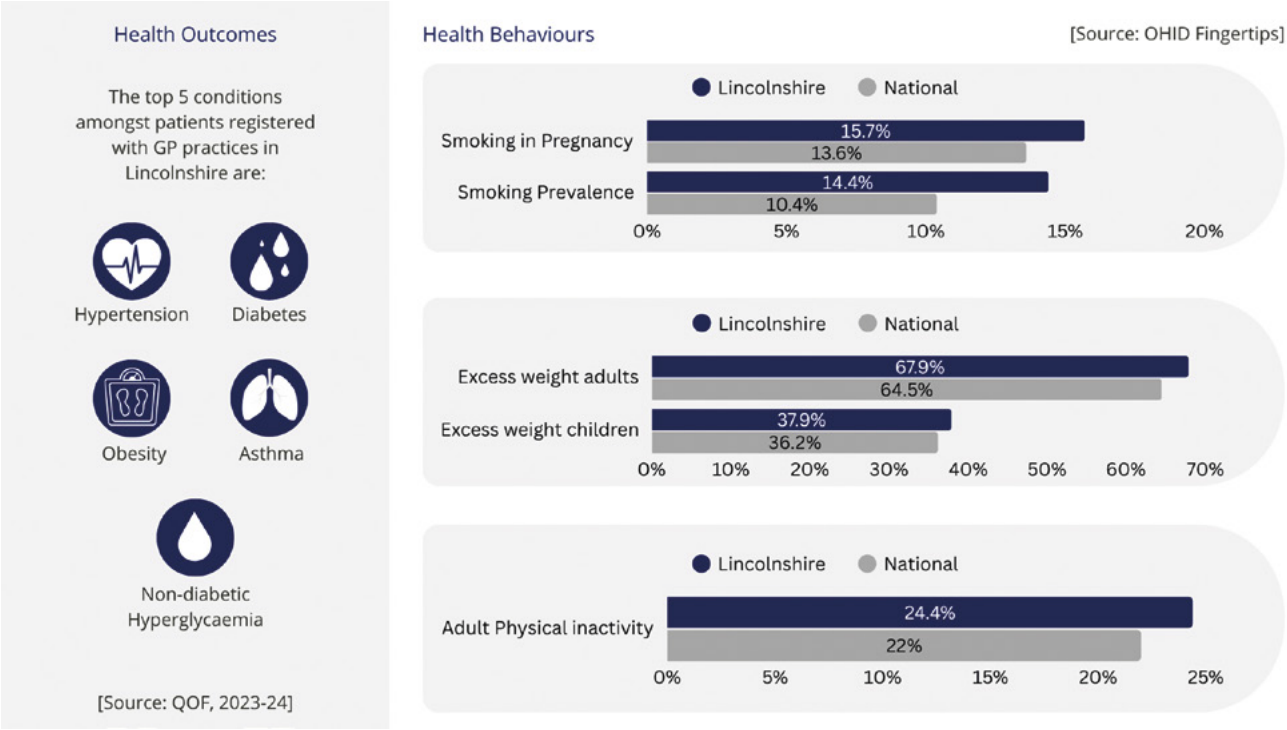
Figure 3: Life expectancy of Lincolnshire's population.



Source: Data taken from the Office for National Statistics, Annual mortality extract, Annual Population Survey and English Census (2011 and 2021).

Lifestyle behaviours often cluster within individuals and communities (including market towns), shaping patterns of preventable disease. Several indicators remain worse than the England average: adult physical inactivity is consistently higher[26] and excess weight is rising in both children and adults.[27] Women in the county are losing more years of life to alcohol-related harm, and although the difference for men is not yet significant, their pattern is starting to worsen.[28] Smoking rates are falling but more slowly than nationally, particularly among people in routine and manual occupations and in more deprived communities.[29]

Figure 4: Lifestyle behaviours and health outcomes in Lincolnshire.



Source: Lincolnshire County Council.

Key assets

Strong system partnerships

Against this backdrop, Lincolnshire benefits from a well-established foundation of partnership working that helps it respond effectively to local challenges. The NHS, local authorities, universities and the Voluntary, Community, Faith and Social Enterprise (VCFSE) sector collaborate closely to enable effective design and delivery of joined up services. The Lincolnshire Health and Wellbeing Board provides collective planning and shared accountability, helping ensure that people in Lincolnshire have the best start in life and are supported to live, age and die well. This approach is strengthened by strong population insight, meaningful co-production with communities and a growing emphasis on prevention, tackling inequalities, workforce development and using digital tools more effectively to ensure services reflect the needs of residents across dispersed communities.

Close working between acute and community NHS providers is strengthening community services to reduce excessive reliance on acute care. The county's diverse VCFSE organisations offer trusted relationships, local insight and community-rooted support that works in rural and remote areas in ways statutory services alone may not.

Effective rural service models

Over time, the county has developed a suite of practical models designed to ensure that rurality does not limit access to timely and effective care. These approaches aim to bring services closer to residents and strengthen coordinated responses across agencies. To achieve this, the county has expanded community diagnostic and urgent care options, increased the range of support delivered within neighbourhoods and care settings and enhanced multiagency collaboration. Examples of the latter include Lincolnshire's Integrated Voluntary Emergency Response Service,[30] Lincolnshire Recovery Partnership,[31] the Campus for Future Living[32] and local transport solutions such as Call Connect[33] and voluntary car schemes. Outreach and mobile clinics support delivery within rural areas and small towns.

Growing research and innovation capacity

Lincolnshire's research landscape is strengthening, with the Lincoln Institute for Rural and Coastal Health[34] providing national leadership on rural and coastal inequalities. New investment, including the £10.96m mental health research unit, is enhancing research capacity and ensuring local decisions are informed by high-quality evidence. This growing capability supports innovation and helps ensure solutions are tailored to Lincolnshire's distinctive geography and population needs.

Vision for the future

Lincolnshire's Joint Health and Wellbeing Strategy[35] sets out a shared ambition for residents to have the best start in life and be supported to live, age and die well. This calls for a clear focus on prevention, early intervention, coordinated action across the NHS and local authorities and a commitment to fair, equitable services that reduce health inequalities. Achieving this long-term ambition will mean transforming services to manage rising demand, addressing rural challenges and creating a more resilient, person-centred health and care system.

The emerging Strategic Neighbourhood Health Plan for Lincolnshire builds on this ambition with a shared vision that everyone in Lincolnshire will benefit from an environment and community-based services that help people stay healthier for longer and, when needed, provide personalised and coordinated care closer to home. This neighbourhood-based approach will be centred on people, prevention and partnership working.

Spalding



Spalding's town centre along the River Welland in Lincolnshire.

Source: South and East Lincolnshire Councils Partnership.

Like many of Lincolnshire's market towns, Spalding sits within rural fenland, where agriculture and horticulture remain central to the local economy and identity. Situated in south Lincolnshire near the Cambridgeshire border, the area has an estimated population of 31,266.[36] Seasonal and physically demanding work remains common, contributing to fluctuating income stability and associated health impacts for some of the workforce. People in lower-income groups are up to 4 times more likely to display multiple unhealthy habits.[37] Supporting these individuals effectively in a rural context requires integrated, person-centred support, as demonstrated within services such as the Lincolnshire Recovery Partnership (LRP);[38] a partnership of third sector organisations providing drug and alcohol support, and commissioned by Lincolnshire County Council. With its network of hubs, satellite sites, outreach delivery, digital options and clinical minibuses, the LRP aims to overcome the transport barriers, distance and low visibility that can restrict access to preventative health care in dispersed rural areas.

Michael,* a 53-year old Spalding resident, illustrates how this flexible model enables engagement where traditional approaches may be less effective. Living alone with limited mobility, anxiety, autism-related communication needs and caring responsibilities, he struggled to attend appointments and faced multiple unmet physical, mental and social health needs. LRP addressed these barriers through a blended offer of home visits, hub-based care, telephone and text-based communication and the use of a named keyworker to provide routine and continuity. This approach eased the mental and practical barriers that often prevent people in rural areas from staying engaged with services.

* Not their real name.

LRP delivered a comprehensive health assessment through its flexible clinical model, including bloodborne virus screening, FibroScan, ECG, smoking cessation support, sexual health testing, weight review and liaison with the GP for identified risks. Harm reduction measures such as naloxone, sharps containers and onsite needle and syringe provision reduced the need for travel while supporting safer drug use. For preventative lifestyle support, LRP's colocation arrangements with the county's stop smoking service enabled Michael to successfully transition from tobacco to vaping through the 'swap to stop' programme.

Because rurality often intensifies service fragmentation, LRP's joined up approach was critical. The team supported Michael with referrals for autism assessment, pharmacy engagement and housing issues, while also coordinating with the local community neighbourhood team when worsening mobility made GP access difficult. A joint home visit resulted in timely treatment for a chest infection, improved inhaler use and a memory assessment, delivered without requiring travel.

Through sustained, flexible and persistent engagement and outreach, Michael reduced his heroin use, stopped injecting, improved his physical health management and re-engaged with wider preventative services. His progress demonstrates how LRP's collaborative, adaptive model overcomes the challenge of geography, transport and isolation inherent to small town and rural settings. By tailoring delivery to individuals rather than expecting them to navigate rigid systems, LRP helps maintain engagement, reduce risk and improve outcomes in communities where access to preventative support is often most challenging.

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2.7 Norfolk County Council

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Source: Norfolk County Council.

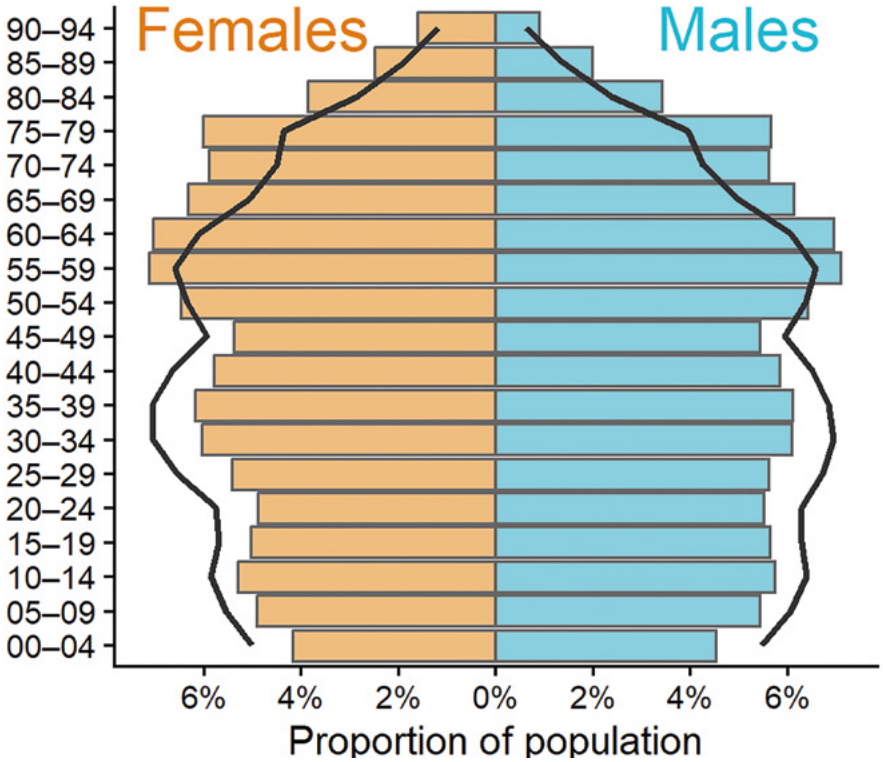
Background

Norfolk is a mainly rural county in the East of England, which is split into 7 local authority areas, with 17 market towns and 3 urban centres: the city of Norwich, Great Yarmouth and King's Lynn. The population is 940,000 across 404,500 households. Norfolk covers 551,000 hectares, making it geographically the fifth largest county in England. It has many areas of natural beauty, including 150km of coast, the Norfolk Broads National Park and other rivers, as well as magnificent woodland and heathland. Economic areas of focus vary across the region, with strengths in clean energy, financial services, advanced manufacturing and engineering and digital technology, alongside important contributions in agri-food and agri-tech.[1] Norfolk's historic and cultural assets, rural landscapes and extensive coastline make it an attractive place for visitors and residents.

Demographics

Norfolk has a notably older population, as seen in Figure 1, with an average age of 44.5 years compared to 40.8 years for England and Wales. There is substantial domestic migration into Norfolk of people aged 50 to 69 years and significant migration out of Norfolk of people aged 20 to 24.

Figure 1: Distribution of age and sex in the population in Norfolk County compared with the England average, 2024.



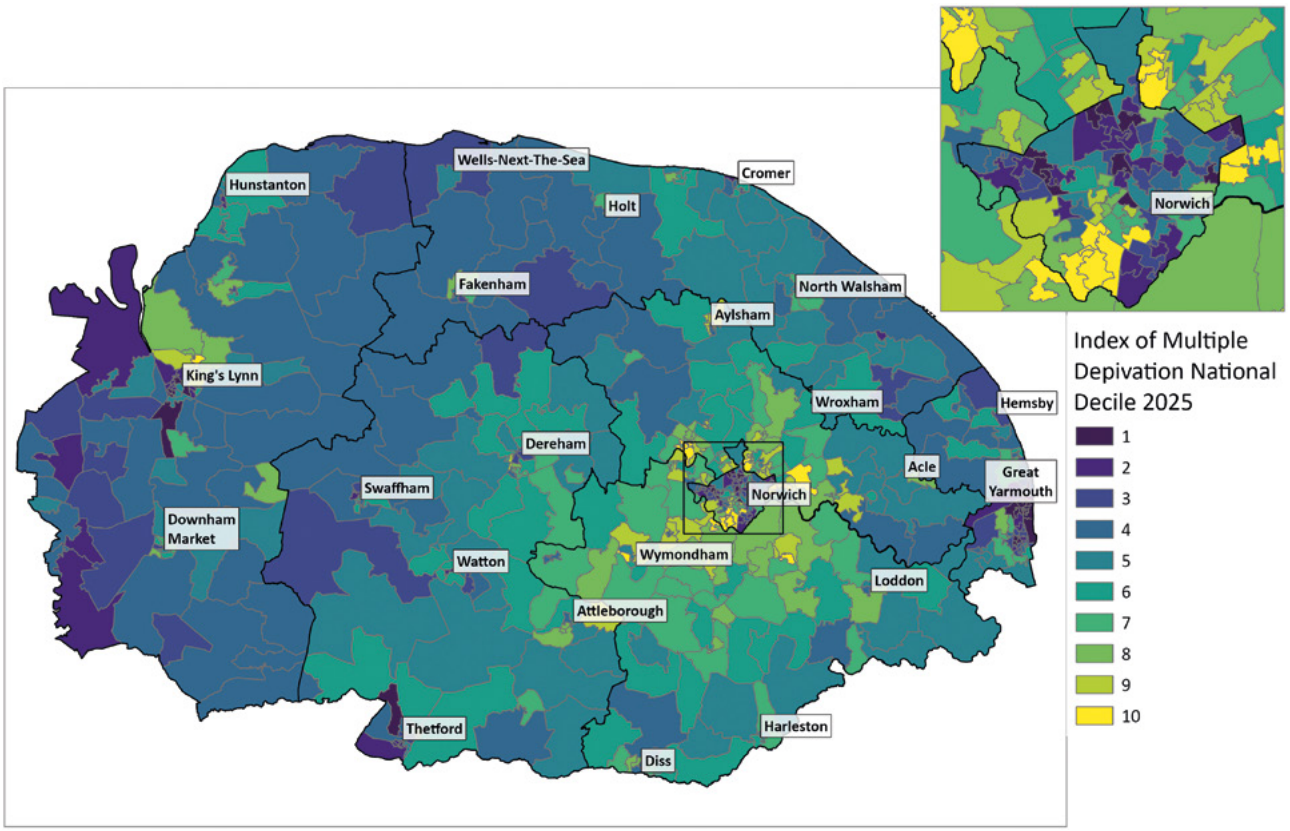
Source: Office for National Statistics 2024 mid-year population estimates.

Norfolk is one of England's least ethnically diverse counties, with 94.7% of residents identifying as White, 2.1% Asian, 0.9% Black, 1.6% mixed ethnicity and 0.7% other ethnic background.[2] Seven percent of residents were born outside the UK, lower than the national average.

In Norfolk, early years educational outcomes are similar to the national average, while results from primary and secondary schools for English and mathematics are below the national average.[3] There are 5.3% fewer 16-year-olds and 17-year-olds in education and training than the England average. There are nearly 5,000 apprenticeships annually, offering a range of opportunities across the county. Adult qualification levels at Level 2 are similar to national figures, but fewer residents hold Level 3 or higher. Median earnings are lower than the England average, and districts such as Great Yarmouth and King's Lynn and West Norfolk experience higher unemployment and lower job density, mirroring patterns of deprivation across the county.[4]

Out of 153 upper tier local authorities, in 2025 Norfolk ranked as the 86th most deprived local authority in England.[5] As shown in Figure 2, the most deprived areas are concentrated in the urban areas of Norwich, King's Lynn and Great Yarmouth. However, there are also pockets of deprivation in small towns in North Norfolk and Breckland, with more widespread areas of deprivation in King's Lynn and West Norfolk district.

Figure 2: Distribution of Norfolk Lower layer Super Output Areas (LSOAs) across the deciles of the Index of Multiple Deprivation (IMD 2025).[6]

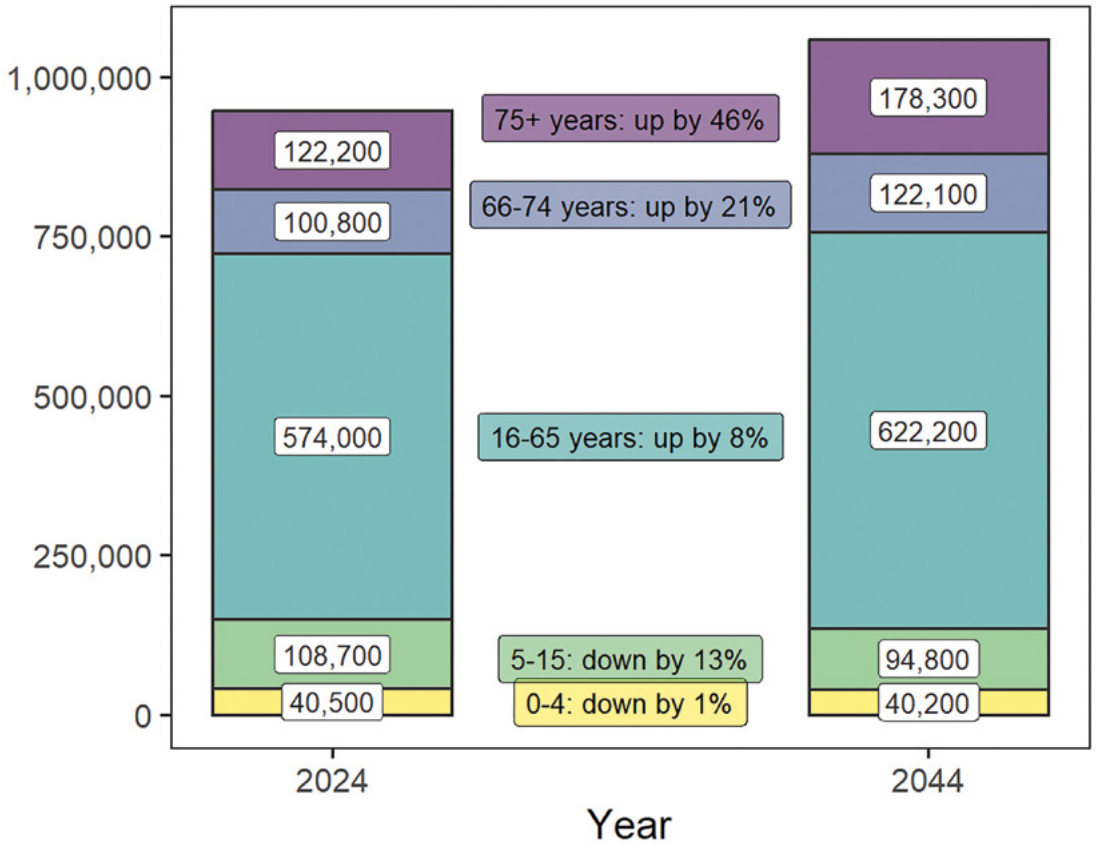


Source: Ministry of Housing, Communities and Local Government, English indices of deprivation, 2025.

Key challenges

Norfolk's public health challenges are shaped by its ageing population, persistent inequalities and rural geography, which influence access to services, transport and opportunities for healthy living. Between 2024 and 2044, the number of residents aged 66 to 74 years is projected to increase by 21%, and those aged 75 years and over is projected to increase by 46%. As seen in Figure 3, this is accompanied by an expected decrease in the population of children and young people. These demographic changes will result in an increased demand for health and social care services.

Figure 3: Projected change in Norfolk's population between 2022 and 2044.[7]



Source: Office for National Statistics, Population Projections 2025.

Much of Norfolk's population lives in dispersed and sparsely populated areas, which can make it harder to access healthcare, preventative services, employment, education and social support. These may be particular challenges for older residents and those with long-term conditions, who may be more reliant on regular appointments and community-based services, and may not have access to private transport. Improving rural connectivity and accessibility are key priorities of Norfolk's Local Transport plan.[8]

Deprivation remains unevenly distributed, as shown in Figure 2, with coastal and rural-coastal communities experiencing higher levels of poverty and poorer health outcomes. These areas face a combined burden of socioeconomic disadvantage and geographic isolation. Such communities show higher prevalence of chronic diseases, lifestyle-related risks and lower life

expectancy, with worsening health inequalities between the most and least-deprived populations.

Patterns of disease and poor health, particularly cardiovascular disease, cancers and respiratory illness, remain key contributors to reduced life expectancy. Rural residents may experience additional barriers such as limited access to services due to travel constraints, workforce shortages or digital exclusion (either due to infrastructure issues or skills gaps).

Key assets

Norfolk has a wide range of strengths and assets that contribute to effective public health delivery across its rural areas and small towns. Its extensive green and blue spaces promote physical and mental health and help mitigate climate change.[9] More than 1,000 miles of walking and cycling paths across the county provide opportunities for physical activity through leisure or active travel. Our green spaces are improved by projects such as the '1 Million Trees for Norfolk' and 'Norfolk Trails' work, increasing footpath accessibility.[10,11]

A strong network of community-based models and mobile outreach services helps overcome rural barriers to access. One example is the Wellness on Wheels Bus, delivered by the local Integrated Care Board, which brings essential care such as NHS health checks and vaccinations, directly to communities.[12] In some rural districts the Community Engagement Van provides health checks, housing advice and multi-agency support.[13] These mobile approaches have been well received and continue to strengthen preventative health outreach in rural areas.

Health and Wellbeing Partnerships (HWPs) bring together councils, NHS organisations, Voluntary, Community and Social Enterprise (VCSE) partners and local communities to focus on reducing health inequalities, improving integration and embedding community-centred approaches. They have strengthened relationships, improved system coherence and enabled partners to respond to local issues with greater agility and shared insight. HWPs have delivered tangible benefits through small-grant programmes, neighbourhood-level pilots and targeted prevention projects that support local innovation and address community needs. Partners report that HWPs now act as key routes for joining up activity, strengthening trust and embedding local intelligence into wider system planning.

This collaborative approach is reflected in successful initiatives across Norfolk. Primary care-based social prescribing helps address non-medical factors influencing health, while VCSE-led programmes, such as exercise referral schemes and mental health initiatives like Mindful Towns and Villages, build community capacity and resilience. Norfolk's library network also plays a vital role by providing bereavement cafés, advice for older adults and digital support to help residents access NHS online services.

There has been recent progress in addressing skills shortages. The development of a Youth Work degree at Norwich City College helps to address the shortage of trained youth workers, professionals who play a crucial role in supporting the development of young people, across Norfolk and beyond. For those in West Norfolk, the College of West Anglia's King's Lynn campus is a major further education and apprenticeship hub. To address challenges of travel for health

careers, the college established a School of Nursing with Anglia Ruskin University and the Queen Elizabeth Hospital, which offers a range of health and social care courses. Since 2022, the School has trained 2 cohorts of Nursing Associates each year. Through the Local Skills Improvement Fund, the college is supporting training in digital equipment, soft skills and green technologies, including through a new Green Skills Centre in Wisbech.

Norfolk County Council, district councils and housing providers work together to develop independent living and extra-care housing schemes that address the challenges of an ageing rural population by reducing loneliness, preventing crisis-driven housing moves and improving health outcomes.[14] Their distribution across Norfolk, Figure 4, supports older people to live independently for longer in small towns, as well as larger urban areas.

Figure 4: Locations of independent living (purple) and housing with care (blue) schemes in Norfolk.[15]



Source: Norfolk County Council, Housing with Care and Independent Living.

Vision for the future

Our vision for Norfolk is clear and ambitious: a county where everyone can start life well, live well and age well, and where no one is left behind.[16] The growing and ageing population, increasing prevalence of long-term conditions and worsening inequalities across Norfolk, make it essential that we act decisively and collaboratively over the coming years.

The focus of Public Health in Norfolk County Council is on 3 major areas:

- Place and partnerships are a major focus. Public Health works in partnership with communities, local government, the voluntary sector and wider system partners to address the causes of ill health and deliver place-based prevention.
- Children and young people require early, equitable access to prevention and support services, with action focused on tackling deprivation, addressing the wider determinants of health and identifying need sooner.
- Adults and older people in Norfolk face rising levels of long-term conditions, isolation and inequalities, requiring proactive, integrated support that promotes independence, wellbeing and inclusion throughout later life.

Achieving our vision in a predominantly rural area requires a system-wide, inclusive approach. Public Health will lead by identifying population health needs, leveraging high-quality data and analytics and ensuring resources are deployed wisely across proven interventions. We will strengthen partnerships across healthcare, social care, local government, the voluntary sector and community organisations, fostering a place-based model that enables joint action on the determinants of ill health. This includes aligning with broader local strategies, supporting the shift to neighbourhood health teams and empowering communities to co-design solutions that reflect their lived experiences. We promote a Human Systems Learning approach to service delivery, focusing on building strong relationships with residents with the greatest needs, integrating expertise across organisations to better support them and continually learning from residents, service users and staff.

By embedding prevention, advancing equity and cultivating strong partnerships, Norfolk's Public Health system will be well-positioned to respond to emerging challenges and create a future where every resident can flourish.

Stalham

Stalham is a tranquil and welcoming small market town in North Norfolk at the edge of the Broads, about 15 miles from the City of Norwich and 4 miles from the coast. It has a population of approximately 3,500, with around half of residents aged 65 or over, and the town falls within the second most deprived decile nationally. Stalham serves as a hub for the surrounding rural communities, with assets including Stalham Library, a supermarket, a pharmacy, Stalham High School and 2 museums. Around a quarter of residents work from home and a third of workers commute more than 10km (6.2 miles). As there is no railway station, it takes about an hour by bus to reach the urban centres of Norwich or Great Yarmouth, with additional travel of about 30 minutes to reach an acute hospital. The area surrounding Stalham is a mix of small villages, open farmland and the wetlands of the Norfolk Broads.

As part of the Age Friendly Communities initiative in North Norfolk,[17] Healthier Stalham aims to create environments where older residents feel valued, respected and supported to age well. The approach is shaped by the North Norfolk Health and Wellbeing Partnership and the North Norfolk Older People Working Group, with the North Norfolk District Council joining the UK Network of Age Friendly Communities. This framework promotes accessible local services, reduced social isolation and age- and dementia-friendly business practices, enabling older people to stay connected and active in their communities.

Ten businesses in the town have made a commitment to becoming more age friendly, joining the North Norfolk register of Age Friendly businesses.[18] These businesses display an Age Friendly North Norfolk window sticker and most offer 'Sit you down' space, aiming to address issues of social isolation and motivate older people to feel confident about leaving their homes and playing an active part in their local communities. As well as providing a space for people to sit, participating members are encouraged to make toilet facilities available and to offer tea, coffee or a glass of water wherever possible.

A recent resident survey completed by a community development worker in Stalham identified the following assets to support people to age well:

- The library as a social and information hub.
- Faith settings and the GP surgery as trusted places to connect and find support.
- Existing groups and clubs, for example 'Friday Friends' at Sutton Village Hall, Tuesday 'Coffee and Chat' at the Baptist Church and 'Sunshine Cafe' hosted at the Stalham Green GP practice.
- The recreation ground and community gym.
- Sheltered housing schemes such as Portalfield and Robert Smith Court.

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2.8 Shropshire Council

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Source: Shropshire Council.

Background

About Shropshire

Shropshire is a large, predominantly rural county with a population of around 327,500 residents, living across 319,736 hectares, making it the second largest inland local authority in England. Its scale, landscape and heritage are defining strengths, with 97% of the county classified as rural, 2 World Heritage Sites and a strong sense of local identity rooted in its towns, villages and communities.

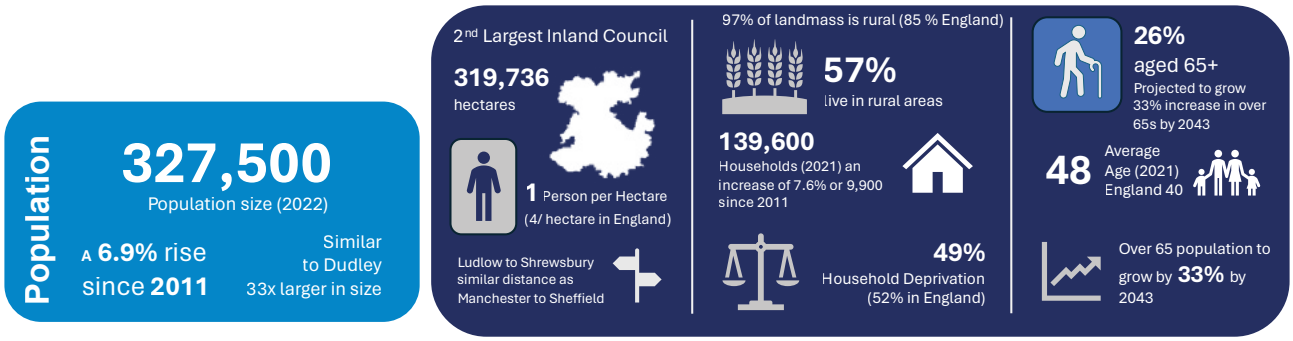
The local economy is diverse and resilient, supporting around 130,600 jobs and over 13,600 active businesses. Shropshire attracts more than 10 million visitors each year. It also has a vibrant Voluntary and Community Sector with a strong commitment to community wellbeing. The sector is not only a source of community support. It also plays a key role in the local economy contributing to overall growth and development of the area, but has become increasingly fragile in recent years due to challenges with recruitment and retention and funding.

Overall, the county population is ageing but a high proportion of residents report good health and life satisfaction, reflecting the county's strong communities, environment and opportunities for active living. However, this hides significant inequalities and variation in outcomes.

Demographics

The population of Shropshire is older than the England average, with 26% aged 65+ and a projected 33% increase in over 65s by 2043. Children and working-age populations are proportionally smaller. This demographic creates an increased demand on health, care and transport services. Shropshire has a predominantly White British population, with lower ethnic diversity than urban areas. Within the county, smaller minority ethnic populations can experience additional barriers to access, particularly in rural and remote locations.

Figure 1: Infographic of key demographic statistics for Shropshire.



Source: Shropshire Council, data taken from the Office for National Statistics.

Educational attainment is mixed, with good outcomes in some areas but pockets of lower attainment linked to deprivation and rural isolation. Access to further and higher education is

more challenging due to distance, transport costs and reduced digital connectivity. Healthy life expectancy is higher than the England average, but this masks inequalities within rural communities. Likewise, employment rates are relatively strong, with high levels of self-employment (13.9%), reflecting the rural economy. Key sectors in the county include agriculture, tourism, public services and small businesses. However, the low-wage economy may leave some residents at greater susceptibility to cost-of-living changes. Further, challenges with workforce recruitment and retention may impact health, care and public services, which receive significantly lower funding per head compared to other areas including some more rural areas.

Overall deprivation levels are lower than the England average, but 49% of households experience at least one measure of deprivation. The greatest deprivation is across access to services and amenities, including healthcare and barriers to accessing services. Rural deprivation is often hidden, as traditional indices can underrepresent need due to car ownership – typically higher in rural communities that are more dependent on private transport – and dispersed populations. 19% of households are fuel poor, and access to services remains a significant issue in more remote areas for residents and those providing services. While Shropshire performs well on many headline indicators, rurality masks small but significant pockets of deprivation and inequality, requiring targeted, place-based and rural-proofed approaches which look to align scarce resources.

Key challenges

Shropshire's public health priorities are shaped by high levels of rurality, an ageing population and marked inequalities between communities, including small pockets of significant deprivation that are not always visible in national datasets. Overall health outcomes are comparatively good, but access, rising demand and hidden inequality are the key drivers of local need.

1. Reducing health inequalities, particularly rural and hidden deprivation

Although Shropshire performs well on many headline indicators, rural inequalities are often masked by aggregate data, with national measures such as the Index of Multiple Deprivation failing to capture dispersed deprivation. As a result, some communities experience poor access and worse outcomes despite 'average' scores. Priority action focuses on improving intelligence to identify both scattered and clustered need, developing rural-sensitive indicators alongside urban metrics and comparing outcomes between least and most deprived areas, including market towns, isolated villages and transport-poor communities. There is a clear need for more robust, government-recognised data on rural deprivation, as Lower layer Super Output Area (LSOA) level analysis often overlooks sparsely populated areas and, while Output Area data can reveal smaller pockets of need, it remains insufficient. The Rural Deprivation Index provides a useful alternative for more accurately capturing rural deprivation, but is currently under-utilised at a national level.

2. Prevention across the life course

Shropshire's prevention priorities are aligned with the Health and Wellbeing Board and Integrated Care Strategy, with a strong focus on early intervention to reduce long-term demand. Priorities span the life course and include giving children the best start in life through early years and family hub support; promoting healthy weight and lifestyles; improving mental wellbeing; reducing the impact of preventable conditions such as heart disease, cancer and diabetes; and tackling harms linked to drugs, alcohol and domestic abuse. Specific health and care priorities include hospital admissions for cardiovascular disease, injuries and pneumonia, diabetes prevalence, smoking in pregnancy and suicide rates. Moving forward, Shropshire will pursue the Marmot approach within its rural geography with strong place-based approaches.

3. Ageing population and healthy ageing

Shropshire has a significantly older population than the national average, with 26% of residents aged 65 and over and a projected 33% increase in this age group by 2043. Although healthy life expectancy is higher than the England average, population ageing is increasing demand for health, care and prevention services. Priority actions focus on supporting independence and proactive care, strengthening community-based and neighbourhood services, tackling loneliness and social isolation and ensuring equitable access to screening, health checks and preventative services for older people in rural areas.

4. Improving access to services in rural communities

Linked to the above priorities, access to services is a defining public health challenge in Shropshire due to its geography and rural sparsity, with long journey times, limited public transport, higher transport costs and digital exclusion creating significant barriers, particularly for the most deprived communities. Public health priorities therefore focus on supporting a strong and vibrant community and voluntary sector, rural proofing health and care policies, delivering services through community-based and mobile models such as hubs and outreach to improve access to primary care, screening, vaccinations and health checks, and ensuring confidentiality and reduced stigma in small communities.

5. Mental health and wellbeing

Mental health is a cross-cutting priority, with a focus on suicide prevention among higher risk groups such as male farmers, improving access to support in rural areas, strengthening strategic leadership and commissioning capacity and embedding mental health within neighbourhood and hub-based models.

6. Wider determinants of health

Shropshire's public health priorities address the wider determinants of health that drive inequalities, including cost of living and fuel poverty, housing quality and affordability, transport and digital connectivity and access to employment, income and services. The focus is therefore on health outcomes, but action must also address the wider infrastructure and place-shaping

issues that influence health. This requires targeted, place-based action that is informed by better data to narrow inequalities, alongside a commitment to embedding health and wellbeing across all local authority services and policies and strengthening rural proofing across partner organisations' programmes.

Key assets

Shropshire benefits from strong partnership working and place-based delivery. These include approaches such as the Community and Family Hubs and neighbourhood working, supported by flexible outreach and mobile models that reduce access barriers for isolated rural communities. This is underpinned by mature partnership working across the Council, NHS/ Integrated Care Board (ICB), Primary Care Networks and the voluntary and community sector, with a clear, life-course focus on prevention embedded through Prevention Matters and Health in All Policies. Evidence-led rural proofing, strong member engagement and a committed workforce have driven innovation in rural health and care, alongside significant progress in establishing Shropshire's first Neighbourhood Health Hubs. As one of 43 national first-wave areas, Shropshire has a strong foundation for integrated, preventative neighbourhood-based care.

Vision for the future

Our strategic aims for Shropshire are currently being refreshed through a revised Health and Wellbeing Strategy in light of NHS reforms, Shropshire Council's New Direction and Shropshire Partnership Plans. However, priorities remain evidence-led with a strong focus on residents and local communities.

Our strategic aims:

- Improve population health and reduce inequalities, including those hidden by rurality
- Improve access to health, wellbeing and care, especially in rural areas
- Shift the system towards prevention and early intervention across the life course
- Strengthen integrated partnerships across health, care and communities
- Ensure decisions are intelligence-led and rural-proofed
- Deliver sustainable improvement within available resources

How we will deliver these aims:

- **Prevention first:** early intervention, best start in life, mental wellbeing and healthy ageing, including delivering a sustained shift to prevention, requires rebalancing investment between secondary care and primary and community services, and council services with a preventative focus. Improving vaccination uptake is also a priority with greater focus on promotion programmes and alignment of provider resources.

- **Place-based working:** community, family and neighbourhood hubs, outreach and mobile services help to tackle often hidden inequalities through close partnership working including supporting a strong and vibrant community and voluntary sector. The forthcoming National Neighbourhood Health Planning Framework is therefore welcomed, providing a clearer basis for joint NHS and Local Authority planning at neighbourhood level from 2026/27 onwards.
- **Health in All Policies:** embedding health considerations across council and partner decision making.
- **Strong partnerships:** close working with the ICB and voluntary and community sector.
- **Rural proofing and intelligence:** improving data to identify rural deprivation and access issues.
- **Sustainable delivery:** integration, shifting resources to prevention, workforce development and digital solutions suited to rural settings.

Highley

Highley is a small village in the South East of Shropshire. It is located on the west bank of the River Severn sitting on a road between Shrewsbury and Bridgnorth.

Two years ago, the Highley Health and Wellbeing Centre was opened in the Severn Centre. It is already making a positive difference for residents by expanding access to health and wellbeing services.

Following a comprehensive place-based Joint Strategic Needs Assessment in the community, the first of 18 undertaken across the county, partners across Shropshire Council, including the public health team, the NHS including the South-East Shropshire Primary Care Network, the local town council and the community, worked together to explore how local services could better meet resident's needs.



Source: Shropshire Council.

With the retirement of the local GP and closure of the medical centre, we looked at community assets in Highley and worked in partnership to develop a new medical practice at the heart of the community. While local GP practices lacked capacity to host additional clinics, the partners worked together to develop a dedicated space for clinical and wellbeing support. Dr Jess Harvey, Clinical Director for the South East Shropshire Primary Care Network said: "*You think of the NHS 10 Year Plan and the shift towards neighbourhood working, but actually we were ahead of the curve – we started this three years ago.*"

The centre brings a wide range of services together in one modern, accessible location, including mental health support and women's health services. This approach helps residents access care closer to home, supports early intervention and reduces the need to travel.

In Shropshire, our approach is that there is no single model for a neighbourhood health hub – it's shaped by what the community needs. It's about providing holistic, wraparound support.

The centre opened in April 2024, with additional consultation rooms enabling a much broader range of services, including first-contact physiotherapy, mental health support, clinical pharmacy and social prescribing. There are drop-in clinics for health visitors, sexual health and smoking cessation, and the centre hosts women's health hubs to deliver menopause talks. The centre also supports the wider community, including groups for older residents, families and people living with dementia. Having the NHS, local authority, parish council and community working towards a shared goal has shown what can be achieved.

The Highley Health and Wellbeing Centre demonstrates how partnership working can strengthen local healthcare provision, with further services expected to develop in the future.

3. Transport and access to healthcare services

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Introduction

Good access to healthcare services is needed to facilitate effective healthcare provision across emergency, planned, routine and preventative services. In time-critical emergency conditions, such as stroke, severe asthma attack or myocardial infarction, even small delays can lead to worse outcomes. Similarly, barriers to accessing routine and preventative services can result in worse outcomes through missed opportunities for early prevention of ill health, such as blood pressure management, support with stopping smoking and cancer screening programmes. This can lead to people presenting later in disease progression when healthcare is less effective.

Small towns and rural areas are, by definition, further away from many of the services more readily available in the major conurbations. However, barriers to access in these communities extend beyond the challenge of physical distance.[1] Challenges to access may also include:

- Affordability – can I afford transport?
- Availability – does this service exist in my area?
- Accommodation – is the service open when I need it and can access it?
- Acceptability – can I trust service providers?

These challenges may relate to both the service (location, opening times) and the service user (mobility, access to a car or internet connection). As shown in Chapter 1, rural populations look different to urban populations, with higher proportions of older adults who may have higher needs for health and social care services, and who may face rural-specific challenges to navigating barriers to access. Within these settings inequalities in access remain, with people living in the most deprived communities facing the most significant barriers.

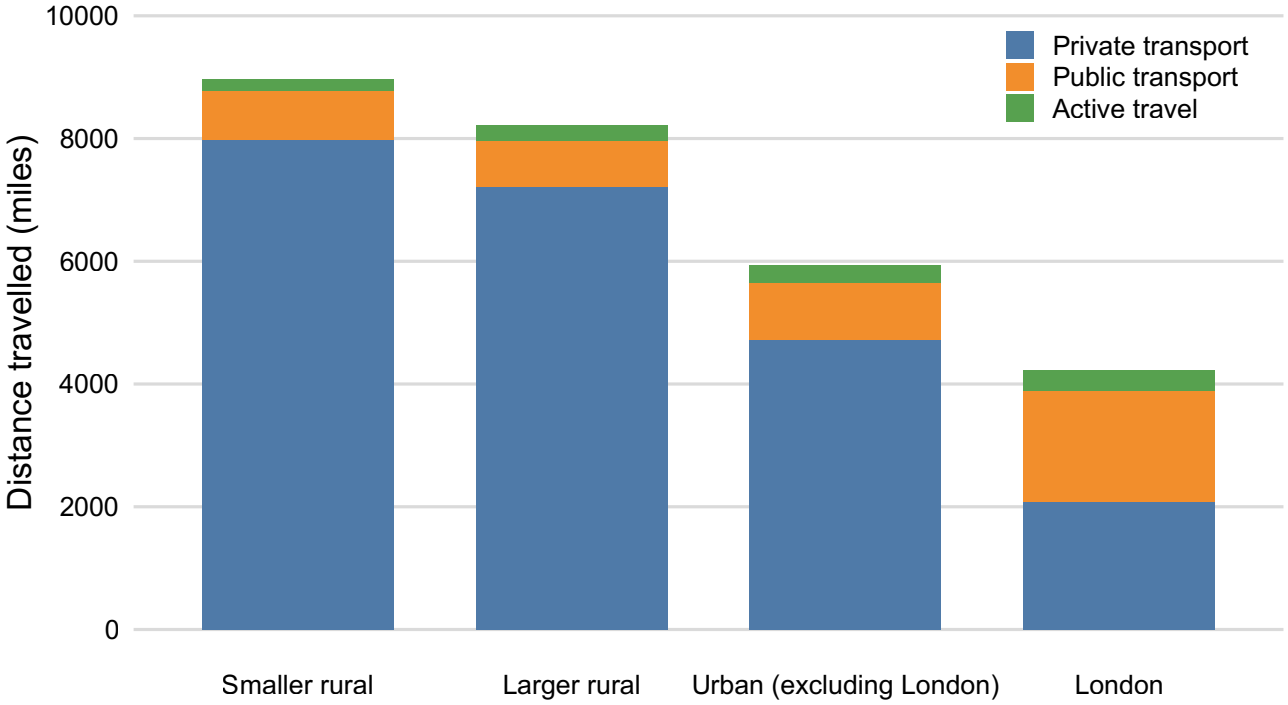
Physical barriers to access

Rural residents travel further for health services

In general, people living in more rural areas spend more time travelling each year for services, employment and recreation.[2] This reflects both the greater physical distance between home

and services ('as the crow flies'), and also the longer time taken to complete journeys, whether by driving, public transport, or active travel (travel involving physical exertion, for example walking, cycling, non-motorised wheel chair).[3] Reduced transport infrastructure in many of these settings make travelling by public transport particularly challenging. Figure 1 presents the average distance travelled per person in England in 2024, based on the geographical category of their residence.

Figure 1: Average distance travelled per person by 2021 Rural-Urban Classification (RUC), England, 2024.

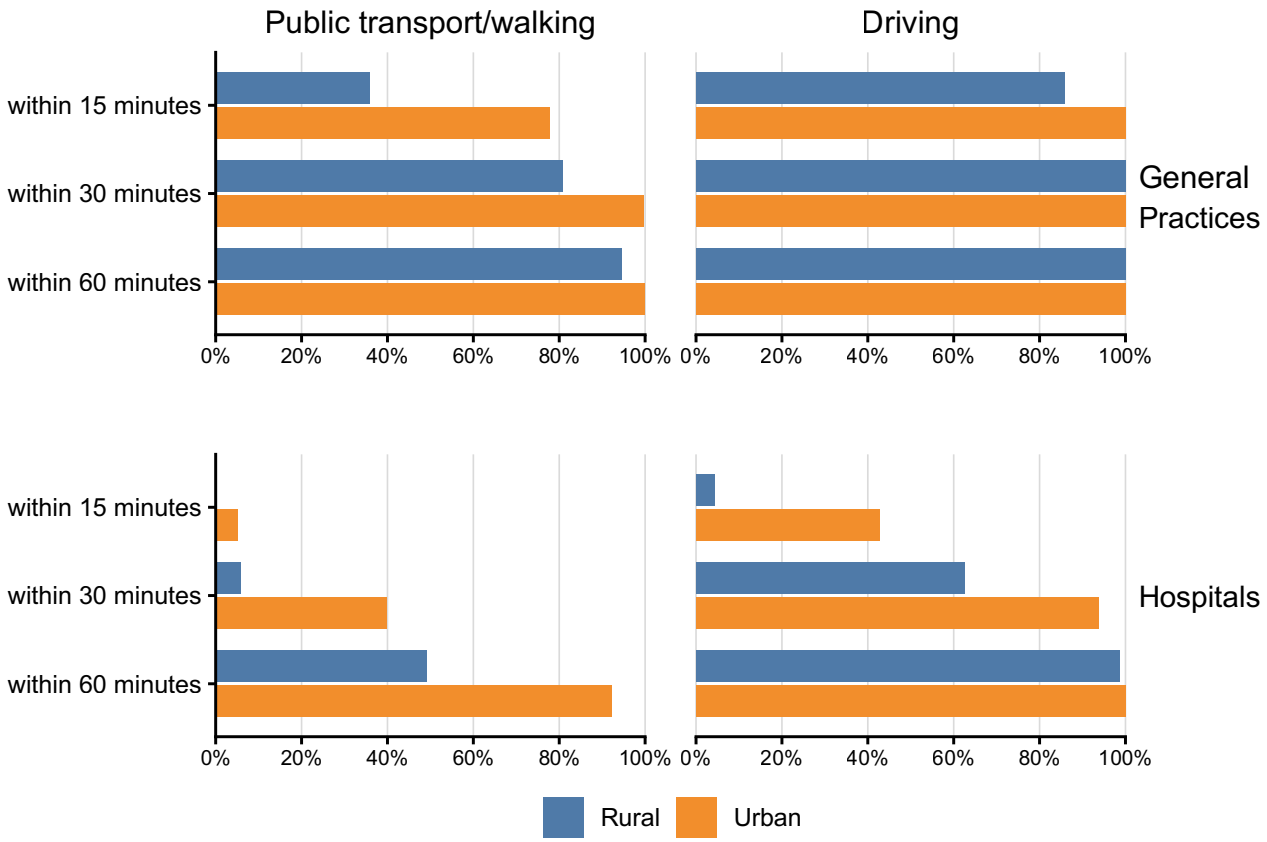


Source: Data taken from the Department for Environment, Food and Rural Affairs, Statistical Digest of Rural England: 5 – Connectivity and Accessibility.

In 2024, people living in settlements broadly considered 'rural' each travelled around 8,600 miles on average, while people living in urban areas travelled only 5,600 miles.[4]

Figure 2 presents the proportions of rural and urban residents within different categories of journey time to reach key health services. Travel times by public transport or walking to general practice and hospitals are much longer in rural areas. In many rural settings, public transport is largely provided by buses, which may be infrequent and poorly aligned with medical appointment times. While drive time to general practice remains short in both rural and urban settings, many rural residents drive for longer to access hospital appointments.

Figure 2: Percentage of households able to access key health services within different journey times, by public transport/walking (L) and driving (R), by 2011 RUC, England, 2019.



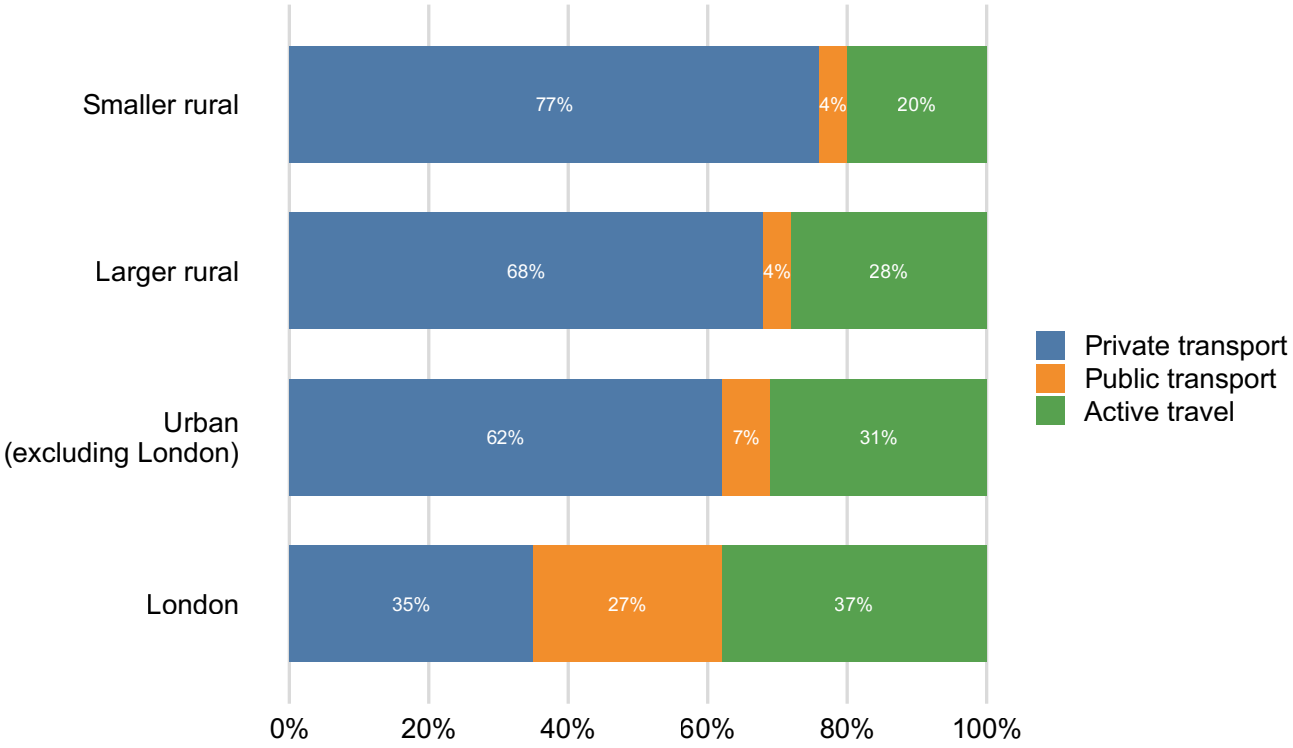
Source: Data taken from the Department for Environment, Food and Rural Affairs, Statistical Digest of Rural England: 5 – Connectivity and Accessibility.

Longer journeys in rural settings highlight the centralisation of health services in many of the major towns and cities in England.[5] Centralisation and consolidation of services in transport hubs does offer benefits. It may result in both improved efficiency and cost-effectiveness of service provision, alongside improved clinical outcomes arising from an increased familiarity and specialisation of staff within a clinical area.[6,7] However, these benefits exist in tension with the inequities that can be introduced as rural residents face longer journeys to access healthcare.

Rural residents are heavily reliant on private transport

Most travel in rural settings is via private transport.[8] Figure 3 presents the proportion of travel via different modes of transport by geographical area. In 2024, the average rural resident made 73% of their trips using private transport, compared to only 58% across urban settings.[9]

Figure 3: Proportion of trips made by mode of transport by 2021 RUC, England, 2024.

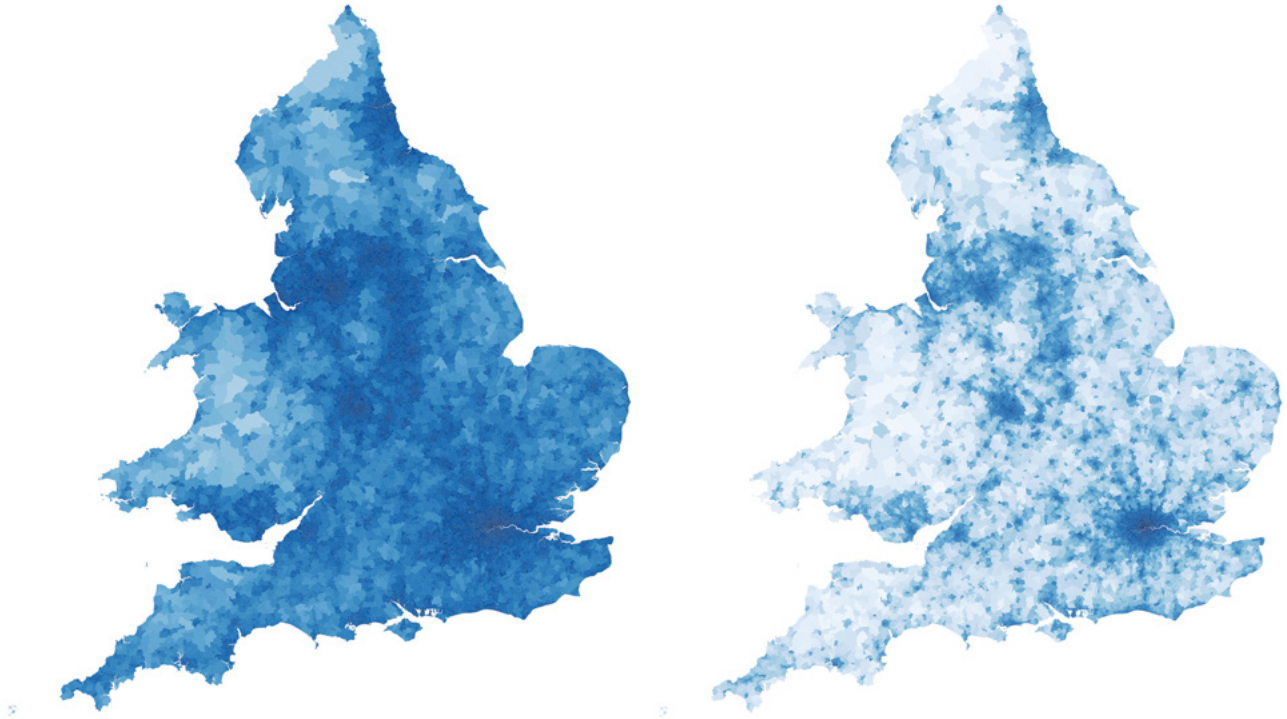


Source: Data taken from the Department for Environment, Food and Rural Affairs, Statistical Digest of Rural England: 5 – Connectivity and Accessibility.

A lower proportion of rural residents engaging in walking and cycling may seem unexpected given the proximity to green spaces in more rural settings. However, roads in rural areas often have no paths or cycle paths. They may have no street lighting and have cars travelling at high speeds on winding roads where visibility around corners is limited. Consequently, many rural residents must first drive before they can reach somewhere they feel safe to either walk or cycle.

The Department for Transport has developed a connectivity metric which measures a person's ability to reach employment, services and social engagements via different modes of transport.[10] Figure 4 contrasts the regional variation in connectivity scores by driving and by public transport, throughout England and Wales. Connectivity scores are relative, with areas shaded in darkest blue having the highest scores. While connectivity by car is relatively consistent across much of England and Wales, connectivity by public transport varies far more by location, with the highest scores concentrated in major urban areas.

Figure 4: Heatmaps of connectivity by driving (L) and public transport (R) using the Department for Transport's connectivity metric, England and Wales, 2024.

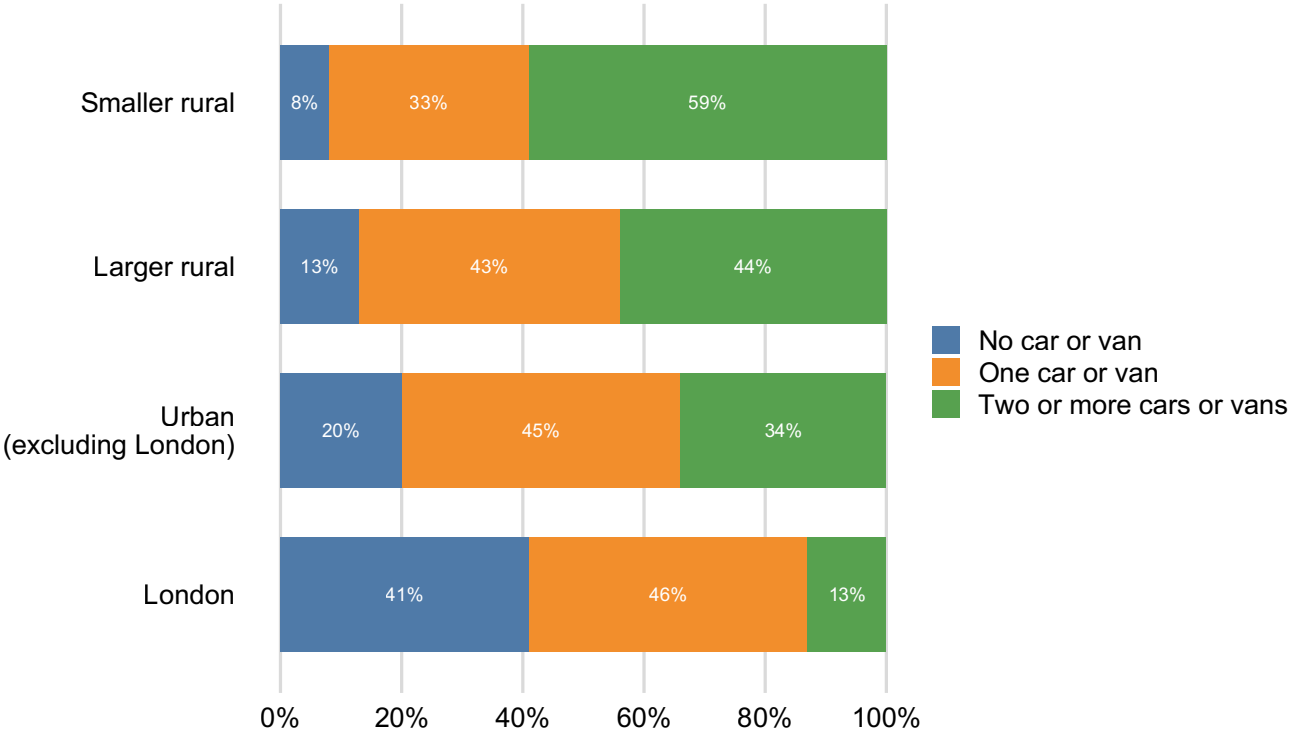


Connectivity scores are scaled relative to the best area, with the maps highlighting the regional distribution of connectivity within each mode, not the absolute difference in connectivity across modes. The metric applies a diminishing returns effect on the value of reaching more of the same type of destination.

Source: Images from Department for Transport, Transport Connectivity Metric, Figures 6 and 7. Available under the Open Government licence v3.0.

High reliance on private transport is reflected in higher car ownership in rural settings. Figure 5 presents the proportion of people having access to one or more cars by geographical area. In smaller rural areas only 8% of households did not have access to a car or van in 2024, a percentage that increases by level of urbanisation, up to 41% for households in London.[11]

Figure 5: Household car or van availability by 2021 RUC, England, 2024.



Source: Data taken from the Department for Environment, Food and Rural Affairs, Statistical Digest of Rural England: 5 – Connectivity and Accessibility.

The difference in access to a car in rural/urban settings reflects the necessity of driving for rural life. While in some urban areas access to a car may be seen as a luxury, in many rural settings it is an essential asset.

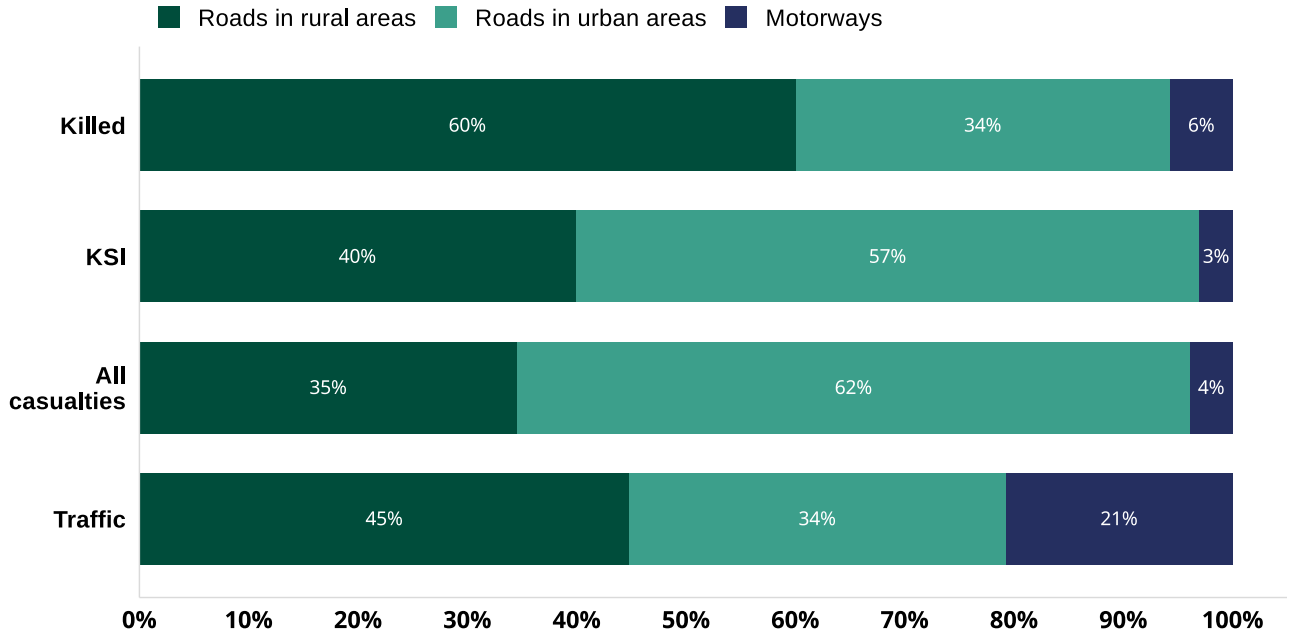
Private transport is not a panacea for rural access challenges

Increased reliance on private transport carries significant implications for inequities in access to health services by geography. More deprived households in rural settings may have no choice but to spend a significant proportion of their income on maintaining private transport. It has been reported that the poorest households in the UK spend a quarter of their income on their car, impacting on financial resource for other essentials.[12] Those without sufficient means to afford private transport may face significant social isolation, and long and arduous journeys to access healthcare services.[13] Challenges facing these households may be missed in national statistics that report averages over large geographical areas. A lack of car ownership has been linked with reduced healthcare access, including for screening uptake[14] and greater difficulties accessing a GP,[15] while the increased geographic and social isolation may also pose a risk for poorer mental health and wellbeing.[16]

Further, while those with access to private transport may face fewer barriers to accessing healthcare services, challenges remain. Driving in rural settings carries a higher risk of fatal injury, and is potentially more intimidating for less confident drivers, than driving in urban settings.[17] Figure 6 contrasts the proportion of traffic (measured in billion vehicle miles) with the

proportion of all casualties and fatalities on different road types. Despite comprising only 45% of road traffic in 2025, roads in rural areas had around 60% of road fatalities.[18]

Figure 6: Proportion of reported road casualties by severity, and traffic proportion, for different urban or rural classification in Great Britain, 2025.



KSI = Killed or Seriously Injured

Source: Image from the Department for Transport, RRCGB 2025: Introduction and main findings, Chart 8. Available under the Open Government licence v3.0.

There are also challenges for specific population groups. While many older drivers benefit from a wider breadth of driving experience, changes to a person's health as they age may mean they are no longer able to drive safely. Consequently, some may have to relinquish their driving licence, either voluntarily or on the advice of a medical professional,[19] potentially introducing significant barriers to accessing healthcare services at an age when they are needed most.

Driving cessation has been found to be linked with a range of negative health outcomes, particularly in more remote and rural settings. These include increased risk of depressive symptoms, entry into long-term care and mortality.[20,21,22] Increasing loneliness is also a risk. Some evidence suggests that planned transitions to driving cessation can reduce some of the negative impacts,[23,24] and driving retirement programmes – programmes supporting and facilitating driving cessation for older adults – have been trialled in some settings.[25]

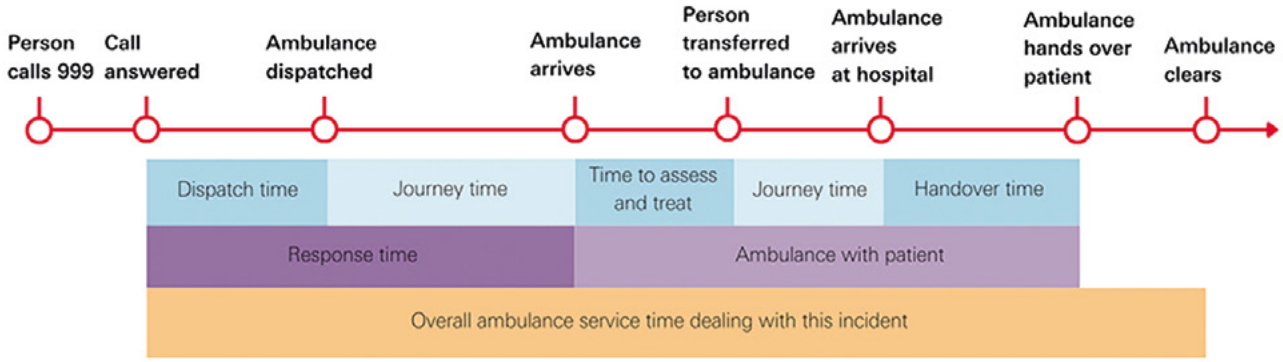
Finally, the challenges in navigating greater physical distances to access services may be compounded by additional, less tangible, barriers to access. Rural communities may be poorly served by urban-centric healthcare delivery models, and some communities report feeling abandoned by the health system.[26] Consequently, perceptions that services are unwelcoming or do not understand rural needs may reduce trust in services, discouraging engagement with care. Further, a distinct cultural feature of some rural communities is their close-knit feel, where many individuals know each other. Concerns regarding social image, stigma and perceived lack of confidentiality, may also discourage access to care.[27,28,29]

Accessing emergency healthcare services

Rural emergency responses have longer journey times

Longer journey times in England's small towns and rural settings are particularly relevant in the context of medical emergencies. Medical emergencies are time-critical with even short delays before definitive treatment leading to poorer patient outcomes.[30,31] Figure 7 presents an example ambulance service pathway in an emergency.[32] Both 'journey time' elements of the pathway may be prolonged in more rural settings where ambulance services may cover much larger geographical areas, extending the overall time between symptom onset and receiving definitive in-hospital treatment.

Figure 7: Example ambulance service pathway for a patient needing urgent assessment or treatment at the hospital.

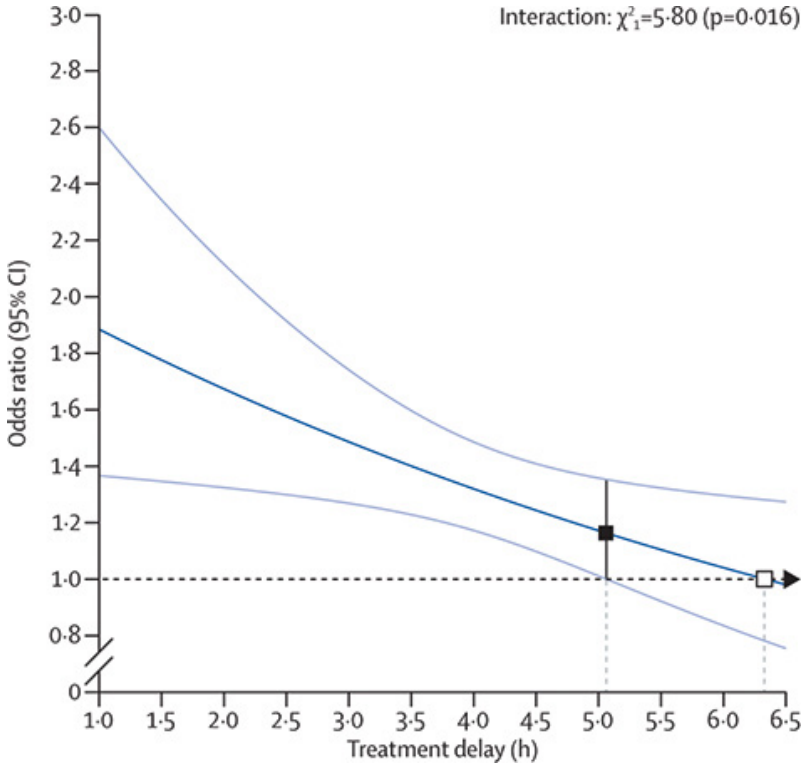


Note: The scale of this pathway is indicative, so distances between each point of the pathway are not to time scale.
Source: Image from The Health Foundation. Why have ambulance response times been getting worse? Figure 2. 2022.

Longer journey times are important when every minute counts

The importance of timely therapeutic intervention is evident across a range of medical emergencies, including cardiovascular (strokes and acute myocardial infarctions (AMIs)), trauma, infection (sepsis) and out-of-hospital cardiac arrests (OHCAs), among others. Figures 8 and 9 present published evidence on the sensitivity of health outcomes to delays in receiving reperfusion therapy in both stroke and AMI.[33,34]

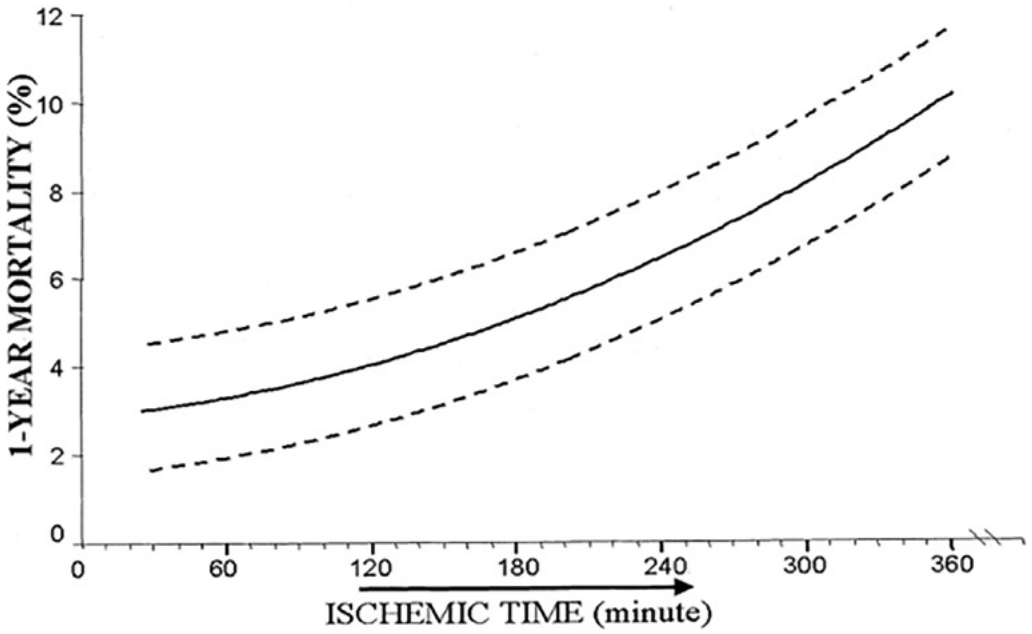
Figure 8: Effect of timing of alteplase (thrombolytic) treatment on good stroke outcomes (modified Rankin Scale 0-1).



Light blue lines represent the 95% confidence interval.

Source: Image from Emberson J, Lees K, Lyden P et al. Effect of treatment delay, age, and stroke severity on the effects of intravenous thrombolysis with alteplase for acute ischaemic stroke: a meta-analysis of individual patient data from randomised trials. Lancet. 2014. Figure 1.

Figure 9: 1-year mortality for AMIs by length of ischaemic time.



Black dashed lines represent the 95% confidence interval.

Source: Image from De Luca G, Suryapranata H, Ottervanger J, Antman E. Time delay to treatment and mortality in primary angioplasty for acute myocardial infarction: every minute of delay counts. Circulation. 2004.

For rural residents, increasing journey times before reaching a healthcare setting where definitive treatment can be delivered may mean treatment delays and an increased likelihood of poorer health outcomes when emergencies do occur. This disparity is reflected in published evidence. Increasing drive time and rurality are associated with poorer outcomes in AMIs,[35,36,37] trauma[38,39] and OHCAs,[40,41] although much of the published evidence is taken from international settings.

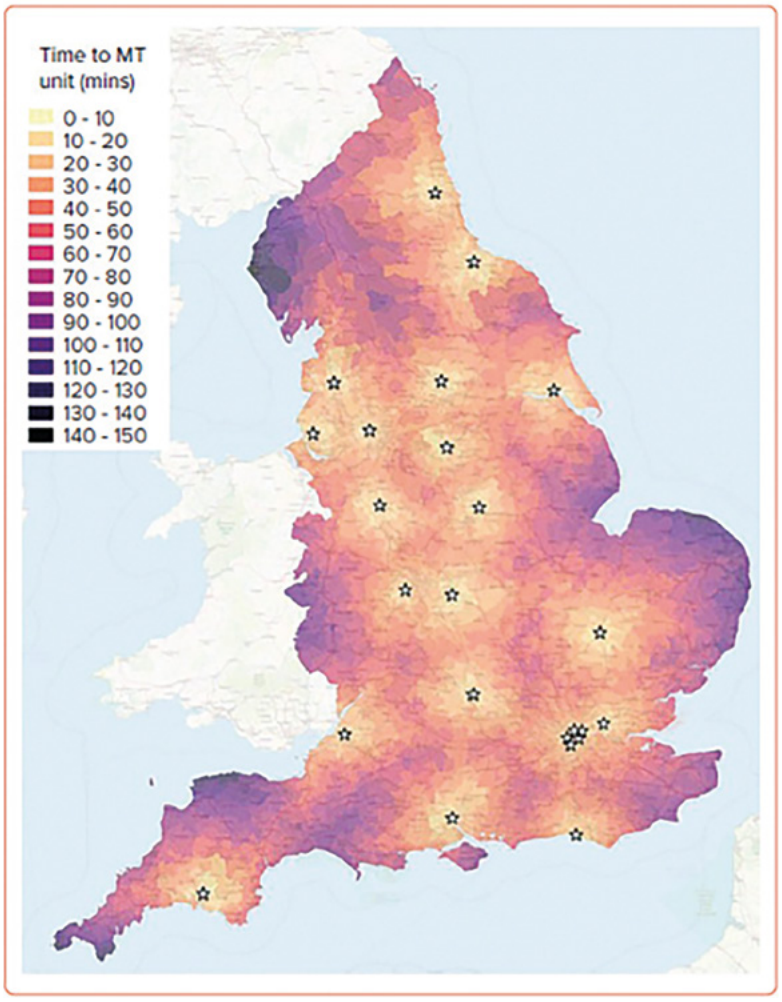
Increased distance and journey times may also have significant implications for patients presenting around the time boundary of therapeutic benefit for different interventions. For stroke, international studies have demonstrated reduced likelihood of receiving reperfusion therapies with increasing travel time and rurality.[42,43] Across England, Wales and Northern Ireland the time from onset of stroke to arrival in hospital has been steadily increasing since 2013/14. In 2023/24 12.2% of all stroke patients in England received thrombolysis and 4.4% received mechanical thrombectomy. Although the rates of mechanical thrombectomy remain below the European average, rates have increased in recent years.[44] For AMI, a study in Scotland reported that patients in more remote areas were less likely to receive optimal reperfusion therapy.[45]

While journey times are an important consideration for more rural and remote areas, they are only part of the emergency pathway for patients. Pre-hospital delays may also arise in the period between the onset of symptoms and patients or bystanders seeking urgent medical attention. Consequently, much effort has been given to public education on the symptoms of medical emergencies.[46]

Improving timely access to emergency treatment

Given the importance of prompt treatment in emergencies, there has been much interest in the safe delivery of definitive treatment in a pre-hospital setting (for instance, at the roadside or in the ambulance). Internationally, mobile stroke units equipped with brain imaging equipment – a key diagnostic tool for identifying if thrombolysis/thrombectomy can be safely administered – have been trialled.[47] Further, enhanced training for interventional cardiologists has been suggested as a mechanism for increasing the pool of trained clinicians capable of performing mechanical thrombectomy in the UK, consequently expanding the number of centres where thrombectomy could be delivered and improving access in rural and coastal settings.[48] Figure 10 presents a map of access to neuroscience centres capable of delivering mechanical thrombectomy.[49] Darker areas – more common in rural settings and the coast – indicate increasing travel times.

Figure 10: Access to neuroscience centres in England, 2019.



MT = Mechanical Thrombectomy

Source: Image from Oxford Academic Health Science Network, Mechanical thrombectomy for acute ischaemic stroke: an implementation guide for the UK. Figure 7.

A significant success of moving emergency treatment into the community has been the introduction of Automatic External Defibrillators (AEDs). These have provided local access to defibrillation for OHCA and are designed to be used by members of the public without specialist training. There is growing evidence that this is leading to improved survival rates, including in rural settings.[50,51] In England there is generally good access to AEDs across rural areas, although gaps remain.[52]

Optimising prevention alongside improving access to emergency treatment

Finally, where inequities in timely access to definitive emergency treatment cannot be fully eliminated, preventing medical emergencies becomes even more important. Because rural patients may face a higher risk of death or disability once an emergency occurs, each emergency prevented has the potential to avert a greater burden of adverse outcomes than in settings with more timely access to definitive care. This reinforces the importance of both high quality

primary and secondary prevention, principally delivered by local, regional and national government and primary care.

Improving access to emergency support in Lincolnshire: LIVES

Daniel Sedgewick – Medical Director, LIVES

LIVES is a Lincolnshire-based charity that exists to respond to 999 medical emergencies and deliver immediate pre-hospital care when every minute matters. Founded in 1970, LIVES began as a group of local doctors who would respond to emergencies (often road traffic collisions) in support of the ambulance service. In 1999, LIVES launched a Community First Responder scheme in partnership with Lincolnshire ambulance service, training members of the public to respond to life-threatening emergencies in their communities. In 2020, LIVES was commissioned by the NHS to launch 2 innovative services: the Community Emergency Medicine Service (CEMS) and Falls Response Partnership.

CEMS brings emergency department care to the rural communities of Lincolnshire. Staffed by a doctor or Advanced Clinical Practitioner, and paramedic or nurse, these mobile teams of experienced healthcare professionals attend 999 calls in support of the ambulance service, with a view to managing the vast majority of cases in the community. The Falls teams are staffed by teams of responders trained in emergency care and manual handling who can assist fallen patients from the floor, preventing complications of long lies and promoting mobility and independence, linking in with community teams of healthcare professionals including CEMS.

Lincolnshire brings unique challenges. Its rural nature means long distances to travel for healthcare and emergency response. Distinct health inequalities exist in areas of deprivation, particularly around the coastal towns, and the above-average age of the population means higher levels of frailty. Evidence shows frail patients have much higher risks from hospital admission, and alternatives to emergency department attendance reduce these risks and allow patients greater choice over their care. This is where the LIVES teams provide a unique capability.

CEMS teams attended 3,500 incidents in the past year, and saved the health economy an estimated £2.7 million, treating 75% of patients without emergency department attendance. Composed of clinicians from a variety of backgrounds including emergency medicine, primary care and pre-hospital care, the team carries advanced diagnostic equipment such as ultrasound and point-of-care blood testing, as well as a wide range of medications and procedural equipment, allowing patients the freedom to be treated without attending hospital.

Falls teams attended 2,700 incidents in the past year, usually arriving before ambulance service resources thus preventing many of the medical complications that can be caused by long lies on the floor. Connecting with the CEMS team and community health services, Falls teams get patients back on their feet, provide initial clinical and mobility assessment and ensure the appropriate follow-up for treatment or prevention of further falls.

Despite Lincolnshire's unique challenges, LIVES teams are able to provide emergency healthcare within communities and tailored towards the needs of the population.



A training simulation in which a LIVES team supports a patient in cardiac arrest.

Source: LIVES. Reproduced with permission.

Digital barriers to access

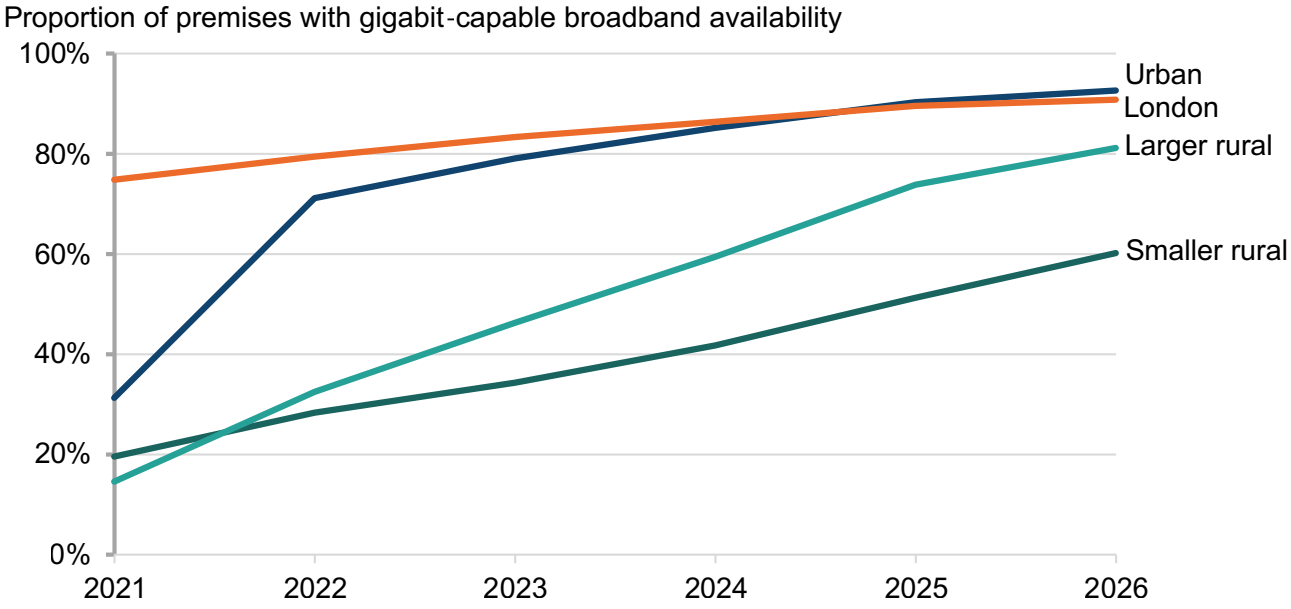
Opportunities for digital health have increased

Digital technologies for health, or digital health, covers multiple interventions with recognised potential to address health needs.[53] For example, digital health includes: telemedicine; the provision of health services over distance; support for delivery of services through remote consultations between health workers and accessing health records; targeted communication and dissemination of health information to patients; electronic booking systems; remote patient monitoring; and provision of digital workforce training. Digital health is increasingly prominent, with over a third of GP consultations taking place remotely[54] and use of online GP consultation requests rising by over 50% in 2025.[55] Factors relevant to digital inclusion are therefore key barriers to accessing services in rural areas. Digital inclusion means that "everyone has the access, skills, support and confidence to participate in and benefit from our modern digital society".[56]

Digital infrastructure has improved over time, yet rural areas still experience poorer access

Sufficient digital infrastructure for broadband and mobile connectivity is needed to facilitate access to digital health opportunities, including for accessing healthcare services. There have been improvements in expanding digital infrastructure over time (Figure 11), including through the ongoing Shared Rural Network and Project Gigabit government initiatives. Nonetheless, rural areas still experience poorer digital access.[57,58] Accordingly, while in rural areas telemedicine has been found to address barriers to accessing health services, specifically travel barriers, a lack of digital infrastructure has been identified as a persistent challenge to its delivery.[59] Digital infrastructure therefore remains a barrier to supporting equitable access to digital health for both patients and providers.

Figure 11: Proportion of all premises with gigabit-capable broadband availability, by 2021 RUC, England, January 2021 to January 2026.



Urban excludes London.

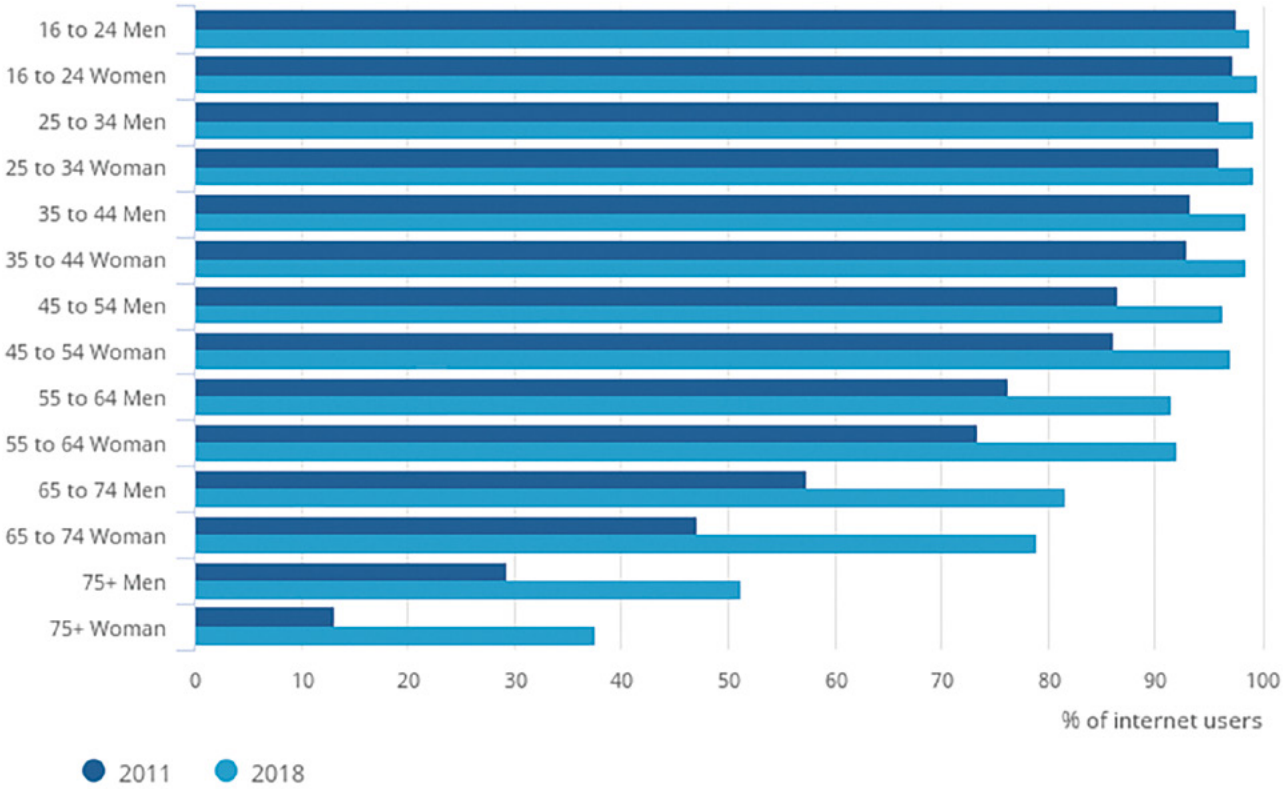
Source: Image from the Department for Environment, Food and Rural Affairs, Statistical Digest of Rural England: 5 – Connectivity and Accessibility, Figure A-13.

Social and economic barriers to digital inclusion persist

Beyond infrastructure, there are further social and economic barriers preventing digital inclusion and access to services. It is recognised that population groups at risk of experiencing health inequalities with the greatest health needs, are least likely to access digital health opportunities, referred to as the 'digital inverse care law'. This particularly includes older people and those who are socially disadvantaged.[60] Rural areas, typically having older populations, may experience high levels of digital exclusion. This is particularly pertinent where rurality is accompanied by socioeconomic disadvantage.

Among older adults, barriers to the adoption of digital health include individual skills (digital literacy), motivational factors (privacy and mistrust concerns, preference for existing care), material constraints (affordability and access to devices and connection), and system-level factors (provider engagement and support).[61] Accordingly, Age UK reports that nearly 1 in 2 older adults aged 75 years and over do not have sufficient digital skills to be successful online.[62] Within rural contexts specifically, socioeconomic factors and low digital literacy in elderly populations have similarly been reported as key barriers to accessing telemedicine.[63] Although disparities persist, it is important to recognise that digital disparities have been narrowing over time across multiple socio-demographic groups, including gender, age, ethnic groups and geographical regions.[64] Figure 12 presents the percentage of adults using the internet in the last 3 months, contrasting 2011 to 2018. As exemplified in the trend of internet usage, it is likely that as the population ages, the cohorts moving into the older age bands will use the internet more frequently than their predecessors.

Figure 12: Percentage of adults who have used the internet in the last 3 months, by age group and sex, UK, 2011 and 2018.



Source: Image from the Office for National Statistics, Exploring the UK's digital divide, Figure 9. Available under the Open Government licence v3.0.

There is clear and increasing potential for digital health to mitigate travel-related barriers and increase access to services in rural communities. However, this underscores the need for equitable developments to avoid exacerbating inequalities, with digital exclusion a key multi-layered barrier to capitalising on this opportunity.

Video consultations in Lancashire

Alex Woywodt – Consultant Nephrologist, Department of Renal Medicine, Lancashire Teaching Hospitals.

Our centre looks after around 1,000 patients with a functioning kidney transplant across a large geographical area in Lancashire. Prior to the COVID pandemic the transplant follow up clinic was fully face-to-face, with additional telephone appointments in a nurse-led clinic for stable patients. However, during COVID delivering face-to-face appointments became increasingly difficult, so we decided to change one of the consultant-led transplant clinics to include virtual consultations.

All stable patients in this clinic were seen via video consultations (75% of clinic capacity) while patients with significant problems were still seen face-to-face (25% of capacity). Patients responded positively to this new approach, citing convenience, cost savings and fewer days off work as significant advantages. This approach is now routine practice in our clinic, although there is scope for further rollout across our trust and in other specialties.

While video consultations have generally been well-received in our patient group, for some patients additional support is required. On average, transplant patients are younger and may use video calling regularly in their daily lives. However, some patients may not have access to devices that support video calling, may not have sufficient internet to support a video call, or may simply prefer a face-to-face consultation. Patients with visual and hearing impairments may find video calling particularly challenging, and their needs must be considered when moving to a remote service-delivery model.

In conclusion, we used the disruption of the COVID pandemic to rethink transplant aftercare, using the pandemic as a 'reset button'[65] for our service. Beyond patient benefits, conversion of routine appointments from face-to-face to video has also reduced the carbon footprint of our care, a particular benefit in centres like ours that cover a large geographical patch.[66] In our experience video consultations have been safe, user-friendly and popular during routine transplant aftercare.[67] We suggest that video consultations are here to stay[68] and that there is potential to extend the use of video consultations in other specialties, particularly where the emphasis is more on laboratory results than on clinical examination.

Facilitators to access

The barriers to accessing healthcare services in rural communities are numerous and well-known. However, there are assets in rural communities that services can leverage to maintain and improve access to healthcare in these settings.

First, rural populations tend to be less geographically mobile, and transient, than populations in cities.[69] For invitation-based preventative services – for instance, invitations for screening or vaccinations – this means that letters are less likely to be missed as a result of delivery to a previous address.[70] This can be a significant problem for the major conurbations with large populations of students and young professionals who may change address frequently.

Second, the stability of rural populations may also extend to the rural medical workforce, where local general practitioners, community nurses and allied health professionals, may spend extended periods of their career working in one setting, often in smaller teams serving smaller communities. This may facilitate greater continuity of care, and greater trust, between healthcare professionals and their local community. Both higher continuity of care and improved doctor-patient trust are associated with improved service uptake and clinical outcomes.[71,72] However, advantages from this stability may be offset by the increased fragility of services, with some areas struggling to replace staff as healthcare professionals retire or move to work in another part of the country.

Finally, strong social capital and high levels of volunteering within some small towns and rural communities, may help overcome some of the barriers to service access.[73,74,75] While some of these assets may take the form of formal, community-led initiatives as described in the boxes below, much support is also provided via informal networks of neighbours, friends and family.[76]

Community-led transport in Northumberland

Luke Robertshaw – Deputy Director of Public Health, Northumberland County Council
Caroline Clarke – Facilitator/Co-ordinator, Church and Community Partnership, Tynedale
John Sadler – Trustee/Treasurer, Church and Community Partnership, Tynedale

In Northumberland, a variety of community-led transport schemes play a vital role in supporting rural mobility, including informal neighbourly help, car sharing, volunteer driver schemes and dial-a-ride schemes. Most schemes have a strong local focus, and work is ongoing to support sustainability, scale and reach of schemes.

In response to social isolation in rural Northumberland, the Church and Community Partnership (CCP)[77] developed a new volunteer driver scheme drawing on guidance from the Community Transport Association.[78] Volunteers are trained and supported to use their own cars to take people to medical appointments, social groups and care home visits. Most trips are to rural medical practices or to specialist health services.

When Mary needed to attend an appointment at Bellingham Practice, volunteer driver David collected her from her remote rural home and drove her to see Heidi Moore, Care Co-ordinator at the surgery. For Mary, who lives with Alzheimer's and no longer drives, these journeys are about much more than getting from A to B. "*This is a lifeline for me, my driver always has time to talk in the car*," she says.

For David, volunteering has brought a renewed sense of purpose since retirement from work in the gas production industry. During regular journeys, he provides a listening ear and companionship, helping people like Mary stay connected. "*Being a volunteer driver has raised my morale, given me a new sense of purpose and a chance to meet some very special people*," he explains.

Heidi sees first-hand the difference the scheme makes. "*I have been able to organise lifts for patients for urgent and routine appointments, not only to see a GP but also for eye screening, podiatry and physiotherapy clinics held here at the surgery*."

The scheme has been growing over the past few years and currently supports around 30 drives a month with 10 volunteer drivers, driving distances of between 10 to 100 miles round trip in the more remote areas.

Mountain rescue in Cumbria

Phil Gerrard – Chair of the Lake District Search and Mountain Rescue Association

Carolyn Otley – Chief Executive, Cumbria Council for Voluntary Service, and Mountain Rescue volunteer

In rural areas like Cumbria, volunteer mountain rescue teams add essential countywide capacity and capabilities into the resilience system. In 2025, the 450 members from the 12 teams in the Lake District Search and Mountain Rescue Association (LDSAMRA) responded to over 800 calls, double the number of incidents that were seen in the early 2000s.

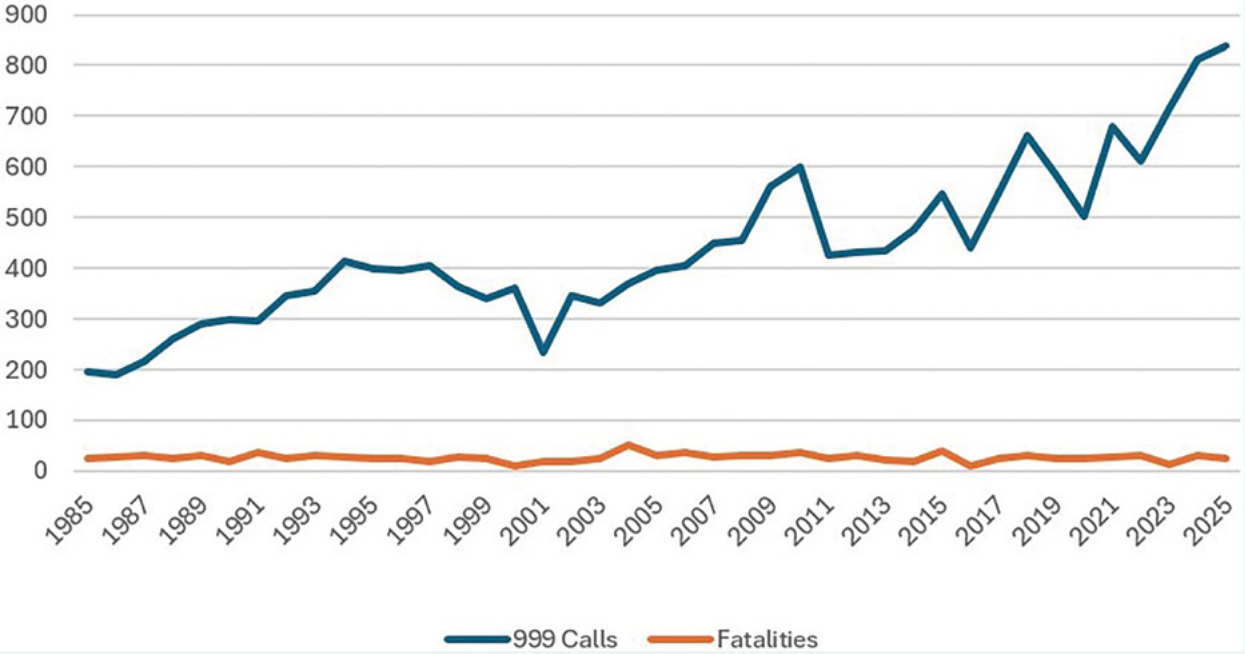
Mountain rescue teams have always responded to help people who were lost or injured in the high Lake District fells. The number of these incidents is increasing and their nature changing, as a wider range of people begin to explore the countryside, often inspired by social media posts and influencers.

Around half the calls involve an injury, with casualties often located in inaccessible mountainous areas, which require technical rope rescue skills to access. When on scene, casualties are assessed and treated by team members qualified as Remote Rescue Medical Technicians (RRMT), sometimes for serious and life-threatening injuries. These early interventions are then built upon, through close collaboration with other emergency medical services, including North West Ambulance Services, the local Air Ambulances, and Coast Guard rescue helicopters.

But mountain rescue is #SoMuchMoreThanMountains.[79] The teams cover the whole county, responding to incidents in remote lowland locations beyond the high fells, including farming and forestry accidents. They are involved in searching for missing people (including those with dementia and mental health conditions). Trained Mountain Rescue Search Managers work closely with the Cumbria Police Search Advisors, using missing person behaviours to guide search strategy.

At scale, mountain rescue teams have played an essential part in the response to major incidents across Cumbria, including the COVID pandemic as well as the more obvious flood, storm and snow incidents, where their local knowledge supports an effective multi-agency response. LDSAMRA are members of Cumbria Local Resilience Forum and regularly participate in multi-agency training and exercising, at operational, tactical and strategic levels.

Figure 13: 999 calls and fatalities responded to by the Lake District Search and Mountain Rescue Association, 1985 to 2025.



Source: Lake District Search and Mountain Rescue Association.

Accessing routine healthcare services

Mixed evidence on the impact of rurality on uptake of routine healthcare services

Despite the physical and digital challenges to accessing routine healthcare services for England's rural residents, the evidence of any negative impact of these challenges on the uptake of these services is mixed. This may reflect that, unlike emergencies, with sufficient support and planning rural residents can build routine healthcare access around their daily and weekly routines, for instance combining an outpatient appointment with a trip to town for shopping.

For screening, a multi-site study including rural patients in Scotland and Australia found that rural residents were actually more likely to have attended mammography screening than urban residents, with differences remaining after adjusting for differing deprivation levels between areas.[80] Additional studies in Scotland have reported similar findings, with higher screening

uptake for rural residents in screening programmes including abdominal aortic aneurysm,[81] and bowel and cervical cancers.[82] While meta-analyses provide a means of critically assessing and synthesising the results of multiple studies – producing a pooled estimate of the impact of rurality on screening uptake – the wide variety of settings under the umbrella heading of 'rural' greatly limits valid synthesis. A recent meta-analysis which combined multiple studies across international settings argued that cancer screening uptake may be poorer in rural settings but acknowledged this significant limitation.[83]

However, uptake of some routine healthcare services has been demonstrably impacted by rurality and increasing remoteness from service provision. A scoping review of OECD countries described distance decay as: "a reduction in health service access with an increase in distance or travel time".[84] Distance decay was visible in one study at as short a distance as 16.1km.[85] Distance decay has been demonstrated in an English setting, with a study in Devon reporting lower rates of out-of-hours general practice use by increasing distance.[86] Increasing distance and travel time has also been shown to be associated with variations in clinical decision-making, with a reduced likelihood of onward referral of patients with hepatitis C virus (HCV) to a HCV specialist centre demonstrated in one Scottish study,[87] and a reduced likelihood of receiving surgical resection for lung cancer in England.[88] Finally, a recent systematic review examining access to hospice care reported poorer access by geography in rural or deprived areas.[89] Mixed evidence on uptake of routine healthcare may reflect a combination of both facilitators to access in rural settings (for example, less transient populations, increased continuity of care) alongside additional barriers (for example, greater distance from services).

Mixed evidence on the impact of rurality on health outcomes

Different barriers and facilitators to accessing routine healthcare settings between urban and rural geographies, translates to mixed evidence of rural residence on health outcomes.

For certain cancers some studies have demonstrated a negative impact of rurality and increasing distance from services. In England, greater travel time to primary care has been shown to be associated with increased risk of cancer diagnosis via either emergency or 'death certificate only' routes[90,91] – proxies for delayed diagnosis.[92] These findings were supported by a separate study examining stage of cancer at diagnosis in Northern England, which found that late stage at diagnosis was associated with increasing travel time to general practice for both breast and colorectal cancers.[93]

However, other studies exploring the impact of rurality on cancer diagnosis and outcomes have reported conflicting results. Studies based in Scotland have reported differences in the diagnostic pathways for rural cancer patients – both positive and negative – although these did not appear to translate to meaningful differences in health outcomes.[94,95] Further, while an additional Scottish study reported that residents further from a cancer treatment centre were more likely to receive a prompt cancer diagnosis and treatment, this group had paradoxically poorer survival at 1-year.[96] Finally, a systematic review of geographical variation in access to chemotherapy reported no strong evidence of an association between rurality or distance travelled with the likelihood of receiving chemotherapy for cancer treatment.[97]

For other medical conditions there are relatively few studies of the impact of rurality on outcomes in a UK setting. A cross-sectional cohort study in England used health survey data to demonstrate an increased likelihood of undiagnosed hypertension in men living in rural areas, with the authors suggesting a possible gendered impact of convenience of access to healthcare in rural settings.[98]

Challenges in accessing routine services also extend to dental care, and these are discussed in the box below.

Improving access to dentistry in rural and coastal communities

Jason Wong – Chief Dental Officer for England

Divyash Patel – Clinical Policy Lead, Office of the Chief Dental Officer (OCDO)

Access to NHS dentistry in small towns and rural and coastal areas of England is in crisis. Practices are no longer accepting new adult patients, leaving residents – particularly those on low incomes, older adults and those without private transport – with nowhere to turn for routine care. In Dorset, for example, only 35% of adults currently access NHS dental care and no practices are accepting new patients.

The causes of access challenges are structural and self-reinforcing. The NHS dental contract was not designed with rural realities in mind – longer travel times, sparser transport links and the administrative burden of dispersed practice make it difficult to sustain viable services. Recruitment compounds the problem: dental training is predominantly urban-based and graduates are more likely to return to cities after qualifying, leaving rural and coastal practices with a persistent pipeline problem.

Impact on oral health

The consequences fall hardest on those who are already disadvantaged. Where routine dentistry is unavailable, unmet need accumulates and patients present late – often in pain – to urgent care or emergency departments. Rural and coastal populations tend to be older, with higher rates of complex restorative need and oral cancer. Children in deprived coastal communities experience disproportionately high rates of dental decay, with avoidable hospital admissions and lost school days among the measurable consequences. Poor oral health does not occur in isolation: it correlates strongly with cardiovascular disease, diabetes and social exclusion – meaning that unaddressed oral health inequalities compound wider health inequalities.

Plans and next steps

The OCDO, working with the Coastal Navigators Network, has developed a National Framework for Improving Oral Health in Rural and Coastal Areas – a practical blueprint for Integrated Care Boards and commissioners. First, a hub-and-spoke model for service delivery, using existing providers as immediate spokes, incentivising private providers into NHS care in the medium-term, and procuring new NHS services for longer-term sustainability. Patients should be able to access dental care directly through NHS 111, with digital innovation enabling real-time booking into provider capacity, ensuring people reach the right care at the right location without unnecessary delay. Second, a workforce strategy built on short, medium and long-term pipelines: embedding undergraduate training locally, supporting placements for newly qualified and internationally trained practitioners and upskilling the workforce to deliver Level 2 complex care. Third, a commitment to optimum care delivery grounded in prevention, personalised care planning and stabilisation of active disease – ensuring oral health is treated as an essential component of rural public health, not a luxury.

Conclusion

In small towns and rural areas there are a range of barriers to accessing healthcare services, including greater travel times, limited public transport and social, cultural and digital factors. These barriers are not distributed equally across settings, with the most deprived communities facing the most significant challenges. While for residents with access to a car, some of these challenges are mitigated, the cost of car ownership is high for socially disadvantaged groups. Strong social capital and a culture of volunteering in many rural settings help to overcome some of these access barriers, and both digital connectivity and digital literacy are likely to continue improving in the future, facilitating greater access to services. In emergency settings – where speed of access is paramount – increased journey times may put rural residents at higher risk of poorer health outcomes. Further efforts to expand the safe delivery of emergency treatment in rural settings, and to optimise primary and secondary prevention, should help to reduce inequalities by geographical area.

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4. Deprivation

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Introduction

Deprivation is a nuanced concept that is often conflated with inequality but more accurately refers to a lack of the resources, opportunities and conditions necessary for a safe, healthy and fulfilling life. In the context of health, deprivation is shaped by a broad range of social determinants, including income, education, employment, housing and the physical and social environment. The nature and distribution of these determinants can differ substantially between urban and rural settings. In small towns and rural areas, deprivation and poverty are often highly localised and less visible, making them difficult to identify using conventional area-based measures. As a fundamental determinant of health, deprivation contributes substantially to social and health inequalities, influencing patterns of disease, access to services and health outcomes across populations.[1]

Measuring rural deprivation

Accurately measuring and identifying deprivation is essential for targeting public health resource where the need is greatest. Using measures that are biased, or that miss important elements of deprivation, may mean that the areas and communities that need support the most are missed.

There are well established national measures of deprivation, most notably the Indices of Deprivation (IoD)[2], a collective of 10 indices that capture the multifaceted nature of deprivation. They provide a place-based assessment of relative deprivation, comparing small areas (Lower layer Super Output Areas or LSOAs) to each other rather than measuring deprivation in absolute terms. Seven weighted domains within the IoD – Income (22.5%), Employment (22.5%), Education (13.5%), Health (13.5%), Crime (9.3%), Barriers to Housing and Services (9.3%) and Living Environment (9.3%) – are combined to form the Index of Multiple Deprivation (IMD), which is the official and most widely used measure of relative deprivation in England.

Rural deprivation may be hidden in national measures

The IMD is reported down to LSOA level. This means that one summary value – for instance, overall deprivation level or income level – is used for an area as a whole. This may be appropriate in urban settings in which an LSOA may cover neighbouring streets or postcodes with very similar living circumstances. However, in rural and small town settings in which LSOAs can cover

much larger geographical areas, relying on these summary values can lead to incorrect inferences, including the ecological fallacy, where it is assumed that what is true for the average resident must be true for every individual within that setting.[3] In reality, rural communities are smaller, widely dispersed and more heterogeneous across the country, and therefore the experiences of individuals may be masked within population-level measures. A few deprived streets or neighbourhoods within an otherwise affluent LSOA may be missed entirely.

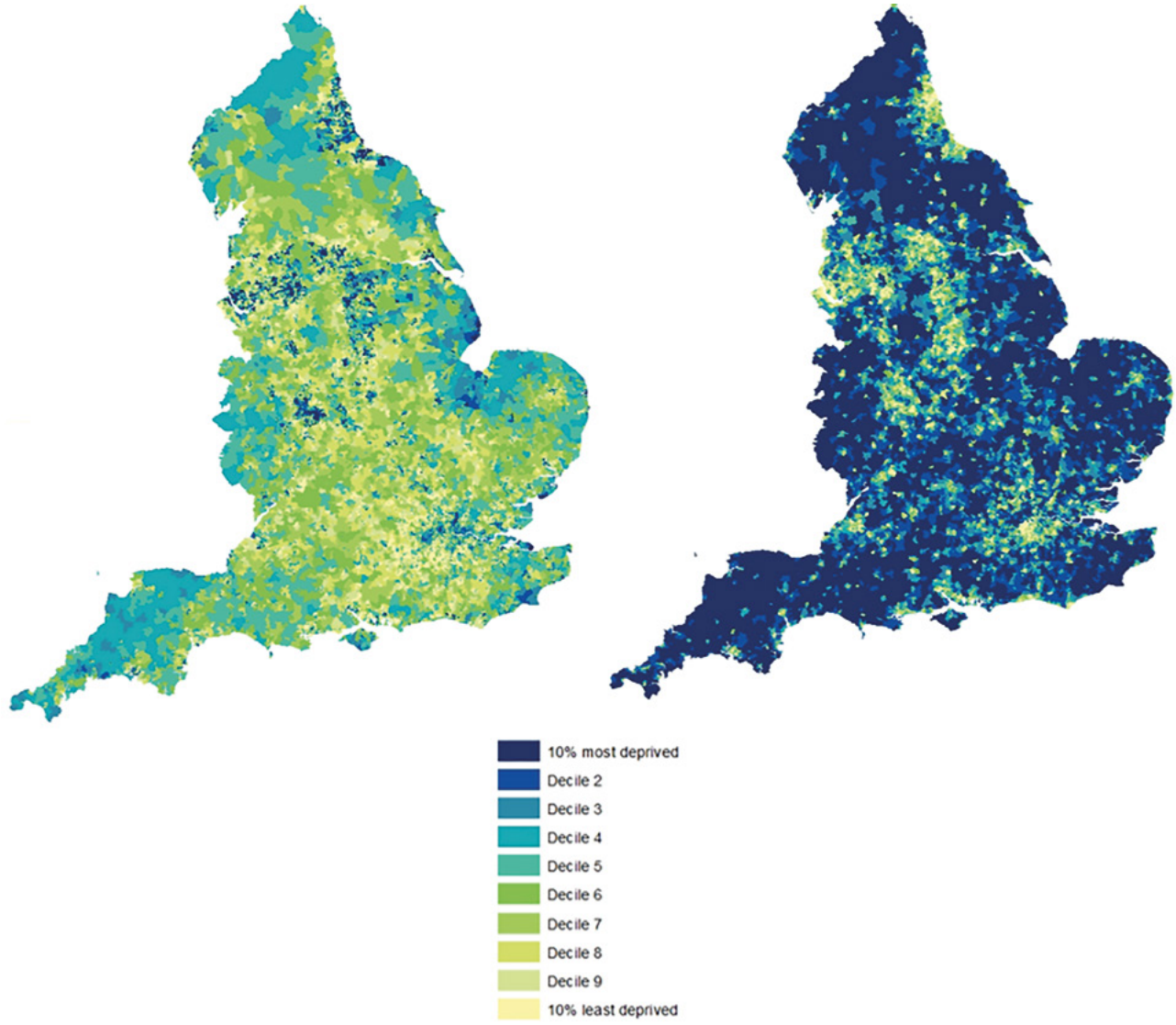
In addition to this 'Hidden Deprivation' in national measures, social housing policy over time has contributed to the emergence of small, concentrated pockets of deprivation within otherwise affluent rural areas. These areas are often very localised, sometimes a single row of houses or cluster of streets, that do not show up at LSOA level. This concept of 'nested deprivation' was described by Boswell et al.[4] who argued that "*people living in nested deprivation are not so much the 'left behind' as the 'never acknowledged*.'" Characteristics of residents in these nested areas may differ from the older populations commonly associated with rural settings, for example, they may be earlier in their careers, raising young families, experiencing greater financial insecurity and facing higher health needs – challenges that are intensified by the physical and geographical barriers typical of rural living, which are often difficult to identify and measure.

The limitations of national deprivation measures in rural settings are recognised. The 2025 update of the IoD addressed several previous methodological limitations, particularly those relating to spatial scale and management of statistical unreliability. Further, attempts have been made to develop alternative measures of rural deprivation, such as the Norfolk Rural Deprivation Index (RDI)[5] using Norfolk County as a case study. Building on the strengths of selected IMD domains, the RDI integrates population structure, small area variation and indicators relevant to rural settings.

Rural deprivation looks different to urban deprivation

Important differences exist between areas considered deprived in rural and urban settings, and the IMD itself may be more optimised for measuring and detecting urban than rural deprivation.[6] Figure 1 compares overall IMD deciles against the Barriers to Housing and Services domain in England, highlighting these differences. Areas ranked most deprived for the overall IMD are predominantly urban, while rural areas are most deprived in the Barriers to Housing and Services domain. Rural areas are also overrepresented in both the Living Environment domain, reflecting housing-related challenges, and the Geographical Barriers domain, reflecting challenges in accessing services, with over 50% of rural LSOAs falling within the 10% most deprived in England.

Figure 1: Comparing the overall Index of Multiple Deprivation (L) and Barriers to Housing and Services Indices of Deprivation Domain (R), England, 2025.



Source: Data taken from Ministry of Housing, Communities and Local Government, 2025. Maps produced by Hampshire Public Health Intelligence Team. ® Crown copyright and database rights 2025 Ordnance Survey 100019180.

Higher levels of deprivation in these domains reflect the limitations in physical infrastructure in rural communities. Both digital connectivity and transport are increasingly essential for full participation in modern life and accessing education, healthcare and employment services. The limited and infrequent public transport highlights a broader challenge of poor access to services as evidenced by the Department for Transport's Connectivity Tool,[7] which shows a pattern of limited connectivity to services by walking, driving, cycling or public transport in many rural areas. This disadvantage, compounded with rising living costs and housing pressures, creates an inherent 'Poverty Premium'. Residents face disproportionately higher living expenses, particularly for energy, food and transport and a greater reliance on private vehicles to access essential services, including healthcare, which is especially acute for low-income families and drives health inequalities. While in some urban areas car ownership may be a marker of affluence, in rural settings – with limited alternative transport options – it can be an essential necessity for daily living.

Built-Up Areas (BUAs): an additional option for understanding deprivation in small towns

Communities in small towns and rural areas are often poorly represented by the standard statistical geographies used to measure deprivation. LSOAs provide the most granular data available but they may poorly align to real-world geography and communities. For instance, in sparse rural areas they may combine multiple small hamlets and villages that actually look very different to each other, with different needs and challenges. BUAs, however, are an ONS defined geography that could offer a useful lens for better understanding deprivation in small built-up areas. Defined by the physical built environment, BUAs align more closely with real-world service delivery.[8] Public health services and interventions are more typically targeted to a town or community as a whole, rather than the more arbitrarily defined boundaries of an LSOA. With the ongoing focus on Neighbourhood health, BUAs may offer a useful tool for summarizing data at a 'neighbourhood' level. However, their wide variation in size and overlap with LSOAs mean BUAs can still miss rural deprivation, especially in sparse rural settings.

Nationally, the most deprived rural BUAs are often found in former mining and coastal communities, but deprivation does not present uniformly. Comparing Frodsham in the North West and Broughton in the South East are useful case studies for exploring these differences.

Frodsham is widely perceived as an affluent market town, but significant inequalities exist. While 5 of its 6 LSOAs fall within relatively low deprivation levels, one small area ranks among the 10% most deprived nationally, including for employment, health and crime. This contrasts sharply with the wider town and reflects a concentration of disadvantage typified by higher levels of social housing, lone parent households, economic inactivity, low qualifications and poorer health. Residents in this area are more likely to face overcrowded housing, rely on public transport, provide unpaid care and experience disability, alongside reduced access to local amenities due to physical barriers. These overlapping socio-economic and health challenges demonstrate that deprivation in Frodsham is highly localised but complex, requiring targeted, place-based responses rather than town-wide assumptions of affluence.

Broughton, by contrast, has far less visible socioeconomic vulnerability. Ranking in decile 5 for the IMD, it occupies part of a single LSOA. As the BUA is far smaller than an LSOA, the IMD methodology notes that its deprivation cannot be measured precisely, an inherent issue for a geographically sparse community where, without local insights, small pockets of deprivation can remain hidden. While at LSOA level the IoD appears to indicate that deprivation here is being driven mainly by barriers to services, this fails to capture the small cluster of younger, less affluent households within an otherwise prosperous rural community. In the north of the village, higher levels of social renting, poorer health, lower car ownership and reliance on electric and oil central heating point to a more vulnerable group, particularly affected by the costs and practical challenges of rural life. Without local insights this small-nested area would be unknown.

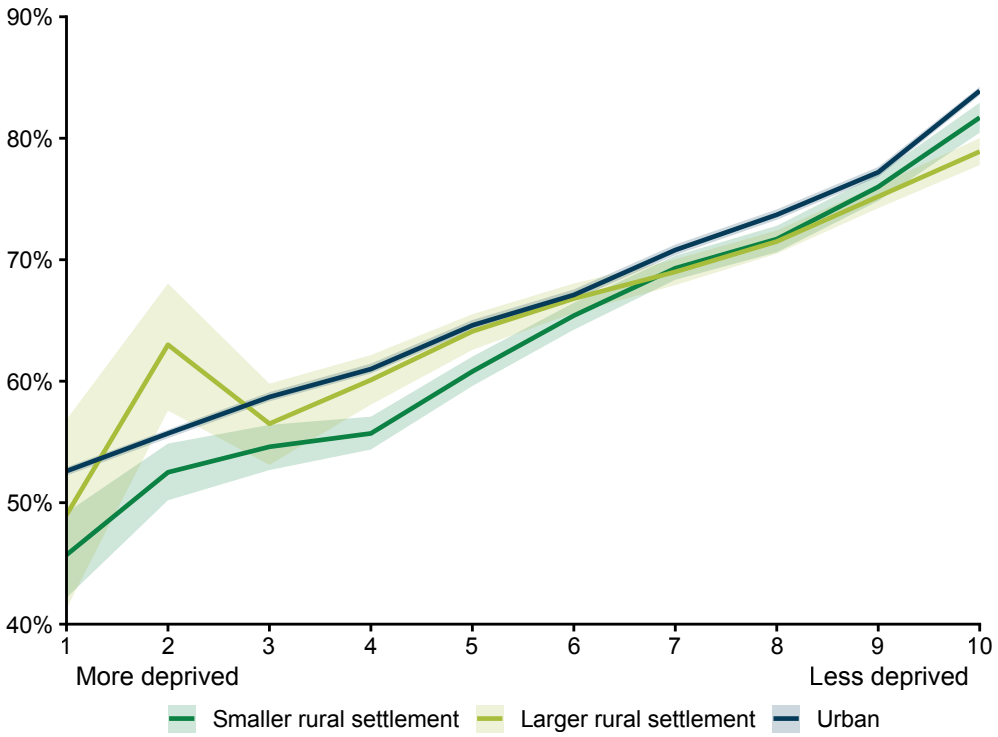
Education

Education plays a critical role in shaping future employment opportunities which subsequently influence health. An area's employment rate is an important characteristic. In places with higher economic inactivity, people are more likely to have lower healthy life expectancy.[9]

National statistics[10] show that, on average, pupils attending rural schools achieve higher educational outcomes on most metrics than those in urban settings. This could be due to several inter-related reasons: rural areas generally have lower pupil mobility, smaller school and cohort sizes and closer relationships between schools, families and communities, all of which can support pupil engagement and attainment. However, national averages may mask challenges facing specific rural communities. Educational attainment is consistently lower for disadvantaged pupils in both rural and urban areas. In rural and small town settings, this disadvantage can be obscured within overall averages, warranting closer examination that is often lacking in published analyses of educational outcomes.[11]

One metric in which rural pupils, particularly those in more deprived areas, appear to underperform is in Key Stage 4 GCSE results. Data analysed by rural–urban classification shows that while there are comparatively fewer pupils in rural schools, resulting in wider confidence intervals, there is a consistently lower proportion of pupils in rural areas achieving grade 4 or above in English and Maths, compared with pupils in urban settings. This inequality is most pronounced among the pupils living in the most deprived smaller rural areas (see Figure 2).

Figure 2: Percentage of pupils achieving grades 4 or above in English and Maths GCSEs by rurality and Income Deprivation Affecting Children Index (IDACI) decile, 2024/25.



Ribbons show the 95% confidence intervals for the percentage of pupils achieving grades 4 or above in English and Maths.

Source: Data taken from the Department for Education, Academic Year 2024/25, Key Stage 4 performance.[12] Adapted by the Hampshire Public Health Intelligence Team.

A significant challenge of schooling in more deprived rural areas is educational isolation. This has been defined as the combination of challenges arising from an isolated geographical location, and the lack of access to resources needed to deliver improvements.[13] The challenge of educational isolation was highlighted by the Pretty Poverty report,[14] which argued that rural and coastal communities face distinctive, place-based challenges that are not fully captured by national measures. Various reports[15,16] identify transport as the single most significant barrier impacting young people's access to education, employment and training, with expensive and infrequent public transport often preventing timely travel. Analysis of average trip length shows significantly longer trips for rural residents when traveling to work or school.[17] Young people growing up in rural areas who experience poor and infrequent transport are therefore more likely to be 'left behind' relative to their peers in learning skills needed to maximise their employment opportunities.[18] Further, students at these schools may face cultural isolation, with challenges accessing diverse cultural experiences including museums and the arts.[19] Other areas, notably former mining or manufacturing areas and seaside towns, also face entrenched disadvantage. Labour market opportunities are restricted for young people in these towns as well as in sparsely populated rural areas, with Cornwall highlighted as an example.

Finally, beyond socioeconomic disadvantage, there is also strong and consistent evidence showing a close link between special educational needs (SEN), disability, ethnicity and gender, and lower educational outcomes including being less likely to go on to higher education.[20] Rural areas have a proportionally higher number of children with SEN compared with urban areas.[21] Many of these underlying vulnerabilities are not captured in published educational data, meaning inequalities in academic performance, progression and social development often remain hidden. Overall, education data broken down by rural-urban classification and different measures of pupil disadvantage is limited and inconsistently reported over time. This lack of robust, detailed data restricts the ability to fully understand the challenges and inequalities, and to track changes over time.

Case study: A small school in a 'Small Town'

Sarah George – Head Teacher at Hurst Green Infant School and Nursery

Oxted in Tandridge, Surrey, is a small town with a population size of 11,490. Although the town appears affluent, there are sharp contrasts in deprivation within a very small area, something we see clearly in our pupils and families. Our school is small, with fewer than 100 children, and sits on a social housing estate among more affluent homes. Many of our pupils come from the estate, reflected in higher-than-average free school meal eligibility. Children often live close to one another but experience very different opportunities.

What I value most in our work is the strength of our relationships with the local families, often spanning generations. This builds trust and belonging, but we also see challenges repeating. These include low incomes, limited opportunity and low confidence in education. These factors can affect attendance and how school is prioritised.

Around a third of our pupils are eligible for pupil premium, rising to nearly half in Reception. We try to use our funding in ways that make a real difference. A lot of it goes towards additional staff, so that children get the support they need. It's just as important to us that children can fully take part in school life, so we also use funding to help with uniforms and trips, things that can otherwise become barriers.

Our role increasingly extends beyond education. We run a free breakfast club, provide facilities for washing uniforms and distribute food bank vouchers. While not traditionally part of schooling, these supports are essential for ensuring children are ready to learn. Recently, our intake has become more mixed, but levels of need for some families have deepened. More parents are struggling with the basics and we're seeing just how unstable things can be. Families' eligibility for free school meals can change quickly, which reflects how insecure some employment situations are.

I am particularly proud of our inclusive culture. In a community where stigma could easily exist, we have built an environment of openness and trust. Strong relationships and continuity among staff mean families feel able to ask for help and that makes it much easier for us to give the right support at the right time.

Employment

Employment plays a fundamental role in shaping health and wellbeing. Access to good work, including secure employment, fair pay and supportive working conditions, is a key driver of a healthy society.[22] At a local level, employment rates are a powerful indicator of population health, closely linked to how long people can expect to live in good health. Areas with higher levels of economic inactivity tend to experience poorer health outcomes and lower healthy life expectancy.[23]

On many of the published employment metrics rural areas tend to outperform more urban settings. A very small proportion (1.7%) of rural areas are ranked in the 10% most deprived decile for the IoD Employment domain. This domain is derived from state welfare claimant data reflecting those out of work or on very low pay. Overall, unemployment rates are lower in rural areas than urban areas.[24] However, these metrics may miss unique challenges for employment contexts in rural communities, and averages may mask challenges in smaller, more localised areas of deprivation. The Select Committee on the Rural Economy[25] highlighted that employment deprivation extends beyond unemployment to include underemployment – workers underutilizing their skills – forced geographic mobility and absent career progression.[26] Furthermore, the mental health benefits of being in employment may be more significant in rural areas.[27]

There are significant differences between rural residents who work within the local area, and those who commute to jobs in nearby conurbations. Median residence-based earnings[28] suggest that many people living in predominantly rural authorities commute to higher-paid jobs in urban or suburban areas and therefore have higher earnings than those who work locally in these areas. In contrast, workplace-based earnings[29] in most rural local authorities are

consistently lower than urban ones. Residence-based earnings tend to be lower in local authorities that are further from a major town or city. In rural areas, the higher wages are often earned by older people who are more advanced in their careers and employed in jobs that facilitate working from home. In contrast, young people beginning their careers tend to earn lower wages and are more likely to be employed locally in jobs that require a physical presence.

Employment and training opportunities, including career progression, can be more limited for those living in rural areas and small towns due to constrained broadband and mobile infrastructure. According to Ofcom (2025), around one in every 25 properties in rural England are unable to access decent broadband, compared with fewer than one in 100 in urban areas. In addition, 1% of rural premises do not have 4G mobile coverage.[30] These geographical barriers are reflected within the Barriers to Housing and Services domain of the IoD and are discussed further in Chapter 3.

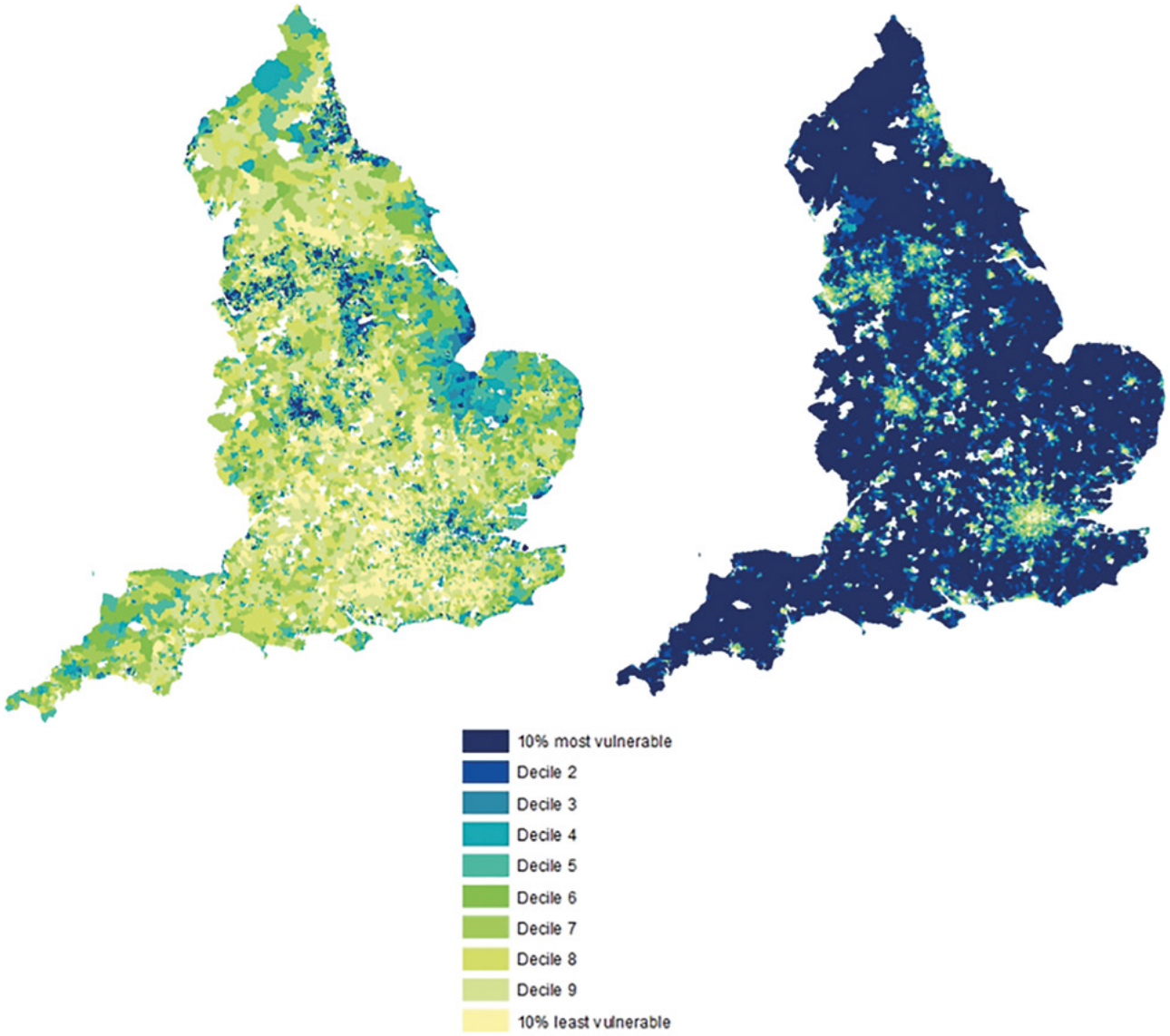
High-quality employment opportunities are essential to facilitate social mobility within a community. Social mobility refers to the extent to which people's life outcomes – such as income, occupation, education and housing – differ from those of their parents. Young people growing up in rural areas are disadvantaged and are more likely to be 'left behind' relative to their peers in opportunities for upward mobility.[31] Similar patterns of entrenched disadvantage are seen in former mining or manufacturing communities and seaside towns, as well as sparsely populated rural areas where restricted access to employment constrains young people's prospects.

Access to healthy food

The quality, adequacy and accessibility of healthy food, alongside healthy eating behaviours, are critical to people's health and wellbeing.[32] Food insecurity occurs when households are unable to access sufficient and affordable food,[33] due to inadequate income, limited access to food stores and good-quality fresh food, or a combination of both. In rural areas around 60% of supermarkets are convenience stores[34] – smaller stores operated by larger supermarkets. Which?[35] found that prices in these smaller stores can be 10-20% higher than in their corresponding larger supermarkets.

The Food Insecurity Index (FII) developed by Smith et al. (2022, updated in 2024),[36] considers both household economic circumstances (the compositional domain) and local service availability (the structural domain). The study recommends applying the compositional domain across all areas, alongside the structural domain in rural settings where locational disadvantage limits access to local resources (see Figure 3).[37] While barriers related to household economic circumstances are more common in urban settings, a lack of local service availability drives food insecurity in rural areas.

Figure 3: Comparing compositional (L) and structural (R) domains of the Food Insecurity Index, 2024.



Source: Data taken from Smith D, Rixson L, Grove G et al., updated in 2024.[38] Maps produced by Hampshire Public Health Intelligence Team. ® Crown copyright and database rights 2025 Ordnance Survey 100019180.

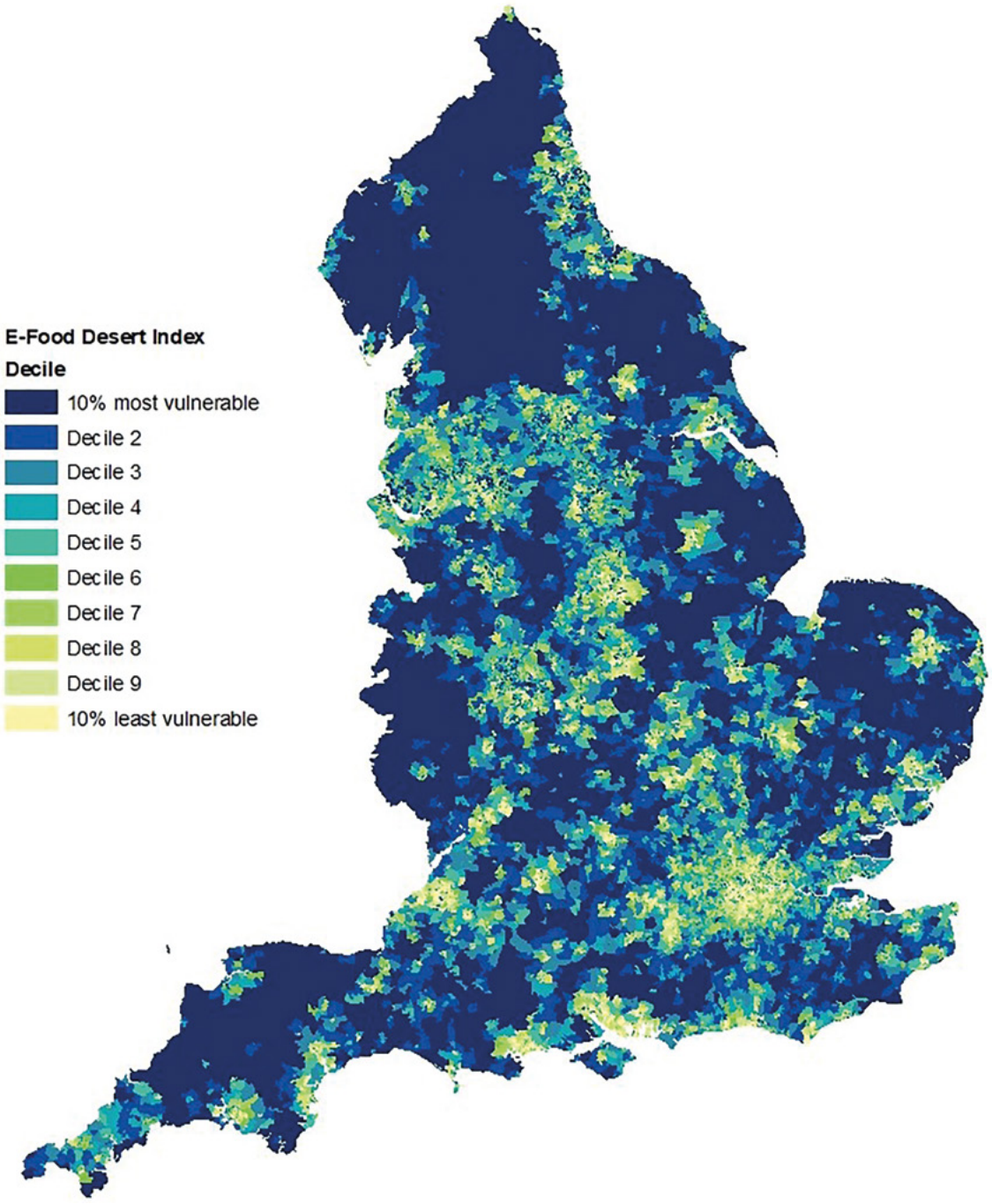
A related measure, the E-Food Desert Index (EFDI),[39] measures 4 key drivers of grocery accessibility:

- Proximity and density of grocery retail facilities
- Transport and accessibility
- Neighbourhood socio-economic and demographic characteristics
- E-commerce availability

The EFDI (see Figure 4), shows a pattern similar to the structural domain of the FII, with the most vulnerable areas located in rural settings where access to supermarkets is comparatively limited. A key benefit of the EFDI is that it incorporates online delivery access into the metric.

The EFDI shows that in some rural areas the availability of delivery services can reduce the risk of food insecurity. However, these benefits may be constrained by delivery requirements as most major supermarkets operate minimum spend thresholds, which may present an additional barrier for lower-income or single-person households. Furthermore, where digital connectivity remains poor geographical remoteness continues to limit the commercial viability of delivery services. An estimated 11.5% of households in remote rural areas have no choice of online grocery delivery provider.[40]

Figure 4: Map of England by E-Food Desert Index (EFDI) decile, 2020.



Source: Data taken from the Consumer Data Research Centre. Map produced by Hampshire Public Health Intelligence Team. ® Crown copyright and database rights 2025 Ordnance Survey 100019180.

Housing

Rural households face a poverty premium, typically spending 10–20% more on everyday essentials such as fuel, transport and food, than urban ones. They are less likely to use mains gas than urban households (57% compared with 77%) and are more reliant on oil for heating (16.3% compared with 0.5%), especially in smaller rural areas.[41] Many rural homes, particularly owner-occupied properties, are older, larger and under-occupied, meaning they require more energy to heat. Older residents in cold rural housing face serious health risks. Further, affordability challenges in some rural settings may contribute to housing pressures and displacement of rural communities, although this varies by region.[42] These challenges are discussed further in Chapter 5.

Conclusion

Deprivation in rural areas and small towns is complex, multifaceted and often poorly captured by conventional place-based measures. Consequently, although deprivation and poor health are intrinsically linked, this relationship is likely to be weaker and more difficult to demonstrate in rural areas than in urban areas. Therefore, significant forms of disadvantage can remain hidden, particularly where small, concentrated pockets of deprivation exist within otherwise less deprived areas. Concepts such as 'nested' or 'hidden' deprivation are therefore critical to understanding how inequalities manifest in rural and small town communities. This chapter has shown that deprivation in rural areas is more often shaped by limited access to essential resources, including healthcare, housing, transport, employment opportunities, digital connectivity, broad educational experiences and affordable food.

Exploring alternative approaches to measurement, including BUAs and complementary wider determinant indices, help to reveal greater heterogeneity within rural England and underscores the importance of using multiple quantitative data sources. Local knowledge and qualitative insights also remain essential for identifying vulnerabilities and understanding local drivers of deprivation. Taken together, the evidence highlights the need for a more nuanced, context-sensitive approach to measuring deprivation in rural areas and small towns to ensure that health inequalities in these communities are neither overlooked nor underestimated.

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5. Housing

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Introduction

Housing is a key social determinant of health. Poor quality housing exposes people to physical risk, undermines mental wellbeing and affects access to education, employment, healthcare and social connection.[1] When housing is insecure or substandard, the health consequences are profound and long-lasting, contributing to avoidable illness, premature mortality and widening health inequalities.[2]

Small towns and rural areas are often assumed to provide healthier living conditions, but this perception masks housing-related health risks that are frequently hidden rather than absent. Statistical indicators, even at the lowest geography such as Lower layer Super Output Areas (LSOAs), often fail to capture small pockets of deprivation, meaning serious housing need in rural areas can be overlooked and deprioritised in national housing and health policy.

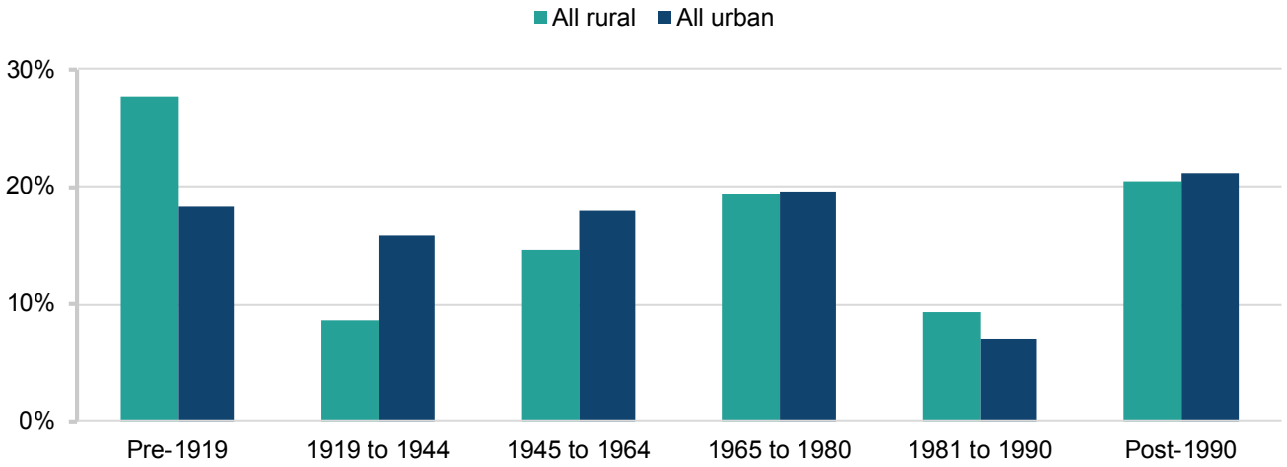
This chapter examines how housing conditions, affordability and availability affect health outcomes for people living in small towns and rural areas throughout England.

Drivers of housing need: an ageing population

The demographic profile of small towns and rural areas may differ substantially compared with more urban settings, with population ageing occurring more rapidly.[3] By 2024 in England, more than a quarter of people living in rural areas (27%) were aged 65 or over, and 3.4% were aged 85 or above.[4] The more rural the settlement, the higher the proportion of older residents.[5]

However, much of the rural housing stock is poorly suited to an ageing population. Rural areas see a greater proportion of homes built pre-1919 compared to suburban areas.[6] This makes them costly or difficult to adapt due to structural, design or heritage constraints. As a result, many older adults may face a difficult choice between staying in a place where they feel a strong sense of belonging and emotional ties to their community, or moving to a new area with more suitable housing provision.[7]

Figure 1: The percentage of residential properties, by building age band and area type in England in 2020 from the English Housing Survey (EHS).



Source: Image from Department for Environment, Food and Rural Affairs, Statistical Digest of Rural England 2 Housing Figure A-6.

Preventable injury in the home is a consequence of this mismatch between housing and need. In England (2023/24), hospital admissions due to falls were 1,985 per 100,000 people aged 65 and over, rising to 4,969 per 100,000 among those aged 80 and over.[8] Between 2022 to 2024, mortality following a fall was 14.6 per 100,000.[9] These outcomes are not inevitable consequences of ageing; they are strongly influenced by the safety and suitability of the home environment.

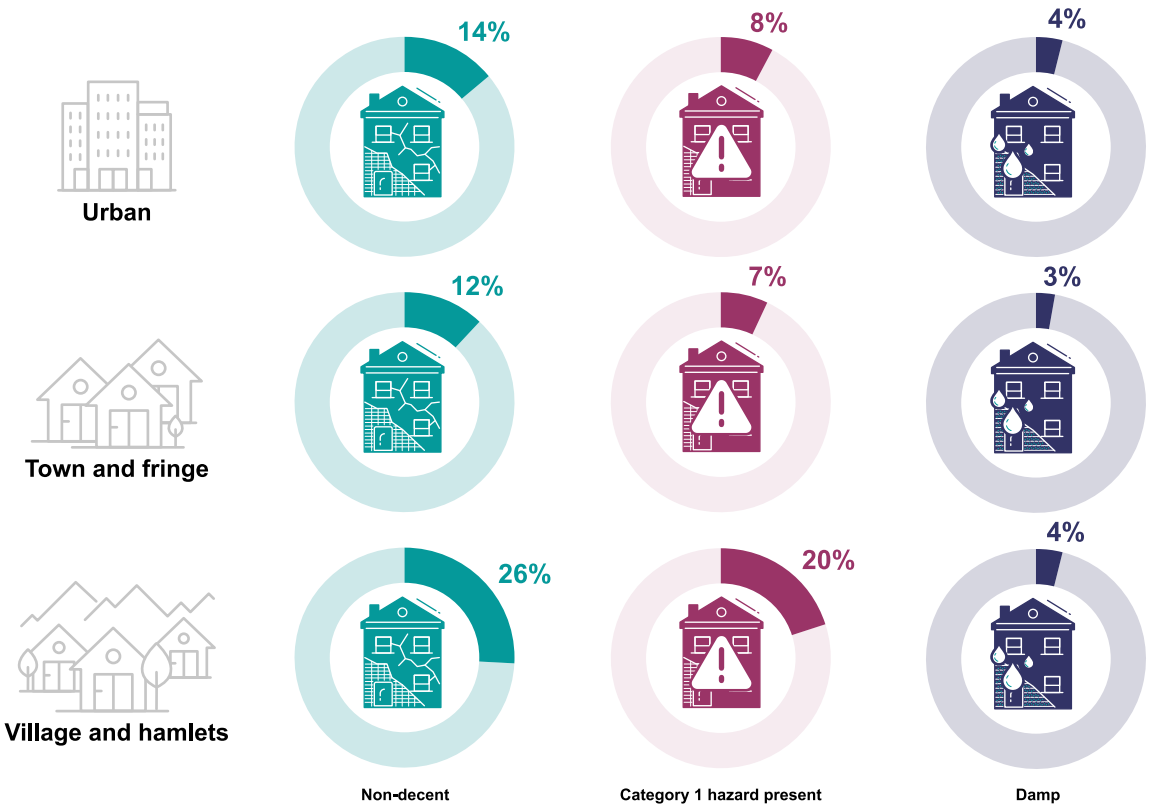
Homes that are safe, accessible, appropriately sized and low-maintenance are important factors in promoting independence and potentially reducing demand on health and care services as people age.[10,11] This need is amplified in rural and small town areas with limited transport, longer distances to services and workforce constraints.[12] Housing adaptations and safer living conditions may offer a key opportunity for preventing ill health. However, the evidence on housing adaptations remains limited, particularly in relation to inequalities and the health impacts, due to difficulties in establishing clear causal links.[13]

Housing conditions and exposures

Housing standards

The Decent Homes Standard[14] defines the minimum condition that a home must meet to be considered acceptable, requiring it to be free from serious health and safety hazards (specifically Category 1 hazards),[15] in a reasonable state of repair, equipped with usable core facilities and able to provide adequate thermal comfort, with an explicit expectation that homes are also free from harmful damp and mould. Originally it applied only to social housing, however the updated standard will be extended to the private rented sector from 2035.

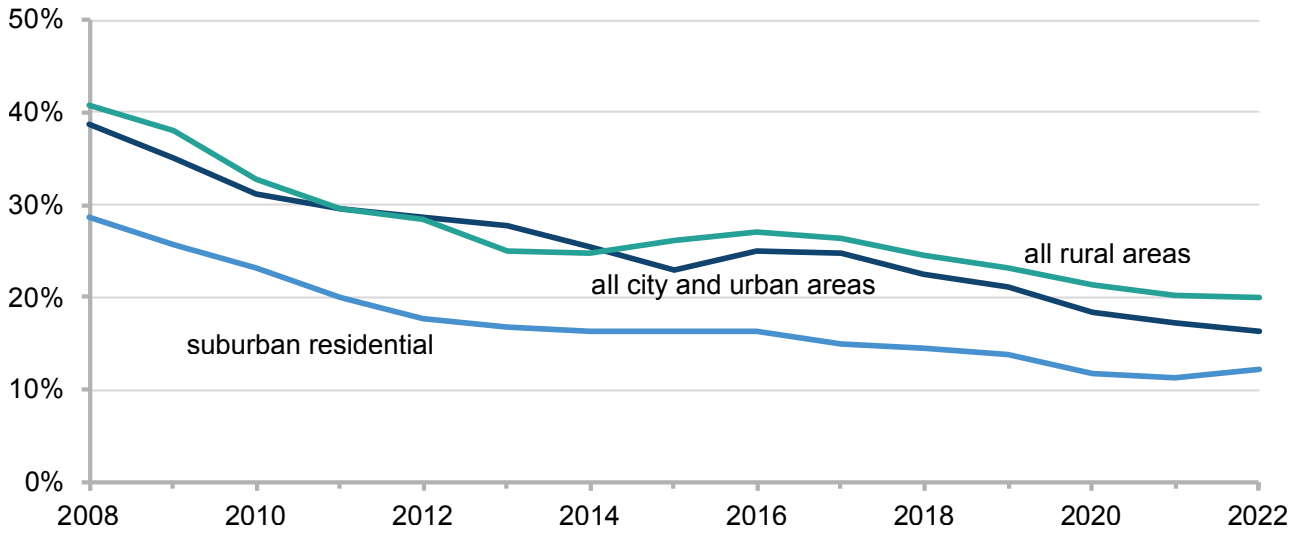
Figure 2: The distribution of homes categorised as non-decent or containing a category 1 hazard across England 2022-2023.[16]



Source: Image from Ministry of Housing and Communities and Local Government report, English Housing Survey 2022 to 2023: housing quality and condition.

Rural housing, however, is more likely to fall below the Decent Homes Standard than housing in urban areas.[17] A quarter of households in villages and hamlets (26%) live in non-decent homes, compared with 14% in urban areas and 12% in towns and fringe locations.[18] This is at least partly driven by an increased prevalence of Category 1 hazards. A Category 1 hazard under the Housing Health and Safety Rating System (HHSRS)[19] refers to a condition that poses a serious and immediate risk to occupants' health or safety, such as severe damp and mould, significant structural defects, or major fire or electrical hazards, and requires statutory action. 20% of rural houses have a Category 1 hazard present, compared to 7% in town and fringe and 8% in urban areas.

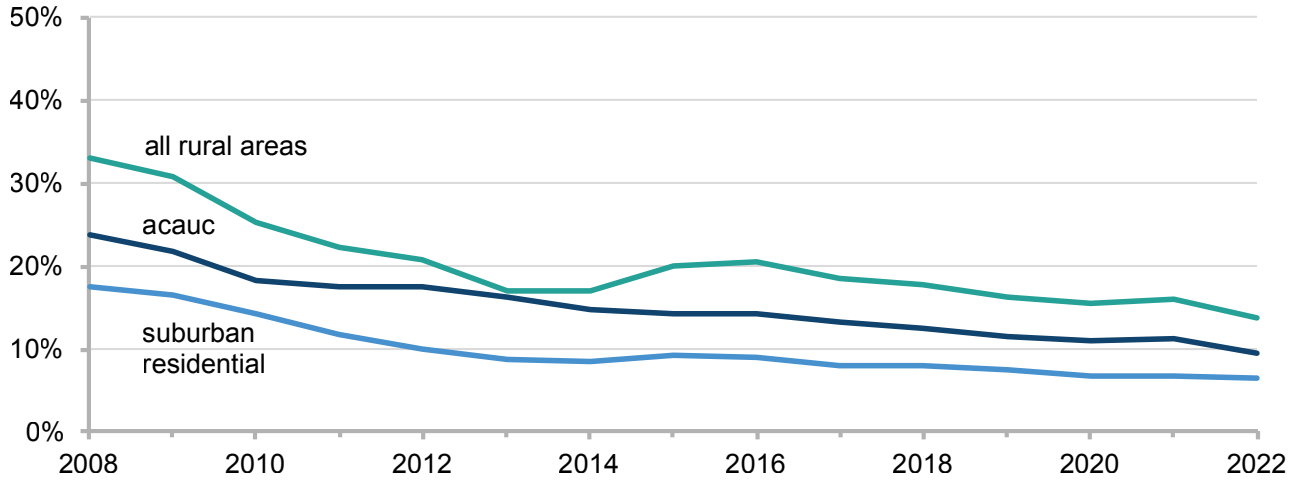
Figure 3: The proportion of homes failing to meet the Decent Homes Standard by EHS classification areas, 2008 to 2022.[20]



Source: Image from Department for Environment Food and Rural Affairs, Statistical Digest of Rural England 2 Housing Figure G-1.

The nature and age of housing stock play a central role in shaping these patterns. Pre-1919 properties account for 28% of the rural housing stock, compared to 18% observed in urban areas.[21]

Figure 4: The proportion of homes failing to meet the minimum standards set under the HHSRS by EHS classification areas, 2008 to 2022.[22]



acauc = All City and Urban Centres.

Source: Image from Department for Environment Food and Rural Affairs, Statistical Digest of Rural England 2 Housing Figure G-4.

While Figures 3 and 4 show that a higher proportion of homes in rural areas continue to fail the Decent Homes Standard and the minimum standards set under the HHSRS compared to their urban counterparts, it is important to recognise the substantial improvements that have taken place over time. Across all EHS classification areas, the proportion of non-decent homes has fallen markedly since 2008 reflecting wider improvements in housing conditions nationally.

Non-decent housing, including damp and mould, is more common in the oldest homes, with 29% of pre-1919 properties failing to meet decency standards.[23] However, the risk of damp and mould is unevenly distributed. Damp is more common in homes where someone has a long-term illness or disability.[24] Exposure to damp and mould disproportionately impacts vulnerable and disadvantaged groups and therefore contributes to health inequalities.[25]

Furthermore, older homes are more likely to suffer from disrepair, poor insulation and serious hazards, and are often more difficult and costly to bring up to modern health and safety standards needed to support health.[26] For instance, homes built before the 1970s are more likely to contain legacy lead plumbing, increasing the risk of lead exposure, particularly for young children, where it can affect neurodevelopment and cause long-term cognitive problems.[27]

While retrofitting rural homes could address some of these issues, there are distinct practical and technical challenges. These properties often have older building fabric, higher levels of heritage or traditional construction, limited access to the gas grid and greater distance from major infrastructure, all of which make upgrades more complex and costly.[28]

Royal Academy of Engineering: Delivering co-benefits through retrofitting rural housing

Caitriona Hanly – Policy Advisor, Infrastructures and Resilience, Royal Academy of Engineering

Alexandra Smyth – Head of Policy, Infrastructures and Resilience, Royal Academy of Engineering

In England, housing in rural areas make up around 24% of the total housing stock, and the general mix of building types and condition is different compared to urban areas. For example, rural areas are typically associated with a higher prevalence of pre-1919 properties and on average lower energy efficiency ratings owing to factors including number of detached properties, solid wall construction and fewer properties with insulation.[29] It is estimated that people living in villages and hamlets are twice as likely to be in a home that does not meet the decent home standard compared to urban and fringe areas. Features such as solid walls and lack of insulation contribute to buildings being classed as 'hard to heat' and 'hard to treat', which can make energy efficiency improvements more challenging.

Opportunities to improve buildings

Older properties can have their performance and indoor environmental quality improved through retrofitting. However, approaches to retrofitting must be well-considered and holistic to help avoid potential unintended negative consequences for health. At a minimum, planned retrofit programmes need to bring buildings into line with existing standards for indoor air quality.[30]

Interventions to improve airtightness and thermal performance, such as installing insulation and upgrading windows, can reduce heat loss from a building and manage heat demand (during cold conditions), reducing the health risk to residents from excessive cold conditions. Preventing draughts and heat loss make it easier to manage comfort and heating, but this must be designed with a suitable ventilation strategy to allow circulation of fresh air to control moisture and air pollution.[31] For example, for properties with solid wall construction – a feature more common in rural areas – it is important to consider how to manage moisture as these types of walls can allow water to permeate. Managing moisture requires careful consideration of the choice of construction materials and suitable ventilation. Without suitable ventilation properties may be more vulnerable to developing damp and mould, or could contribute to risks for overheating during hot conditions, putting inhabitants at higher risk.

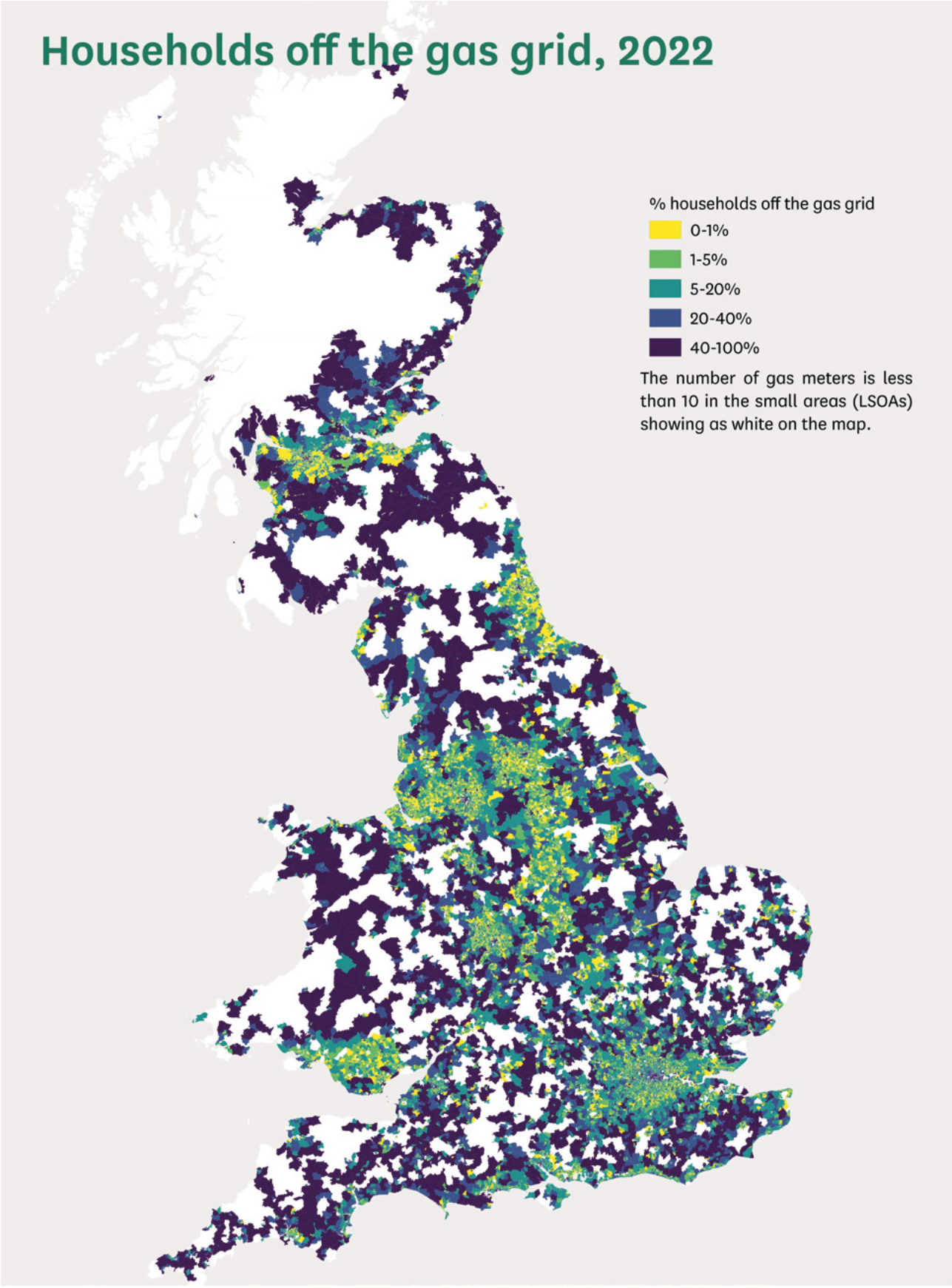
Retrofitting buildings to improve energy efficiency, airtightness and thermal performance can be costly, and older properties – particularly those in more remote and rural areas – may face higher costs. For some rural properties there may also be wider challenges such as grid constraints which restrict the use of electric-based solutions, skills shortages from fragmented demand and planning permission blockers from rural areas having relatively more listed buildings.[32]

When a suitable approach is applied, retrofit interventions can reduce the risk of fabric degradation and mould growth on surfaces or inside the fabric. A review of retrofit measures over time found that fabric efficiency improvements were effective in the long-run with heat demand remaining low relative to the national average. Resident feedback on comfort in homes also indicated that the retrofit measures improved comfort, particularly during winter, and key measurements taken during the evaluation showed that relative humidity and CO_2 remained within recommended ranges for most of the homes.[33] Since older homes make up a higher proportion of housing stock in the more rural parts of England, these areas have significant potential to benefit from extending retrofitting measures to improve thermal performance and ventilation.

Fuel poverty and cold homes

Fuel poverty refers to households that are unable to afford adequate energy services for their home without compromising other essential needs, typically due to low income, high energy costs and energy-inefficient homes.[34,35] Fuel poverty is a significant driver of health risks in small towns and rural areas, reflecting the interaction between housing quality, energy efficiency and household income. While a similar proportion of households in rural and urban areas are classified as fuel poor (around 11%),[36] rural households tend to experience deeper fuel poverty, particularly where homes are older, poorly insulated or located off the gas grid (Figure 5).[37]

Figure 5: Households off the gas grid in 2022 in England, Wales and Scotland.[38]



Source: Image from Stewart, I. and Bolton, P. 2024. Households off the gas-grid and prices for alternative fuels. House of Commons Library; DESNZ, LSOA estimates of properties not connected to the gas network 2015 to 2021.

Fuel poverty is notably more prevalent among households not connected to the gas network, with around 1 in 5 such households affected.[39] In predominantly rural authorities, oil remains an important heating fuel, especially for older homes, and this contributes to higher and less predictable energy costs.[40]

An Energy Performance Certificate (EPC) rates the energy efficiency of homes on a scale from A to G. A higher proportion of rural homes are rated EPC D or below compared with those in urban areas. Poor energy efficiency increases heating costs and heightens vulnerability to rising energy prices and extreme temperatures, with potential implications for health.

Oil-heated households fall outside the energy price cap, making them particularly vulnerable to sharp and immediate rises in energy costs. When heating becomes unaffordable, households are more likely to under-heat their homes, increasing the risk of cold-related illness. This vulnerability is greater in rural areas, where 9% of homes fail to meet thermal comfort standards compared with 4% in suburban areas,[41] leaving more residents in cold or poorly insulated homes.

Recent winters demonstrated heightened vulnerability to cold, reflected in sharp increases in mortality during prolonged cold periods.[42] Cold homes have both direct and indirect health impacts including heart attacks, hypertension, asthma, depression and poorer mental health in adults.[43] The UK Health Security Agency (UKHSA) identified 2,544 deaths attributable to exposure to cold temperatures between November 2024 and January 2025.[44] The strongest relationship between cold weather and mortality was seen in those aged 85 years and over.[45]

Tackling fuel poverty is a priority for many public health teams, with an example of an innovative approach described in the case study below.

Case study: Population health management to tackle fuel poverty in Northern Devon

Oliver Hassall – GP Partner, Brannam Medical Centre and Clinical Lead for Health Inequalities and Population Health, One Northern Devon

Joanna Howard – Chief Executive, 361 Energy

Richard Blackwell – Associate Director of Insight, Health Innovation South West

Disadvantaged coastal and rural communities in Northern Devon received targeted support to reduce the impact of poor housing and fuel poverty on their health. To respond to energy price rises and cost of living pressures, 4 Primary Care Networks (PCNs) partnered with a local energy advice charity (361 Energy). A cohort of 1,200 patients with high-risk respiratory conditions were identified and then stratified by risk of fuel poverty based on postcode.

PCN wellbeing teams contacted these patients and offered referral to 361 Energy for a home visit. These visits aimed to reduce household energy costs through improved energy efficiency; behavioural shifts in heat usage; addressing energy debt, billing and metering; income maximisation, including unclaimed benefits and financial assistance such as the household support fund; and advice and support for accessing energy efficiency upgrades through grant schemes (boilers, storage heaters and internal wall insulation). Where necessary, emergency measures including electric blankets and dehumidifiers, were provided. Link workers and home energy advisors also assisted with other social determinants impacting on health and offered support, signposting and referrals to other agencies, including food banks.

Referrals were capped by the funding available. Of 353 patients agreeing to a referral, 285 (81%) had home visits. The estimated median financial benefit per household per year ongoing was £676 (Interquartile range: £347 – £1125). Of those referred, 60% were aged over 65 and half of households were in LSOAs of Index of Multiple Deprivation 1 to 3. In 60% of cases there was at least one other household member. Other long-term conditions in the index case and household members were common.

This successful model was adopted by other PCNs in Devon and has informed future work in the region. A new project is underway targeting patients with cardiovascular disease, children with asthma and patients with severe mental illness, with University of Exeter researchers evaluating the health and health service impact.

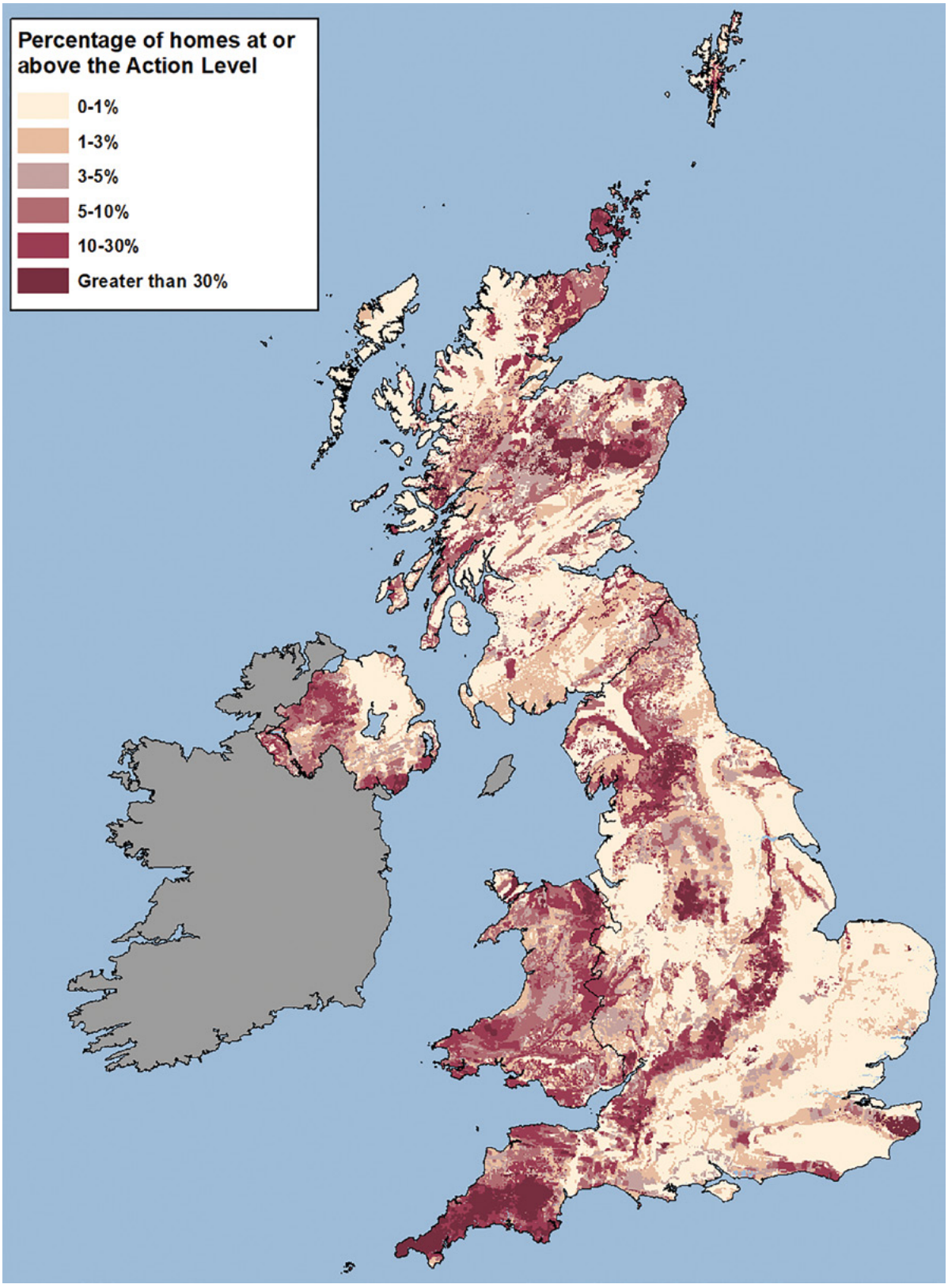
Overheating

Heat episodes in England are becoming longer, hotter and more frequent, with 1,311 heat-associated deaths recorded in 2024.[46] Overheating increases strain on the cardiovascular and respiratory systems, particularly for people who struggle to regulate body temperature, including older adults, young children and those with underlying health conditions.[47,48] Although risks are often higher in urban areas due to the urban heat island effect, rural communities may also be vulnerable because of older populations and homes poorly adapted to extreme heat.

Radon

Radon is a colourless, odourless radioactive gas released from naturally occurring elements in rocks and soils. It is the largest source of domestic radiation exposure in the UK and is present at low levels in all buildings. However, concentrations are higher in some predominantly rural areas, largely due to underlying geology, particularly granite-rich ground.[49] Evidence reviewed by UKHSA shows that long-term exposure to radon increases the risk of lung cancer,[50] making it a preventable health risk. Identifying homes with elevated radon levels and reducing exposure is therefore especially important in rural areas such as Devon and Cornwall (Figure 6).

Figure 6: Radon affected areas in the United Kingdom, 2022.



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Adequate housing availability

Affordable housing is essential for stability, health and wellbeing. Across England, the house price-to-income ratio increased from 4.9 in 2002 to 8.3 in 2022.[52] Affordability pressures are greater in rural areas, where the lowest priced homes cost 8.8 times the earnings of the lowest-paid workers, compared with 7.6 times in urban areas.[53] However, affordability varies far more by region than by rurality. In June 2025, a typical terraced home cost around £125,300 in predominantly rural and intermediate areas of the North East, compared with £329,200 in equivalent rural and small town areas of the South East.[54]

Demand for affordable housing continues to outstrip supply. In 2024, housing registers reached 1.33 million households, the highest level since 2014.[55] Social rented housing accounts for 17% of stock in predominantly rural authorities, compared to 19% in urban areas.[56] While new affordable homes are often delivered through Section 106 agreements, many rural developments fall below the size thresholds required,[57] limiting delivery through small-scale schemes.

In rural areas, affordability pressures are further compounded by second and empty homes. In 2024, second homes accounted for 2.5% of dwellings in predominantly rural authorities, more than 3 times the level in urban areas outside London (0.8%).[58] High concentrations of non-permanent occupancy, particularly in protected landscapes such as North Norfolk[59] and the Isles of Scilly,[60] reduce housing availability for local residents.

As a result, many households increasingly rely on the private rented sector. However, housing quality is poorer in this sector, with 33% of rural private rentals failing to meet the Decent Homes Standard compared with 21% in urban areas.[61] Poor-quality and insecure housing is associated with worse physical health outcomes and increased stress, anxiety and depression.[62,63]

Selective licensing provides a mechanism to improve standards within the private rented sector. Under the Housing Act 2004, local authorities can require landlords in designated areas to obtain licences and meet minimum conditions.[64] While long-term experimental evidence remains limited, observational studies indicate that selective licensing can reduce hazards, antisocial behaviour and mental health service use,[65] supporting its role as a public health intervention.[66]

In Somerset, enforcement of safety standards, minimum energy efficiency requirements and the Housing Health and Safety Rating System demonstrates how local regulation of the private rented sector can protect and improve residents' physical and mental health, particularly where reliance on private renting is high.[67]

Homelessness

Homelessness includes a range of circumstances, such as rough sleeping, sofa surfing, insecure accommodation, vehicle dwelling and risk of eviction.[68] Homelessness has severe impacts on health, with a reported average age of death of 45 for men and 43 for women.[69] People

experiencing homelessness often face multiple challenges, including poor mental health and substance use, which increase vulnerability.[70] Despite having high health needs, unstable housing makes it difficult to access and maintain contact with health and support services.

Homelessness is often seen as an urban issue, yet Somerset, a largely rural authority, recorded the third-highest estimated rate of rough sleeping in England on a single night in 2025.[71] Between 2018/19 and 2023/24, homelessness rates increased across all area types, including majority rural authorities, demonstrating that homelessness is a growing issue beyond urban settings.[72] Within this context, vehicle dwelling has emerged as a notable form of hidden homelessness in Somerset, particularly in and around Glastonbury, where a count on the 25th of February 2026 identified 131 vehicles[73] in a town with a population of only 7,000 people. Vehicle dwellers often park informally and move frequently and many present with complex needs, including mental health challenges, long-term health conditions and substance dependency.

Insecure housing can be a barrier to registration with local health services, limiting access to proactive and long-term care, although the scale of this issue is difficult to quantify due to gaps in routine data.[74] Housing insecurity in early life is linked to poorer outcomes including low birth weight,[75] adverse physical and mental health,[76] disrupted education and reduced family stability.[77]

In more rural settings, wide geographic dispersion, poor transport links and limited local services make it more difficult for outreach teams and health services to identify, engage and sustain contact with people experiencing homelessness, reducing opportunities for early intervention and continuity of care. These structural features of rurality can compound exclusion from primary care and preventative services, further entrenching health inequalities despite high underlying need.

Case Study: Somerset homeless and inclusion health team

Laura Devlin – Homeless and Inclusion Health GP

Somerset's Homeless and Inclusion Health Team supports improved health outcomes for people experiencing homelessness, multiple disadvantage and social exclusion, contributing to NHS priorities on reducing health inequalities, improving access and prevention. Delivery is underpinned by multi-agency collaboration, trauma-informed practice and proactive advocacy, including awareness of the health injustice faced by marginalised communities. Work focuses on addressing the wider determinants of health alongside clinical need.

Local barriers to care include digital exclusion (limited devices, skills, affordability and connectivity), rural distance and constrained or expensive transport, pressures from the cost of living and insufficient safe, supported housing. These factors increase the risk of delayed presentation, poor continuity of care and avoidable deterioration.

One local person we supported was a 57-year-old man with chronic breathlessness and longstanding severe mental illness that had lived outdoors for many years, with previous accommodation placements breaking down and limited trust in services. Joint working with the Somerset Council Rough Sleeper Team, Second Step and adult social care and mental health services, enabled flexible clinical assessment in a setting he could tolerate, followed by coordinated advocacy to secure permanent supported accommodation with autonomy.

Three years later, he remains stably housed, engaged with care, and has had no significant illness episodes or hospital admissions, illustrating the benefits of tailored access, continuity and upstream intervention.

Conclusion

Taken together, the evidence shows that housing in small towns and rural areas is a significant contributor to poor health and avoidable harm across the life course. An ageing rural population is more likely to live in older, less energy-efficient housing that is harder to adapt, increasing exposure to cold, heat, damp and safety hazards. These risks fall disproportionately on older people, people with disabilities and those on lower incomes, reinforcing existing health inequalities and increasing demand for health and care services.

At the same time, structural pressures on the rural housing market drive high costs, limited affordable and social housing supply, under-occupation of unsuitable homes and the loss of stock to non-primary use, undermining housing security and wellbeing.

Homelessness in rural areas, while often less visible, is present and is associated with severe ill health and heightened risk. This is further exacerbated by limited temporary accommodation, fewer local services and transport barriers, particularly for families and children.

Addressing housing quality, affordability, accessibility and stability in rural areas should therefore be seen as a core public health priority, with action on age-appropriate housing, adaptations, energy efficiency and homelessness prevention offering clear opportunities to reduce health inequalities and prevent future harm.

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6. Epidemiological analysis of chronic disease in rural and urban communities in England, 2014 to 2023

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Introduction

In this chapter we present a descriptive comparison of the rates of chronic disease and all-cause mortality between rural and urban communities in England at Lower layer Super Output Area (LSOA) level. Our aim is to explore where the burden of disease falls in England, so that policymakers and healthcare leaders can better understand how current service provision aligns with geographical need. To do this we describe how rates of diseases vary over time and geography and how the patterns seen in rural communities compare to those seen in urban communities. We present unadjusted measures, and measures adjusted for the age and sex of communities to explore the contribution of age structure to rural/urban patterns. We do not explore how living in a rural or urban area could impact on health.

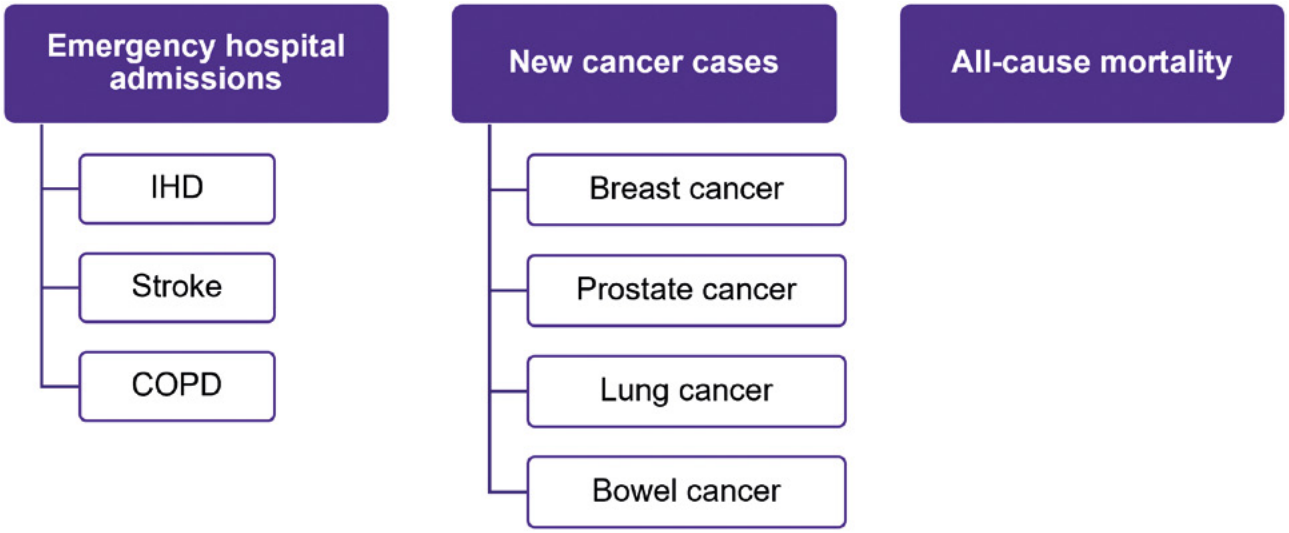
We focus on emergency hospital admissions for 3 major chronic diseases, namely Ischaemic Heart Disease (IHD – which includes heart attacks, angina and related conditions with reduced blood flow to the heart muscle), strokes and Chronic Obstructive Pulmonary Disease (COPD), the incidence of the 4 most common types of cancer in England (breast, prostate, lung and bowel) and all-cause mortality (a measure of overall population health).

National annual rates of chronic diseases and all-cause mortality in rural and urban areas

In this section we compare the annual rates of each health outcome between rural and urban areas in England (Figure 1). We divide the population into 33,755 communities (LSOAs, population of between 1,000 and 3,000) and classify each community as urban, larger rural or smaller rural.[1] We then allocate each outcome to a community type using the residential postcode of the person at the time of the event. We calculate the smoothed unadjusted (crude)

annual rates of each outcome. Smoothed rates are used to remove the random fluctuations seen in the real-world data to improve precision (see Appendix).[2]

Figure 1: Summary of the chronic disease and mortality outcomes in this chapter.



Source: UK Small Area Health Statistics Unit.

We use hospital admission information from NHS England (Hospital Episode Statistics (HES) Admitted Patient Care dataset)[3] for the 10 years between 2014 and 2023. Over this period, there were on average 104,046 emergency admissions per year in residents of England for IHD, 79,050 admissions for stroke and 108,312 admissions for COPD.

When these admissions are categorised into rural and urban areas, we find clear rural/urban differences in the smoothed unadjusted annual rates of emergency hospital admissions. These are presented in Table 1 and in Figure 2 along with 95% credible intervals based on Bayesian smoothing approaches.[4]

Across the 10-year period, rural areas, both larger and smaller, had higher smoothed unadjusted annual rates of emergency hospital admissions for IHD and stroke compared to urban areas (Figure 2). Larger rural areas had the highest smoothed unadjusted annual rates in 2014 and the gap between smaller and larger rural areas narrowed over the period. The rates in the smaller rural areas reached those of the larger rural areas in 2023 for IHD and 2018 for stroke. COPD emergency admission rates showed a different rural/urban pattern, with the lowest rate in the smaller rural areas and the highest rate in urban areas.

Table 1: Smoothed unadjusted annual rates of emergency hospital admissions, cancer incidence and all-cause mortality per 100,000 population for each area category (urban, larger rural and smaller rural) in England in 2017 for cancer and 2023 for other outcomes.

	Urban	Larger Rural	Smaller Rural
IHD	171.58	201.02	197.43
Stroke	139.98	176.63	177.01
COPD	196.35	184.72	136.58
Breast cancer*	192.17	243.07	256.39
Prostate cancer↑	185.25	265.45	296.91
Lung cancer	90.82	100.33	82.05
Bowel cancer	76.10	100.05	105.13
All-cause mortality	896.80	1,137.26	1,083.79

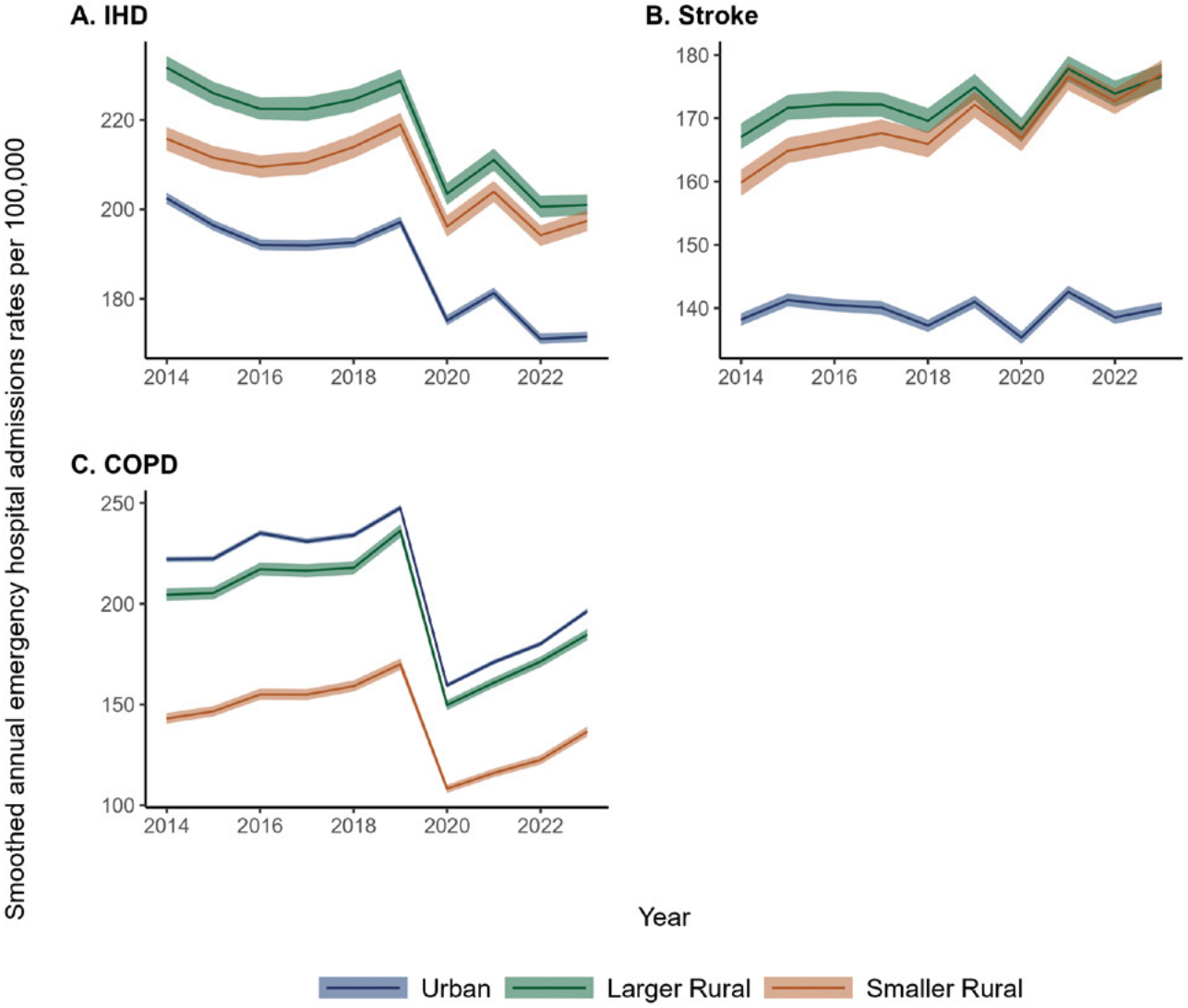
* per 100,000 female population; ↑ per 100,000 male population.

Cancer incidence data from the National Cancer Registration and Analysis Service (NCRAS)[5] from 2014 to 2017 showed that there were on average 44,358 newly diagnosed cases of breast cancer in female residents of England per year, 41,073 cases of prostate cancer in males, 38,262 cases of lung cancer and 34,279 cases of bowel (colorectal) cancer.

For breast, prostate and bowel cancer the smoothed unadjusted annual incidence rates of cancer were over 25% higher in rural compared to urban areas, in 2017 (Table 1). The smaller rural areas had the highest annual incidence rates across the period; urban areas had the lowest rates while rates in larger rural areas were closer to smaller rural than urban areas (Figure 3). Lung cancer incidence rates had a different rural/urban pattern. Larger rural areas had the highest rates, followed by urban areas and the lowest incidence rates were in smaller rural areas.

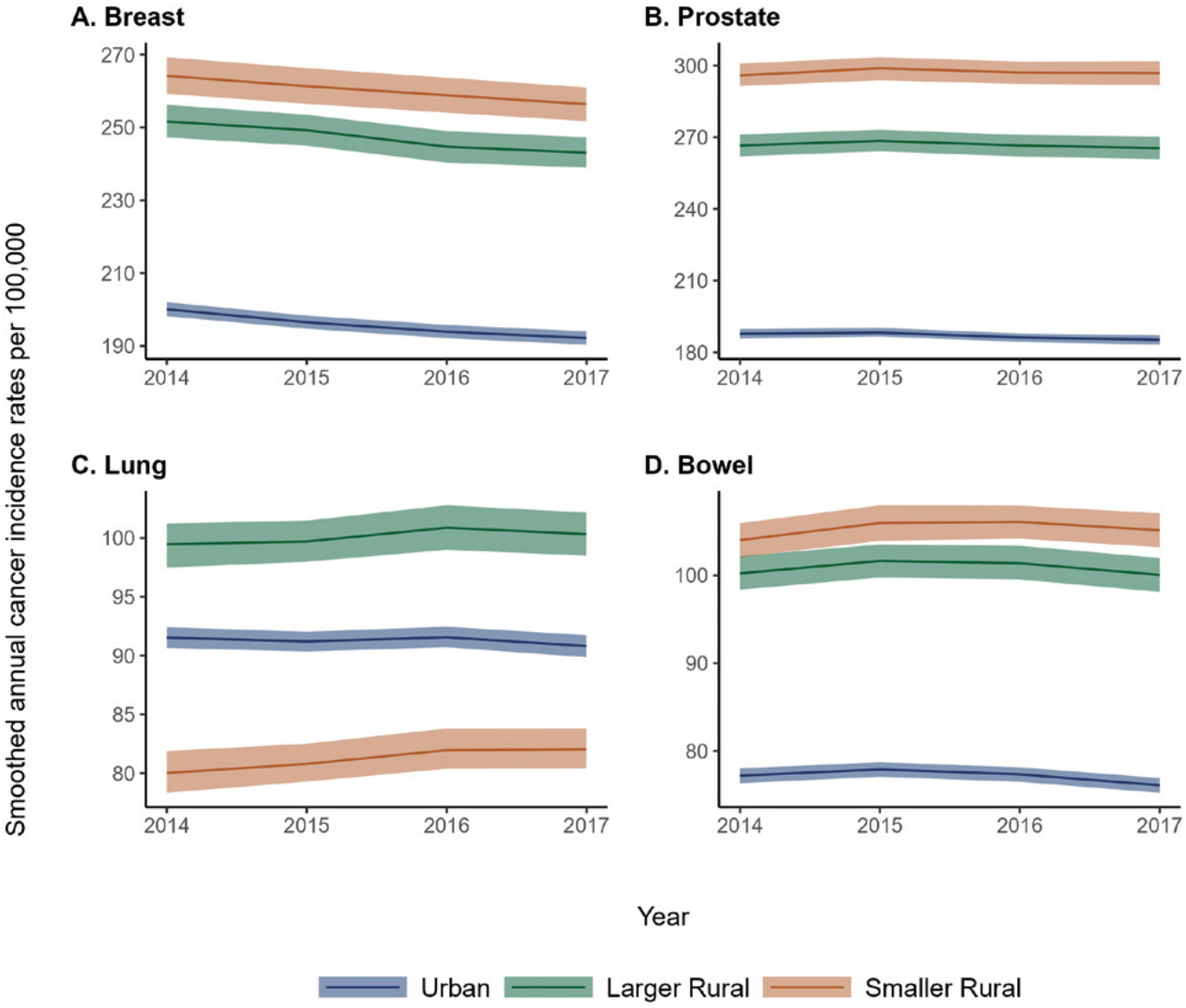
Using death registrations from the Office for National Statistics (ONS),[6] there were on average 517,923 deaths annually from all causes in the total population of England between 2014 and 2023. The general trends in all-cause mortality over the 10-year period were similar across the 3 area categories, including a sharp increase in smoothed unadjusted rates of all-cause mortality during the COVID-19 pandemic period, followed by a steady decline with rates in 2023 remaining higher than the 2014 rates (Figure 4). The rates of all-cause mortality were over 25% higher in larger rural compared to urban areas in 2023 (Table 1).

Figure 2: Smoothed unadjusted annual emergency hospital admissions rates (IHD, stroke and COPD) and 95% credible intervals per 100,000 population by area category (urban, larger rural and smaller rural) in England, 2014 to 2023.



Source: UK Small Area Health Statistics Unit.

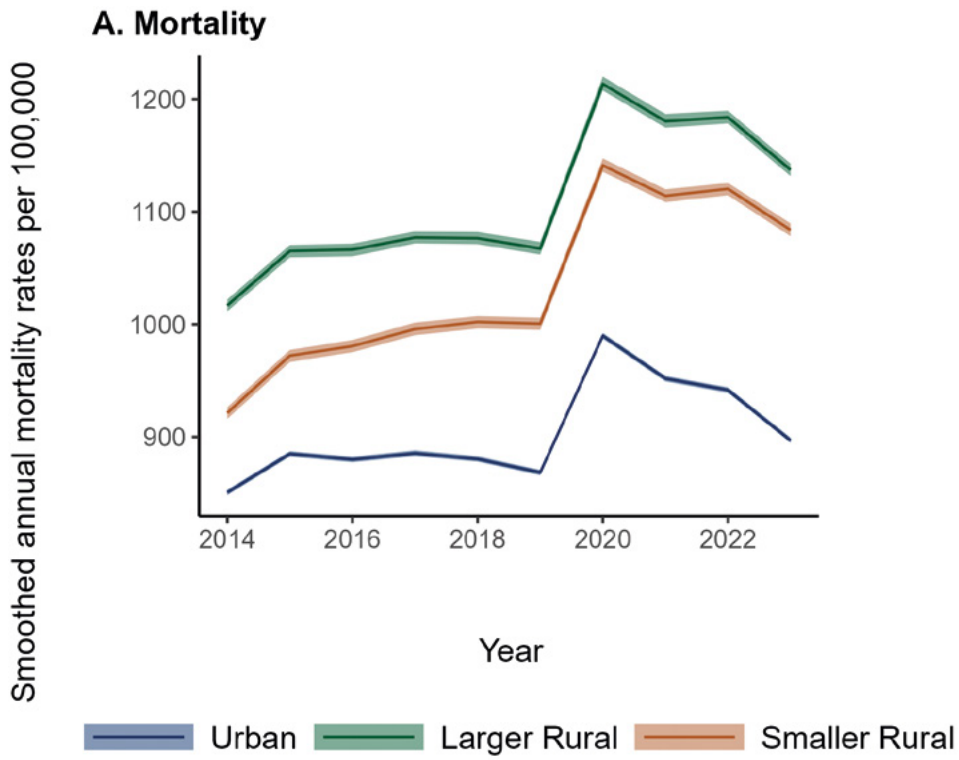
Figure 3: Smoothed unadjusted annual incidence rates of cancer (breast, prostate, bowel and lung) and 95% credible intervals per 100,000 population by area category (urban, larger rural and smaller rural) in England, 2014 to 2017.



Rates for breast cancer are presented per 100,000 females; rates for prostate cancer are presented per 100,000 males and rates for bowel and lung cancer are presented per 100,000 overall population.

Source: UK Small Area Health Statistics Unit.

Figure 4: Smoothed unadjusted annual all-cause mortality rates and 95% credible intervals per 100,000 population by area category (urban, larger rural and smaller rural) in England, 2014 to 2023.



Source: UK Small Area Health Statistics Unit.

Community-level rates of chronic disease and all-cause mortality by rural/urban category

The previous section described national patterns in the smoothed unadjusted annual rates of each outcome between rural and urban areas in England. This section extends the unadjusted analysis by looking at the community-level geographic patterns that underlie the national rural/urban differences.

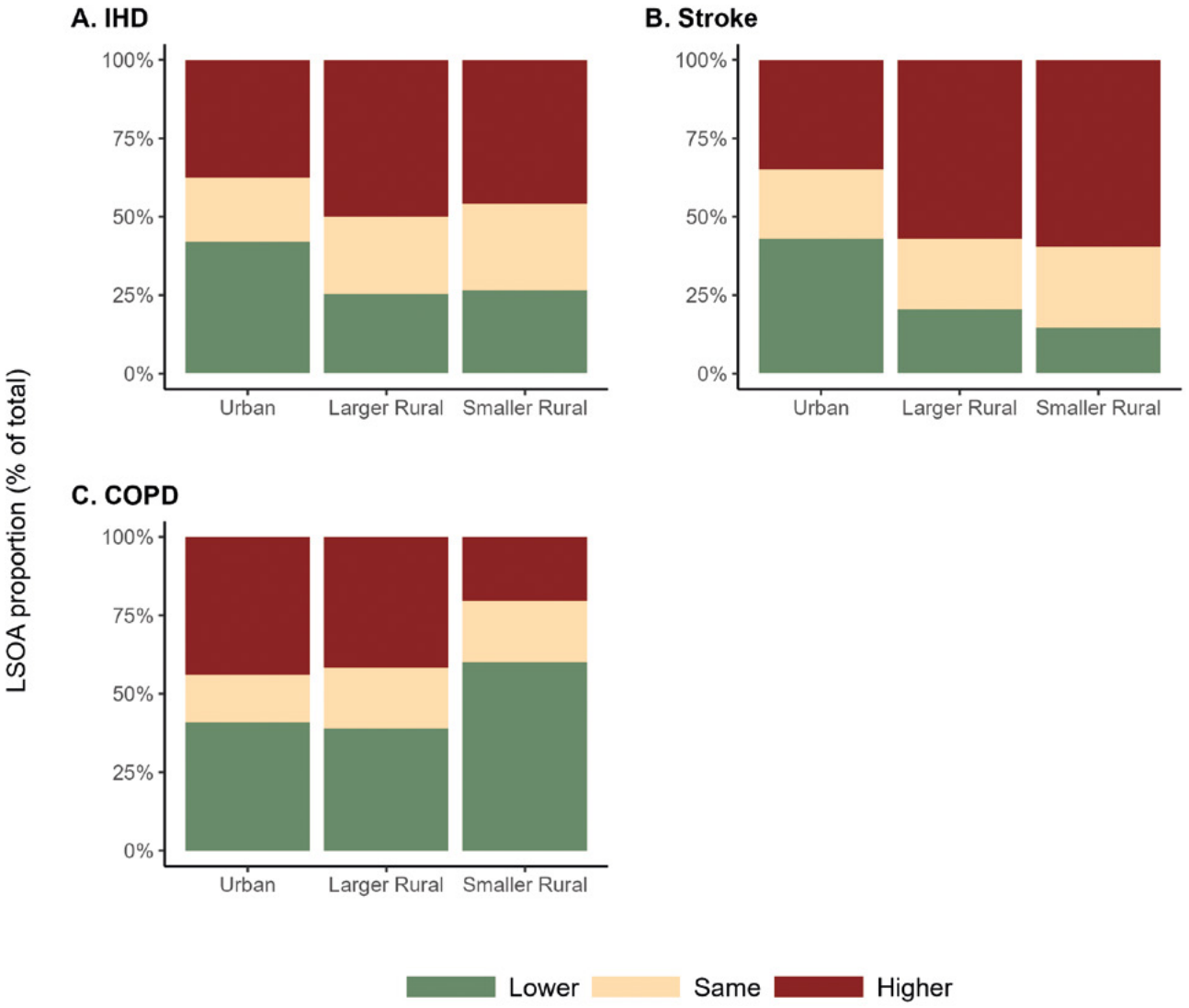
For each of England's 33,755 communities (LSOAs), we calculate the smoothed unadjusted average annual rate for each outcome and compare this to the national average rate. In this analysis the annual counts for each outcome are aggregated over the study period to add stability to the small-area estimates (see Appendix). We present a comparison of the proportion of communities in urban, larger rural and smaller rural areas, respectively, that have rates of each outcome (a measure of healthcare need by head of population) that are above or below the national average.

For emergency hospital admissions, the smoothed unadjusted average annual rates per 100,000 population varied markedly across communities: from 10 to 1,151 for IHD; 10 to 554 for stroke; and 10 to 1,920 for COPD. To statistically explore how a community's rate compares to the national average, communities were categorised as having a smoothed unadjusted average

annual rate of emergency hospital admissions (by outcome) that was 'higher than', the 'same as' or 'lower than' the national average (see Appendix).

Around half of communities in larger (50%) and smaller (46%) rural areas had rates above the national average for IHD, compared to around a third (38%) of communities in urban areas (Figure 5). For stroke, over half of communities in larger (57%) and smaller (59%) rural areas had rates that were higher than the national average, compared to a third (35%) of communities in urban areas. The patterns were reversed for COPD. The proportion of communities in larger rural (41%) and urban (44%) areas with a rate that was higher than the national average, was 2 times greater than in smaller rural (20%) areas. Maps are presented in the Appendix to illustrate the geographical pattern of how each community's smoothed unadjusted average annual emergency hospital admissions rate compares to the national average.

Figure 5: Proportion of communities (LSOAs) with a smoothed unadjusted average annual emergency hospital admissions rate (IHD, stroke and COPD) that was higher than (red), the same as (yellow) or lower than (green) the national average rate in England from 2014 to 2023.

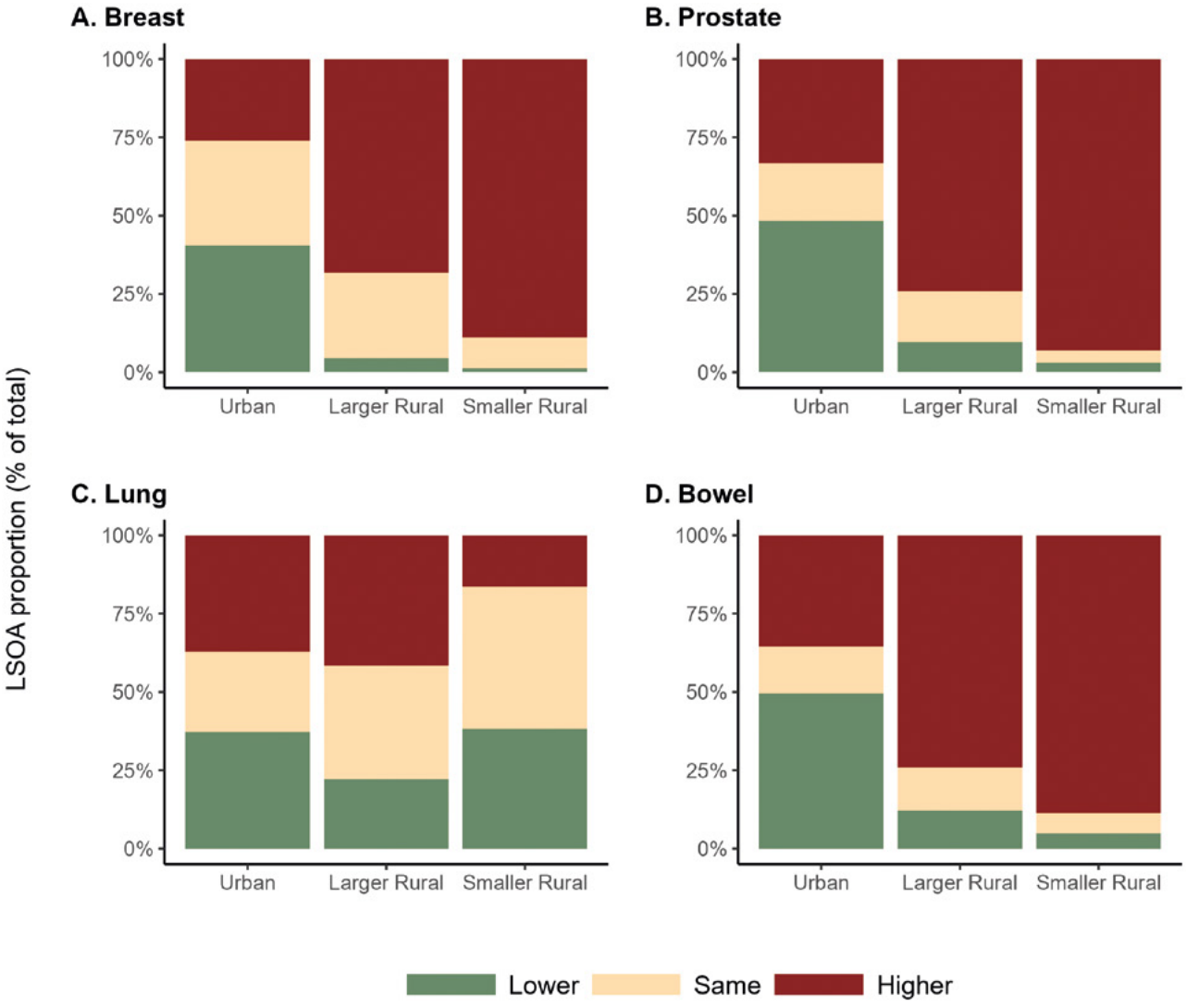


Source: UK Small Area Health Statistics Unit.

The smoothed unadjusted average annual incidence rates per 100,000 population of the 4 most common cancers in England ranged from 11 to 410 for breast cancer (in females); 5 to 680 for prostate cancer (in males); 10 to 214 for bowel cancer; and 10 to 563 for lung cancer.

For breast, prostate and bowel cancer most communities in smaller (at least 89%) and larger (at least 68%) rural areas had higher smoothed unadjusted average annual incidence rates compared to the national average (Figure 6). The proportion of communities in smaller rural areas with rates that were higher than the national average was 3 times greater than in urban areas. For lung cancer, the proportion of communities with a smoothed average annual incidence rate higher than the national average was twice as high in larger rural (42%) and urban areas (37%) compared to smaller rural areas (16%). Maps are presented in the Appendix to illustrate the geographical pattern of how each community's smoothed unadjusted average annual incidence rate compares to the national average.

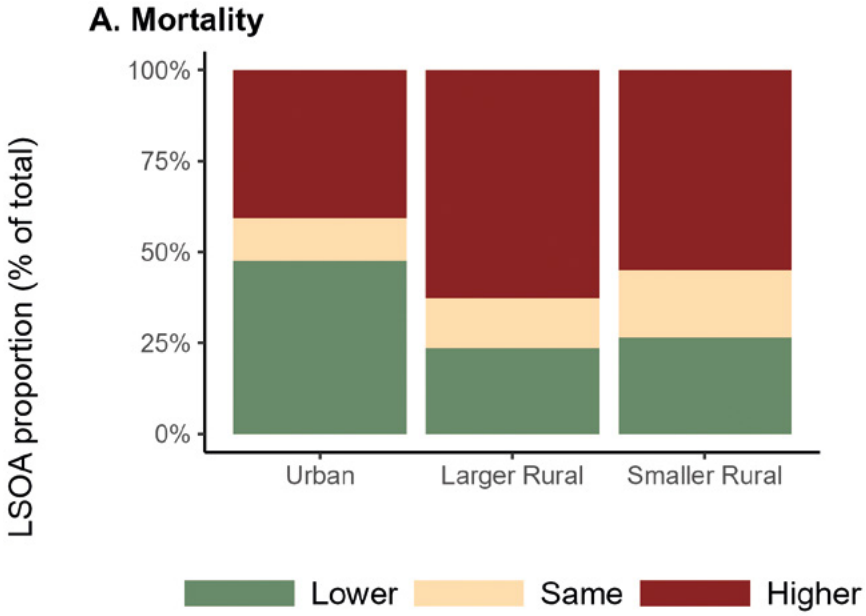
Figure 6: Proportion of communities (LSOAs) with a smoothed unadjusted average annual cancer incidence rate (breast, prostate, lung and bowel cancer) that was higher than (red), the same as (yellow) or lower than (green) the national average rate in England from 2014 to 2017.



Source: UK Small Area Health Statistics Unit.

The smoothed unadjusted average annual all-cause mortality rates ranged from 35 to 6,218 per 100,000 in communities in England over the period 2014 to 2023. There is evidence of a higher burden of deaths in rural areas. The majority (63%) of communities in larger rural areas have a higher all-cause mortality rate compared to the national average, followed by those in smaller rural areas (55%) with the lowest proportion seen for communities in urban areas (41%) (Figure 7).

Figure 7: Proportion of communities (LSOAs) with smoothed unadjusted average annual all-cause mortality rate that was higher than (red), the same as (yellow) or lower than (green) the national average rate in England from 2014 to 2023.



Source: UK Small Area Health Statistics Unit.

Community-level age and sex adjusted rates of chronic disease and mortality by rural/urban category

The previous 2 sections present rates that are unadjusted for age and sex. They describe how the burden of disease is distributed between rural and urban communities and contribute to assessing how service provision aligns with geographical need.

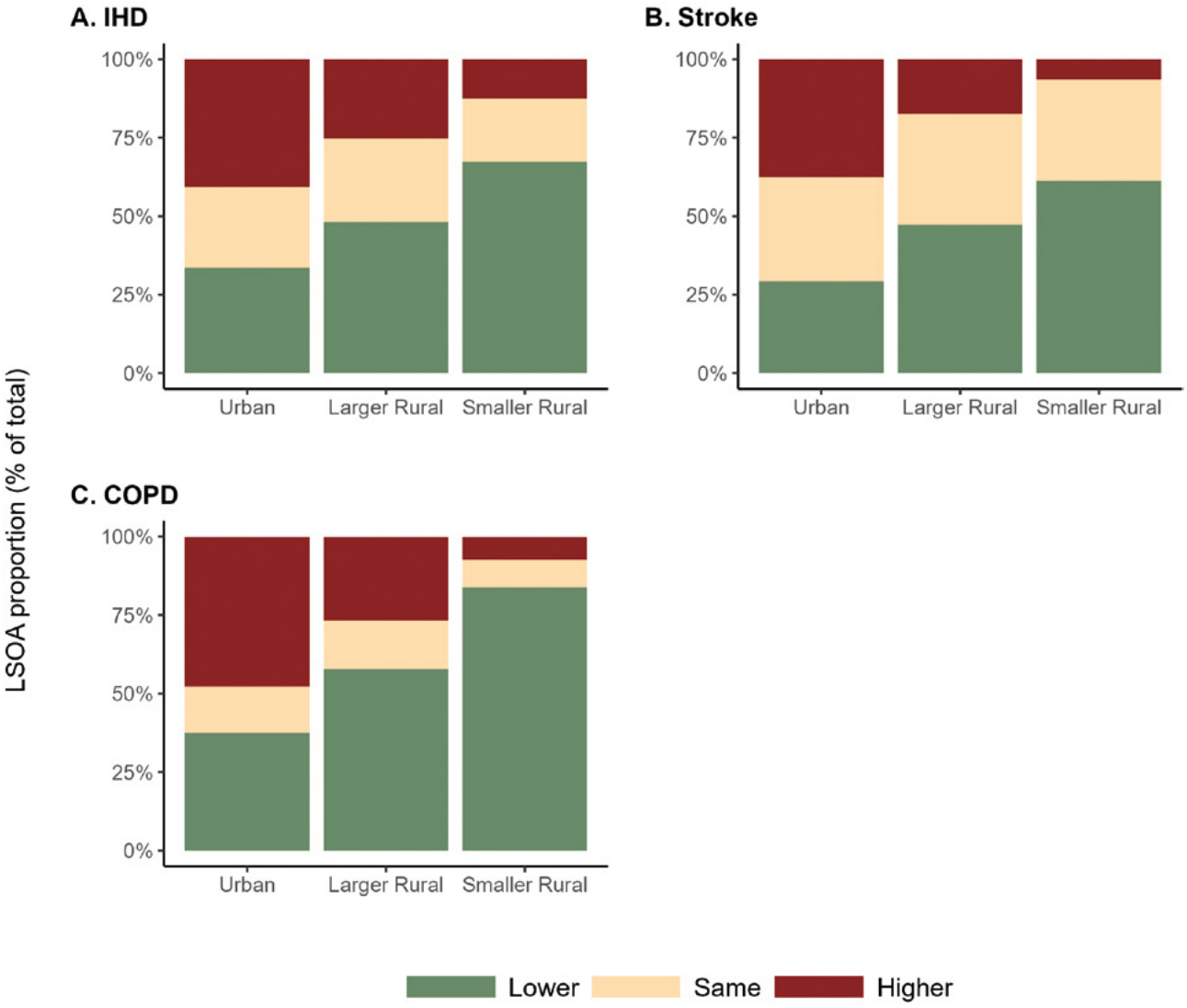
In this section we adjust for the age and sex composition of communities. The aim of this is to account for the older population in rural areas – compared to urban areas – that is likely to drive much of the difference in the smoothed rates of chronic disease and mortality described in the earlier sections. To reiterate, the age and sex adjusted analysis presented here will describe disparities between rural and urban areas, but it does not explore the effect of the rural environment on health outcomes.

We use the smoothed rate ratio (sRR), which can be considered to be a Bayesian estimate of the Standardised Incidence Rate (SIR) or Standardised Mortality Rate (SMR), to explore variations in outcomes that remain after age/sex differences between communities (LSOAs) are taken into account (see Appendix). The sRR summarises how a community's disease incidence

compares with what would be expected, given its age and sex composition, if each age-sex group had the same incidence as the corresponding group in the national population. Our statistical analysis of the sRRs categorises communities into groups with a disease incidence that is 'higher than', the 'same as' or 'lower than' expected (see Appendix). The sRRs presented here summarise the rates over the 10-year study period and do not take account of other factors, such as deprivation, ethnicity or tobacco smoking rates, which will vary between communities and may influence community-level risk.

When the age and sex structure of communities is accounted for, urban areas had the highest proportion of communities with a higher rate of emergency hospital admissions than expected, at over 1 in 3 for all 3 outcomes (IHD, stroke and COPD) (Figure 8). The smaller rural areas had the lowest proportion of communities with a higher rate compared to expected (fewer than 1 in 7).

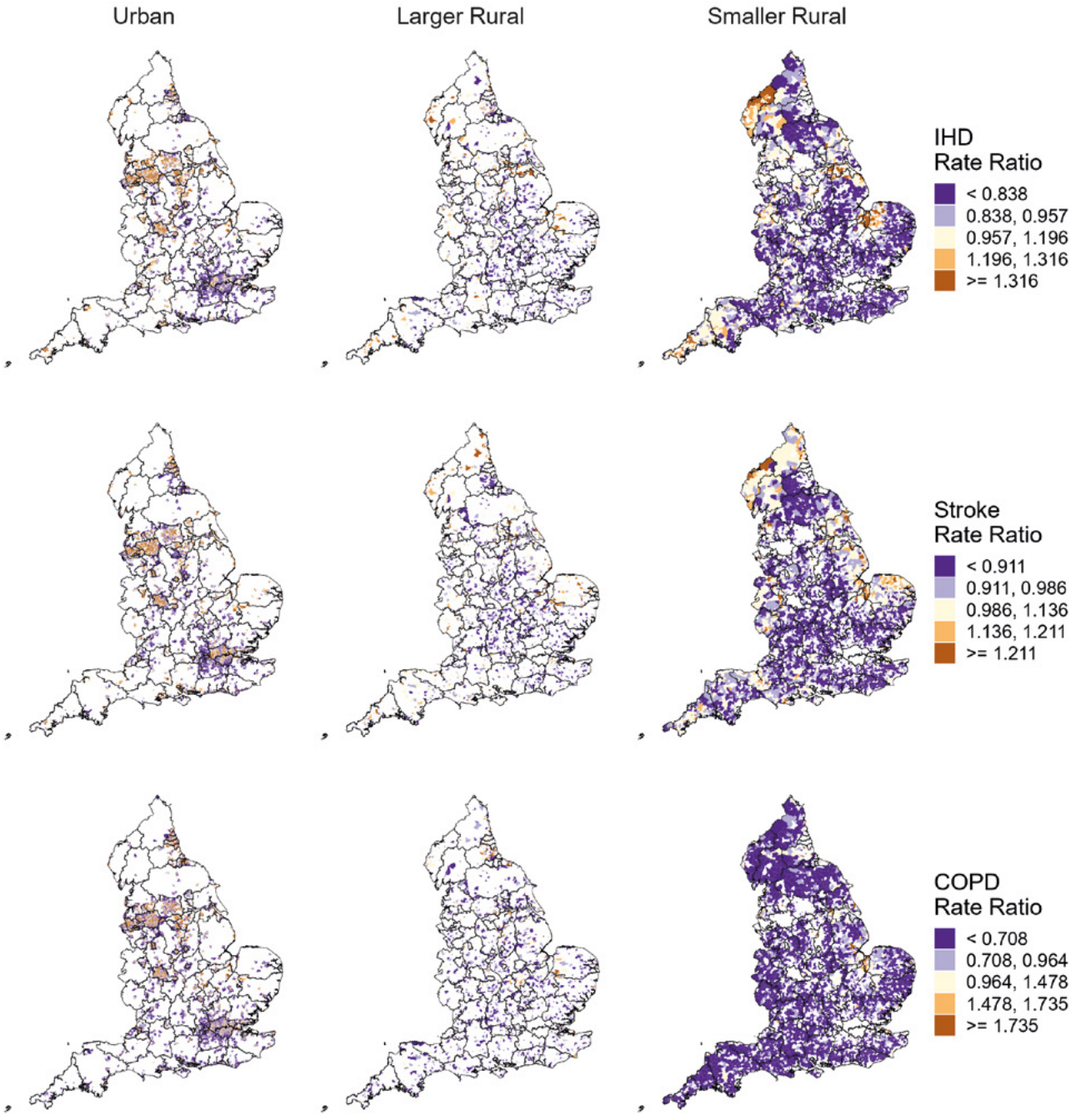
Figure 8: Proportion of communities (LSOAs) with a smoothed rate ratio of emergency hospital admissions (IHD, stroke and COPD), adjusted for age and sex, that was higher than (red), the same as (yellow) or lower than (green) expected in England from 2014 to 2023.



Source: UK Small Area Health Statistics Unit.

The maps in Figure 9 illustrate the spatial distribution of communities categorised according to their sRR for emergency hospital admissions. Higher rates of IHD (sRR >1.196), stroke (sRR >1.136) and COPD (sRR >1.478) emergency hospital admissions were seen among communities in smaller and larger rural areas and the communities with lower sRRs (sRR <0.957, 0.986 and 0.964, respectively) were distributed across the country.

Figure 9: Map showing the 33,755 communities (LSOAs) in England shaded according to the smoothed rate ratio of emergency hospital admissions (IHD, stroke and COPD), adjusted for age and sex and presented by area category (urban, larger rural and smaller rural), 2014 to 2024.

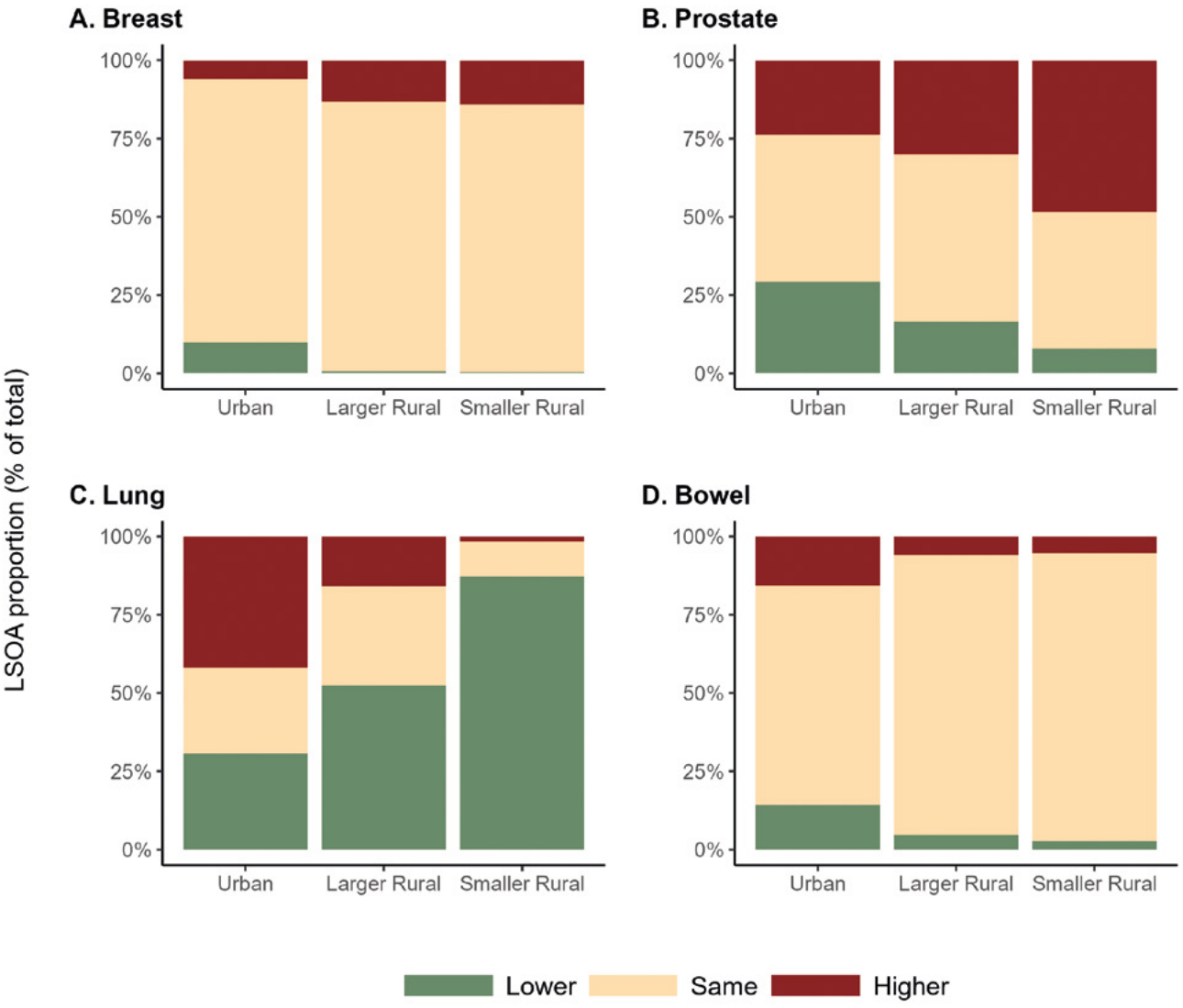


Source: UK Small Area Health Statistics Unit.

For breast and prostate cancer, after adjustment for age and sex, larger and smaller rural areas continued to have a greater proportion of communities with higher rates than expected when compared to communities in urban areas (Figure 10). For bowel cancer, after age and sex standardisation, the proportion of communities with a higher rate than expected became greatest for urban areas (16%), followed by larger rural and smaller rural areas (both 6%). However, for breast and bowel cancer, the majority of England's communities (between 70 and 92%) have rates that are the same as expected.

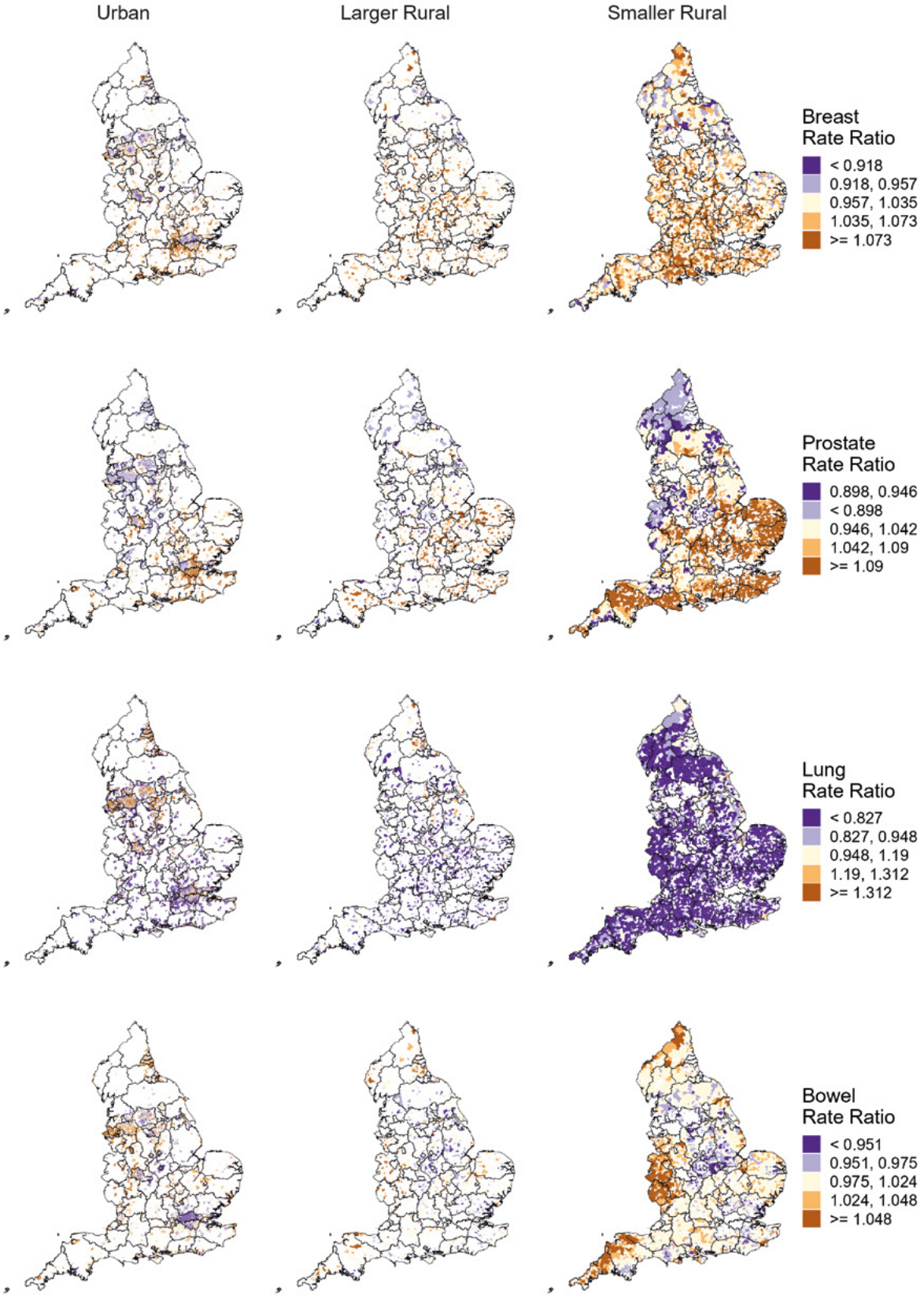
For lung cancer, after age and sex adjustment, the proportion of communities in urban areas with an incidence rate that is higher than expected is over twice as high as the proportion of communities in larger rural areas and 20 times greater than smaller rural areas. The map of smaller rural communities illustrates the widespread distribution of communities with a smoothed rate ratio below 0.95 (Figure 11).

Figure 10: Proportion of communities (LSOAs) with a smoothed rate ratio of cancer incidence adjusted for age and sex that was higher than (red), the same as (yellow) or lower than (green) expected in England from 2014 to 2017.



Source: UK Small Area Health Statistics Unit.

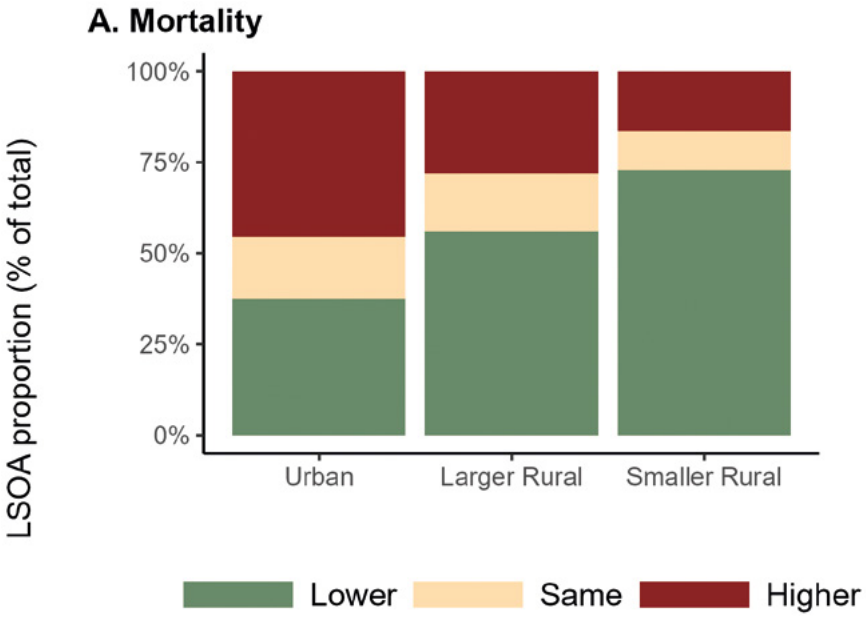
Figure 11: Map showing the 33,755 communities (LSOAs) in England shaded according to the smoothed rate ratio of cancer incidence, adjusted for age and sex and presented by area category (urban, larger rural and smaller rural), 2014 to 2017.



Source: UK Small Area Health Statistics Unit.

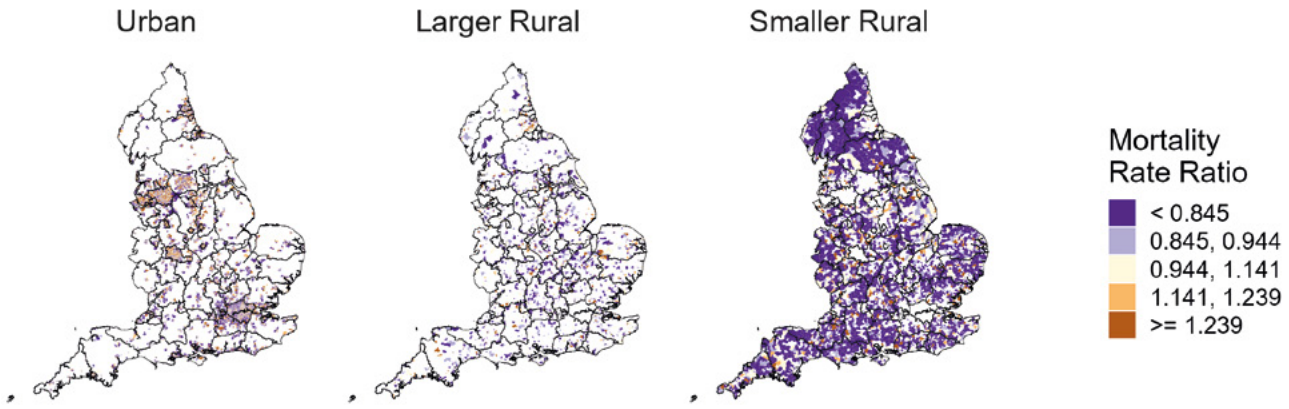
For all-cause mortality, after age and sex adjustment, the proportion of communities in urban areas with a higher rate than expected is over 1.5-fold greater than the proportion of communities in larger and smaller rural areas (Figures 12 and 13).

Figure 12: Proportion of communities (LSOAs) with a smoothed rate ratio of all-cause mortality adjusted for age and sex that was higher than (red), the same as (yellow) or lower than (green) expected in England from 2014 to 2023.



Source: UK Small Area Health Statistics Unit.

Figure 13: Map showing the 33,755 communities (LSOAs) in England shaded according to the smoothed rate ratio of all-cause mortality adjusted for age and sex and presented by areas category (urban, larger rural and smaller rural), 2014 to 2023.



Source: UK Small Area Health Statistics Unit.

Discussion

In this analysis we present unadjusted and age-sex adjusted rates of chronic disease and all-cause mortality in urban and rural areas in England, 2014 to 2023. The unadjusted rates – a measure of healthcare need by head of population – varied significantly throughout England. The patterns between rural and urban areas varied across outcomes and many changed with age and sex adjustment, indicating that these are important factors in the distribution of health outcomes. Key findings of this analysis include:

- Rural areas had higher unadjusted rates of emergency hospital admissions for IHD (15% higher) and stroke (20% higher) compared to urban areas in England in 2023. After age and sex adjustment, over 1 in 3 communities in urban areas had higher rates than expected, compared to 1 in 4 communities in larger rural areas and fewer than 1 in 7 communities in smaller rural areas.
- Urban areas had a 40% higher unadjusted rate of COPD emergency hospital admissions compared to smaller rural areas in England in 2023. After age and sex adjustment, 48% of communities in urban areas had higher rates than expected, which was twice as high as the proportion for larger rural areas and 6 times greater than the proportion for smaller rural areas.
- Rural areas had at least 25% higher unadjusted incidence rates of breast and prostate cancer compared to urban areas in England in 2017. After age and sex adjustment, the proportion of communities in larger rural and smaller rural areas with higher rates than expected remained higher than in urban areas.
- Rural areas had a 30% higher unadjusted incidence rate of bowel cancer compared to urban areas in England in 2017. After age and sex adjustment, the proportion of communities with higher rates than expected was almost 3 times greater for urban areas compared to smaller rural areas.
- Larger rural areas had a 10% higher unadjusted incidence rate of lung cancer compared to urban areas, and a 20% higher rate compared to smaller rural areas, in England in 2017. After age and sex adjustment, 40% of communities in urban areas had higher rates than expected which was more than twice the proportion for larger rural areas and 20 times the proportion for smaller rural areas.
- Larger rural areas had a 25% higher unadjusted rate of all-cause mortality compared to urban areas in England in 2023. After age and sex adjustment, 45% of communities in urban areas had higher rates than expected which was almost 3 times greater than the proportion of communities in smaller rural areas.

Strengths and limitations of the analysis

This analysis uses multiple national data sources (HES, NCRAS, ONS) covering the entire population of England which avoids the selection bias that would affect survey or cohort-based studies. By simultaneously examining 8 outcomes (IHD, stroke, COPD, breast, prostate, bowel and lung cancer and all-cause mortality), we generate a comprehensive picture of rural-urban health disparities, rather than focusing on a single condition. Presenting analysis unadjusted and adjusted for age and sex provides insights for a range of public health and healthcare perspectives, including understanding health burden and identifying disparities.

The use of the ONS Rural Urban Classification[7] to distinguish larger and smaller rural areas has revealed important within-rural heterogeneity (for example, the patterns for COPD and lung cancer which are different between larger and smaller rural areas). Furthermore, using a Bayesian framework, which generates more stable estimates from small numbers of events, has allowed us to perform the analysis at the highest possible spatial resolution (LSOA). The probabilistic classification of communities into 'higher', 'same' or 'lower' categories is more informative than simple point estimates and correctly conveys uncertainty which strengthens the translation of within local authority difference into insights for neighbourhood public health action.

This is a descriptive analysis. We do not quantify the effect of rurality on the rates of disease (i.e. whether the rural environment contributes to observed differences or disparities). Despite LSOAs being small, they are still administrative units designed for population size, not geographic homogeneity. Therefore, some LSOAs classified as 'urban' may contain rural pockets and vice versa, introducing potential misclassification of rurality at the community level. Our analysis has a focus on emergency hospital admissions which is one measure of disease burden and does not consider primary or elective care. Our analysis includes the period of the COVID-19 pandemic and pandemic restrictions which had major impacts on health, healthcare utilisation and mortality in England.

Conclusion

This chapter presents a detailed comparison of the rates of a range of key chronic diseases and all-cause mortality between rural and urban communities (LSOAs) in England between 2014 and 2023. There were marked disparities in the rates of these chronic diseases between urban, larger rural and smaller rural areas, but patterns varied between outcomes and changed with age and sex standardisation. The community-level analysis has identified considerable heterogeneity in rates of each outcome between communities within the same rural/urban category which may be missed in analyses typically carried out at Local Authority level.

The unadjusted rates provide a useful measure of total disease burden that is informative for policymakers and healthcare leaders, as they align service provision with clinical need. While the unadjusted rates give an indication of the total disease burden in these areas, adjustment for age (especially) and sex allows comparisons to be made that are not driven by these key demographic factors. Our analysis suggests that much of the difference in disease burden between geographical areas is driven by differences in the age structure of the population.

As described in the earlier chapters of this report, there are important differences between rural and urban communities, beyond the age and sex structure considered in this analysis, that are likely to explain some of the disparities reported here. Further epidemiological analysis considering the community-level differences in social and environmental determinants of health – including, for example, access to healthcare, education and greenspaces, tobacco smoking rates, diet and air pollution – could support the design and implementation of neighbourhood public health interventions to improve the health of the public.

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7. Zoonoses in a rural environment

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Christine Middlemiss – Chief Veterinary Officer for the UK

Introduction

Infections are common, and most of them are no more common in rural areas and small towns of England than in urban settings.[1] Some diseases of crowding may be more common in urban areas.

Zoonoses are infections transmitted between animals and humans (and vice versa), usually through food or drink (oral route), touch, or via a vector such as a mosquito or tick. In England and the UK more widely most human infections from animals are via food such as the bacterial infections salmonella and campylobacter. Whilst these often originate from farms the food is distributed nationwide and these are not specifically rural associated diseases. There are however infections which are exclusively or largely acquired in rural areas, and a significant proportion of these are zoonoses.

Whilst most zoonotic infections in England are relatively mild and self-limiting, there are occasional cases of very serious zoonotic infections in humans acquired directly or indirectly from animals. As these diseases are generally very rare in urban areas doctors may find these difficult to diagnose if they are not aware that someone has been in a rural area, so if you have an infection always report any rural or farm exposure.

From time to time outbreaks of new or emerging diseases occur in England, the wider UK and internationally. These almost invariably start when a disease jumps from animal to human. Most of these outbreaks are short-lived but occasionally they can lead to epidemics or pandemics so surveillance of animal infections both nationally and internationally is essential.

The potential for outbreaks and epidemics from animals

Every year sees multiple outbreaks globally from serious infectious diseases derived from animals. In most cases these enter the UK, if they do at all, in travellers. Recent examples include hantavirus and Ebola. The most significant of these was the COVID-19 pandemic. Rural areas of England are at no greater risk than any other from these.

There is however always the possibility that England will be the starting place for a zoonotic outbreak. The most serious recent example was bovine spongiform encephalopathy (BSE) in cattle causing new variant Creutzfeldt-Jakob disease (CJD) in humans who ate beef from infected animals.[2] The importance of this came from the seriousness of the disease, and it required mass culling of cattle and substantial changes to the food chain to bring it under control. In turn this had a major impact on cattle farming.

As BSE shows, zoonotic outbreaks can have a major impact on the rural economy in addition to their effects on humans. The epidemic of salmonella in eggs in the late 1980s was another example with devastating impacts on the poultry industry until brought under control with vaccination.[3]

Currently the biggest concern of a known infection is avian influenza. This can have major impact on chickens, turkeys and other birds, including wild birds, but it also has the potential to jump to other species including humans. Some forms of avian influenza have significant case-fatality rates in humans who catch them, although cases are only occasional and almost all in people working or living in close proximity to birds.[4]

Because of the risk of outbreaks initiating in animals in rural areas it is important to maintain good surveillance of animal and human diseases in these areas. In the UK this is undertaken by the UK Health Security Agency (UKHSA), the Animal and Plant Health Agency (APHA) and the Human Animal Infections and Risk Surveillance (HAIRS) group among others.[5] Farmers and their vets have a major role to play in identifying and reporting abnormal infections or outbreaks in their livestock.

Infections from direct contact with animals, animal products or excreta

A number of infections can be passed on by touching animals on farms or in the wild, or contact with water or soil contaminated with their urine or faeces.

Good animal husbandry on UK farms means the probability of serious infection from farm animals is much lower than in many other countries but inevitably there is some risk of infection particularly for those who touch or come very close to animals routinely for their work (such as farmers and veterinarians) or in some cases through activities such as touching animals in petting farms. Birthing (lambing, calving) are particularly high-risk periods.

Examples of infections include cryptosporidium, *E. coli* O157, and salmonella, all of which can cause significant gastrointestinal infections, or the viral skin infection orf. Visiting farms is an excellent educational activity, and the risk of infection can be significantly reduced by taking a few simple precautions.[6]

A few of the zoonotic infections can be very serious if not diagnosed and treated early. Two examples are the bacterial infections anthrax and Q fever, both of which can be transmitted by touch or breathing in dust, spores or droplets. Fortunately in England they very rarely lead to disease in humans, and are even rarer outside occupational groups who handle animals.

Bovine tuberculosis is a major risk in cattle. Since the introduction of widespread milk pasteurisation and the testing and removal of infected animals, infections in humans are very rare, and people who work closely with cattle are at the highest risk.

Animal faeces can pass on a number of rare but significant infections some of which are more common in rural areas. Hydatid disease, a serious parasitic infection, can be found in some sheep farming areas and is usually acquired through contact with faeces from dogs that have

eaten meat or offal from infected cattle and sheep, such as farm dogs. Contaminated soil inoculated into unvaccinated people has the risk of causing tetanus, a very serious disease, but fortunately up-to-date vaccination is an almost complete protection.

Swimming or other water sports in inland waters increases the risk of leptospirosis, a rare but sometimes serious infection usually caused by water contaminated by rat urine.

One risk which has to be managed is the possibility of spreading antimicrobial resistant (AMR) organisms from animals to humans (or vice versa). This is primarily a risk from domestic and farmed animals as wild animals will not be regularly exposed to treatment with antibiotics, although some wildlife can acquire resistant organisms from the environment (e.g. sea gulls frequenting landfill sites). Antibiotic stewardship – only using antibiotics when needed – is as essential in veterinary as in human practice.

Zoonotic infections transmitted via insect and arachnid vectors

Insect (e.g. mosquito) and arachnid (tick) vectors can pass on zoonotic infections where there is no contact with the animal. These vectors are generally much more common in rural areas. Climate change may increase the risk of some vector-borne diseases in England.[7]

Tick-borne diseases

The most important current vector-borne disease in England is Lyme disease, transmitted by ticks.[8] It remains a rare disease with around 1,000 laboratory-confirmed cases a year, and an estimated 3,000-4,000 cases overall. Most cases cause no long-term issues, but it can cause severe longer term health problems if not treated early. It is therefore important to take measures to reduce the risk of tick bite if walking in rural areas, and to look for and remove ticks rapidly if found. Most ticks in England are not infected, and the risk of infection transmission is low if they are removed within 24 hours of attaching.

In recent years tick isolated areas of England have been found to have the virus for the zoonotic disease tick-borne encephalitis, a potentially serious infection which can cause brain inflammation, and a small number of UK-transmitted human cases have been identified.[9] There is also a similar tick-borne infection, louping ill, which can cause encephalitis especially in areas where sheep or grouse are found. In continental Europe tick-borne encephalitis is much more common, and this is an area where climate change may increase our risks.

Mosquito-borne and midge-borne diseases

Currently we do not have significant risks of mosquito-borne diseases in England, although we did in the past (malaria was eliminated in England in the 1920s). The mosquito-species *Aedes albopictus* (tiger mosquito) is however moving north through Europe, probably in part due to climate change, and may well become established in England in the next few years although measures are being taken to delay this.[10] It can transmit a number of infections including dengue.

The UK has midges, but currently no human midge-borne diseases. Important animal midge-borne diseases found in the UK (such as bluetongue and Schmallenberg) are not considered a risk to humans, but the possibility of midge-borne illness cannot be discounted in the future.

Conclusion

Zoonotic infections are rare in England, but some are serious. Good animal husbandry and infection control around all animals, surveillance of animal outbreaks and interventions to stop outbreaks should keep the risks from animals and birds low. Sensible hygiene precautions around animals (and their food and immediate environment) and reducing the risk of ticks help keep the risks low. If you live in, or have been to, a rural area and have an infection serious enough to see a doctor it is sensible to say you have been to a rural area as these infections are rare and may not otherwise be considered.

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8. Agricultural communities

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Introduction

Farming communities make a vital contribution to England's economy, food security, diet and rural life. Home and workplace are often closely connected, and daily life is shaped by seasonal demands, long and inflexible hours and physically demanding and hazardous work in dispersed settings. Many farms operate on very tight financial margins, which can constrain day-to-day decisions, including the ability to take time away from the farm, with important implications for both physical and mental health. The NHS is also often not well set up to respond to the needs of farming communities.

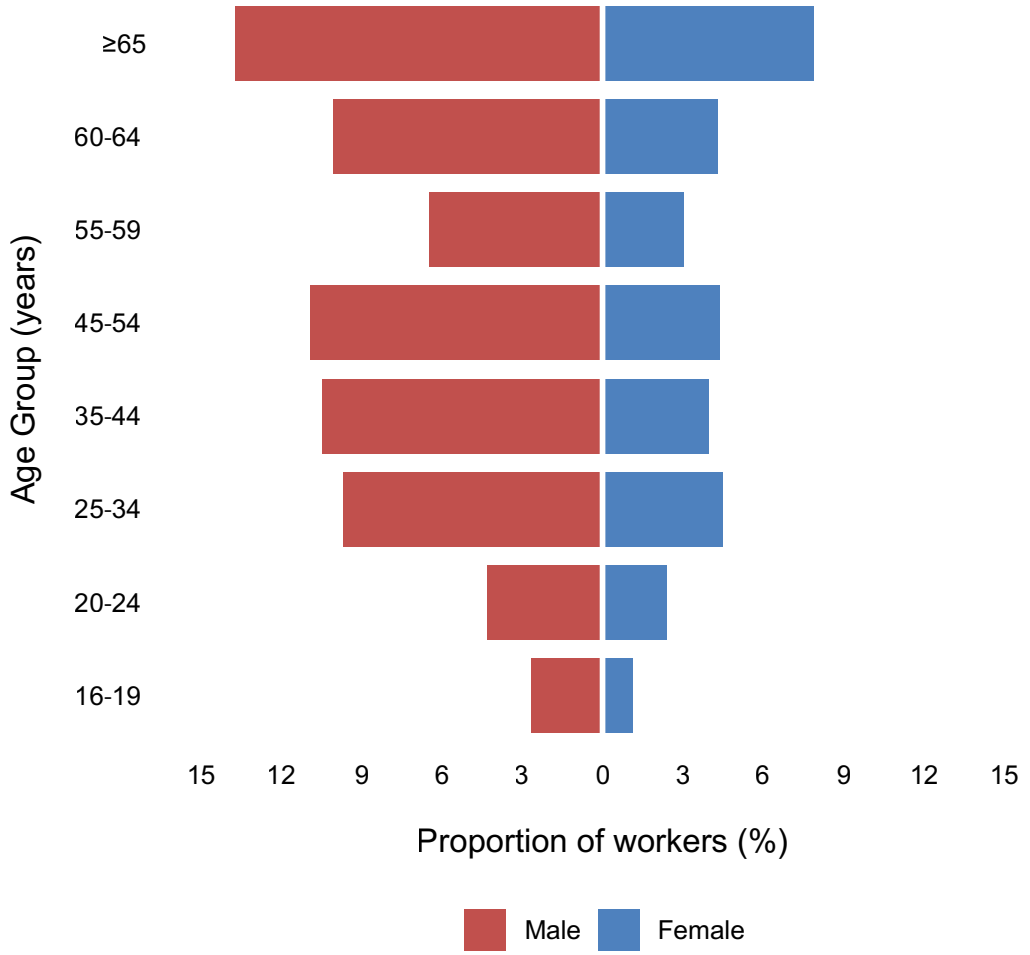
The agricultural workforce

The agricultural workforce has a higher proportion of men, and older workers, than many other industries. Workforce data is gathered by the Office for National Statistics (ONS) in their Annual Population Survey, with individuals categorised into industries using Standard Industrial Codes (SIC). Figure 1 presents the estimated size of the workforce in *'Crop and animal production, hunting and related service activities'* by age and sex. The large proportion aged 65 and over indicates that workers remain economically active in the agricultural sector beyond ages that are typically seen in the wider workforce. This pattern may reflect a combination of factors, including challenges associated with succession planning and retirement,[1] alongside barriers that can limit entry and progression for younger people seeking careers in agriculture.[2]

Women account for a substantially smaller proportion of the recorded workforce across all age groups. However, research suggests that women's contribution to farming and farm businesses is not always fully reflected in official workforce statistics, despite the important roles many women play in agricultural production, business management and family enterprises.[3] Evidence also points to barriers to participation and progression within the sector, including inheritance and succession practices that have historically favoured men.[4]

These characteristics are important when considering occupational health risks, chronic disease burden, service access and workforce sustainability within the sector. They also provide important context for understanding patterns of fatal injury within agriculture.

Figure 1: Age and sex profile of workers in *crop and animal production, hunting and related service activities*, Great Britain, 2024/25.



The estimates shown are derived from the Annual Population Survey. While estimates for the industry are robust, specific age group/sex combinations may be based on a small sample size, potentially resulting in higher sampling variability.

Source: Estimates are taken from the Office for National Statistics Annual Population Survey.[5]

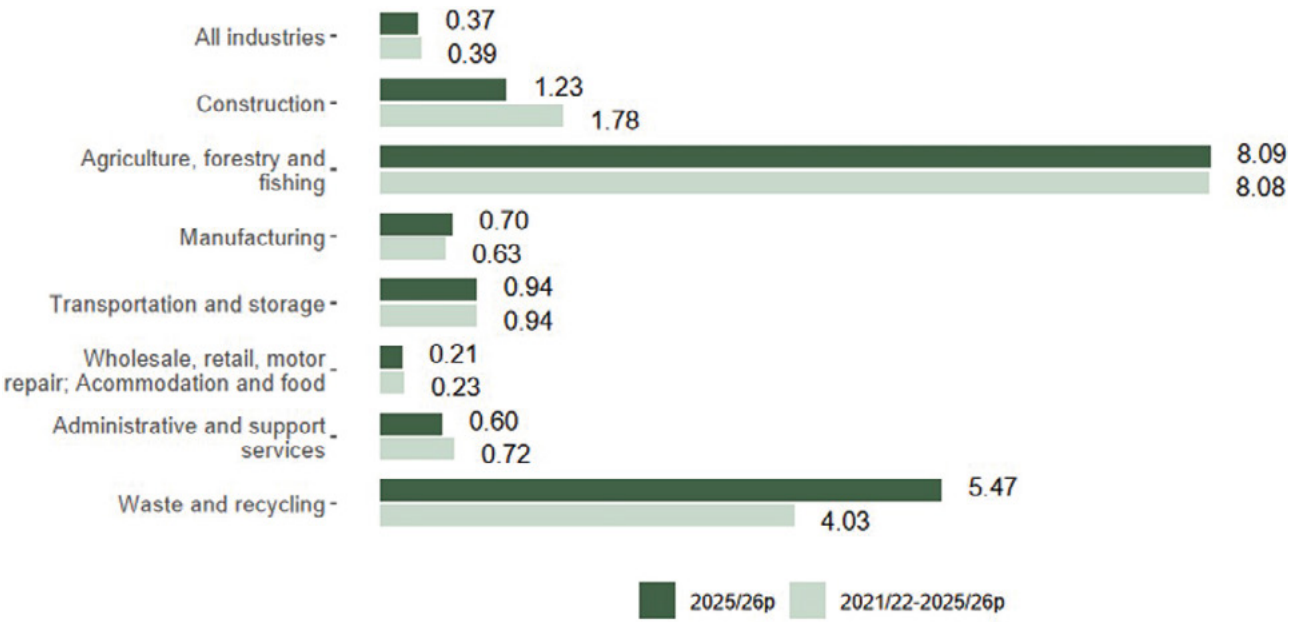
Accidents, injuries and emergencies for farm workers

Against a backdrop of long hours and an ageing workforce, farming remains one of the most dangerous industries in terms of injury, including work-related fatal injury. This risk of injury extends beyond farm workers to also include members of the public who are present in agricultural settings (including farming families, visitors and other people not at work).

Fatal incidents to farm workers can arise from everyday farming activities involving powerful machinery, vehicles, livestock, unstable structures and hazardous environments, with some occurring in remote locations where help may be delayed. Significant reductions in the risk of work-related fatal injury have been noted across many sectors in recent decades.[6] However, despite some improvements in recent years the rate of work-related fatal injury in the '*Agriculture, Forestry and Fishing*' industry group[7] (of which farming is the major component) has remained higher than other main industry sectors (Figure 2).

In 2025/26 22 workers in *Agriculture, Forestry and Fishing* were killed in work-related accidents (all in farming), a rate of 8.09 per 100,000 workers.[8]

Figure 2: The rate of fatal injuries per 100,000 workers by selected main industry group in Great Britain, 2025/26p and annual average for 2021/22 to 2025/26p.

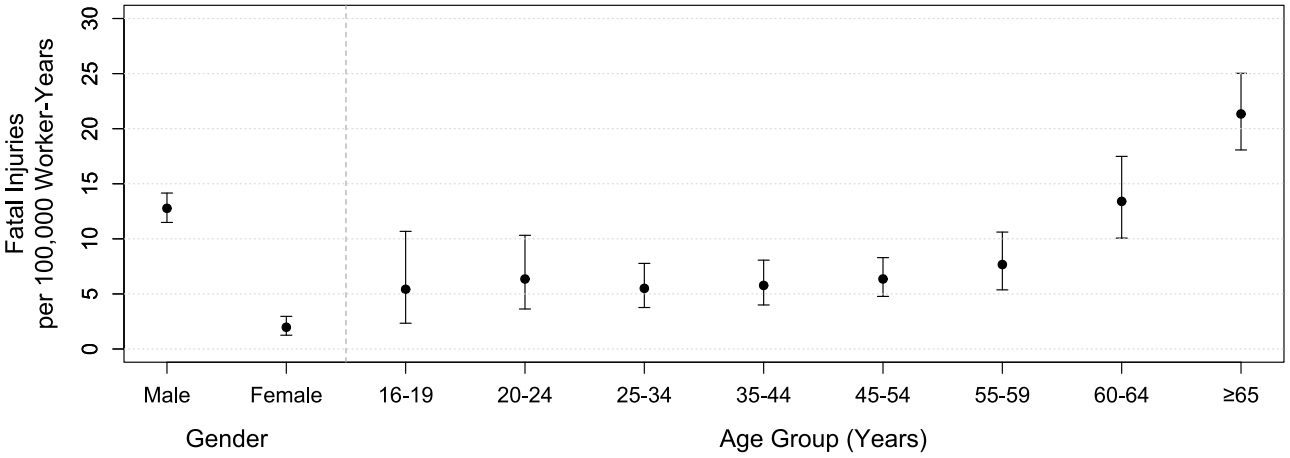


p = provisional. Industry is defined using the 2007 SIC. *Agriculture, Forestry and Fishing* is defined by Section A.[9] Fatal injuries are those that the relevant enforcing authority (namely Health and Safety Executive, Local authorities, Office of Rail and Road or Office for Nuclear Regulation) have judged as reportable under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR).[10]

Source: Image taken from the Health and Safety Executive, Work-related fatal injuries in Great Britain, 2026, Figure 3.

Farming is the largest component of the *Agriculture, Forestry and Fishing* industry, and the fatal injury rate in farming closely aligns with the rate for *Agriculture, Forestry and Fishing* as a whole. Rates of fatal injury vary between different demographic groups within the farming workforce. Figure 3 presents fatal injury rates to workers by age and gender. It draws on data for the subcategory *crop and animal production, hunting and related service activities* within the overall *Agriculture, Forestry and Fishing* industry. Rates of fatal injuries were notably higher in males rather than females, with a notable increase in the rate after the age of 60.

Figure 3: The rate of fatal injuries to workers in *crop and animal production, hunting and related service activities*, by age and gender, 2010/11 to 2024/25, Great Britain.

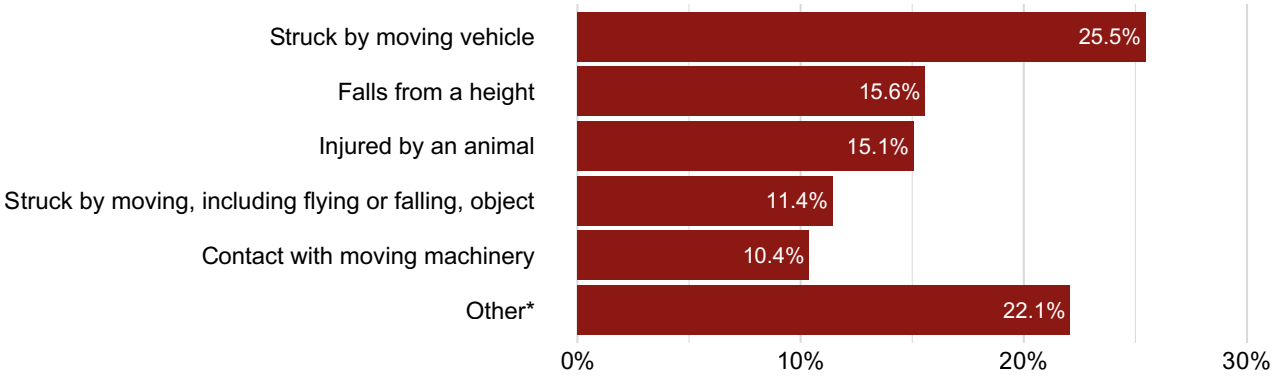


95% confidence intervals are presented. The intervals were calculated assuming that fatal injury counts follow a Poisson distribution, an approach commonly used for rare events. Industry is defined using the 2007 SIC. *Crop and animal production, hunting and related service activities* is defined as SIC 01.[11] Fatal injuries are those that the relevant enforcing authority (namely Health and Safety Executive, Local authorities, Office of Rail and Road or Office for Nuclear Regulation) have judged as reportable under RIDDOR.[12]

Source: Data taken from the Health and Safety Executive RIDDOR statistics.[13]

Incidents involving moving vehicles, livestock and falls account for the largest share of worker deaths over this 15-year period, reflecting the routine hazards of farm work (Figure 4). Risk may also be shaped not only by machinery and livestock, but by lone working, extended hours, fatigue during peak seasons and financial pressure to continue working despite injury, increasing both the likelihood of accidents and delayed or unreported care.

Figure 4: Percentage of fatal injuries to workers in *crop and animal production, hunting and related service activities*, by cause, 2010/11 to 2024/25, Great Britain.



*Other includes: Trapped by something collapsing or overturning (8.1%), Drowning or asphyxiation (5.7%), Contact with electricity or electrical discharge (2.9%), Other kind of accident (2.1%), Strike against something fixed or stationary (1.6%), Slips, trips or falls on same level (1%), Exposure to fire (0.5%), Exposure to an explosion (0.3%). Chart shows all specific accidents kinds accounting for 10% or more of the total. Industry is defined using the 2007 SIC. *Crop and animal production, hunting and related service activities* is defined as SIC 01.[14] Fatal injuries are those that the relevant enforcing authority (namely Health and Safety Executive, Local authorities, Office of Rail and Road or Office for Nuclear Regulation) have judged as reportable under RIDDOR.

Source: Data taken from the Health and Safety Executive RIDDOR statistics.[15]

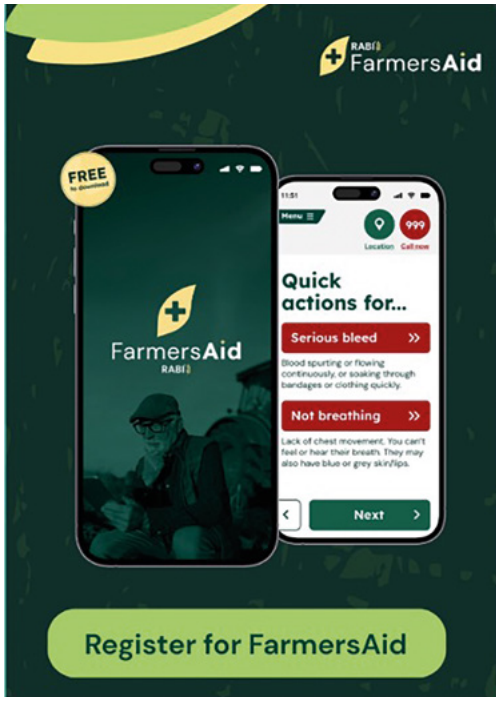
Accessing urgent and emergency care

When serious accidents occur, farmers can face significant barriers to accessing urgent care due to isolated working environments and unreliable connectivity. Lone working further increases the risk that help cannot be reached quickly.

Rural mobile signal 'not spots' remain a key challenge. Although the Shared Rural Network (SRN) has expanded 4G coverage across England to 94–95% of landmass,[16,17] a survey of English and Welsh farmers found that 22% could not access reliable mobile signal across all outdoor areas of their farm,[18] posing a serious risk in emergencies. As one farmer noted, "*Losing a few seconds with your business is one thing, but dying because you can't contact anyone on your phone, is another*."[19]

Emergency response can also be delayed by remote locations, difficult terrain and unclear coordinates, contributing to rural health inequalities. In response, the Royal Agricultural Benevolent Institution (RABI) launched FarmersAid in June 2026. This initiative provides training, critical-care kits and an emergency-support app tailored to serious agricultural accidents (Figure 5).

Figure 5: FarmersAid app launched by the Royal Agricultural Benevolent Institution, June 2026.



Source: Royal Agricultural Benevolent Institution.

Chronic exposure

Farmers face a broad range of occupational health risks arising from the physical, environmental and biological demands of agricultural work, many of which contribute to significant long-term illness and reduced quality of life.

Musculoskeletal disorders

Long-term physical strain continues to be one of the most significant occupational health burdens for farmers. In Great Britain, musculoskeletal disorders account for 60% of all work-related ill health in the agriculture sector, with an estimated 6,000 workers affected each year.[20] Rates of musculoskeletal injury are almost twice as high as the all-industry average,[21] reflecting the physical nature of farming, including heavy lifting, repetitive manual tasks, livestock handling and prolonged exposure to whole-body vibration. However, these estimates are derived from the Labour Force Survey and are based on self-reported illness, meaning they are likely to underestimate the true scale of musculoskeletal issues within farming communities. These chronic pressures accumulate over decades, contributing to long-term pain.

Solar radiation

Solar radiation encompasses visible light, infrared heat and ultraviolet radiation (UVR). While regular sunlight exposure supports vitamin D synthesis[22] and contributes to bone health, immune function and overall wellbeing, excessive exposure to UVR carries risks.[23] Over-exposure can cause sunburn and premature skin ageing, and increases the likelihood of developing skin cancers, including non-melanoma skin cancers and malignant melanoma.[24] Farmers' long hours outdoors, combined with cumulative sun exposure and emerging climate-driven shifts in UV levels, place them at increased risk from harmful ultraviolet radiation.[25] A UK survey highlighted that 77% of agricultural workers suffer from sunburn at least once a year, with 52% rarely or never wearing sunscreen in the summer.[26] This elevated occupational exposure appears to place them at higher risk of certain skin cancers.[27]

Respiratory hazards

Respiratory illness remains an important occupational health concern in agriculture, where workers are routinely exposed to complex mixtures of organic and inorganic dusts. Farmers' lung is a well-recognised form of allergic alveolitis caused by inhalation of organic dusts and mould spores from mouldy hay, grain or straw.[28] National mortality data show an average of around 7 deaths per year between 1993 and 2023 where farmers' lung or a related condition was recorded as the underlying cause.[29] Although fatalities are uncommon, the disease can lead to significant respiratory impairment, and non-fatal cases may occur far more frequently in the farming population each year.[30]

Occupational asthma in agriculture arises predominantly from exposure to agricultural dusts, which include fungal spores, bacteria, endotoxins, animal dander, faecal matter, plant material and soil.[31] Inhalation of these dusts can trigger allergic respiratory reactions, and once

sensitised, affected workers may develop symptoms even at very low levels of exposure. Typical symptoms include coughing, wheezing and chest tightness, often accompanied by rhinitis or conjunctivitis.[32] Reported rates of occupational asthma in agriculture are low and show considerable year-to-year variation, limiting the certainty of estimates.

Noise-induced hearing loss

Noise-induced hearing loss is an important but often overlooked occupational risk in agriculture. Many routine farming activities involve the use of loud machinery, including tractors, chainsaws and grain dryers, which can expose workers to daily noise levels above 85 decibels (dB), the threshold at which prolonged exposure can cause permanent hearing damage.[33] Intensively housed livestock, such as pigs at feeding time, can generate noise levels of 100 dB or more, further increasing risk for farmers working in enclosed animal housing environments.[34]

Robust sector-specific data on the prevalence of noise-induced hearing loss in agriculture are limited, and available figures are likely to underestimate impact due to under-reporting and delayed presentation, particularly among older, self-employed farmers with long cumulative exposure. Nonetheless, prolonged occupational noise exposure is a well-established cause of irreversible hearing damage, and growing evidence links hearing loss to significant wider health consequences, including risk of dementia.[35]

Potential health benefits

While farming is associated with a range of chronic occupational risks, it also involves characteristics that may have some potential health benefits. Evidence from a large cohort study suggests that farmers and their spouses tend to be highly physically active, with farmers undertaking a median of around 1.5 hours of muscle-strengthening activity per day and their spouses around 0.5 hours per day.[36] This equates to approximately 10.5 hours per week for farmers and 3.5 hours per week for spouses.

In contrast, UK guidelines recommend muscle-strengthening activity on at least 2 days per week,[37] and only a minority of adults meet this recommendation.[38] This highlights the substantially higher levels of occupational physical activity associated with agricultural work. Regular physical activity is associated with a wide range of health benefits, including reduced all-cause mortality and lower risk of cardiovascular disease, stroke, type 2 diabetes and some cancers, as well as improvements in mental wellbeing, sleep and cognitive function.[39]

In addition to the high levels of physical activity, farmers may also be exposed to some of the health benefits associated with natural environments. Evidence suggests that green space exposure is linked to reduced feelings of fatigue, increased positive emotions such as vitality, and short-term physiological responses, including lower heart rate levels.[40] Some studies also suggest associations with reduced cardiovascular risk and improvements in mental wellbeing.[41] However, it is important to note that while farms are ecologically green environments, they are not necessarily 'restorative green spaces', and the context of occupational exposure may lead to different outcomes.

These potential benefits must be considered alongside the substantial physical demands, cumulative occupational exposures and wider structural pressures faced by farmers and their families, which may limit or offset any protective effects.

Mental health and wellbeing in farming

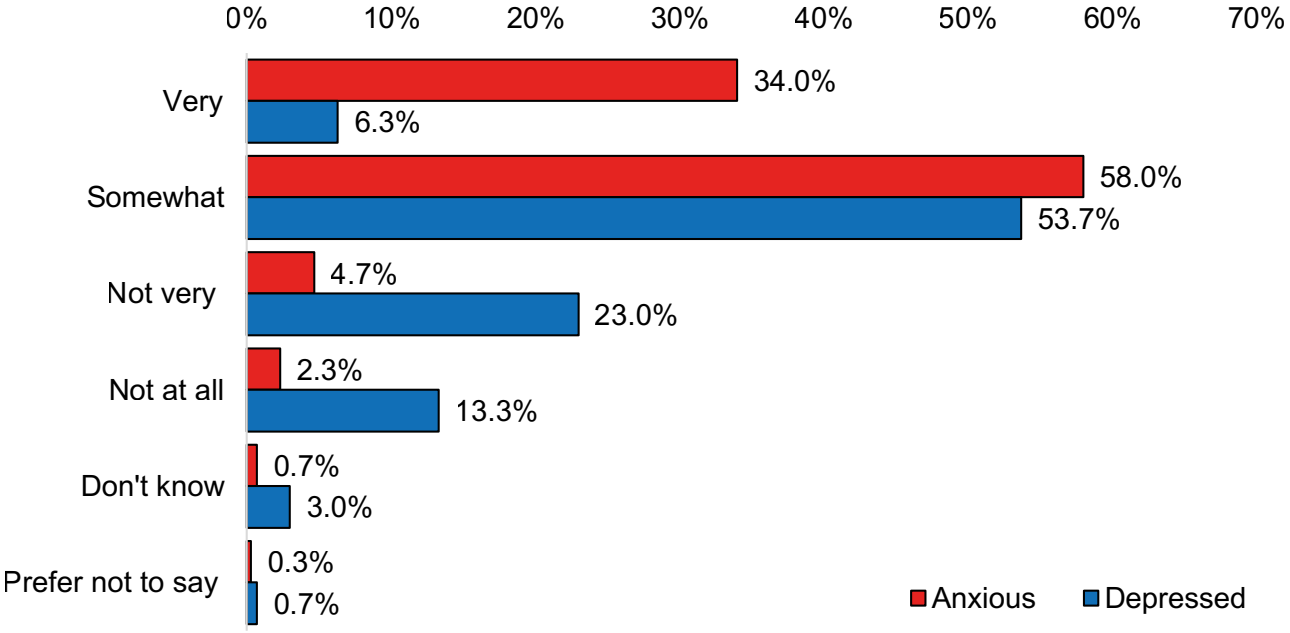
Mental health and wellbeing are shaped by structural, economic and environmental pressures that also influence physical health. Long working hours, financial uncertainty, physical risk and limited access to services create cumulative psychological strain. Work, home and income are inseparable, meaning business pressures carry emotional and relational consequences for farmers and their families.

Climate events, global shock and policy changes

In recent years, farming communities have faced external shocks largely beyond individual control, including climate-related extreme weather, the COVID-19 pandemic, geopolitical instability and major changes to agricultural subsidies and regulation.

Events such as flooding, drought and heatwaves disrupt farm operations, extend working hours and intensify physical and emotional strain at critical points in the agricultural calendar. Survey evidence links these periods to increased anxiety and depressed mood (Figure 6).[42]

Figure 6: Proportion of farmers reporting feeling anxious or depressed in during the period of extreme weather.

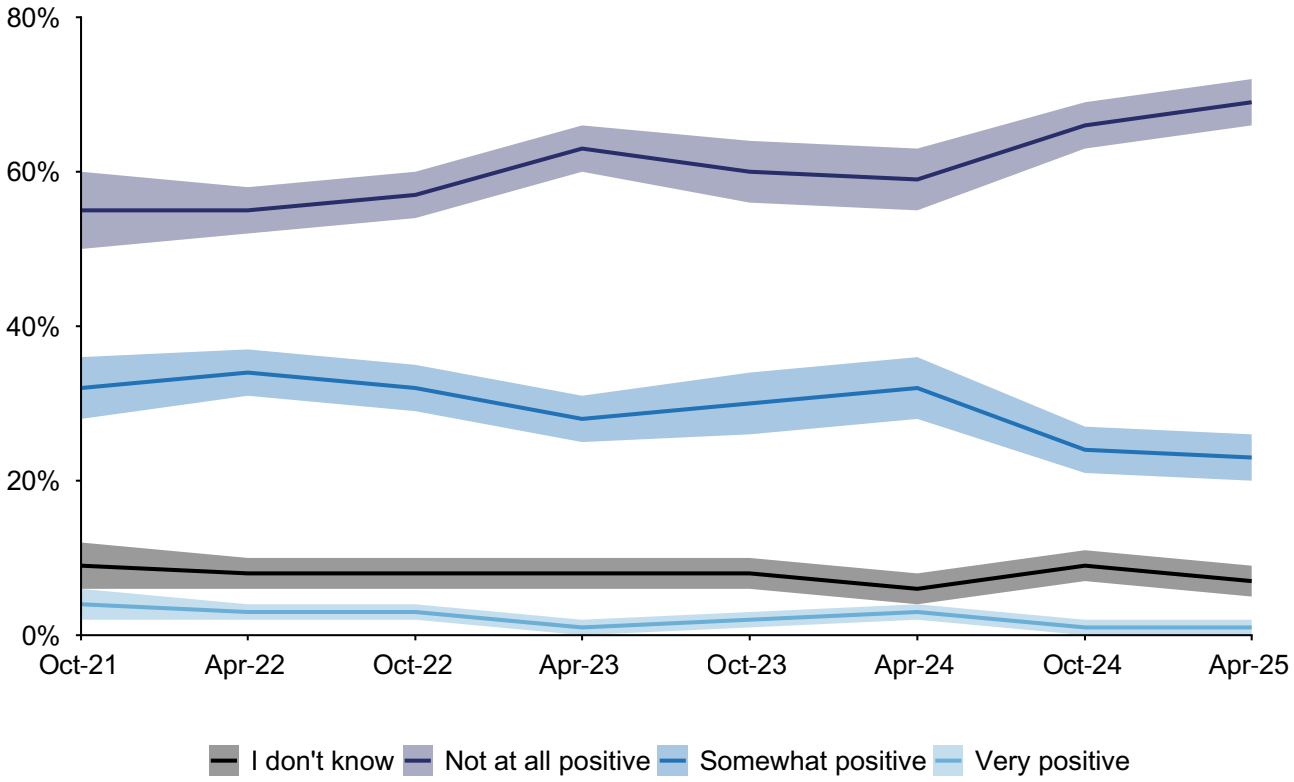


Source: Data taken from the impact of climate change on British farms and farmers' mental health report.[43]

Data from the Department for Environment, Food and Rural Affairs' Farmer Opinion Tracker shows increasing negative sentiment about the future of farming between 2021 and 2025 (Figure 7), with more farmers reporting they feel "not at all positive" and consistently low confidence in policy delivery.[44]

Qualitative evidence suggests this can lead to a sense of professional helplessness, with farmers describing exposure to forces beyond their control, including markets, policy and public narratives.[45]

Figure 7: Department for Environment, Food and Rural Affairs' opinion tracker – "taking into account the changes to existing payments/regulations and new schemes that will be available, how do you feel about the future of farming?"

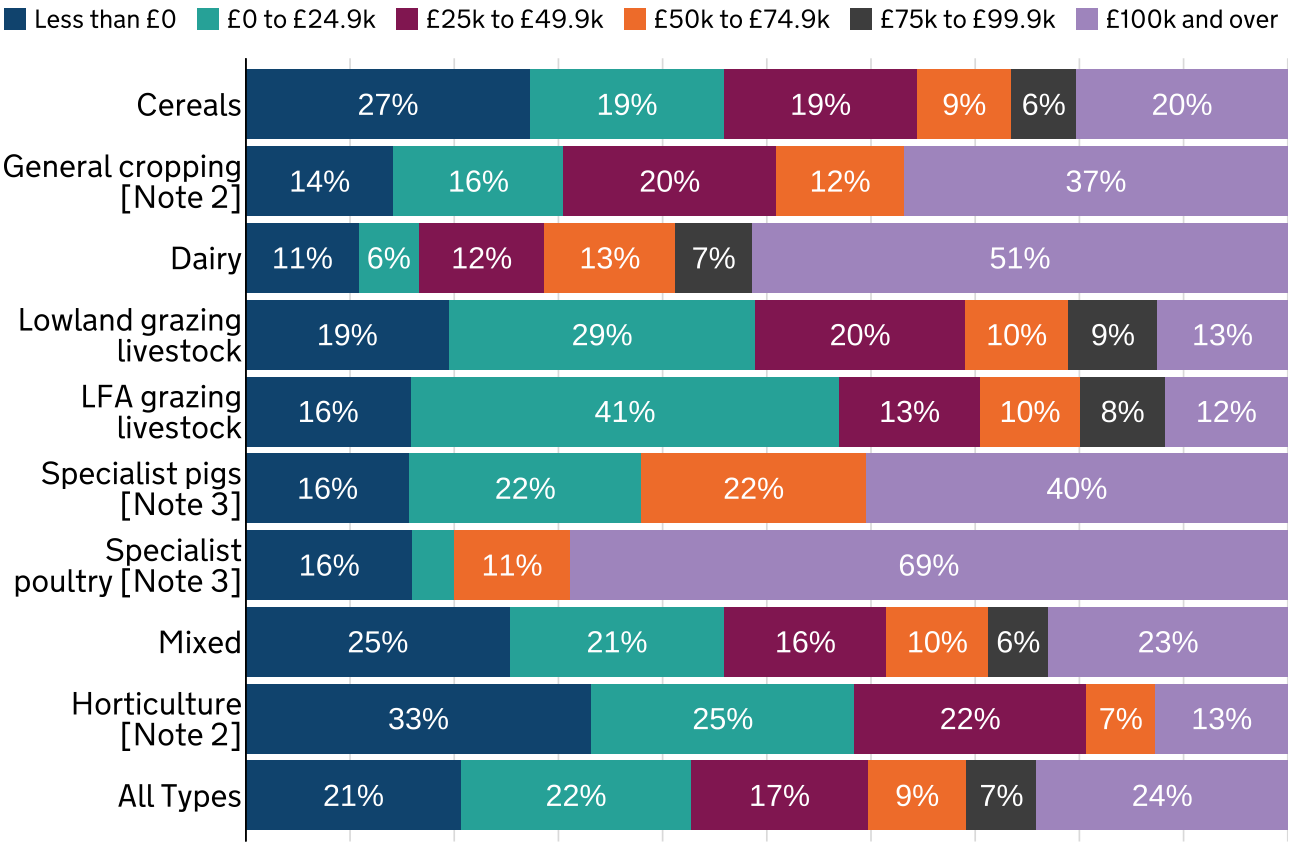


Ribbons represent 95% confidence intervals.

Source: Data taken from the Farmer Opinion Tracker for England.[46]

Farm incomes also vary widely, and some did not make a profit in the last financial year,[47] with some farms generating substantial returns while others operated at a loss (Figure 8). These differences reflect variation in farm type, scale and location, and mean that financial security and resilience are uneven across farming communities. Together, these factors are likely to shape patterns of health, wellbeing and access to care across farming communities.

Figure 8: Distribution of farm business income by farm type, England, 2024/25.



1. The legend is presented in the same order as the bars.
2. Due to small sample sizes, some categories have been merged for general cropping farms and horticulture farms; the categories are 'Less than £0', '£0 to £24.9k', '£25k to £49.9k', '£50k to £99.9k' and '£100k and over'.
3. Due to small sample sizes, some categories have been merged for specialist pig farms and specialist poultry farms; the categories are 'Less than £0', '£0 to £49.9k', '£50k to £99.9k' and '£100k and over'.
4. The sample sizes for specialist pig and poultry farms are relatively small with average incomes subject to greater variation.

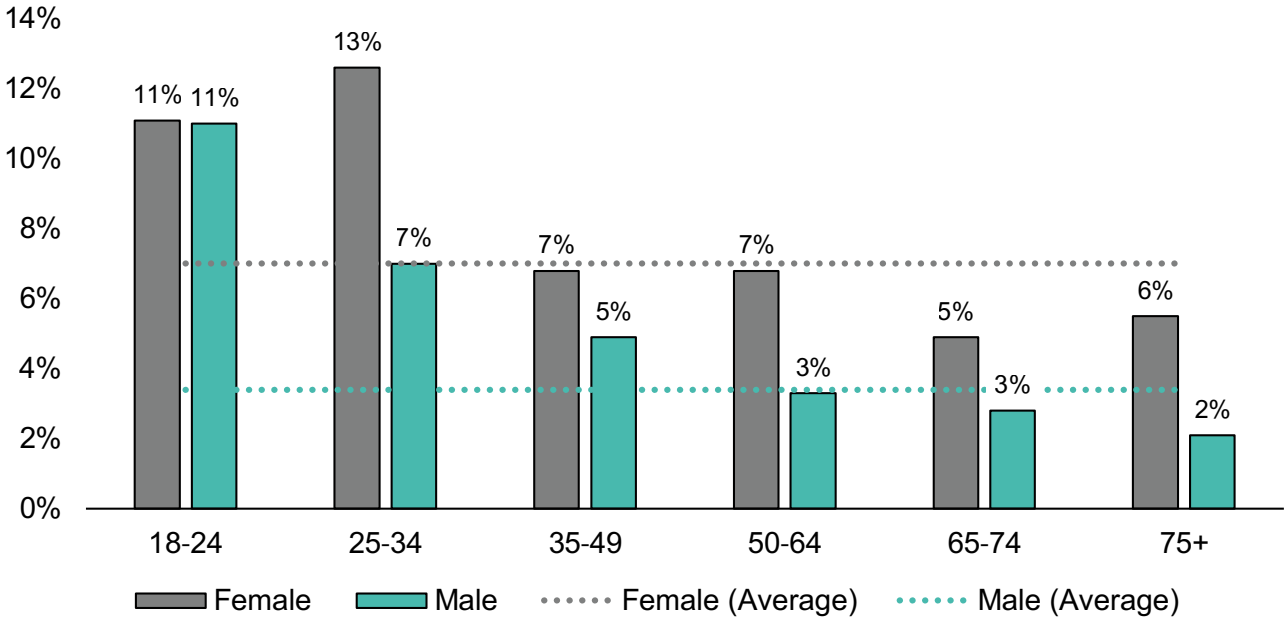
Source: Image from Department for Environment, Food and Rural Affairs, Farm Business Income by farm type in England, 2024/25, Figure 2.1.[48]

Isolation and loneliness

Lone working is common in agriculture and frequently unavoidable. Physical isolation, combined with long days and limited opportunities to interact with peers or services, increases vulnerability to mental health difficulties and reduces the likelihood that emerging problems are noticed early or discussed openly. Isolation in this context should be distinguished from loneliness: isolation reflects limited social contact due to geography or work patterns, while loneliness is a subjective sense of disconnection, such as lacking trusted relationships in which concerns about the farm business, family pressures or personal wellbeing can be shared.[49] Long working hours, sole responsibility for decision-making, blurred boundaries between work and home and a strong culture of stoicism may further intensify loneliness, even where family members are present.[50]

The RABI Big Farming Survey was conducted in 2021 and collected responses from over 15,000 farmers across England and Wales.[51] Findings indicate that loneliness was more common among women and younger farmers (Figure 9).

Figure 9: Proportion of farmers reporting feeling lonely 'often or always' by age group and gender, England and Wales, 2021.



Survey data were collected in 2021 during the COVID-19 pandemic, which may have influenced reported experiences.
Source: Data taken from the Royal Agricultural Benevolent Institution: The Big Farming Survey.[52]

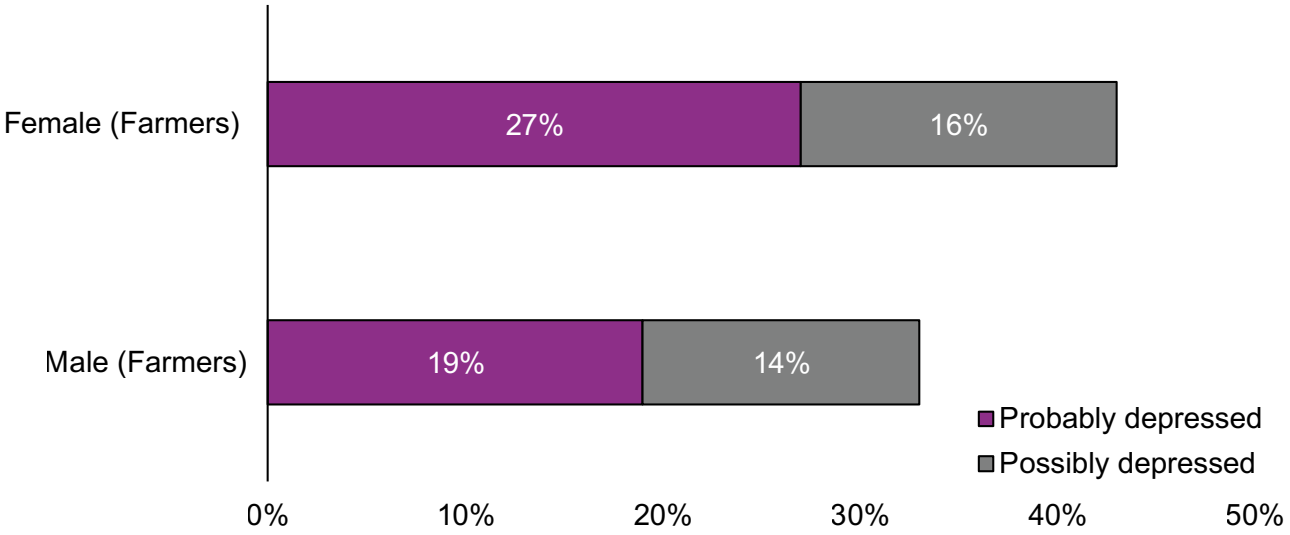
Depression

Studies have indicated that there is a relatively high prevalence of poorer mental health among farmers around the world.[53] In September 2024, a Farm Safety Foundation survey of 750 farmers showed that 91% rank poor mental health as the "biggest hidden problem"[54] and in another survey of 320 people from UK farming communities over half (54.5%) scored within a range for mental wellbeing consistent with possible mild or probable clinical depression.[55]

As part of the RABI Big Farming Survey, the Warwick–Edinburgh Mental Wellbeing Scale (WEMWBS) was used to assess mental wellbeing. While not a diagnostic tool, it provides an indication of wellbeing and allows respondents to be classified as having scores consistent with probable or possible depression.

Overall, 21% of respondents were classified as probably depressed, with a further 14–15% as possibly depressed.[56] Differences were observed by gender (Figure 10), with higher levels of probable depression among females (27% vs 19%) and slightly higher levels of possible depression (16% vs 14%).[57]

Figure 10: Proportion of farmers with WEMWBS scores consistent with possible or probable depression, by gender, England and Wales, 2021.

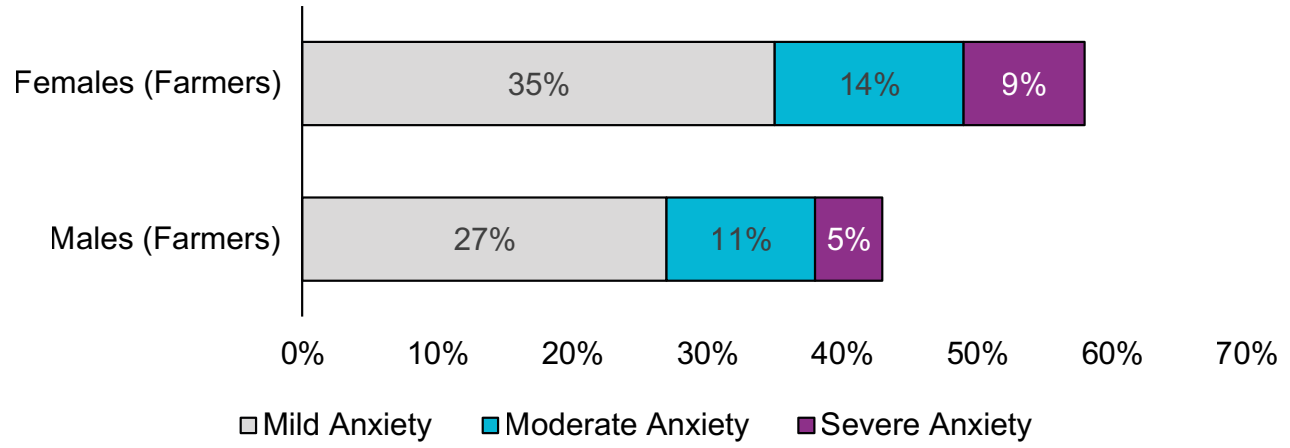


Survey data were collected in 2021 during the COVID-19 pandemic, which may have influenced reported experiences.
Source: Data taken from the Royal Agricultural Benevolent Institution: The Big Farming Survey.[58]

Anxiety

As part of the RABI Big Farming Survey, anxiety symptoms among farmers were assessed using the Generalised Anxiety Disorder-7 (GAD-7) scale. Overall, 47% of farmers reported symptoms of anxiety, most commonly mild (29%), with smaller proportions experiencing moderate (12%) and severe anxiety (6%) symptoms.[59] Clear differences were evident by gender (Figure 11) with higher levels among female farmers across all severity categories.

Figure 11: Proportion of farmers with GAD-7 (General Anxiety Disorder-7 Scale) scores consistent with different levels of anxiety symptom severity, England and Wales, 2021.

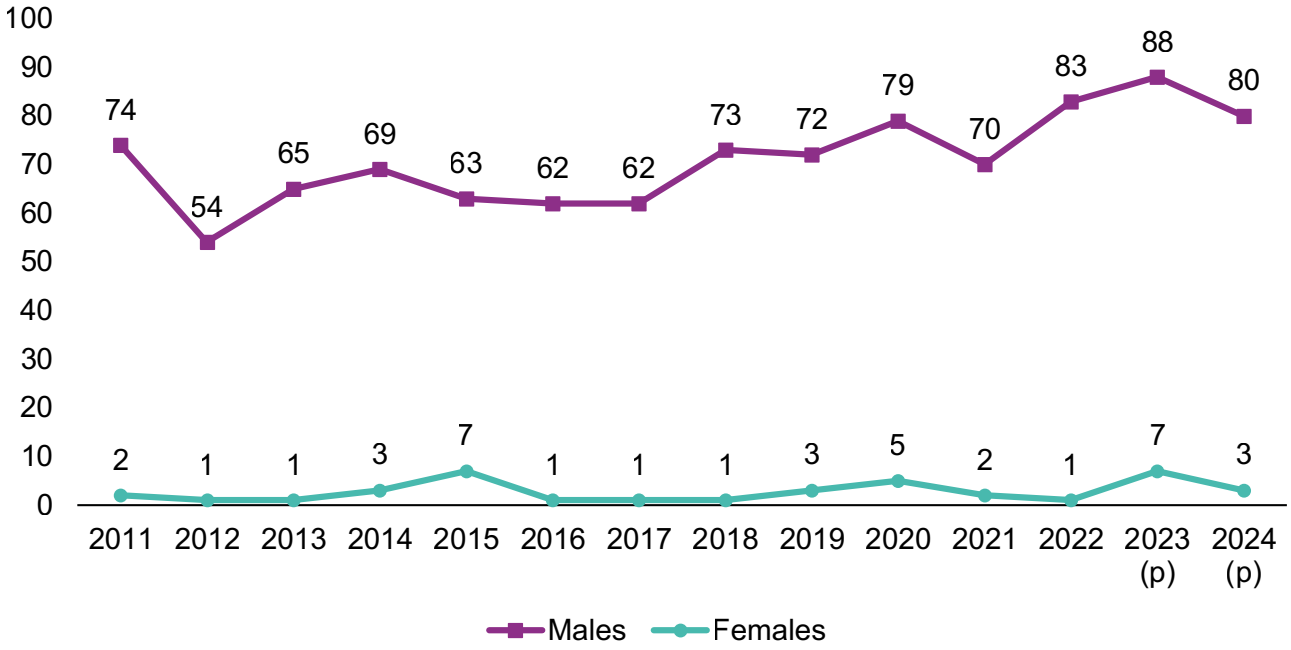


Survey data were collected in 2021 during the COVID-19 pandemic, which may have influenced reported experiences.
Source: Data taken from the Royal Agricultural Benevolent Institution: The Big Farming Survey.[60]

Suicide risk in skilled agricultural and related traders

Research suggests that farmers are at a higher risk of mental illness and death by suicide.[61] Figure 12 shows the number of deaths registered as suicide or injury of undetermined intent for males and females aged 20 to 64 years old in England, whose occupation were skilled agricultural and related trades. Over time, there was a higher number of deaths reported in males when compared to females, although this may reflect higher numbers of males working in these industries.

Figure 12: Number of deaths by suicide for Skilled Agricultural and Related Trades, males and females aged between 20 to 64 years, deaths registered in England, 2011 to 2024.



(p) Provisional data. Figures are for deaths registered, rather than deaths occurring in each calendar year. Due to the length of time it takes to hold an inquest, the deaths presented here may have occurred months, or even years, before they were registered.

Source: Office for National Statistics, Suicide by occupation in England.[62,63,64]

The Farm Safety Foundation (Yellow Wellies) leads efforts to reduce suicide risk in UK agriculture. Its annual campaign encourages farmers, rural organisations, colleges and Young Farmers' Clubs to start conversations, build practical skills and connect communities to support. A partnership with the suicide prevention charity Baton of Hope UK led to the 2026 launch of the Farming Pledge, promoting safer, more supportive farming workplaces and communities.[65]

Gendered experience of mental health in farming

Mental health risks in farming can be shaped by gendered roles and expectations. Women consistently report poorer mental wellbeing than men, including higher levels of depression, anxiety and loneliness,[66,67] reflecting cumulative pressures such as high workloads, caring responsibilities and the under-recognition of their labour within farm businesses and family structures.[68]

In contrast, men typically report lower levels of anxiety and depression. Cultural norms emphasising stoicism and self-reliance within farming communities may contribute to delayed help-seeking among men,[69] increasing the likelihood of crisis presentation rather than early intervention.

"*We don't talk enough. People are too embarrassed and too ashamed of what's going on in the real world and they don't open up…. A farmer is very proud and very good at hiding stuff.*" Male farmer, aged 40-49.[70]

Family wellbeing and hidden household harms

Mental wellbeing in farming is closely tied to family and household dynamics, as work, home and identity are often inseparable. Pressures frequently extend to partners and children, shaping relationships and family stability.[71] Financial strain, uncertainty and cumulative stress can increase household tension, often remaining hidden from formal services. These pressures may intersect with under-recognised harms, including controlling and economic abuse, while isolation and dependence on the farm for housing and income can delay help-seeking.

Case study: Young farmers

Young farmers may face distinctive pressures arising from the intersection of family, work and community life. Entry into farming is often shaped by intergenerational expectations and early responsibility for businesses that may already be financially or structurally fragile. While this legacy can provide purpose and identity, it may also limit perceived choice and contribute to stress during early adulthood.

Work and family life are closely intertwined within rural households, and long, irregular hours can limit opportunities to build wider peer networks, increasing isolation. Barriers to timely and confidential support may compound this, as concerns about privacy in small communities can deter help-seeking, particularly for sensitive issues such as mental, sexual and reproductive health. Where professionals are known personally, young people may delay or avoid seeking care.

Together, these factors illustrate how intergenerational responsibility, isolation and constrained access to confidential support shape wellbeing. Peer-led organisations such as Young Farmers' Clubs (YFCs) play an important protective role, with 93% of members reporting improved wellbeing through participation.[72]

Case study: Derbyshire rural chaplaincy

Derbyshire Rural Chaplaincy provides pastoral and emotional support to farmers, farm workers and their families across the county, maintaining a visible presence in rural settings through livestock markets, farm visits and community events.

Support is available regardless of faith and ranges from brief conversations to ongoing contact during periods of stress. By engaging in familiar, non-clinical environments, the chaplaincy helps reduce barriers related to isolation, stigma and confidentiality.

The chaplaincy also works with voluntary and statutory partners, acting as a trusted point of contact and supporting access to wider services. This model highlights the value of locally embedded, non-clinical approaches in promoting connection, resilience and early support.

"*Whilst striving to maintain my motivation after my cattle were diagnosed with TB…the Derbyshire Rural Chaplaincy was able to visit and was always prepared to listen*." Farmer, South Derbyshire.[73]



Source: Derbyshire Rural Chaplaincy.

Accessing health services

Healthcare access for farming communities is shaped by geography, service availability, work patterns and sociocultural norms. Long, inflexible hours, seasonal demands and limited opportunities for substitution make attending appointments difficult, often with financial or operational consequences.[74,75] These constraints limit access to fixed appointments, underscoring the need for flexible approaches such as remote consultations and mobile health services.

Online consultations require adequate broadband, typically ≥10 Mbit/s download speed. While most households meet this, coverage gaps remain in rural areas, with around 4% of premises in smaller rural settlements not meeting this speed.[76] Online appointments may therefore need to be used cautiously in more remote areas, with alternatives such as drop-in models. A 2025 County Durham pilot of a drop-in GP service saw over a quarter of contacted local farmers attend, with 60% having previously unidentified health issues detected.[77]

"*People were so welcoming, and the nurse was brilliant: put me at ease straight away. Drop-in works for me due to time restrictions.*" Farmer from Teesdale farming family.[78]

Within farming communities, sociocultural norms of toughness and self-reliance, combined with concerns about being perceived as struggling, discourage early help-seeking, particularly for mental health concerns.[79] These patterns interact with structural and practical barriers, increasing the likelihood of late presentation. Improving health literacy through focused education and outreach in rural communities may help address some of these attitudes, reduce stigma and encourage more timely engagement with care. These challenges highlight the importance of locally tailored and flexible models of care that meet farming communities where they are.

Case Study: Bakewell market health hub

The Bakewell Market Health Hub brings health services directly to farmers on livestock sale days. A 2025 'Health MOT' delivered by Derbyshire Community Health Services NHS Foundation Trust offered screening (including blood pressure, cholesterol, height and weight), health advice and access to services such as mental health, cancer awareness, physiotherapy and abdominal aortic aneurysm screening. It successfully engaged farming men, a group known to under-use primary care, and demonstrated the value of delivering preventive care in familiar agricultural settings.

"*We are targeting men mainly, as the majority of the farming community who attend the market are men and they are well known to be stoic and less likely to attend health services for a variety of reasons*."

Conclusion

Farming communities in England experience a distinctive pattern of health risks shaped by the interaction of demanding work, environmental exposure and ongoing economic uncertainty. Evidence shows elevated risks of musculoskeletal and respiratory conditions, alongside a significant psychological burden linked to weather extremes, financial strain and future insecurity. These impacts are not evenly distributed: older farmers face cumulative occupational harms and challenges around ageing and succession, women experience poorer mental wellbeing and children and young people are exposed to unsafe environments and social isolation. Remoteness and limited access to services further compound these risks, contributing to persistent physical and mental health inequalities within farming populations.

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9. Military communities

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Sheep graze in a field as an Army Air Corps Apache AH-64E waits to be prepared for flight during Exercise Pinion Titan. RAF Chinook working alongside British Army Wildcats and Apaches across Dishforth, Catterick and Otterburn.

Source: Credit AS1 Jason Russell RAF UK MOD © Crown copyright 2026. Available under the Open Government Licence v3.0.

Context and the rural-military geography

The health and wellbeing of the UK Armed Forces community is inextricably linked with rural geographies across England because large Defence footprints are commonly stationed away from major metropolitan centres. This is a population which relies upon effective and accessible healthcare services to maintain its fitness to deploy to austere and challenging environments, often at short notice. While regular military personnel receive comprehensive occupational and primary healthcare through Defence Primary Healthcare (DPHC) services, the responsible commissioner for secondary and specialist care remains the NHS, with additional health and prevention responsibilities lying with local authority and public health providers.

A defining characteristic of military populations is their high mobility and frequent relocation across provider, Integrated Care Board (ICB), devolved administration and local authority

boundaries. These populations also spend a proportion of their time remote from the UK on deployment or assignment which compounds the challenge of access to timely and coordinated healthcare services to meet their needs.

Military basing and housing infrastructure often place personnel and any accompanying families within small towns and rural communities whose services may not be designed for a sizeable, young and mobile population. Based on Defence GP-registered patient populations, approximately one third of the England-based military population reside in rural or semi-rural areas.[1] Here, long journeys, poor public transport, few alternative providers and intermittent or peripatetic specialist provision may increase disruption to healthcare pathways, particularly when treatment has been initiated elsewhere. The requirement for Service personnel and their families to reside in locations determined by Defence also has implications beyond healthcare access alone, affecting the wider determinants of health. Families depend heavily on local arrangements for maternity, children's and community services, safeguarding provision, support for special educational needs and disabilities (SEND) and services that underpin caring responsibilities.

Military personnel are in demanding employment and incur injury or illness patterns which differ from their peers in civilian life. Services for the military community should therefore seek to be person-centred and enabled flexibly from residence or unit locations, taking into consideration the disproportionate effects of duty demands, remote residence, transport limitations and caring responsibilities undertaken far from their family and support networks. Rurality in this context shapes access and delivery of equitable services to Armed Forces personnel with the potential for effects on readiness and fitness for their complex and demanding roles.

Remote healthcare settings offer a particular opportunity to strengthen relationships between NHS and military clinical teams. As military medics and clinicians prepare for their operational roles, placement and employment within rural NHS services exposes them to broader scopes of practice, professional independence and, in some settings, the realities of delivering care remote from specialist support. In turn, military clinicians bring experience in adaptability and decision-making in austere or resource-constrained environments, enriching teams and strengthening cross-sector understanding. Placement of military medical personnel in rural healthcare settings can complement their experience in large acute trusts or primary care, while reinforcing practical partnerships between Defence and the NHS.

The Armed Forces Covenant and healthcare equity

The Armed Forces Covenant is the national commitment that serving personnel, Reservists, veterans and families should not be disadvantaged because of Service life, while special provision may be justified for those who have sacrificed the most.[2] The statutory Covenant Duty requires specified public bodies to give these principles due regard in relevant functions, including health and social care. Commissioners and service planners should translate this into population identification and awareness, service specifications, eligibility and access, feedback routes and outcome review. For instance, service-related moves should not reset assessment,

treatment or waiting time, and referral systems should seek to maintain access to Defence personnel as far as possible.

Access to healthcare and the interoperability challenge

The NHS funds secondary care for regular Armed Forces personnel in England centrally through the NHS Armed Forces Commissioning Team.[3] This helps with parity across ICBs and provides national and regional advocacy for Armed Forces personnel in parts of the system. Defence itself provides a majority of primary care, mental health, occupational health and rehabilitation services independent of NHS contracts or funding streams. With commissioning responsibilities and budgets increasingly delegated, the convergence of these arrangements may risk exclusion of Defence populations from local planning, service transformation initiatives and resource allocation decisions at neighbourhood or community level.

Eligibility, funding responsibility and access arrangements can also vary according to practice registration status, service type, reserve mobilisation status and geographic location.[4] Consequently, services available to neighbouring civilian populations may not always be accessible unless military requirements are considered during commissioning and service redesign. This complexity is particularly evident for Service families registered with Defence practices, whose experience in primary care varies from those registered in equivalent NHS general practice, for instance in additional role reimbursement schemes or social prescribing access. Families may also experience fragmented pathways for paediatric care, chronic disease management and specialist services when crossing NHS administrative boundaries, with interruptions to treatment plans and specialist referrals common. Approximately 10% of the Defence-registered population live in Scotland, Northern Ireland and Wales where differing funding arrangements, referral rules, screening programmes and prior approvals policies create complexity when they enter English pathways.

An additional structural challenge is the limited digital interoperability between Defence and NHS primary, community and secondary care providers. Although both use standard NHS e-referral, pathology connections and diagnostic pathways, clinical information sharing remains inconsistent and technical or security considerations may exacerbate the ability to communicate between services. This is not unique to Defence but delays in correspondence, fragmented record transfer, discharge planning, results handling and limitations on patient recall have the potential for gaps in care. Some national screening and immunisation programmes also require specific planning for a population whose GP registration sits outside the NHS.

These challenges can be amplified in rural and geographically dispersed health systems, where workforce scarcity, distance to specialist care or diagnostics and limited service availability already constrain access. Maintaining equitable access may require outreach clinics, protected capacity, transport support or digitally-enabled care, supported by reliable connectivity. Reliance solely on volume-based commissioning risks undermining low-volume services that remain critical to both Defence's operational readiness and healthcare equity.

The delivery of healthcare for the Armed Forces community requires proactive collaboration between Defence and the Department of Health and Social Care's primary care, digital and commissioning teams, ICBs and local authority providers. NHS bodies and local authorities should also routinely identify and assess the needs of both the military-registered and military-resident population in each relevant assessment: from the Joint Strategic Needs Assessment undertaken by local partnerships to those that inform the commissioning, redesign or continuation of individual services. This ensures that the military population is visible and that their needs are reflected in priorities, specifications and resource decisions. Public health, statutory and political levers may also be helpful in the delivery of the Armed Forces Covenant.[5] Existing partnership practice shows that this can be done well and may be supported by Local Government Association guidance on assessing the needs of the Armed Forces community.

Primary care, occupational readiness and reservist complexities

While regular service personnel benefit from integrated Defence primary healthcare, the reserve forces operate within a more fragmented model. Non-mobilised reservists receive their routine healthcare through NHS services while simultaneously maintaining an occupational relationship with Defence. On mobilisation, clinical responsibility for much of their care transitions to Defence Medical Command (DMedC), creating a cycle of changing clinical governance, record transfer and occupational oversight. This dual-system arrangement presents a unique challenge for continuity of care and workforce readiness. Occupationally acquired health risks, service-related injuries, fitness assessments and rehabilitation requirements may not be consistently visible across NHS and Defence systems. The challenge is further amplified by the geographically dispersed nature of the Reserve population. Reservists often live substantial distances from Defence facilities and may rely on NHS services in underserved areas. During periods of heightened operational activity or mobilisation, demand for occupational health assessments, fitness evaluations and deployment-related healthcare support can increase rapidly, placing additional pressure on both Defence and NHS systems.

A resilient national model is therefore required to support Reservists throughout the transition between civilian and military healthcare responsibilities. Such a model would ideally ensure seamless transfer of clinical records, consistent occupational health oversight, access to preparation such as immunisation and shared accountability for managing service-related health risks. Planning assumptions should also account for geographic dispersion, rurality, travel burden, variable NHS capacity and surges in mobilisation demand. Improving interoperability between Defence and NHS providers would enhance continuity of care and strengthen the ability of Reservists to meet military employment standards while maintaining equitable access to healthcare. In doing so, it would support both operational readiness and the commitments of the Armed Forces Covenant, at scale when needed.

Rurality is an important consideration for whole force operational readiness. The same factors that constrain access to care in rural communities in peacetime are likely to be amplified during any transition to conflict. This would be particularly evident in the preparation of personnel for deployment, and in the capacity to receive, triage and manage casualties at scale.[6] Healthcare

provision across rural settings should therefore be viewed not only as a health service issue, but as an enabling capability for Defence readiness and operational resilience.

Integration successes: System leadership and local collaboration

To address these challenges at a national level, policy may reinforce commissioning norms between ICBs and central bodies; strengthen cross-boundary arrangements; and ensure Armed Forces populations are routinely considered within transformation programmes and needs assessments. Improved digital interoperability, clear accountability for clinical handover, and robust Defence representation within healthcare planning are essential to maintaining continuity of care, readiness and concordance with the Armed Forces Covenant.

In many areas, local partnerships have demonstrably closed these seams. Armed Forces leads in ICBs successfully influence planning as well as resolving complex cases. Defence regional teams and medical centres have effective routes into local systems to ensure that demand, pathways and digital access are considered alongside civilian services. Rural examples include access to NHS talking therapies; families signposting services in Wiltshire and an important Defence – NHS collaboration in North Yorkshire as the new Catterick Integrated Care Centre prepares to open doors to the whole Richmondshire community.

The Wiltshire experience

Wiltshire is home to one of the largest Armed Forces communities in the country, including serving personnel, reservists, veterans and families, many of whom live in rural settings. For these communities the pressures of very frequent deployment and military family life can compound familiar challenges: loneliness, disrupted access to care and uncertainty about where to seek help.

Two linked Wiltshire initiatives show how partnership working can respond to these issues. DPHC worked with Wiltshire Talking Therapies to develop a managed pathway for serving personnel experiencing common mental health conditions. NHS providers offered assessment and evidence-based treatment where needs could be safely managed, while Defence retained responsibility for occupational health and decisions on fitness for military duties. An early evaluation found the pathway to be safe, clinically effective and sustainable. It improved early access to psychological therapies, including higher-intensity interventions, and gave people greater choice through locally delivered face-to-face care. By enabling those with less complex needs to access NHS support directly, Defence specialist mental health services were able to focus on more severe, complex or occupationally significant conditions. This preventive approach also has potential downstream benefits, supporting personnel earlier in service and translating to better integration of support for veteran populations.

In parallel, a collaboration across Wiltshire has listened to military families about the wider factors affecting health and wellbeing. Families described being placed back on waiting lists after moves, losing continuity in healthcare, children changing schools at important stages and feeling isolated. Their insight shaped 2 Military Families Summits, bringing together Public Health, Wiltshire Council, the Armed Forces, military health services and serving personnel around a shared set of priorities. That work is now informing a new gateway to allow serving personnel and families to access information on healthcare, education, employment, housing and council services, alongside a secure online community designed to improve peer support.

Together, these initiatives demonstrate the value of local collaboration in rural areas. They combine clinical oversight with community insight, improve access to timely support and recognise the needs of Armed Forces communities.

Conclusion

Service life makes rural residence, mobility and fragmented care a material health equity issue for Armed Forces personnel and families, with consequences for continuity of care and strategic implications for operational readiness. England should ensure that Defence populations are visible in local needs assessments and service redesign, while strengthening localised and cross-boundary commissioning, digital interoperability and clinical handover. Effective partnerships already show that these disadvantages can be overcome; the priority is to make that practice systematic rather than dependent on local relationships.

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10. Medical workforce

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Introduction

The distribution of the medical and wider healthcare workforce is a key determinant of access to services, quality of care and health outcomes. Previous Chief Medical Officer (CMO) reports have highlighted geographical variation in workforce availability and its potential implications for patient care. Analysis undertaken for the 2021 CMO report on health in coastal communities[1] identified that some areas with higher health needs had fewer clinicians relative to the populations they served. It also highlighted that the location of postgraduate medical training posts was not always aligned with either current or projected patient need.

Small towns and rural areas share several characteristics with other underserved geographies. These areas often serve dispersed populations and may have higher proportions of older residents and people with long-term conditions. An appropriate distribution of the healthcare workforce is therefore important for maintaining equitable access to services across England.

Drivers of workforce challenges in small towns and rural areas

Several factors influence the distribution and sustainability of the healthcare workforce in small towns and rural areas. These include workforce supply, access to professional development and the characteristics of service delivery.

While challenges are numerous, for some medical professionals these settings may also offer distinct advantages. There may be opportunities for a broader scope of work, development of generalist capability and closer team working, which can strengthen supervision, mentorship and continuity of care.

Workforce supply and recruitment challenges

Recruitment and retention difficulties are widely reported in rural primary care settings in England, with shortages affecting service delivery, workforce stability and patient experience.[2]

Workforce distribution is also influenced by training pathways. Clinicians are more likely to practice in locations close to where they train,[3,4] meaning that limited exposure to rural practice during medical education can contribute to workforce shortages in these areas. Rural placements may also present practical challenges for learners, including travel requirements and the relative scarcity of nearby educational infrastructure. Lack of accessible social, leisure, cultural or religious networks may also act as a disincentive.

Evidence from GP workforce analyses in England also shows that workforce pressures are unevenly distributed, with geographies with greater health need often having fewer clinicians relative to population demand.[5]

Professional development and career opportunities

Opportunities for professional development and specialist training are not evenly distributed geographically. Academic institutions, specialist training and research facilities are largely concentrated in urban areas, limiting access for clinicians working in smaller or more remote services.

Professional isolation may also affect retention, with smaller teams and fewer opportunities for peer interaction reducing access to mentoring, collaboration and continuing professional development.[6]

Characteristics of rural service delivery

Delivering rural healthcare involves serving dispersed populations across larger geographical areas, often requiring increased travel between sites or during community visits. This may affect workforce efficiency and service capacity.

Workload patterns may also differ. Rural practices may experience higher consultation activity per patient, reflecting limited alternative routes for care, although continuity of care may offer benefits for patients.[7]

Greater reliance on locum doctors is also observed in settings where recruitment is more challenging.[8] While maintaining services in the short term, it may affect continuity of care and the stability of training environments.

Overall, these findings suggest that workforce challenges in small towns and rural areas arise from the interaction of training pathways, professional opportunities and the realities of delivering healthcare across dispersed populations.

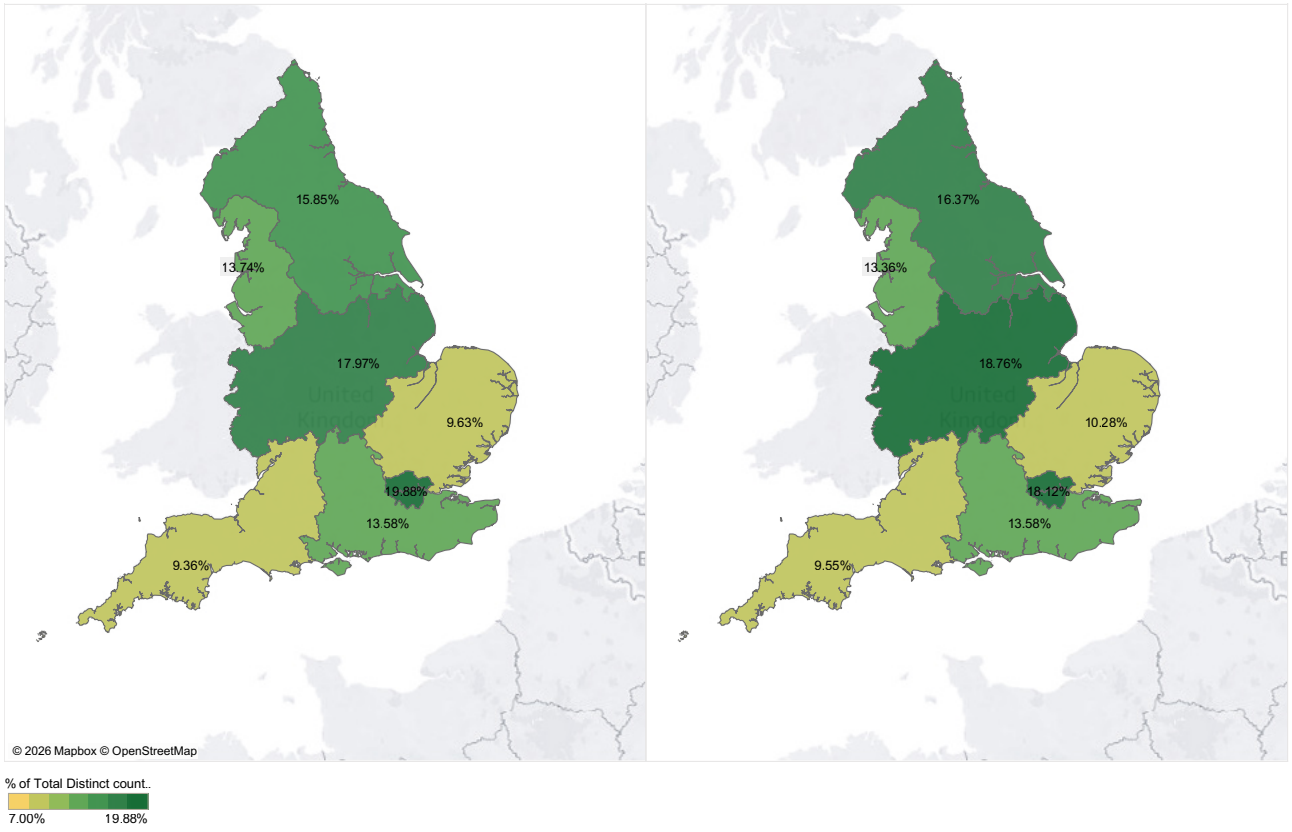
Progress since previous CMO reports

An earlier CMO report[9] highlighted a mismatch between the geographical distribution of postgraduate medical training posts and population need. As clinicians frequently practice close to where they complete postgraduate training, this distribution represents a key lever for influencing long-term workforce disposition.

In response, national workforce initiatives have sought to distribute investment in training capacity so that more posts are in areas with historically lower workforce supply. The intention of this distributive expansion approach is to strengthen workforce pipelines in underserved areas while maintaining training quality.

While significant challenges in workforce distribution remain, early evidence suggests this initiative has begun to shift workforce capacity between regions. Comparing the regional percentage of national total resident doctor placements in foundation, core, run-through and higher specialty training between March 2021 and March 2026 shows an increase across most regions except London and the South-East (Figure 1). In particular, regions with historically poorer workforce capacity together with ageing populations, such as the South-West and East of England, have seen increases in their resident doctor share. Although the regional percentage has decreased in London from 19.88% to 18.10%, it is important to note that in real terms the number of resident doctor placements still increased from approximately ~9,800 to ~11,250 in 2026, confirming that the overall number of resident doctor places increased across all regions. Similarly, although the South-East appears to have a slight decrease in the overall national share of posts (13.59% to 13.57%), in real terms the number of resident doctor places increased from approximately ~6,700 to ~8,400 during the same period.

Figure 1: Regional percentage of total national resident doctor placements comparing 2021 (L) to 2026 (R).



Source: NHS England 2026.

These data are based on resident doctors actually placed in posts and exclude placements for vacant posts, those on parental leave, out of programme or on long-term sick leave. There is a

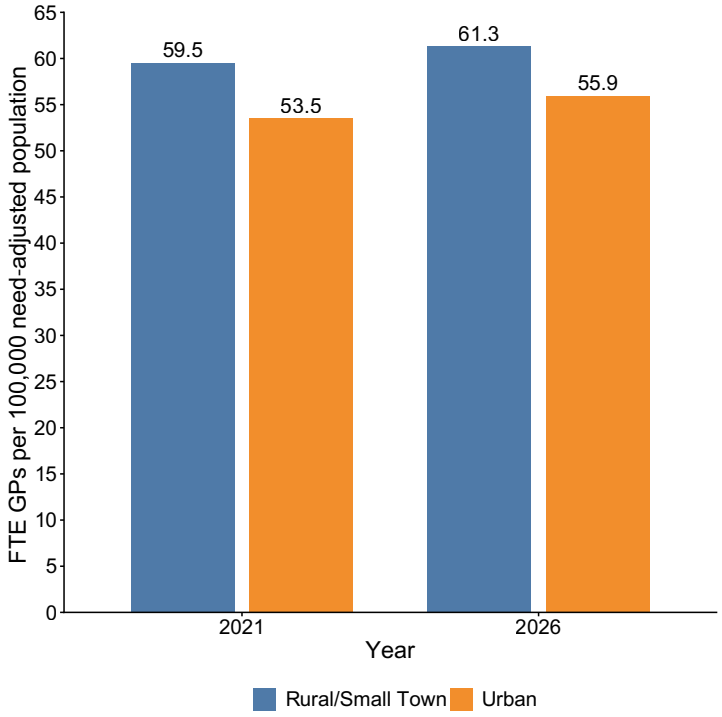
demonstrable consistent trend across all stages of postgraduate medical training that placements are increasing and are distributed more equitably across regions of England, although further work is still needed.

Current workforce considerations in small towns and rural areas

For the purposes of workforce data analyses, in this chapter a small town is defined as a settlement with a population of fewer than 30,000 residents and without an acute NHS trust. Rural and urban classifications are aligned to the Office for National Statistics (ONS) Rural–Urban Classification (2021), with analysis undertaken at the smallest feasible statistical geography, typically Lower layer Super Output Area (LSOA) level.[10] LSOAs are small, consistent geographic units used to report population-level statistics and measure deprivation in England and Wales, as defined by the ONS. London is excluded, as no settlements meet the criteria defined above.

Current workforce analyses show a mixed picture across primary and specialist care. The number of GPs per 100,000 need-adjusted population is higher in small towns and rural areas than in urban areas (61.3 per 100,000 for small towns and rural areas compared with 55.9 per 100,000 for urban areas) and has increased in both settings since 2021. This is demonstrated in Figures 2 and 3. The needs-adjustment takes account of population size, health needs (determined by the population age and sex demographics) and any unmet needs or health inequalities.[11] It should be noted that the GP workforce includes partners, salaried and locum GPs as well as GP resident doctors in training.

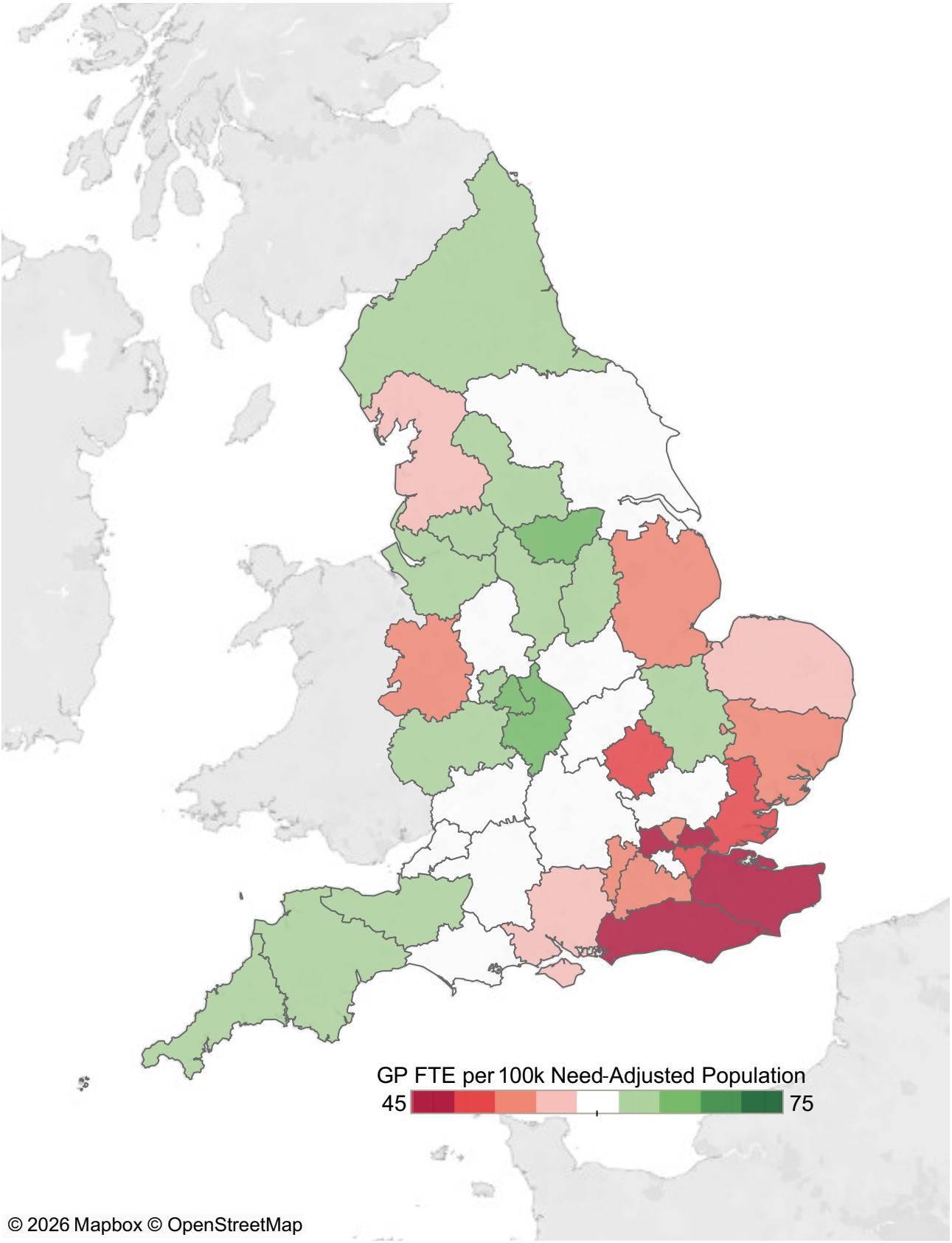
Figure 2: Comparing the General Practitioner workforce per 100,000 need-adjusted population between 2021 and 2026.



FTE = Full-Time Equivalent

Source: NHS England 2026.

Figure 3: The General Practitioner workforce per 100,000 need-adjusted population across England, 2026.

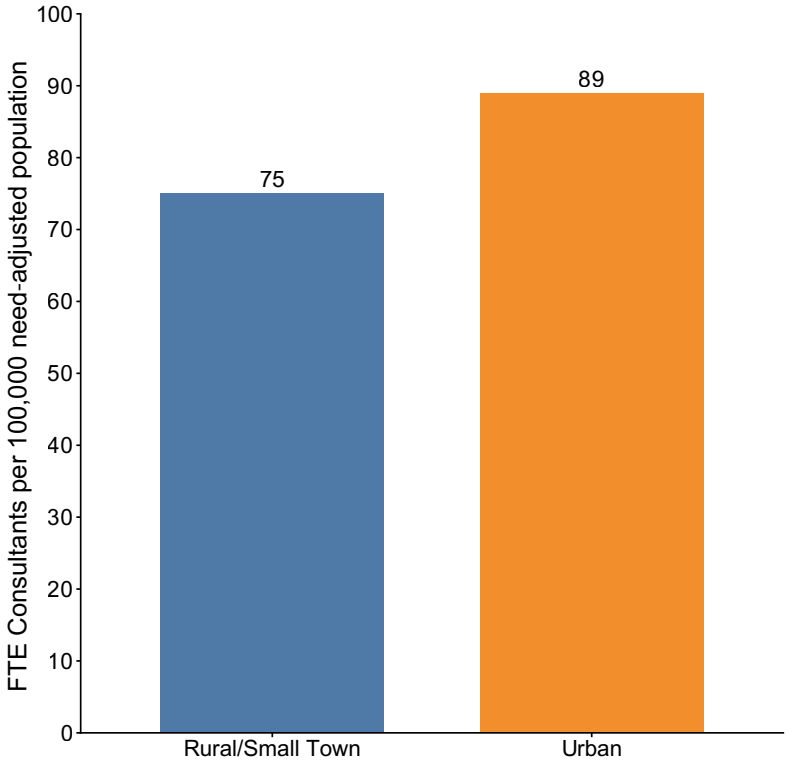


FTE = Full-Time Equivalent

Source: NHS England 2026.

This pattern is seen across all non-London regions in the dataset, suggesting that GP workforce in small towns is, in aggregate, relatively stronger than other parts of the country. However, dispersed populations, greater travel requirements and higher consultation activity per patient may mean that workforce capacity across small towns and rural areas is more constrained than workforce numbers alone suggest. By contrast, the acute trust consultant workforce, inclusive of the locum consultant workforce, is lower in small towns and rural areas than in urban areas (75 per 100,000 need-adjusted population compared with 89 per 100,000), reflecting the continued concentration of specialist services within larger acute providers, which are typically located outside small towns. It should be noted that resident doctors in training are excluded from the consultant workforce analysis. This is illustrated in Figure 4.

Figure 4: Consultant workforce per 100,000 need-adjusted population across England, March 2025.



This analysis is based on the populations served by acute trusts (based on Office for Health Improvement and Disparities catchment areas), rather than the specific settings in which consultants work. The data does not include mental health or community trusts. FTE = Full-Time Equivalent

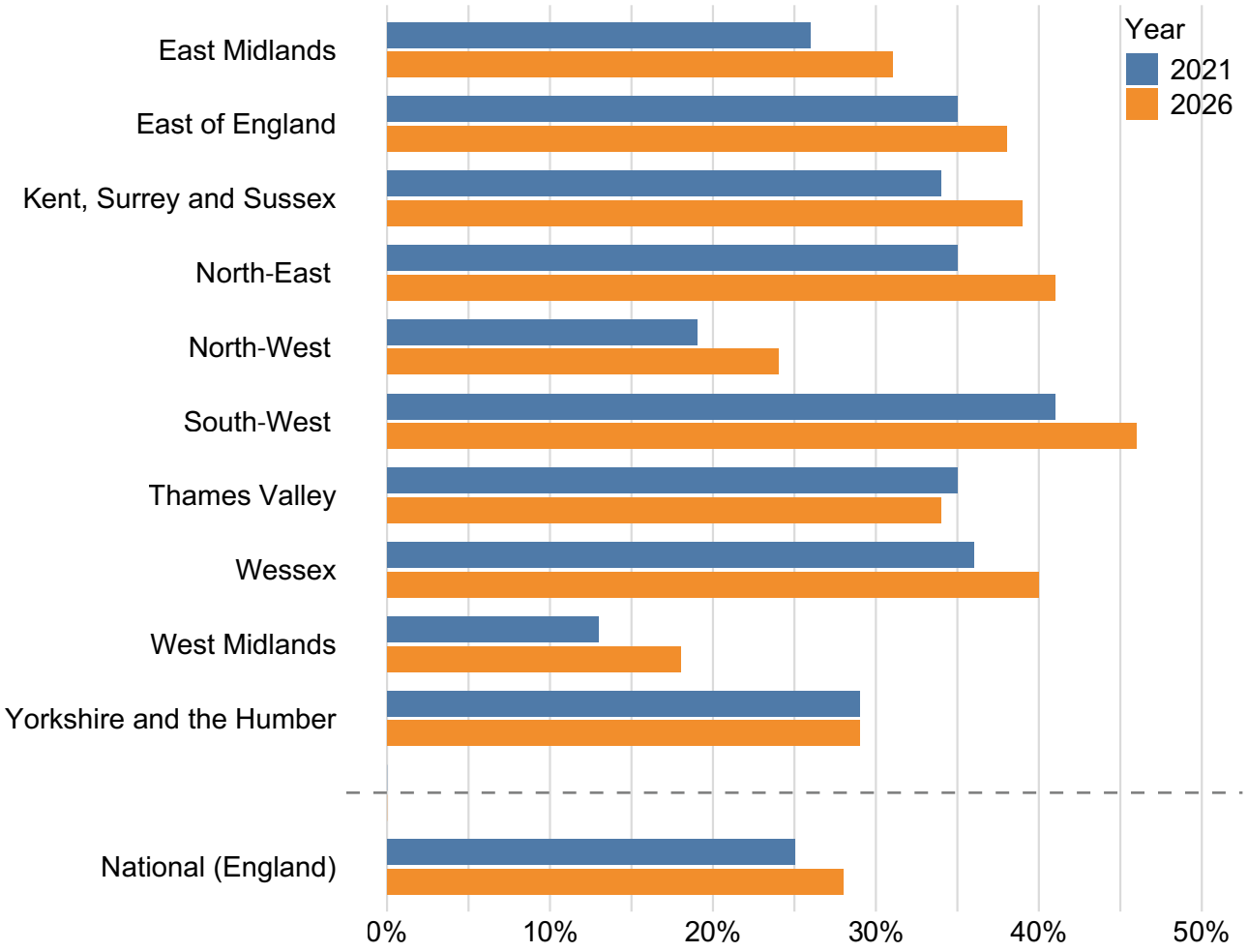
Source: NHS England 2026.

While inequalities in workforce distribution remain, trends in training exposure suggest some early progress in addressing workforce distribution challenges. Between 2021 and 2026, the proportion of GP resident doctors in training undertaking a placement in a small town or rural setting (and therefore exposed to that training environment) at the census point increased nationally from 25% to 28%, representing a relative increase of around 13%.

Figure 5 shows substantial regional variation, with the lowest exposure in 2026 (excluding London) in the West Midlands (18%), and the highest in the North East (41%). Percentage exposure increased in most regions between 2021 and 2026, with the most significant relative

increase being in the West Midlands (+34%). Across all regions fewer than half of GP trainees currently undertake a training placement in a small town or rural setting.

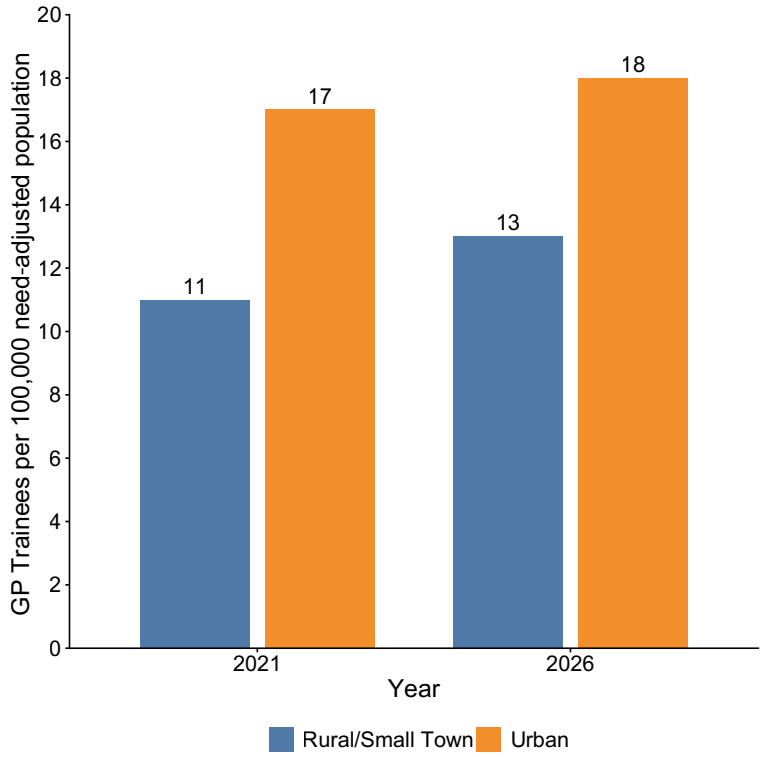
Figure 5: Percentage of GP trainees undertaking a placement in a small town or rural setting by region, 2021 and 2026.



Source: NHS England, 2026.

Figure 6 shows the GP resident doctors in training per 100,000 need-adjusted population, indicating that this increased from 11 to 13 in small towns and rural areas between 2021 and 2026, whereas the increase was less marked in urban areas.

Figure 6: GP resident doctors in training per 100,000 need-adjusted population.



Source: NHS England 2026.

While a meaningful gap between urban and small town and rural areas remains, these findings suggest that current policy approaches are beginning to shift the system, particularly in general practice and training exposure. These changes are not yet sufficient to address longstanding imbalances, particularly in access to specialist consultant provision. Progress in the distribution of training is encouraging, but to meet the ambitions of the 10 Year Health Plan, more medical training will need to be delivered out of neighbourhoods.

This has important implications for service delivery. Limited access to specialist care can place additional pressure on general practice and may contribute to greater reliance on temporary staffing where recruitment is difficult. In some settings this may affect the stability of training environments, impacting consistent clinical supervision and team continuity.

The availability of high-quality training environments is therefore critical. Training capacity not only reflects current service provision but directly shapes the future workforce pipeline, influencing both where clinicians choose to work and the distribution of skills across the system.

Interventions to address workforce challenges

Distribution of postgraduate training posts

Improving the alignment of postgraduate medical training posts with corresponding population health need is one of the most direct policy levers available to influence long-term workforce distribution. By increasing the number of trainees working in areas with historically lower

workforce supply and disproportionately higher population health need, the programme aims to strengthen local workforce pipelines, improve alignment to need and reduce healthcare inequality.[12] To maintain service and educational sufficiency, this is enacted through differential, targeted expansion of new investment. Investment in this phase of training aims to provide a complete pipeline for workforce expertise by complementing training from undergraduate and foundation stages.

New medical schools and local workforce pipelines

Expanding medical school capacity in regions that have historically trained fewer doctors has been used to strengthen local workforce supply. Clinicians are more likely to practise near where they train, making training location a key determinant of workforce distribution.[13]

Early data from newer medical schools in England suggest this approach may be effective. Between 2023 and 2025, 58% of graduates from newer medical schools were within 50 miles of their medical school for Foundation training, compared with 44% from established schools (Table 1). The newer medical schools included in this analysis were Sunderland, Anglia Ruskin, Canterbury Christ Church and Edge Hill Universities, located in the North-East, East of England, Kent and North-West England, respectively. Although Lincoln Medical School was established at the same time as the other newly created medical schools included in this study, it continues to operate as part of a partnership arrangement with the University of Nottingham. As a result, the available data does not allow Lincoln to be reliably identified and analysed as a separate institution.

Table 1: Distance from medical school to Foundation placement by type of medical school, England, 2023–2025.

Distance between medical school and doctor location	New Medical Schools		Established medical schools	
	Headcount	%	Headcount	%
0-10 miles	51	11%	3,776	18%
10-50 miles	222	47%	5,736	28%
50-100 miles	59	13%	4,663	23%
More than 100 miles	136	29%	6,528	32%

This provides an early signal that place-based medical education may support more locally anchored workforce pipelines in areas with historically lower supply. Some of this effect may reflect preferential allocation to local Foundation programmes, so ongoing evaluation is needed to assess longer-term retention.

Enhancing generalist skills to deliver neighbourhood health

Delivering the ambitions of the 10 Year Health Plan will require a workforce able to manage complexity, work across organisational boundaries and respond to the wider determinants of health. The NHS England Enhance programme[14] supports this by embedding generalist skills across the multidisciplinary workforce. More than 10,000 learners from over 25 professions have participated in regionally tailored programmes aligned to local population health priorities. Enhancing generalist skills provides a way of mitigating some of the workforce challenges in rural settings, as clinical staff with enhanced generalist skills are able to coordinate care more efficiently, reduce duplication, and reduce unnecessary referrals. This is particularly advantageous in remote, rural and coastal areas that face challenges filling their GP and consultant posts.

Case study: Gloucestershire – improving care for vulnerable women

An Enhance-led initiative at Gloucestershire Royal Hospital brought together frontline clinicians and a specialist drug misuse nurse to improve care for vulnerable women. A structured set of criteria was developed to support identification of women at risk, alongside a direct referral pathway to the Nelson Trust, a charity providing trauma-informed support for women experiencing multiple disadvantage. The initiative improved identification and referral of vulnerable women and reduced self-discharge, demonstrating how generalist skills, multidisciplinary working and cross-sector partnerships can improve continuity of care, reduce inequalities and prevent vulnerable patients from falling through gaps between services.

Case study: Humber – improving system flow and reducing avoidable harm

In the Humber, Enhance initiatives focused on improving patient flow and reducing avoidable harm across the system.

These included:

- reductions in polypharmacy-related admissions into general surgery
- simplification of referral pathways for patients experiencing homelessness into wider services
- development of discharge-to-assess models to support earlier discharge and reduce deconditioning

These interventions demonstrate how workforce development aligned to local system priorities can support safer, more efficient care, particularly in areas where capacity is constrained. Early evaluation suggests Enhance improves clinicians' confidence in managing complexity, working across systems and addressing wider determinants of health. Although delivery remains

variable, the programme demonstrates how strengthening generalist capability can support neighbourhood health and improve care in areas where workforce capacity is constrained.

Allied Health Professions: Anchors of sustainable rural health, inclusion and economic resilience

Beverley Harden – Deputy Chief Allied Health Professional Officer for England
Linda Hindle – Deputy Chief Allied Health Professional Officer for England

Delivering neighbourhood health will require more than medical workforce expansion alone. Allied Health Professionals (AHPs) are a critical component of multidisciplinary teams, providing prevention, treatment and rehabilitation across the life course, from supporting communication and development in early years through to enabling recovery, independence and healthy ageing.

AHPs are not peripheral to care delivery; they are vital system integrators across the NHS, local government, housing, education and the voluntary sector. Working across hospital, community and prevention settings, they enable joined up, place-based care that strengthens multidisciplinary teams, drives flow through systems, reduces avoidable care needs and delivers more coordinated, high impact care for patients, families and carers.

In rural communities and small towns, this contribution is amplified. Yet where services are small, fragile and interdependent, a single vacancy can destabilise services, limiting access to vital skills and placing additional pressure on GPs, acute services and wider community teams. When recruitment pipelines fail, or vacancies remain invisible within fragmented planning systems, fragile services are more likely to contract or close than adapt, widening inequalities and reducing the effectiveness of local health and care services. These impacts extend beyond health outcomes: AHP services underpin local service productivity, sustain unpaid caring roles and enable people to remain economically and socially active, strengthening community cohesion and long-term resilience.

Providing equitable healthcare in rural areas and small towns requires a strong multidisciplinary workforce. This includes strengthening AHP leadership, training pathways and career opportunities, alongside innovative approaches to service delivery, supervision and workforce development, including digital and hybrid models. Together, these approaches can support resilient teams rooted in place and strengthen the delivery of neighbourhood health.

Training and workforce development in general practice

Strengthening the general practice workforce will be central to delivering the ambitions of the 10 Year Health Plan, including the shift towards neighbourhood-based models of care. This is particularly important in small towns and rural communities, where general practice often forms the core of local provision.

Neighbourhood models will need to be adapted for rural areas, where smaller and more dispersed populations make standard service configurations harder to deliver.[15]

Training environments are a key lever in shaping the workforce serving these communities. Training hubs and primary care education networks coordinate placements, education and workforce development across local systems, supporting multidisciplinary teams and aligning training with population need.

Structured learning placements in rural and coastal areas

Structured learning placements (SLPs) combine clinical practice with protected learning time, self-directed study and facilitated group teaching, offering an approach to delivering high-quality training in small towns and rural areas.

In Norfolk and Waveney, this model has supported GP resident doctors in training across a large rural and coastal geography, including those who might otherwise have left the programme.

National evaluation suggests that SLPs can increase training capacity while maintaining educational quality, with emerging evidence of improved examination performance and reduced time to completion of training.

This model may be particularly valuable for international medical graduates in geographically dispersed settings, where access to peer support and structured learning is more limited.

Case study: Structured learning placements in coastal and rural communities

Structured Learning Placements within the Great Yarmouth GP Specialty Training Programme were introduced to address constraints in training capacity and variability in learning experiences across a coastal and rural setting.

The model combines clinical placements, protected learning time, community-based experience and facilitated group learning, enabling practices to increase training capacity while maintaining quality and patient safety. Local evaluation has demonstrated improvements in training consistency, GP resident doctor confidence and examination outcomes.

GP resident doctors in training highlighted the relevance of the model to community-based care:

"*The flexibility… helped me link theory with what I was seeing in clinic… and ultimately deliver more patient-centred care*."

They also emphasised the role of peer learning in reducing isolation:

"*The face-to-face sessions… brought us together as a community… the comfort of knowing I wasn't alone*."

These findings suggest that structured training models combining clinical exposure, protected learning time and peer support can increase capacity while improving preparedness, particularly in small towns and rural areas where sustaining local workforce pipelines is critical.

Conclusion

Small towns and rural areas serve dispersed populations, often with higher proportions of older residents and people living with long-term conditions. While significant differences in workforce distribution between urban and more rural settings remain, there are early indications that training distribution is becoming more equitable, with increasing proportions of GP resident doctors having exposure to small towns and rural settings since 2021. However, dispersed populations, greater travel requirements and higher consultation activity per patient may mean that workforce capacity across small towns and rural areas is more constrained than workforce numbers alone suggest. Access to specialist care also remains more limited than in urban areas.

Preliminary signals from newer medical schools suggest that training locally may support retention. Accelerating place-based training, strengthening generalist capability and embedding workforce development within neighbourhood models will be critical to meeting population need and delivering the ambitions of the 10 Year Health Plan.

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11. General practice

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Introduction

General practice in rural areas operates within a distinct context shaped by geography, population structure and service availability. This creates a supportive environment for managing diverse communities, with huge scope for the provision of continuity of care, which is of value to both the community and the healthcare providers serving it. The difficulties created by the challenges accessing healthcare in rural settings also drives innovation, as communities support projects designed to meet their unique needs. However, rural general practice faces challenges when it comes to funding, wraparound services, ambulance delays, the need for an extended scope of practice, access to secondary care, recruitment and retention and a disproportionately ageing population. Meeting these challenges will require the empowerment of local healthcare commissioners and services to flexibly adapt to the real needs of rural communities so that everyone, no matter where they live, can live healthy, fulfilling lives.[1]

Understanding local populations

General practice in small towns and rural areas often functions as both the first point of clinical contact and a continuous observer of population health. Population health management in this context operates at a very granular scale offering opportunities for highly individualised care. Practices serve relatively small and often stable populations and combine clinical care with prevention, surveillance and informal public health activity.[2] Rural populations tend to be older than those in urban areas, with around 27% of residents aged 65 years or over compared with approximately 18% in predominantly urban settings (outside of London).[3] Rural populations are also often more geographically dispersed, shaping both service delivery and patterns of healthcare access. The proximity between clinicians and communities means that changes in local health patterns are often recognised early, and responses can be tailored to the needs of particular populations.[4]

The closure of GP practices can have a significant impact on rural communities. In 2017 over 200 surgeries (both rural and urban) closed or merged with a nearby surgery. The BMA warned that the figures were just "the tip of the iceberg" and that many more practices were at risk of closure because of rising demand, workforce shortages and financial pressure. Practice closures

may have a disproportionate impact on rural communities, since patients may need to travel significant distances to access an alternative GP practice.

Micro-geography

Micro-geography is significant in rural general practice. Practices located only a short distance apart may serve populations with markedly different demographic, occupational and socioeconomic characteristics. County or regional datasets can mask these variations highlighting the value of local clinical insight. Within relatively small geographical areas there may be substantial differences in age, deprivation, transport access and occupational risk. Agricultural communities, coastal settlements, traveller sites and commuter villages have distinct health profiles, including differing patterns of injury, mental health needs and chronic disease. Studies of access to health services have demonstrated that travel distance and rural geography can shape patterns of healthcare use, even within relatively small regions.[5] Local clinicians often develop an understanding of these patterns before they become visible in formally collected data. This proximity allows practices to tailor prevention, screening and clinical services to the needs of their own population rather than applying a uniform model of care. Understanding health needs at this scale allows interventions to be directed towards specific communities supporting more precise and effective population health management strategies.

The ability of general practice to mobilise quickly at a local level is a notable strength and is best demonstrated during periods of increased demand. During the COVID-19 vaccination programme many rural practices delivered vaccination through local models that reflected the geography and demographics of their communities. In some areas, practices organised vaccination sessions in village halls, community centres or temporary drive-through vaccination clinics to reach patients who might otherwise face significant travel barriers. For example, one semi-rural practice reported administering more than 2,800 vaccinations in a single day through a drive-through clinic organised in a local business park, demonstrating how community-based infrastructure and local planning could support rapid population-level delivery of vaccination programmes.[6]

Continuity of care

Relational continuity of care is a key strength of many rural practices and an important part of a clinician's local knowledge. In smaller and more stable practice teams, patients frequently see the same clinicians over many years. Continuity allows clinicians to recognise subtle changes in health status, social circumstances, or behaviour that may indicate emerging illness. Evidence consistently associates higher levels of continuity with improved patient satisfaction, reduced hospital admission and lower mortality.[7,8] Continuity can also support public health activity by improving uptake of vaccination and screening programmes, strengthening adherence to long-term treatments and facilitating earlier planning for frailty and end of life care.[9] In this sense, continuity is not only a patient experience measure but also a mechanism through which population health outcomes may be improved.

Community – Health service interface

General practitioners in rural and small town settings also function as an important interface between healthcare services and the wider community. Many patients work in agriculture, small industry or self-employment, and formal occupational health provision is often limited. General practice provides an informal occupational health function, advising on injury, chronic disease management, mental health and fitness for work. Longitudinal relationships between clinicians and patients mean that public health interventions are often delivered through these trusted contacts rather than through institutional programmes. Vaccination campaigns, screening initiatives and health promotion activities can therefore reach groups who may be less likely to engage with centrally organised services – supporting more inclusive delivery of population health interventions.[10]

Access and complexity

Physical access

It is widely accepted that there is an increased level of patient complexity in rural general practice. While this is multifactorial, poorer access to services is a significant contributing factor. In urban areas, 95% of patients can walk to their GP surgery in under 30 minutes. This drops to 43% in rural areas.[11] Public transport routes are sparse and infrequent, meaning that a car (and the money to run it) is essential. These transport challenges lead to 'distance decay', where the further you are from a service, the less frequently you use it.[12] In general practice, this leads to late presentations that need more complex management, with increased appointment demand and higher levels of mortality.[13] Appointment demand is also impacted by the lack of access to wraparound services (such as urgent care centres and pharmacies), with the GP often being the only accessible source of healthcare provision. While the Pharmacy First service has the potential to reduce demand on general practice (the scheme was introduced to alleviate pressure by enabling community pharmacies to manage certain minor illnesses), its impact is dependent upon the availability of community pharmacy services. In many rural communities, lower population density means that local pharmacies are not viable, limiting the ability of these areas to benefit from the model.

Population sparsity is also an important lens through which to view the renewed focus on 'neighbourhood health'. While this focus provides welcome attention to the importance of health service provision that is informed and driven by local needs, the large population size proposed in defining neighbourhoods (Single Neighbourhood Providers may support a population of around 50,000) may fit poorly with geographically dispersed rural communities. A one-size-fits-all approach to defining neighbourhoods could lead to further centralisation of services and risk the creation of effective healthcare deserts with worsening service access for these communities.

Challenges to accessing general practice in rural areas may disproportionately affect some communities. Minority populations, in all areas, face unique barriers and risk suffering health inequity. In rural areas, these represent permanent populations (farm workers and Traveller

communities) and transient populations (seasonal workers (farms and tourism), holidaymakers and people experiencing homelessness).[14]

Due to the increased scope of practice in rural settings, there is an increased need for consulting space. As rural patients are primarily accessing general practice (they have reduced access to wraparound services), the demand is higher, hence consulting space is needed to match this. Further, while outreach clinics provided by secondary care and hosted at the GP practice could support equitable service provision, limited consulting space may hold back the adoption of such approaches.

Finally, for GP home visits, geographic factors are significant. Increased travel times, plus more obscure factors (such as being stopped by a dairy herd crossing the road) serve to increase the time needed per visit compared to an urban setting, but with the same resources as urban counterparts.

Digital access

Successive governments have pushed for general practice to have a digital front door.[15] Rural areas have much to gain from this as it would resolve some of the geographic barriers to access. Telephone appointments for simple problems alleviate a significant burden of travel, and video appointments provide an even richer experience for both doctor and patient. Further, text message reminders have become useful tools for prompting patients to book screening and vaccination appointments, enhancing uptake of key preventative services. However, although telephone networks and broadband speeds have been improving in rural areas, they remain disadvantaged. Broadband speeds are slower and more unpredictable, and the population is older and may be less able to utilise these developments.[16,17] The same applies to mobile phone (or broadband) coverage. Indoor mobile coverage is between 73 – 83% in rural areas, compared to 96% in urban areas.[18]

Telephone and video appointments have become mainstream in general practice, yet in rural areas the inverse care law is in effect. Rural populations face increased challenges physically accessing services, and yet also have the poorest access to telemedicine alternatives. This itself can feed into increased demand, as a higher proportion of consultations need to be face-to-face, which takes more time.[19]

Dispensing doctors

Dispensing doctors are GPs who provide a critical, but increasingly fragile, role in delivering primary healthcare to around 10.14 million patients in remote, rural and coastal England. Around 3.58 million of these patients live more than 1.6km from a community pharmacy, and dispensing demand in rural areas may not be enough for community pharmacies to be viable. Dispensing practices are therefore the only NHS access point for medicines in many rural areas. In total, around 7% of all prescription items are dispensed by doctors in a network of 1,084 dispensing practices across Great Britain.[20,21,22]

The unique benefit of the dispensing doctor service is that it provides access to both medicines and general healthcare under one roof. A dispensing practice serving 4,000 patients may be

responsible for every prescription and repeat medicine within a 20-mile radius, the same workload as an urban practice with 2 to 3 pharmacies nearby, but without the supporting infrastructure or resource more typical in urban settings.

Despite their importance, dispensing practices' costs have risen sharply over the past decade. Rising costs have increased pressures on dispensing practices, with some practices closing or reducing their vital service provision as a result.

Impact of reduced secondary care access on rural general practice

Geographical barriers

Rural geography means that many secondary or wider health and care services are harder to reach and more limited. Rural patients travel, on average, around twice as far to hospital services as urban counterparts,[23] with palliative care, mental health and social care services also less readily available.[24,25,26] These factors lead to rural general practice managing and coordinating complex care at the more local level while developing strong relationships with patients over time.

This trusted relationship between general practice teams and their patients is an asset of rural healthcare. Rural GPs manage a broad clinical range but should still be supported to work at an appropriate level of complexity, rather than filling the gap when secondary services are more difficult to reach.[27] The risk of working beyond typical limits is increased with the continued centralisation of wider health services, overlooking the need for appropriate local support.[28] While centralisation may provide clinical benefits, it increases the practical burden on patients, particularly those who are older, deprived or more isolated. Patients in Herefordshire, for example, may travel over an hour each way for oncology care coordinated from Cheltenham.

The Guildford and Waverley community gynaecology service is an example of how this balance between specialist access and locality can be achieved in practice. This GP-led, locally-delivered service won the 2018 Women's Health Initiative Award at the National GP Awards, demonstrating how it reduced unnecessary secondary care referrals, improved access and increased satisfaction.[29] Expanding such models offers practical, proven ways to bring care closer to rural communities without duplicating existing infrastructure.

Task shift

General practice supports the wider health system by absorbing administrative and clinical tasks that come from secondary care, including prescribing, arranging investigations and monitoring. However, it is known that hidden administrative workload, including hospital-generated tasks, is poorly recognised and contributes to increased costs in general practice.[30] Rural practices may take on this work to spare patients lengthy journeys and keep care local, risking increasing costs relative to urban areas. Acknowledging this additional workload would

support fairer workforce and workload planning, and further work is needed to establish the true effects for rural practices.

Solutions to this challenge already exist or are in development. Advice and Guidance – a digital communication channel allowing a GP to seek advice from a specialist prior to, or instead of, referral – can offer timely input to help manage patients during waiting periods, give additional clinical advice and enhance care for rural patients.[31] However, its value depends on being implemented as clinical support as opposed to a mechanism to prevent referral when specialist care is limited, or to shift hospital workload into the community. Further, Electronic Prescribing Services (EPS) are already integrated in English primary care and could be rolled out more widely across secondary care. Appropriately geographically situated community diagnostic centres and mobile or community-based venues also offer effective ways to redistribute tasks more fairly, keeping GPs focused on relational, continuity-based care.

Workforce: recruitment and retention

Workforce in general practice is a wider issue, but in more remote situations there are different pressures. While published data suggests rural areas have higher numbers of GPs per head of population,[32] this doesn't tell the full story.

It is harder to recruit from the outset, as travel times, fuel costs and higher property costs make it hard to balance the cost of living.[33,34] In addition, because the GP surgery is seen as a community hub, receptionists (and other team members) find themselves taking on heightened roles: citizen's advice, car problems, IT problems, social problems, all of which are outside their traditional remit. Being embedded in their local communities, they also become more involved when something goes wrong. The strong sense of community spirit and enhanced continuity of care creates an innate drive to help. While this is deeply rewarding, this is all outside what is required within the GP contract, but which has evolved to fill the void in service provision.

Although rural practice takes on these additional roles, it does so based on the same resource provision as an urban practice which experiences less complex demand.[35,36] This puts pressure on it to stay viable. However, the strength of local knowledge, and the flexibility to respond to local challenges allows for innovation. A strong sense of connection to the community leads to a great sense of workplace satisfaction and can be seen as an important part of rural general practice, and a significant attraction to many general practitioners in training.

When examining disparities between rural and urban communities, workforce attrition represents a significant challenge as the provision of healthcare depends on the availability of an adequate workforce. In rural areas, reduced workforce capacity can limit access to healthcare services, contributing to geographical variation in healthcare provision. Consequently, place of residence may influence an individual's access to care and, ultimately, health outcomes.

Research has previously focused on financial incentives, but the World Health Organization urges a more holistic approach.[37] Greater focus is required on the wider determinants of doctors' choices; chiefly, choices beyond the job.[38]

Education bias

Addressing rural workforce disparities requires intervention during undergraduate medical education. Rather than treating rural medicine as a niche elective, medical schools should ensure all students gain exposure to its distinctive clinical and professional features, including broad clinical practice, continuity of care and close integration with local communities. For many students, a rural placement provides their first experience of community-embedded healthcare but is only usually available on a self-selected basis.

However, with nearly 20% of the population living in rural settings in England, rural education is relevant regardless of future career intentions.[39] Telemedicine, regional referral pathways and workforce mobility mean that doctors across all settings increasingly care for patients whose health is shaped by rural contexts. A foundational understanding of rural health systems and the inequities they face would therefore benefit the medical curriculum.

This imbalance in medical education has consequences for workforce distribution. Rural areas account for 59% of hard-to-recruit GP specialty training posts and recruitment remains persistently challenging.[40] While educational exposure alone may not resolve these shortages, increasing undergraduate experience may increase interest in rural careers.[41]

Changing undergraduate education is challenging. Most medical schools and universities are based in cities next to large teaching hospitals. Rural placements may require students to travel, adding logistical complexity around expense and funding. The absence of local institutional support could feel like a substantial burden: students might feel disconnected in unknown communities or struggle without dependable public transport. Students may also worry that rural placements provide poorer training experiences: fewer patients, less robust supervision and fewer specialist sessions. However, this negatively frames what is in fact an opportunity to manage uncertainty in the face of undifferentiated presentations, collaborate with practitioners who have exceptional breadth of knowledge and experience real job satisfaction.

In rural practice, students are frequently afforded greater continuity within clinical teams than is typical in large teaching hospitals. Rural placements also provide sustained exposure to the communities served, enabling students to develop an understanding of the social, environmental and contextual factors that influence health and healthcare delivery.[42] This offers a dimension of learning that is less easily achieved through predominantly hospital-based clinical education.

Rural placements can also provide unique exposure to the social determinants of health: transport poverty, digital exclusion, agricultural occupational risk and the specific stoicism that has been reported as delaying care-seeking in rural communities. They serve as lessons that make doctors more effective wherever they are practicing.

Personal values

The narrative around recruitment and retention of rural healthcare has previously focused on the job characteristics. This is only half the story and understates the importance of multiple influences: healthcare professionals, like all individuals, have personal, familial and social

priorities in addition to professional aspirations and these are becoming better recognised among recruiters. Spousal employment and proximity to social support exemplify some key considerations impacting retention.[43] Doctors may have their professional values met by their rural role but forfeit this due to competing family priorities involving schooling or lack of infrastructure around childcare. There is some evidence that the Targeted Enhanced Recruitment Scheme (TERS) increased recruitment to rural areas by offering a 'golden handshake' for GP registrars.[44] However, there was little evaluation in the English context and the long-term effects of financial incentives on recruitment and retention are mixed.[45]

Other considerations include dependence on vehicular transport, impact of weather on geographical isolation and access to services.[46] Often overlooked, however, is access to recreational activities; rural settings can be hubs of creativity, have greater availability of fresh, organic produce, better air quality, lower crime rates and a greater perceived sense of community. Central investment in rural infrastructure would benefit not only the health and wellbeing of the local population but encourage workforce retainment.

Professional values

Rural medicine offers a broad scope of clinical practice, continuity of care and close integration with the communities it serves. Despite these distinctive strengths, it is often perceived as either low intensity or professionally isolating, perceptions that do not fully reflect the realities of contemporary rural practice.[47]

Clinicians may be deterred by the prospect of taking on a rural post with a greater on-call burden and almost single-handedly managing risk for the local population where secondary care is geographically limited. This may be paired with fears over a lack of opportunities for career progression; a misconception given there are in fact multiple opportunities for community health leadership and multi-disciplinary collaborations.

Trainees may have concerns about limiting their exposure to certain presentations that are less common in rural communities or be daunted at the prospect of less robust senior supervision and greater autonomy at an earlier stage. There is little evidence to suggest this is the reality; often greater autonomy can be a potent trigger for speed of skill acquisition. Increased rural placements at university for all healthcare professionals would challenge misconceptions, offer a 'commitment-free' experience, eliminate fear of the unknown and ultimately attract those who would be the right fit for the role later in their careers.

The personal/professional overlap

Burnout is one of several factors contributing to workforce attrition in rural healthcare. Worries over staffing shortages, personal illness, maternity leave or retirement are often cited by those leaving rural posts.[48] Clinicians may encounter patients within their social networks, creating ethical and emotional complexities when managing care at this personal and professional boundary. There is little structured GMC guidance around managing this dilemma.[49]

Further, previous research has shown that women are more likely to prefer female GPs when seeking care for gynaecological concerns.[50] Internationally, evidence suggests women may be

under-represented in rural GP posts, although UK-based evidence is lacking. Reduced access to a female GP could lead to delays in consulting or having to travel further afield for access to sexual health or maternity services. In general, rural practices are more likely to be partnership-based and experience greater recruitment challenges. Exploration of access to a female GP in England's rural populations would help assess the significance of this challenge in this context.

Conclusion

General practice in small towns and rural areas functions as a highly localised population health system. Geography remains an important determinant of health, shaping both the risks people face and the services they can access. Close relationships with patients, detailed knowledge of community characteristics and the ability to respond flexibly to changing circumstances allow practices to translate national public health priorities into interventions that are meaningful at the level of individual communities. Further, enhanced continuity of care is highly valued by patients and workforce alike, leading to improved healthcare delivery. However, despite these significant strengths and assets within rural general practice, relative isolation from secondary care services and third sector organisations may increase the demand placed on services. This can be exacerbated by challenges in recruiting and retaining the medical workforce. In addressing these needs, it is important to remember that an urban approach to healthcare provision is not directly translatable into healthcare provision in rural areas, which need services adapted to population-specific needs.

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12. Medical education

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Introduction

Postgraduate Medical Education and training in England has been traditionally focused around large urban areas, and clinical centres of excellence. But as this report shows patients are often concentrated in remote and rural areas and small towns which have more limited access to healthcare, and specific healthcare needs. Our rural population is ageing faster than the average for the country, and the needs of patients are becoming more complex with an increase in multiple co-morbidities. This is coupled with the recognition of the impact of rural social deprivation on health outcomes. Our current postgraduate medical education and training delivery needs updating to reflect this increased complexity and to focus more on the evolving service needs. Persistent workforce shortages in rural, coastal and remote communities exacerbate health inequalities and reduce access to care. Training in rural areas can help address this.

Aligning medical education with population need

The Medical Education and Training Review Phase 1 (METR1) led by the Chief Medical Officer and National Medical Director has emphasised the need for urgent reform of postgraduate medical education (PGME) and one of the reasons is to align more closely with population need. Rural and remote education and training delivery is an enabler for raising the standards of healthcare in these communities and improving the lives of the families that live there.

The METR1 report has published 11 recommendations across 4 priorities to improve things.[1] The priorities are: more flexibility; removing the divide between service and training; ending bottlenecks; and rebuilding teams where doctors feel valued. Data from the report shows that resident doctors value opportunities for working in the specialty of their choice, the geographical region of their choice, having better work life balance (or flexibility) and reduction of the current bottlenecks. This has to be reconciled with the increasing healthcare needs of coastal and rural communities.

Exposure to rural environments during postgraduate training increases the likelihood that doctors will practice in these areas,[2] known as the 'rural pipeline'. In England, this implies that redistributing postgraduate training posts towards underserved areas would improve equity in healthcare provision. Published data from Australia from a rural general practice workforce and training programme combining remote supervision with community-based training has shown high completion rates and strong retention.[3] In the UK, most of the evidence for remote or rural training comes from Scotland. The Scottish Rural Track GP training programme offers a 3-year pathway centred on rural general hospitals and remote communities, with extended

placements in a single geographical locality. The training is integrated across primary care and rural hospital settings, provides immersion within rural communities and supports the development of generalist and emergency care skills. Like the Australian experience, this has improved recruitment into rural training posts.[4] Another Scottish example is the Broad-Based Training programme (BBT).[5] Evaluation of this shows that BBT trainees develop the ability to work across specialty boundaries and to manage complex patients holistically.

NHS England has been developing primary care training hubs to bring together local education providers which support locally tailored education and training in community-based learning environments. In addition, the Centre of Excellence in Safety for Older People (CESOP) located in the Northwest of England has aligned multidisciplinary education with health priorities in ageing populations. An approach that is relevant to providing care in rural settings, where ageing populations with complex care needs are more common.

Digital innovation is an enabler for this kind of training programme as it increases access to specialist teaching, supports stronger peer networks and reduces professional isolation, but access to this is currently patchy.

As is evident in all postgraduate medical education, the quality of supervision, the professional and social support, integration into the local community and the protection of work life balance are key features of successful programmes but are more difficult to maintain outside urban centres. Training in innovative approaches to care delivery such as health coaching results in better self-management of long-term conditions and a reduced need for referral for medical intervention in remote localities.

Conclusion

Most of the innovations described here are small scale, and robust evaluation data are scarce, but they demonstrate that it is possible to relocate high-quality education and training into remote and rural areas. The challenge is to scale these education and training innovations to make sure we create a future medical workforce that is flexible, predominantly generalist, but with access to specialism, and evenly distributed across the country. The METR2 is tasked with exploring how this can be achieved, while also addressing the concerns of the current resident doctor cohort that were evidenced in Phase 1 namely: specialty of choice, geography of choice and work life balance (flexibility).

CESOP initiatives on locally focused care and education in remote and rural areas

Iqbal Singh – Consultant Physician in Medicine for Older People and Chair of the Centre for Excellence in Safety for Older People (CESOP)

Embedding compassion in the care of older people

The Centre for Excellence in Safety for Older People (CESOP) has developed a strong commitment to improving health education and healthcare delivery in remote, rural and underserved communities. Through locally focused initiatives, CESOP seeks to reduce health inequalities, improve health literacy and strengthen the healthcare workforce by bringing education directly into communities where access to training and health services can be limited. Established in response to the recommendations of the Mid-Staffordshire NHS Foundation Trust Inquiry led by Sir Robert Francis, the Centre was created to strengthen standards of care, improve safety and promote cultures founded on dignity, compassion and respect.

CESOP makes a significant contribution to community engagement and health education. Working alongside universities, students and local communities, the Centre has supported public health initiatives including Health Melas[6] – community-led public health events that provide health information and free health checks – in remote and deprived areas that help to address the significant health inequalities that exist across these local communities. It also participated in outreach events across Pendle and the Ribble Valley, targeting rural communities that may face difficulty in accessing local services.

CESOP's educational approach is grounded in the realities of everyday practice. Rather than concentrating solely on theory, learning activities encourage participants to reflect on real-world situations they encounter when supporting older people. Topics include preventing avoidable harm, recognising and responding to frailty, effective cross-cultural communication and culturally sensitive education, being respectful and preserving dignity through person-centred care, respecting individual choice and maintaining independence.

At the heart of CESOP's work is the development of the health and social care workforce. Through a wide range of educational programmes, the Centre supports care home staff, community practitioners and multidisciplinary teams to enhance their knowledge, skills and confidence in delivering safe, person-centred care. The focus extends beyond clinical competence to encompass the values and behaviours that underpin compassionate care.

During the COVID-19 pandemic, CESOP led the Staying Safe and Well project, which sought to reduce the impact of isolation and prevent deterioration in health among older people who were shielding at home. This was particularly important for those living in rural and hard-to-reach areas. Through virtual support and telephone-based interventions, the project addressed key areas including mobility, diet and nutrition, medication management, mental health and overall wellbeing, helping older people remain safe, active and connected during a period of unprecedented challenge.

The impact of CESOP's work has been reflected in increased staff confidence, enhanced quality of care, stronger community engagement, greater awareness of health and wellbeing among diverse populations and a skilled and compassionate workforce serving local communities.



Source: CESOP Library taken from the Centre for Ageing better, reproduced with permission.

CESOP is hosted at The Institute of Medicine, The University of Greater Manchester Medical School.[7]

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13. Effective approaches to health research in rural environments

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Introduction

There is a long and unresolved debate about how rural places should be defined in ways that allow more precise measurement practices.[1,2] Policymakers require clear and usable classifications to distribute resources fairly, yet such simplification inevitably involves trade-offs, which commonly means that the diversity between and within rural communities and dispersed small towns is 'averaged out' to allow a dichotomous rural or urban categorisation. Conceptual difficulties in differentiating rural from non-rural also result in a general (usually unchallenged) acceptance that 'rural' is that which is not urban, and by extension, that defining characteristics of the rural should not be found elsewhere. While recent developments in England's Rural Urban Classification (RUC) – such as incorporating spatial concepts like 'relative access' rather than sparsity – have improved this classification system, it remains imperfect.[3] Rural categories still function as a form of symbolic shorthand that can reinforce inaccurate assumptions about need, and limit opportunities for more precise and context-sensitive interventions.[4]

These classification issues have broader consequences beyond measurement. They influence research design and participation, often leading to the marginalisation of rural communities. Rural areas are frequently perceived as less relevant or more difficult to engage,[5] which reinforces the idea that their populations are 'hard to reach'. In practice, this translates into perceptions of increased cost and time associated with participant recruitment and retention

– 2 factors that heavily shape research design decisions. As a result, rural populations are often underrepresented in studies, creating inequity based on place of residence.

Beyond issues of equity, lower participation from rural populations reduces the generalisability of findings and can weaken methodological robustness.[6] Decision-makers are left without a complete understanding of how health interventions operate across different contexts, leading to gaps in knowledge that may compromise health outcomes and system resilience. At a population level these 'gaps' can increase risks for health security and reduce preparedness for systemic pressures or health crises.

This chapter considers how research can more effectively engage and include rural places and people and highlights gaps in our understanding of how best to do that. Perennial issues of cost, best research methods and good data practices are considered in the context of rurality and small towns. Additionally, there is much that could be adapted and used by local authority public health teams based in rural areas who engage in data collection management and use.

Understanding and defining rural

Given the difficulties in defining rurality, the Lincoln Institute for Rural and Coastal Health (LIRCH) proposes a 'rurality for purpose' approach. This is one of a number of possible approaches and begins by asking what place-, space- or pace-related problem is being addressed, and how the relevant catchment area can be most meaningfully conceptualised in geographical or demographic terms. Central to this approach, and one of many that could be used, is the Place, Space and Pace (PS&P) framework: a pragmatic, evolving model that draws on multiple disciplines to support a flexible and context-sensitive understanding of rurality. It helps researchers, practitioners and communities move beyond statistical reduction and de-contextualised classification systems.

Within this framework, **Place** refers to location with meaning, rather than simply a point on a map or a set of coordinates. This importance of place (or location with meaning) in health and health research is now gaining broad acceptance and is well described elsewhere.[7,8]

Space describes the territory surrounding a place, including hinterlands, borders, barriers, sociocultural influences, assets and capital. It is the zone through which residents must move to access goods, services and experiences, and through which services and commodities must pass to reach them. Space may be open and resource-rich, or difficult to navigate, with important implications for health-supporting assets, transport, access and service delivery.[9,10]

Pace adds the temporal dimension. It includes travel time, histories of place and space, collective memories, seasonal rhythms, local norms and the pace at which activities can be undertaken. These factors shape engagement, participation and understanding of health and wellbeing. For rural communities, time away from work, caring responsibilities or local obligations can be amplified, while drive-in/drive-out research risks transactional engagement.

Consideration of the geospatial and temporal characteristics of rural settings allows workers to operationalise their definition of a rural catchment area. This then guides action to optimise participant inclusion, determine the statistical geography for routine data sources, identify and

mitigate confounders, strengthen inclusion and sustained engagement and maximise knowledge-use and outcomes. This approach will require balance with broader considerations of rural units of definition and measurement (for example, standard statistical geographies like RUC) that enable reasonable pooling in larger quantitative studies. The trade-offs between hyperlocal operationalisation of the rural place and larger statistically powered catchments should be considered and acknowledged during research design and at the reporting and knowledge mobilisation stage.

Health research in, on and with rural communities

An approach to defining rural that considers geospatial and temporal characteristics allows researchers to consider more locally situated circumstances and how they are influenced by wider societal and external conditions, particularly how inequalities at a local level are amplified by challenges at national and international levels.

Evidence suggests that barriers to participation include travel distance, costs, limited connectivity, cultural attitudes and concerns about privacy in small communities. However, research also shows that rural residents value sustained engagement and meaningful relationships with researchers, particularly approaches that extend beyond short-term project cycles.[11,12]

More effective ways of including residents of rural communities in health and social care can only be known by engaging directly with them. Effective inclusion needs adaptation, which may require more flexible methods for participation, alternative modes of data collection and clearer, more accessible communication. Digital and remotely applied approaches offer a significant opportunity to broaden research engagement with people living in rural communities across England, particularly for those who face barriers related to travel, transport, time, mobility or access to local research infrastructure. Online interviews, group discussions, surveys and other digital methods can make participation more convenient and accessible and allow researchers to engage geographically dispersed populations more efficiently. However, these approaches should complement rather than replace place-based engagement. Differences in digital access, confidence and connectivity across rural areas may introduce or increase risk of inequity in participation. A blended approach that combines digital methods with trusted local networks and community-based opportunities could therefore help make research participation more inclusive and representative.[13,14] Whatever the mix of research tools and approaches used, reducing reliance on extractive research models – where data is gathered without ongoing engagement – can improve trust and participation.

Interdisciplinary approaches, including qualitative and creative methods, offer opportunities to better capture the complexity of rural experiences.[15,16] At the same time, researchers and funders must account for the additional resources required to engage dispersed populations, ensuring that methodological rigour is not compromised. Ensuring sufficient resources are available to do this can also reduce negative public perception that research is done 'on' people and is extractive in nature, allowing a more sustained connection with communities.



Creative methods for understanding barriers (snakes) and facilitators (ladders) to meaningful co-produced research.
Source: Lincoln Institute for Rural and Coastal Health.

Where methodological approaches are predicated and costed on sample sizes that 'work' with urban populations it might be helpful for researchers and funders to consider pragmatic resource issues needed to ensure the optimal inclusion of more sparsely populated communities, and at the same time tighten internal and external validity of the research.[17]

Rural people and communities doing health research

Widening participation in the research process to hear and include the perspectives of patients and the public has gained significant traction recently as evidenced by published National Institute for Health and Care Research (NIHR)[18] standards and the makeup of funding assessor panels. However, some observers have noted a clustering of patient and public involvement and engagement (PPIE) at just a few of the key stages within the research cycle: namely, bid writing and dissemination but less so at study design, data collection, or determining research agendas or questions, and almost entirely absent in data analysis stages.[19]

Optimal inclusion is more likely when researchers move beyond thinking about rural people, groups or communities as the 'subjects' or 'beneficiaries' of research, to consider the benefits of rural residents as fellow researchers in their own right. Trust and power, and the way these manifest in professional and lay relationships, make it challenging for conventional health research to shift from positioning rural people as quotas to be 'recruited and retained', towards recognising and working with them as 'active' partners in research.[20] People living in rural areas

can be experts in their own communities, with place-based knowledge and wisdom, lived experience and cultural understanding that is often undervalued. While collaborative approaches in which academic researchers work closely with communities remain central to culturally appropriate and high-quality rural health research, there is also real potential for individuals within those communities to take on researcher roles themselves.

One approach that lends itself well to rural areas and small dispersed towns is the *'community-based researcher'*: individuals who are long term residents and/or deeply embedded within their local rural communities. Their role does not require formal research qualifications or academic experience. Their expertise and contribution lie in trusted relationships, contextual understanding and a sustained presence within the community. This approach has recently been implemented successfully by LIRCH at the University of Lincoln.[21,22,23,24,25] While the concept of community researchers is by no means novel, what is unique about this approach is their integration within a specialist place-based research institute. The LIRCH community researcher is effectively a member of both the research team and the partner community and facilitates a dynamic, reciprocal relationship between these 2 settings. Community researcher roles have for some time been established within local authorities, voluntary and charitable organisations, or other place-based partnerships, but barriers exist to genuine inclusion with research institutes at universities. Entry barriers include inflexible staff classification systems, perceived problems of parity with conventionally qualified staff and risks with benefit loss or taxation penalties.

Given the previously identified drivers of ongoing lower representation of rural people and communities in research, the community researcher, together with wider engagement of trusted community members and local champions, offers a practical way to build direct and credible links into rural communities.[26] They also help establish trust, improve communication and support meaningful involvement across the research lifecycle, while also empowering rural people and communities to actively shape research that reflects their priorities, needs and lived experiences.

Rural health research can be most effective when it is community-led, with co-production at its core.[27] Research developed in partnership with communities is higher quality and more responsive to local needs, reflecting a shift beyond simple engagement to more effective inclusion of rural people and communities as assets and experts within the research process. Community researchers can contribute across the research lifecycle, from design and planning to dissemination and impact generation. However, given the diversity of experiences within rural communities, they are not by themselves sufficient for maximal engagement, as no single community researcher can represent all rural perspectives. Complementary approaches such as 'snowballing' recruitment, which begin with a small number of community researchers and expand through local networks, can help to broaden reach while remaining sensitive to local contexts. In addition, community researchers should be able to activate their community networks to ensure the inclusion of groups that are hardly reached.

As a consistent and familiar presence within their communities, community researchers can support externally based research teams and enable ongoing, responsive engagement over time. Situating research leadership within communities at recruitment through to knowledge

mobilisation and pathways to impact, can significantly strengthen both the evidence-base and the relevance of rural health research.

The cost of underrepresentation: rural populations and health research in England

In 2024, a significant minority (17%) of the population of England resided in rural areas.[28] Given the unique challenges and benefits of living in rural places for health and wellbeing, rural populations should be better represented in research activity and its resourcing. Despite this we are unable to determine whether research investment reflects this, as no major funder disaggregates health research spend by rurality. The UK Health Research Analysis, the most comprehensive cross-funder overview available, contains no rurality dimension in its classification framework.[29] This mirrors funding patterns in health services identified by the Nuffield Trust, whose review of rural NHS funding found that the way NHS budgets are allocated to areas lacks transparency and consistency, with rural areas consistently losing out through multiple adjustment mechanisms.[30,31] Without better visibility of the mechanisms of research funding as they relate to rural places and people, assessing whether investment is proportionate to need remains impossible.

Financial barriers are a key factor limiting participation. Travel costs, time commitments and opportunity costs are higher for rural residents and are often not accounted for in research design. Standard area-level deprivation measures also tend to underestimate rural disadvantage, further masking inequalities.

For low- and no-income rural households, transport is among the largest household expenses, and attending a research site or clinical trial introduces costs that urban participants do not face to the same degree. If transport costs already deter rural low-income households from attending routine healthcare appointments,[32] it is reasonable to expect that the same barrier applies with greater force to discretionary research participation, where the personal benefit is less immediate and reimbursement of expenses is inconsistent. In England, longer travel times to primary care are associated with later and more emergency cancer diagnoses,[33] underscoring that distance and travel cost are important determinants of health service participation and outcomes in their own right. The zone of tolerance for additional funding to support equitable participation for rural people and communities, and the extent to which government and funding organisations are willing to provide it, remain undefined in English research practice.[34] It is likely though that if these costs fall on individual participants, rural people on low incomes will remain systematically excluded.

This exclusion carries a cost beyond those associated with equity. When rural populations are underrepresented in trials and implementation studies, the evidence base reflects primarily urban structures and system configurations. The National Institute for Health and Care Excellence (NICE) cost-effectiveness thresholds and care pathway recommendations are built on delivery models that assume service density and patient mobility that are unlikely to apply where hospitals are distant and specialist services are fewer. Applying these recommendations without rural-specific implementation data introduces a rurality premium: the unavoidable

additional costs of distance, lower patient density and workforce gaps that standard funding formulae do not capture.[35,36] The NIHR has identified rural and coastal areas as having historically low research activity and has used strategic funding to begin addressing this,[37] but targeted rural implementation research remains limited, relative to the scale of the problem.

The NIHR reports that every £1 invested in research returns more than £13 in societal benefit nationally.[38] Better effectiveness and implementation data for rural settings would improve both the precision and reach of that return, enabling the NHS to allocate resources based on evidence that reflects where people actually live.

Improving rural representation would enhance the effectiveness of healthcare interventions and ensure that policy decisions are based on more accurate and inclusive evidence. Given the high societal returns on research investment, addressing rural underrepresentation is both an ethical and economic imperative

Complexity and system-level perspectives for better health research

Broader considerations of important dimensions of rural locations also encourages broader systems-level perspectives to be adopted in research engaging rural (and non-rural) 'places with meaning'. Like all other places, social and economic prosperity plays a key role in rural health and quality of life. Inequalities in these outcomes persist across the social gradient in England, [39] including rural places. Although inequalities are commonly 'located' with particular groups, they can negatively impact everyone[40] regardless of relative position on the 'social ladder'. More complete and higher utility research capable of meeting needs across society is required. Approaching rural health and wellbeing-related research from a systems science or complex systems perspective, and the understanding of complexity that this can afford, offers significant opportunities to further innovative research in this field,[41] while also aiming for successful implementation to improve health outcomes and supply important data and insight.

Understanding of complexity, and its contribution to rural health differences, is made more challenging because of issues of appropriate and representative sampling in rural areas. Certain groups are more likely to access healthcare[42] meaning data from these settings may not always account for the characteristics of those not attending, or accurately reflect key attributes of rural populations. Inadequate sampling may also limit participation of rural residents in randomised controlled trials[43] and findings may become less representative statistically, as well as creating voids in the understanding of complex system-level drivers of health inequities across the nation. Sophisticated data-synthesis techniques can help in reducing these limitations and in exploring important rural-related issues[44] but this should not distract from the need to improve primary data collection by better and sustained engagement with rural communities.

Related to this dual need, targeted frameworks such as the Core20PLUS5 demonstrate the value of focusing on inequalities. Despite this, there is not enough nuanced data to account for all the challenges related to complex systems associated with rural communities, and in a way that these challenges can be consistently assessed separately to those in urban areas. Some

populations may fall outside predefined categories while still experiencing significant barriers to care.

Implications for data generation and use in rural health research

Understanding rural and remote inequality is key to guiding investment in services, housing, environment and economic opportunities for vulnerable communities. The English Index of Deprivation uses anonymised, small-area data (Lower layer Super Output Areas; LSOAs) to measure disadvantage across factors like income, employment, transport and air quality.[45] LSOAs have similar population sizes but vary greatly in geographic scale, with scores based on averaged data such as household income.

The effect of area-averaging across dispersed rural LSOAs is not consistent; in some instances, averaging may negatively skew LSOA values, while in others averaging may positively skew values. For example, in high-density urban LSOAs average values for air quality measures better represent the exposure of all residents to poor air quality because dwellings are in close proximity. In low-density rural LSOAs, average values are less representative of residential exposure due to fluctuations across larger areas. As an example of this, super-sources of fine particulate matter (for example, motorways) in dispersed rural areas tend to negatively skew area averages, overestimating population exposure; households near super-sources will be exposed to considerably higher air pollution than households further from super-sources. By comparison, averaging income across rural LSOAs with pockets of affluence and deprivation may positively skew values towards greater affluence, obscuring the most vulnerable families in isolated areas.[46] These technical challenges translate into socio-ecological justice obstacles as measurement can make the most vulnerable and exposed communities, households and individuals 'invisible'. The equity of data-driven decisions can therefore be compromised by unequal representation of dispersed compared to dense populations.

Alternative methods for producing LSOA-level values, such as population weighting, could improve representation in dispersed rural areas, and areas with rural-like experiences. The recently developed Index of Multiple Environmental Deprivation for England[47] employed population weighting to reduce the skewing effect of super-sources of air pollution, better capturing household exposure. Alternative methods and data could be used to complement traditional indexification, producing rural place-appropriate ways of knowing. Place-based and community-centric approaches offer avenues for 'ground-truthing' indices towards equitable representation in rural and sparsely populated landscapes.

Large cohort studies and biobanks also tend to underrepresent rural populations due to recruitment practices centred on urban or city-based research infrastructure. Linked primary care data such as the Clinical Practice Research Datalink (CPRD) includes a rural-urban classification flag and links to secondary care, mortality and deprivation data at patient level. Rural GP practices often deliver a broader range of services than their urban counterparts, making the CPRD resource an additional set of real-world data reflective of rural health indicators and service use. Consistency in the application of rural-urban classification across

routinely collected datasets is a significant problem that makes cross study comparison difficult, but which may be corrected by very low cost adjustments to recording instruments. Allowing patients and participants to self-identify as rural or rural-like (including dispersed small towns) may provide a single data point that could be used alone or in addition to routinely collected data related to postcode and may allow analyses at sub-LSOA level as recommended by the Indices of Deprivation rural supplementary report.[48]

Geospatial and travel-time methods offer a useful alternative or supplemental analytical unit to administrative geography, capturing rural access barriers that LSOA-based analysis misses. This approach has been used productively in cancer geography and could be applied more widely. Community and third sector data sources, including social prescribing records, voluntary sector activity data and food bank referrals, could capture rural health need among populations most likely to be missed by routine NHS data.

A strength of rural health research is the relative stability of rural populations. ONS data show net inward migration to rural local authorities, against net outward migration from the most urban areas,[49] and population turnover is lowest in rural and former industrial areas.[50] Since residential mobility is a recognised predictor of attrition in longitudinal studies,[51,52] this relative stability may offer a modest advantage for participant retention, though further research would be needed to confirm this specifically for rural settings.

Conclusion

There is a need to adapt the research process to account for, perhaps even leverage, rural experience in order that it be more inclusive of a more complete range of rural people and places. In addition, there is a need for further research developing our understanding of rurality and its contribution to inequities generally, but also more specifically how to ensure equal opportunity for rural people and communities to participate in relevant research. Finally, we suggest researchers consider the most appropriate reference states for measuring differences in health and wellbeing within a rural setting including small towns. Comparisons with other significant population groups remain important, but research should foreground the rural place/space rather than have urban as a 'starting point' or 'ideal'. In other words, the driving challenge should be how do we make rural places as good as they can and want to be, rather than how do we make rural places look more like an urban 'ideal'.

Geospatial-temporal frameworks like the PS&P, together with multidisciplinary approaches and genuine participatory methods, provide more sophisticated and less reductionist views of place and its meaning, and its impact on health experience and outcomes.

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Appendix

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Chronic disease definitions

Emergency hospital admissions

- NHS England Hospital Episode Statistics Admitted Patient Care data[1] were used to identify all emergency hospital admissions in England between 2014 and 2023 for:
  - Ischaemic heart disease (defined as International Classification of Disease version 10 (ICD-10) I20-25)
  - Stroke (ICD-10 I60-69)
  - COPD (ICD-10 J43-44)
- Admissions occurring in people with a residential postcode located outside England and hospital transfers of admitted patients, maternity admissions, babies born outside healthcare providers or other means of admission were removed (limited to Admission Method Code (ADMIMETH) 21, 22, 23, 24, 25, 2A).

Cancer Incidence

- National Cancer Registrations and Analysis Service data[2] were used to identify all new diagnoses in England between 2014-2017 (due to data availability) of:
  - breast cancer (defined ICD-10 site code C50)
  - prostate cancer (ICD-10 site code C61)
  - lung cancer (ICD-10 site codes C33 and C34)
  - bowel (colorectal) cancer (ICD-10 site codes C18, C19 and C20)
- Breast cancer cases were limited to females, and prostate cancer cases were limited to males. Cases diagnosed in people with a residential postcode located outside England at the time of their diagnosis were removed.

All-cause mortality

- Death registrations from the Office for National Statistics (ONS)[3] were used to identify all deaths in England between 2014 to 2023.

- Deaths occurring in people with a residential postcode located outside England at the time of their death were removed.

Health outcome processing

- For each health outcome the record contained information about the calendar year of the occurrence (2014 to 2023), the person's gender (male or female), age group (0-4 years, 5-9, …, 80-84, ≥85) and community (Lower layer Super Output Area, LSOA) of residence at the time of the event.
- Events were aggregated into annual community-level counts by age-group and sex.

Population counts

- Annual mid-year LSOA population estimates by age and sex from ONS were used.[4]
- For breast and prostate cancer, the female and male denominators were used, respectively.

Rural/Urban definitions

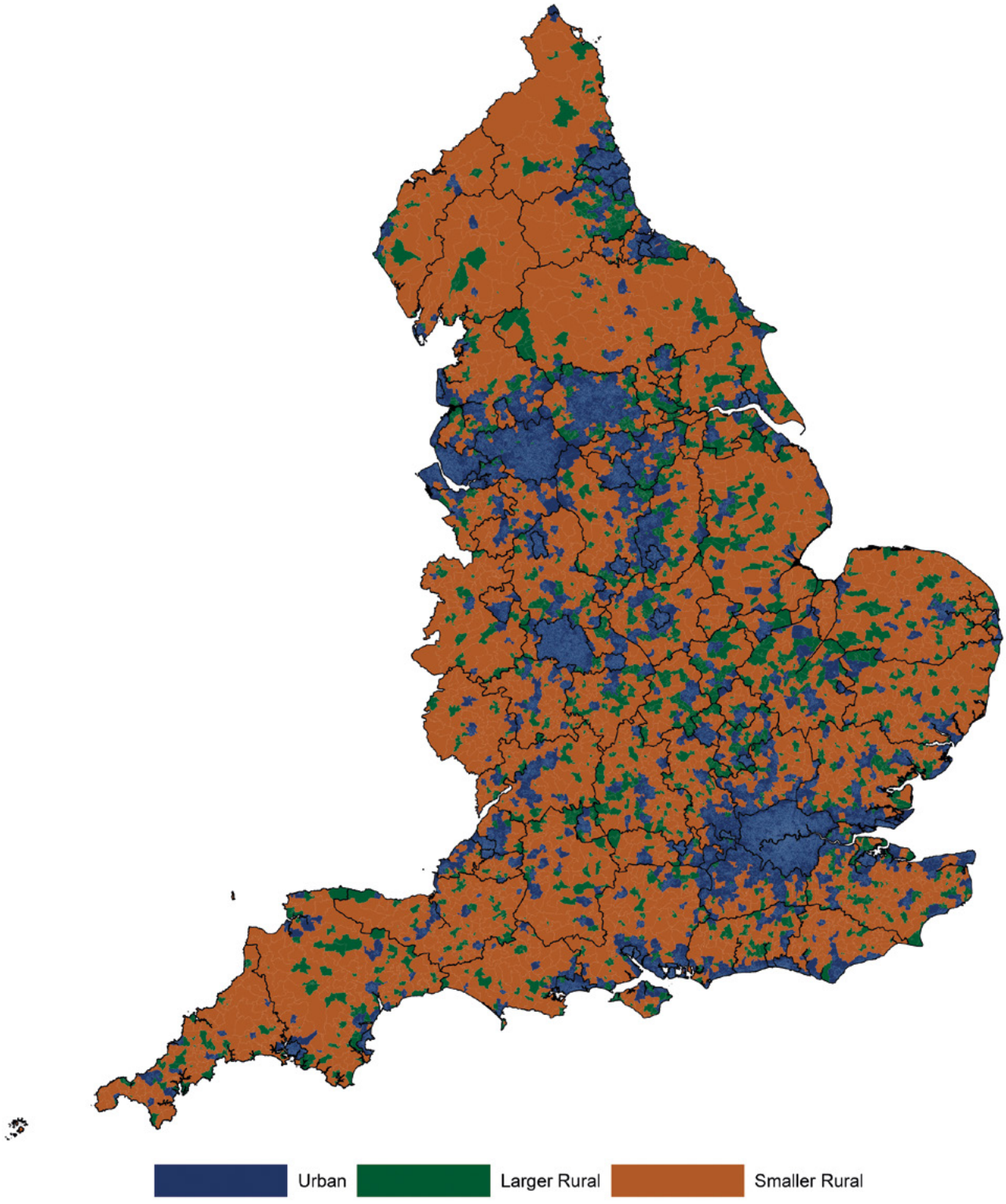
The 2021 Rural Urban Classification for England and Wales from the ONS[5] is used to classify communities, defined using LSOA boundaries from 2021, as urban, larger rural and smaller rural.

The distribution of communities (LSOAs) by rural/urban category is presented in Table 1 and illustrated in Figure 1.

Table 1: 2021 ONS Rural Urban Classification of communities (Lower layer Super Output Areas) used in this chapter.

Rural Urban Category	Number of communities	Percentage of communities
Urban	28,201	83.54
Larger Rural	2,886	8.55
Smaller Rural	2,667	7.90

Figure 1: Map of the 2021 Rural Urban Classification of 33,755 communities (Lower layer Super Output Areas) in England with county boundaries overlaid.



Source: UK Small Area Health Statistics Unit.

Description of the modelling

We analyse each major chronic disease using a Bayesian hierarchical model.[6] We account for area-level covariates using fixed regression parameters, and account for any residual unknown confounding using random effects. We fit 2 complementary models:

- Model 1 models the disease count by LSOA-year-age-sex combination and uses the corresponding population as the offset so that the model estimates rates.
- Model 2 models the disease count by LSOA-year and uses an age-sex standardised expected number of counts as the offset so that the model estimates standardised incidence/mortality ratios.

Both models have a consistent framework, so we will use one model to describe them and then highlight where differences occur. For Model 1, let y_{ltas} denote the number of observed counts for a specific outcome in the l^{th} LSOA, t^{th} year, a^{th} age group, and s^{th} sex. For Model 2, let y_{lt} denote the number of observed counts in the l^{th} LSOA and t^{th} year. We unify these separate indices into a general index $\boldsymbol{k}$ where $\boldsymbol{k} = (l, t, a, s)$ for Model 1 and $\boldsymbol{k} = (l, t)$ for Model 2. The offset for the 2 models is

$$\text{offset}_{\boldsymbol{k}} = \begin{cases} N_{\boldsymbol{k}}, \text{ Model 1} \\ E_{\boldsymbol{k}}, \text{ Model 2} \end{cases}$$

where $N_{\boldsymbol{k}}$ is the population total and $E_{\boldsymbol{k}}$ is the age-sex standardised expected number of counts. For Model 2, $E_{\boldsymbol{k}}$ is obtained through an age-sex standardisation, so that the national age-sex specific rates over the entire study period are used as reference and applied to the age-sex-LSOA specific population and then summed over all the age-sex strata. Note that the $E_{\boldsymbol{k}}$ are calculated separately for each outcome considered.

We assume the observations follow a Poisson distribution,

$$y_{\boldsymbol{k}} | \text{offset}_{\boldsymbol{k}} \sim \text{Poisson}(\lambda_{\boldsymbol{k}})$$

where $\lambda_{\boldsymbol{k}} = \text{offset}_{\boldsymbol{k}} \rho_{\boldsymbol{k}}$ is the Poisson rate with the mean function $\rho_{\boldsymbol{k}}$. We express the mean function using the following,

$$\log(\rho_{\boldsymbol{k}}) = \beta_0 + \boldsymbol{x_k \beta} + \delta_l + \gamma_t + \xi_{lt}$$

where β_0 is the global intercept, $\boldsymbol{\beta}$ are the fixed regression parameters associated to the covariates. For Model 1, these covariates are age, sex, urban classification, deprivation and ethnicity. For Model 2, these are the latter 3 only as age and sex are already incorporated in the offset. The terms δ_l, γ_t, and ξ_{lt} are the random effects accounting for unmeasured confounding by year, LSOA and LSOA-year interaction, respectively.

As we are fitting the model in a Bayesian hierarchical framework, we need to specify priors on all parameters included in the model.

For the fixed regression parameters, we use a flat, non-informative prior,

$$\beta_0, \boldsymbol{\beta} \sim \text{Normal}(0, 1000).$$

For the LSOA-specific random effect, we use a weighted average of an unstructured and structured component.[7,8] The unstructured component is an exchangeable model, and the structured component is defined by a conditional autoregressive prior model. The structured component reflects the belief, *a priori*, that LSOAs geographically closer to one another will be more similar than LSOAs further away. The prior model is written as

$$\delta_l = \sigma_\delta\left(\sqrt{1-\phi}v_l^* + \sqrt{\phi}u_l^*\right)$$

where v_l^* and u_l^* are the unstructured and structured components standardised to have variance equal to one, $\phi \in [0,1]$ is the spatial mixing parameter which attributes how much of the variation seen in the LSOA-specific random effect is due to the unstructured and structured component (i.e., $\phi = 0$ implies all variation due to the unstructured component and $\phi = 1$ implies all variation is due to the structured component) and σ_δ is the standard deviation.

For the year-specific random effect, we use a conditional autoregressive prior that accounts for the year-on-year correlation. That is, the prior reflects that we believe *a priori* that subsequent years are more likely to be related to one another than years further apart. Specifically, we use a random walk of order one (RW1) prior model[9] which gives a dependence upon the time step (year) before and is written as

$$\gamma_t - \gamma_{t-1} \sim \text{Normal}\left(0, \sigma_\gamma\right)$$

where σ_γ is the standard deviation.

For the LSOA-year interaction random effect, we use the following exchangeable model[10]

$$\xi_{it} \sim \text{Normal}\left(0, \sigma_\xi\right)$$

where σ_ξ is the standard deviation.

In the prior model specifications for both the year and LSOA-year interaction random effects there are standard deviation parameters that need to have their own probability distribution assigned. Additionally, in the LSOA random effect, there is both a standard deviation and the spatial mixing parameter that need to have a probability distribution assigned. For all these additional parameters we use penalised complexity (PC) priors.[11] A PC prior for a given model component is specified through $\Pr(\theta > U) = p$ where θ is the given parameter, U is an appropriate upper bound for it and p is the probability of the parameter being in said upper bound.

For the standard deviation parameters, we will set $U = 1$ and $p = 0.01$ to reflect that random effects are not likely to affect the observed relationship. For the spatial mixing parameter, we will set $U = 0.5$ and $p = 0.5$ to reflect we believe there is an equal amount of the variation in space explained by the unstructured and structured components.

For Model 1, we report the smoothed rate per 100,000 individuals. The smoothed rate for a given level of aggregation is obtained by marginalising over the remaining grouping variables via a weighted average. Formally, let $\hat{\rho}_{\boldsymbol{k}}$ be the posterior smoothed rate at the finest level of

granularity (LSOA-year-age-sex). To marginalise over a subset of grouping variables, we compute a weighted average of the form,

$$\hat{R}_g = \frac{\sum_{k \epsilon g} w_k \hat{\rho}_k}{\sum_{k \epsilon g} w_k}$$

Where g denotes the target grouping level and w_k is the weight assigned to each constituent stratum. The weights are defined as the proportion of individuals in stratum $\boldsymbol{k}$ relative to the total number of individuals in the target group g across all time periods. For example, when aggregated from the LSOA-year-age-sex level to the LSOA level, the weight for stratum (l, t, a, s) is

$$w_{ltas} = \frac{N_{ltas}}{\sum_{t,a,s} N_{ltas}}$$

Where N_{ltas} is the population total for the l^{th} LSOA, t^{th} year, a^{th} age group, and s^{th} sex. The same process is applied when aggregated to other levels (e.g. year), with the weights redefined to reflect the grouping variables being marginalised over. All rates are multiplied by 100,000 to give the rate per 100,000 individuals.

For Model 2, we report the smoothed adjusted rate ratio. As the age-sex population structure is accounted for through the standardisation procedure, no additional weighting is required when aggregating across groups. The smoothed adjusted rate ratio compares the observed disease incidence in an area with the incidence expected given that area's age-sex composition, after borrowing strength across areas and/or years through the model. At the LSOA level, the adjusted rate ratio is interpreted as: < 1 is a lower risk than expected for a given LSOA over the study period; $= 1$ is a consistent risk for a given LSOA over the study period; and > 1 is a higher risk than expected for a given LSOA over the study period. An analogous interpretation is made at the year level. In addition to the rate per 100,000 and adjusted rate ratios for Models 1 and 2, respectively we report the associated 95% Credible Intervals (CrIs).

For both models, we report the spatial exceedance probability relative to the national estimate. This is defined as the posterior probability that a given LSOA's quantity of interest exceeds the corresponding national-level value:

$$\Pr(\theta_l > \theta_{\text{national}} | \boldsymbol{y})$$

where θ_l is the quantity of interest (rate per 100,000 and adjusted rate ratio for Models 1 and 2, respectively) for the specific LSOA and θ_{national} is the corresponding national estimate. The exceedance probability is categorised as 0-20%, 21-80%, and 81-100% which can be interpreted as sustainably lower than the national estimate, consistent with the national estimate, and sustainably higher than the national estimate, respectively.

Supplementary Tables

Table 2: Smoothed unadjusted annual rates and 95% credible intervals of emergency hospital admissions for IHD per 100,000 population by area category (urban, larger rural and smaller rural) in England, 2014 to 2023.

Community type	Year	Population size	Number of hospital admissions	Smoothed rate per 100,000	95% Credible Interval	
					Lower	Upper
Urban	2014	45,399,712	89,490	202.50	201.23	203.75
	2015	45,798,217	87,482	196.41	195.24	197.61
	2016	46,222,557	86,185	192.07	190.90	193.27
	2017	46,493,877	86,745	191.95	190.72	193.16
	2018	46,753,564	87,230	192.59	191.48	193.70
	2019	47,000,927	90,130	197.16	195.94	198.36
	2020	47,054,317	79,953	175.14	174.06	176.40
	2021	47,143,104	83,078	181.31	180.21	182.51
	2022	47,641,294	79,065	171.02	169.90	172.24
	2023	48,333,618	80,621	171.58	170.40	172.65
Larger rural	2014	4,608,967	10,394	231.69	228.85	234.29
	2015	4,636,922	10,201	225.96	223.39	228.52
	2016	4,673,934	10,186	222.46	220.04	225.02
	2017	4,713,803	10,186	222.41	219.75	225.18
	2018	4,744,347	10,505	224.54	221.82	227.15
	2019	4,781,550	10,597	228.73	225.98	231.32
	2020	4,805,401	9,476	203.51	201.01	205.93
	2021	4,875,289	9,962	211.03	208.65	213.62
	2022	4,924,215	9,645	200.59	198.21	203.02
	2023	4,981,974	9,535	201.02	198.74	203.34
Smaller rural	2014	4,361,652	8,984	215.79	213.14	218.41
	2015	4,373,549	8,874	211.52	209.02	214.17
	2016	4,392,555	8,931	209.53	207.07	212.08
	2017	4,411,880	8,980	210.48	207.85	212.97
	2018	4,426,629	9,292	213.92	211.42	216.62
	2019	4,447,591	9,445	218.96	216.41	221.57
	2020	4,466,255	8,608	196.16	193.86	198.69
	2021	4,536,510	9,031	203.96	201.63	206.38
	2022	4,578,898	8,668	194.22	191.79	196.43
	2023	4,616,890	8,985	197.43	195.11	199.84

Table 3: Smoothed unadjusted annual rates and 95% credible intervals of emergency hospital admissions for stroke per 100,000 population by area category (urban, larger rural and smaller rural) in England, 2014 to 2023.

Community type	Year	Population size	Number of hospital admissions	Smoothed rate per 100,000	95% Credible Interval	
					Lower	Upper
Urban	2014	45,399,712	61,070	138.18	137.21	139.19
	2015	45,798,217	63,164	141.28	140.25	142.29
	2016	46,222,557	63,149	140.47	139.47	141.49
	2017	46,493,877	63,425	140.10	138.96	141.11
	2018	46,753,564	62,433	137.23	136.24	138.20
	2019	47,000,927	64,590	141.00	140.01	141.97
	2020	47,054,317	61,919	135.34	134.33	136.33
	2021	47,143,104	65,777	142.57	141.56	143.55
	2022	47,641,294	64,639	138.52	137.51	139.57
	2023	48,333,618	66,346	139.98	139.05	140.96
Larger rural	2014	4,608,967	7,488	167.05	165.13	169.23
	2015	4,636,922	7,825	171.63	169.72	173.70
	2016	4,673,934	7,972	172.17	170.16	174.30
	2017	4,713,803	7,966	172.18	170.22	174.09
	2018	4,744,347	7,903	169.59	167.61	171.61
	2019	4,781,550	8,224	174.92	172.88	177.01
	2020	4,805,401	7,905	168.22	166.20	170.06
	2021	4,875,289	8,390	177.82	175.79	179.84
	2022	4,924,215	8,285	173.88	171.82	175.96
	2023	4,981,974	8,409	176.63	174.58	178.59
Smaller rural	2014	4,361,652	6,949	159.84	157.72	161.90
	2015	4,373,549	6,985	164.85	162.89	166.93
	2016	4,392,555	7,195	166.22	164.26	168.33
	2017	4,411,880	7,319	167.66	165.58	169.79
	2018	4,426,629	7,226	165.95	163.81	167.92
	2019	4,447,591	7,537	172.12	170.08	174.23
	2020	4,466,255	7,358	166.82	164.77	168.77
	2021	4,536,510	7,764	176.53	174.39	178.62
	2022	4,578,898	7,469	172.69	170.66	174.72
	2023	4,616,890	7,822	177.01	174.98	179.20

Table 4: Smoothed unadjusted annual rates and 95% credible intervals of emergency hospital admissions for COPD per 100,000 population by area category (urban, larger rural and smaller rural) in England, 2014 to 2023.

Community type	Year	Population size	Number of hospital admissions	Smoothed rate per 100,000	95% Credible Interval	
					Lower	Upper
Urban	2014	45,399,712	96,005	222.07	220.80	223.39
	2015	45,798,217	96,992	222.33	220.95	223.79
	2016	46,222,557	103,708	235.10	233.79	236.47
	2017	46,493,877	102,415	230.96	229.65	232.41
	2018	46,753,564	104,314	234.04	232.73	235.43
	2019	47,000,927	110,923	247.58	246.26	249.09
	2020	47,054,317	71,383	159.46	158.46	160.70
	2021	47,143,104	76,761	171.03	169.85	172.24
	2022	47,641,294	81,762	180.10	178.93	181.36
	2023	48,333,618	90,504	196.35	195.17	197.73
Larger rural	2014	4,608,967	9,027	204.44	201.46	207.78
	2015	4,636,922	9,003	205.39	202.13	208.31
	2016	4,673,934	9,549	217.13	214.12	220.46
	2017	4,713,803	9,624	216.44	213.15	219.65
	2018	4,744,347	9,796	217.87	214.54	221.15
	2019	4,781,550	10,816	236.25	232.80	239.47
	2020	4,805,401	6,826	149.76	147.18	152.18
	2021	4,875,289	7,478	160.82	158.43	163.42
	2022	4,924,215	8,105	171.33	168.52	173.84
	2023	4,981,974	8,714	184.72	181.84	187.52
Smaller rural	2014	4,361,652	5,905	143.04	140.55	145.78
	2015	4,373,549	6,171	146.63	144.09	149.25
	2016	4,392,555	6,479	155.00	152.39	157.93
	2017	4,411,880	6,499	154.95	152.26	157.68
	2018	4,426,629	6,744	159.11	156.43	161.97
	2019	4,447,591	7,234	170.00	167.12	172.81
	2020	4,466,255	4,536	108.26	106.13	110.23
	2021	4,536,510	4,864	116.01	113.92	118.17
	2022	4,578,898	5,113	122.54	120.25	124.93
	2023	4,616,890	5,870	136.58	134.06	139.07

Table 5: Smoothed unadjusted annual rates and 95% credible intervals of breast cancer incidence per 100,000 female population by area category (urban, larger rural and smaller rural) in England, 2014 to 2017.

Community type	Year	Population size	Number of new cancer cases	Smoothed rate per 100,000	95% Credible Interval	
					Lower	Upper
Urban	2014	17,754,018	35,568	200.05	198.15	202.02
	2015	17,922,872	34,956	196.48	194.71	198.31
	2016	18,114,601	35,047	193.89	192.12	195.77
	2017	18,254,938	34,981	192.17	190.34	193.99
Larger rural	2014	1,871,474	4,634	251.64	247.25	256.23
	2015	1,884,454	4,809	249.24	244.97	253.50
	2016	1,902,850	4,547	244.70	240.34	249.01
	2017	1,921,364	4,650	243.07	238.94	247.30
Smaller rural	2014	1,747,334	4,547	264.17	259.25	269.29
	2015	1,755,764	4,589	261.33	256.49	266.30
	2016	1,767,155	4,607	258.85	254.05	263.66
	2017	1,779,923	4,499	256.39	251.73	260.98

Table 6: Smoothed unadjusted annual rates and 95% credible intervals of prostate cancer incidence per 100,000 male population by area category (urban, larger rural and smaller rural) in England, 2014 to 2017.

Community type	Year	Population size	Number of new cancer cases	Smoothed rate per 100,000	95% Credible Interval	
					Lower	Upper
Urban	2014	16,703,734	31,333	187.81	185.84	189.72
	2015	16,863,451	31,450	188.24	186.47	190.14
	2016	17,020,495	31,346	186.19	184.33	187.89
	2017	17,127,450	31,354	185.15	183.27	187.14
Larger rural	2014	1,726,844	4,471	266.63	262.21	271.07
	2015	1,740,586	4,607	268.45	264.13	273.01
	2016	1,756,906	4,702	266.46	262.07	270.90
	2017	1,772,395	4,707	265.34	261.18	269.91
Smaller rural	2014	1,705,087	4,889	295.86	291.53	300.70
	2015	1,715,026	5,196	298.69	293.94	303.96
	2016	1,726,968	5,106	297.01	292.49	302.07
	2017	1,738,140	5,131	296.69	292.23	302.17

Table 7: Smoothed unadjusted annual rates and 95% credible intervals of lung cancer incidence per 100,000 population by area category (urban, larger rural and smaller rural) in England, 2014 to 2017.

Community type	Year	Population size	Number of new cancer cases	Smoothed rate per 100,000	95% Credible Interval	
					Lower	Upper
Urban	2014	34,457,752	31,561	91.53	90.65	92.42
	2015	34,786,323	31,664	91.21	90.35	92.03
	2016	35,135,096	32,059	91.56	90.71	92.46
	2017	35,382,388	31,941	90.82	89.87	91.74
Larger rural	2014	3,598,319	3,588	99.47	97.49	101.23
	2015	3,625,041	3,479	99.71	97.98	101.49
	2016	3,659,757	3,822	100.88	99.00	102.79
	2017	3,693,760	3,643	100.33	98.50	102.17
Smaller rural	2014	3,452,422	2,670	80.02	78.34	81.90
	2015	3,470,791	2,861	80.79	79.29	82.52
	2016	3,494,124	2,831	81.96	80.39	83.81
	2017	3,518,064	2,929	82.05	80.40	83.82

Table 8: Smoothed unadjusted annual rates and 95% credible intervals of bowel cancer incidence per 100,000 population by area category (urban, larger rural and smaller rural) in England, 2014 to 2017.

Community type	Year	Population size	Number of new cancer cases	Smoothed rate per 100,000	95% Credible Interval	
					Lower	Upper
Urban	2014	34,457,752	26,454	77.19	76.33	78.02
	2015	34,786,323	27,184	77.91	77.07	78.72
	2016	35,135,096	27,162	77.34	76.49	78.15
	2017	35,382,388	26,974	76.10	75.25	76.92
Larger rural	2014	3,598,319	3,676	100.22	98.36	102.19
	2015	3,625,041	3,621	101.64	99.75	103.52
	2016	3,659,757	3,736	101.37	99.52	103.37
	2017	3,693,760	3,646	100.05	98.10	101.97
Smaller rural	2014	3,452,422	3,641	104.00	102.05	105.93
	2015	3,470,791	3,697	105.96	103.92	107.97
	2016	3,494,124	3,705	106.08	104.17	107.93
	2017	3,518,064	3,620	105.13	103.20	107.06

Table 9: Smoothed unadjusted annual rates and 95% credible intervals of all-cause mortality per 100,000 population by area category (urban, larger rural and smaller rural) in England, 2014 to 2023.

Community type	Year	Population size	Number of deaths	Smoothed rate per 100,000	95% Credible Interval	
					Lower	Upper
Urban	2014	45,399,712	381,622	850.72	848.27	853.17
	2015	45,798,217	400,516	885.03	882.49	887.46
	2016	46,222,557	401,808	880.02	877.50	882.48
	2017	46,493,877	407,657	885.51	882.98	888.25
	2018	46,753,564	407,839	880.43	878.01	882.97
	2019	47,000,927	404,406	868.43	865.94	870.79
	2020	47,054,317	465,107	989.81	987.20	992.46
	2021	47,143,104	448,715	951.89	949.20	954.37
	2022	47,641,294	446,187	941.64	939.07	944.17
	2023	48,333,618	431,100	896.80	894.61	899.47
Larger rural	2014	4,608,967	47,026	1,016.78	1,011.52	1,022.19
	2015	4,636,922	49,624	1,065.19	1,059.47	1,070.50
	2016	4,673,934	50,173	1,066.40	1,060.38	1,071.67
	2017	4,713,803	50,726	1,077.08	1,071.83	1,082.58
	2018	4,744,347	51,026	1,076.44	1,071.11	1,082.08
	2019	4,781,550	51,107	1,067.31	1,062.02	1,073.25
	2020	4,805,401	56,919	1,213.50	1,207.72	1,220.11
	2021	4,875,289	55,689	1,180.42	1,174.64	1,186.86
	2022	4,924,215	57,704	1,183.87	1,178.42	1,189.80
	2023	4,981,974	56,122	1,137.26	1,131.66	1,142.82
Smaller rural	2014	4,361,652	41,063	921.33	916.05	926.38
	2015	4,373,549	43,391	972.14	966.53	977.33
	2016	4,392,555	43,999	980.66	975.22	986.08
	2017	4,411,880	44,341	995.79	990.36	1,001.61
	2018	4,426,629	44,436	1,002.18	996.33	1,007.36
	2019	4,447,591	44,458	1,000.60	995.09	1,005.94
	2020	4,466,255	48,869	1,141.21	1,135.52	1,147.41
	2021	4,536,510	48,381	1,114.09	1,108.53	1,119.99
	2022	4,578,898	50,243	1,120.35	1,114.54	1,125.67
	2023	4,616,890	48,983	1,083.79	1,078.20	1,089.71

Table 10: Percentage of communities (Lower layer Super Output Areas) in each area type (urban, larger rural and smaller rural) with a smoothed unadjusted average annual rate that was higher than, the same as or lower than the national average, in England from 2014 to 2023. Data are presented for emergency hospital admissions, cancer incidence and all-cause mortality.

	Percentage of Urban communities			Percentage of Larger Rural communities			Percentage of Smaller Rural communities		
	Higher	Same	Lower	Higher	Same	Lower	Higher	Same	Lower
IHD*	37.56	20.38	42.06	42.06	24.80	25.25	45.82	27.67	26.51
Stroke*	34.86	22.20	42.94	56.98	22.45	20.57	59.43	26.02	14.55
COPD*	44.02	15.13	40.85	41.60	19.50	38.90	20.40	19.57	60.03
Breast↑	26.19	33.26	40.56	68.20	27.23	4.57	88.86	9.86	1.27
Prostate↑	33.25	18.42	48.34	74.23	16.14	9.63	93.06	3.90	3.04
Lung↑	37.15	25.66	37.18	41.70	36.09	22.02	16.35	45.44	38.21
Bowel↑	35.60	14.75	49.65	74.09	13.75	12.16	88.64	6.56	4.80
All-cause mortality	40.76	11.70	47.54	62.73	13.78	23.48	54.93	18.60	26.47

*Emergency hospital admissions rate; ↑Cancer incidence rate from 2014 to 2017.

Table 11: Percentage of communities (Lower layer Super Output Areas) in each area type (urban, larger rural and smaller rural) with a smoothed rate ratio adjusted for age and sex that was higher than, the same as or lower than expected, in England from 2014 to 2023. Data are presented for emergency hospital admissions, cancer incidence and all-cause mortality.

	Percentage of Urban communities			Percentage of Larger Rural communities			Percentage of Smaller Rural communities		
	Higher	Same	Lower	Higher	Same	Lower	Higher	Same	Lower
IHD*	40.69	25.68	33.63	25.32	26.50	48.18	12.60	20.10	67.30
Stroke*	37.54	33.13	29.33	17.46	35.33	47.21	6.49	32.21	61.30
COPD*	47.69	14.82	37.5	26.84	15.28	57.88	7.24	8.92	83.84
Breast↑	6.07	83.94	9.98	13.20	86.01	0.80	14.06	85.49	0.45
Prostate↑	23.85	46.82	29.34	30.10	53.38	16.52	48.37	43.61	8.02
Lung↑	41.95	27.47	30.58	15.93	31.59	52.48	1.72	11.02	87.25
Bowel↑	15.66	69.98	14.36	5.99	89.26	4.75	5.40	91.90	2.70
All-cause mortality	45.48	17.05	37.47	28.06	15.97	55.98	16.46	10.65	72.89

*Emergency hospital admissions rate ratio; ↑Cancer incidence rate ratio.

Supplementary Figures

Figure 2: Maps showing the 33,755 communities (Lower layer Super Output Areas) in England shaded to show if their smoothed rate of emergency hospital admissions (for IHD, stroke and COPD) was higher than (red), the same as (yellow) or lower than (green) the national average rate in England from 2014 to 2023, presented by area category (urban, larger rural and smaller rural).



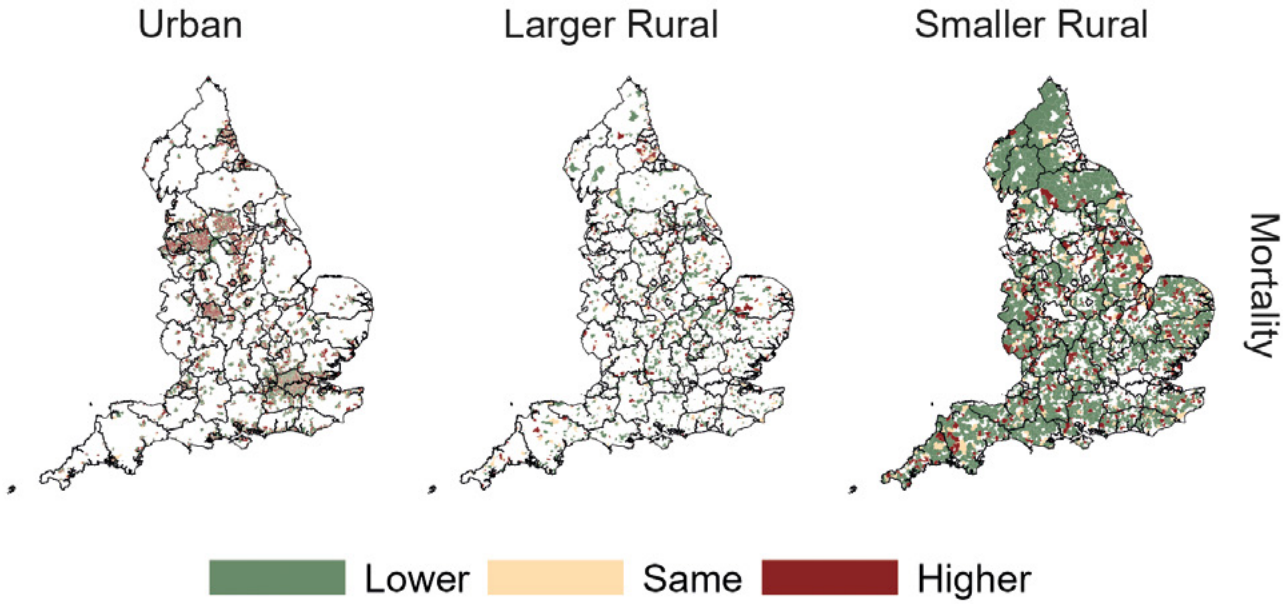
Source: UK Small Area Health Statistics Unit.

Figure 3: Maps showing the 33,755 communities (Lower layer Super Output Areas) in England shaded to show if their smoothed rate of cancer incidence (for breast, prostate, lung and bowel) was higher than (red), the same as (yellow) or lower than (green) the national average rate in England from 2014 to 2017.



Source: UK Small Area Health Statistics Unit.

Figure 4: Maps showing the 33,755 communities (Lower layer Super Output Areas) in England shaded to show if their smoothed rate of all-cause mortality was higher than (red), the same as (yellow) or lower than (green) the national average rate in England from 2014 to 2023.



Source: UK Small Area Health Statistics Unit.

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