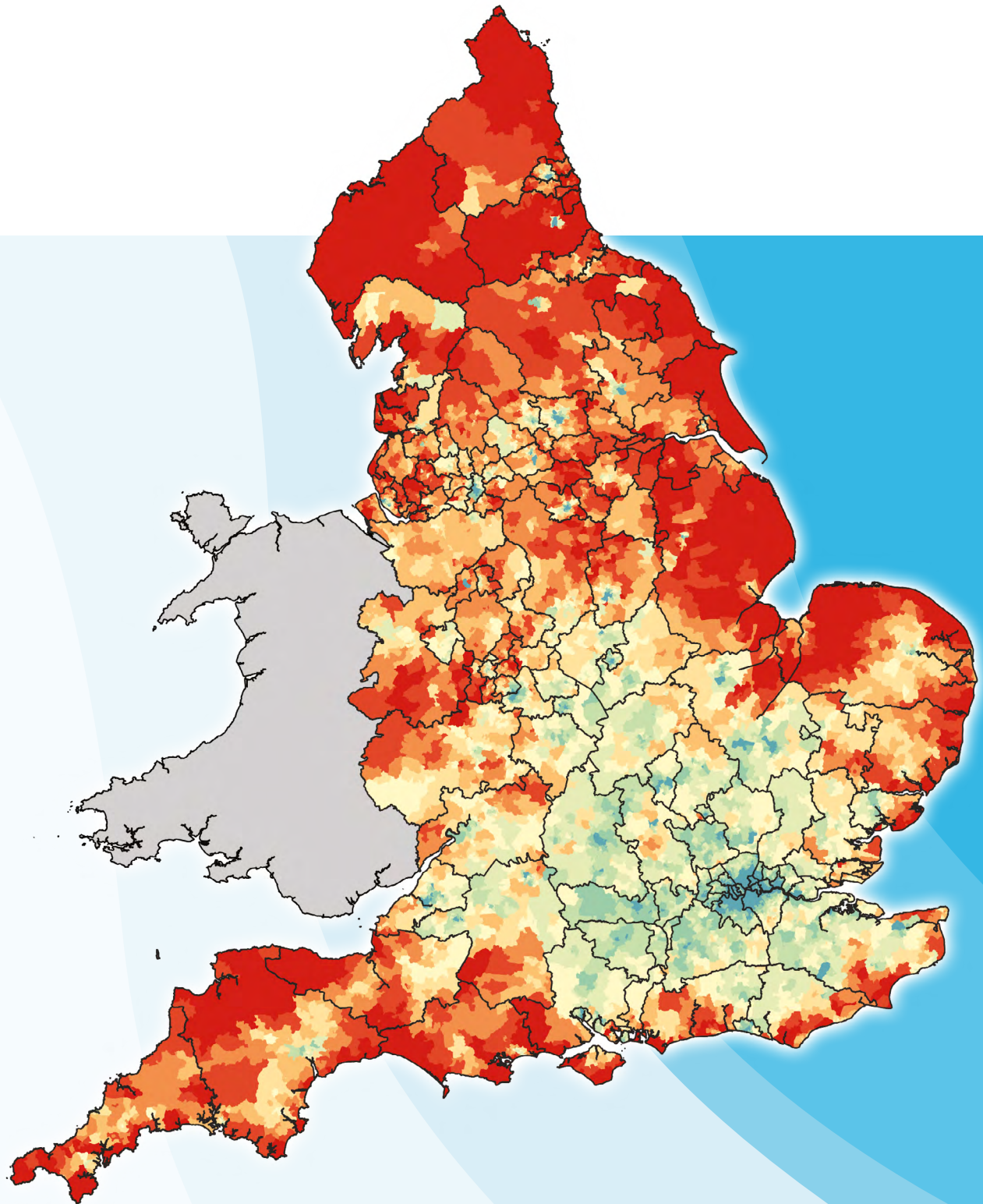# Chief Medical Officer's Annual Report 2021
Health in Coastal Communities

Map showing prevalence of coronary heart disease in England.

Introduction

The last year has seen the public health focus dominated by combatting COVID-19. With other health colleagues, I intend to write a report on technical lessons learned from COVID-19, but the pandemic in the UK is still evolving rapidly. COVID-19, which has had its greatest effects on those with chronic health conditions, has however reinforced the importance of local variations in health, and the concentration of pre-existing health conditions and chronic disease in certain geographies. It is important we do not lose sight of these enduring health challenges as we face the largest pandemic for a generation. The Chief Medical Officer's Annual Report 2021 concentrates on one of the most important of these challenges: health in coastal communities.

Coastal communities, the villages, towns and cities of England's coast, include many of the most beautiful, vibrant and historically important places in the country. They also have some of the worst health outcomes in England, with low life expectancy and high rates of many major diseases. For example, Blackpool, one of the country's favourite holiday destinations, has the worst life expectancy in the UK despite remarkable efforts by local health and civic leaders.

The central argument of this report is that the health challenges of coastal towns, cities and other communities are serious, and their drivers are more similar than their nearest inland neighbour. This means a national strategy to address the repeated problems of health in coastal communities is needed in addition to local action. If we do not tackle the health problems of coastal communities vigorously and systematically there will be a long tail of preventable ill health which will get worse as current populations age.

There are many reasons for poor health outcomes in coastal communities. The pleasant environment attracts older, retired citizens to settle, who inevitably have more and increasing health problems. An oversupply of guest housing has led to Houses of Multiple Occupation which lead to concentrations of deprivation and ill health. The sea is a benefit but also a barrier: attracting NHS and social care staff to peripheral areas is harder, catchment areas for health services are artificially foreshortened and transport is often limited, in turn limiting job opportunities. Many coastal communities were created around a single industry such as previous versions of tourism, or fishing, or port work that have since moved on, meaning work can often be scarce or seasonal.

Given the known high rates of preventable illness in these areas, the lack of available data on the health of coastal communities has been striking whilst researching this report. Coastal communities have been long overlooked with limited research on their health and wellbeing. The focus has tended towards inner city or rural areas with too little attention given to the nation's periphery. Data is rarely published at a geographical level granular enough to capture coastal outcomes, with most data only available at local authority or Clinical Commissioning Group (CCG) level. As a result, deprivation and ill health at the coast is hidden by relative affluence just inland which is lumped together. This report aims to explore the experiences of local leaders, along with analysis of what data exist, to help us understand the health and wellbeing of coastal communities.

Coastal communities are not homogenous, and each is shaped by its own unique history and culture. They do, however, share many similar characteristics, which should help some common policy responses. A resort town like Blackpool, for example, has more in common with Hastings, Skegness or Torbay than with Preston, just 18 miles inland. Fishing or port communities have particular, shared, challenges. A national strategy informed by these common groups, and underpinned by local actions aligned with a sustained evidence-informed strategy, will help reduce health inequalities in these areas.

This report will highlight the significant strengths in coastal communities along with many exemplary and impressive examples of local work taking place to support the health of local citizens. They should not however, in my view, face the considerable health challenges alone. The vulnerability of these communities is not a new revelation, and the economic problems they face have been highlighted in several recent reports including in relation to the impact of COVID-19 [1,2,3].

Whilst the focus nationally over the summer may be directed towards visitors, with many opting to stay in one of the UK's many beautiful coastal towns, it is important to remember that the coast is also home to millions of people and that the health and wellbeing of these populations has been long neglected and overlooked.

Report structure

The aim of this report is to explore the health and wellbeing of coastal communities, combining insight from local leaders with data analysis. For the definition of 'coastal community' please see Appendix 1.

I will first highlight the key themes and recommendations, which are then followed by chapters 1-6.

Chapter 1 includes 10 case studies written by Directors of Public Health and others who work with and in coastal communities. These case studies range from large port cities, to local authorities covering smaller seaside towns. The case studies provide an overview of the demographic structure of the population and their health and wellbeing outcomes, along with both the strengths and challenges facing their communities. These case studies highlight what local level, place-based working can achieve.

Chapter 2 consists of analysis by the Office for National Statistics (ONS) using their own granular coastal definition to explore the wider determinants of health including demographic and migration patterns, deprivation, employment, education and housing. Given the limited relevant data available on housing, especially the private rental sector, section 2.8 will further explore housing via a case study from Blackpool Council.

Chapter 3 is an analysis by colleagues from Plymouth University exploring the burden of disease and health service data at a granular level using their own definition of a coastal community.

Chapter 4 includes analysis by Health Education England (HEE) on the medical workforce in coastal communities and their ambitious programme of reform to overcome some of these challenges.

Chapter 5 is a summary of flooding and coastal communities written by the Public Health England (PHE) Extreme Events Team. This was raised as a concern by local leaders working in coastal communities.

Chapter 6, written by colleagues from Exeter University, explores the benefits of coastal living. The coast has much to offer with research suggesting that there is a protective effect to health and wellbeing from living on the coast.

Running through this report is the fact that coastal communities have multiple, overlapping but addressable health problems. If we are serious about improving the health of the nation, coastal communities are a good place to start.

Professor Christopher Whitty – Chief Medical Officer for England.

References

[1] McCurdy, C. (2020). *Local Differences: Responding to the local economic impact of Coronavirus.* Resolution Foundation https://www.resolutionfoundation.org/app/uploads/2020/06/Local-differences.pdf

[2] Davenport, A. et al. (2020*) The geography of the Covid-19 crisis in England.* Institute for Fiscal Studies https://www.ifs.org.uk/publications/14888

[3] *The effect of the Covid-19 pandemic on our towns and cities.* Centre for Towns. https://www.centrefortowns.org/reports/covid-19-and-our-towns

Summary of key themes

The following are key themes arising from this report.

1.   Health and wellbeing in coastal communities.

2.   Deprivation and health.

3.   Mental health.

4.   Migration and demography.

5.   Health services and medical workforce.

6.   Economy and employment.

7.   Education.

8.   Housing.

9.   Benefits of coastal living for health.

10.   Coast-specific issues.

11.   Limitations of data and definitions.

12.   A strong case for national action.

Health and wellbeing in coastal communities

Many coastal communities are remarkable and beautiful places but have some of the worst health and wellbeing outcomes in England. Capturing these outcomes accurately has historically been challenging as data are often not available at a granular level and are averaged out with nearby healthier inland towns.

This report demonstrates that coastal communities have a higher burden of disease across a range of physical and mental health conditions (for example Coronary Heart Disease in Figure 1). This is partly driven by age structure and partly by concentration of deprivation, however, even after accounting for these and other factors, there remains a 'coastal excess' of disease. This is true across many conditions and risk factors. Figure 2 plots these 'coastal effects', demonstrating the extent to which, having accounted for all other factors, populations in coastal areas experience higher or lower disease prevalence rates.
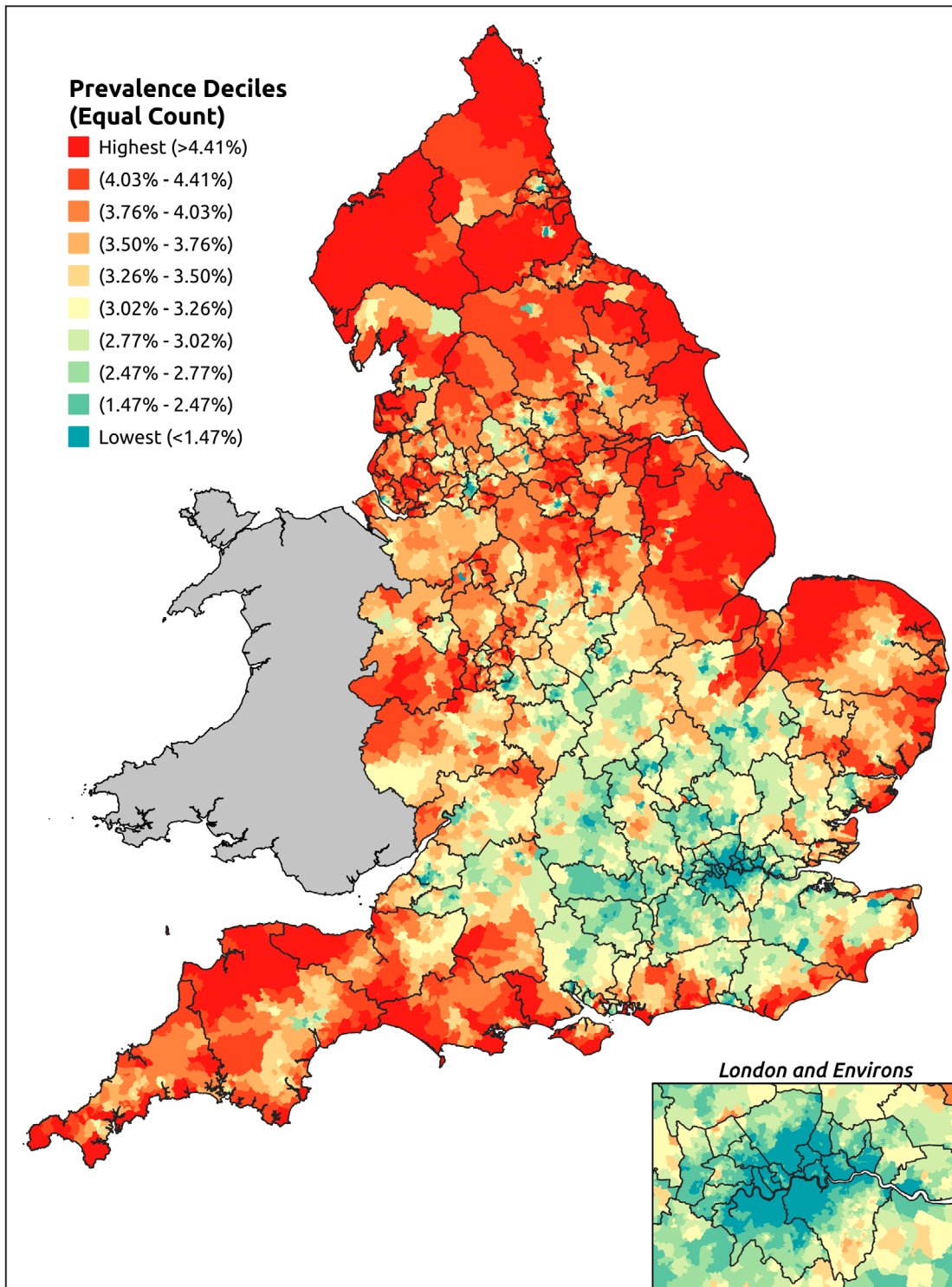
Life expectancy (LE), healthy life expectancy (HLE) and disability free life expectancy (DFLE) are all lower in coastal areas and the Standardised Mortality Ratios (SMRs) for a range of conditions, including preventable mortality, are significantly higher in coastal areas compared with non-coastal. The case studies in this report describe a high proportion of people with long term conditions, with one in four people in Morecambe having a limiting, long-term illness or disability (25.0%), significantly more than the national average.

The Director of Public Health (DPH) in Hull, for example, highlights how poor health occurs prematurely and is largely the result of preventable diseases affecting LE and HLE/DFLE – "far shorter lives are spent in far poorer health." This is echoed by the Director of Public Health of North East Lincolnshire who describes people in their most deprived communities "old before their time".

This concentration of poor health and wellbeing in coastal communities also provides a clear and geographically defined target for national action. If we could improve the health of coastal communities, the median health for the entire country would be lifted. Improving health here would mean a significant part of the long tail of lower life expectancy in England would be reduced.
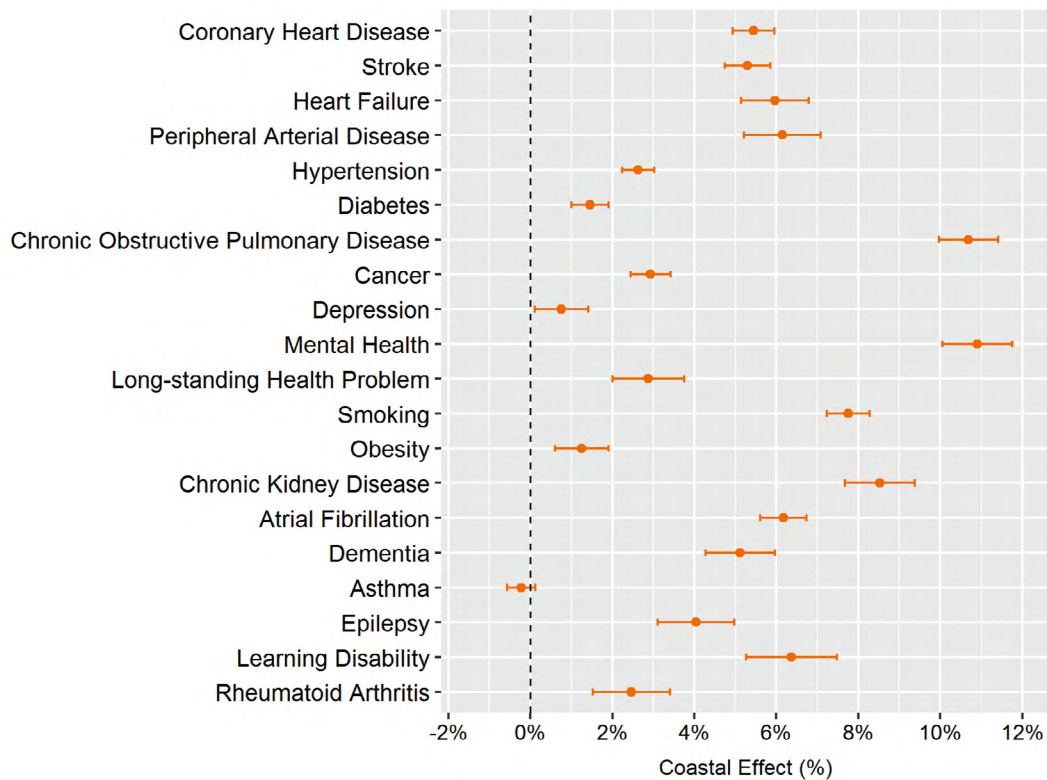
Figure 1: Crude GP QOF Prevalence of Coronary Heart Disease attributed to LSOAs: 2014/15 – 2018/19

Prevalence Deciles (Equal Count)

- Highest (>4.41%)
- (4.03% - 4.41%)
- (3.76% - 4.03%)
- (3.50% - 3.76%)
- (3.26% - 3.50%)
- (3.02% - 3.26%)
- (2.77% - 3.02%)
- (2.47% - 2.77%)
- (1.47% - 2.47%)
- Lowest (<1.47%)

London and Environs

Figure 2: Estimates of the 'coastal effect' on the number of patients on selected GP disease registers: 2014/15 – 2018/19
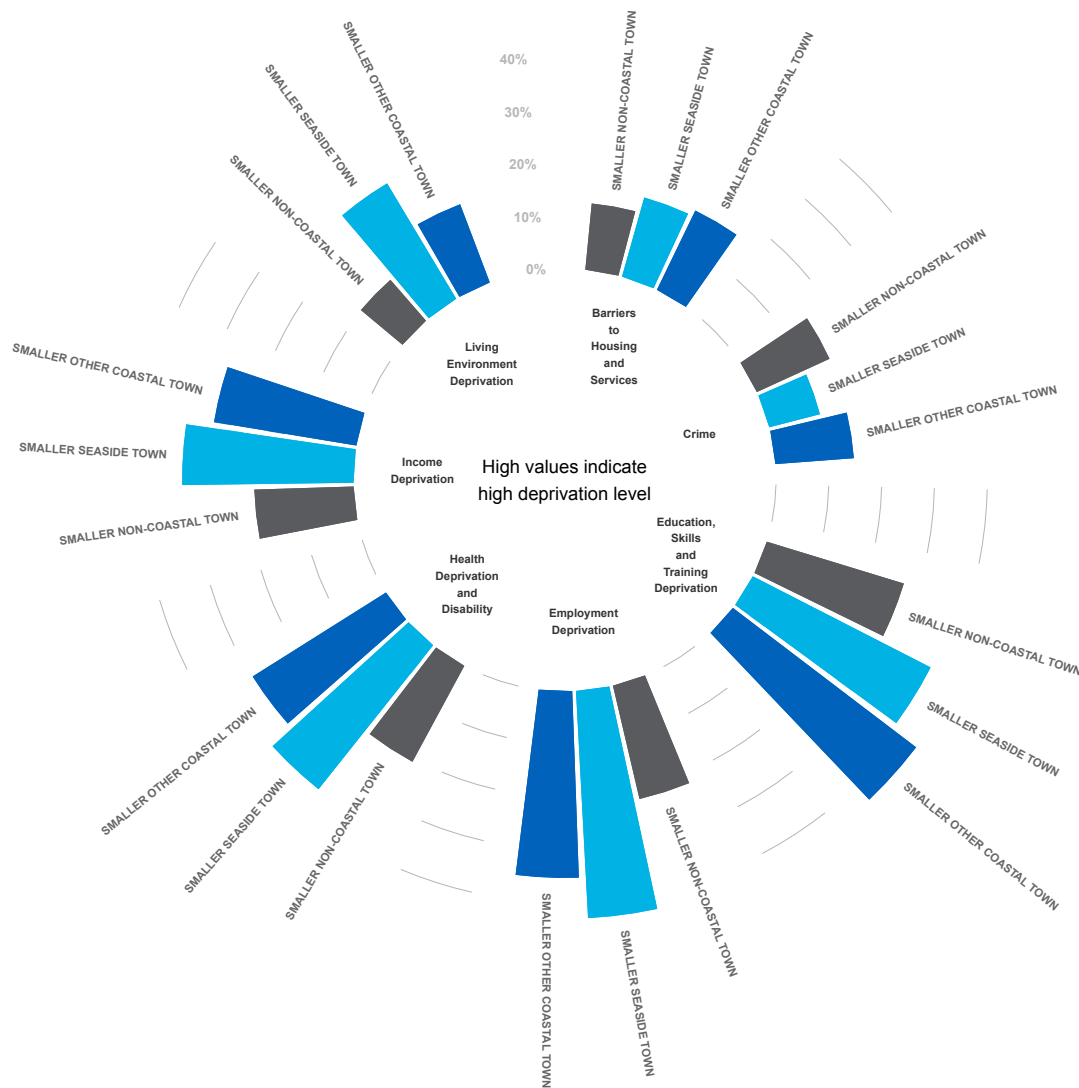

Deprivation and health

High levels of deprivation, driven in part by major and longstanding challenges with local economies and employment, are important reasons for the poor health outcomes in coastal communities. ONS, in their analysis for this report, found that deprivation was higher in coastal communities compared to non-coastal, with smaller seaside towns and large coastal (non-seaside) towns being especially deprived. Figure 3, for example, shows that smaller coastal towns had a higher share of population living in the most deprived areas of England across almost all domains of deprivation. This is echoed by all case studies in the report, including Blackpool, the most deprived local authority in England and Hastings, the most deprived in the South East.

Figure 3: Percentage of small towns' resident population living in the 30% most deprived neighbourhoods in England, 2019

Source: Ministry of Housing, Communities and Local Government – English Indices of Multiple Deprivation, 2019, compiled for towns and cities by the Office for National Statistics

Several risk factors which are important drivers of health outcomes have a strong correlation with deprivation. Obesity for example, is higher in those who live in more deprived areas which are often obesogenic environments compared to less deprived neighbourhoods. Peoples' circumstances and environments can make it difficult for them to change unhealthy behaviours[1]. Whether we can be active or eat healthily is impacted by a number of socio-economic factors, such as income, housing, education, access to space and sale of unhealthy foods.

Risk factors, including smoking, are higher in coastal communities, with analysis suggesting an excess coastal prevalence rate of 6.71%. Many coastal Directors of Public Health highlight smoking as a key concern in their case studies. Hartlepool and Blackpool for example, describe that almost one in four women smoke during pregnancy, and in Hull, despite the proportion of women smoking in pregnancy falling, it is still twice that of England (20.6% compared with 10.4%). Despite a downward trend in smoking rates nationally, it is clear geographical inequalities remain, and that targeted intervention to high risk groups and geographies is required.

Excess alcohol use is also commonly raised as an issue by coastal Directors of Public Health. Along with other coastal communities, Morecambe and Hastings have high rates of hospital admission for alcohol-related harm. The Torbay case study highlights worse admissions for alcohol-related conditions compared to the English average and Blackpool has the highest rate of hospital admissions for alcohol-related harm in the country. This report also found that alcohol-attributed admissions in 0-17-year olds were higher in coastal communities.

ONS analysis of alcohol-specific mortality rates found a mixed picture. Large urban areas appeared to have a higher alcohol-specific mortality rate. There was a statistically significant higher alcohol-specific mortality rate in males in large towns (both coastal and non-coastal) compared to smaller non-coastal towns. Mortality figures, however, are unlikely to represent the overall burden of the challenges associated with alcohol and further analysis of alcohol related indicators at a granular level in relation to coastal communities would be beneficial. Improving the ability of Directors of Public Health to input into licensing applications in their local areas is likely to have a significant impact on health outcomes, especially in coastal communities.

Coastal Directors of Public Health outlined substance misuse as a concern. In Hull for example, the estimated prevalence of opiate and/or crack cocaine use is more than twice that of England (18.1 versus 8.9 per 100,000 population aged 15-64 years). These local data are supported by the national ONS analysis which found that the mortality rate due to drug poisoning was higher in coastal towns compared to non-coastal.

Mental health

Mental health problems demonstrate social gradients in the same way as physical health problems[2].

There is a high burden of mental ill-health illustrated by QOF data in coastal communities. The rates of self-harm among 10-24-year olds were also found to be higher in coastal compared with non-coastal communities.

These findings are mirrored by the case studies, with Clacton, reporting the second highest mental health need in the country. According to the case study, patients in Morecambe Bay Primary Care Network are 20% more likely to have depression than the national average, and in Somerset, hospital admissions for self-harm are significantly raised compared to the rest of England and appear to be increasing with time. Hartlepool has a higher prevalence of mental health disorders than the England average for both the 16 years + population and the 65 years + population.

Researchers at Liverpool University have created the Small Area Mental Health Index (SAMHI), which is a composite measure on mental health from multiple sources at lower geographical level (lower super output areas)[3]. This index also shows a coastal pattern of disease which is largely explained by deprivation, migration and age profile of coastal populations.

Demographics and migration patterns

Coastal communities more often have a higher proportion of elderly residents than the general population, and this is set to increase over the following decades. The ONS analysis found that coastal towns and cities have higher shares of residents in the 65 years or over age group and lower shares in the 0 to 15 years age group (Figure 4). This finding is mirrored in the population pyramids of each case study. This age difference is likely driven by migration out of large cities as people grow older and may also be similarly seen in rural areas.

Figure 4: Population by age groups, England 2019
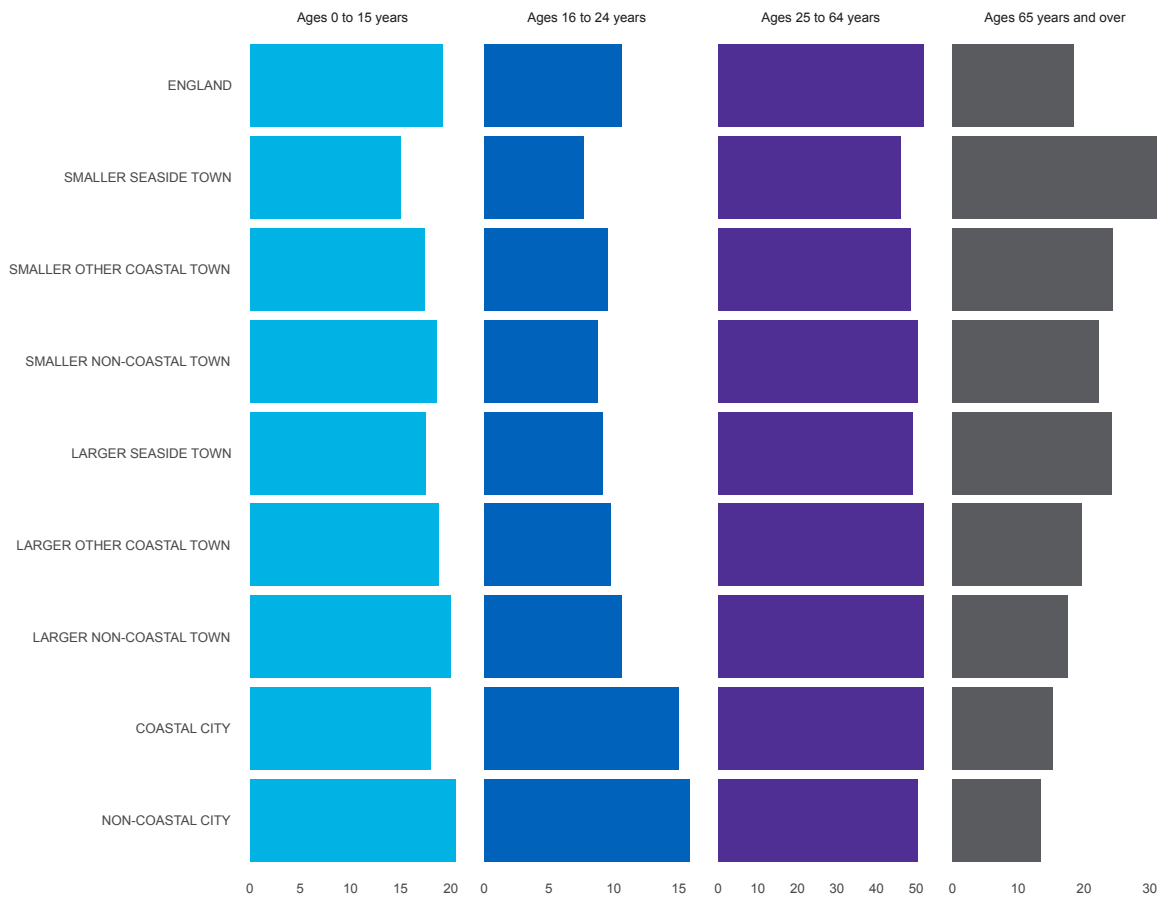
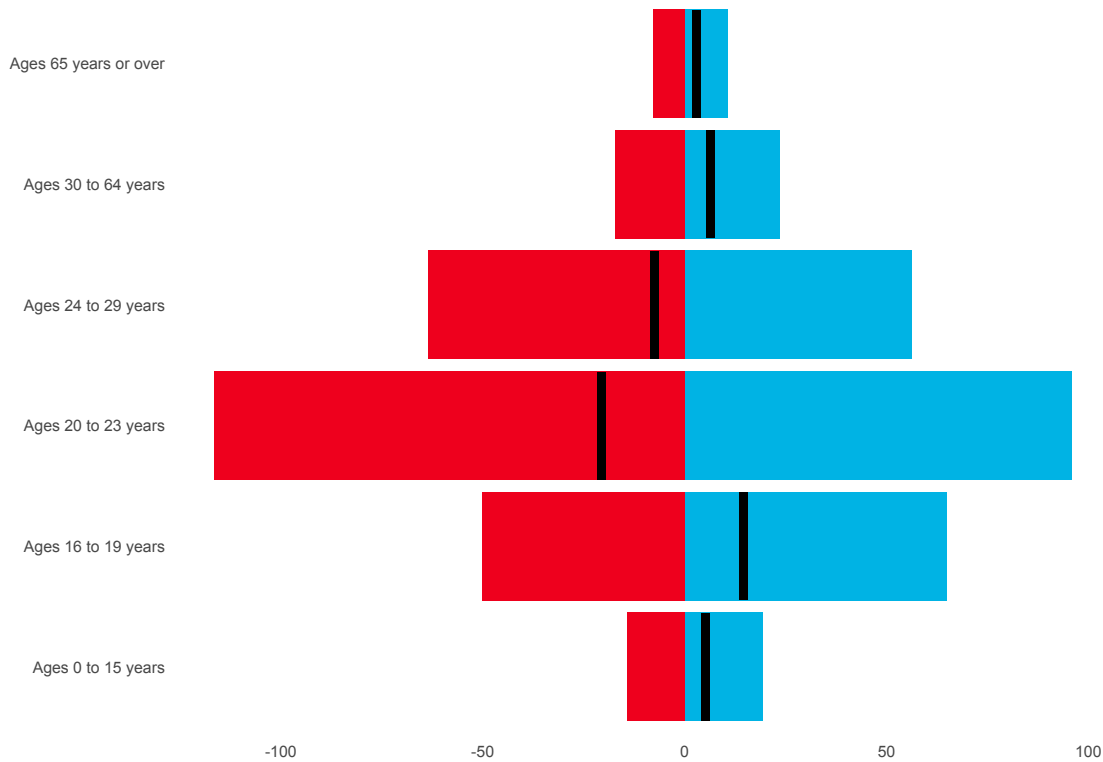**Source:** Office for National Statistics – Population estimates

Migration

The case studies and wider literature describe three key populations who migrate to and from the coast. There is an in-migration of the elderly population, retiring to the coast (as they do to other semirural areas). Secondly, some coastal areas including Blackpool, Morecambe and Hastings experience in-migration of a transient, vulnerable younger population driven by the availability of cheap housing. There is also an out-migration of young people in search of employment opportunities not available locally.

Granular migration data below local authority level was not available nationally for ONS analysis. Despite this, analysis at local authority level provides an indication of movement to coastline local authorities (although this may not equate directly to coastal areas, especially in large local authorities with small coastlines). The analysis suggested that coastline local authorities saw a net outflow of two age groups: the 20 to 23 years age group and the 24 to 29 years age group. All other age groups had a net inflow, including the 16 to 19 years age group which is likely due in large part to migration into coastline local authorities with universities or other higher and further education.

Figure 5: Net moves from coastline local authorities to inland, by age group (per 1,000 population), England, 2019

Source: Office for National Statistics – Population Estimates

Both current and future demographic and migration patterns have public health implications for the burden of disease and service provision in coastal areas. Given the elderly population, considering the needs of older people is essential. PHE highlighted this in their commissioned evidence review of health inequalities in older populations in coastal and rural areas[4]. The review found a paucity of literature in coastal communities. As a result, they are due to publish a further report, in partnership with Age UK, to assist those working in coastal communities to understand the issues affecting older people in previously under-recognised groups, including older men, older people from ethnic minority and LGBTQ communities.

Migration patterns are also relevant to population health and wellbeing. Evidence suggests that triggers for moving in the elderly can include a change in partnership, such as widowhood or a change in health and economic status during the last 12 months[5]. Understanding the *reasons* for migration are likely to be important especially for ensuring appropriate support and services.

Health services and medical workforce

There is evidence of a significant health service deficit in terms of recorded service standards, cancer indicators and emergency admissions in coastal communities. The reasons for this are unclear, however possible explanations include challenges with the retention of medical workforce and access to services.

The case studies emphasise that coastal communities, especially those in coastal areas that are also sparse, such as West Somerset and Lincolnshire, face challenges with access to services, but also challenges with service delivery where they struggle to reach the critical mass needed to sustain specific services.

Medical workforce

Challenges to the recruitment and retention of health and social care staff is a common concern expressed by coastal Directors of Public Health and NHS leaders. Morecambe, for example, describes the challenges of recruiting and retaining General Practitioners and experienced practice nurses, and how these inequalities in primary care provision further compound the health issues within the community.

HEE's analysis for this report found that despite coastal communities having an older and more deprived population, they have 14.6% fewer postgraduate medical trainees, 15% fewer consultants and 7.4% fewer nurses per patient. This is shown in Figure 6.

Figure 6: Deficit in consultants, trainees and nurses in coastal communities
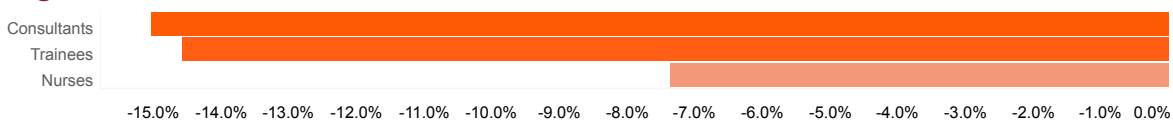
HEE is planning an ambitious set of reforms to address these concerns. Their approach to undergraduate reform, along with the review of the distribution of post-graduate medical trainees in coastal areas, will be a step towards reducing the disparities in coastal communities. HEE's approach to generalism is especially welcomed, given the aging population in coastal communities, who are likely to have a greater number of long-term conditions.

Economy and employment

Employment is a key challenge in coastal communities and impacts health in multiple ways. ONS analysis for this report shows that the unemployment and part-time employment rate is higher in coastal towns. There is also a greater dependency on the public sector for employment in coastal communities.

The drivers of employment patterns in coastal communities are varied. The case studies illustrate that higher levels of unemployment, part time and seasonal work may be due to a decline in traditional industries which were central to the original reasons these communities thrived and grew, such as previous versions of tourism, fishing, engineering and manufacturing. These industries have changed over recent decades and the historical 'purpose of place' has changed. Poor transport connections, peripheral location and long distances to local employers are also a challenge, along with limited awareness of opportunities outside the local area. A person in a coastal community looking to work outside their area has literally half the geographical options of inland towns (the other half is the sea). Lack of diversification in the local economy is problematic; however, some areas have been able to adapt, whilst others, for various reasons, have found this more challenging. These findings are also highlighted by the House of Lords Select Committee on Seaside Towns and the Coastal Communities Alliance[6,7]. North East Lincolnshire's Director of Public Health describes how a third of economic inactivity is due to long-term sickness and is linked to high rates of chronic disease in some of their neighbourhoods.

COVID-19 has had a significant impact on unemployment rates in coastal communities. The case studies suggest that this is due in large part to their reliance on tourism and hospitality, but also the already low levels of employment and opportunities. Increases in unemployment-related benefit claims during COVID-19 were not equal across the country. Areas that started out with higher claimant rates and those with a higher reliance on tourism were hit especially hard[8]. Coastal areas like Blackpool, Devon and Cornwall have been particularly affected. This is supported by other reports, including by the Institute of Fiscal Studies, which found that many coastal areas are notably vulnerable along both health and employment dimensions[9,10]. Whilst the effects of the initial COVID-19 waves will fade, these communities are more vulnerable to economic shocks of many kinds.

Poor employment prospects underpin many drivers of poor health outcomes, and good quality, stable jobs are important in ensuring positive health outcomes. Local areas, however, have embraced various innovative strategies to improve employment prospects, including working with local anchor institutions. The NHS's work on anchor institutions is an example of how the health sector can support this given the NHS and social care are major employers in many coastal communities.

Education

Poor educational attainment is linked to worse health outcomes over a lifetime[11]. Analyses from this report suggest that children in coastal communities have worse education attainment compared to those in non-coastal areas. This is especially true for progression to higher education. There is, however, disparity between different types of coastal communities as outlined by ONS.

The case studies mirror these findings. In Clacton, for example, the proportion of children achieving a good level of development is statistically significantly worse than wider Tendring, Essex and national comparators, with only 53% achieving a good level of development at age 5 compared with 58% in Tendring and 62% in Essex. Morecambe and Torbay report high numbers of children receiving Special Educational Need (SEN) support, with Torbay emphasising that poor outcomes are often masked by the high performance of pupils in the grammar school system.

The Director of Public Health in Lincolnshire describes how poor educational attainment includes low aspirations that may be tempered by home and community expectations. Access to local higher education opportunities is also harder than for most inland communities. Travel times from coastal Skegness or Mablethorpe to Lincoln are over two hours when using public transport, making on-campus learning unviable for those who need to live at home. Young people often leave coastal areas to pursue higher education given the lack of local opportunities, and the Morecambe public health team describe how these young people rarely return, making recruitment into local businesses and the development of the local economy more difficult.

The Coastal Communities Alliance summarise several reasons for the patterns of comparatively low education attainment in coastal areas which include: a transient workforce with a high percent turnover of pupils; lack of access to further education; lack of employment opportunities and investment in skills development and lack of adaptation to peak and low season patterns of employment[6]. With support from the Coastal Communities Fund, Lincolnshire is piloting courses that are adaptable to the seasonal nature of coastal communities, with the aim of encouraging young people to continue in education that is flexible to their needs.

Housing

Housing, especially the private rented sector and other accommodation including Houses of Multiple Occupation (HMOs) and static caravan parks, is a key issue for coastal communities. HMOs in seaside towns have often been converted from now comparatively cheap former guesthouses, designed for a previous form of seaside tourism. Directors of Public Health and local government leaders raise concerns about the challenges of poor quality, but cheap HMOs, encouraging the migration of vulnerable people from elsewhere in the UK, often with multiple and complex health needs, into coastal towns. This has implications for both service provision and support. Blackpool's Director of Public Health describes the tight relationship between poor quality private rented housing and low life expectancy, with those living in the failing private rented housing of inner Blackpool dying prematurely (Figure 7).

Static caravan parks present a different set of challenges, often being the home for part of the year for older citizens with multiple health needs or migrant workers, but without the service provision designed in to support them.
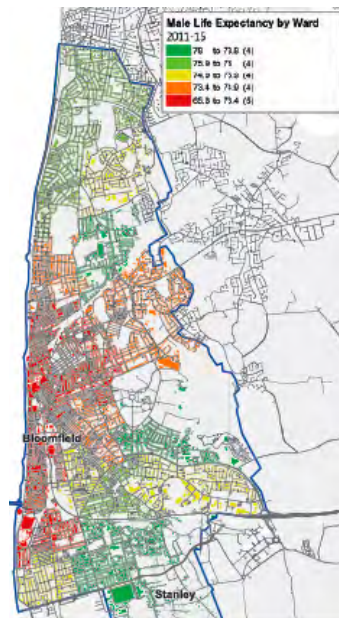
Figure 7: Approximate location of HMOs and Male Life Expectancy

Approximate location of HMOs   **Male Life Expectancy**
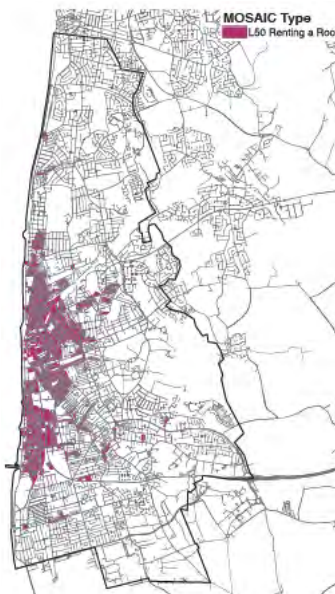
Source: Blackpool Public Health Annual Report 2017

Source: Public Health England Local Health

Benefits of coastal living

Although this report demonstrates the many health challenges of coastal communities, paradoxically coastal areas are generally intrinsically healthier. Once socio-economic and demographic characteristics are accounted for, those living closer to the coast report better health on average than their inland counterparts. this report highlights that there are health benefits (both physical and mental) to living near the coast which are not merely the result of selective migration. These may include better access to outdoor spaces for exercise, social contact and lower air pollution. There are also opportunities from new initiatives such as the English Coast Path. These geographical advantages provide a good starting point for many of the changes that need to occur.

Problems caused by the physical geography of the coast

Flooding is more common in many coastal areas, through combinations of storm surges from the sea, and fluvial (river) flooding as many are built on river outlets of flood plains. Flooding can have a significant health impact both in the short term and long term. Drowning, physical injuries and water contamination may impact in the immediate aftermath, whereas mental health problems, access to health care and loss of employment can have severe long-term consequences. Modelling of future flood risk indicates significant increases in future coastal flood risks with coastal local authorities including Hull, the City of Portsmouth, and Sedgemoor District Council at particular risk. Climate change will exacerbate this risk.

Having half of the surrounding area as sea makes transport, digital connection and wider connectivity more difficult. The time taken to get from coastal communities to major conurbations for work, specialist healthcare, retail and leisure is often considerable, providing a physical reason for some coastal community challenges.

Limitations of data and definitions

A key challenge for this report has been the minimal research and limited data available at small area geographies. Several key public health indicators were not available or accessible for analysis at lower level geographies. The Directors of Public Health and chapter authors clearly highlight that the granularity of analysis makes a major difference, and that health outcomes in coastal communities can be significantly masked when analysis is at a wider geographical footprint such as local authority or CCGs.

Data from Clacton highlight that a key issue in recognising and understanding the severity and rate of the decline in the area, is that data are usually presented on a wider Tendring footprint, which includes some areas that are relatively affluent. If just the wards identified as Clacton are considered, the level of deprivation around the education and childhood deprivation domains exceed almost all comparators.

A further limitation is that there is no nationally agreed definition or consensus on what constitutes a 'coastal community'. Academics, institutions, and policy makers have adopted a variety of definitions. These range from the narrower specification of seaside resorts, to broader classifications which include every local authority with a coastline or estuary. Each definition has its limitations and there is commonly an element of subjectivity in the categorisation. Certain 'sub-categories', for example, port-towns or seaside towns may sometimes be an appropriate narrower definition depending on the purpose for categorisation.

A strong case for national action

The UK, and England specifically, is a coastal nation. A high proportion of the worst health and wellbeing outcomes in England are concentrated in coastal communities. The specific health challenges of coastal communities often have much more in common with one another than their nearest inland neighbours, making a national strategy to complement local and regional initiatives a sensible approach. If we could reduce the health disparities in coastal communities, the impact locally would be very positive. Given the scale, improving health in coastal communities means the median health and wellbeing of the whole country would also be lifted, and the long tail of poor health outcomes in the nation would be reduced appreciably. Many of these challenges are amenable to strong, targeted, long-term action. In this report we have highlighted many problems, but they are problems to which in many cases there are solutions. We have suggested some specific recommendations for action, but these should be viewed as a starting place. Coastal communities have major public health challenges, and we have a responsibility to meet them.

References

1   Williams, E. Buck, D. (2020). *What are Health inequalities?* Kings Fund. Available at: https://www.kingsfund.org.uk/publications/what-are-health-inequalities#pathways

2   Marmot M (2005) *Social determinants of health inequalities*. Lancet 365, 1099–1104. Available at: https://pubmed.ncbi.nlm.nih.gov/15781105/

3   https://pldr.org/dataset/2noyv/small-area-mental-health-index-samhi

4   Public Health England, (2019). *Health inequalities in older population in coastal and rural areas.* Public Health England. Available at: https://www.gov.uk/government/publications/health-inequalities-in-ageing-in-rural-and-coastal-areas

5   Evandrou, M., Falkingham, J. & Green, M. (2010) *Migration in later life: evidence from the British Household Panel Study*. Popul Trends 141, 77–94. Available at: https://doi.org/10.1057/pt.2010.22

6   Coastal Community Alliance, *Policy Strategy.* Available at: https://www.coastalcommunities.co.uk/wp-content/uploads/2018/05/national-coastal-story-and-lobbying-final-april-2018-1.pdf

7   House of Lords Select Committee on Regenerating Seaside Towns and Communities (2019). *The Future of Seaside Towns.* Available at: https://publications.parliament.uk/pa/ld201719/ldselect/ldseaside/320/32002.htm

8   McCurdy, C. (2020*). Local Differences: Responding to the local economic impact of Coronavirus*. Resolution Foundation. Available at: https://www.resolutionfoundation.org/app/uploads/2020/06/Local-differences.pdf

9   Davenport, A. *et al.* (2020*). The geography of the Covid-19 crisis in England.* Institute for Fiscal Studies. Available at: https://www.ifs.org.uk/publications/14888

10   Centre for Towns (2020). *The effect of the Covid-19 pandemic on our towns and cities. Available at:* https://www.centrefortowns.org/reports/covid-19-and-our-towns

11   Marmot,M. Allen,J. Boyce,T. Goldblatt,P. Morrison,J. (2020) *Health Equity in England: The Marmot Review ten years on*. London: Institute of Health Equity. Available at: https://www.health.org.uk/sites/default/files/2020-03/Health%20Equity%20in%20England_The%20Marmot%20Review%2010%20Years%20On_executive%20summary_web.pdf

Recommendations

This report has three key recommendations, and several more specific recommendations.

Lead government departments and organisations are listed where appropriate, but this is not exhaustive, and this work needs a whole of government response.

Key recommendations:

1. Given the health and wellbeing challenges of coastal communities have more in common with one another than inland neighbours, there should be a **national strategy to improve the health and wellbeing of coastal communities**. This must be cross-government as many of the key drivers and levers such as housing, environment, education, employment, economic drivers and transport are wider than health.

2. The current **mismatch between health and social care worker deployment and disease prevalence in coastal areas** needs to be addressed. This requires action by HEE and NHSE/I.

3. The paucity of **granular data and actionable research into the health needs of coastal communities** is striking. Improving this will assist the formulation of policies to improve the health of coastal communities. Local authorities, ONS and NHSE/I need to make access to more granular data available. Research funders, including NIHR and UKRI, need to provide incentives for research aimed specifically at improving coastal community health.

Detailed recommendations:

1. Develop a national cross-government strategy on health and wellbeing of coastal communities

The strategy should consider cross-government action on the following:

1.1	Planning for the ageing population in coastal and other peripheral areas, with consideration to migratory patterns, and the potential for a deficit of social care and healthcare workers relative to older populations	Cross-government

1.2	Opportunities for joint working from early years through to further education to improve both health and educational outcomes for children and young people in coastal communities	DfE, MHCLG
1.3	Opportunities for joint working to maximize economic opportunities for coastal communities including maintaining the current focus on the role of the NHS as an anchor institution	NHSE/I, DWP, DHSC, MHCLG
1.4	Review of incentives in the private rental sector in coastal communities, specifically HMOs which draw a transient vulnerable population to coastal communities	MHCLG, HMT
1.5	How to mitigate the transport links which make coastal communities more peripheral	DfT
1.6	Specific plans for major risk factors concentrated in coastal communities – especially high rates of smoking in pregnancy, alcohol and substance misuse	DHSC, NHSE/I
1.7	Looking at funding formulas which disadvantage coastal communities	MHCLG, DHSC, HMT
1.8	Making more of the potential health and wellbeing benefits of living in coastal communities	DEFRA, MHCLG

2. Maintain focus on the current and proposed future medical education reforms which includes the geographical redistribution programme

Additional work is required to;

2.1	Take account of the coastal deficit in the location of new medical schools, and actively recruit in coastal communities to existing medical schools	HEE, DHSC
2.2	Increase GP and specialty training placements (including public health) in coastal areas	HEE, NHSE/I
2.3	Increase access of coastal communities to specialist healthcare, including via digital methods	HEE, NHSE/I
2.4	Build upon learning from the COVID-19 pandemic and HEE's Future Doctor report to strengthen the focus on maintaining generalist skills, which are doubly useful in populations with multimorbidity in peripheral areas further from specialist care	HEE

2.5	Review whether current funding arrangements are a disincentive to GP, nursing and other NHS and social care workers moving to coastal areas	HEE, DHSC
2.6	Consider the wider workforce including social care and other NHS workforce in addition to the medical and nursing workforce	NHSE/I, DHSC

3. Improve data and research into coastal communities

This work should include the following actions:

3.1	Review the availability, access and applicability of data on health and wellbeing outcomes and their determinants at lower geographical levels. This includes the analytical capacity across the system to collate, analyse, interpret and disseminate the existing data. This needs consideration of data sharing arrangements	OHP, ONS
3.2	Further multi-disciplinary research is required to understand the multiple drivers of poor health outcomes in coastal communities and test effective interventions and solutions. This requires specific incentives to leading health academic groups by research funders	NIHR, MRC, ESRC
3.3	Analysis suggests that there may be service level challenges in coastal communities. Further research is required to assess this including reviewing the actual, versus expected disease prevalence and service provision in coastal and non-coastal communities	Health inequalities team in NHSE and DHSC
3.4	Research on the health and wellbeing of coastal communities should be encouraged in coastal universities where appropriate, for example through civic agreements between universities and local authorities	NIHR, MRC
3.5	Review migration patterns at lower level geographies to improve understanding of their impact on local communities	ONS
3.6	Improve joint working between local authorities and academic institutions data sharing arrangements	Research funders, especially NIHR, MRC, ESRC

3.7	Given the commonality of interest between coastal areas, learning networks of those leading population health in these areas should be encouraged, linked to academic institutions with an interest in building the knowledge base on health improvements	ADPH

Further recommendations

4.1	Continue work to ensure Directors of Public Health in every Integrated Care System (ICS) are an integral part of the ICS Executive leadership team/ board	DHSC
4.2	The high rates of excess alcohol use in coastal communities, and specifically issues in resort towns, further strengthens the case that public health should be added as a licensing objective in the Licensing Act 2003	HO, DHSC

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Contents

Coastal case studies

1.1 Blackpool

Background

Blackpool is home to just under 140,000 proud residents, at its very heart is a simple mantra of progress and a distinctive entrepreneurial spirit. The town is synonymous with fun, thrill and excitement for the 18 million visitors it welcomes every year. It is a town like no other with a historic and unique variety of attractions and entertainment. We are proud to be a place of compassionate, tolerant and forward-thinking people which unites our communities and drives us to continually evolve and improve.

On the western edge of Lancashire in the North West, Blackpool rose to prominence as a major centre of tourism in England when a railway was built in the 1840s, connecting it to the industrialised regions of Northern England. Within decades, Blackpool was established as a vibrant, popular tourist resort with a population of 14,000 and the promenade resplendent with piers, fortune-tellers, public houses, trams, donkey rides, fish-and-chip shops and theatres. By 1901, the population of Blackpool had grown to 47,000 and its place cemented as "the

archetypal British seaside resort". By the 1950s it had grown to 147,000 people. As more affordable travel across Europe and beyond blossomed in the late 20th Century, Blackpool, along with many British seaside resorts saw a reduction in the number of families visiting for holidays. Blackpool's economy remains deeply rooted in the tourism sector, continuing to attract millions of visitors each year, but is now more often seen as a destination for day trips rather than week-long or weekend stays.

Demographics

The current population of Blackpool is estimated to be 139,446. Blackpool generally has an older population than the national average, though has a similar proportion of people under the age of 18.

	Blackpool		**England**
All ages	139,446		
<18	29,215	21.0%	21.4%
18-24	10,693	7.7%	8.4%
25-44	32076	23.0%	26.2%
45-64	38967	27.9%	25.6%
65+	28495	20.4%	18.4%

Source: ONS mid-year population estimates 2019

Population pyramid – 2019 mid-year estimates
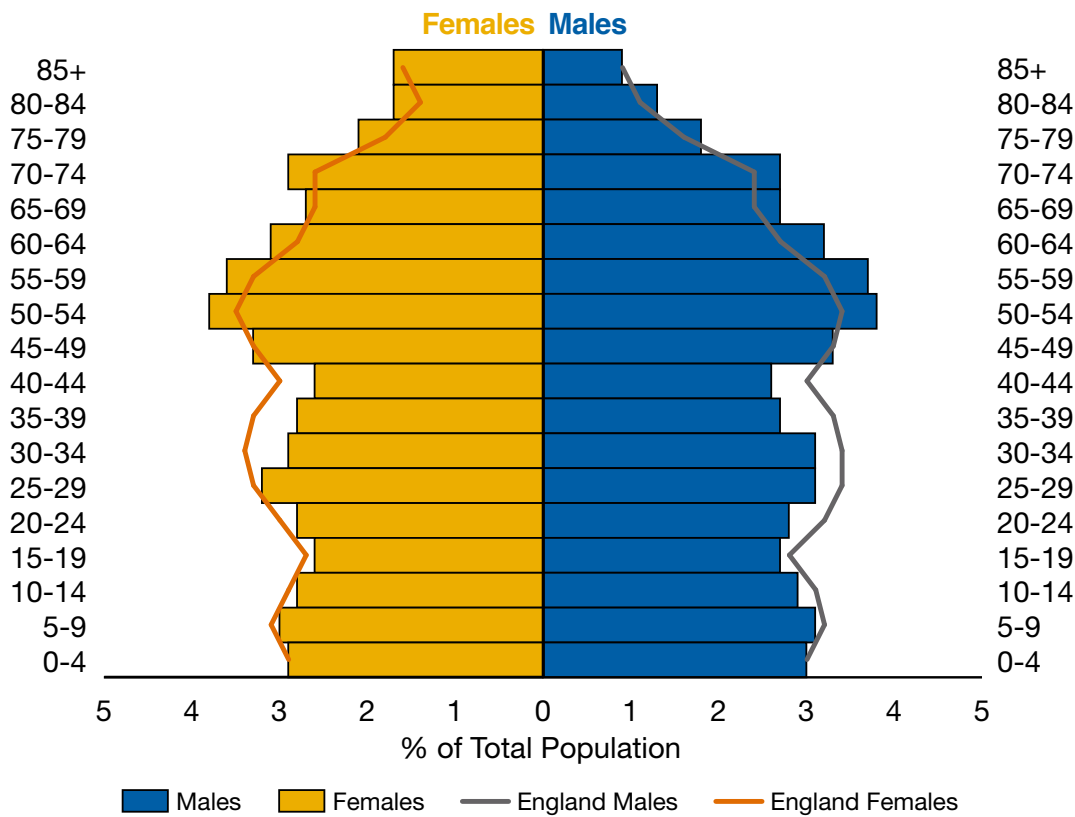
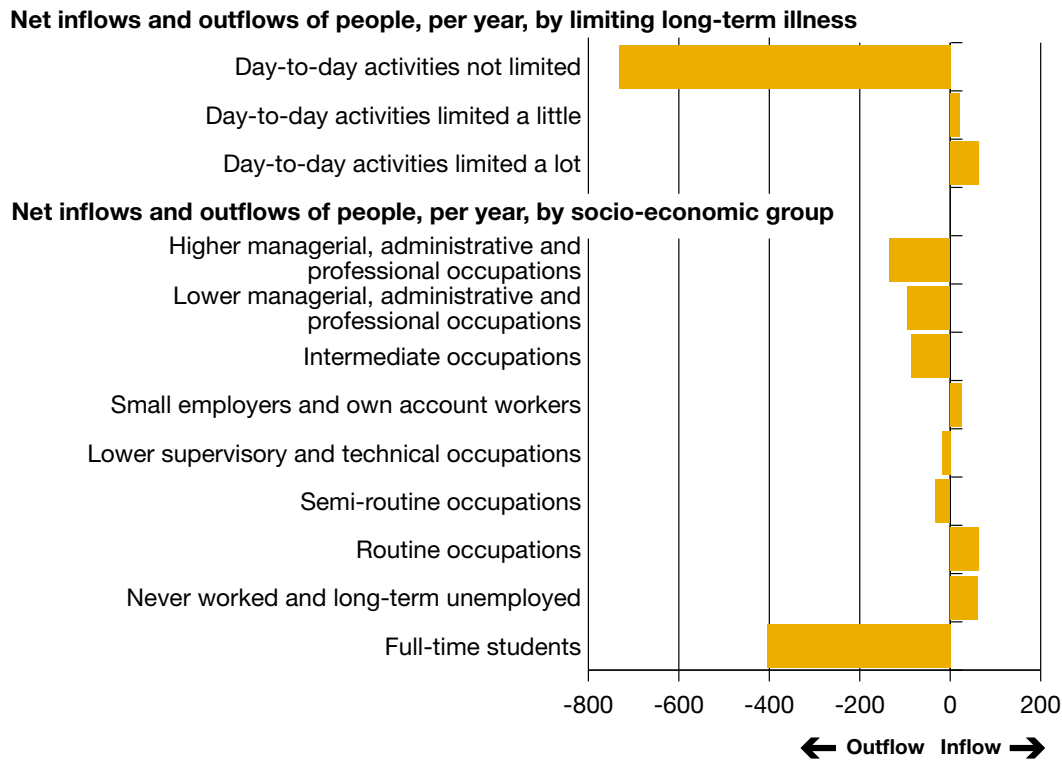**Source:** ONS mid-year population estimates 2019

Predicted future population

- Predicted population projections show a gradual decrease over the next 10 years. Any increases that are seen are in the over 60s for both males and females contributing to Blackpool's higher than average elderly population.

- Demographic profiling shows that the two largest groups of people in Blackpool are single people renting low-cost homes for the short-term and mature families in inexpensive homes who work in routine jobs for a modest wage. Transience has been an identified issue in Blackpool for a long time, with some areas having extremely high levels of population inflow and outflow, compounded by considerable movement within the town. Many people have limited resources and rely on financial and practical support to face an array of challenges.

Health outcomes

Net inflows and outflows of people, per year, by limiting long-term illness

Day-to-day activities not limited

Day-to-day activities limited a little

Day-to-day activities limited a lot

Net inflows and outflows of people, per year, by socio-economic group

Higher managerial, administrative and professional occupations

Lower managerial, administrative and professional occupations

Intermediate occupations

Small employers and own account workers

Lower supervisory and technical occupations

Semi-routine occupations

Routine occupations

Never worked and long-term unemployed

Full-time students

-800   -600   -400   -200   0   200

← **Outflow   Inflow** →

Source: Census 2011

Wider determinants

- According to the rank of average score, local concentration and rank of average rank deprivation domains, Blackpool is the most deprived local authority in England, and also experiences the lowest life expectancy in England for both males and females (74.4 and 79.5). Life expectancy is 12.3 years lower for men and 10.1 years lower for women in the most deprived areas of Blackpool than in the least deprived areas.

- More than a third (38%) of people in Blackpool die before the age of 75, and premature death rates across many causes are the highest of any local authority in the country. Not only do people in Blackpool live shorter lives, but also spend a smaller proportion of their lifespan in good health and without disability. The latest data shows disability-free life expectancy for males and females is the lowest across the UK.

- The major reasons for the gap in life expectancy between Blackpool and England are due to circulatory diseases (includes coronary heart disease and stroke), cancer, respiratory and digestive diseases. There is also a significantly higher proportion of deaths in much younger age groups from causes such as suicide, drugs and alcohol.

- There is a high prevalence of damaging behaviours – 23.4% of adults smoke and this rises to 37% in adults with routine or manual jobs. Indicators of poor diet, excess weight, alcohol use and physical activity are also significantly worse than the national average. Blackpool has the highest rates of hospital admissions for alcohol-related harm and drug-related deaths in the country. Socioeconomic and environmental factors play a significant role in determining these health outcomes.

- Mental ill-health continues to be an issue in Blackpool with high rates of diagnosed severe mental illness. There were over 500 hospital admissions for intentional self-harm in 2018/19 and suicide rates amongst males are the second highest in the country. Many people have co-occurring substance misuse and mental health issues.

Premature mortality from all causes, Blackpool and England
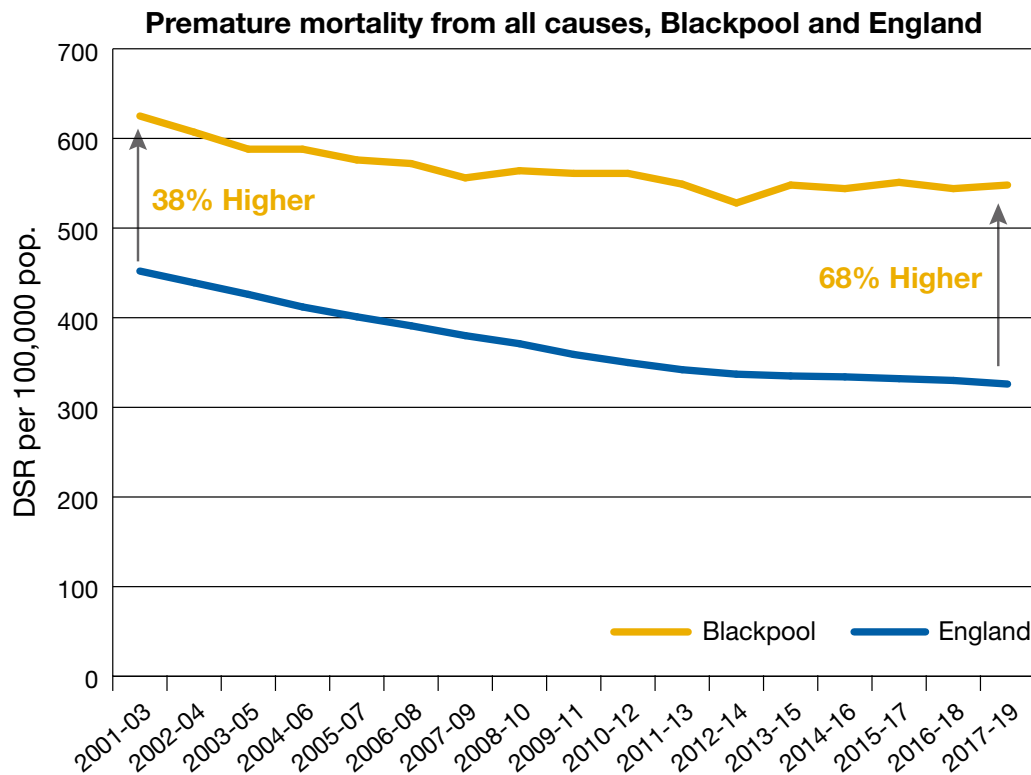
Source: Under 75 mortality rate from all causes (Persons) - PHE Fingertips

**Indices of Deprivation 2019 –** Blackpool
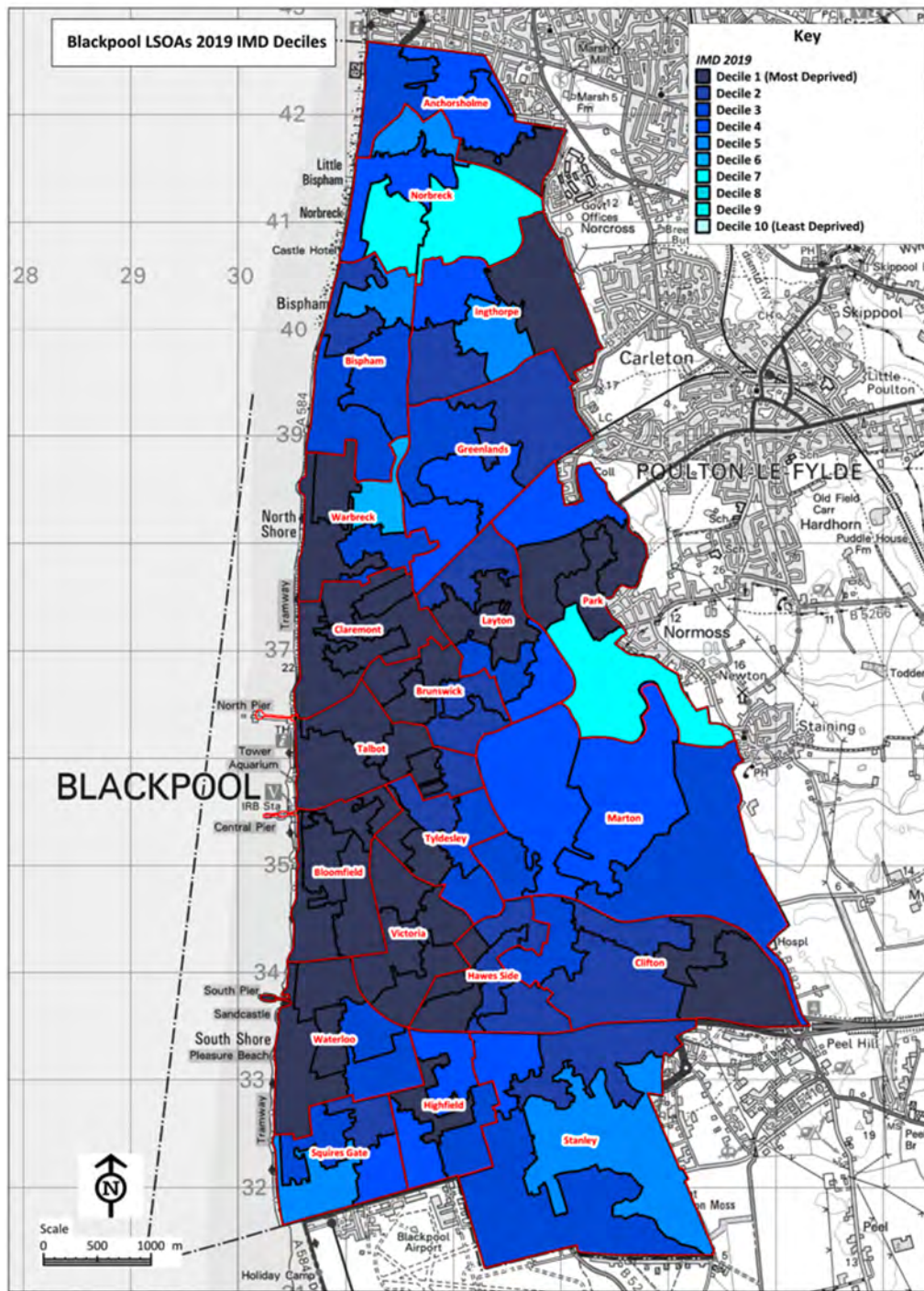
Children and young people

Overall the health and wellbeing of children in Blackpool is significantly worse than England as a whole. The rate of smoking during pregnancy is twice the national average and highest amongst authorities in England. Over a quarter of children aged under 16 are being brought up in absolute low-income families. Although the gap is narrowing, there are still three times the number of children in care than is seen nationally, and hospital admissions for self-harm are twice the national average.

	Blackpool	England
Smoking in pregnancy	23.10%	10.40%
Infant Mortality (rate per 1,000)	6.4	3.9
School Readiness	67.90%	71.80%
Average Attainment 8 Score	39.2	46.9
Children in low-income families (under 16)	26.40%	18.40%
Children in care (rate per 10,000)	197	65
Childhood obesity - Reception	11.30%	9.70%
Childhood obesity - Year 6	24.00%	20.20%
Under 18 conception rate (per 1,000)	36.9	16.7
Hospital admissions for self-harm (10-24-year olds) (rate per 100,000)	906.1	444

10-year trend in teenage conceptions across Blackpool and England: 2009-18

Teenage Conceptions
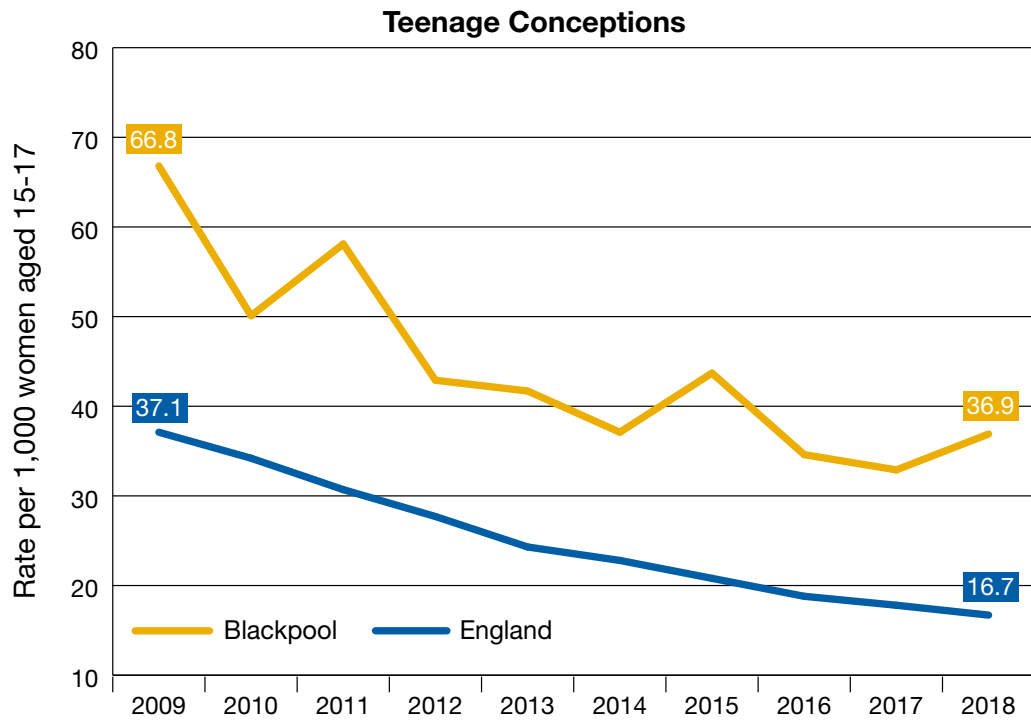
**Source:** Under 18s conception rate / 1,000 - PHE Fingertips

While the teenage pregnancy rate is still significantly worse than England, with 79 girls becoming pregnant in 2018, the trend over the last 10 years has shown significant improvement.

Key challenges

People working in Blackpool are far more likely to be working in temporary and insecure employment than in other areas. As with many other coastal communities, most jobs within Blackpool are related to tourism, directly or indirectly. They are often low-skilled, low-paid and affected by seasonality whilst residents can find it more difficult to take up opportunities that require a commute due in part to low levels of car ownership. The availability of jobs is affected by the seasonal nature of the economy and the work available is more likely to be part time where fewer qualifications and lower wages are typical.

Economic activity and inactivity, year ending June 2020
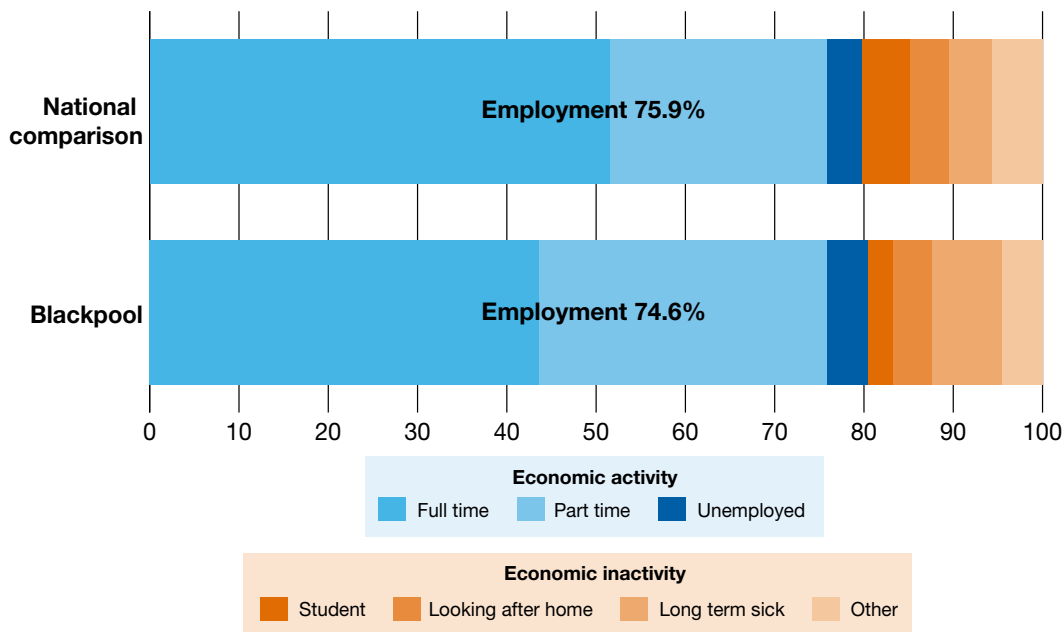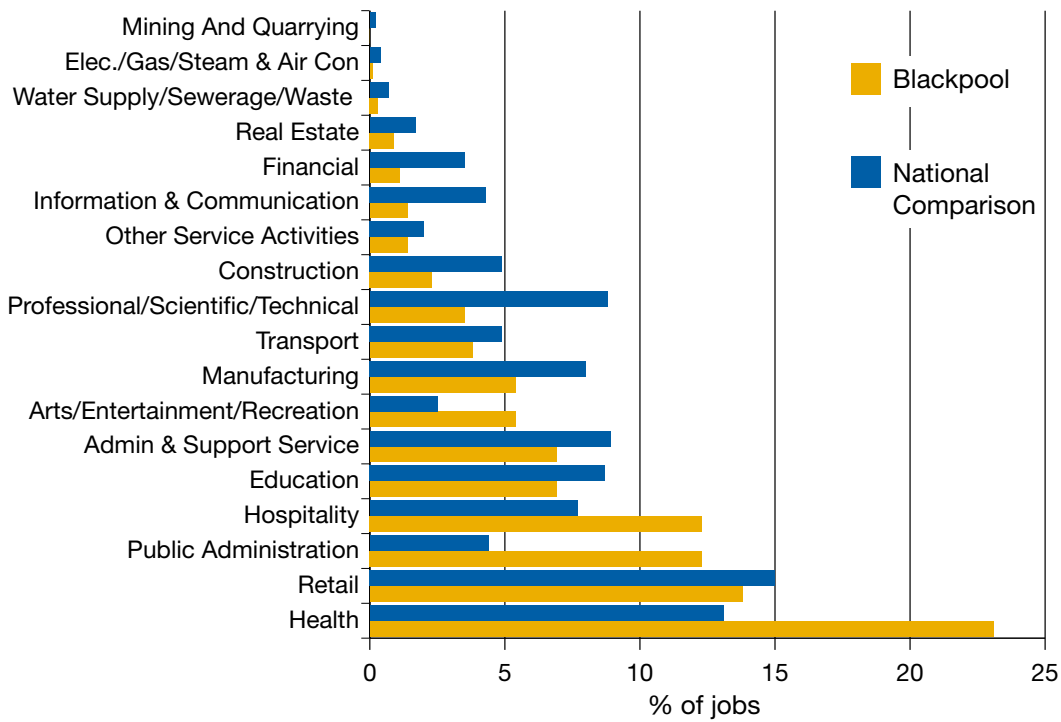

Source: NOMIS

Blackpool has an ageing population, and general poor health in older adults leads to care needs fulfilled by paid carers and unpaid, family carers across the community. Unpaid care falling on family members can be a limiting factor on their employment options, and currently, many jobs in social care across the country are low paid and considered low skilled.

Aside from tourism, the Blackpool and the Fylde area has high public-sector employment. We have an acute hospital hub which covers the Fylde Coast and have a range of civil service offices. Public sector employment has contracted over recent years with negative impacts for Blackpool.

- 23.6% of Blackpool residents are qualified to degree level or above, compared to 42.8% nationally.

- 43.1% of employee jobs are part-time.

- 35% of jobs are in the highest paid sectors compared to 49% nationally.

- Almost half of all jobs are in the health and care sector, retail or hospitality.

- The average weekly wage for residents of £445 is 30% less than average.

- Blackpool has the 5th lowest weekly wage of all upper tier local authorities in England.

- Of those people who are not working, a much larger proportion can't work because of long-term illness; 41.8% compared to 22.8% nationally.

Employee Jobs by Industry: 2019

Legend: Blackpool, National Comparison

Categories (top to bottom):
Mining And Quarrying, Elec./Gas/Steam & Air Con, Water Supply/Sewerage/Waste, Real Estate, Financial, Information & Communication, Other Service Activities, Construction, Professional/Scientific/Technical, Transport, Manufacturing, Arts/Entertainment/Recreation, Admin & Support Service, Education, Hospitality, Public Administration, Retail, Health

X-axis: % of jobs (0 to 25)

Source: NOMIS

Gross weekly pay (£) - For all employee jobs: Upper tier local authorities, 2020

Blackpool, £444.6

England, £581.7

Y-axis: Gross weekly pay (£) (0 to 1200)
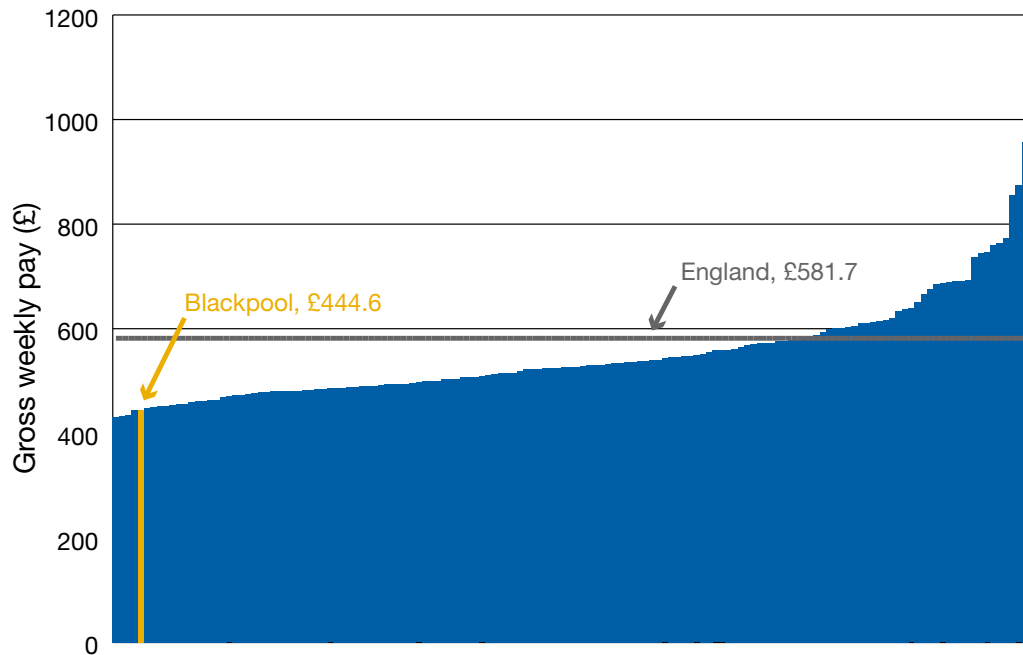
Source: Annual Survey of Hours and Earnings - ONS

As with other coastal communities, the housing stock and neighbourhood environment in some areas of Blackpool are extremely poor, with a legacy of poorly converted former guest houses. With an average monthly rent of just £398 for a one-bedroom property, Blackpool has some of the cheapest accommodation in the country. This availability of relatively cheap rental accommodation allows people who are economically inactive, from across the country access to a cheap home which creates concentrations of deprivation. In this system, private landlords are incentivised to pack vulnerable people into poor quality accommodation to maximise rental yields, whilst at the same time compounding the disadvantage of those housed in this accommodation. The areas of highest concentration of failed private sector housing is now home to the worst health outcomes.

Challenges with employment makes home ownership particularly challenging as, although house prices in Blackpool are fairly low, and average rents are not dissimilar to what you may expect to pay on a mortgage, prospective home-owners find it difficult to provide the level of surety needed to satisfy a high street lender.

The ageing coastal population and the influx of summer visitors makes considerable demands on medical and social services, as indeed do issues such as higher teenage pregnancy rates, high levels of children in need, mental ill-health, high numbers of benefit claimants, and established coastal worklessness. The additional demands placed on Blackpool's public services can be further compounded by the difficulty of recruiting public and private sector professionals to work in the town.

Key strengths/assets and examples of positive work locally

The scale and breadth of challenges in Blackpool are such that long term, significant and sustainable change is needed to impact positively on outcomes. Over the last decade, investment has been drawn in from a range of public, private and third sector partners, and the Council continues to work hard to ensure this investment is maximised to deliver key changes for residents of the town in the key priority areas such as improving life chances, health and housing. We are developing a new, innovative and transformational entertainment centre in the heart of Blackpool which will create new jobs and opportunities; a state of the art conference centre is emerging from our historic Winter Gardens facility – with growth in business focussed hospitality building on this investment; we are working with national government to develop a professional civil service hub in the town centre with excellent transport links offering transformational career

paths; working to deliver a multiversity with our further education partners that will create jobs and opportunities; intervening in our housing market to deliver hundreds of new quality, affordable homes across the social and private rented sector; are working with our partners across Lancashire and South Cumbria to improve life chances and health outcomes as part of the delivery of the Integration and Innovation challenge to Health and Social Care and; are already seeing the impact of joint work with our schools and academies on improving outcomes for our young people in education.

A number of our interventions are particularly important in improving health outcomes, including giving every child the best start in life. This is crucial to reducing health inequalities across the life course. Within this context, a new model for 0-5-year old children's public health services was developed in 2018/19 in close partnership between Better Start, Blackpool Teaching Hospitals and the council's public health team. The number of universal contacts for each child has increased from the mandatory 5 contacts to 8. The service is now in its second year and we will be introducing Behavioural Activation training and Speech and Language training across the service. Blackpool's new service model is the focus of much attention and interest nationally for its innovative and evidence-based approach. The partnership uses collective impact and wider systems change models, with a community development framework, to reduce critical pressures for parents and build on their capabilities to parent in a collaborative manner to improve child outcomes.

The Blackpool approach to our sustained reduction in teenage conception has been multifaceted. Schools in Blackpool face many challenges but have welcomed continued support with the development of their SRE/PSHE delivery including training for teachers, lesson plans and resources. The aim is to ensure consistent delivery to ensure that children who move between schools have the knowledge and skills they require. In addition, there are Blackpool-wide programmes to improve resilience and educational attainment of young people, including the National Lottery funded Headstart programme.

1 to 1 support is available for vulnerable young people through Blackpool Young People's Service to build confidence, increase their personal resilience and encourage them to access effective contraception. This service was established as a precursor to the PAUSE programme and the philosophy behind it has been built into generic service delivery.

Over many years, Blackpool has increased access to Long Acting Reversible Contraception for young people, now achieving 45% take up of the most effective forms of contraception in sexual health services. This is enhanced by a specialist domiciliary contraception services for the most vulnerable young people. Work is underway to train midwives to deliver Long Acting Reversible Contraception as part of the maternity pathway.

@TheGrange is a community hub located on Grange Park, managed for the benefit of local people by Groundwork Cheshire, Lancashire and Merseyside in partnership with Blackpool Council. Onsite there is a library, theatre, café, community farm, meeting spaces, pharmacy, community police office and a community shop. Over 50 organisations deliver activities from @TheGrange focusing on reducing isolation, facilitating volunteering, delivering education, enabling environmental action and supporting people to be more physically active. There are over 500 formal and informal volunteers involved in the programme in a typical year, and over 10,000 people participate in activities from the site. A local study concluded that @TheGrange has "a significant positive impact on health, wellbeing and community inclusion and a profound impact on diet, confidence and resilience".

Blackpool Fulfilling Lives (BFL) is one of the 12 pilot areas in England that received Big Lottery Fund funding to support people with multiple and complex needs. BFL work in a person-centred, non-judgemental way and understand that a "one size fits all" model does not work for this client group. 530 people who were experiencing multiple disadvantage, were supported by a named 'navigator' who connected the person to local support and services. The BFL programme has enabled Blackpool to grow a 'Lived Experience Team' (people who have direct experience of disadvantage and trying to access services in Blackpool) at the heart of driving systemic change. The legacy of BFL is evident in local statutory and voluntary sector services who have adopted a 'multiple disadvantage-friendly' way of working, for people experiencing complex problems. Client reported outcomes have improved with this methodology. The final, independent evaluation report demonstrated cost savings to the system of around £10,000 per client in service per year. The BFL project has also been part of a national learning group (with other Fulfilling Lives projects) which have published guidance on how to help people experiencing disadvantage. Locally, the 'Lived Experience Team' continue to provide advice and guidance as equal partners to decision-makers on how services are designed, monitored, and reviewed.

Vision for the future

Blackpool Council and its partners are delivering change in accordance with two key strategic priorities, improving the economy and building community resilience. The pace of delivery against these priorities is quickening and the partnership is strong. The Blackpool Pride of Place partnership launched in 2017 is a group of people from the business, voluntary and public sectors who have come together to promote economic development and tackle local issues – as a whole system the partnership focussed on delivering key strategic change. Our shared vision is that Blackpool will be Britain's Number One family focussed modern beach resort with big city facilities. This vision for the future is underpinned by a wave of exciting projects and initiatives to grow our economy and strengthen our communities and their life chances.

Our holistic approach has seen effort and investment to diversify our employer base beyond tourism, pushing up average wages and reducing seasonal employment, with the co-creation of two Enterprise Zones in the wider Fylde Coast which seek to deliver 6,500 extra jobs. Hundreds of poor quality housing units have been demolished or refurbished, replaced by quality affordable units for rent and sale, whilst standards in the wider private sector have been driven up by a targeted approach to rogue landlords.

By building on our strengths, but nurturing emerging specialities, we aim to produce a well-rounded, resilient economy, with a variety of opportunities to suit workers of all skill levels, which both attracts staff and provides further opportunity for them to stay locally and thrive in their community as their career develops.

Director of Public Health – Dr Arif Rajpura

Contributors: Stephen Boydell, Liz Petch, Vikki Piper, Kate Aldridge

1.2 Clacton

Background

Clacton on Sea (Clacton) is surrounded by the beautiful coast and countryside that made it so attractive as a holiday destination, it is amongst the most affordable areas allowing commuting to London with a strong sense of community.

Clacton is in Essex, 75 km northeast of London and 18 km southeast of Colchester, with a population of 58,933. It is the largest town in the Tendring peninsula and district.

As a seaside resort it saw peak tourism seasonally between the 1950s and 1970s. Clacton Pier opened in 1871, initially as a docking point for steamships. The growth in affordable foreign holidays severely impacted tourism in Clacton. Butlin's Holiday camp which was built just before the Second World War closed in 1983.

Jaywick is an area just west of Clacton with a population of around 4,500 that was a holiday resort and is now retirement area, but it has experienced significant decline.
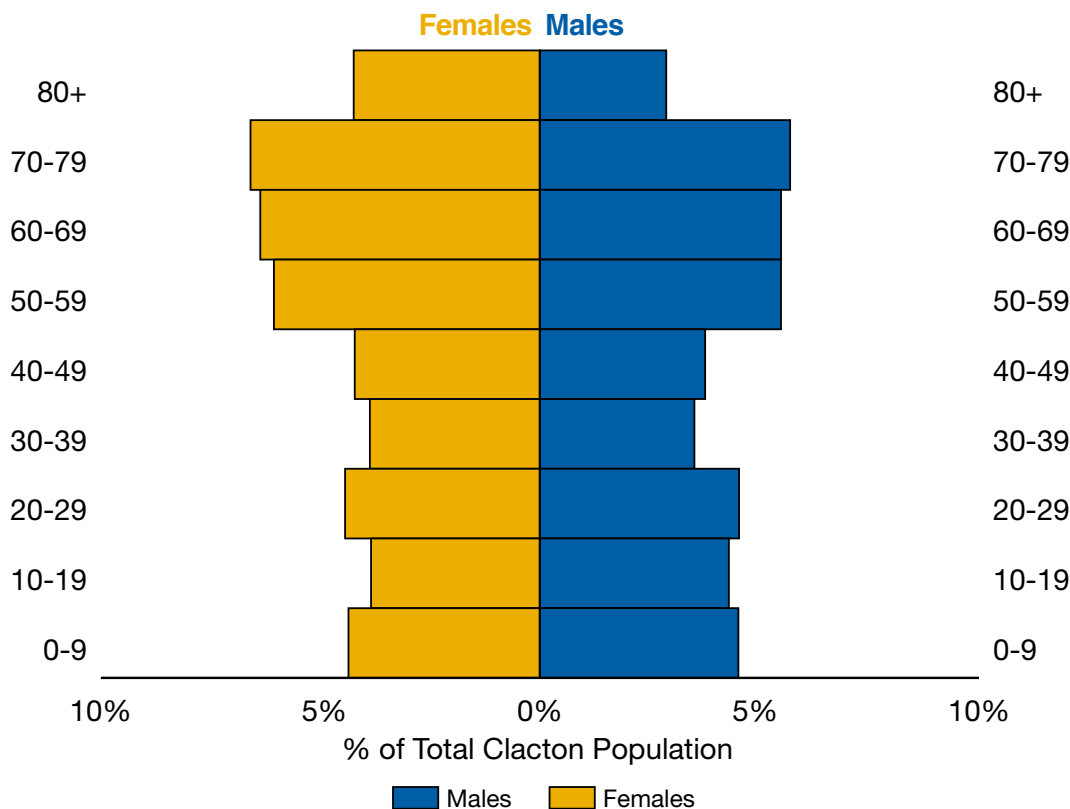
Clacton shares common drivers of decline in coastal communities, including peripheral location; poor transport system (particularly to London); lack of diversification in the local economy; and low educational attainment, all making it difficult to regenerate the economy.

Demographics

One key issue in recognising and understanding the severity and rate of the decline in Clacton is that data is presented on a wider Tendring footprint which includes some areas that are relatively affluent. If just the wards identified as Clacton are considered, the level of deprivation around the education and childhood deprivation domains exceed almost all comparators. This is, however, self-selected. If we look at Electoral Constituencies as a measure, although Clacton Constituency includes areas such as Frinton that are not deprived, the area ranks 14th most deprived nationally in the employment domain and 17th most deprived around childhood deprivation.

Current population structure

Population pyramid – 2019 mid-year estimates

Source: ONS (mid-2019) https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/lowersuperoutputareamidyearpopulationestimatesnationalstatistics

Migration patterns

- There is a net population inflow into the area. The highest rate of net inflow is within the 50-70-year-old age groups, a characteristic in both males and female age groups.

- The highest net outflow is within 15-19 age group and is more pronounced in females.

- Males aged between 25-30 years have a greater level of outflow relative to other age groups in males (outside of the 15-19 age group).

Health outcomes

Clacton has significantly worse morbidity and mortality relative to the rest of Tendring and Essex.

SMRs for under 75s
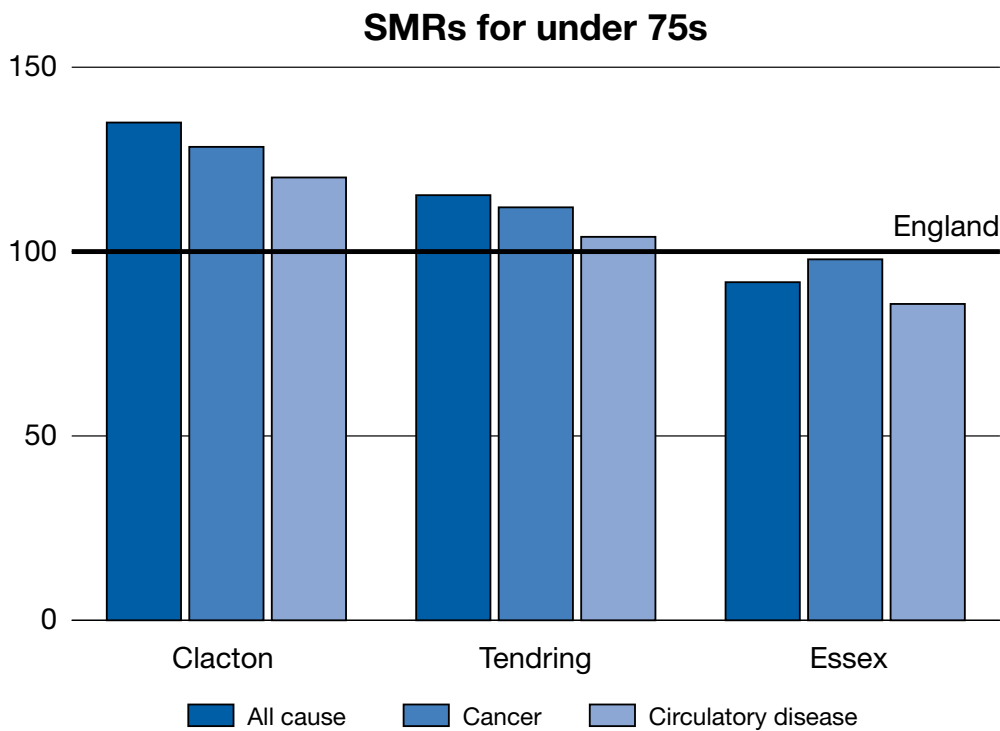
Source: Local Health

Standardised Mortality Ratios (SMR) show that Clacton has a high ratio of preventable deaths under the age of 75. This is also true for cancer and circulatory disease-related mortality.

Hospital episodes, including emergency admissions are markedly higher in Clacton. Standardised ratios for hospital admissions show Clacton people have more episodes requiring emergency hospital admission for respiratory condition like COPD, chronic heart failure, falls (65+), and self-harm.

Standardised Admission Ratios

Essex   Tendring   Clacton
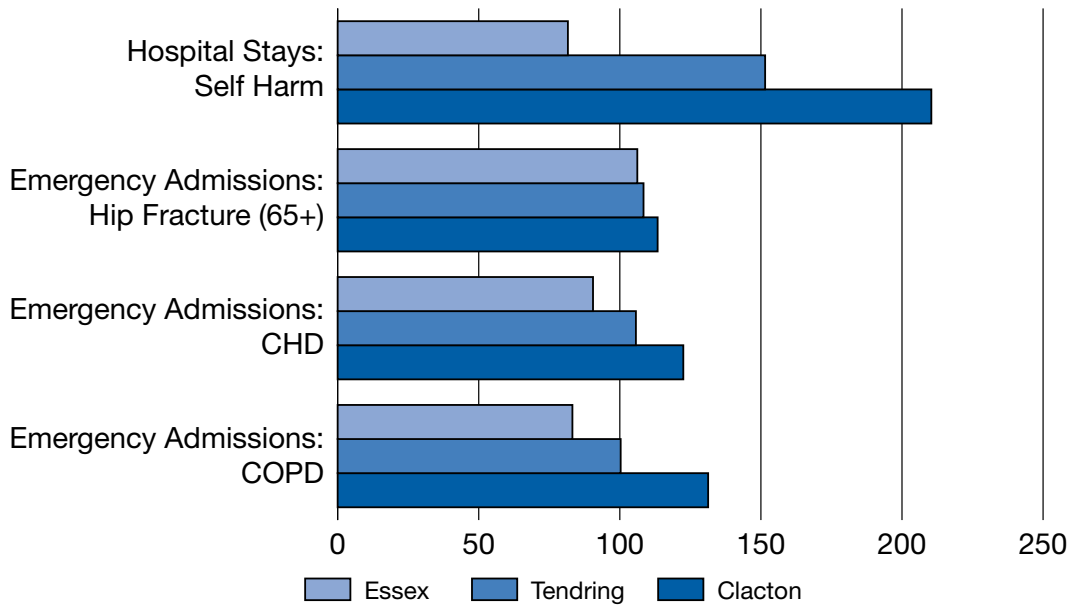
Source: Local Health

Child development and educational attainment is a key concern, with poor levels of aspiration and low prospects. The attainment 8 score for Tendring District is significantly below the England average and one of the worst nationally.

Child development & educational attainment

Child Development: Age 5   GCSE Achievement (%)
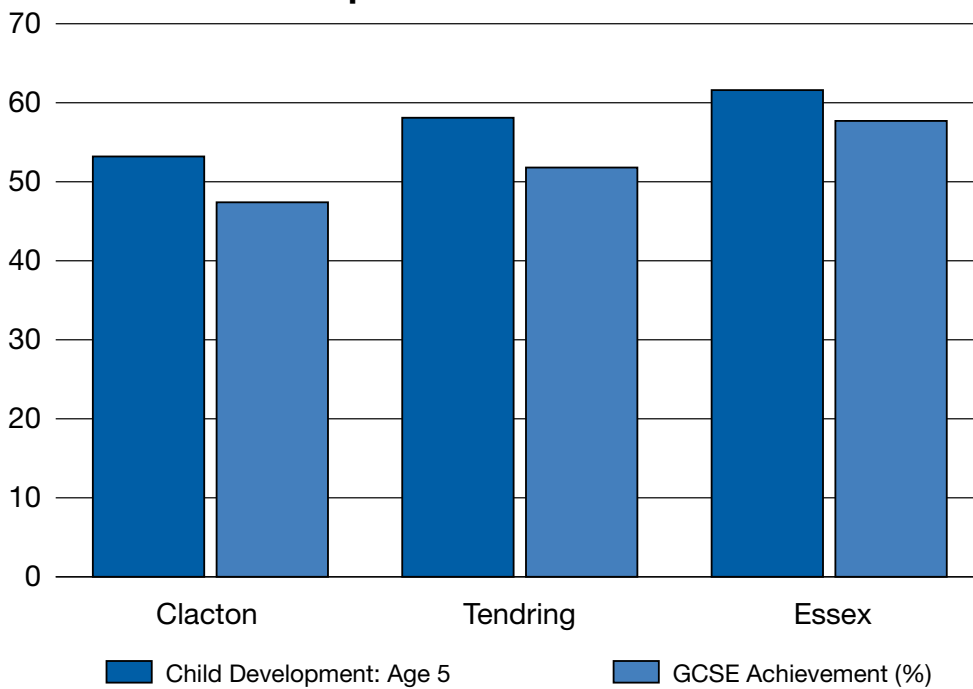
Source: Local Health

The proportion of children achieving a good level of development in Clacton is statistically significantly worse than Tendring, Essex and national comparators, with only 53% achieving a good level of development at age 5 vs 58% in Tendring and 62% in Essex.

Clacton also has high levels of mental health needs. This chart shows the IMD 'mood and anxiety disorders indicator' – a broad measure of mental ill health in the local population. Higher scores mean higher levels of need. Clacton has the second highest mental health need in the country.

IMD 2019 mood score

Chesterfield: 1.604	
Clacton: 1.598	
St. Helens: 1.565	
Blackpool: 1.531	
Barrow-in-Furness: 1.461	
Knowlsey: 1.328	
Redcar and Cleveland: 1.253	
King's Lynn and West Norfolk: 1.199	
Middlesbrough: 1.115	
Wirral: 1.113	
Hyndburn: 1.048	

Source: MHCLG IMD 2019, file 8. In health tab, column 'Mood and anxiety disorders column': https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019

In 2017-19, suicide rates in Tendring District were the second highest amongst all districts in England – reflecting high suicide rates in Clacton.

Key challenges

Clacton shares some common drivers in the decline of coastal communities. These in large measure are around the poor and declining employment prospects and opportunities in the town. These result in low aspiration and academic achievement. Where young people do achieve their potential, there is a need for outward migration in order to optimise prospects. Improving educational attainment is important but will be challenging without improved local job prospects and may only improve the lot of those who use education as their opportunity to live elsewhere.

The Coastal position by definition means the area is peripheral and has a much smaller arc for business to engage. This is more the case where the area is a peninsular as in Clacton's case. Travel to London is possible but slow, with no express train service. Clacton had not benefitted from the "gentrification" opportunities enjoyed in some other seaside areas, and house prices remain comparatively low. This is a positive for local people but does not encourage those who see their home as an investment.

While some areas can benefit from the opportunities of offshore energy, there is no port facility available or that could be developed at Clacton to support this. Opportunities however exist for this at Harwich, but Harwich is not that accessible to Clacton residents.

There may be opportunities related to the freeport status at Harwich, depending on how the included hinterland is defined, if sites could be developed for businesses that are in Clacton or are accessible to Clacton people.

- **Peripheral location and poor transport system/provision** – Although Clacton is just 70 miles from London, transport links are limited, creating a barrier to inward movement of people and investment into Clacton. A common perception amongst Clacton residents is that their community is easily ignored because they are 'at the end of the line'. Travel times to key services are longer for Clacton residents, which may be a barrier for people wanting to access further education or employment opportunities, many of which are located in Colchester. The cost of public transport and timing of public transport may also be barriers.

- Although there is considerable work going on across public sector anchor institutions to enhance and revitalise local communities, new businesses and employers and inward investment are all required to provide the opportunities that meaningful regeneration needs.

- **Attracting quality jobs** – This is overwhelmingly the most important challenge in Clacton. Clacton is not perceived as attractive to private sector businesses and public sector support and jobs could be crucial.

- **Lack of diversification in the local economy** – With poor and declining employment prospects, this is a major challenge. Employment levels are low: 70.2% (Essex – 78.2% and national – 75.2%). In West Clacton and Jaywick Sands wards, unemployment rates (aged 16-64) are 50%. Many people who are employed are in low-skilled, low-paid, often temporary/seasonal jobs. The average wage is well below national average, £23.8k (2017) – 84% of national average.

- **High numbers of people have long-term conditions** – Significant gaps exist in their employment compared to the overall rate (15.3%, compared to 8.8% in Essex and 11.5% nationally).

- **Low educational attainment and skills** – These are linked to a sense of hopelessness and low ambition, combined with poor local work prospects. However, while essential to reverse this, improved academic attainment would likely just accelerate outward migration in young people who would seek better jobs elsewhere.

- **Clacton has been disproportionally impacted by COVID-19** – 25% of all employed people work in sectors shut during lockdown.

- Current national models for investment assume returns that coastal communities with low land values cannot achieve.

Key strengths/assets and examples of positive work locally

Tendring's attractive coastline, beaches and green hinterland are considerable assets. Clacton can capitalise in part on its history as a leisure and tourism resort and on its natural coastal beauty.

There are potential economic opportunities linked to the nearby international port of Harwich and, in addition, marine projects can be explored as a means of potential regeneration.

Clacton is comparatively close to high quality further and higher education institutions – the University of Essex, University College of Suffolk and Colchester Institute.

Tendring District Council, Essex County Council (ECC) and local NHS partners work together as anchor institutions to optimise their impact on wider determinates of health, supporting those communities most in need through targeted recruitment and through developing provider relationships with local supply chain businesses.

There is a strong voluntary sector in Clacton, working closely with statutory colleagues. There are 24,501 registered volunteers i.e. at least 17% of the population of Tendring.

For individuals with mental health problems, a Mental Health Recovery Programme run and commissioned by ECC, supports individuals to take back control and re-join the labour market or gain confidence to improve skills to support their development and improve earning potential.

Other local initiatives in development:

- A new Garden Community planned in the west of Tendring close to Colchester involving potentially 9,000 new homes. This will be of value to Clacton people only if it provides accessible good work opportunities

- Sixteen Primary Schools have established Wellbeing Hubs using a national provider Career Track to provide apprenticeships to businesses across Tendring.

Tackling upstream determinants

Tendring Health and Care Academy has been established to 'grow talent in Tendring' and to increase accessible employment opportunities in Health & Social Care and other local industries. The programme develops and fosters a range of virtual and physical interventions and opportunities, aimed at supporting young people and working-aged adults to be able to capitalise on emerging employment opportunities within the local health and care and other sectors.

Clacton Coastal Academy sees itself as a true community school. During the COVID-19 lockdown, the school has loaned 660 Chromebooks, 49 WIFI devices and 60 BT OpenZone vouchers to support students. The school also runs a foodbank from the Academy delivering 40+ Food parcels every week to the most needy families in the community.

The Academy also runs a successful ITT (Initial Teacher Training) Programme to 'grow its own' local teaching staff, helping overcome significant recruitment challenges seen in coastal areas.

Tendring District Council has developed a 'Back to Business Plan' to stimulate and support the local economy in response to the pandemic. This has included delivering significant projects, proactive payment of grants, and wider support for Clacton town centre to re-open.

Supporting those suffering the impacts of deprivation

Tendring Mental Health Hub is jointly funded by the Office of Police and Crime Commissioner, local CCG, Tendring District Council and Essex County Council. It is based in the ward with the highest mental health need nationally, offers a (literal) shop front venue to provide holistic and peer-led support to help tackle wider determinates in people with severe mental health issues, with a focus on supporting independence including employment.

Vision for the future

The ultimate vision is to restore Clacton to a thriving community where young people and families have the educational and employment opportunities that encourage them to settle and remain in this attractive and historically important part of Essex.

Local anchor institutions will collaborate with local and external partners to develop and deliver high-quality commercial, residential, and public sector developments, alongside improvements to the transport and public realm to enhance the vibrancy of the town. This will enable its residents to capitalise on the area's natural assets and will create conditions that will encourage inward investment to build on our existing assets.

Partnerships between local and central government and investors will be built upon strong local leadership and on meaningful engagement with the local community, to ensure that Clacton becomes a truly great place to live in, to work in and to visit.

Director of Public Health – Dr Mike Gogarty

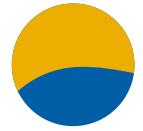**Contributors:** Dr Mike McHugh and Sofian Ragab

1.3 Hartlepool

Background

Hartlepool is situated on the North East coast in the Tees Valley area. As one of the smallest unitary authorities in England, we have a population of 93,663. The geographical area covers 36 square miles and includes several villages as well as the urban Hartlepool town area. Tourism is a key plank of the economic regeneration in the town. The beach at Seaton Carew is a popular destination and the National Museum of the Royal Navy is a key partner with a significant presence in the town cementing the links to the coast.

The town has a history of industrial activity associated with the coast. Shipbuilding was carried out in Hartlepool for a number of years before the decline in the 1960's led to the major shipyards closing. Those that remained adapted and provided engineering and construction support for offshore structures. More recent developments have seen the arrival of Able UK who provide shipbreaking and marine recycling services in the town.

Steel was a significant contributor to the economy with a number of steelworks in the town supporting heavy industry. These subsequently declined and the steel working continued on with the Liberty Steel works now the main steel industry in the town.

The ports form a large part of the coastal infrastructure in Hartlepool. Additional large-scale infrastructure in the town is provided by the Teesside windfarm and Hartlepool Nuclear Power Station.

The traditional relationship with the maritime environment continued with the port continuing to operate, however the focus changed during the 1990s with the development of Hartlepool Marina and the National Museum of the Royal Navy recreating an 18th century sea port and hosting the HMS Trincomalee.

The loss of major industries led to large scale unemployment and associated challenges and problems which have seen health inequalities rise and poverty increase. The proportion of children living in low-income families in Hartlepool, at both under 16 and under 20-year olds, are above the England average

Hartlepool has been badly affected by the coronavirus pandemic. At its peak in January 2021, we saw a 7 day case rate as high as 889 per 100,000. The impact of this will be significant, and so will need to be the focus of a high proportion of our work in the next 12 to 18 months.

The Council plan launched in 2016 set us on a journey to make Hartlepool a vibrant, welcoming and inspiring place to live, visit, work, invest and grow up in.
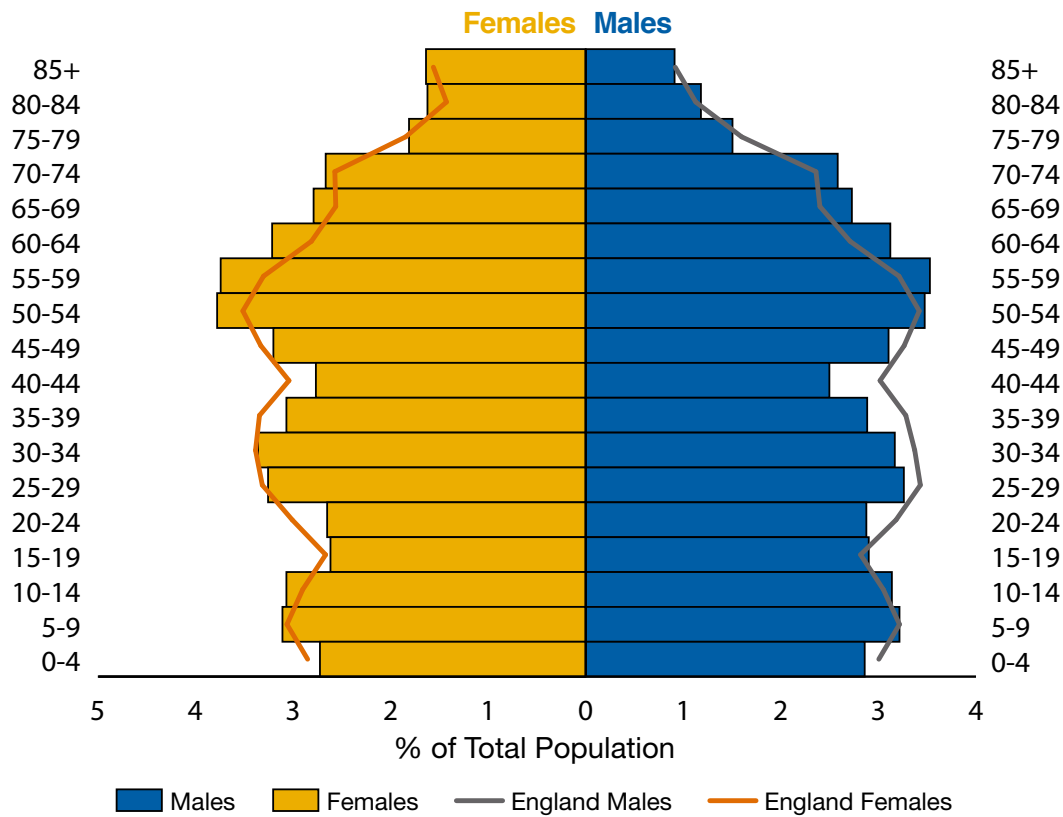
Demographics

	Hartlepool		England
All ages	93,663		
<18	20,054	21.4%	21.4%
18-24	7,253	7.7%	8.4%
25-44	22,719	24.3%	26.2%
45-64	25,439	27.2%	25.6%
65+	18,198	20.5%	18.4%

Source: ONS mid-year population estimates 2019
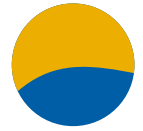
Population pyramid – 2019 mid-year estimates

Females Males

Males   Females   —— England Males   —— England Females

Source: ONS mid-year population estimates 2019

Population projections for Hartlepool show an expected ageing of the population, with a 32% increase in the population aged 65 and over from the 2020 level by 2040. At this same time, the working aged adult population is expected to decrease by 6%. The total population is expected to stay relatively stable at around 93,500 people.

Health outcomes

Hartlepool's life expectancy is below the England average for males and females for both life expectancy at birth and life expectancy at 65. Hartlepool also has a lower healthy life expectancy at birth for both males and females.

| Indicator	Period	Hartlepool Value	Regional value	England value	England value (worst)	England value best
Healthy life expectancy at birth (male)	2016-18	58.1	59.4	63.4	53.3	71.9
Healthy life expectancy at birth (female)	2016-18	57.3	59.7	63.9	54.2	72.2
Life expectancy at birth (male)	2017-19	76.9	78	79.8	74.4	84.9
Life expectancy at birth (female)	2017-19	81.3	81.8	83.4	79.5	87.2
Life expectancy at 65 (male)	2017-19	17.9	18.1	19	16.4	23.2
Life expectancy at 65 (female)	2017-19	20	20.2	21.3	18.8	24.9

Source: Public Health England 2021

Hartlepool has high levels of widespread deprivation. This level of inequality impacts the Hartlepool population in many ways, including health, housing, employment and other financial factors, and general wellbeing.

## Index of Multiple Deprivation
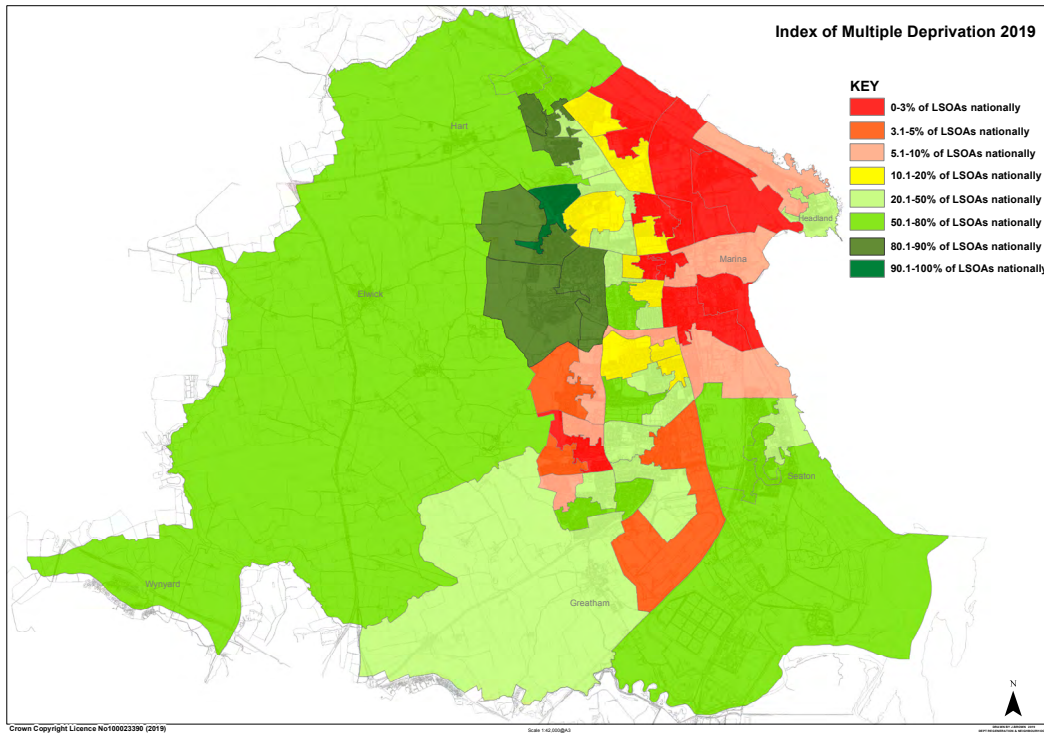
Poor health outcomes are evident across the full spectrum of the life course. Alongside the lower life expectancies, Hartlepool also has high levels of cancer and cardiovascular disease. Cancer in particular is a concern for Hartlepool, with a high mortality rate for both those aged under 75 and those aged over 65.

Hartlepool has high levels of preventable mortality, with the preventable mortality rate for cancer, cardiovascular disease, liver disease and respiratory disease all significantly higher than the national average.

Hartlepool has three in four adults classified as overweight and high levels of obesity in both reception (14%) and year 6 (24%) pupils. More than one in four adults has a long-term musculoskeletal problem.

Hartlepool has a larger prevalence of mental health disorders than the England average for both the 16+ population and the 65+ population. For children, Hartlepool has a higher prevalence than England for emotional disorder, conduct disorders and hyperkinetic disorders.
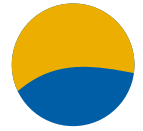
Key challenges

Hartlepool has many low performing health determinants, covering everything from employment, violence and educational attainment.

Indicator	Period	Hartlepool Value	Regional value	England value	England value (worst)	England value best
Children in low income families (under 16)	2016	28.60%	22.60%	17%	31.80%	5.80%
Average Attainment 8 score	2018/19	43.1	44.9	46.9	39	60.2
Percentage of people aged 16-64 in employment	2019/20	68.10%	71.10%	76.20%	63.30%	91.40%
Violent crime (hospital admissions for violence(including sexual violence) (rate per 100,000)	2016/ 17-18/19	69.7	62	44.9	127.6	6

Source: PHE 2021

- Less than 70% of working age adults in Hartlepool are in employment, and the gap between the employment rate for those with and without a long-term health condition is one of the largest in the north east. Almost one in four children live in a low-income household.

- Hartlepool has one of the highest levels of smoking during pregnancy in England, more than one in four pregnant mothers smoke during pregnancy.

- Breastfeeding levels in Hartlepool are some of the lowest in England, with fewer than two in five new mothers choosing to breastfeed.

- Successful completions of substance misuse treatment for both opiate and non-opiate users is below the national average.

- Alcohol continues to have a large impact, not only through elevated mortality for alcohol-specific conditions, but through a very high level of alcohol-related hospital admissions.

- Hartlepool has one of the least physically active populations in England, with almost one in three adults being defined as physically inactive.

Key strengths/assets and examples of positive work locally

One of the key strengths of Hartlepool is the ability to be able to work collaboratively. There are examples of collaborative working across the North East and locally sub-regionally.

Sexual health commissioning is an example of collaborative working that has developed an innovative approach to commissioning services. Sexual health is commissioned by four local authorities (including Hartlepool), the Tees Valley CCG and NHS England. The collaborative commissioning approach has been developed that sees a commissioning agreement signed by all partners setting out how the contract will operate and how the partners will work together. The agreement takes a whole systems' view of sexual health including treatment and prevention.

Collaboration with our communities and engagement is a crucial element of the work that we do. A good example of this is our Empowering Parents, Empowering Communities (EPEC) Project. Working through children's services, the EPEC Hub organises and delivers the Parent Group Led training. This provides peer-led courses to parents who have been referred by schools, children's centres, locality teams, social workers and self-referral. This programme has proven to be highly effective and well received in our local communities.

Vision for the future

The council's vision is to make Hartlepool a vibrant, welcoming and inspiring place to live, visit, work, invest and grow up in. COVID-19 has placed a spotlight on the health inequalities in the town and how the pandemic has magnified these. Building back from the pandemic means that we will need to focus on supporting our residents as we come out of lockdowns and back into business as usual. The longer-term health and social care challenges will be great. We will build on the already strong partnership working that has been key to managing the COVID-19 response in Hartlepool to strengthen the offer to our residents and to work with them to ensure a successful recovery.

Taking a place-based approach to improving health is crucial. This will be a key element of our thinking as we come out of the pandemic. Understanding how the pandemic has affected our population and working in partnership with them and local services will ensure that we are able to provide more effective support and develop interventions that are more responsive to local need on a local footprint.

Director of Public Health – Craig Blundred

Contributors: Dean Langstaff

1.4 Hastings

Above Photo taken by Georgie Scott

Background

Hastings Borough, East Sussex is a fiercely independent and free-spirited place, with a distinctive character bubbling with traditional community-led events. "The heart and soul of Hastings is best expressed by its unique and somewhat maverick people and communities and the way they came together in both a crisis with COVID-19 or one of the many festivals like Jack in the Green or our Guinness world record breaking pirate record."

Hastings is situated between the Wealden ridge of hills and the English Channel. These geographical features have shaped and physically constrained the town's development over the centuries. Hastings Borough was ranked 13/314 most deprived local authority in the index of multiple deprivation 2019, but alongside socio-economic challenges, the town also has considerable natural, built and cultural heritage and a strong sense of identity and community. Modern Hastings

emerged as a seaside resort in the late 18th century but the Old Town and Castle date prior to 1066, and the town was a thriving port in medieval times, until coastal erosion caused the loss of port status. However, despite this challenge, the fishing industry continued, and some remains today. In the 19th century, Hastings developed rapidly around the seafront and St Leonards, supported by the arrival of the railway in 1852 and the creation of fine public parks and gardens to attract tourists. Hastings was a booming tourist destination post WW1 when the modernist seafront was built, but activity declined after WW2. During the 1970s both tourism and fishing declined further, whilst housing estates were developed around the outskirts of Hastings to house Londoners displaced by slum clearances, leading to areas with significant levels of deprivation by the 1990s.[1] Empty hotels around the town and seafront became houses of multiple occupation. Today, around 40% of employment comes from public administration, education and health (England 25%).

Demographics

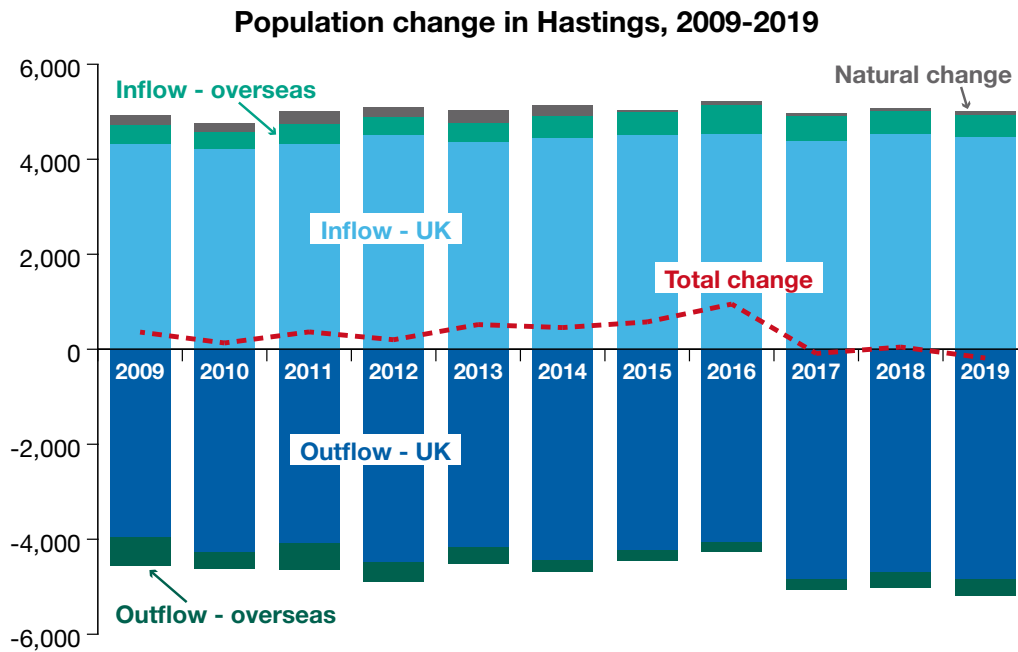**Figure 1:** Age structure of Hastings population 2009-19

Population pyramid – 2019 mid-year estimates

Legend: Males 2019, Females 2019, Males 2009, Females 2009
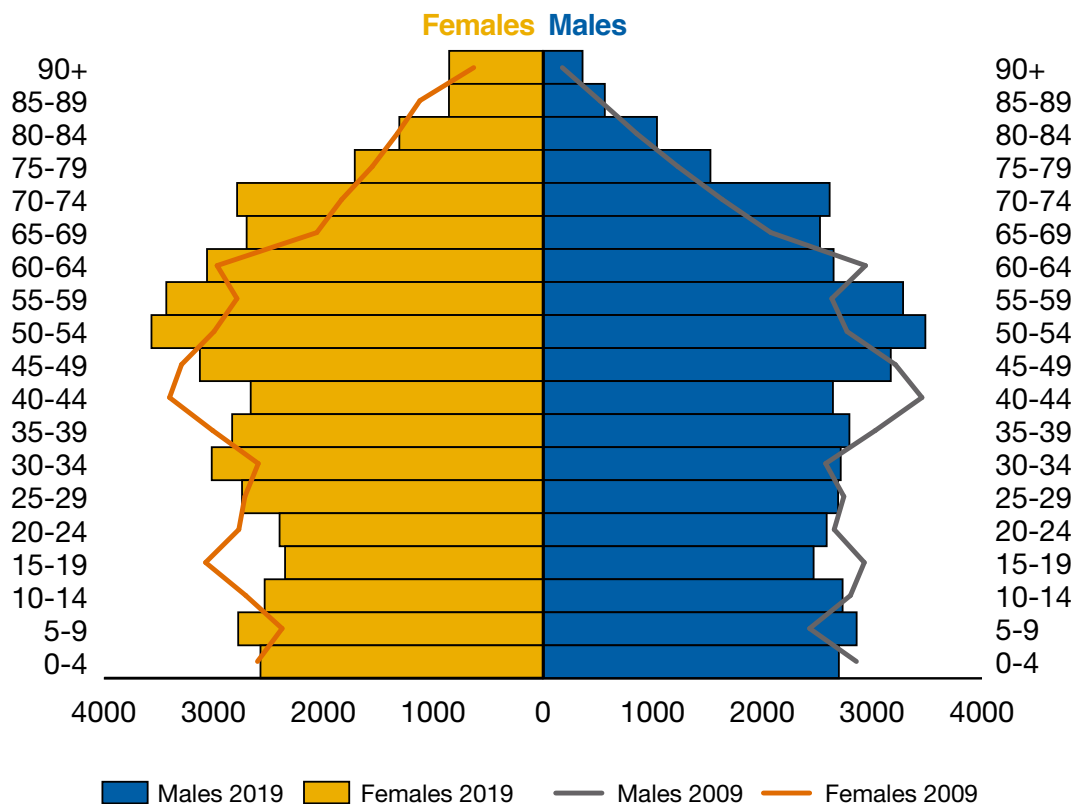
Source: ONS Mid-year Population Estimates 2019 via the Research and Information Team, East Sussex County Council

Figure 2: Internal and external migration to/from Hastings 2009-19

Population change in Hastings, 2009-2019

Source: ONS Mid-year Population Estimates 2019 (and components of population change) via the Research and Information Team, East Sussex County Council

The age structure of Hastings is very similar to England. Between 2009-19, the Hastings population increased by 3.8% to 92,700. Most growth was in the 50-74 age group. The population is projected to increase by another 2.6% to 95,500 by 2024 including planned housing developments. Figure 2 shows that while net population change has been in double figures for most of the last 10 years, this masks a greater turnover ~4,500 move in/out each year, mostly from within the UK. Inward migration to Hastings from areas of higher housing costs may result in pockets of gentrification without addressing longer standing poverty-related issues. Other inward migration comes from a more transient population drifting along the coast from Brighton to Eastbourne to Hastings seeking the cheaper accommodation – much of which is in the economically deprived ward of Central St Leonards and in houses of multiple occupation converted from once grand Victorian houses in the centre or on the seafront. Outward migration from Hastings tends to be in younger age groups contributing to the ageing of the population.

Hastings has almost twice the national average of care home beds at 17.7 bed per 100 people aged 75+ vs England's 9.6 (PHOF, 2020), and 14.5 per 100 for Eastbourne, the next highest in East Sussex. On the other hand, despite recent declines in teenage conceptions, Hastings still has the highest rate of <18 conceptions in East Sussex at 25.2 per 1,000, significantly above the all England rate of 16.7 per 1,000.
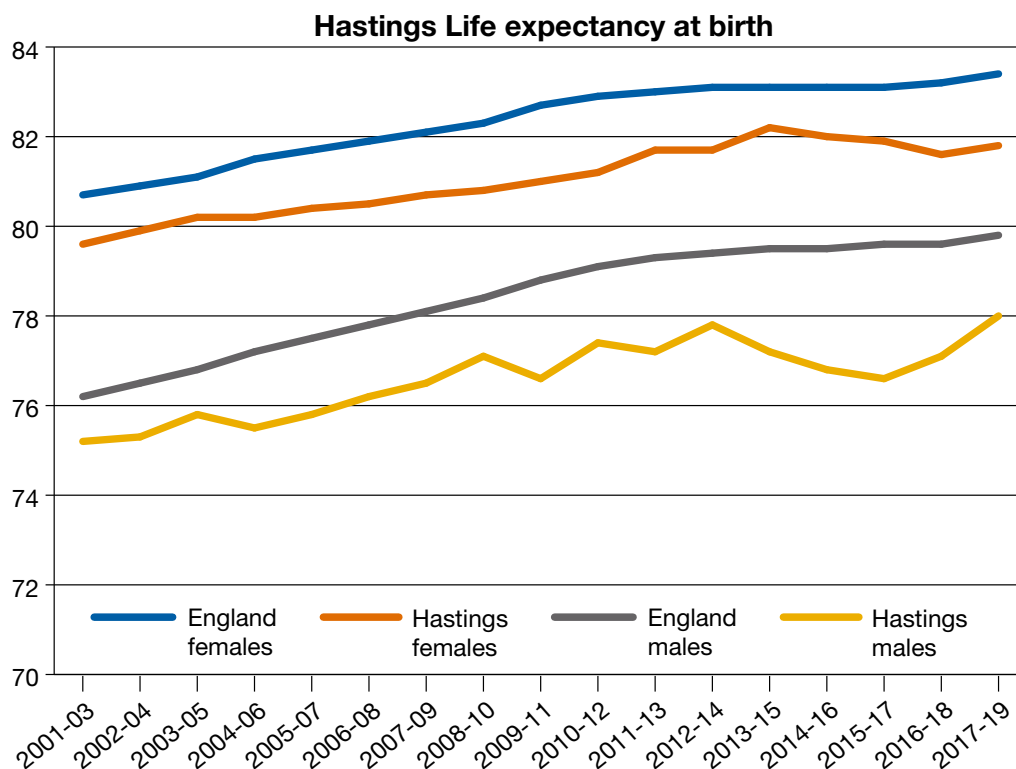
Health outcomes

Average life expectancy at birth in East Sussex is higher than England, but in Hastings it is more than a year lower than the England average. The gaps are significantly bigger at MSOA level with life expectancy at birth in Central St Leonards 11.2 years below Crowborough North East (nearby Wealden District) for males, and 8.7 years lower for females. Figure 3 shows average life expectancy in Hastings declined between 2012-14 and 2015-17 (for males) and from 2013-15 (for females). Although most recent figures show the declines appear to have halted, the life expectancy gap between Hastings and England is greater in 2017-19 than it was 6 years earlier.

Circulatory diseases are the single biggest cause of the gap in life expectancy for men and women (figure 4). External causes including injury, poisoning and suicide are the second biggest cause for men – accounting for 20% of the gap, followed by respiratory disease. The second biggest contributor to the gap for women is cancer, which is the 4th largest reason for men. Cancer inequalities may be partly influenced by lower uptake of cancer screening in Hastings compared to England (Table 1).
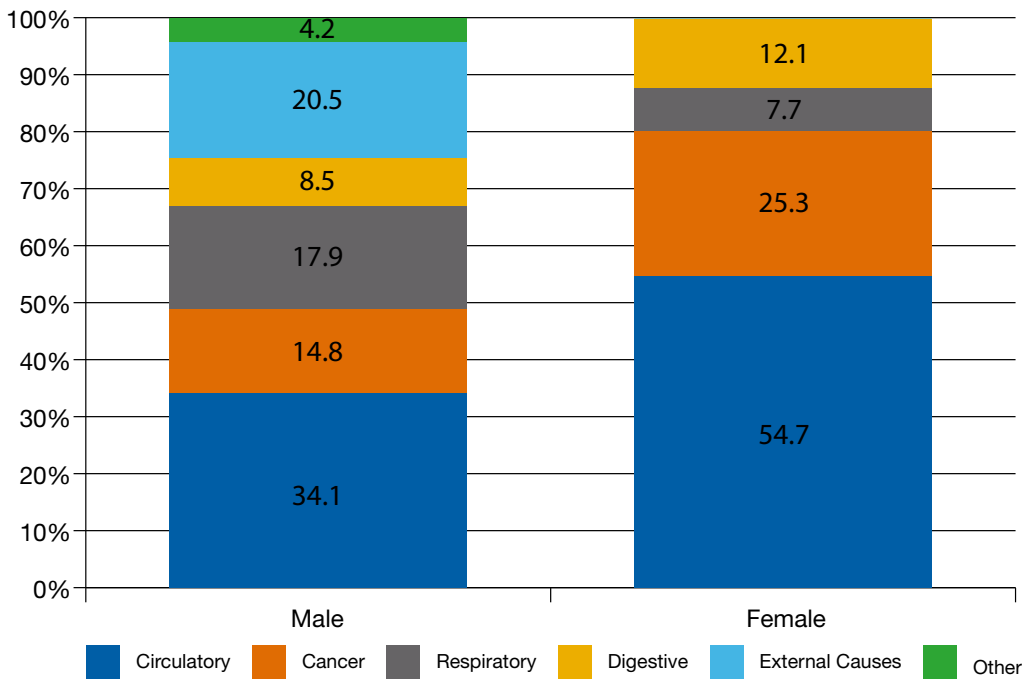
Figure 3: Trends in life expectancy at birth by gender- Hastings and England

Source: Public Health Outcomes Framework from Public Health England

Figure 4: Broad cause of death contributing to gap in life expectancy between Hastings and England by gender 2015-17

Source: Public Health England Segment Tool

As would be expected in an area with high levels of deprivation, there are significantly more children in low income families in Hastings (and in Eastbourne, another seaside borough in East Sussex) compared to the districts within East Sussex and England. Rough sleeping is high in Hastings (and Eastbourne) with 67/159 ex rough sleepers housed in Hastings (60 Eastbourne), and on average 6-10 people still recorded as sleeping rough despite initiatives to help people. Pupil absence rates and under 18s conceptions are high and attainment rates low in Hastings. On a more positive note, Hastings has the highest percentage of physically active children in the county, significantly more than the England average. However, uptake of preventative health services such as screening is low.

Table 1: Selected Public Health Outcomes Framework indicators where Hastings is significantly different from East Sussex and England

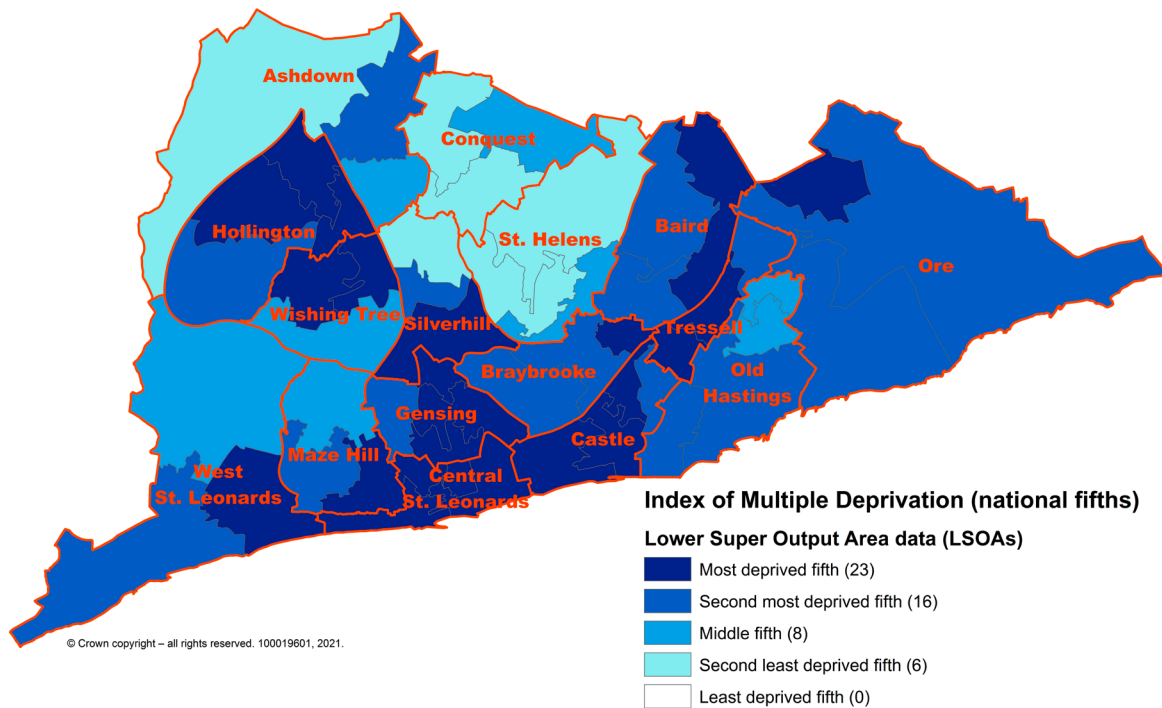| Compared with England	Similar	Worse	Better	Period	England	Eastbourne	Hastings	Lewes	Rother	Wealden
Indicator										
Children in low income families (all dependent children under 20) (Persons) (%)				2016	17	18.2	25.7	13.4	16.8	10.2
Average Attainment 8 score				2018/19	46.9	43.1	40.9	46.6	46.3	49.6
Pupil absence (%)				2018/19	4.73	5.15	5.35	5.33	5.11	4.87
Under 18s conception rate/1,000 (Female, <18yrs)				2018	16.7	22.5	25.2	15.4	14	7
Smoking status at time of delivery, (Female, All ages) (%)				2019/20	10.4	11	14.4	7.7	14.4	8.8
Percentage of physically active children and young people (Persons, 5-16yrs)				2018/19	46.8	50.6	59.8	50.1	44.7	52.9
Cancer screening coverage – cervical cancer (aged 50 to 64 years old) (F) (%)				2019	7.62*	73.8	73	75.8	76	77
Cancer screening coverage – bowel cancer (Persons, 60-74yrs) (%)				2019	60.1*	59.7	55.8	63.1	64.8	64
Suicide rate/100,000 (Persons, 10+yrs)				2017-19	10.1	15.5	15.1	13.7	13.3	11.1
Emergency readmissions within 30 days of discharge from hospital (Persons, All ages) (%)				2018/19	14.3	14.5	15.4	13.3	13.8	13.9

Source: Public Health England Fingertips tool

Key challenges

In 2001, Hastings & Rother Task Force – a partnership of key local, regional and national agencies – was set up to provide oversight of a regeneration programme, including a range of education, community safety and cultural activities to address the long-standing socio-economic challenges that Hastings and the surrounding district of Rother faced. Significant amounts of inward investment have been received over the last 20 years: 40 capital investment projects, with a total value of £590m and 35 social and economic interventions with a value of £90m. Hastings received the largest share of the funding. Despite this investment, using the Indices of Multiple Deprivation as a measure, Hastings has not become relatively less deprived over this period, still ranking as the most deprived local authority in the South East. In 2020, an independent review of economic growth and the regeneration activity of the last 20 years concluded that while the overarching challenge of reducing the relatively high levels of deprivation remains, it also seems likely that many of the performance indicators for Hastings would be comparatively worse than they are today had the

concerted local regeneration activity and associated investment during the last 20 years not occurred. The nature of relatively short-term funding is also cited as not being focused long enough to create generational change. Another finding was the lack of connectivity between capital piecemeal funding and revenue piecemeal funding which creates unsustainable provision over the medium and long-term (eg University of Brighton opened a campus in Hastings which closed after 14 years; Hastings Pier changing ownership).

Figure 5: Areas of deprivation in Hastings.

Index of Multiple Deprivation (national fifths)

Lower Super Output Area data (LSOAs)

- Most deprived fifth (23)
- Second most deprived fifth (16)
- Middle fifth (8)
- Second least deprived fifth (6)
- Least deprived fifth (0)

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Source: Index of Multiple Deprivation, 2019

Figure 6: Health Related Behaviours in Hastings

Smoking

17% of adults and 14% of pregnant women are smokers (2019)

Alcohol

Significantly higher rate of admissions than England (2018/19)

Physical activity

23% of adults are physically Inactive (2018/19)

Sexual health

HIV prevalence similar to England (2019)

Chlamydia testing higher than England (2019)

Healthy eating

56% eating 5-a-day (2018/19)

Self-harm

3rd highest rate for self-harm admissions (2019/20)

Source: Fingertips profiles, Public Health England

COVID-19 has accelerated some of the challenges the town centre was beginning to face: changing consumer behaviour, outdated and disconnected public realm, limited range of leisure and social offer with 'unfinished business' from the original regeneration programme which started in 2001. In addition, increases in temporary accommodation and pockets of antisocial behaviour can make the town centre feel unsafe.

In 2016, Hastings was ranked 282 out of 324 on the Social Mobility Index, which compares the chances that a child from a disadvantaged background will succeed in education and work. From early education up to post-16, outcomes for disadvantaged children and young people in Hastings are well below the national average.

In 2017, as part of a nationwide drive to improve areas facing similar challenges, the Department of Education provided funding to set up The Hastings Opportunity Area. The programme works across key areas for improvements, and

collaborates with local businesses, schools, nurseries and colleges. The Hastings Opportunity Area was specifically established with the aim of ensuring that all children and young people in Hastings have the key foundations in literacy and maths to be successful.

Key assets/strengths and examples of positive work locally

Whilst the town's problems are significant and long-entrenched, Hastings also has lots to offer. It is a fiercely independent and free-spirited place with a distinctive character, bubbling with traditional community-led events.

> "Our landscapes, our people and our iconic cultural heritage has always been a source of local pride and passion. The built and natural heritage of our town is extraordinary."

> "Hastings is a lively, passionate and active town where the community and businesses are always keen to engage, lend their voices and get involved."

The town's creativity is a major attraction to living and working in the town. The innovation charity NESTA, named Hastings a 'creative hotspot' with a high percentage of firms and potential for further growth in this sector.

The collective response to COVID-19 from a coalition of organisations in the town – statutory, voluntary and community groups – has shown the passion, organisational skills, creativity and effectiveness of Hastings.

A multi-agency bid focussing on closing the life expectancy gap for men in Hastings has reached the "discovery" phase of the Health Foundation's Shaping Places for Healthy Lives Programme, providing time, expertise and funding to enable partners from the statutory and voluntary sectors to work with men's organisations such as ex-veterans, homeless men, young men in contact with the justice system and drug and alcohol misusers, as well as men and their communities to propose solutions to the underlying causes of premature mortality and to reduce the inequalities in life expectancy. Over the first few months of 2021, partners will use Design Council methodology to explore, develop and test new approaches to tackling organisational, civic and structural issues which underlie poor outcomes for men. If successful at this final stage,

the project will receive three years of funding and support from the Health Foundation to embed system changes to benefit men who currently have the shortest life expectancy in Hastings.

Hastings and Rother Clinical Commissioning Group established a Hastings inequalities fund, specifically to tackle the long-standing inequalities in the town. Working closely with partners include Hastings Borough Council and East Sussex County Council Public Health, the investment from the fund was used to establish Health and Wellbeing Community Hubs in the most deprived areas of North East Hastings, North West Hastings, Central St Leonards, Central Bexhill and Sidley to improve access to prevention activities including smoking cessation services, walking and running groups, NHS health checks, NHS diabetes prevention programme, debt advice, and parenting and carers support.

Vision for the future

The development of a Town Investment Plan for Hastings is crystalising a collective vision of Hastings becoming a "healthy, vibrant and quirky seaside town that people love to visit, live and work in". It offers an opportunity to build on the town's strengths, pushing it collectively to achieve that vision. There is a 'bottom up' approach to its development and delivery that, combined with its range of board members and partners, is significantly different to that which has gone before. The Town Investment Plan board aims to create an inclusive economy ensuring its most disadvantaged residents benefit directly from economic development that promotes health and wellbeing for both people and planet, such as the shift to a zero-carbon economy. The shift is envisaged to be not only through growth in traditional industries (such as tourism), but also

through new creative, digital and green industries, as well as building much-needed quality homes. There is an aspiration to link future capital investments to 'inclusive growth' to ensure the long-entrenched inequalities are reduced. The planned town centre reinvention will include building on Hastings' potential for heritage development in the town and through rediscovering its forgotten history and creating a new streetscape that not only promotes active travel but brings in biodiversity and an ecologically rich public realm.

Hastings has successfully been allocated £24.3M to enable the collective vision expressed within our town investment plan to be delivered.

Whilst the funding that the Town Investment Plan seeks will make a positive contribution to the overall health of the town, the programme is limited to capital funding which means that other revenue funding sources will need to be sought to provide the additionality to any Town Investment Plan funding. The recently announced Community Renewal Fund, which is predominantly revenue-based and will be administered by East Sussex County Council, is a potential source.

Using evidence and prior research to learn lessons of the past, the Town Deal Board aim to deliver regeneration in a holistic way, working in partnership to ensure the capital investment this bid is asking for is linked with revenue and other leveraged funding with the ambition to enable the whole town to benefit.

Please note, that while Hastings overall has the greatest level of deprivation in East Sussex, other coastal towns and communities in East Sussex such as areas within Eastbourne and the port of Newhaven, also experience greater deprivation than the rest of East Sussex.

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Contributors:
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Hastings Borough Council: Jane Hartnell, Victoria Conheady and Hannah Brookshaw

References

1 Hastings Heritage Report Nov 2017 (moderngov.co.uk)

1.5 Hull

Background

Hull is a proud, ambitious, resilient, and strongly self-reliant city; these characteristics bind together the efforts of all partners and our ability to push boundaries through local, regional, national and international collaborations.

The city and port of Hull is compact and highly urbanised, covering 27.6 square miles, situated on the banks of the river Humber, and is positioned at the gateway to Europe. It is linked to the national motorway networks from the West, via the M62, and to the South, across the Humber Bridge, via the M180. Hull is surrounded by the East Riding of Yorkshire, a largely rural area, which also encompasses a number of Hull's more affluent suburbs immediately adjacent to the tight city boundary.
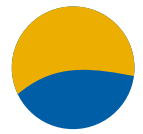
Hull has a strong maritime heritage, and the city's historic wealth was built on international trade. Hull has transformed itself since becoming City of Culture in 2017. Many of the year's cultural events and installations celebrated our port status and maritime heritage and unlocked significant investment within the city centre aimed at creating a world class visitor experience. Key to our future prosperity will be the current transformation into becoming 'Yorkshire's Maritime City'. In addition, Hull is central to the 'Humber Energy Estuary', having secured £310m of investment from Siemens Gamesa and ABP to bring England's first offshore wind turbine blade manufacturer to Hull. The next round of the city's growth is focused upon the energy and health sectors.

Demographics

Hull has a population of approximately 260,000 (2019 mid-year population estimate of 259,778), with a 50.5%/49.5% split male to female. The median age of Hull residents at mid-year 2019 was estimated to be 35.8 years, younger than the England median age of 40.0 years. The University campus has a student population of 16,500 and staff of 2,500.

Population pyramid – 2019 mid-year estimates

ONS residential population estimates, 2019

Legend: Males, Females, England Males, England Females
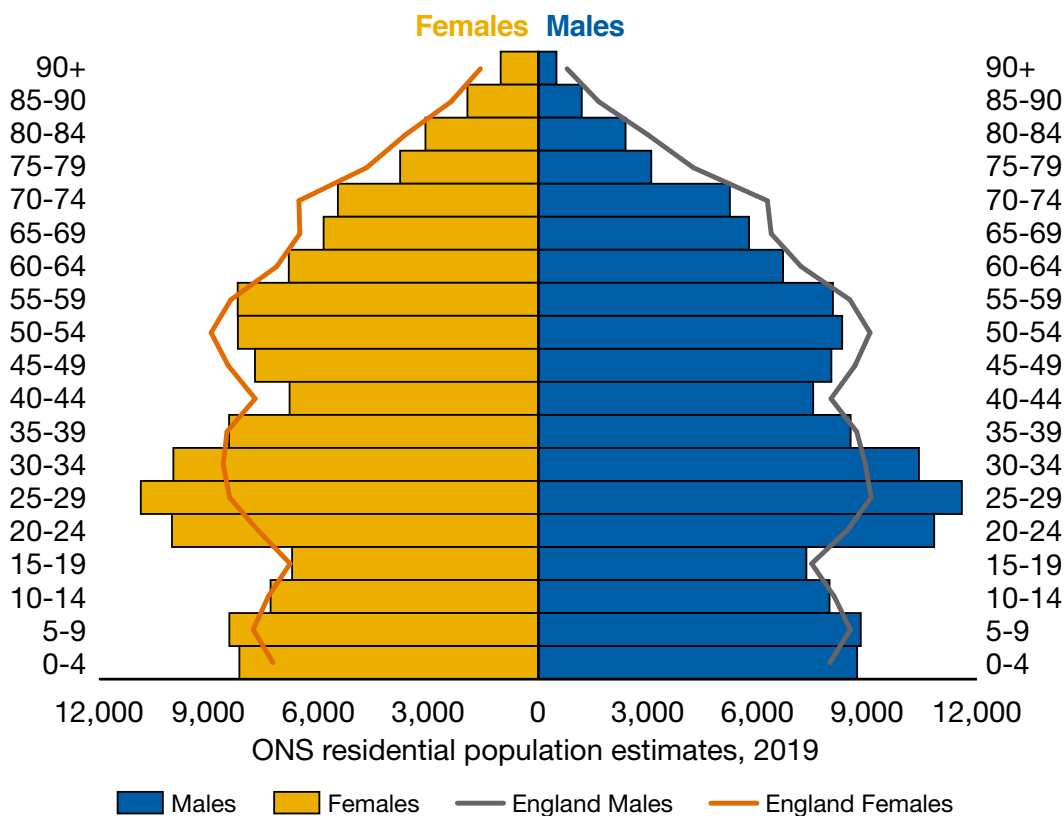
Source: Office for National Statistics: population estimates for mid-year 2019

At the time of the 2011 census, 94.1% of the population of Hull was White, 2.5% were Asian/Asian British, 1.2% Black/Black British, 1.3% from Mixed/Multiple ethnic groups and 0.8% from other ethnic groups. From the local authority population profiles produced by the Office for National Statistics (ONS), there were 43,000 key workers in Hull in 2019 (35.8% of the population aged 16-64 years).

Hull's population has been relatively static in terms of overall numbers (±2,000 per year; less than 1%). As with most cities, internal migration occurs with more affluent groups moving to leafy suburbs (generally to the East Riding of Yorkshire in the case of Hull). In general, younger people move into the city to study and work, and internal net migration has been relatively static over the last five or so years.

The resident population of Hull is projected to be relatively static overall in the next few years, with the ONS predicting a 0.15% increase to 261,000 by 2028 and a further 0.6% increase to 262,100 by 2043 from the 2018 baseline.

Hull Population Projections
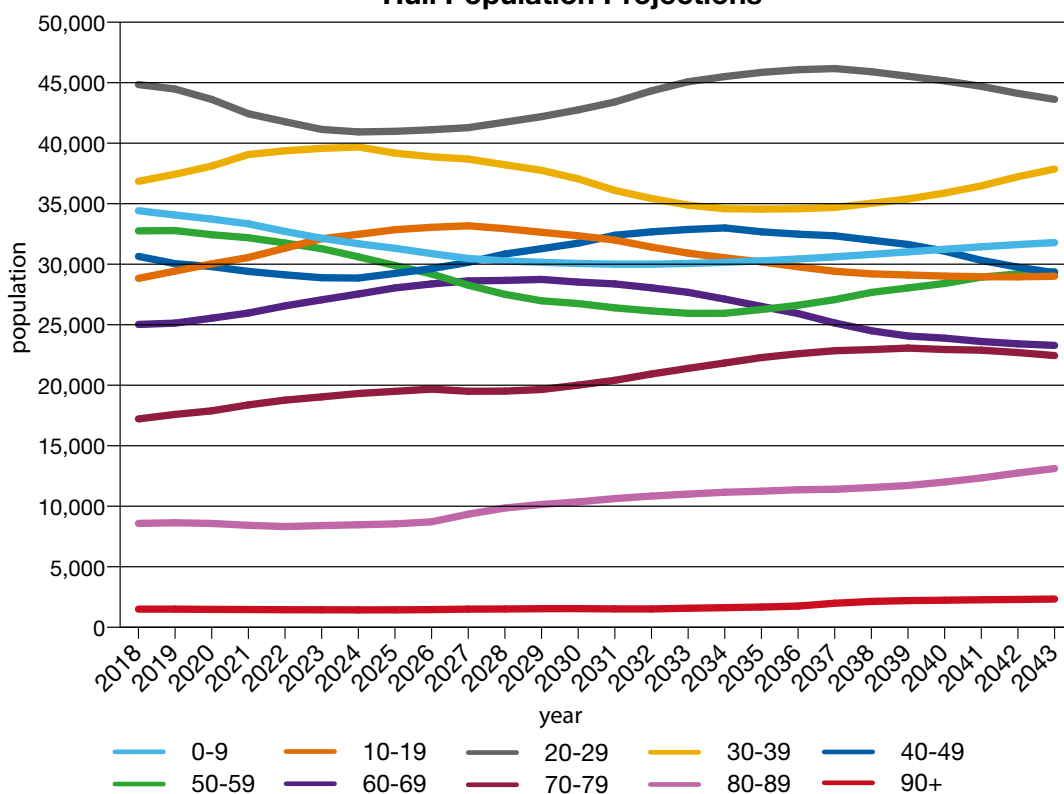
Source: Office for National Statistics: population estimates for mid-year 2019

Between July 2019 and June 2020, 4.5% aged 16+ years were estimated to be unemployed (95% CI 3.2%-5.8%). Of those in employment, 16.3% of employees worked in manufacturing, 15.4% in the wholesale or retail trade,

or in motor vehicle repairs, 15.4% in health and social work activities, 12.2% on administrative and support services, 8.9% in education, 4.9% in public administration and defence, 4.9% in accommodation and food services, 2.4% in information and communication and 2.0% in arts, entertainment and recreation. Hull has approximately half the proportion of adults qualified to degree level compared to England and a much higher proportion (31.7%) with no qualifications compared to England (22.5%) with large differences in educational attainment across the wards.

Health outcomes

Generally, the people of Hull are far healthier than they were in the past; however, as with other coastal communities, factors such as the mechanisation of the ports, decline of the fishing industry, the 'end of the line' location with declining travel by people and passengers, and the very tight local authority boundary which essentially separates the city from its healthier and more affluent suburbs, has impacted adversely on a fragile economy over the last few decades (as well as more recently as a result of COVID-19). The resulting high levels of poverty and deprivation have a sustained influence on education, skills, employment and housing that, in turn, greatly impact the city's health and wellbeing. Thus, despite huge strides made in inward investment, regeneration and ongoing efforts to tackle health inequalities, Hull is often at the bottom of national league tables and among the 'worst' for various indicators related to health and its wider determinants.
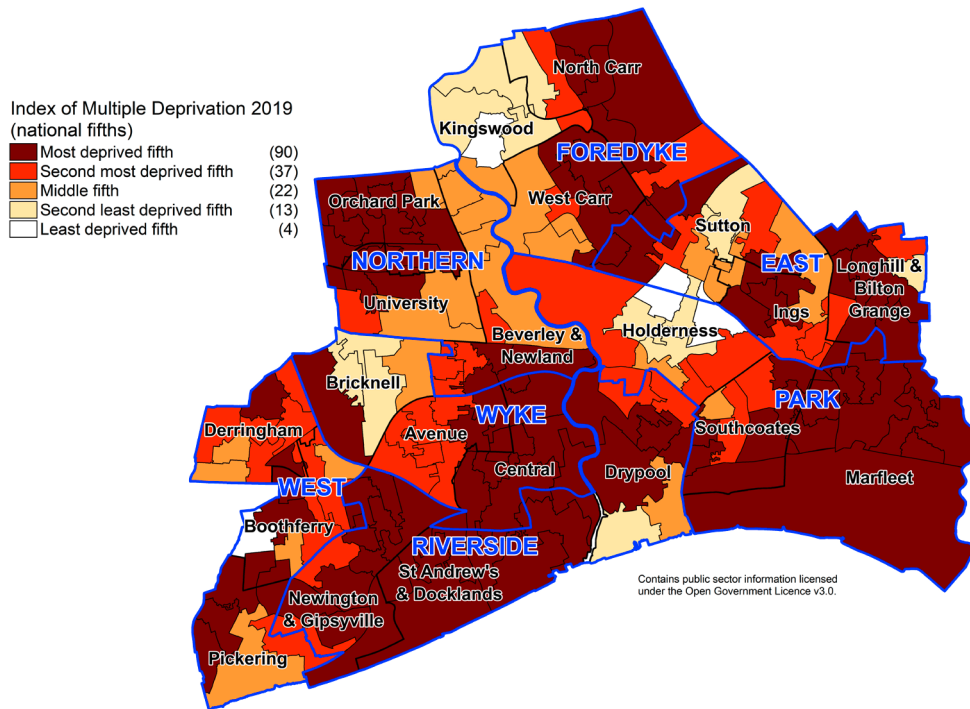
Like many places in England, improvements in life expectancy and healthy life expectancy have stalled in Hull, and inequalities are increasing.

Poor health occurs at an earlier age and is largely the result of preventable diseases. Hull people spend more than a quarter of their lives in poor health (25% for men and 29% for women). For those who live in our most disadvantaged communities, there is a double jeopardy of inequality: far shorter lives spent in far poorer health.

Hull Life Expectancy
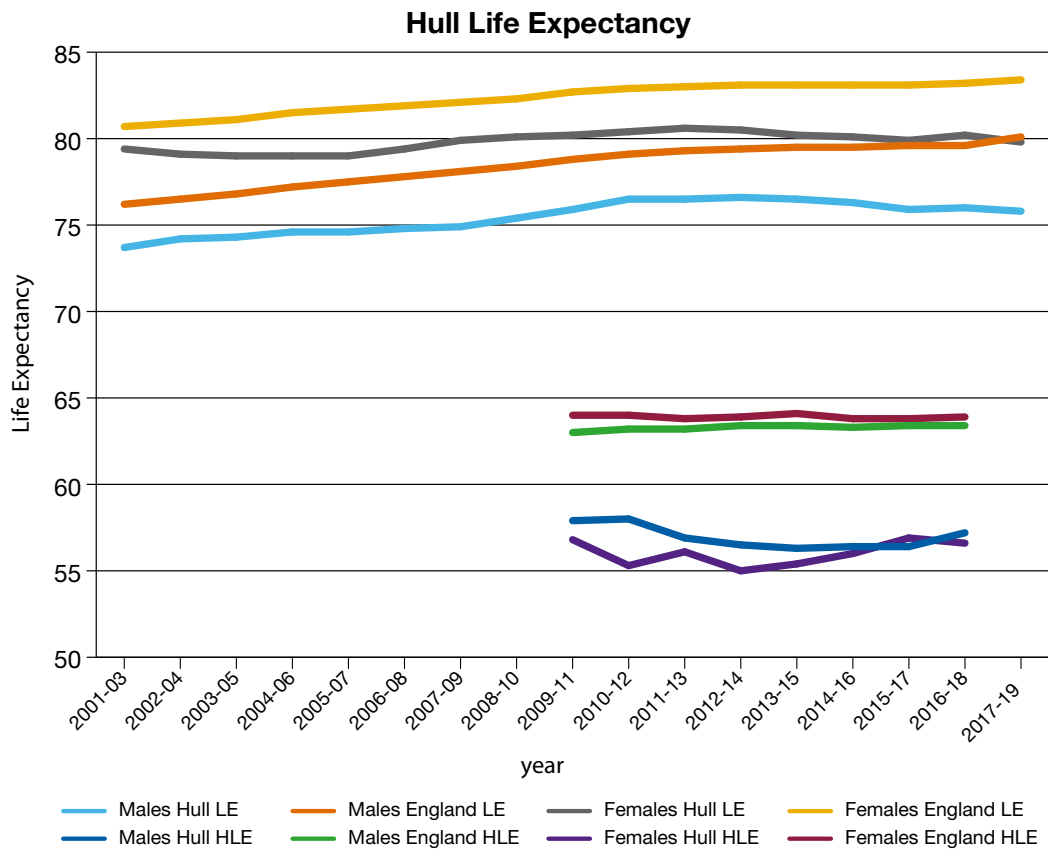
Source: Public Health England Fingertips calculated from Office for National Statistics annual death extract and above ONS resident mid-year populations

Due to the high levels of poverty and deprivation, Hull's residents are more vulnerable to the impacts of external factors due to economic downturn, austerity measures, climate change, flooding, and the COVID-19 pandemic. These factors have a direct negative impact on our population's employment and financial resilience, health and housing, physical and emotional wellbeing and negative lifestyle choices exacerbated by the tight geographical boundaries at place.

Index of Multiple Deprivation 2019
(national fifths)
- Most deprived fifth (90)
- Second most deprived fifth (37)
- Middle fifth (22)
- Second least deprived fifth (13)
- Least deprived fifth (4)

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A selection of health indicators for Hull reveals that:

- **Financial insecurity** – 30% of children live in relative low income families compared to 18% for England (ranging from 9% and 49% across Hull's 21 wards). Prior to the pandemic, around one-quarter of adults in Hull could not fund a £200 household emergency. One in 11 adults worried on a daily or weekly basis about not having enough food. The financial insecurity has increased substantially in the last year.

- **Preventable mortality** – The rate of preventable premature death (death under 75 years) is two-thirds higher than England, with rates differing markedly across the city. The five most common causes of death are CHD, dementia, lung cancer, COPD and stroke, and account for 45% of all deaths.

- **Smoking** – 92% of Hull's children and young people choose not to smoke. The number of women smoking in pregnancy has fallen, it is still twice that of England (20.6% versus 10.4%). However, more than one in five adults (22.2%) still smoke, which is much higher than England (13.9%). This equates to over 45,000 current smokers and leads to a smoking-attributable hospital admission rate almost twice that of England.

- **Alcohol** – Fewer adults in Hull drink alcohol (18%) than England (22%), but 32% of those who drink alcohol were harmful drinkers, with alcohol admissions 50% higher than England.

- **Substance misuse** – The estimated prevalence of opiate and/or crack cocaine use in Hull is more than twice that of England (18.1 versus 8.9 per 100,000 population aged 15-64 years) with double the numbers in drug misuse services (8.8 versus 4.4 per 1,000 population).

- **Mental health** – The registered rates of depression are slightly higher than England and the suicide rate is 14.8 cases per 100,000 population, ranked equal third highest in England.

- **Obesity** – Seven in ten adults are overweight, including one-third who are obese, which is higher than England (71% versus 62%). Only one in five adults are eating the recommended 5 portions of fruit and vegetables a day. There are also high levels of child obesity with 28.4% having excess weight in reception (23.0% in England) and 37.3% in Year 6 (35.1% in England).

Key challenges

Some health impacts are directly linked to our geographical location. Hull is the most flood-prone city, and the Humber is the most flood-prone UK region, after London, facing risks from fluvial, coastal and surface water. Hull suffered devastating surface water flooding in 2007 as well as city centre flooding from a severe tidal surge in 2013.

In 2007, over 9,000 homes and businesses were flooded, and 6,300 people were forced into temporary accommodation, many for more than 12 months. 70% of those who had been flooded and moved out of their homes reported health problems, both physical and mental. Of those affected by floods overall, 64% reported adverse health impacts. Children forced out of their homes were more likely to suffer emotional health problems and the limited financial resilience of the population meant debt-related problems were common.

Economy – The health of Hull's residents is also inextricably linked to the performance of the local economy. Economic investment and the priority placed on job creation in our City Plan has resulted in Hull's employment (74%) and unemployment (6%) levels in March 2020 being at their best since 2004 (when the most recent method of recording was established). However, the COVID-19 pandemic has had a major impact. Since March 2020, Hull has seen a significant increase in the number of out of work benefit claimants from 6% to 10% (compared with an increase from 3% to 6% nationally). This equates to approximately 6,200 (63%) additional new claimants. There has been a notably substantial rise in young people (aged 18-24) claiming unemployment benefits over this period from 1,970 to 3,165; a 61% increase in only eight months, resulting in a claimant rate for this age group of 25% compared to 9% nationally.

Housing – There has been a significant rise in the number of HMO's in Hull. Of the 4,000 HMO's, around a quarter are subject to mandatory licensing by the authority (five or more unrelated persons sharing facilities). Many HMOs in the city are former family houses and Hull has a high percentage of Victorian terraced housing. The most common housing hazards found are in relation to excess cold, falls, damp and mould, fire safety, electrical and overcrowding. Evidence has shown that, after 2013, a number of developers began creating HMOs outside of

these areas particularly to create migrant worker accommodation and supported accommodation. The Council has used planning powers (Article 4) to attempt to limit the increase of unregulated HMO's, and works very closely with the Police to investigate concerns regarding modern slavery.

This increase in unregulated accommodation brings an additional financial burden to Hull, as many residents require additional support services to those with complex needs or who have complex needs and are considered high risk and/or vulnerable, to live, or adjust to living independently within the community. The Council has established a multi-disciplinary team to regulate this non-commissioned accommodation, using our collective regulatory powers to address poor practice, including safeguarding matters and significant housing hazards and make improvements to services and support.

Health and Care Workforce – As with other coastal, peripheral communities, recruitment and retention of the healthcare workforce is challenging. Clinicians and health and social care professionals who choose to come and work in Hull often remain locally, however there is a challenge attracting them to the area. Hull University is linked with York University through the Hull-York Medical School (HYMS) and the local hospital is a University Teaching Hospital active in both education and research. We have established a Pride to Care approach, with strong links with Hull University and academies to create opportunities for students to have real work experience of adult social care and to gain valuable insight into our city and the needs of our local population.

Key strengths/assets and examples of positive work locally

In 2013, at a time of austerity and reduced budgets to local authorities, the City Leadership published its 10-year plan for economic growth as a route to reducing social and health inequalities. Public health has continued to be at the heart of our City's Strategy.

Our investment in growth is illustrated through the increasing number of international companies across a range of sectors investing in Hull. The pharmaceutical industry is one of these growth areas, on course to secure further capital investment; for example, Reckitt Benckiser invested £100m into opening their global Research and Development Facility in East Hull in 2019. The City also seeks to focus its future growth around its strength sectors of Energy, Medi-Health and logistics. The £310m investment from Siemens Gamesa and ABP is the first element of the city developing its Energy sector, with a planning application for a further £100m factory extension shortly to be submitted, in accordance with wider plans for the Humber.

Hull City Council and NHS Hull CCG have an integrated budget of over £640m and joint decision-making for commissioning for health and social care through Joint Committees in Common. We are on course to secure significant investment into Hull University Teaching Hospitals NHS Trust, which is located close to the former fishing docks in the west of the city. Additionally, a collaboration between the Council, post-16, and higher education providers will establish a 'Social Care Academy' offering new career pathways into employment as well as progression opportunities within this sector.

The food sector accounts for 9% of all employment in Hull, with notable food manufacturing-based businesses such as Aunt Bessie's, Cranswick and BBF contributing significantly to this percentage. Jobs in this sector are relatively low skilled but have enabled those who would have gone into the fishing industry to gain employment. Employers also offer training to upskill these workers, enabling progression to more highly skilled roles and possible diversification into other sectors. The food industry is particularly important for young people, who have become distanced from education or work, enabling an easy route into employment.

In order to address our flood resilience, in response to the devastating impact of the 2007 floods, a strategic partnership was formed between Hull City Council, East Riding of Yorkshire Council, the Environment Agency and Yorkshire Water. This 'Living with Water Partnership' has seen in excess of £200m invested in flood infrastructure, critical to address some of the mental health challenges faced by householders and, in particular, young people. To appease some of this anxiety, a strong commitment by the partnership was essential to build back residents and businesses' confidence that action was being taken to minimise future flood risk exacerbated by climate change.

In seeking to address above average child and adult obesity rates, the Council has brought together internal and external partners to look at ways of curbing this increase. This has led to a policy in the Hull Local Plan preventing any new takeaways within 400m of a secondary school or playing field. This policy was supported by the Planning inspectorate on the evidence of Hull having high levels of obesity, in addition to having an above average number of takeaways per head of population. Successful collaboration between Public Health and Planning has led to a 'Healthy Places Healthy People' Supplementary Planning Document being developed.

In relation to workforce challenges, HCV working with Hull CCG and HYMS, have developed a bespoke fellowship offer for GPs leaving vocational training to encourage them to stay locally – we now have 35 recruits starting this month. This scheme is unique to our area although other ICS have their own fellowship offers, we believe this one is particularly valuable.

The St. Marys Health and Social Care Academy opened in 2015 as a joint venture between St Mary's Academy and the CCG with the expressed aim of growing its own Health and Social care Workforce. Since then it has enrolled many hundreds of students from an ever-widening background from both within and outside Hull. It has aimed to widen participation in higher education and training both at apprentice, vocational qualification and degree level. Several students have gained places to study medicine from a school that had never had that success before. It has worked closely with Hull York Medical School on its widening participation work and has won national awards for its work. It has encouraged students into areas they would never have considered before such as Medicine, Nursing, Midwifery, Paramedics, ODAs and Social Work.

We have made significant progress on economic growth, infrastructure, employment and housing. Our progress on reducing harm from preventable risk factors including tobacco, alcohol and drugs remains challenging. Hull is dealing with these challenges head on through our strength in leadership of Place, our focus on better outcomes for our people, and our partnership relationships across the Humber, region, nationally, and internationally.

The response to the pandemic has highlighted the strength of our partnerships and increased commitment to continuing to work together for and with our communities. Since March 2020, when the Government launched the "Everyone In" programme to ensure all those at risk of rough sleeping were accommodated, partners have worked closely to ensure that provision is in place. A number of temporary sites were procured at short notice, including hotels, B&Bs and HMOs, which led to well over 100 people being offered accommodation to enable them to keep safe. To date, we have not had any confirmed cases of COVID-19 in any of the temporary accommodation set up to support people.

Vision for the future

Hull is a proud and confident city that has been transformed by investment in people, place and culture, leading to sustained economic, social and cultural improvements, and our vision remains ambitious. The challenges we face do not define Hull; our courage, tenacity, ambition and pride of our people, place and our communities does. By working together, we will continue to create a Place where every child will fulfil their hopes and aspirations – now and into the future – and those born in Hull will have equity in terms of life chances, quality of life, and healthy life expectancy.

Director of Public Health – Julia Weldon

Contributors: Ali Patey

1.6 Lincolnshire

North Sea Observatory, Chapel Point, Chapel St Leonards, Skegness, Lincolnshire

Background

Lincolnshire is the fourth largest county in England with a coastline which runs for approximately 50 miles from the Humber, close to Grimsby, to the Wash, close to Kings Lynn. This incorporates traditional seaside coastal communities in East Lindsey and a port in Boston, and this case study predominantly focusses on the traditional seaside communities and the challenges they face. The coastal area boasts an impressive natural landscape, much of which are categorised as Sites of Special Scientific Interest (SSSIs), bordering the Lincolnshire Wolds Area of Outstanding Natural Beauty (AONB). Lincolnshire's coast is home to more than 200 caravan sites and around 25,000 static caravans, and it is estimated that there are around 3,500 households (6,600 people) who live for some or all of the year in caravans or chalets. The area is highly vulnerable to flooding, including seeing devastating floods in 1953, when 43 people died.

The relatively isolated nature of coastal communities in Lincolnshire is something that sets it aside from many other coastal areas of the country, being surrounded by large areas of rurality with limited immediate links to other urban service centres or larger communities.

Latest figures suggest that the East Lindsey district welcomes nearly 5 million visitors a year, with the tourism sector (direct and indirect) worth £733m. The area has significant employment in the low skilled, low wage sectors associated with tourism such as accommodation, food service and the recreation industry, which are often also very seasonal in nature. Around a third of residents in Skegness and Mablethorpe have no, or low, qualifications, and economic inactivity is high, at around 42%. Deprivation is high, with 83% of the population in the First Coastal Primary Care Network (PCN), which covers these towns, living in areas designated as being within 20% of England's most deprived.

There is a high proportion of small and microbusinesses which are vulnerable to economic shocks. In April 2020, a Centre for Towns study showed that almost 55% of employment in Skegness was in sectors that were shut down due to COVID-19 restrictions, the second highest of any town in the UK behind Newquay. Mablethorpe had 45% of employment in shut down sectors.

Figure 1: Overall Deprivation (left) and Health Deprivation (middle) on Lincolnshire's Coast, and the surrounding Barriers of Services Deprivation (right) by National Decile of Deprivation
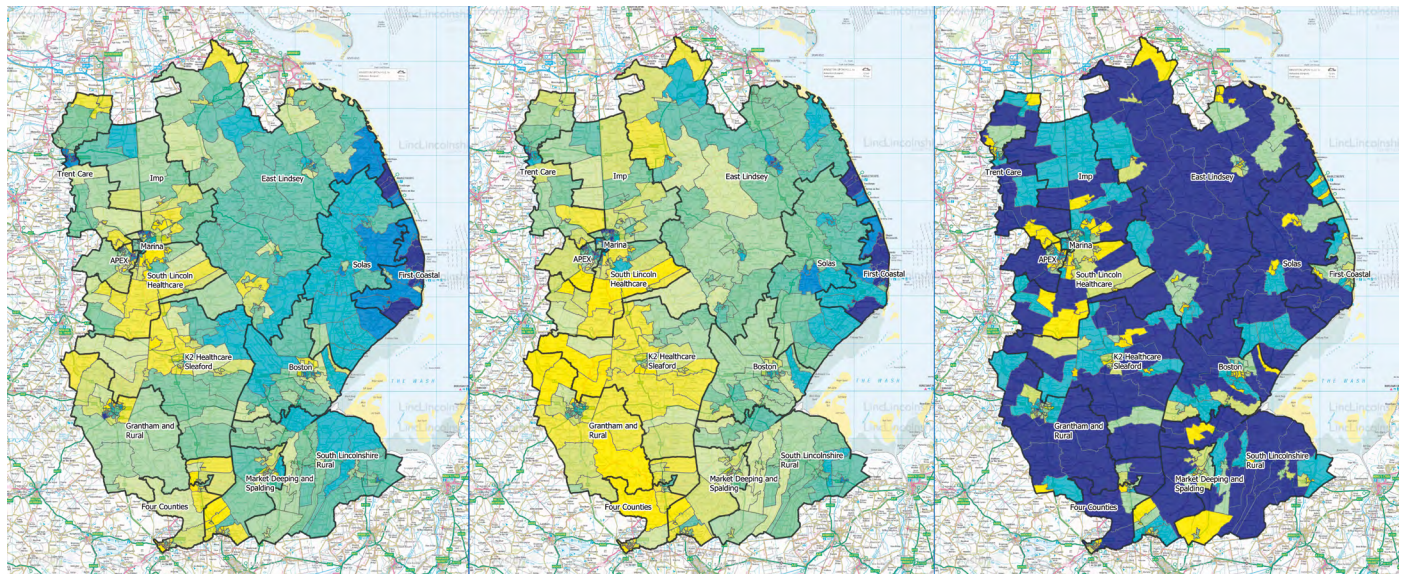
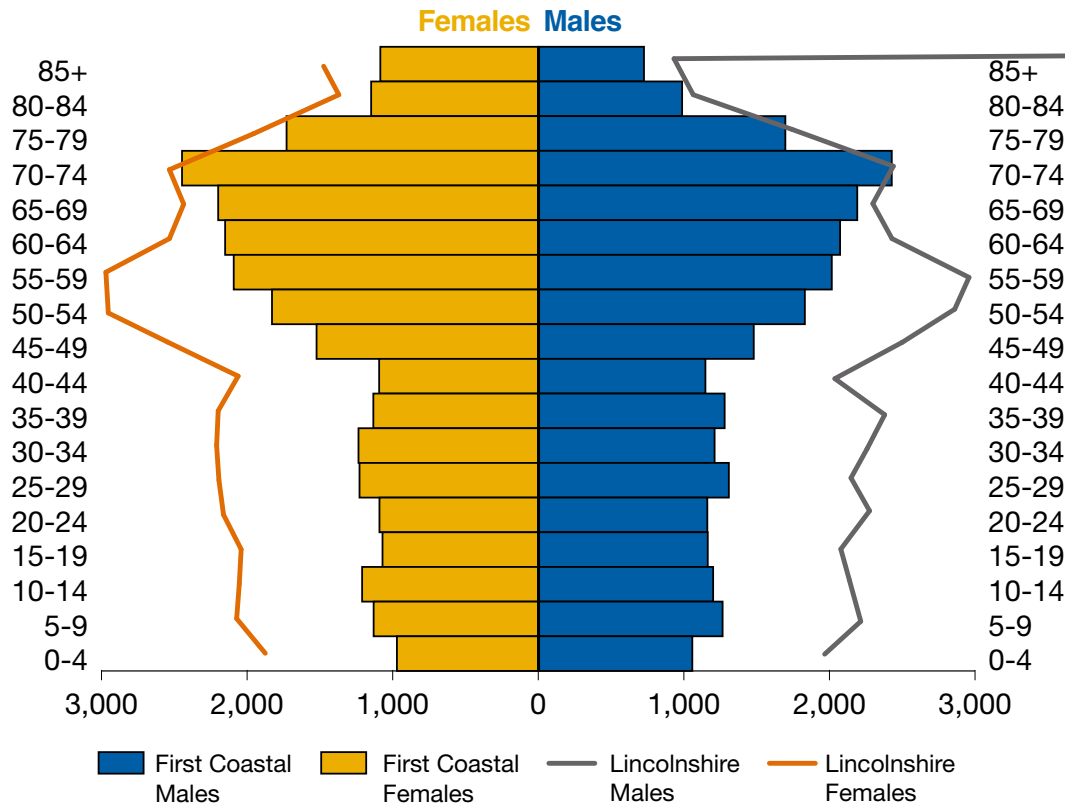**Source:** GOV.UK (2019) English indices of deprivation 2019.Blue colouration indicates most deprived decile.
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Demographics

Figure 2: First Coastal PCN Population Pyramid, 2019 [Line denotes Lincolnshire average]

Population pyramid – 2019 mid-year estimates

Source: NHS Digital - 2019 GP patient registration data

Lincolnshire's coast has an older age profile and a population that is ageing quite rapidly with slow population growth, as illustrated in Figure 2. In the First Coastal PCN which includes the coastal towns and communities around Skegness and Mablethorpe, and a population of 52,671, nearly 32% of registered patients are aged 65 or over, compared to 18% in England. A very high proportion of residents were born inside the UK and are of white ethnicity.

Whilst population growth is very low in the coastal areas, it is driven by increases in the over 65s while 16-24-year olds have reduced. It is estimated that between 2011 and 2019, the 16-24 year old population declined in Lincolnshire's coastal areas by 16% (1,000 people), as the 65 and over population increased by 19% (3,700 people); a ratio of one young person fewer for every additional 3.7 older people. The 65 and over population is projected to increase by another 43.9% by 2041 (nearly 8,000 people) and the over 85s by 116.6% (more than 2,000 people).

Health outcomes

Health outcomes for those on Lincolnshire's coast are poor. The coast has the highest emergency inpatient admissions in the county, and the rate is increasing. The premature mortality rate for East Lindsey, the district within which the traditional seaside coastal communities are located, is 385 per 100,000, significantly higher than the national rate of 326 per 100,000 (for England). There is a high prevalence of cancer, asthma, chronic obstructive pulmonary disease (COPD), arthritis, dementia, and all types of cardiovascular disease (CVD) on the coast, as shown in Figure 3. Screening rates for cervical, breast and bowel cancer are relatively low.

Figure 3: Comparison of NHS Digital Quality Outcomes Framework for Lincolnshire and the Coast 2018/19

Respiratory	First Coastal PCN	Lincolnshire
Asthma: QOF prevalence (all ages)	7.6%	6.6%
COPD: QOF prevalence (all ages)	4.5%	2.3%
MSK		
Osteoporosis: QOF prevalence (50+)	1.6%	1.2%
Rheumatoid Arthritis: QOF prevalence (16+)	1.1%	0.9%
Mental Health		
Dementia: QOF prevalence (all ages)	1.3%	1.0%
Depression: QOF incidence (18+) – new diagnosis	1.2%	1.8%
Depression: Recorded prevalence (aged 18+)	12.2%	11.7%
Mental Health: QOF prevalence (all ages)	1.1%	0.8%
CVD		
Atrial fibrillation: QOF prevalence	3.7%	2.6%
Heart Failure: QOF prevalence (all ages)	3.0%	1.5%
CHD: QOF prevalence (all ages)	6.7%	4.0%
Stroke: QOF prevalence (all ages)	3.5%	2.2%
PAD: QOF prevalence (all ages)	1.4%	0.7%
Hypertension: QOF prevalence (all ages)	22.9%	14.4%
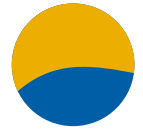
Respiratory	First Coastal PCN	Lincolnshire
Cancer		
Cancer: QOF prevalence (all ages)	4.7%	3.7%
Females, 25-64, attending cervical screening within target period (3.5 or 5.5 year coverage, %)	72.1%	76.3%
Females, 50-70, screened for breast cancer in last 36 months (3 year coverage, %)	70.2%	73.3%
Persons, 60-74, screened for bowel cancer in last 30 months (2.5 year coverage, %)	55.3%	63.0%
Crude rate of emergency admissions with cancer per 100,000	842.6	638.3
Crude rate of emergency presentations with cancer per 100,000	148.4	101.5

In addition to premature mortality, years lived with disability (YLD) are high for those on the coast, accounting for 8,563 per year amongst patients registered to practices on the coast. Musculoskeletal disorders are the cause of 23% of these, and YLD due to sense organ disorders increase from the age of 50 onwards, escalating from age 70. YLD due to neurological disorders are higher amongst females across the life course and, due to substance use, are higher in males particularly, between the ages of 20 and 50.

Risk factors start much earlier in life, smoking at the time of delivery and teenage pregnancy are high, there is relatively poor child oral health and lower MMR vaccine take-up. Levels of obesity are high and increasing (statistically significant differences are shown in red).

	East Lindsey	England
Smoking at time of delivery	19.90%	10.40%
Teenage pregnancy	0.90%	0.70%
Percentage of 5 year-olds with experience of visual dental decay	26.50%	23.40%
Population vaccination coverage – MMR 2 doses (5 year-olds)	84.40%	86.80%
Prevalence of overweight including obesity (Reception)	25.90%	23%
Prevalence of overweight including obesity (Year 6)	35.60%	35.20%
Percentage of adults overweight or obese *(18/19)	64.60%	62.30%

Source: Public Health England, Public Health Profiles 2019/20 except where shown.

Figure 4: Top 10 Years Lived with Disability
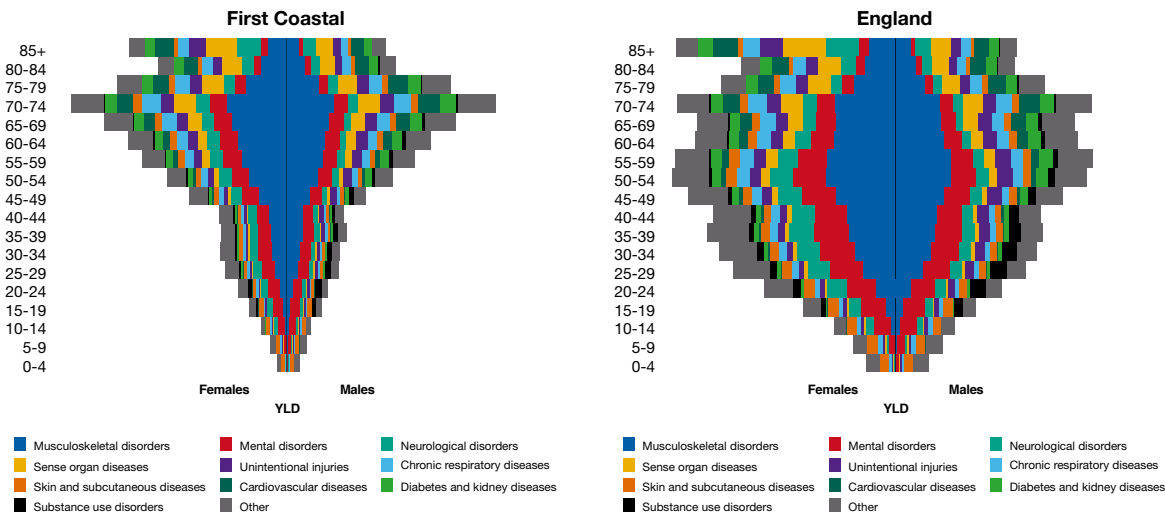
Source: Total Years Lived with Disability in First Coastal PCN and in England, by main cause, gender and 5 year age band; Global Burden of Disease 2017 (level 2) with 2019 GP patient registration data)

Key challenges

As a rural and coastal county, Lincolnshire faces a series of interlinked challenges, including:

- Sparsity, poor transport and digital infrastructure compared to urban counterparts contributing to social isolation. People have to travel further to access services and many communities have limited or no mobile phone and broadband coverage. Particularly, access to local higher education opportunities is limited with, for example, travel times from Skegness or Mablethorpe to Lincoln being over an hour using private transport, but more than double that when using public transport, making on-campus learning unviable for those who need to live at home.

- Coastal towns like Skegness and Mablethorpe have seasonal economies largely based on tourism. There is a low skilled, low paid, transient workforce.

- Parts of the Lincolnshire coastline have high levels of temporary and/ or hidden residency, to which the NHS attributes £22m of additional health costs.

- Lincolnshire has one of the highest levels of caring responsibilities with over 79,000 unpaid carers, with over 20,000 of these providing 50 or more hours per week.

- There are 20,000 care workers (more than the total NHS workforce in the county) working across 740 SME providers. By 2035, it is estimated that Lincolnshire will not have enough people to fill the projected health and care jobs.

- Seasonality also brings challenges in upskilling the workforce. People often move quickly from job to job, leaving before they have had a chance to progress or upskill in an area.

- Housing stock in rural areas tends to be older and therefore not suited to adaptation. Homes are often off-grid for mains gas, making them harder, and more expensive, to heat.

- Rates of inactivity in those aged 55 and above are worse than the national average, with 31% of adults aged 55-74 and 59% of adults over 75 in Lincolnshire inactive, compared to national averages of 27% and 49% respectively.

Whilst Lincolnshire's rurality and sparsity appears to have provided some protection from high levels of infection and mortality from COVID-19, the impacts of the pandemic are yet to be fully understood. There will be opportunities for innovation but also potentially disproportionate impacts in our rural context which will need to be understood and addressed.

Key strengths/assets and examples of positive work locally

Lincolnshire has a number of strengths which can support delivery of partnership goals, including:

- Strong record of partnership working across the county council, seven districts, clinical commissioning group and 14 primary care networks. Statutory bodies spend a lot of time talking to each other and with stakeholders, building relationships so that decisions are made in the best interests of the whole community rather than a single organisation.

- A positive voluntary sector with 315 organisations benefitting from over 7,000 volunteers. 'Involving Lincs' is a consortium of VCS organisations that supports the engagement of the third sector in strategic policy development and to influence the development of service delivery. Lincolnshire Voluntary Engagement Team (VET) is a partnership of voluntary organisations and statutory stakeholders that have chosen to work together to promote third sector opportunities in health and care.

- The TED project in East Lindsey provides an important evidence base and blueprint for 'what works' in tackling loneliness and social isolation. The six-year programme was awarded £2.7m as part of the National Lottery Communities Fund Ageing Better programme. The aim of the project has been to support people aged over 50 who are experiencing or are at risk of social isolation and loneliness. It has built a programme of work around age-friendly businesses, evidence-based service delivery and was an important catalyst in East Lindsey becoming the country's first Age-friendly district.

- The National Centre for Rural Health and Care is a membership CIC which is national in scope, based at the University of Lincoln and aims to improve outcomes and reduce health inequalities in rural areas. The University of Lincoln has established a Global Chair for Rural Health and Care. Both of these reflect Lincolnshire's ambitions to be a national exemplar on rural health and care.

A number of strategic developments recognise the inter-connectedness of health outcomes and the wider social and economic challenges and opportunities:

a) Agreement to incorporate the functions of the Integrated Care System Partnership Board with the Health and Wellbeing Board, bringing better understanding of health and care needs, alignment of commissioning plans and greater service transformation. For example, the Housing Health and Care Delivery Group has developed a Homes for Independence Strategy and Delivery Plan.

b) In early 2020, Lincolnshire became the Centre for Ageing Better's Rural Strategic Partner, complementing similar relationships with Greater Manchester and Leeds. The Partnership seeks to understand better what works to support people to age well. Initial programmes of work will explore:

   - Healthy Ageing: targeted support to those aged 50 and above at risk of developing poor health to improve lifestyles choices and promote physical activity

   - Housing: improving the design of new homes to support people in later life in terms of accessibility and digital connectivity

   - Fulfilling employment: developing age-friendly employer practices. For example, supporting people to move to less physically demanding roles, to retire flexibly, or to change direction completely to meet known pressures e.g. in the health and care sector.

   - Connected Communities: exploiting the digital opportunities which support independence and quality of life, the adoption of which has accelerated during COVID-19.

c) Lincolnshire has attracted up to £100 million investment (Boston, Lincoln, Mablethorpe and Skegness) through the Towns Fund. These Town Investment Plans focus on health, enterprise and resilience, and provide an important opportunity to drive future economic growth and improve outcomes and opportunities to achieve thriving communities for all residents.

d) A Joint Strategic Asset Assessment (JSAA) is being developed to support commissioning by understanding the physical and community assets available to improve social connection and wider health outcomes. Alongside this, post-COVID recovery plans consider the impacts and opportunities to sustain the informal community response and the formal

voluntary sector, develop a Lincolnshire 'volunteer workforce' and related digital platform, and further exploit the impetus towards digital connection experienced in recent months.

Tactically, a number of activities are in hand:

a) One You Lincolnshire, Integrated Lifestyle Service, co-funded by the County Council and the Clinical Commissioning Group, this offers weight management, stop smoking and alcohol reduction support and advice. Target groups include unpaid carers, women smoking in pregnancy, those needing to improve their health before surgery.

b) Extension of Connect to Support Lincolnshire as a self-serve platform for support and services, to include a virtual wallet option for those receiving direct payments for their health and care.

Vision for the future

Lincolnshire County Council's vision goes far beyond what we can deliver on our own and we will need to work with the public and partners to ensure we deliver lasting benefits for all our communities. We want Lincolnshire to be a place where everyone has high aspirations by supporting businesses to provide high-quality jobs, skills and development opportunities. This will be especially important for our young people to enable them to achieve their full potential. We want communities to feel empowered to continually improve all aspects of their environment, so we make Lincolnshire an even better place to visit, live, relax, work and do business. We want people in Lincolnshire to live healthier lives and have access to health and care services they need.

Director of Public Health – Professor Derek Ward

Contributors: Andy Fox, Semantha Neal and Katy Thomas

1.7 Morecambe

Background

Morecambe benefits from strong local partnerships across health, council, community, voluntary and faith sector organisations, who share a vision to improve the health and wellbeing of the population and are committed to working together with residents to achieve this. The motto of the town, embedded in the floor of the Town Hall is: 'Beauty Surrounds and Health Abounds' – the beauty of the area is undeniable, but the population does now face significant health challenges. The town's residents are without question resilient, but the difficult conditions that deem resilience necessary are something that the area and partnership are working to overcome. Morecambe boasts a number of iconic buildings and a rich history of entertainment, the statue of Eric Morecambe who took the town as his showbiz name, reflects this and also the love of the area felt by many local people including 'Our Eric'.

Morecambe is a town in Lancashire, part of the wealthier district of Lancaster. The area borders Morecambe Bay, an estuary renowned for its natural beauty that is set to become the home to the Eden Project North. This will further showcase the beauty and diverse ecology of the Bay alongside offering educational and work opportunities to local residents.

As a coastal town with a railway line that linked it to Leeds and Bradford, Morecambe naturally evolved as a thriving tourist destination. Many of the noted features of the town, including the pier and the Midland Hotel, stem from the

boom in domestic tourism during the 1930s, sparked by the granting of holiday periods to workers. The growth of international travel led to a steady decline in Morecambe's tourism and entertainment industries, resulting in the loss of tourist attractions such as the West End and Central Piers and reduced local employment opportunities. Social change has also resulted from guest houses lining the sea front becoming houses of multiple occupation (HMO). This is shared in common with other seaside towns. These HMOs are often filled with people who are recently released from Her Majesty's Prison's, due to advertising about where it is easy to find cheap accommodation and 'make a new start'. Unfortunately this can lead to increased problems with county lines, addiction and antisocial behaviour, negatively affecting both the sense of community and the reputation of the towns. Morecambe certainly suffers from this reality, as does its nearby sister, Blackpool.

The community is skilled, strong and the local assets abundant. Whilst there are health and social care challenges, the excellent integrated working, provides the bedrock and collaborative approach that is needed to build on the strengths of the area and help address the issues that it faces.

Demographics

Age Band and Gender Profile
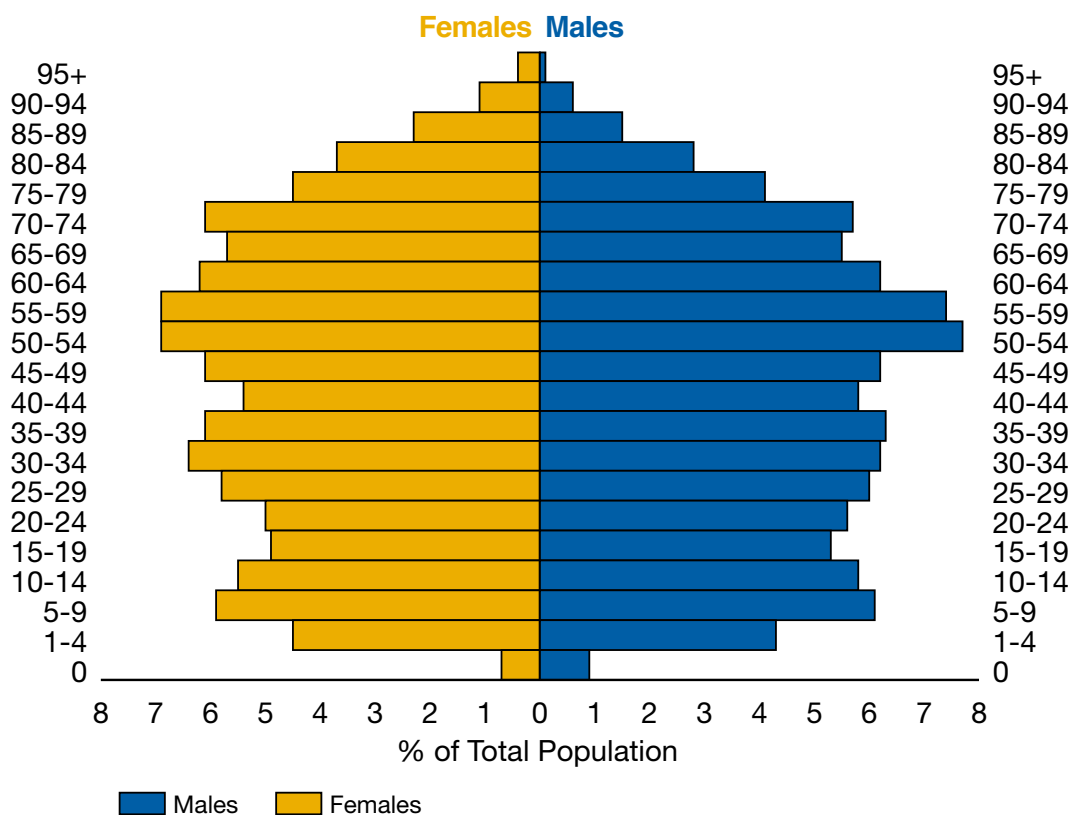
Source: Aristotle xi, Midland and Lancashire Commissioning support unit

Morecambe has a population of approximately 37,500. Two key features of the population are a lack of ethnic diversity and the ageing demographic, particularly aged 65+. Limited opportunities for young people have shaped an older demographic than other parts of Lancaster. The median age in Morecambe (43.5) is higher than Lancaster (39.5), Lancashire (42.7) and England (40.0). The black and minority ethnic population in Morecambe (2.3%) is a lower proportion than Lancaster district (4.4%) and the Lancashire County Council area (7.7%) and far below the national average (14.6%). The population served by the Bay Primary Care Network is around 54,000. The graph opposite demonstrates the population profile of the PCN against the PCN CCG average which is demonstrated in the black outline.

Life expectancy
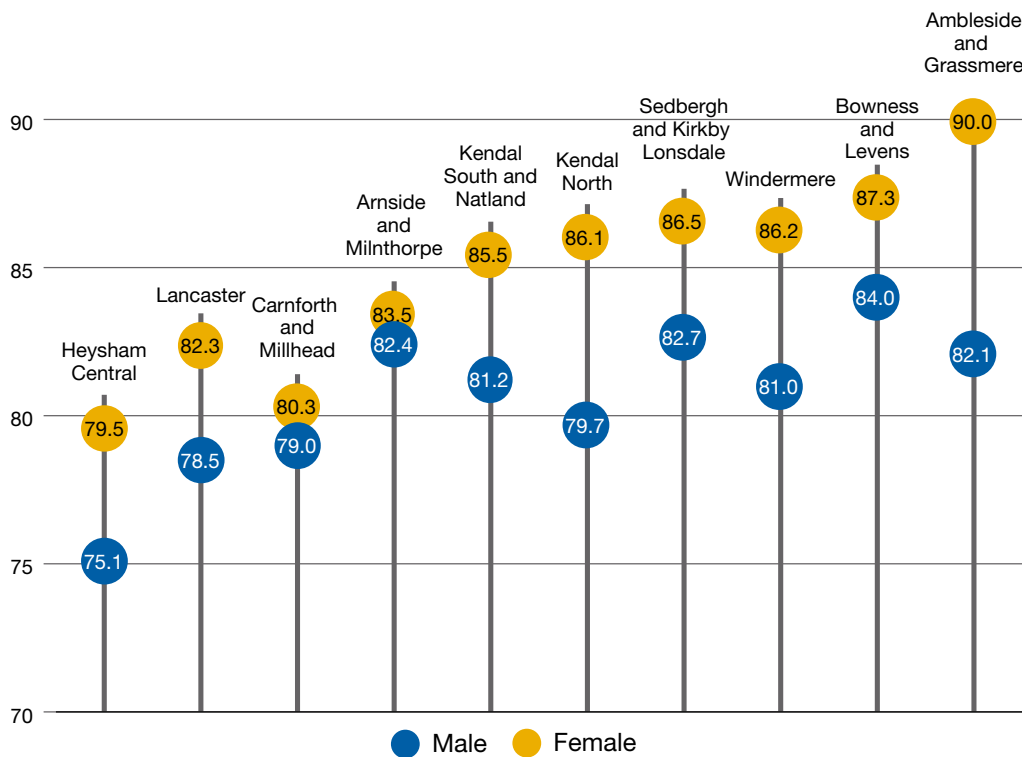
Life expectancy within the Lancaster district is lower for males, 78.7, and females, 82.5, than the England average, 79.8 and 83.4 respectively, based on 2017-19 data. Morecambe is significantly lower than the overall Lancaster district and South Cumbria as demonstrated by the bus route life expectancy graph, the Heysham Central ward is within the Morecambe locality. Residents are likely to experience poorer health earlier in life, creating additional pressures on health and social care services in the seaside town. The lowest life expectancy in the areas is for Males in the Poulton ward with a life expectancy of 72.2 years and healthy life expectancy being 55.7 years.

Health outcomes

Morecambe's population experiences poor morbidity and mortality compared to the national average. In Morecambe there are worse values for all emergency hospital admission indicators, lung cancer incidence, hospital stays for self-harm and alcohol-related harm, and generally higher Standardised Mortality Ratios (SMR) for all ages and under 75s (with the exception of all cancers for under 75s). One in four people in Morecambe have a limiting, long-term illness or disability (25.0%), which is significantly worse that the national average.

Key long term conditions prevalence in Morecambe PCN
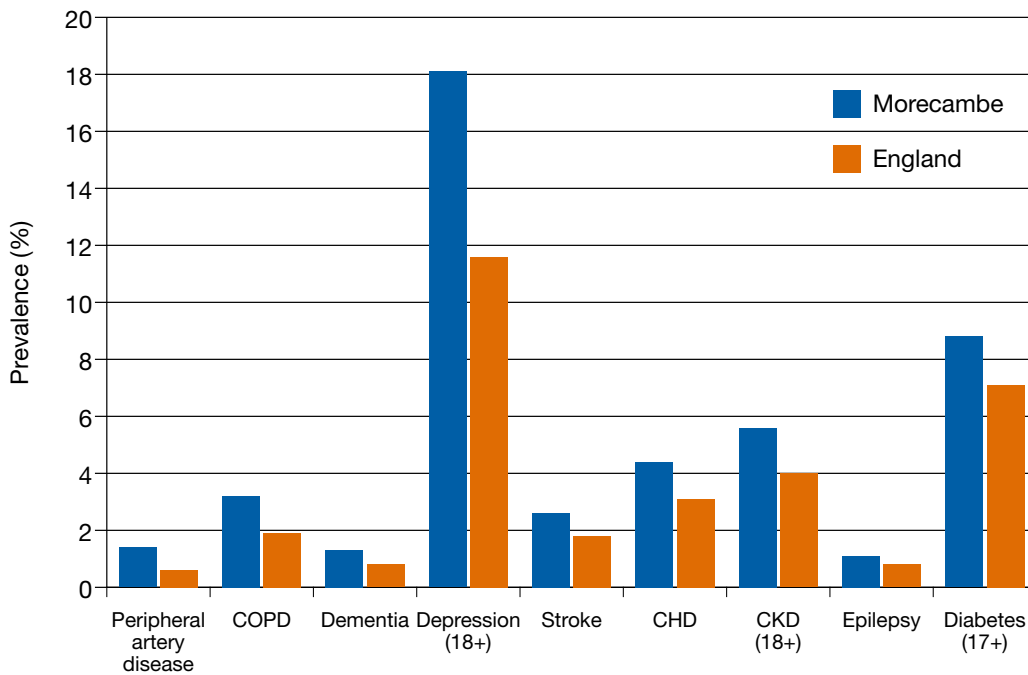
Source: Aristotle Xi, NHS Midlands and Lancashire Commissioning Support Unit & NHS Digital QOF

Long-term conditions (LTCs) are more prevalent in Morecambe than other parts of the Integrated Care System (ICS). 10.5% of people have 3 or more LTCs; if incidence matched the lowest rate across the ICS, there would be 2,272 (40%) fewer people with 3+ LTCs in Morecambe's PCN, highlighting the scale of inequality. People in Morecambe are more likely to have peripheral artery disease, COPD, dementia, stroke, coronary heart disease, kidney disease, epilepsy and diabetes than the national averages.

One in five people smoke in Morecambe, compared to one in six nationally. Patients in Morecambe Bay PCN are also 20% more likely to have hypertension or depression than the national average.

Deprivation plays a significant part in a population's health. Rates of income deprivation, child poverty and older people living in deprivation are significantly worse than the England average. There is a split in the town with areas along the seafront and Morecambe's west end experiencing higher deprivation than the east. The map shows the IMD across the Morecambe area.

Legend

Index of Multiple Deprivation (IMD) Decile 2019

1

10

Morecambe Area

Deprivation
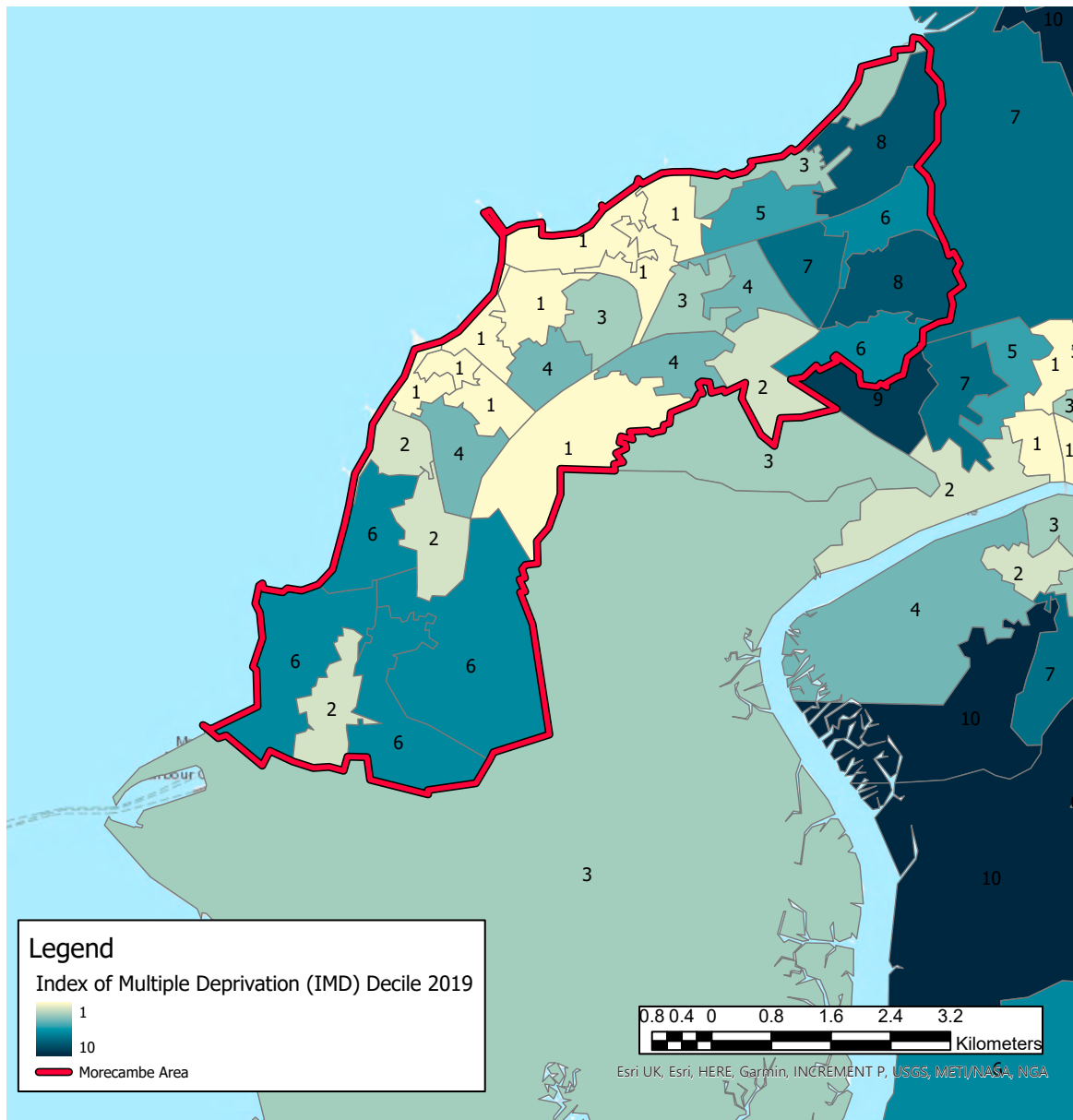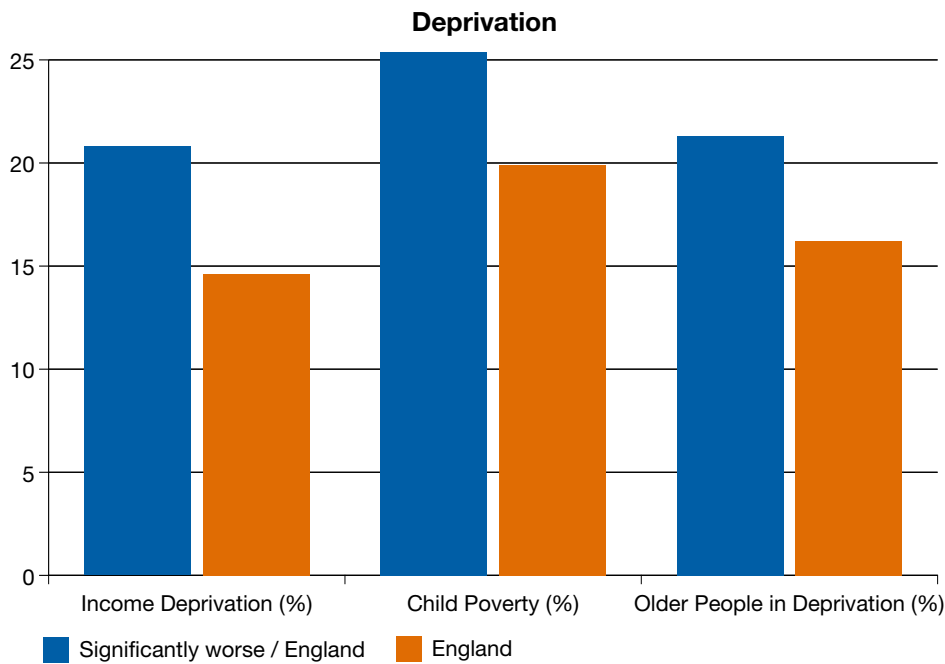
Source: DCLG © Copyright 2015

The graph below show the Bay PCN population against other PCNs within the CCG footprint. It also highlights the issues faced in Barrow which is another coastal town within Morecambe Bay and the interrelationship between poorer health and deprivation.

Morecambe Bay - PCN Populations with 3+ LTCs in IMD Lower Tiers
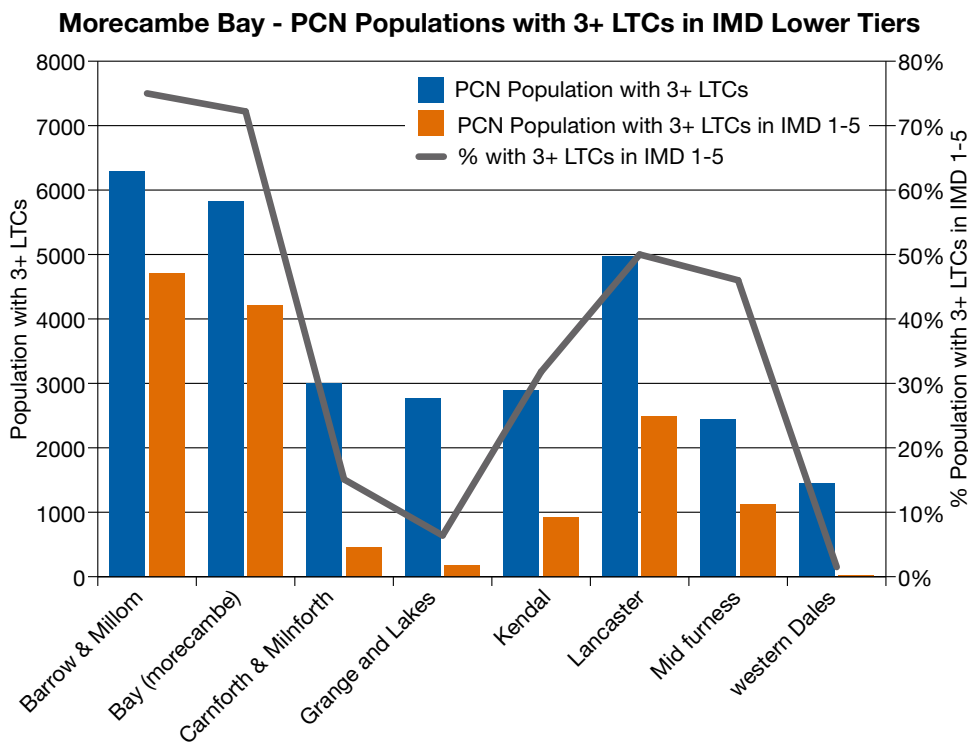
Source: PCN Populations with 3+ LTCs in IMD Lower Tiers - Data source: Aristotle Xi, NHS Midlands and Lancashire Commissioning Support Unit

COVID-19 saw the strong partnerships in the area pull together to ensure that residents were supported, working alongside health and council services, the third sector was invaluable in this response ensuring that support was accessible to those who needed it most. The impact of COVID-19 on the Morecambe community has compounded already deep-seated social, economic, health and educational inequalities. The gap has widened between those who 'have' and those who do not, in the fundamental necessities required for a good quality-of-life, including access to healthy food, social inclusion, psychological and physical health and wellbeing and access to lifelong education.

Key challenges

Houses of Multiple Occupation (HMOs) – HMOs are common in Morecambe. This is shared in common with other seaside towns. They were once guest houses, when the seaside tourism industry was booming. However, since the demise of tourism, these HMOs are now often filled with people who are freshly released from Her Majesty's Prisons, due to advertising about where it is easy to find cheap accommodation and 'make a new start'. Unfortunately, this can lead to increased problems with county lines, addiction and antisocial behaviour, negatively affecting both the sense of community and the reputation of the towns. Morecambe certainly suffers from this reality, as does its nearby sister, Blackpool.

Unemployment – There is significant unemployment in Morecambe. One in 10 people in Morecambe claim unemployment benefits (9.5%), higher than in Lancaster (5.5%), Lancashire (6.1%) and England (6.6%). Lack of skills in the population and lack of investment in the area, resulting in low value jobs, contribute to unemployment. Creating good quality work and equipping residents with the skills to do such work is a challenge that must be met to improve population health. Although there is work, linked with EDF, at Heysham Nuclear Power Station, the NHS, the regulated care sector and education, transport links from Morecambe are very poor (something it shares with other coastal regions) and so opportunities for other employment are very limited.

Child development, and education indicators

Legend:
- Not significantly different
- Significantly worse / England
- England
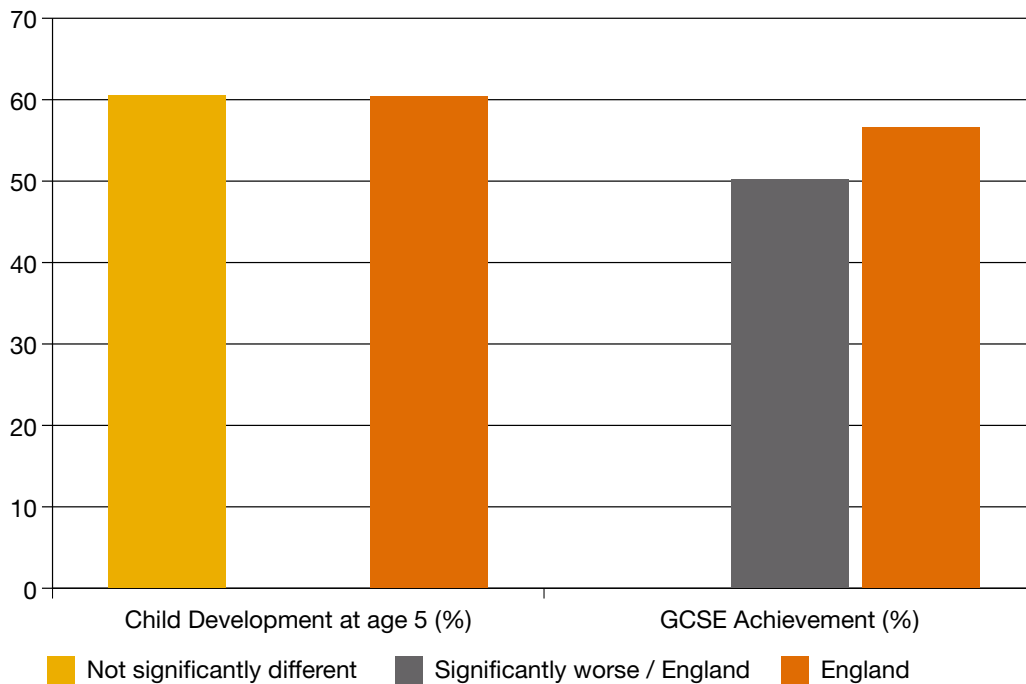
Source: Public Health England, ONS, FfE

Education and skills – Morecambe pupils' performance is below national averages for most education indicators at each key stage. Higher than national average levels of pupil absence and SEN support in Morecambe schools contribute to this. Morecambe's proximity to good quality universities may engage young people in higher education but may also mean talented young people leave the area (a brain drain) and do not return with their higher education qualifications. This makes recruitment into local businesses and the development of the local economy more difficult.

Workforce – Over the last 20 years, it has been challenging to recruit and retain General Practitioners and experienced practice nurses to work in Morecambe to tackle the significant health challenges. Bay Medical Group has been innovative in addressing the workforce issues by ensuring a skill mix including advanced nurse practitioner, specialist practice nurses, clinical and practice pharmacists. The advent of the Primary Care Networks has ingrained this holistic integrated care approach, which means Bay Medical now competes against other local and national PCNs for the same workforce, in addition to the difficulty in recruiting new GPs. The workforce inequalities within primary care further compound the health issues within the community. Changes to the funding formulas could support deprived coastal areas with longstanding workforce recruitment difficulties.

Key strengths/assets and examples of positive work locally

Lancaster City Council recognises the opportunities and challenges for many residents of Morecambe and Heysham, and is pursuing a number of initiatives aimed at improving community health and wider wellbeing, as well as enabling greater access to the economy and a sustainable local environment. This includes working closely with partners across all sectors to increase food security through the Food Poverty Alliance, and housing teams have formed a successful partnership with local health and third sector partners working alongside our communities to address housing challenges in Morecambe and Heysham.

The council also continues to pursue regeneration opportunities – both in conjunction with Eden Project North and independently – to create a positive, prosperous and inclusive living and working environment in the area.

Culture and Tourism – Morecambe's cultural facilities and proximity to the shores of Morecambe Bay are drivers of local economic growth. Exploiting opportunities to build upon the existing tourism sector may help to retain young people in the area and tackle the problem of ageing demographic.

The Eden Project – Eden Project North (EPN) is a unique and ambitious project that seeks to revitalise Morcambe. It will create significant opportunities to impact positively on health and wellbeing, skills, jobs and new business, whilst being driven by an uncompromising commitment to environmental sustainability. EPN is estimated to attract around 1 million visitors per year and to support 6,500 net jobs in the region. The increase in tourism to the area will regenerate the hospitality industry. The renewed focus on the natural environment will develop skills and create jobs in the Green Economy, contributing to the Northern Powerhouse along the 'energy coast' of Lancashire and Cumbria.

Higher education – Morecambe has two large Universities on its doorstep with significant focuses on health and health education. There are opportunities to develop joint service and academic posts that could address the recruitment challenges whilst also building research and teaching projects to look at health inequalities. Eden Project North, Lancaster University and Lancaster & Morecambe College in partnership with a community of communities lead on the co-creation of the innovative, place-based 0-25-year Morecambe Bay Curriculum which will underpin a strategy for a sustainable and healthier Morecambe Bay.

Integrated Care Communities (ICCs) – ICCs were established in Morecambe Bay in 2014 as part of a 10-year journey to localise care. Bay ICC is led by a Bay PCN GP and Clinical services manager. It provides a local focal point for place-based partnership collaboration and is a delivery vehicle for holistic integrated care delivered by a range of providers including voluntary community and faith sector, secondary and primary care. The Bay ICC works alongside Bay PCN to provide proactive interventions to local people to help them manage their health and wellbeing through dedicated care-coordinators and social prescribers.

Local organisations and groups – A key strength is the ability of local organisations to respond, manage and improve the health and wellbeing in the area in partnership with other local statutory, non-statutory organisations and the community. Examples include:

- The Well is a Lived Experience Recovery Organisation (LERO) founded in 2012. With hubs across the North West, they provide support to more than 700 people every year who are facing complex and often interdependent problems including substance misuse, mental ill-health, long-term physical conditions, homelessness, trauma, and offending behaviours. There are over 2,500 members across the North West which offer a range of services including supported housing, mutual aid support and a social activities programme to work with people inside and outside the prison establishment. Since 2019 and through lockdown, the Well has worked with 3,645 people.

- Morecambe Bay Food Bank supports local people and families to ensure that they have access to food. Run by a dedicated team of staff and volunteers, the foodbank has seen demand increase significantly during the pandemic, as part of the COVID-19 response the foodbank provided food parcels to community members in economic difficulty including delivery to vulnerable people who were unable to leave the house. In 2020, the foodbank distributed food parcels to 25,606 adults and 12,308 children; the 2020 activity alone was higher than the previous eight years combined.

- The Poverty Truth Commission. Poverty is an issue faced by many of the citizens in Morecambe. Launched in 2018 and working under the ethos "nothing about us, without us, is for us…" the Morecambe Bay Poverty Truth Commission brings people with lived experience of poverty, and civic and community commissioners together to look at how the area can work together to tackle poverty. The commission enables a deeper understanding of the issues around poverty and has influence within the system to ensure that lived experience is fed into key decision-making.

Voluntary, Community and Faith Sector (VCFS) – Morecambe has a vibrant and active VCFS; West End Impact, More Music, Stanleys, Home Start and many more organisations work together to provide support to our communities. There are excellent working relationships between health and the sector, and integrated ways of working are embedded, which mean that local organisations and groups responded rapidly and effectively at the start of the pandemic. Longer-term, strategic funding for our excellent VCFS would enable them to focus on the vital services and work they do with our population and reduce the distraction of chasing short-term funding pots.

Vision for the future – Over the last few years, many people across the town have participated in community conversations about the hopes and dreams they carry for the future of this town. Morecambe carries a strong sense of community, creativity and resilience. Our hope is that in the years ahead, thanks to a thriving Green Economy and fresh partnerships with the Eden Project North, Lancaster University, Bay Health and Care Partners and the Community, Voluntary Faith Sector, Morecambe may once again become a place where beauty surrounds and health abounds. We want all children to enjoy the stunning landscapes and to have the very best start in life. We want our young people to carry a sense of purpose and joy as they grow into new skills. We want there to be good work available for everyone, which pays a living wage. We want our elderly and those who struggle in life to be appropriately provided for and to be well cared for. For too long, Morecambe has been buffeted by the waves of misfortune and it is time for the tide to turn for the people of this town.

Director of Public Health – Dr Sakthi Karunanithi

Director of Population Health Morecambe Bay and Lead for Population Health LSC ICS – Dr Andy Knox

Contributors: Heather Catt, Anji Stokes, Vicky Hepworth-Putt and Mark Wight

1.8 North East Lincolnshire

Background

Home to a close-knit and innovative community, developed over years of being closely bound to the sea, the towns of Grimsby, Cleethorpes and Immingham, which help make up North East Lincolnshire, are the centre of the UK's growing renewables industry, and home to some of the most beautiful coastal countryside on offer.

Grimsby, once the world's largest fishing port, is now at the heart of the offshore wind industry for the southern North Sea, with companies such as Ørsted basing themselves there. It is also synonymous with the food industry and known as 'Europe's Food Town', home to companies such as Youngs, with 70% of seafood processed in the UK each year coming from Grimsby. In the port of Grimsby, over 500,000 vehicles are carried per year and along with Port of Immingham, they handle 12% of all the UK's cargo.

Immingham is a key national logistical centre, with the port being the largest in the UK by tonnage. Immingham also has a key place in international history as a launch point for the Pilgrim fathers fleeing to the Netherlands and on to America.

Cleethorpes and the East Coast strip are dominated by the leisure and tourism industry, with 10 million visitors recorded each year coming to enjoy the blue flag beaches, the coastal nature reserve or the more traditional seaside resort offers. The pattern of visitors has changed over the years towards more day trips, and the town is undergoing a renaissance in response to these changes.

Demographics

Population pyramid – 2019 mid-year estimates
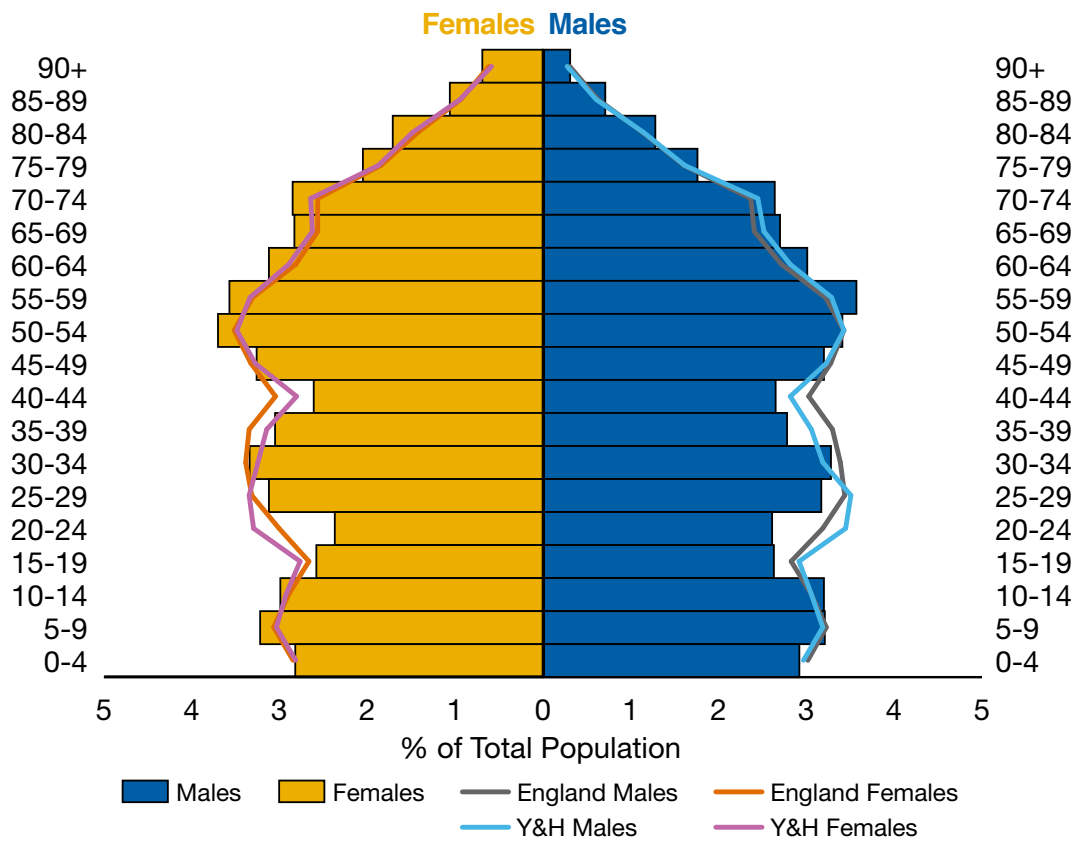
Source: Office for National Statistics

Population by age groups
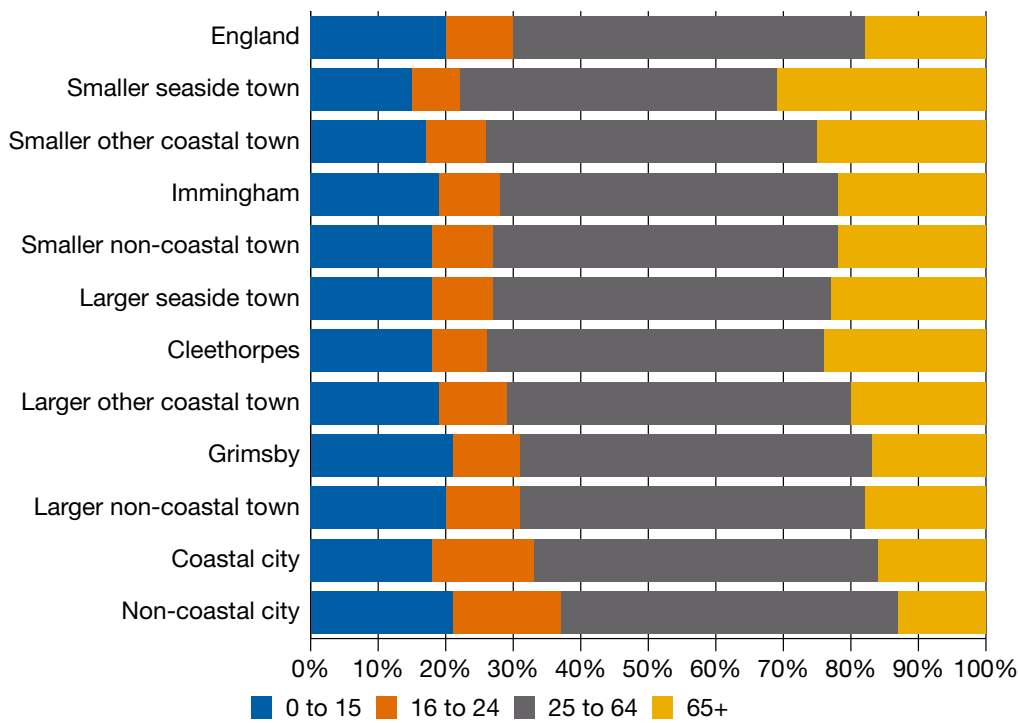
Source: Office for National Statistics

The North East Lincolnshire resident population is estimated at just under 160,000 persons, and population projections, estimate that the population will change little over the next decade to 2030. North East Lincolnshire has a higher percentage of its population consisting of older people, and a lower percentage of working age people when compared to the overall population for both the region and England. There is some evidence of older people retiring to the coast, whereas many of our younger people leave the area for education and employment opportunities and do not return. The overall population of ethnic minorities within North East Lincolnshire is considerably lower than those for both the region and for England overall. There has been an increasing migrant population over recent years in North East Lincolnshire, however the local migration rate remains much lower than the national average and has tended to consist of working age adults from Eastern European countries.

This differential population makeup, reflecting the ONS classification, is seen when comparing the three towns and their associated characteristics.

Health outcomes

Overall Indices of Deprivation 2019 in North East Lincolnshire

Highest Deprivation
1 to 328 (0-1% most deprived nationally) (11)
329 to 3,284 (1% -10% most deprived nationally) (21)
3,285 to 6,568 (10%-20% most deprived nationally) (8)
6,569 to 9,853 (20%-30% most deprived nationally) (13)
9,854 to 16,422 (30%-50% most deprived nationally) (14)
Lowest Deprivation
16,423 to 32,844 (50%-100% most deprived nationally) (39)

For each measure, the LSOA with a rank of 1 is the most deprived
and the LSOA with a rank of 32,844 is the least deprived

North East Lincolnshire
Ward Boundaries

Lower-layer super output
area Boundaries

The Indices of Deprivation 2019 provide a set of relative
measures of deprivation for small areas (Lower-layer
Super Output Areas) across England, based on seven
domains of deprivation. The domains were combined
using the following weights to produce the overall
Index of Multiple Deprivation:

Income Deprivation (22.5%)
Employment Deprivation (22.5%)
Education, Skills and Training Deprivation (13.5%)
Health Deprivation and Disability (13.5%)
Crime (9.3%)
Barriers to Housing and Services (9.3%)
Living Environment Deprivation (9.3%)

The English Indices of Deprivation 2019 were constructed by a
joint research partnership between Deprivation.org and
Oxford Consultants for Social Inclusion (OCSI)

NORTH
EAST
LINCOLNSHIRE
COUNCIL
www.nelincs.gov.uk

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From a health perspective, all the economic challenges are detrimental to health but some of the cultural influences from the former fishing community also appear to be having an impact several decades after its demise. The health of people in North East Lincolnshire is generally worse in comparison to England overall, with life expectancy, obesity, alcohol-related conditions, self-harm, and premature mortality, all worse than the English average. North East Lincolnshire has significant health and social care needs, with considerable health inequalities which tends to mirror the pattern of deprivation shown in the map opposite. The highest levels of deprivation and the poorest health outcomes are centred around the oldest area of Grimsby surrounding the docks, where there is a dense patchwork of terraced housing built in the early twentieth century to support the fishing industry.

The difference in life expectancy across the social gradient from most to least deprived, is 13 years for males and 9 years for females. Both males and females in North East Lincolnshire having significantly lower life expectancy than the England average. The premature mortality rate is significantly worse for many conditions as seen in the chart below.
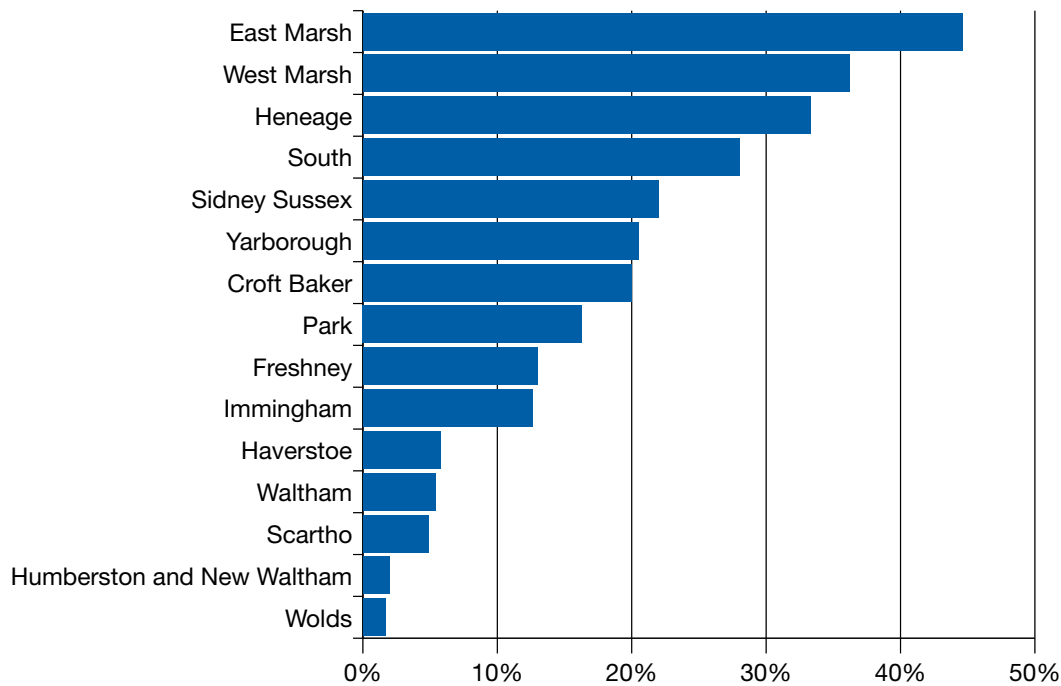
Indicator		NEL	Y&H Region	England	Eng Worst	Eng Best
Under 75 mortality rate from all cardiovascular diseases	Persons	92	80.2	70.4	121.6	39.8
Under 75 mortality rate from all causes	Persons	399	361	326	548	208
Under mortality rate from cancer	Male	166.2	153.7	143.3	206.9	91.3
Under 75 mortality rate from liver disease	Persons	25.3	19.9	18.5	47.5	7.0
Life expectancy at birth	Male	77.8	78.8	79.8	74.4	84.9
Life expectancy at birth	Female	82.1	82.5	83.4	79.5	87.2

Source: Public Health England

Poor health outcomes are evident across the life course. Rates of obesity in Reception and Year 6 children are double in the most deprived areas of North East Lincolnshire compared with the more affluent areas. Rates of teenage pregnancy, breastfeeding, and smoking at time of delivery are all poor, with clear geographic patterns of worse outcomes in many parts of Grimsby and better outcomes in parts of Cleethorpes and the surrounding suburban areas.

Percentage of mothers who smoked at time of delivery by ward 2019/20

Ward	Percentage
East Marsh	
West Marsh	
Heneage	
South	
Sidney Sussex	
Yarborough	
Croft Baker	
Park	
Freshney	
Immingham	
Haverstoe	
Waltham	
Scartho	
Humberston and New Waltham	
Wolds	

Source: Northern Lincolnshire and Goole NHS Foundation Trust

It is estimated that 5.4% of the working age population in North East Lincolnshire are unemployed, higher than the 4.2% for Great Britain overall. However over 20% of North East Lincolnshire households are workless, which compares with just under 14% in Great Britain overall. Many of those who are employed are in temporary and low paid jobs, often on zero hours contracts. Much work in Grimsby is associated with the seafood industry, in food manufacturing and food support businesses, whilst Cleethorpes has a seasonal tourist economy. Over 7% of North East Lincolnshire claimants of Job Seeker's Allowance have been claiming for over 12 months which is double the figure for England overall. A third of North East Lincolnshire's economic inactivity is due to long-term sickness, whereas for Great Britain overall it is under a quarter. This links with the high rates of chronic disease in some of our neighbourhoods.

Map of Under 18-65 mortality in North East Lincolnshire, 2017-2018

Crude mortality rate for all causes
per 1,000 residents aged 18-65

■	6.24 to 12.67
■	4.72 to 6.24
■	3.75 to 4.71
■	1.31 to 3.74
■	0 to 1.3
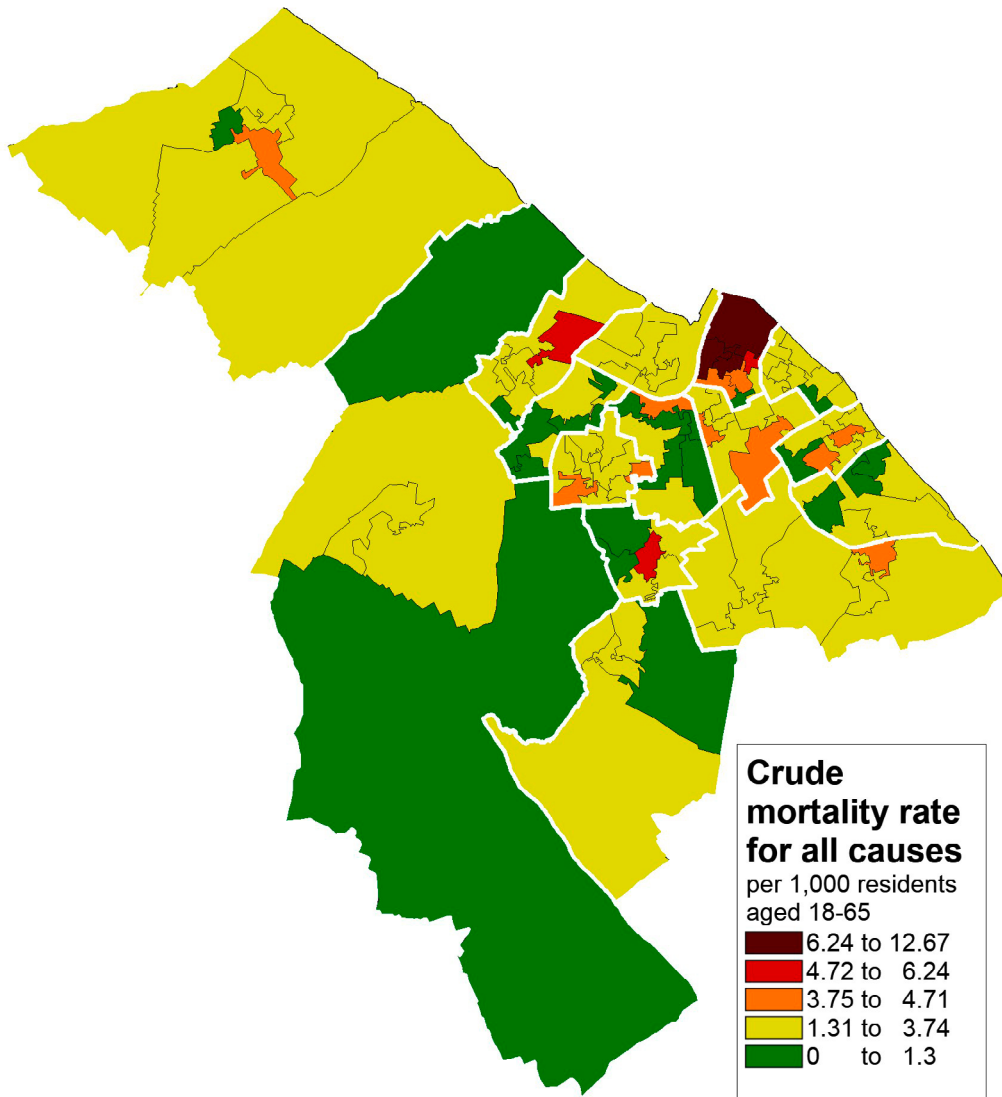
In 2017 we undertook a study on the burden of disease in our population. We identified that a wide range of chronic conditions are far more common in our working population over the age of 50 in particular, coronary heart disease, mental health conditions and musculoskeletal conditions. This was further reinforced by a study in 2019 looking at mortality under the age of 65. This study found pockets of extremely high premature mortality within some of the communities closest to the docks that historically provided the workforce for the fishing industry.

Key challenges

The impact of parental and social factors, including the 'toxic trio' – drug and alcohol misuse, domestic abuse, mental health along with poverty, affects around 1 in 4 children in the borough. Almost half of all children receiving social care services live in the most deprived coastal communities of North East Lincolnshire. Between 2011 and 2018, NEL had the highest proportional increase in the number of children in care of any local authority in England.

Proportion of children who achieved a good level of development (GLD) at the end of reception year, North East Lincolnshire, by Gender
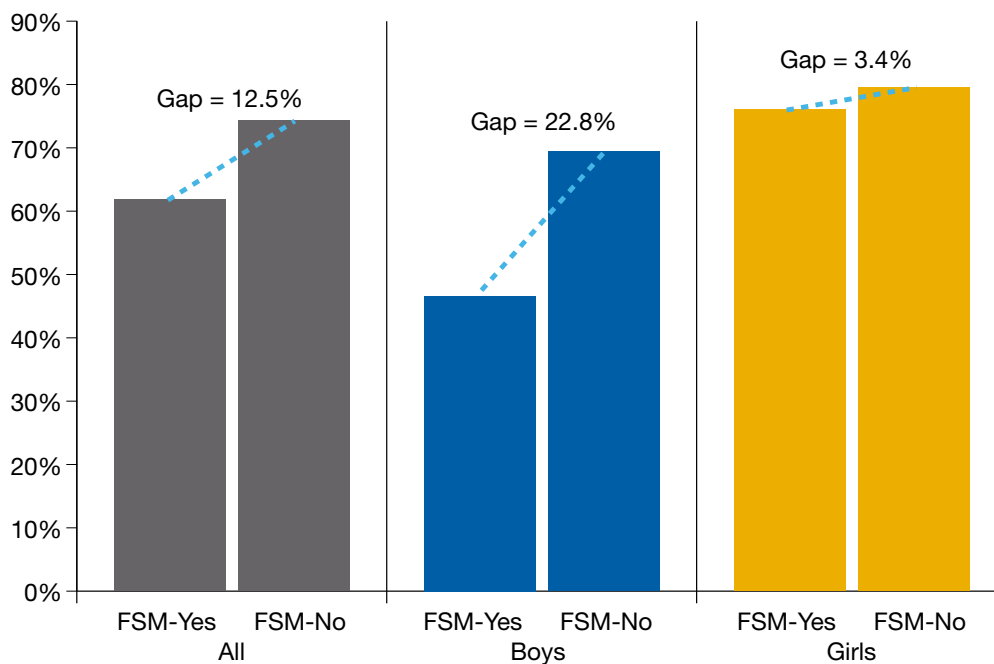
Source: North East Lincolnshire Council

The overall impact of external stresses and limitations on parental capacity has an inevitable adverse impact on child development. Although in 2018/19, 71% of children reached a good level of development at the end of Reception, the inequalities by Free School Meal (FSM) status are stark and further accentuated by gender.

These feed through to notable inequalities in educational attainment by FSM status. In English and Maths, pass rates in those eligible for FSM are only 36.6%, compared to 64.0% for those not eligible for FSM.

Data from our local adolescent lifestyle survey showed around 60% of respondents think it is important to get good results at school, whilst the percentage of pupils who aspire to get a job at 16 decreased from 16% of Year
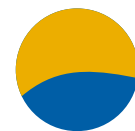
7 pupils to just 6% of Year 11 pupils. Local insights suggest previous aspirations are tempered by home and community expectations based on family experience of work and education.

Due to North East Lincolnshire's geographical isolation and limited public transport connectivity, access to employment outside of the area can be difficult and costly for those without a car. A local survey indicated that around nine out of 10 people living in North East Lincolnshire work within the area, and three out of 10 people reported they are unable to achieve their work-related goals due to few local opportunities. Many of our younger adults who move away from home to university do not return to the area, so the working age population is smaller and older on average than the rest of the country.

Whilst inequalities in life expectancy receive a lot of attention, inequalities in healthy life expectancy are, if anything, even more stark in North East Lincolnshire. The gap in healthy life expectancy between our most deprived decile and our most affluent decile is 18.6 years. In practice this means that many people in our most deprived communities are "old before their time", and many are unable to work well before they reach the age of 65. Again, this primarily impacts the communities that reside closest to the docks in Grimsby. These communities are characterised by numerous rows of low quality terraced houses built quickly and cheaply at the start of the 20th century, most of which are now in the private rental sector and many of which are in poor condition. This emphasises that many of the problems are underpinned by wider determinants of health such as access to good housing and employment.

Healthy Life Expectancy at birth - Male 2016-2018 Deprivation IMD 2019

Deprivation decile	Area
Most deprived	East Marsh, West Marsh, South, Sidney Sussex, Heneage
Second most deprived	Croft Baker, Immingham
Third more deprived	Park, Freshney, Yarborough
Fourth more deprived	
Fifth more deprived	
Fifth less deprived	
Fourth less deprived	Wolds, Haverstoe
Third less deprived	Scartho, Waltham, Humberston and New Waltham
Second least deprived	
Least deprived	

England

Years

Source: Public Health England

The issues for older people in North East Lincolnshire are somewhat different. The majority of North East Lincolnshire's population over the age of 65 are in the wards highlighted in green. As such they have a life expectancy as good or better than the national average. This however brings its own challenges as inevitably, as people reach advanced old age, healthcare needs increase and although the borough benefits from excellent primary care services and a general hospital, many people have to travel considerable distances to access specialist healthcare services. On the other hand, having a large and generally healthy older population does bring benefits, for example, contributing to informal care services by providing personal care and support within the home environment, whether by looking after their grandchildren to enable parents to go to work during the day, or caring for elderly or disabled family members, friends and neighbours who might otherwise be completely dependent on public services.

Key strengths/assets and examples of positive work locally

Our approach to wellbeing in the borough is built around "Stronger economy, Stronger communities" delivered by a place-based outcomes framework.

Grimsby was the first town in the UK to secure a "Town Deal" with government. The Town Deal is a new model of partnership working between central government, local government, business and other stakeholders, focused on delivering positive change through investment and support. The Town Deal has spawned a range of successful proposals to draw investment into the town to reflect its coastal location. Reconnecting Grimsby with its waterfront is a significant opportunity to strengthen the identity of the town and bring forward new opportunities for development and leisure, including an Onside Youth Zone,

supporting the growth of sustainable and healthy lifestyles. Grimsby has a unique collection of heritage buildings and assets that reflect its rich maritime past. Restoring these buildings and bringing them back into economic use will support the growth of the leisure and visitor economy and help restore pride in the town.

The Humber Energy Estuary and the Government's Energy White paper provide the impetus to create the environment for clean, sustainable, long-term growth that benefits the community by providing fulfilling, well-paid employment opportunities. Grimsby is becoming the UK centre for the operation and maintenance of offshore wind energy and one of the main hubs in the UK for sustainable low carbon energy generation and carbon capture.

With the prospect of a potential Freeport and the continuing development of the South Humber Industrial Investment programme, Immingham continues to develop as a key logistics hub.

Cleethorpes is experiencing a renaissance with major regeneration schemes and offering more cultural and active lifestyle opportunities for local people and visitors alike.

North East Lincolnshire Council has developed a "Union" with the Clinical Commissioning Group under a single Chief Officer and merged leadership team. One strand of this has been the development of a Social Value approach, co-produced with the Voluntary and Community Sector (VCS). This reflects a move to a more inclusive economy and recognises the importance of community-led social action in underpinning work on tackling inequalities across our borough, particularly health and income.

Our local Voluntary and Community sector has stepped up throughout the pandemic, developing a signposting system that quickly enables partners and the community to engage with the appropriate organisations on issues such as food, wellbeing checks, access to health appointments and online support for issues such as addiction, debt and housing advice. They have also aided rapid recruitment of local people to work in the pandemic, through their Ethical Recruitment Agency. We are now working with the sector to develop a sustainable VCS model that builds on the good practice that has emerged over the last couple of years.

This model will strengthen their important voice in our Place-based partnership system with a Place Board incorporating the Health & Wellbeing Board role, at its centre. Key to our stronger economy outcome, the VCS have also been working closely with the New Economic Foundation (NEF) and Centre for Local Economy Strategies (CLES) to strengthen the recognition of the sector within our economic strategy and to shape our approach to local economic assessment.

Vision for the future

The last year has shown the commitment and resilience of local communities across the borough and their willingness to band together in support of each other. The local community recognise that wellbeing is about people and creating the conditions for everyone to thrive. It is about quality of life and prosperity, positive physical and mental health and sustainable thriving communities. We want our communities to help us to create North East Lincolnshire and its coastal towns as vibrant places local people can be proud of. Places where public areas provide friendly spaces for safe leisure and recreation for all ages, and our unique waterfront position is maximised. We want our rich heritage to be enlivened and celebrated across the generations, and our cultural environment will provide exciting opportunities for local people to feel engaged.

The people of North East Lincolnshire are proud of their maritime heritage and look to the sea for future prosperity. The development of a new economy built around our coastal location provides the basis for prosperity for future generations. We must support future generations to ensure they benefit from the jobs and opportunities that will emerge in the coming years, changing local expectations in our coastal communities to make that future prosperity theirs.

Director of Public Health – Stephen Pintus

Contributors: Glyn Thompson

1.9 Torbay

Background

Torbay is a place steeped in history and is an area of outstanding natural beauty, being designated a UNESCO Global Geopark due to its unique geology. Torbay's people are immensely passionate about the Bay, what it offers and its potential. Torbay covers an area of 24 square miles, comprising of the three towns of Torquay, Paignton and Brixham located in the South West of England and known as the English Riviera. Each town is fiercely proud of its heritage and distinctiveness.

The Bay's topography and mild climate have meant that tourism, hospitality and fishing have been central economic sectors. It has also become a popular retirement area which has driven the growth of the health and social care sectors.

Figure 1: Population pyramid Torbay (2018)

Population pyramid – 2019 mid-year estimates
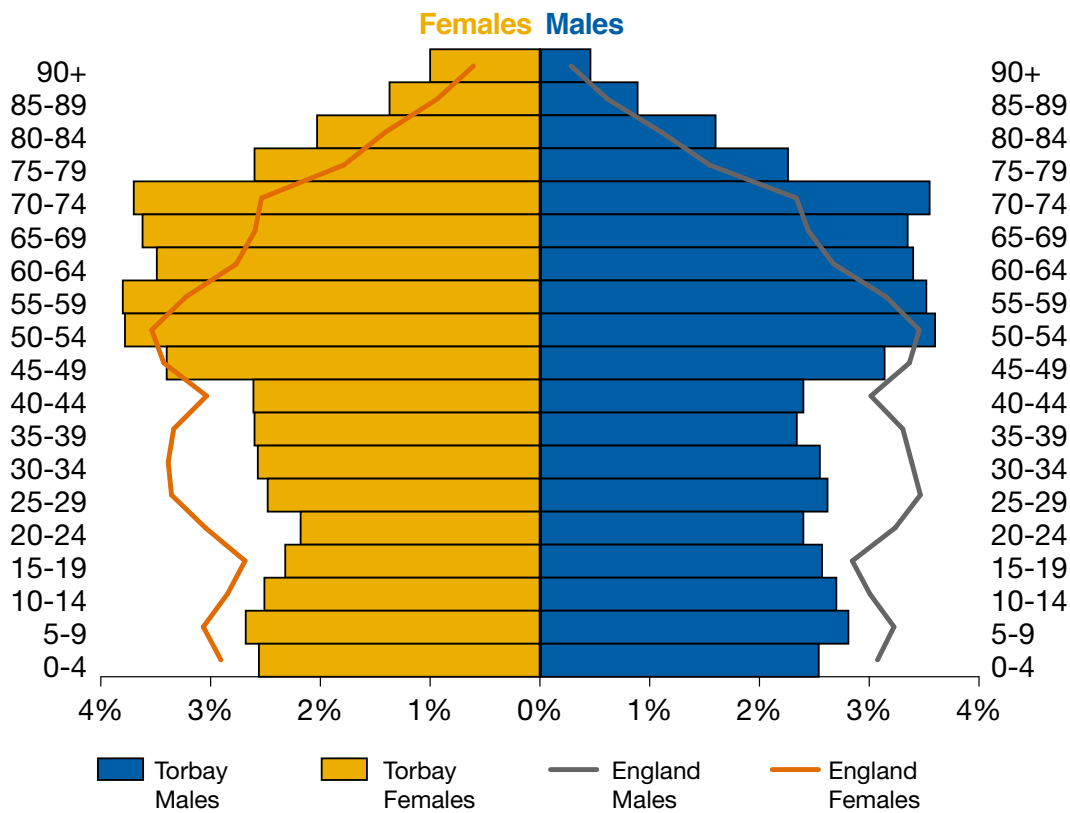
Source: ONS Population Estimates (2018)

Demographics

Torbay has a population of approximately 135,800, which is forecast to increase to 149,500 by 2040. Compared to the England average, Torbay has a higher proportion of all age groups over the age of 50, with younger age groups being lower than the England average (Fig. 1). The increases in population into the future are expected to primarily be the result of increases in the over 65 population, which reinforces the Bay's reputation as a retirement area.

Compared to the England, Torbay has a lower number of residents born outside of the UK, with 95% of the local population being White British.

Health outcomes

In Torbay, the rates for key health conditions such as cardio-vascular disease, respiratory disease, and diabetes are either similar to, or significantly higher than, the England average (Fig. 2). When taken in the round, Torbay's health
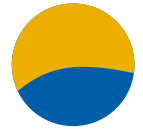
profile for a number of mental health conditions and outcomes is significantly worse the England average, although the prevalence of dementia is significantly lower in Torbay.

Figure 2: Summary of population health outcomes in Torbay compared to the England Average

Better than England average	Worse than England average
Prevalence of Dementia in those aged 65 and over (2019)	Diagnosed with Depression (18/19)
Under 75 mortality rate from breast cancer (2017-19)	Suicide Rate (2016-18)
Comparable to England average	Admissions as a result of self-harm (18/10)
Under 75 mortality rate from all cardiovascular diseases (2017-19)	Under 75 mortality rate from respiratory disease (2017-19)
Under 75 mortality rate from all cancers (2017-19)	

Source: Public Health Outcomes Framework

Those health behaviours such as smoking and physical exercise that are known to effect health outcomes are either comparable in Torbay to the England average amongst the adult population, or better. The exception to this being alcohol consumption patterns and its impact (Fig. 3).

Figure 3: Summary of health promoting behaviours in Torbay compared to the England Average

Better than England average	Worse than England average
Social Isolation: Adult care users (18/19)	Admissions for alcohol related conditions (18/19)
Obesity Prevalence (17/18)	Admissions for alcohol specific conditions (16/17 to 18/19)
Comparable to England average	
Smoking Prevalence (2018)	
Social Isolation: Adult carers (18/19)	
Physically active adults (18/19)	

Source: Public Health Outcomes Framework

Wider determinants

Both the health outcomes and the risk factors associated with the presence or absence of health behaviours are heavily influenced by an individual's economic, social and environmental experience throughout life, with deprivation. Of those major determinants, Torbay only shows favourably compared to the England average with the quality of the natural environment, all other determinants that impact on health outcomes such as housing quality, educational attainment, employment and crime are either comparable to, or significantly worse than the England average.

It is amongst those social, economic and environmental factors that contribute heavily to health outcomes in the population, where the greater disparities between Torbay and the rest of England can be seen. It is only Torbay's natural environment and air quality that is significantly better than the England average (Fig 4).

Figure 4: Summary of wider determinants factors in Torbay compared to the England Average

Better than England average	Worse than England average
Air Pollution (2017 Natural Environment	Attainment 8 score of local children (18/19) Violent and Sexual offences (18/19) Housing affordability (2018)
Comparable to England average Unemployment rate (2019)	Involuntarily excluded from labour market (2019) 50% higher rate of rough sleepers (17-19) Domestic abuse rates (17/18)

Source: Public Health Outcomes Framework except Unemployment (NOMIS), Natural Environment & Excluded from labour market (Index of Multiple Deprivation 2019), Housing Affordability (ONS Land Registry and ONS Annual Survey of Hours & Earnings), Higher rate of rough sleepers (Rough sleeping snapshot in England), Domestic Abuse Rates (Torbay Community Safety Partnership)

Compared to the England average, Torbay has a similar proportion of people in employment, however, those who are employed, are more likely to work part-time and in lower paid roles - 68% of all jobs are in the health and social care, tourism and hospitality and retail sectors in Torbay. Of those not working, a greater proportion are designated as being unemployed or not working due to poor health compared to the England average (Fig. 5).
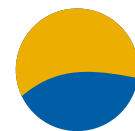
Figure 5: Torbay economic activity and inactivity compared to England Average (September 2020)
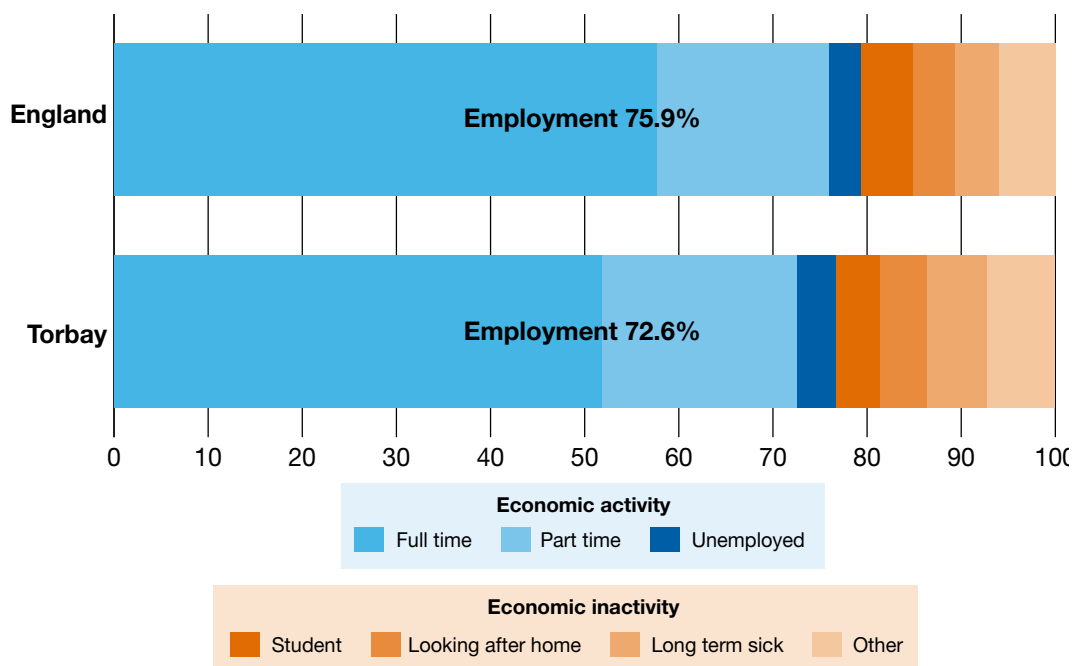
Figure 6: Index of Multiple Deprivation Map of Torbay (2019)

IMD Quintile 2019

■	Most deprived	(24)
■	2nd most deprived fifth	(30)
■	Middle fifth	(18)
■	2nd least deprived fifth	(14)
□	Least deprived fifth	(3)
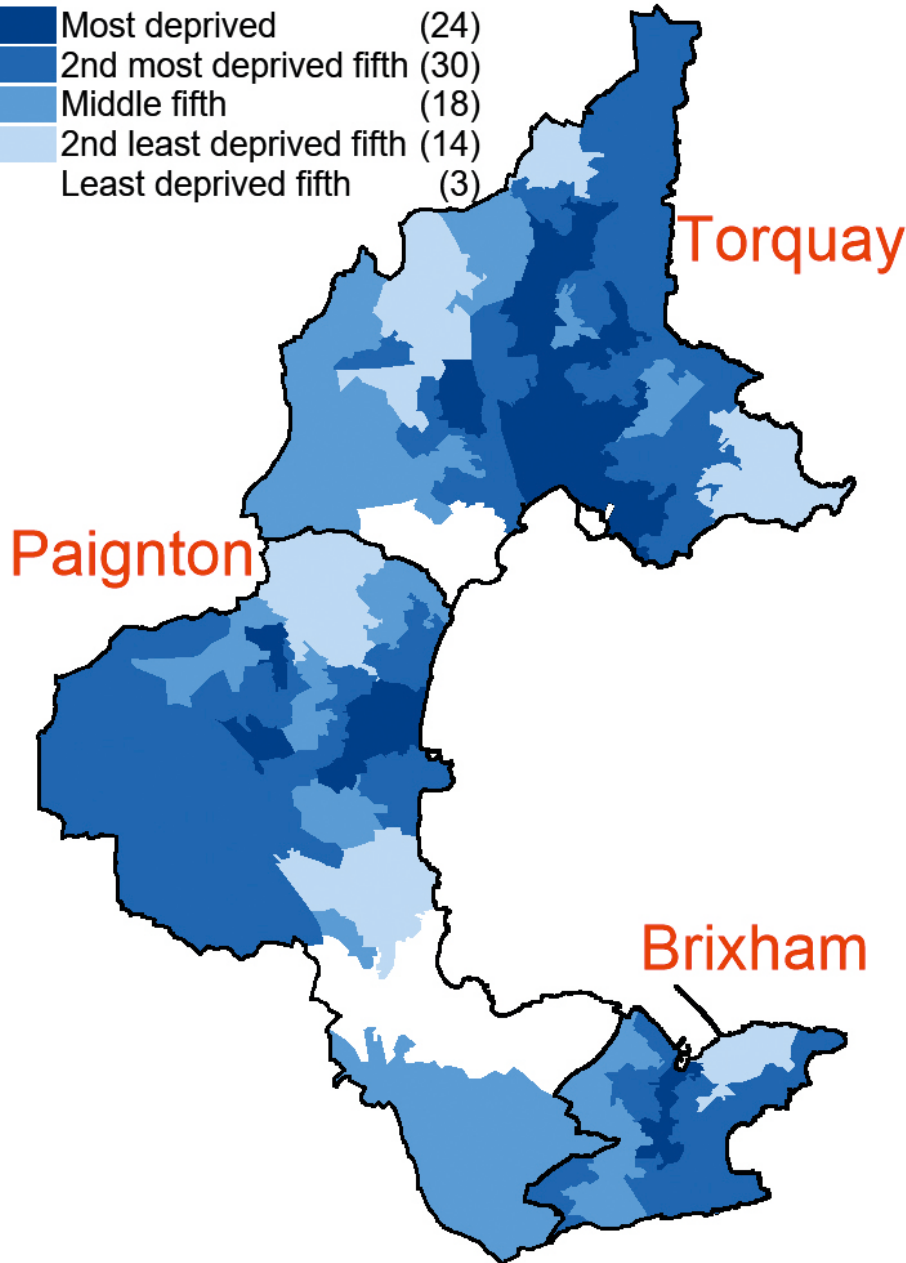
Source: Index of Multiple Deprivation (2019)

Torbay has an excessively large Private Rented Sector when compared to other similar sized local authority areas, with an upper estimate of 30% representing 21,600 dwellings. There is an ageing building stock that was not designed to reflect current needs and a history of poor conversion standards, resulting in lower quality accommodation and energy performance.

Similar to other coastal communities, Torbay has a high density of Houses in Multiple Occupation (HMOs) situated in the poorest areas, which tend to house Torbay's most vulnerable residents. It also has a disproportionate reliance upon park home accommodation that is commonly used by older adults.

There are marked inequalities within the Bay, with some of the most deprived areas in the country situated immediately beside some of the more affluent. The 2019 Index of Multiple Deprivation (IMD) – which shows the relative levels of deprivation in small geographical areas – identified 24 out of 89 areas within Torbay having levels of deprivation that placed them amongst the 20% most deprived areas of England (Fig. 6). This equates to 27% of Torbay's population.

When considering children and young people, whilst Torbay is better than the England average on some measures, the rates of factors associated with poorer health outcomes are largely similar or significantly worse than the England average (Fig. 7).

Figure 7: Summary of children and young people's health promoting factors in Torbay compared to the England Average.

Better than England average	Worse than England average
MMR vaccination rates (18/19)	Rate of Children in Care (18/19)
Baby's first feed is breastmilk (18/19)	Admissions for alcohol specific conditions (16/17 to18/19)
Comparable to England average	Teenage conception rate (15-17)
Overweight Year 6 children (18/19)	5 years olds with 1 or more decayed or filled teeth (16/17)
16 & 17 year olds in employment, education or training (18/19)	Overweight reception children (18/19)

Source: Public Health Outcomes Framework

Torbay experiences the educational challenges that are commonly present in coastal towns. Whilst aggregated data doesn't always present cause for concern, the ongoing challenge of raising the attainment of our most disadvantaged pupils is often masked by the high performance of pupils in the grammar school system, which raises the overall levels. Torbay has the highest proportion of children and young people aged up to 25 with a SEN statement or Education Health Care Plan per 1000 of 2-18 population compared to all other local authority areas. Our current rate is 57.6. Low prior attainment, free school meals eligibility and deprivation indices are key indicators of occurrence of special educational needs. As a coastal community, no additional funding is provided to meet the increased needs of pupils attending schools, without the economic investment being allocated to schools, the gap in performance and the wider longer-term issues are set to continue.

Key challenges

Figure 8: Domains of focus in Torbay

The challenges to health amongst Torbay's population derive from the combination and cumulative impact of the population's demographic health profile, prevalence of risk factors and the wider determinants of health. The areas of focus for Torbay, as outlined in the Torbay Health & Wellbeing Strategy, are concerned with those actions that will enable individuals and communities to thrive (Fig 8). Underpinning this is addressing the significant structural challenges around poverty, employment, access to affordable and high quality housing, inequality and making Torbay a safer place for everyone.

The COVID-19 pandemic has compounded many of the structural challenges that Torbay faces. The Institute for Fiscal Studies[1] having highlighted the Bay as one of the most vulnerable coastal areas susceptible to the multi-dimensional social and economic impacts from COVID-19.

Torbay and its people are not, however, defined by its challenges, with the Bay having a long history of drawing on its strengths and assets to overcome adversity. Torbay is recognised as a place of innovation and partnership-working, particularly in relation to health and social care, with an integrated care organisation delivering acute and community healthcare and adult social care as well as a range of children's and families health care provisions.

Key strengths/assets and examples of positive work locally

Opportunities for development and growth for Torbay are being realised through investment in the area. Significant investments are being made in the redevelopment of town centres alongside a deepening and diversification of the economic base which is positioning Torbay strongly for its future prosperity. This can be seen in the development of the Brixham fish market and new investments in the visitor economy with the building of high quality hotels. Investment in the hi-tech sector, particularly the electronics and photonics industries, is placing Torbay at the forefront of new industries which is broadening the area's economic base.

With Torbay Council being a Co-operative Council, there is a commitment to working with and for residents for the benefit of the community. This is in partnership with a vibrant and an increasingly mature community and voluntary sector, using an Asset Based Community Development approach to empower communities by building on their strengths. Galvanising the assets of partnerships and communities is the cornerstone of Torbay's approach to creating a bright and prosperous future for its people. Some examples of innovative work are:

Multiple Complex Needs Alliance

A collaborative approach to commission services through an Alliance contract to deliver integrated support for those who experience homelessness, substance misuse and domestic abuse. The purpose being to design services that meet and respond to the complexity of people's lives rather than focusing on one single issue.

Torbay Mental Health Network

A collaboration between the community and voluntary sectors to develop community networks to increase people's resilience as well as preventing and responding to mental distress, self-harm and suicide.

Early Help

A new integrated working model based on the principles of co-production with communities. It is an approach based on strengths, belonging and aspiration. Developing common language and shared understanding around what 'Early Help' is, improving family engagement and encouraging swift de-escalation.

Ageing Well Torbay

A six year project, funded by the National Lottery Community Fund, which aims to reconnect communities and reduce social isolation experienced by people aged 50+ living across Torbay. This is done by engaging and empowering people to find solutions that build on their personal strengths and assets.

Integrated 0-19s Service

An ambitious 5-9 year system change programme including Public Health Nursing, Children's Centres and Specialist Children's Services through collaborative commissioning. Using the Thrive conceptual model, the activity is focused around key outcomes for children and families and uses a trauma informed early help approach.

Imagine This

Imagine This is a partnership of 42 voluntary and community sector organisations working and supporting children, young people and families across Torbay. The collective aim being to co-design and develop ways to deliver effective solutions to the problems and challenges young people face in a way that is guided by children and young people themselves.

Vision for the future

The vision for Torbay is to be a place where individuals and communities can thrive, where we have turned the tide on poverty and tackled inequalities; where children and older people have high aspirations and there are quality jobs, good pay and affordable housing for our residents that will form the foundation for positive health and wellbeing. Promoting and supporting people to live healthy lives that reduces the occurrence of preventable illness – physical and mental – is central to this and will be achieved by collaborative working with Torbay's people, communities and partnerships between statutory and voluntary sectors.

Previous Director of Public Health – Caroline Dimond

Current Director of Public Health – Lincoln Sargeant

Contributors: Bruce Bell

References

1 Davenport, A. et al (2020) The geographical impact of COVID-19 crisis will be diffuse and hard to manage. Institute for fiscal Studies. www.ifs.org.uk/uploads/The-Geography-of-the-COVID19-crisis-in-England-final.pdf. [Accessed online 19/01/2020].

1.10 West Somerset

Figure 1. Minehead beach, West Somerset

Background

The West Somerset coastline is flanked not only by the sea, but also wild and dramatic moorland. This all contributes to a feeling of space and fresh air which draws people to the area. The area is on the periphery of Somerset, transport access is poor but those who live there are rewarded with a strong sense of community and pride in the local area.

The County of Somerset is home to over 550,000 people, of whom nearly 25% are aged 65 and over. Over half of the population reside in rural areas with the whole Western side of the county on a coastline. Somerset is governed by two tiers of local authority; Somerset County Council and four District Councils – Somerset West and Taunton, Sedgemoor, South Somerset and Mendip. Somerset West and Taunton was created in April 2019 following the merger of the former West Somerset and Taunton Deane Districts.

The former West Somerset District is one of the most sparsely populated areas of the UK with only 48 people per square kilometre, compared to 274 people per kilometre in the UK. The West Somerset coastal community stretches from Porlock near the Devon border in the west, past the Butlins resort, Dunster and Watchet in the east, and beyond to Hinkley Point, where a third nuclear power station is emerging on the coast from the largest building site in Europe (HPC). The largest coastal town is Minehead (12,000 people), with Watchet (4,000) and Williton (2,700) also locally significant. Over half of the West Somerset population live in one of these three urban communities.

Minehead's origins were as a trading and fishing port, but in 1874 connection to the national rail network transformed the area to be dominated by tourism. The national rail network connection is no longer active, and the area is now serviced by a tourist Heritage Line operating in the summer months only.

Demographics

West Somerset has the highest median age of any English district.

Table 1. West Somerset demographics

	West Somerset	**Somerset**
Males	48.2%	48.8%
Females	51.8%	51.2%
0-15 years	13.4%	17.6%
16-64 years	51.6%	57.5%
65+	35.0%	24.9%
Black, Asian and Minority	1.3%	2.2%
White	98.7%	97.8%
Number of 65+ living alone (per 100,000)	1992	1476
Households with no car	19.0%	15.9%
Economically active male	66.3%	83.1%
Economically active female	87.7%	79.2%

Source: 2011 Census

In contrast to inland areas of the county, internal migration of adults approaching, or of retirement age accounts for much of the population growth. Projections estimate that by 2028, more than half of some of the coastal community will be aged over 65 years.

Figure 2: Proportion 65 years of age and over, Somerset 2018 and 2028
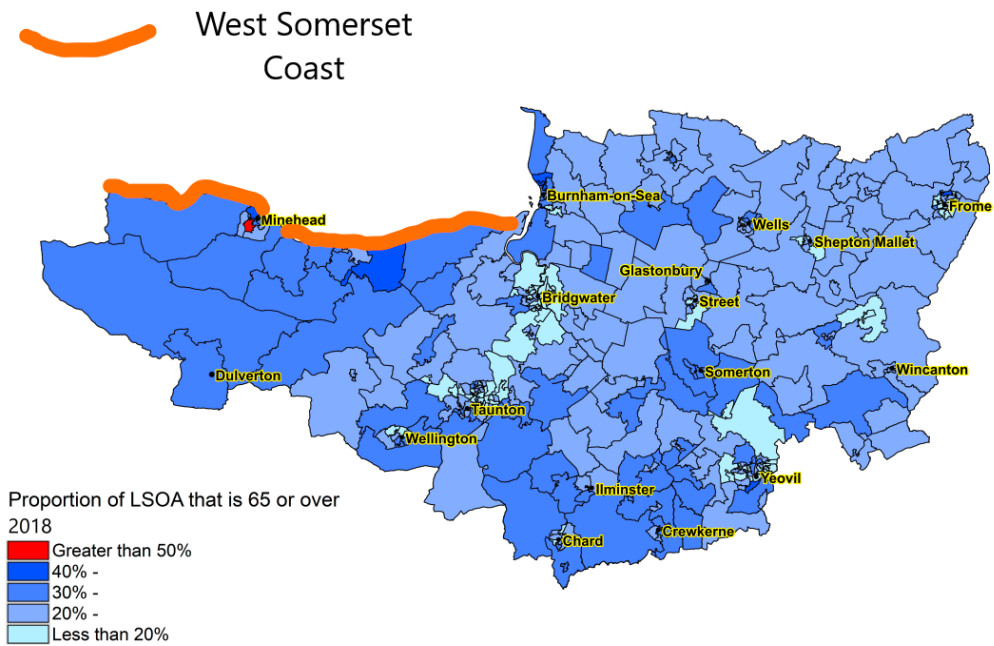
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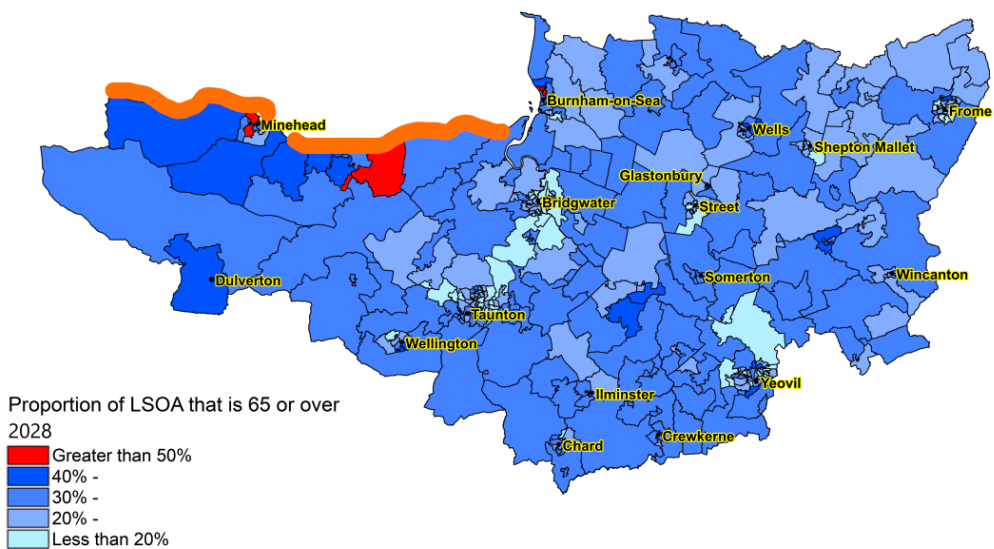
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Source: Office of National Statistics

Figure 3: Population pyramids for West Somerset
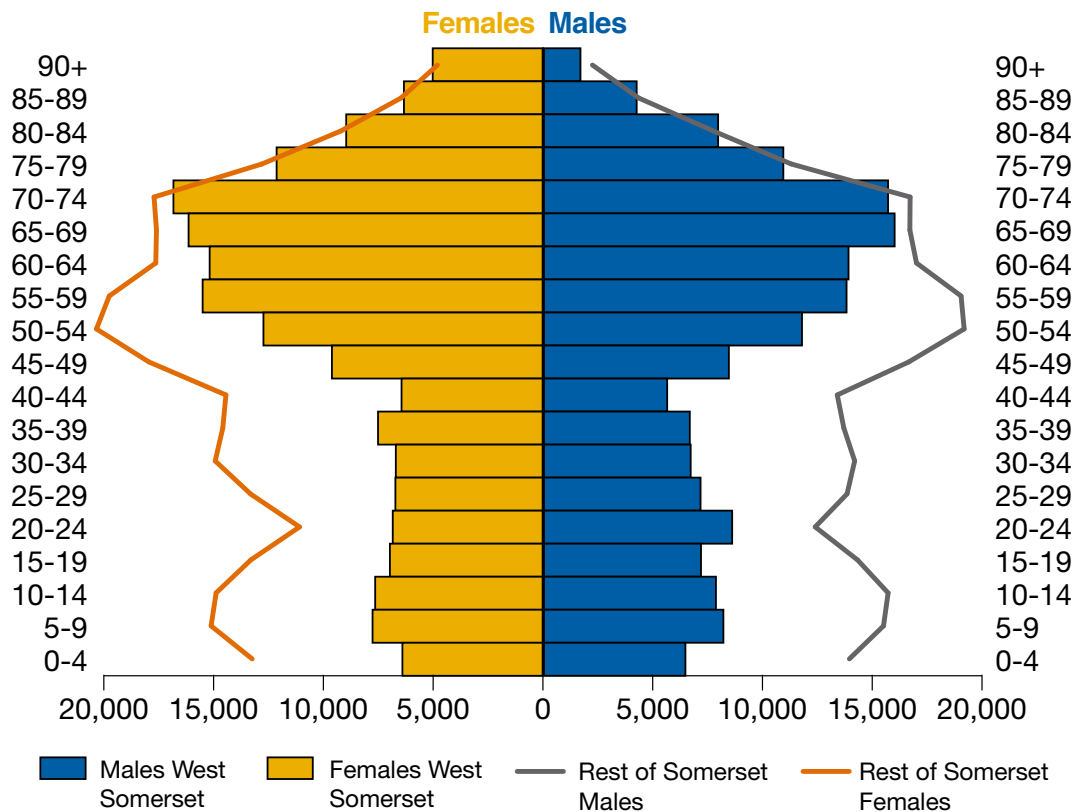
Source: PHE Local Health

The population pyramid for the coastal West Somerset district reveals a striking difference with inland areas for those aged 20-24 years. Inland, young people leave these areas for work, and especially, given the lack of a university within Somerset County, for education (and often return afterwards). The same does not appear true in West Somerset – suggesting that young people are choosing to stay within their communities. There is an apparent influx in young (20-24 years) males which is likely to be attributable to Hinkley Point C. The influx at retirement age is also highlighted.

Health outcomes

The West Somerset area is served by four GP practices, which all fall under a single Primary Care Network (West Somerset PCN). There are two community hospital facilities in Minehead and Williton, and a nurse-led minor injuries unit in Minehead which is open 24 hours a day, seven days a week. Recruitment of health and other professionals to West Somerset can be challenging.

Health

In general, the health of the West Somerset coastal population is good; however, health outcomes are skewed by the elderly population structure. The proportion of deaths occurring before age 65 years is 10.7%, lower than the Somerset rate of 12.0%.There is a higher prevalence of age-related conditions which reflects the age profile of residents, not the inherent healthiness of the residents.

Long-term conditions – In West Somerset, 23% of all residents aged 16+ live with a long-term condition compared to 17% inland. This reflects the older age of the population. If looking at the over 75s population, 63% have a long-term condition in West Somerset compared to 64% inland. Twenty-one % of adults in West Somerset have diagnosed hypertension compared to 17% inland.

Obesity – There are high levels of excess weight in children, with 12.9% of children in reception year being very overweight (10.1% for Somerset) and 24.7% of year 6 children (17.4% for Somerset).

Mental health – In Somerset, hospital admissions for self-harm are significantly raised compared to the rest of England and appearing to be increasing with time. This data needs to be interpreted with some caution and is not available to examine on the West Somerset footprint. However, children and young people in West Somerset will have similar needs to those across Somerset and a number will need to access specialist support from Child and adolescent mental health services (CAMHS).

Employment – Employment figures for the West Somerset District demonstrate a reliance on the accommodation and food sector accounting for 58% of all employment. This sector has been most affected by the economic impacts of the COVID-19 pandemic. An ONS analysis of coastal towns identified a 9% reduction in employment rate for the coastal town of Minehead between 2009-2018.

Tourism and leisure – It is projected that as much as 25-50% of UK holiday accommodation stock could permanently close in coastal communities because of COVID-19. There is no public swimming pool in West Somerset with a day pass to the Butlins resort swimming pool costing £50 for a parent and two children.

Transport – There are no mainline railway stations and one major A road which links Chard to Williton. There are no dual carriageways and to travel from Porlock to the county town of Taunton takes you an hour along the coastal A road.

Earnings – Median earnings in 2018 at £17,233 are lower in West Somerset than for the rest of Somerset (£20,871) and the United Kingdom average (£24,006). Small numbers prevent further analysis of median earning patterns, although anecdote presents a potential under-employment of women in the West Somerset district.

Housing – House prices are relatively high. The ratio of median house price to median gross annual earnings by area is highest in the former West Somerset District.

Figure 5: Ratio of Median House Price to Median Gross Annual Earnings by Area
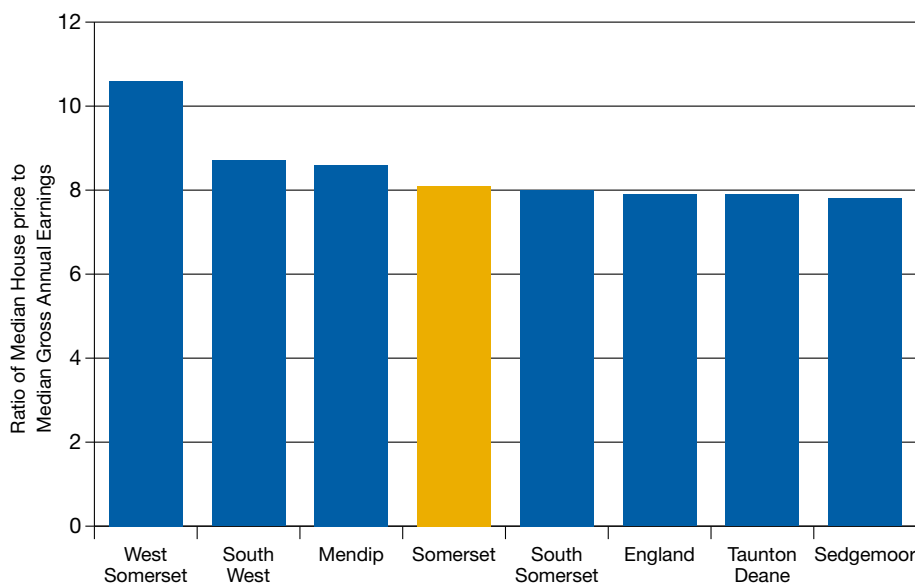
Source: Somerset Trends

The coastal areas of West Somerset also have one of the highest proportions of second homes and empty homes in the country. Furthermore, many homes are 'off-gas' and therefore at risk of fuel poverty. There is rising demand for cheap, rental properties linked to workers from Hinkley Point C, with a growing number of unlicensed houses of multiple occupation.

Education – There are approximately 3,000 school aged children in West Somerset, attending 18 schools across a three-tier system. There is only one provider of further education in West Somerset and no adult education providers.

Key challenges

Sustainability of communities

There are inherent difficulties for young people and families establishing themselves in a sparsely populated area – house prices are driven up by the purchasing power of incomers and those buying holiday homes in coastal areas. There are few typical starter homes, and in the rental sector, there is competition from those coming in to work at Hinkley Point.

There is a suggestion that the coastal population is more transitory, in particular in Minehead, where families move to the area from the Midlands and North of England having spent 'happy' times there on holiday. However, the lack of suitable accommodation often does not match expectations and families move out. Data from the Public Health Nursing service supports this with a higher level of transfers in and out for West Somerset compared to other inland areas (38% transfer in and out compared to 32% in Taunton and 27% in Mendip).

Access to services and work

Services are scattered, usually distant and public transport along the coast is limited. Sparsity also reduces the opportunities to socialise that are the usual diversions and support. The seasonality of work available and lack of leisure and cultural facilities means there can be very little for families to do in the winter months.

The small numbers, peripherality and sparsity also impact on service delivery where many specialist services – such as peer support in mental health – struggle to reach the 'critical mass' needed to exist. Many support services, such as children's social care, have their main hub in Taunton, increasing travel time and potentially the disconnect with the local community.

Digital inclusion is a measure of how well individuals have access to and the skills to use information and communication technology. Coastal areas of West Somerset are at higher risk of digital exclusion compared to the area inland, a result of poor broadband connections and an older age of the population.

Finally, a combination of factors including peripherality, distance from other employment hubs, dominance of tourism for employment and a lack of anchor employers in the public and private sector, make it difficult for the economic base to be diversified, and people move elsewhere to seek employment opportunities.

Social mobility

In 2016, the Social Mobility Index identified West Somerset as the least socially mobile district in the country (324th/324). The index highlighted specific indicators relating to early child development, school progress, progression to further or higher education and adult education opportunities.

In 2018/19, the proportion of West Somerset pupils aged 16-18 going onto a sustained education destination was 23%, less than half of the national average, 47%. There is no University in Somerset and access to further education for the West Somerset coastal regions is hampered by poor transport, and large travel distances to provision.

In the short-term, however, West Somerset's distinctive needs regarding social mobility have disappeared. Not because they have gone away, but because local government reorganisation means that the district merged with neighbouring Taunton Deane in 2019. Statistics reported for these new geographical boundaries will average out the characteristics of the coastal population by inclusion with inland countryside and Taunton. Indeed, social mobility may be just as limited in many other parts of the rural and remote coastline but have not been identified – or received designation as Opportunity Areas – for just this reason in the past.

Key strengths/assets and examples of positive work locally

Partnership working

The county of Somerset has a strong history of working in partnership to improve lives. The 10-year Improving Lives strategy was adopted in 2018 by the Health and Wellbeing Board and other partners across the system. The response to COVID-19 has further demonstrated the strength of partnerships, with organisations working together to deliver support to the clinically extremely vulnerable, moving rough sleepers into temporary accommodation, supporting transient communities, and delivering the vaccination programme.

West Somerset Opportunity Area

The identification of West Somerset as a cold spot for social mobility led to the creation of the West Somerset Opportunity Area, a Department for Education funded programme to deal with opportunity through education. This has brought together a wide range of projects to raise the standards of education locally and provide more opportunities for young people to develop key skills and experiences.

The opportunity area and allocated funding has allowed leaders from across a range of sectors, including early years, schools, Public Health Nursing, charities, Homestart, speech and language practitioners to come together and plan a holistic approach to improving the educational access and opportunity for the West Somerset population. The programme focused on three key aspects of work;

1)   improving early years education,
2)   improving outcomes at primary and secondary school, and
3)   helping young people find a good job.

The programme has allowed specialist services to be delivered where they would not usually be considered to be cost effective due to low numbers. An example of this is the Horizons support group specifically for parents of children up to 3-years-old who have suffered with their perinatal mental health. The group is provided by Health Visitors and NHS Talking Therapies and provided childcare to allow families to attend the intervention. Since COVID-19 has imposed a curtailment of face-to-face services, the Horizons group has moved to an online delivery with West Somerset parents being gifted laptops and broadband connection to attend. This is allowing a connection with other parents across Somerset, improving group size and enabling an improved peer support aspect.

Natural capital

Natural capital is defined as the stock of natural assets, including soil, air, water, and geology. West Somerset is abundant in natural capital with the Exmoor National Park, coastline, and the Quantock Hills Area of Natural Outstanding Beauty (AONB). The area's natural capital not only offers opportunities for tourism, but also for diversification of the economy in providing new job opportunities. The Hinkley Point C Development is an example of this.

Hinkley Point C Nuclear Power Station

The view across the Hinkley Point site to the Bristol Channel. This image has been provided by EDF.

Through the Hinkley Point C (HPC) nuclear build in the Bristol Channel, West Somerset has an investment of £23bn within its borders. The HPC build project employs more than 5,000 people at all levels of skill in its construction and, since 2011, has invested in schools and education in the area in its 'Inspire' for 4-16yr olds and 'Young HPC' programmes for 16-21 year olds. Amongst others, these programmes help to provide vocational training in skills, such as plumbing and electrics, that are of value at Hinkley and elsewhere to local education settings.

However, at West Somerset College, efforts to run vocational courses have been hampered by small numbers meaning they are unviable – inevitable in this sparse, rural coastal area. This has meant that, in practice, the vocational educational opportunities have been the most prevalent in neighbouring areas such as Bridgwater.

The HPC housing strategy seeks to mitigate some of the challenges posed by the influx of workers and shortfall of affordable housing in the area. Somerset West and Taunton are increasing enforcement capacity to regulate and license more of the emerging HMOs to improve standards.

Community

There is a strong sense of community in coastal West Somerset and a number of community-led initiatives to improve outcomes for local people including the Minehead EYE Youth Services. This is a youth and community organisation established in 2018. The Centre features an indoor skate park, café, rehearsal studio amongst other facilities. The team of youth workers work with a range of local organisations, schools, and the community to raise the ambition and aspirations of the young people through creativity. Once COVID-19 restrictions are lifted, the Minehead EYE will be home to a new youth employment hub funded by Somerset West and Taunton Deane Council.

Vision for the future

The coastal communities who live and work in West Somerset are proud of their locality and want to use the natural assets available to them to create opportunities for the future. There are challenges to keeping communities sustainable and delivering the services they need in sparsely populated areas. The influx of recently retired people to the area makes it more difficult for families and young people to find suitable accommodation and work opportunities so stay in the area. However, the West Somerset Opportunity area has demonstrated that partnership working, listening to the communities' needs and wants and, and developing a holistic and sustainable vision for the future can achieve positive outcomes. If we can build on that legacy and continue to put young people and families at the heart of the solution, West Somerset will be a thriving, vibrant community that provides the opportunities for education and employment that are needed and recognised by the local community.

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Economic, social and demographic trends in coastal areas

ONS Centre for Subnational Analysis

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2.1 Introduction

The following chapter analyses 146 coastal towns and 6 coastal cities in England (excluding London). The coastal towns have been split by seaside towns and 'other coastal' (non-seaside) towns, and by size. Throughout this chapter the coastal towns and cities will be compared with the equivalent size non-coastal towns and cities.

The focus of this chapter is a range of socioeconomic determinants of health outcomes. The relationship between socioeconomic status and health outcomes is not straightforward and it is not the aim to assert those relationships. The following chapter will focus on comparing coastal and non-coastal towns and cities across a range of socioeconomic indicators.

2.2 Demographics

Summary

- Coastal towns, both smaller and larger, and coastal cities are more likely to have higher shares of residents in the 65 years or over age group, and lower shares in the 0 to 15 years age group compared with non-coastal towns and cities.

- Population growth between mid-2001 and mid-2019, was highest in the 65 years and over age group across all types of towns but even more so in non-coastal towns.

- In cities, population growth among the 65 years and over age group was highest in coastal cities compared with non-coastal cities.

Over 6.7 million residents live in the 146 coastal towns and 6 coastal cities examined in this chapter. Table 1 shows that, according to the mid-2019 population estimates, 3.2 million lived in seaside towns, 1.5 million in 'other coastal' (non-seaside) towns and 1.9 million in coastal cities. Split by size, approximately 0.8 million lived in smaller towns and 3.9 million in larger towns.

Table 1: Population estimates and count of coastal towns and cities by type, 2019

Type	Total population 2019	Count of towns/cities
Smaller seaside town	508,985	50
Larger seaside town	2,725,045	47
Smaller 'other coastal' town	328,987	28
Larger 'other coastal' town	1,213,740	21
Coastal city	1,878,190	6

Source: Office for National Statistics – Mid-year population estimates 2019

In line with the ONS classification, to qualify for inclusion in the towns list, usual resident population must have been above 5,000 and below 225,000 in 2011 (according to the Census), with the town boundaries used being either built-up area boundaries or built-up area subdivision boundaries. Similarly, to classify as a city, population must have been above 225,000 in 2011 (according to the Census) with the city boundaries used being built-up area subdivision boundaries. The 6 coastal cities are: Brighton and Hove, Kingston upon Hull, Liverpool, Plymouth, Portsmouth, and Southampton. London area has not been included in the list of towns and cities because the built-up area geography does not provide subdivisions within the London area.

All 146 coastal towns and 6 coastal cities can be seen on the Map 1. The detailed list of all areas is presented in Table 2 (Appendix). Map 1 also shows in blue the 87 local authorities in England with a coastline. Data included in this chapter are all at town and city level, except for internal migration data which is based on local authority district boundaries.

Map 1: Map of coastal towns and cities plotted over coastal and non-coastal local authority boundaries in England

Classification of the local authority
- Coastal
- Non-coastal
- Coastal towns and cities
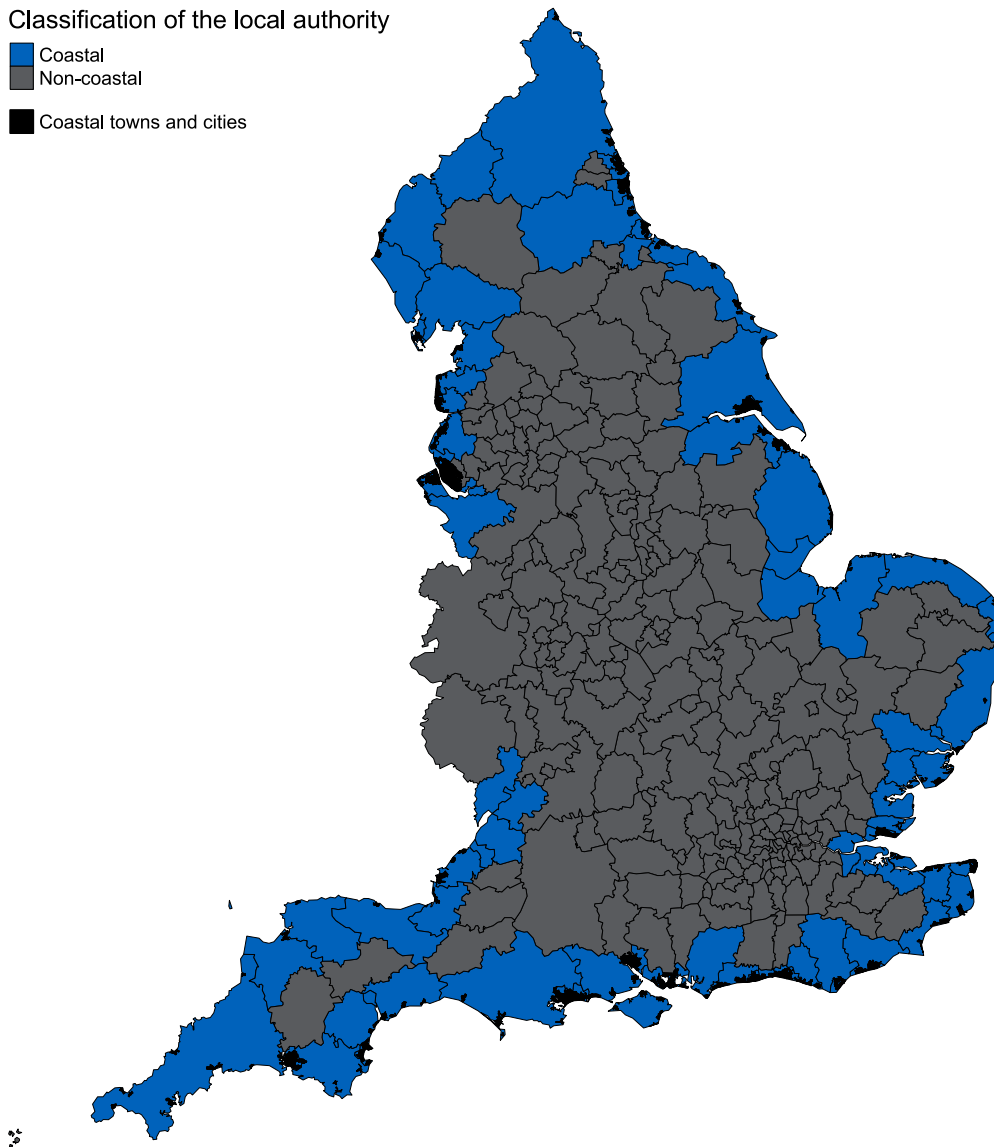
Source: Office for National Statistics

Examining population by age group shows that coastal towns, both smaller and larger, and coastal cities had higher shares of residents in the 65 years or over age group and lower shares in the 0 to 15 years age group compared with non-coastal towns and cities. Figure 1 shows the age breakdown by type of coastal town and city in 2019 and compares this with the demographic structure of non-coastal towns and cities.

Figure 1: Population by age groups, England, 2019
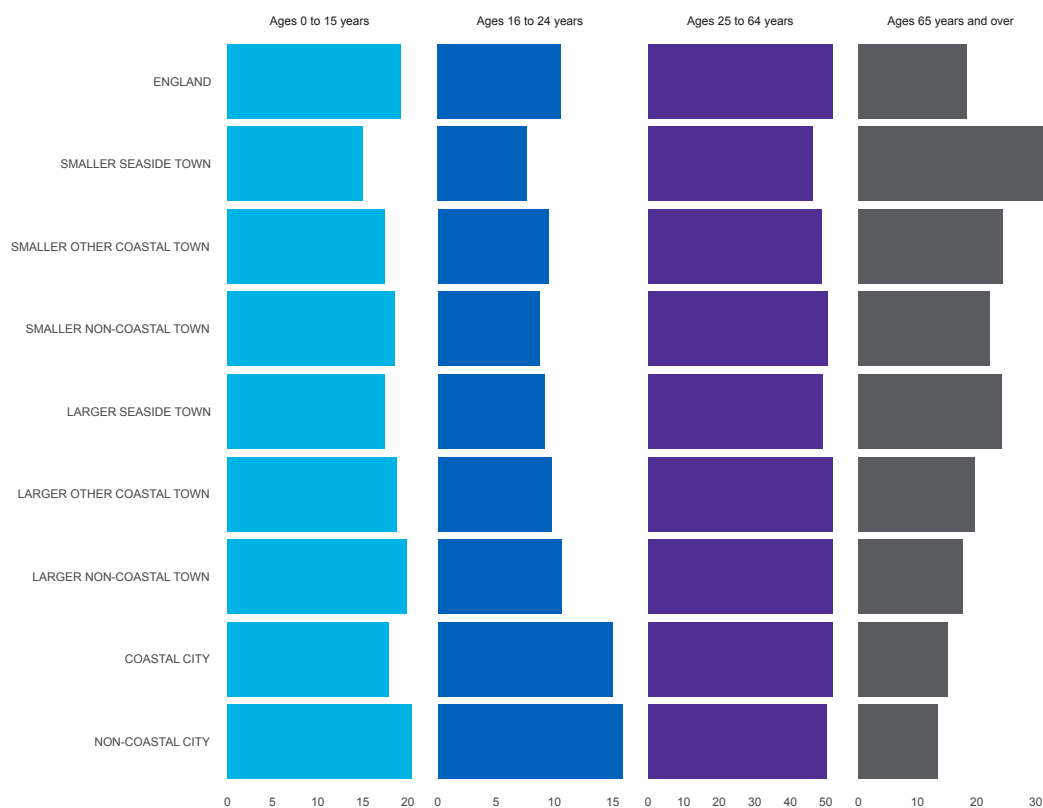
Source: Office for National Statistics – Population estimates

The older age profile of the coastal towns' resident population is particularly visible in smaller seaside towns, where 31% of the resident population was aged 65 years or over, in 2019, in comparison with 22% in smaller non-coastal towns. The proportion of population aged 65 years or over was highest in Budleigh Salterton in Devon at 45%, in Hunstanton in Norfolk at 44% and in Seaton and Sidmouth also in Devon at 43%.

Among larger towns, seaside towns again had on average a higher share of population aged 65 years or over than non-coastal towns. The larger seaside towns with the highest population share aged 65 years or over were Bexhill (35%), Christchurch (34%) and Seaford (34%).

Seaside towns, both smaller and larger, also had on average higher shares of the oldest age group of 85 years or over, compared with 'other coastal' towns and with non-coastal. As much as 4.6% of the smaller seaside towns' resident population was aged 85 years or over compared with 3.2% in smaller 'other coastal' towns and 3.1% in smaller non-coastal towns. Similarly, 3.6% of the larger seaside towns resident population was aged 85 years or over compared with 2.6% in smaller 'other coastal' towns and 2.4% in smaller non-coastal towns.
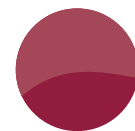
Coastal cities also had a higher share of the population aged 65 years or over (15%) than non-coastal cities (13%). Stoke-on-Trent was the city with the highest share of population aged 65 years and over at 18%, followed by the coastal city Plymouth.

Population growth

When examining population growth, data shows that the 65 years and over age group had the highest percentage growth across all types of towns but even more so in non-coastal towns.

Figure 2 shows that, in smaller towns, population aged 65 years and over increased by 45% in non-coastal towns, 38% in 'other coastal' towns and 28% in seaside towns. Over the same period, in larger towns, population in the 65 years and over age group increased by 31% in non-coastal towns compared with 21% in coastal towns, both seaside and 'other coastal'. The opposite happened in cities, with population growth among the 65 years and over age group increasing more in coastal cities (10%) than in non-coastal cities (8%).

Figure 2: Population growth by age groups, England, mid-2001 to mid-2019
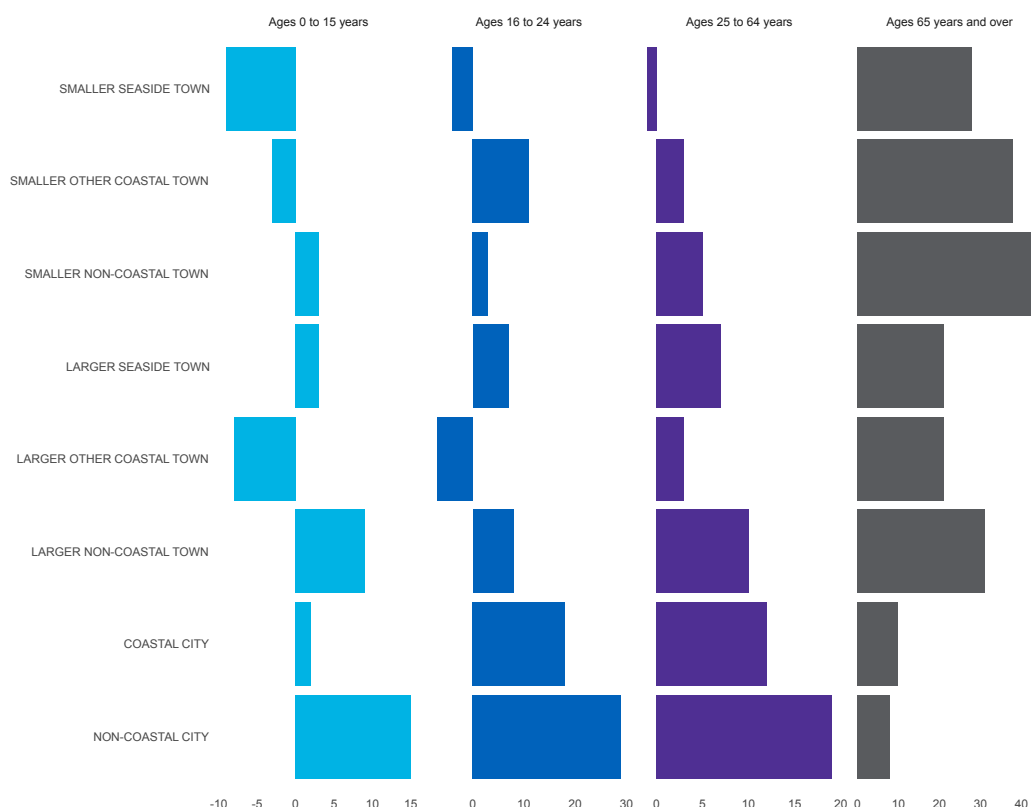
Source: Office for National Statistics – Population estimates

For the 25 to 64 age group, population growth in percentage terms was higher in non-coastal areas. In fact, the number of people aged 25 to 64 living in smaller seaside towns decreased by 1% between 2001 and 2019.

Non-coastal cities have also seen higher percentage growth of population aged 16 to 24 years (29%) compared with coastal cities (18%). This was not the case in towns. In large towns, this age group increased by almost the same in non-coastal and seaside towns (by 8% and 7% respectively) while decreasing by 7% in 'other coastal' areas. In smaller towns, non-coastal areas increased less than 'other coastal' areas (4% and 11%, respectively), while seaside towns saw a 4% decrease in population aged 16 to 24 years.

Over the period from 2001 to 2019, the number of children aged 0 to 15 years has decrease in some types of coastal towns but not in non-coastal towns. Smaller seaside towns and larger 'other coastal' towns have seen the 0 to 15 years age group decrease by as much as 9% and 8 %, respectively. Non-coastal cities have seen the highest increase in the number of children aged 0 to 15 years (15%), followed by larger non-coastal towns (9%).

2.3 Internal migration

Summary

Coastline local authorities saw a net outflow of two age groups: the 20 to 23 years age group and the 24 to 29 years age group. All other age groups had a net inflow, including the 16 to19 age group.

The 10 most popular destinations for those aged 16 to 19 years moving into coastline local authorities (accounting for 63%) were those with university towns or cities which may explain the net inflow in this age group.

Changes in the size and structure of coastal populations can be driven by internal migration, among other factors. This section summarises moves of people between coastal areas and non-coastal areas using internal migration data at local authority district level, which is the lowest geography area for which these data are available.

Internal migration considered in this section, is defined as residential moves between local authority districts of England only. It excludes people's moves between local authorities within England; moves to and from Wales, Scotland and Northern Ireland, as well as international moves into or out of the UK. More detailed information on methods and sources used to calculate internal migration estimates can be found in the latest methodology document.

In the 12-month period to mid-2019, an estimated 419 thousand people moved from inland into coastline local authorities; 367 thousand moved from coastline local authorities to inland local authorities and 327 thousand moved between coastline local authorities.

Figure 3 shows that the number of moves of people to and from coastline local authorities and between coastline local authorities in 2019 (in bars) was very similar to the past 3-year average. More important than the year-on-year change is the cumulative effect that those moves have in certain types of areas over a longer period.

Figure 3: Internal migration moves between inland and coastal local authorities in England, 2019 (in bars) and 3-year average (dot)
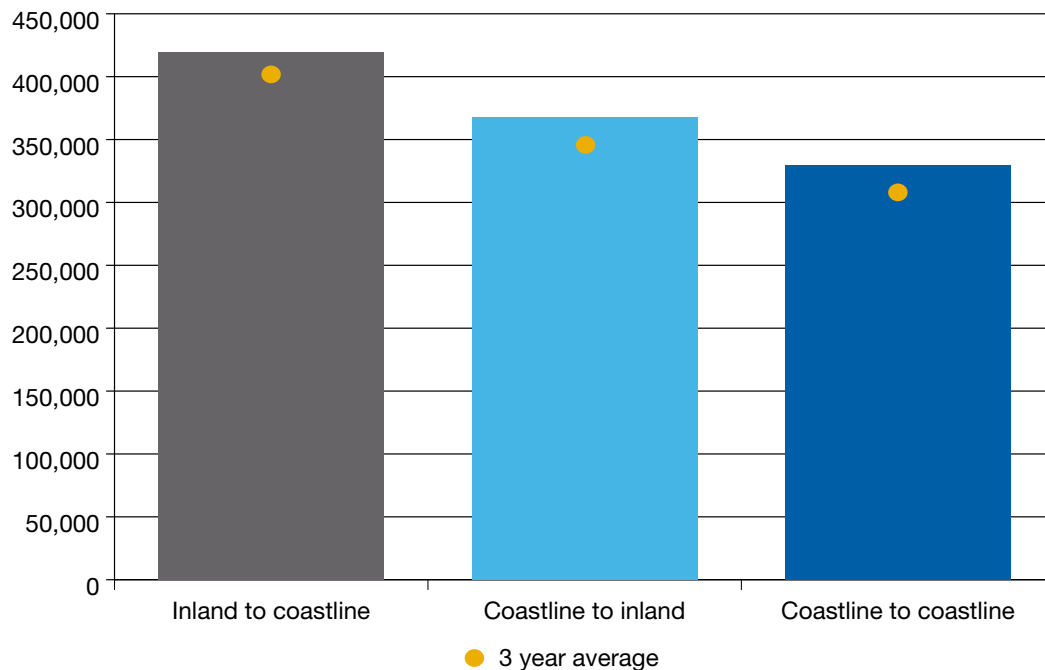
Source: Office for National Statistics – Population Estimates

Figure 4 shows that people in all age groups living in coastline local authorities are more likely to move out of coastline areas compared to those living in inland areas. It also shows that, people aged 20 to 23 years are more likely than any other age group to move in and out of coastline areas. Almost 12% of those aged 20 to 23 years living in coastline areas have moved to inland local authorities in 2019. Comparatively, 3.5% of people within the same age group living in inland local authorities have moved to the coastline.

In coastline local authorities, those aged 24 to 29 years are more likely to move to inland local authorities (6.4%) than those aged 16 to 19 years (5%). This is the opposite in inland local authorities, with 1.8% of the 24 to 29 years age

group moving to coastline local authorities, compared with 2.3% of the 16 to 19 age group. Comparatively to the younger adult age groups, the 30 to 64 years age group and children aged 0 to 15 years are much less likely to move. Less than 2% of each of these two age groups moved out or between coastline local authorities, and less than 1% moved from inland to coastline local authorities.

Those aged 65 years and over are the least likely to move. In the 12-month period to mid-2019, less than 1% of the population aged 65 and over living in inland local authorities have moved into coastline local authorities. Similarly, small shares of this age group have moved out and between coastline local authorities.

Figure 4: Internal migration moves between inland and coastline local authorities as a share of population in each type of area, by age group, England, 2019
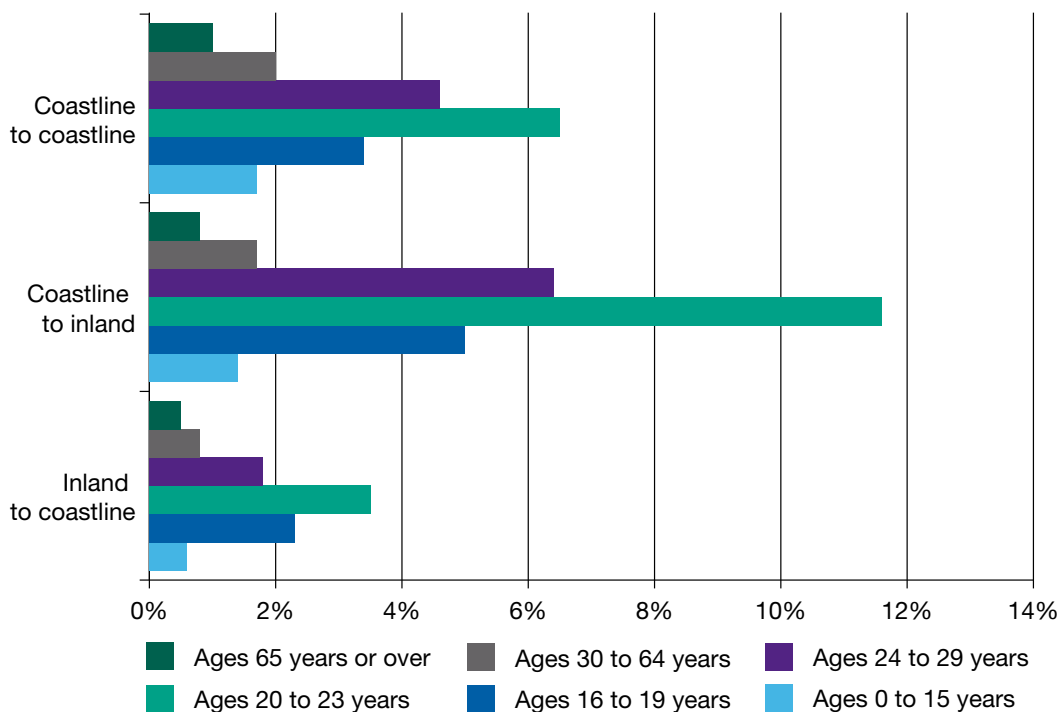
Source: Office for National Statistics – Population Estimates

Figure 5 shows that coastline local authorities saw a net outflow of two age groups: the 20 to 23 years age group and the 24 to 29 years age group. By comparing net moves per thousand population, we can consider the effect of population size in each age band.

Figure 5: Net moves from coastline local authorities to inland, by age group (per 1,000 population), England, 2019
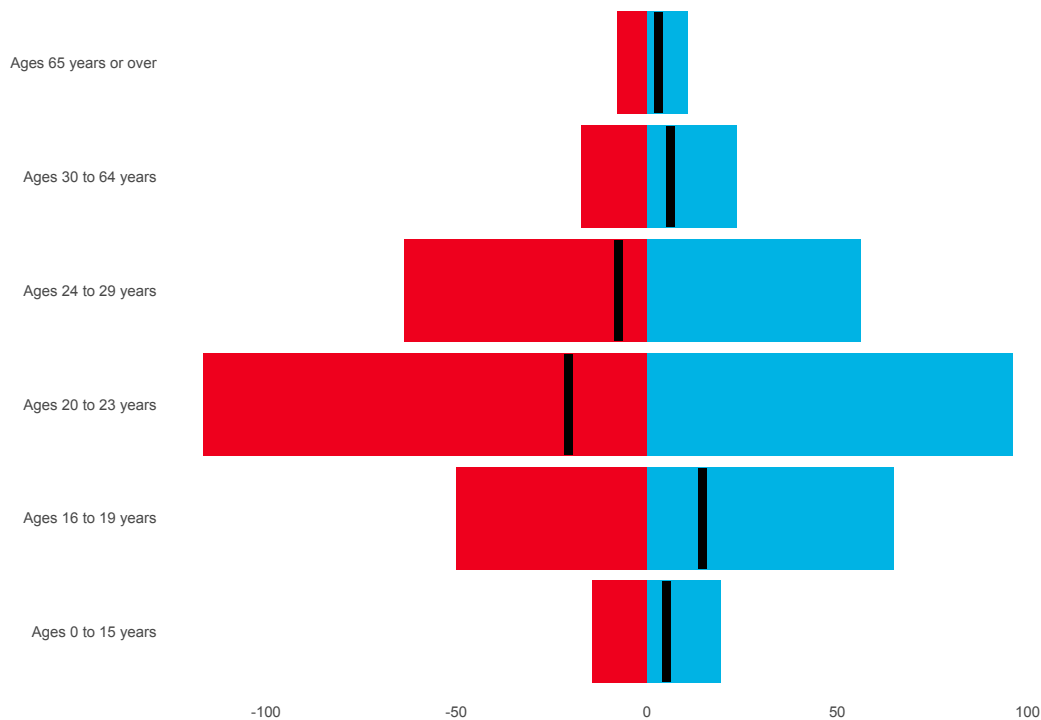
Source: Office for National Statistics – Population Estimates

The 20 to 23 years age group had the highest rate of both inflows (96 per 1,000 population) and outflows (116.5 per 1,000 population) and also the highest net outflow rate (20.5 per 1,000 population aged 20 to 23 years). Of all the people aged 20 to 23 years moving out of coastline local authorities, 26% moved into London.

There was also more people 24 to 29 years moving out than in of coastline local authorities but at a smaller rate than the 20 to 23 years age group. The net outflow rate for 24 to 29 years age group was 7.4 per 1,000 population. Of all the people aged 24 to 29 years moving out of coastline local authorities, 28% moved into London.

For all other age groups, there were more people moving in than out of coastline local authorities. The 16 to 19 years age group had the highest rate of net inflow (14.7 per 1,000 population in the age group).

Figure 6 shows that the 10 most popular destinations for those aged 16 to 19 years moving into coastline local authorities were those with a university. These 10 local authorities accounted for 63% for all the moves from inland into the coastline from people aged 16 to 19 years.

Figure 6: Top 10 most popular destinations for people aged 16 to 19 years moving into coastline local authorities, England, 2019
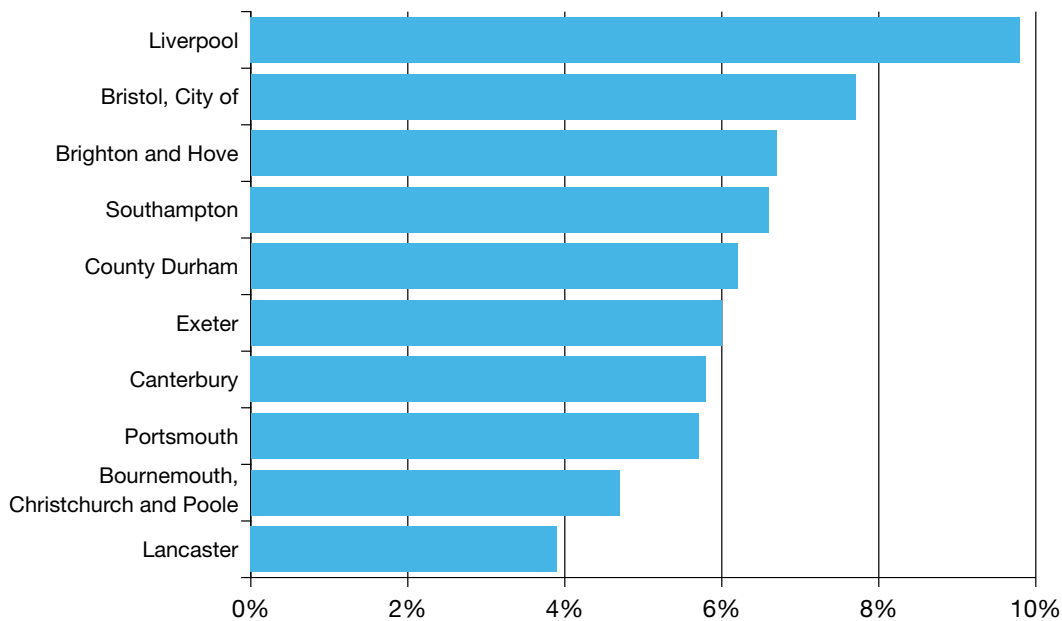
Source: Office for National Statistics – Population Estimates

2.4 Deprivation

Summary

- Smaller coastal towns had a higher share of population living in the most deprived areas of England across all domains of deprivation except crime.
- The share of population living in the most deprived areas in the country was highest in larger 'other coastal' (non-seaside) towns in all domains of deprivation except in the Barriers to Housing and Services domain, and in the Living Environment Deprivation domain.

The Index of Multiple Deprivation (IMD) is the official measure on relative deprivation in small areas in England. The IMD is based on a large set of indicators that are grouped into seven different domains:

- Income Deprivation
- Employment Deprivation
- Education, Skills and Training Deprivation
- Health Deprivation and Disability
- Crime
- Barriers to Housing and Services
- Living Environment Deprivation

In this section, the IMD is used to summarise and compare the extent of deprivation in coastal areas with non-coastal areas for each of the seven different domains of deprivation. The higher the measure, the higher the proportion of population in the area living in the most deprived neighbourhoods in England.

Figure 7 shows, for small towns only, the proportion of resident population living in the 30% most deprived areas across England, for each of the seven domains of the 2019 English Index of Multiple Deprivation. Small coastal towns had a higher share of population living in the most deprived areas across all deprivation domains except for Crime.

The Health Deprivation and Disability domain, which measures the risk of premature death and the impairment of quality of life through poor physical or mental health, shows that across small towns, coastal (seaside and 'other coastal') towns had a greater extent of health deprivation than non-coastal towns. As much as 35% of population in smaller seaside towns lived within the 30% of neighbourhoods in England with the highest health deprivation, followed by 30% of population in smaller 'other coastal' towns, which compares with 21% of the population in smaller non-coastal towns.

Similar trends of smaller seaside towns having higher shares of residents living in the most deprived neighbourhoods of England can be also seen in the Income, the Employment and in the Living Environment Deprivation domains. Significant differences between smaller 'other coastal' and non-coastal towns can also be seen in the extent of deprivation measures in Education, Skills and Training Deprivation domain, which measures the lack of attainment and skills in the local population.

Crime is the only deprivation domain in which the extent of deprivation was lower in smaller seaside towns compared with non-coastal towns.

Figure 7: Percentage of small towns' resident population living in the 30% most deprived neighbourhoods in England, 2019
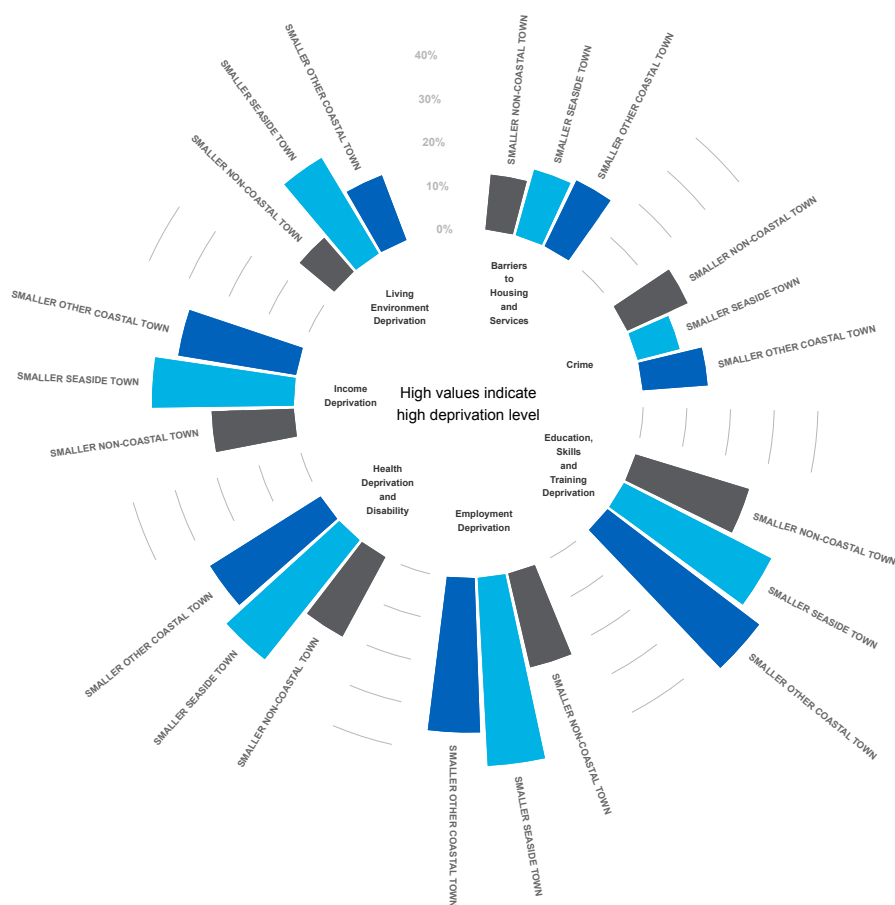
Source: Ministry of Housing, Communities and Local Government – English Indices of Multiple Deprivation, 2019, compiled for towns and cities by the Office for National Statistics

Figure 8 shows seven domains of the IMD in relation to larger towns in England. Larger seaside towns had higher deprivation levels compared with larger non-coastal towns in all domains except for Crime and Barriers to Housing and Services. The disparity, however, is not as distinct as between smaller seaside and non-coastal towns. For larger towns, it is larger 'other coastal' towns with visibly higher deprivation across all domains except for Living Environment and Barriers to Housing and Services.

Two in every three (67%) of the 30% of neighbourhoods in England with the highest health deprivation could be found in larger 'other coastal' towns. It was the highest health deprivation across all towns and cities classifications. It was also the highest percentage of population living in 30% of most deprived neighbourhoods in England of any single IMD domain for the coastal and non-coastal classifications.

On the whole, looking at the combined index of multiple deprivation, 55% of population in larger 'other coastal' towns lived within the 30% of neighbourhoods in England with the highest deprivation, compared with 36% of population in larger seaside towns and 25% of population in larger non-coastal towns.

Figure 8: Percentage of larger towns' resident population living in the 30% most deprived neighbourhoods in England, 2019
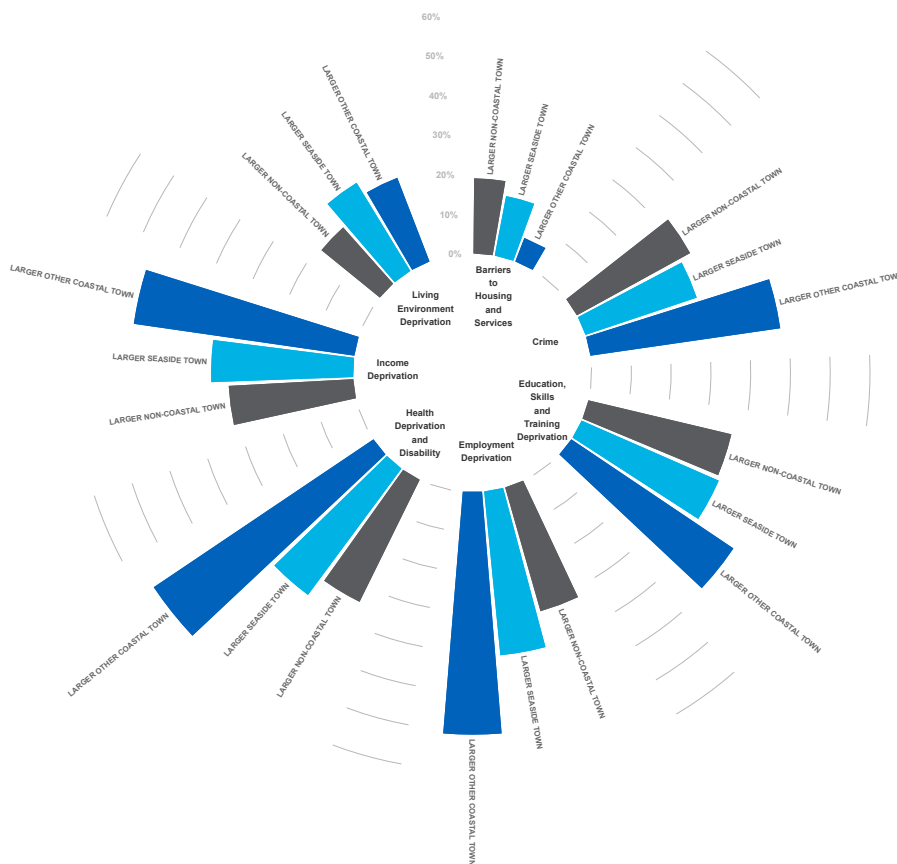
Source: Ministry of Housing, Communities and Local Government – English Indices of Multiple Deprivation, 2019, compiled for towns and cities by the Office for National Statistics

The most deprived areas of England are also known to have higher rates of death from avoidable causes, including causes of death that can be prevented through effective public health and primary prevention interventions, and causes that can be avoided through timely and effective treatment. To illustrate, here we look at three avoidable causes of death: suicide, drug-poisoning, and alcohol-specific causes.

Figures 9 and 10 show the age-standardised mortality rates, which allow comparisons to be made between populations with different age-structures, from each of the three causes by type of area, for deaths that occurred in 2018 (represented by the bars) and for 2014 (represented by the black dot).

Figure 9: Male age-standardised mortality rates per 100,000 population, England, 2018 and 2014
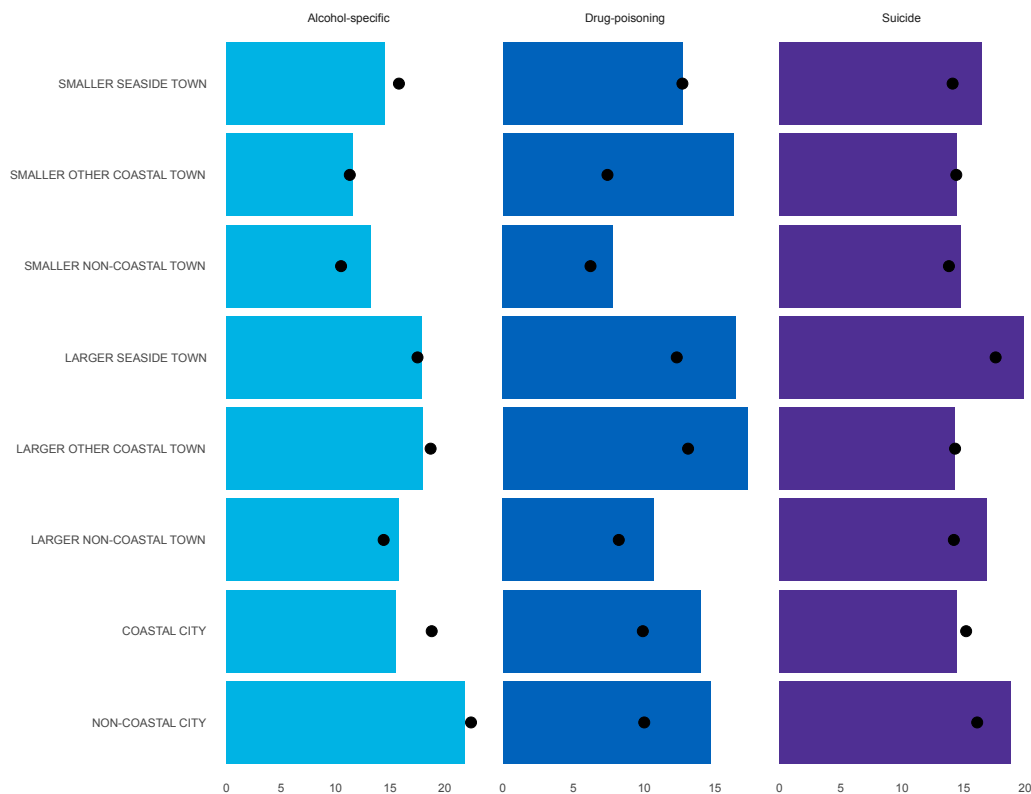
Source: Office for National Statistics

Notes:

1 The National Statistics definition of suicide, drug poisoning and alcohol-specific deaths are given in the Appendix.

2 Figures are not restricted by age for alcohol-specific deaths and drug poisoning. For suicide deaths, figures are restricted for persons aged 10-years and over.

3 Age-standardised rates per 100,000 population, standardised to the 2013 European Standard Population. Age-standardised rates are used to allow comparison between populations which may contain different proportions of people of different ages.

4 Figures are for persons usually resident in England, based on postcode boundaries as of February 2021.

Looking at male deaths caused by diseases known to be direct consequence of alcohol misuse, alcohol-specific deaths, in 2018, non-coastal cities registered the highest rate with 21.8 deaths per 100,000 residents, compared with a significantly lower rate of 15.5 in coastal cities.

Among towns, the male alcohol-specific mortality rate due to alcohol misuse was higher in larger towns compared with smaller towns, but statistically significant differences are only found for small non-coastal towns when compared to larger towns, both coastal and non-coastal. The mortality rate among males due to drug poisoning was the lowest in smaller non-coastal towns, at a 7.8 rate per

100,000 population, followed by larger non-coastal towns with a 10.7 rate. In both, smaller and larger towns, the rate was statistically significantly lower than the rate in same size coastal towns.

Between 2014 and 2018, the mortality rate for males due to drug poisoning has increased in coastal cities and large towns but no statistically significant increase was found in non-coastal areas. During the same time period, the male drug poisoning rate in England and Wales as a whole has seen a statistically significant increase.
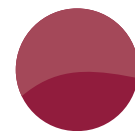
Regarding the number of deaths from suicide among males in 2018, the highest mortality rate was in larger seaside towns, and the lowest in larger 'other coastal' towns, with 19.9 and 14.3 per 100,000 population respectively. In smaller towns, the rate ranged from 14.4 in 'other coastal' to 16.5 in seaside, but no statistically significant difference was found between these estimates.

The male mortality rate from suicide in non-coastal cities was 18.8 per 100,000 population compared to 14.4 in coastal cities. The difference between coastal and non-coastal cities was statistically significant. Between 2014 and 2018, male mortality rate by suicide in these areas has increased by 25%, with similar increases in the male rate also seen in the population (England and Wales) as a whole.

Figure 10: Female age-standardised mortality rates by cause of death, England, 2018 and 2014
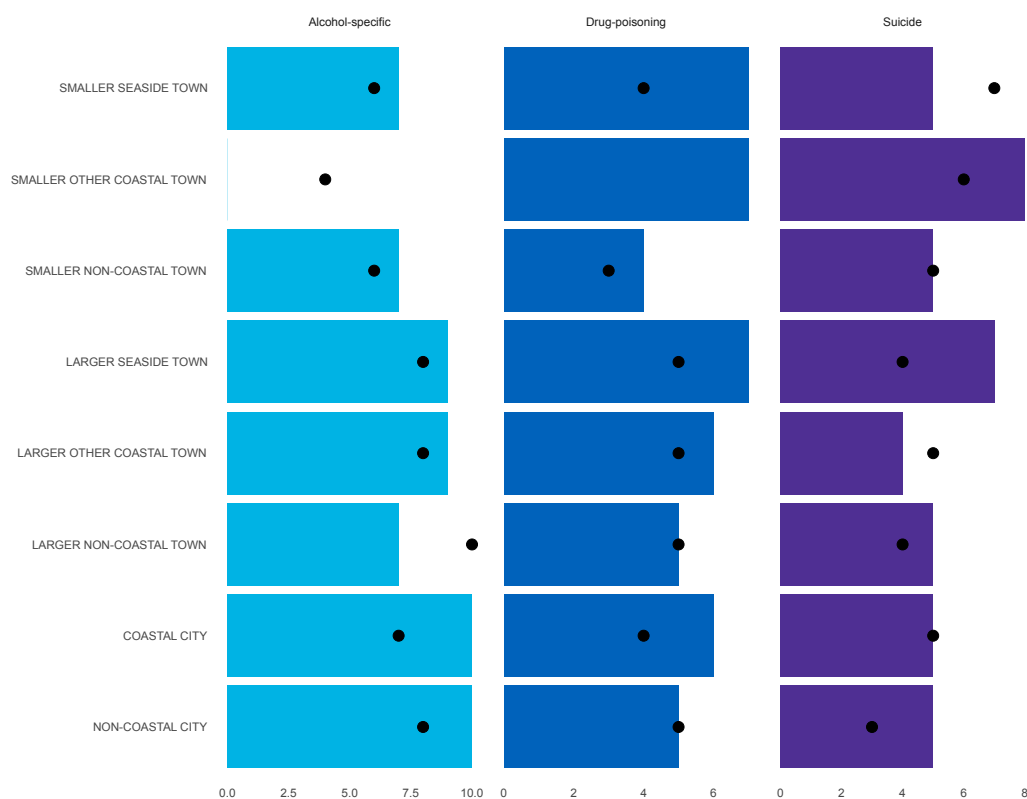
Source: Office for National Statistics

The female alcohol-specific mortality rate in 2018, similar to the male rate, was highest in the larger urban areas, but no statistically significant differences were found between coastal and non-coastal areas of the same size.

The female alcohol-specific mortality rate in non-coastal cities was statistically significantly higher than the rate in larger non-coastal towns and smaller non-coastal towns. The age-standardised mortality rate in non-coastal cities has risen from 7.7 to 10.2 per 100,000 population between 2014 and 2018. This increase was found to be statistically significant. During the same period, female rates of alcohol-specific deaths in England as a whole have remained largely unchanged.

The mortality rate among females due to drug poisoning was the lowest in smaller non-coastal towns, at a 3.6 per 100,000 population, and highest in smaller 'other coastal' towns, at a rate of 7.4 per 10,000 population.

Similarly, across large towns, the female mortality rate due to drug poisoning was lower in non-coastal towns, at a 5.2 rate per 100,000 population, compared with larger coastal towns, in particular, larger seaside towns where the rate was 7.1 per 100,000 population. The female mortality rate due to drug poisoning in larger non-coastal towns has increased by 33% between 2014 and 2018. The increase was found to be statistically significant; during the same period rates among females in the population (England and Wales) have also increased.

Regarding the number of deaths from suicide in 2018, the highest female mortality rates were estimated to be lowest in larger 'other coastal' towns at 4.1 per 100,000 population and highest in smaller 'other coastal' towns, at 8.2 per population. Rates in non-coastal areas ranged from 4.7 in non-coastal cities to 5.2 in larger towns. However, because of the smaller number of deaths creating more statistical uncertainty around the estimates, differences between coastal and non-coastal areas were not found to be statistically significant.

2.5 Labour statistics

Summary

- The unemployment rate was highest in 'other coastal' towns both, smaller and larger. Among cities, the unemployment rate was lower in coastal cities.

- Coastal towns had higher shares of its employed population working part-time. No such difference can be seen when comparing coastal cities with non-coastal cities.

- The share of those self-employed was higher in seaside towns.

- Shares of public sector employment were highest in coastal towns and cities.

- People living in non-coastal towns working full-time had, on average, higher annual gross earnings than those living in coastal towns. Little difference is found between those living in coastal cities and those living in non-coastal cities.

- For part-time, the median annual gross earnings in 2019 was lowest for residents of smaller coastal towns working part-time.

The relationship between employment status, work characteristics, job conditions and employee health and wellbeing has attracted considerable attention in the literature, and it has been highlighted in many health and wellbeing strategies. This section compares the labour market in coastal areas with non-coastal areas. Figure 11 shows that the unemployment rate for population aged 16 years and over was highest in 'other coastal' towns both, smaller and larger. The unemployment rate was particularly high for larger 'other coastal' towns at 7%. Out of 21 larger 'other coastal' towns in England, 16 are located in the north of England (North East, North West and Yorkshire and The Humber).

The unemployment rate was very similar in seaside towns and in non-coastal towns. Conversely to 'other coastal' towns, England's seaside towns are found predominantly (76 out of 97) in the south of England (South West, South East and East of England) or East Midlands. Among cities, the 4.9% unemployment rate in coastal cities was lower than in non-coastal cities at 6.0%. The results suggest that labour markets in coastal areas are heterogeneous and, in terms of unemployment rate, some coastal areas (cities) benefit from their geographical location while for others ('other coastal' towns) the coastal location is disadvantageous.

**Figure 11:** Unemployment rate for people aged 16 years and over, England, 2019
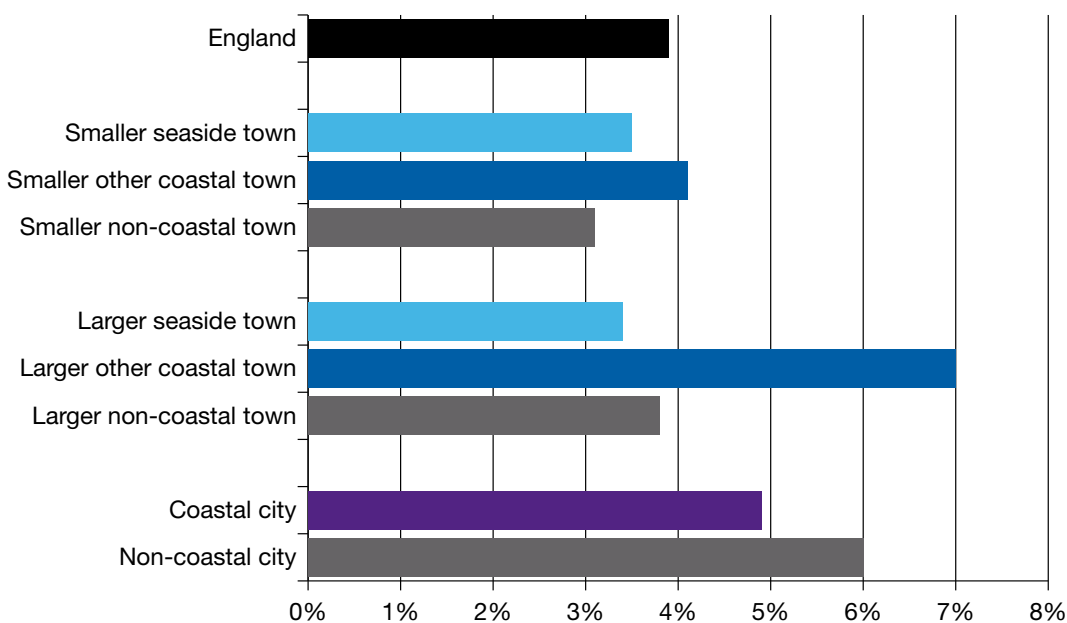
Source: Office for National Statistics – Annual Population Survey

Coastal towns also had higher shares of its employed population working part-time. Figure 12 shows that seaside towns, both smaller and larger, had higher shares of part-time employment among people aged 16 to 64 years than rest of the towns, with 32% and 30% respectively. No such difference can be seen when comparing coastal cities with non-coastal cities. Earning enough working part-time, having domestic commitments or not being able to find full-time job, among others, are possible reasons for deciding to work part-time. However, regardless of the reason, working part-time restricts career opportunities and slows down wage growth for the individual.

Figure 12: Shares of part-time employment, population aged 16 to 64 years, England, 2019
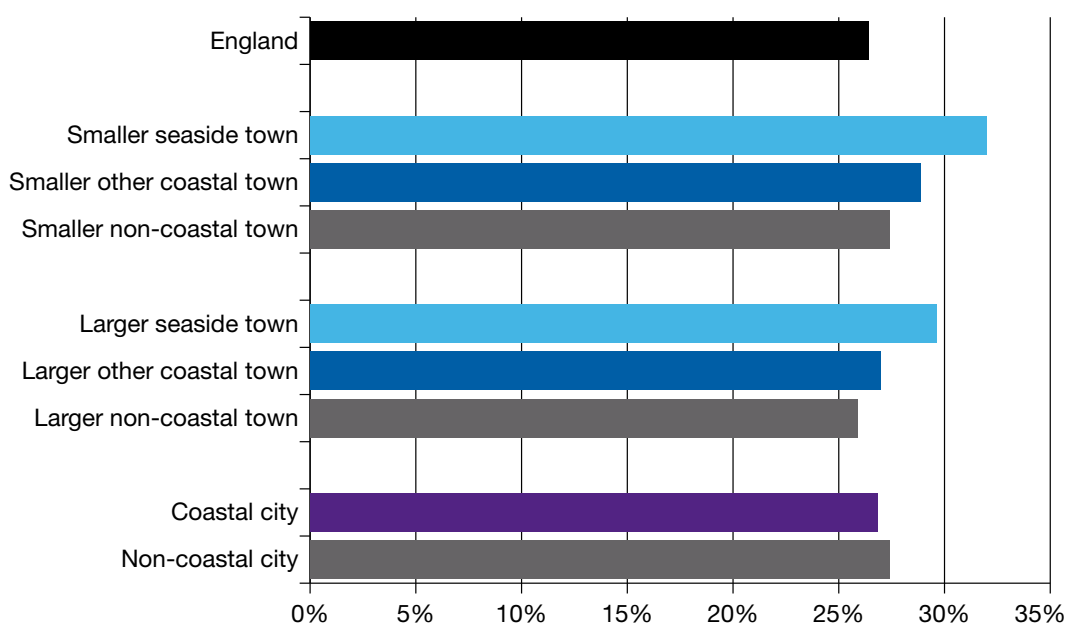
Source: Office for National Statistics – Annual Population Survey

Figure 13 illustrates that the share of self-employed people was higher in seaside towns, both smaller and larger, than in other towns. The share of self-employed in both smaller and larger seaside towns was 16% compared with 11% to 13% for any other cities and towns. High shares of self-employment can be a sign of entrepreneurship activity or indication of lack of employment opportunities. Nevertheless, the volatility of income and lack of employee benefits can pose a serious risk to the self-employed, especially during financial downturns.

Figure 13: Shares of self-employed, population aged 16 to 64 years, England, 2019
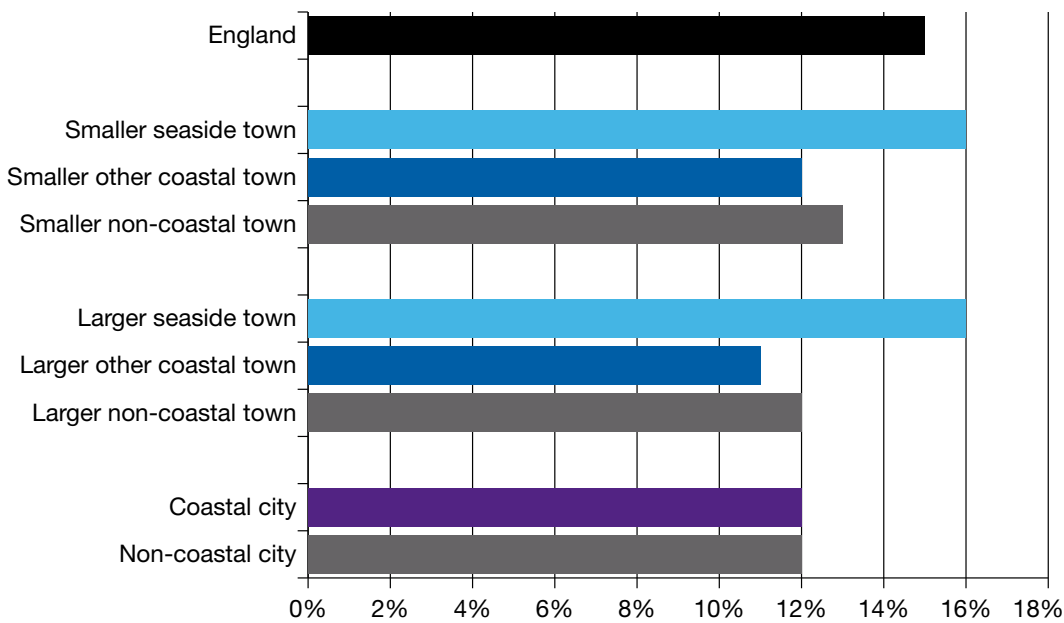
Source: Office for National Statistics – Annual Population Survey

Figure 14 shows that shares of public sector employment were highest in coastal towns and cities. Smaller seaside towns and smaller 'other coastal' towns had the highest shares of public sector employment among smaller towns at 24%. Out of larger towns, both 'other coastal' and seaside, had 23% of public sector employment compared with 21% for non-coastal towns. The share of public sector jobs was similar in coastal and non-coastal cities.

Figure 14: Shares of public sector employment, population aged 16 to 64 years, England, 2019
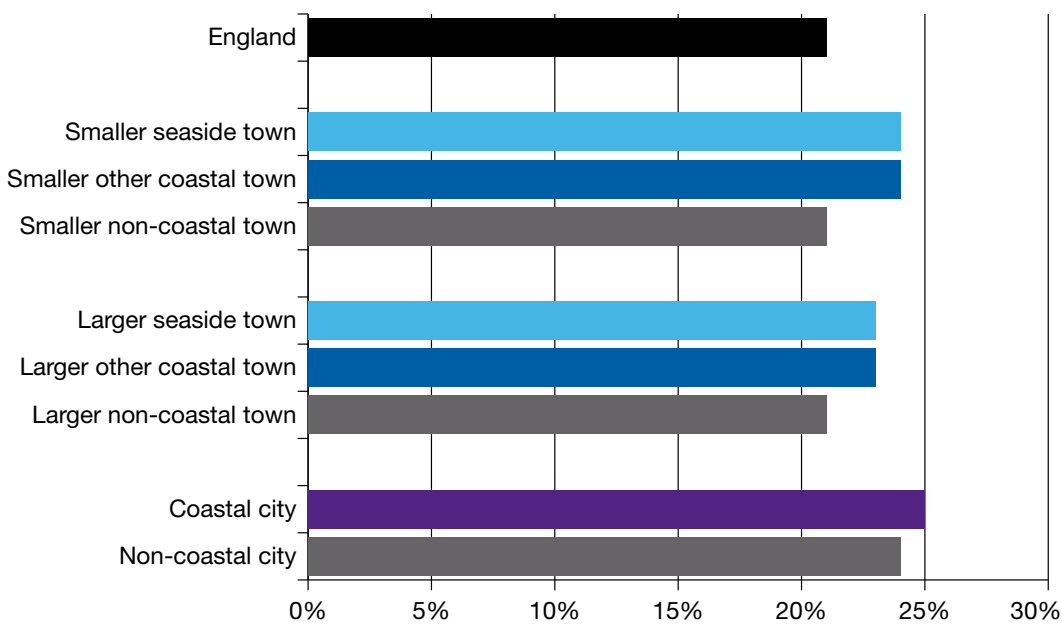
Source: Office for National Statistics – Annual Population Survey

Figure 15 shows that the inactivity rate for people aged 16 to 64 years was slightly lower for coastal cities at 24% compared to non-coastal cities at 26%. This is a similar pattern to that found in Figure 11 showing the unemployment rate for people aged 16 years and over. Looking at larger towns, the larger 'other coastal' towns had much higher inactivity rate for people aged 16 to 64 years at 24% compared to the rest of larger towns. The similarities of unemployment rate and inactivity rate end when considering smaller towns. Smaller coastal towns had higher inactivity rate than smaller non-coastal towns. Smaller 'other coastal' towns had the highest inactivity rate among the population aged 16 to 64 at 22%.
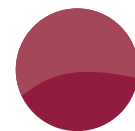
Figure 15: Inactivity rate for people aged 16 to 64 years, England, 2019
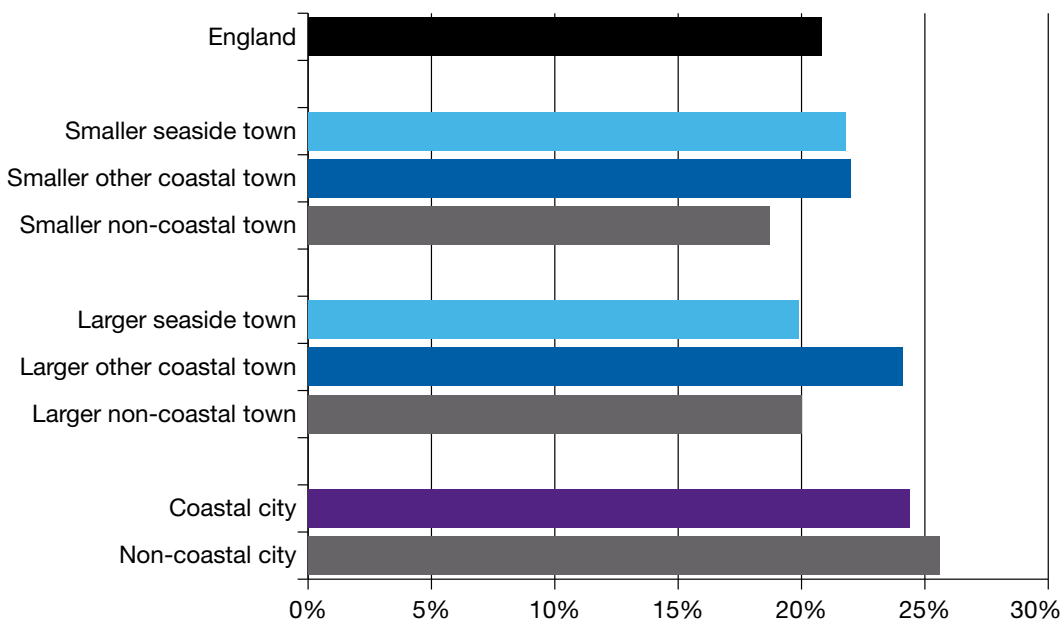
Source: Office for National Statistics – Annual Population Survey

It is important to also consider the reasons behind people remaining inactive. Figure 16 shows four selected main reasons for people aged 16 to 64 years who do not have a job and have not been actively seeking work within the last four weeks and/or are unable to start work within the next two weeks. There are other reasons not shown in the chart that cumulatively accounted for 9% to 16% of responses in different areas.

The most common response for cities, both coastal and non-coastal, was being a student. However, the long-term sick or disabled accounted for a higher share of responses in coastal cities at 27%, compared with non-coastal cities at 22%. Moreover, compared to non-coastal cities, higher share of working age population in coastal cities tended to retire from work early at 10%.

Examining larger towns, being long-term sick or disabled was the most common reason for people not looking for a job. Larger 'other coastal' towns had the highest share of such responses at 37%, followed by larger seaside towns at 31%, which compares with 25% for larger non-coastal towns. Both larger 'other coastal' towns and larger seaside towns have lower shares of being a student and looking after a family home as a main reason for not looking for a job compared with larger non-coastal towns. Among larger towns, it was more common in larger seaside towns to retire from work early at 16%.

Considering smaller towns, smaller 'other coastal' towns had the highest share of long-term sick or disabled as a main reason for people not actively seeking a job, at 36%. Similarly, to larger seaside towns, smaller seaside towns had the highest share of people, at 20%, not looking for a job because they were retiring from paid work.

Figure 16: Main reasons for not looking for a job in the last 4 weeks for people aged 16 to 64 years, England, 2019
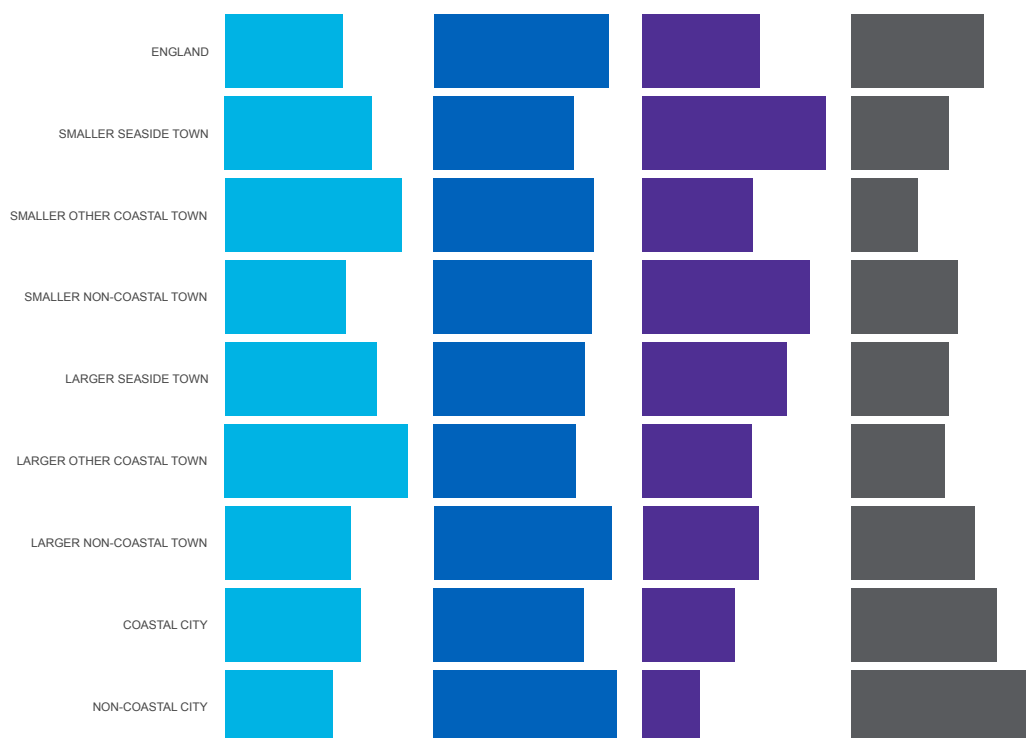
Source: Office for National Statistics – Annual Population Survey

The Annual Survey for Hours and Earnings (ASHE) provides information about the earnings and hours paid for employees within industries, occupations, and regions in the UK. It has been used in this report to estimate the annual gross earnings (earnings throughout the entire year before taxes and deductions are taken), on a residence base, for coastal and non-coastal towns and cities.
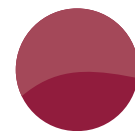
Figure 17 shows that people living in non-coastal towns, working full-time had, on average, higher gross earnings than those living in coastal towns, both in the smaller and larger categories of towns. In comparison, little difference is found between the median annual gross earnings of those living in coastal cities and non-coastal cities.

Residents in smaller non-coastal towns had the highest median annual earnings in 2019 at £30,202 and the nearest to England's average of £30,692 (including London); while residents in smaller seaside towns had, on average, the lowest annual earnings (£26,834).

**Figure 17:** Median annual gross pay, full-time employees, residence-based, England, 2019
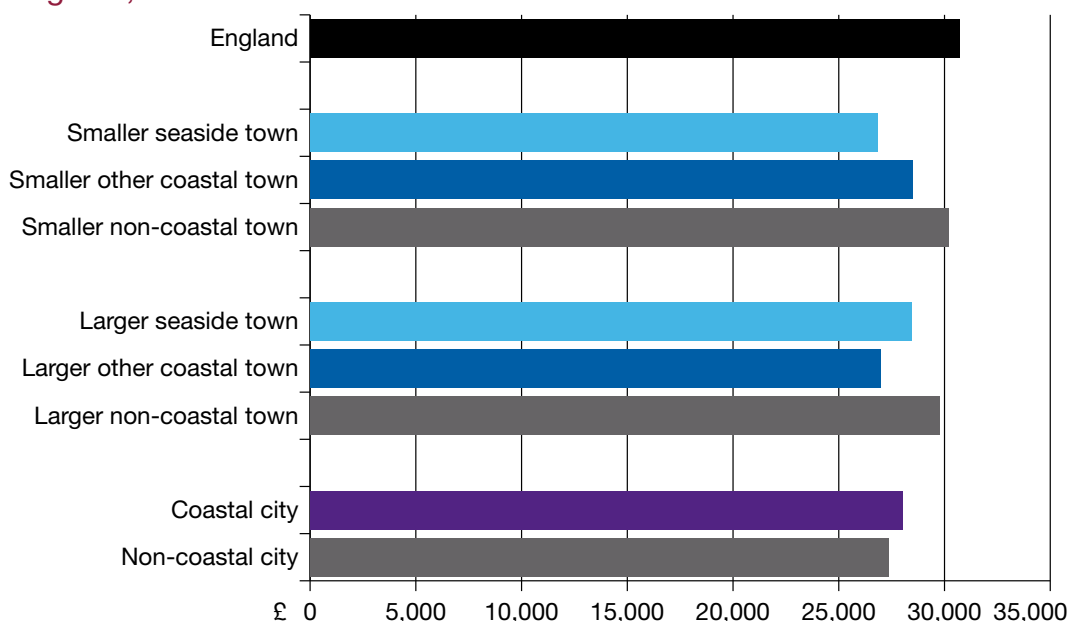
Source: Office for National Statistics – Annual Survey of Hours and Earnings

Figure 18 shows that the median annual gross earnings in 2019 was lowest for residents of smaller coastal towns working part-time.

The median gross pay of part-time workers living in larger non-coastal towns and cities was slightly less than larger coastal towns and coastal cities.

Figure 18: Median annual gross pay, part-time employees, residence-based, England, 2019
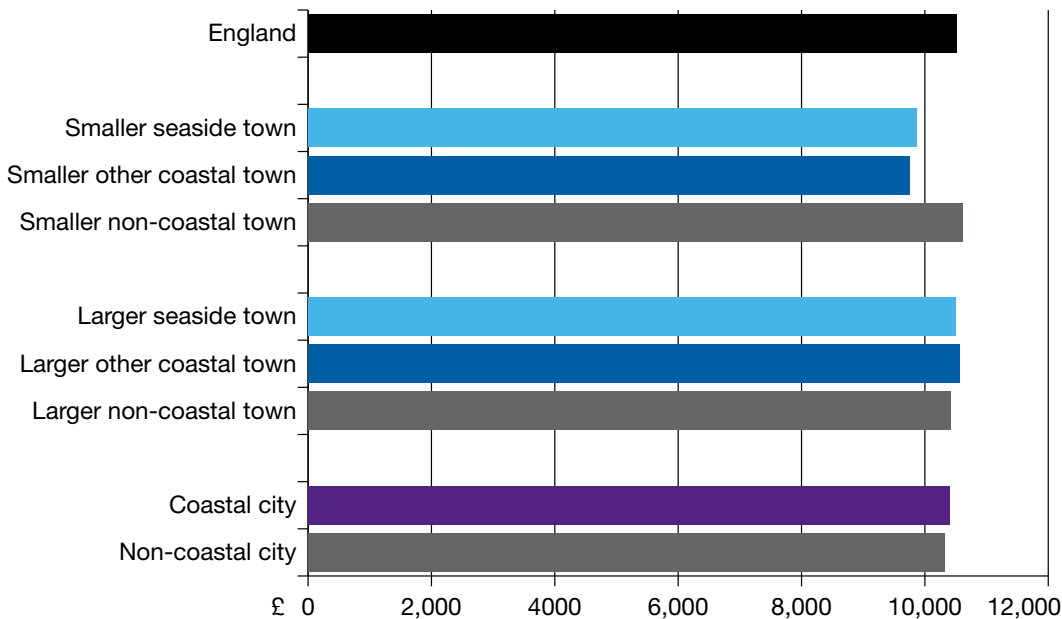
Source: Office for National Statistics – Annual Survey of Hours and Earnings

2.6 Education statistics

Summary

- Smaller seaside towns had the lowest percentage of pupils reaching the expected standards in Reading, Writing and Maths.

- Coastal towns had a higher proportion of pupils eligible for free school meals, at KS2 than non-coastal town. Non-coastal cities had the highest overall rate.

- The Attainment 8 score for schools in non-coastal towns and cities was higher than for the same size coastal areas.

- Non-coastal areas had a higher proportion of the population with degrees, higher education or equivalent, compared with coastal areas.

This section focuses on school performance statistics using the compare and find schools function available on the Government website. All school types are included in this analysis which needs to be taken into consideration when making comparisons to published data on state funded schools.
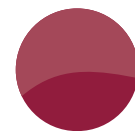
Figure 19 shows the percentage of Key Stage 2 pupils reaching the expected standard in three core subject areas: reading, writing (grammar, punctuation and spelling) and mathematics. The requirements for reaching the expected standard varies by subject.

The percentage of pupils reaching the expected standard in all three core subjects does not differ by large amounts, especially among larger towns.

Among smaller towns, non-coastal outperformed coastal towns in all three subject areas, with smaller seaside towns having the lowest percentage of pupils reaching the expected standards in all three subjects.

Coastal cities have outperformed non-coastal cities in the Reading subject area, with 74% of pupils reaching the expected standard in coastal cities, compared with 71% in non-coastal cities.

Figure 19: Percentage of Key Stage 2 pupils reaching the expected standard in core subject areas, England, 2019
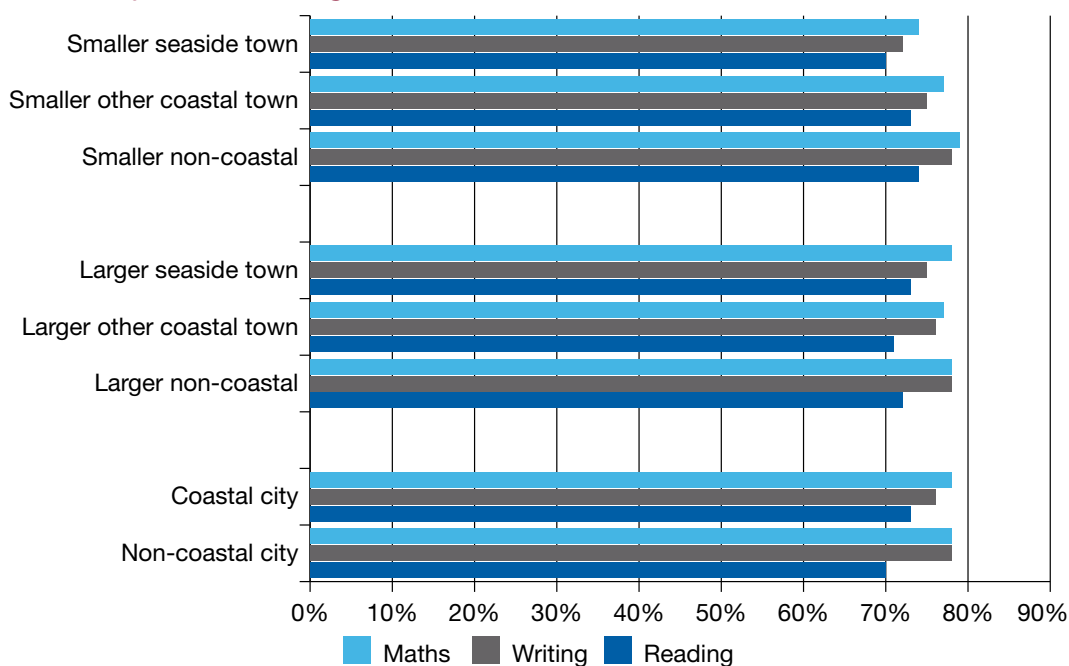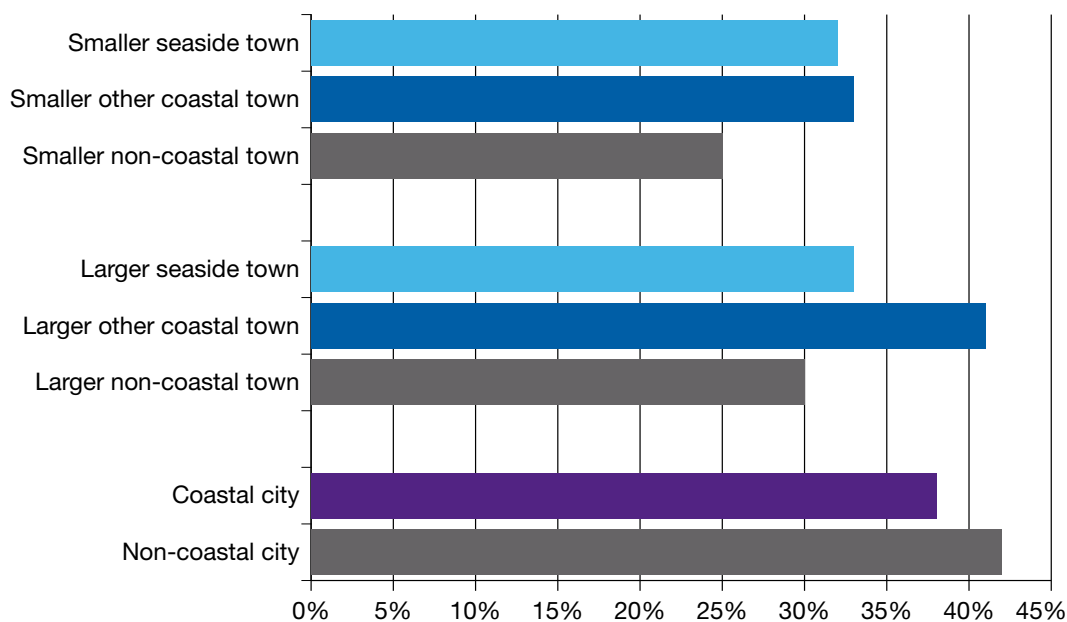

Source: Office for National Statistics analysis based on Department for Education school performance tables

The data also provides information on the number of pupils who are eligible for free school meals in KS2. Figure 20 shows that non-coastal cities had the highest proportion of pupils eligible for free school meals, at 42%, while non-coastal towns both larger and smaller had the lowest proportions, with 29% and 25%, respectively.

Figure 20: Percentage of pupils eligible for free school meals in Key Stage 2, England, 2019
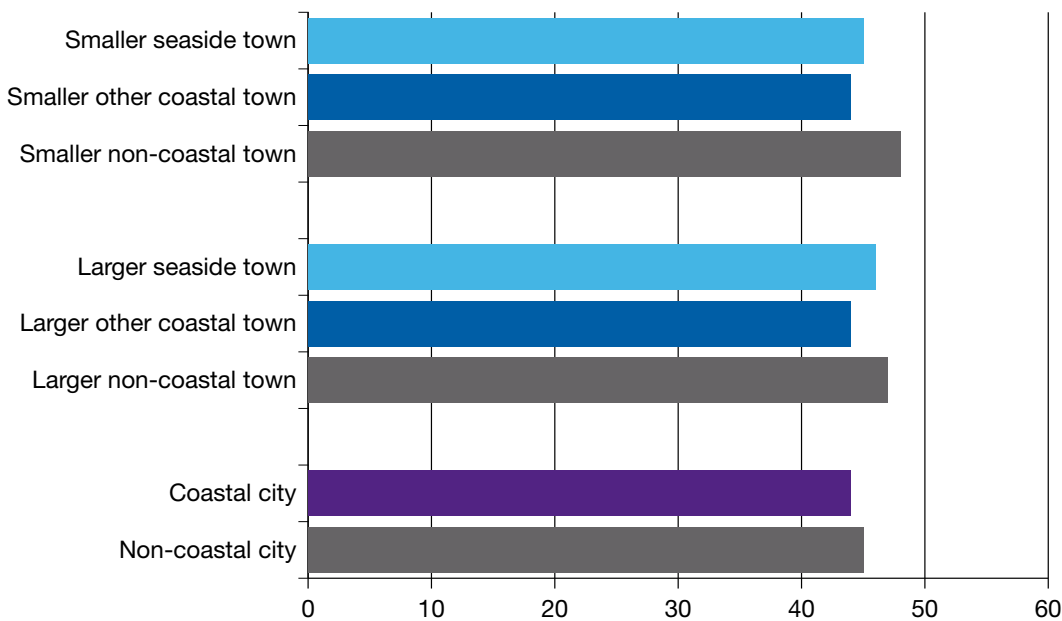

Source: Office for National Statistics analysis based on Department for Education school performance tables

Schools' average Attainment 8 and Progress 8 scores are used as performance indicators at Key Stage 4. Attainment 8 measures the achievement of a pupil across 8 qualifications. Each individual grade a pupil achieves is assigned a point score, which is then used to calculate a pupil's Attainment 8 score.

Figure 21 shows that the average Attainment 8 score for schools in non-coastal towns and cities was relatively higher compared with the same size coastal areas. Smaller non-coastal towns had the highest average attainment score in 2019 at 47.6, while the large 'other coastal' towns had the lowest score at 44.

Figure 21: Average Attainment 8 score in Key Stage 4, England, 2019

Source: Office for National Statistics analysis based on Department for Education school performance tables

Progress 8 was introduced in 2016 and the aim of this metric is to capture the progress a pupil makes from the end of KS2 to the end of KS4. It is a type of value-added measure, which means that pupils' results are compared to the actual achievements of other pupils with similar prior attainment. The higher the Progress 8 score, the better the school is performing. The national average Progress 8 score is 0.0, so any areas with a positive score are outperforming the rest of the country, while areas with a negative score are underperforming.

Figure 22 shows that most towns and cities had a Progress 8 score below the national average in 2019, except for non-coastal cities. It is worth noting that although London is not included in the analysis, the progress of pupils attending schools in London is considered when calculating the national average.

Larger coastal towns had the lowest score at -0.25, followed by coastal cities with a score of -0.21. Among smaller towns, the lowest score was also in the 'other coastal' areas.

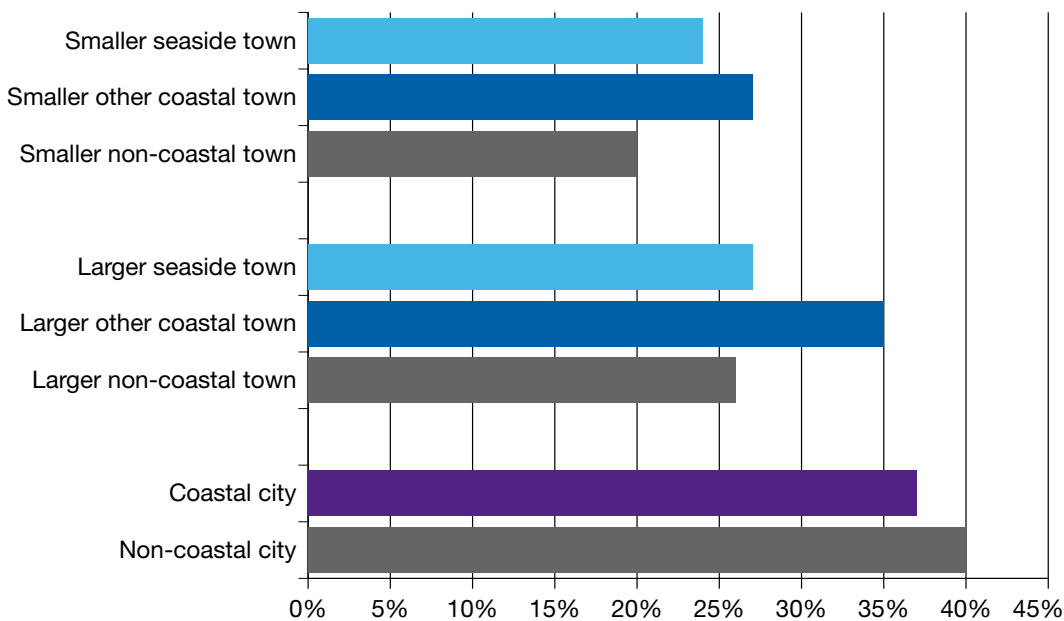**Figure 22:** Average Progress 8 score in Key Stage 4, England, 2019
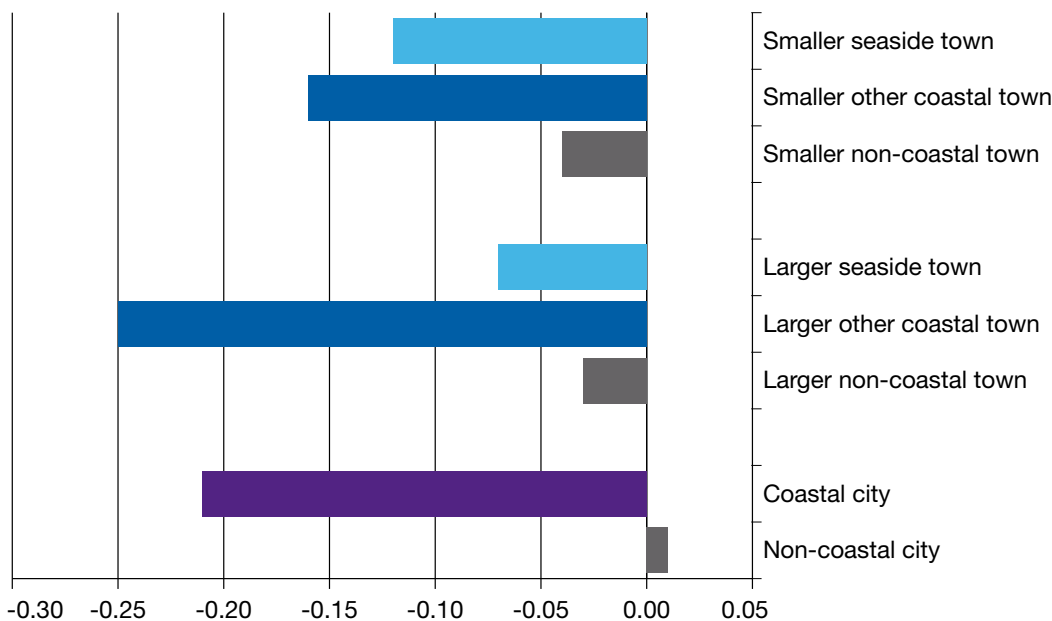
Source: Office for National Statistics analysis based on Department for Education school performance tables

The percentage of pupils in KS4 eligible for free school meals is shown in Figure 23. Cities had the highest percentage of pupils eligible for free school meals with non-coastal cities (40%) higher than coastal cities (37%). The opposite is true for larger and for smaller towns groupings, with 'other coastal' and seaside towns faring worse than non-coastal towns. Smaller non-coastal towns had the smallest proportion of pupils eligible for free school meals at 20%.

Figure 23: Percentage of pupils eligible for free school meals in Key Stage 4, England, 2019

Source: Office for National Statistics analysis based on Department for Education school performance tables

Figure 24 shows that the largest difference between coastal and non-coastal areas are in the proportion of population with degrees, higher education or equivalent, with non-coastal areas having higher shares than coastal areas, across cities and towns.

In contrast, coastal cities and large coastal towns had smaller shares of population with the highest qualification being GCE A-levels and also GCSE grades A* to C or equivalent. Both coastal and non-coastal areas had similar shares of population with other or no qualifications.

Figure 24: Highest qualification obtained, resident population aged 16 to 64 years, England, 2020
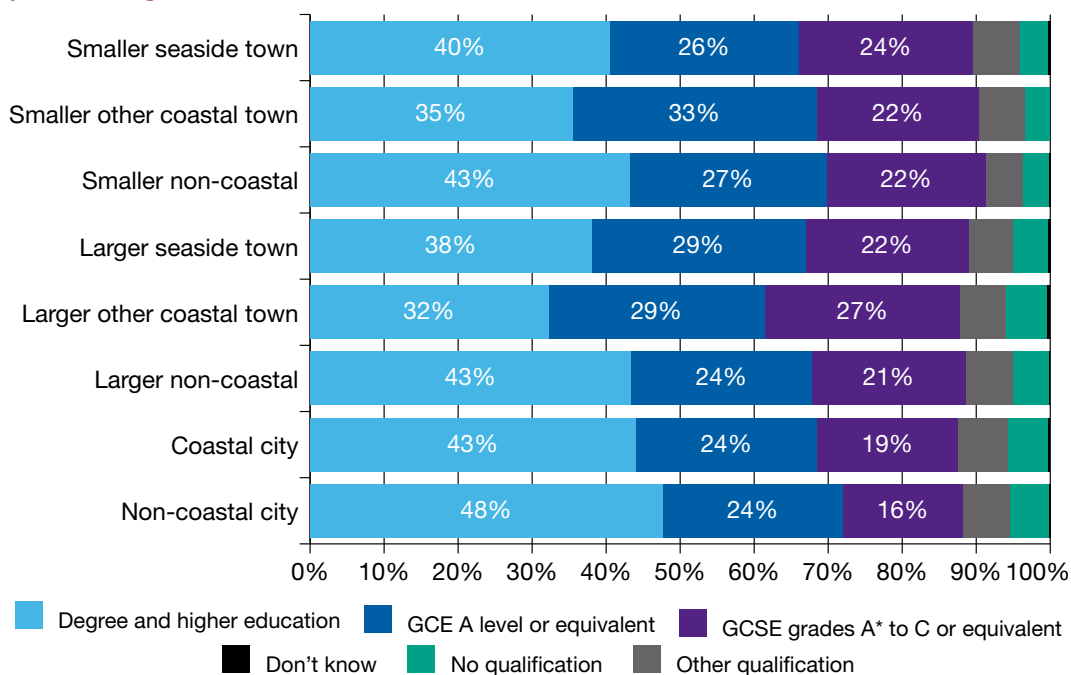
Source: Office for National Statistics – Annual Population Survey

2.7 Housing statistics

Summary

- Of those renting, private landlords were the most common type of landlords across the towns and cities. Seaside towns, both smaller and larger, had the highest shares of individual private landlords at 57% and 61%.

- Smaller seaside towns had the highest share of houses owned outright at 41% compared with 33% in smaller non-coastal towns. The share of houses owned outright was also higher in larger seaside towns (33%) compared with larger non-coastal towns (28%).

- The share of households with more than one family unit was highest in non-coastal cities at 16%, compared with 10% in coastal cities.

Housing quality and indoors environment can have an influence on mental and physical health and wellbeing. Some of the findings in the relevant literature show that high standard, warm and dry accommodation can have a positive impact on the physical health of tenants, while living in overcrowded accommodation leads to limited private space and restricted access to household needs. This in turn can negatively affect wellbeing. For children living in overcrowded houses, poorer mental and physical health can lead to worse outcomes at school.

This section is focusing on housing statistics extracted from the Annual Population Survey. The aim of this section is to explore tenure, types of landlords and overcrowding indicators.

Figure 25 shows that over two out of five (41%) houses in smaller seaside towns were owned outright, which was the highest share across smaller towns. Similarly, one in every three (33%) houses in larger seaside towns were owned outright, which was the highest share among the larger towns. Coastal cities had only a slightly higher share of houses owned outright at 25% compared with non-coastal cities at 24%.

Figure 25: House tenure, England, 2019
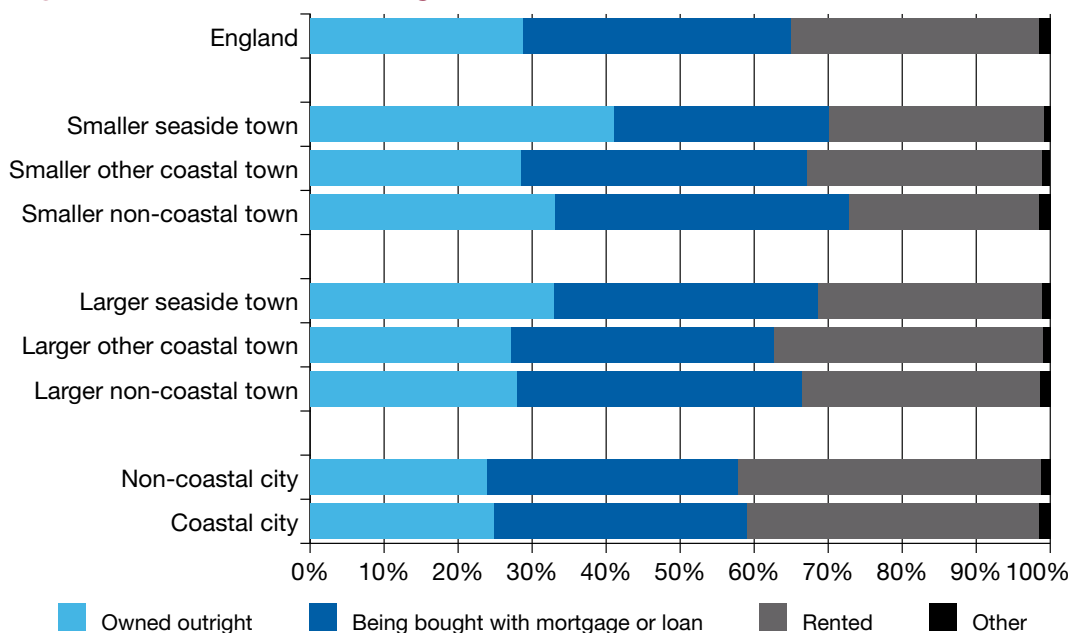
Source: Office for National Statistics – Annual Population Survey

When houses owned outright and being bought with a mortgage or loan are considered together, the differences between seaside and non-coastal towns, both smaller and larger, disappear. Consequently, 'other coastal' towns had the highest shares of renting houses. This is particularly visible in larger 'other coastal' towns at 36%.

In general, higher shares of houses rented were more likely in cities. Around two out of five houses in the cities are being rented while less than one in three houses in the smaller towns were being rented.

Figure 26 shows that individual private landlords were the most common type of landlords across the towns and cities. Seaside towns, both smaller and larger, had the highest shares of individual private landlords at 57% and 61%, respectively.

Local Authorities and Housing Associations combined in a single type of landlord made up the highest proportion in all towns except for seaside towns and smaller 'other coastal' towns.

When examining cities, little difference was found in the shares of public and private landlords between the coastal and non-coastal cities. However, in coastal cities there was a small share of houses with the local authority as the landlord (21%) than in non-coastal cities at 31%.

Figure 26: Type of landlord, England, 2019
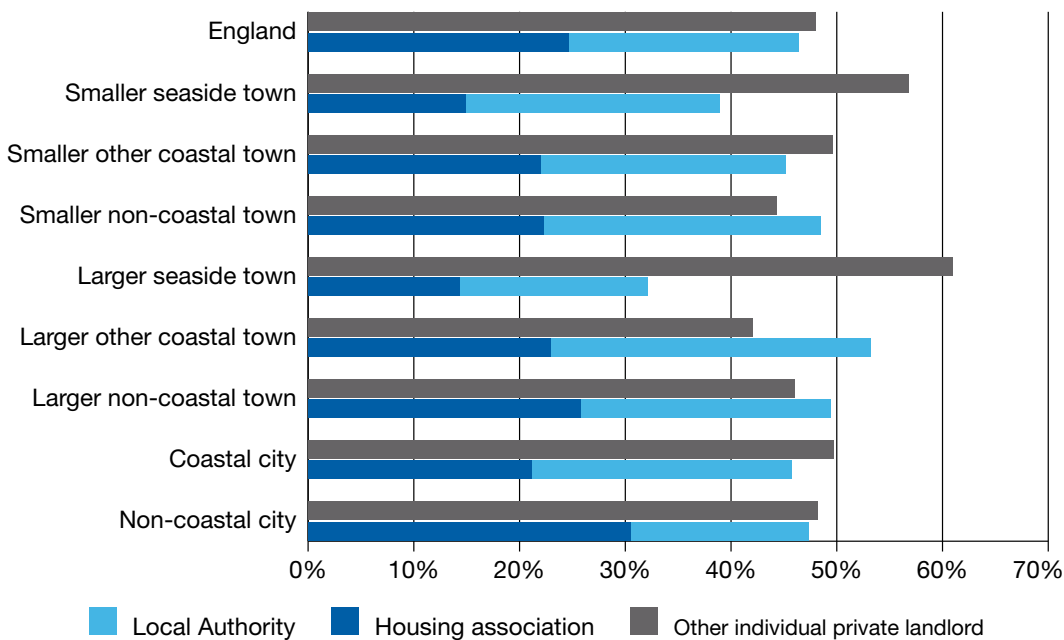
Source: Office for National Statistics – Annual Population Survey

Figure 27 shows that 4% of households in smaller 'other coastal' towns had more than one family unit, compared with 6% in smaller non-coastal towns and smaller seaside towns.

Among larger towns, coastal towns had lower shares of more than one family units in a household at 7% for larger 'other coastal' towns and at 8% for larger seaside towns, compared with 9% for larger non-coastal towns.

Examining cities, coastal cities have a lot lower share of households with more than one family unit at 10%, compared with 16% of non-coastal cities.

Figure 27: Total number of family units in household, England, 2019
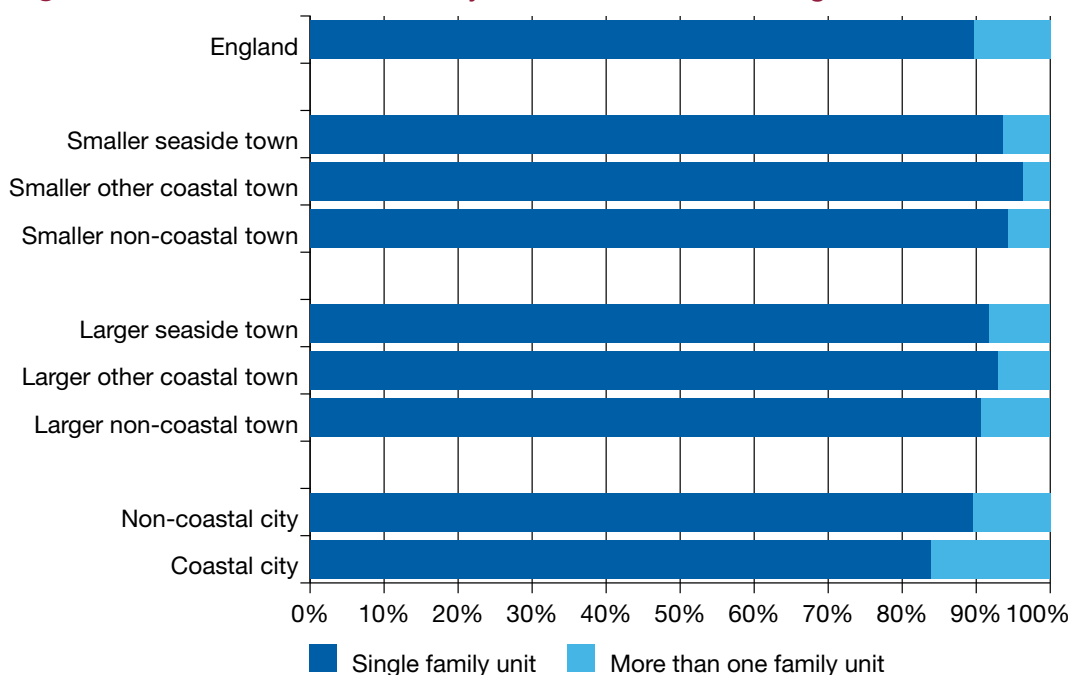
Source: Office for National Statistics – Annual Population Survey

For detailed information on the definition and composition of family unit, please see Appendix.

Analysis of the English Housing Survey carried out by the Ministry of Housing, Communities & Local Government examines whether the condition of homes in coastal areas is similar or different compared with homes located in non-coastal areas. It also explores the variation in the wellbeing of householders and the prevalence of disability among households by those location types. It is based on analysis of the 2018-19 English Housing Survey (EHS)[1,2].

When examining the shares of homes that failed to meet the Decent Homes Standard, figure 28 shows that homes in coastal towns and cities were just as likely as those anywhere in England to be non-decent. In coastal towns and cities, 17% of homes failed to meet the Decent Homes Standard, which was not significantly different from homes in non-coastal towns and cities (18%).

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[1]   The findings are based on two-year averages, which are the average of the two years up to and including the labelled data. The analysis has used two years of data to increase the reliability of the findings as well as to ensure an unbiased coverage of coastal locations. The EHS randomly divides England into two groups of 904 areas and collects data from one group in odd number years and from the other group in even number years. As a result, half the coastal locations are not covered in any single year of EHS data. The EHS Technical Report has further information about the Half England Sample Design: https://assets. publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/898113/2018-19_ EHS_Technical_Report.pdf.

[2]   Coastal locations were identified in the analysis using the Office for National Statistics definition of coastal towns and cities used throughout this report.
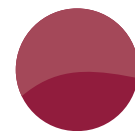
The prevalence of non-decent homes in coastal towns and cities was similar in all the main tenures. Around 17% of owner-occupied homes and 25% of private rented homes in both coastal and non-coastal towns and cities failed the Decent Homes Standard. The share of non-decent social rented homes was not significantly different for coastal and non-coastal towns and cities at just over 10%.

Figure 28: Share of non-decent homes, by tenure, 2018-2019
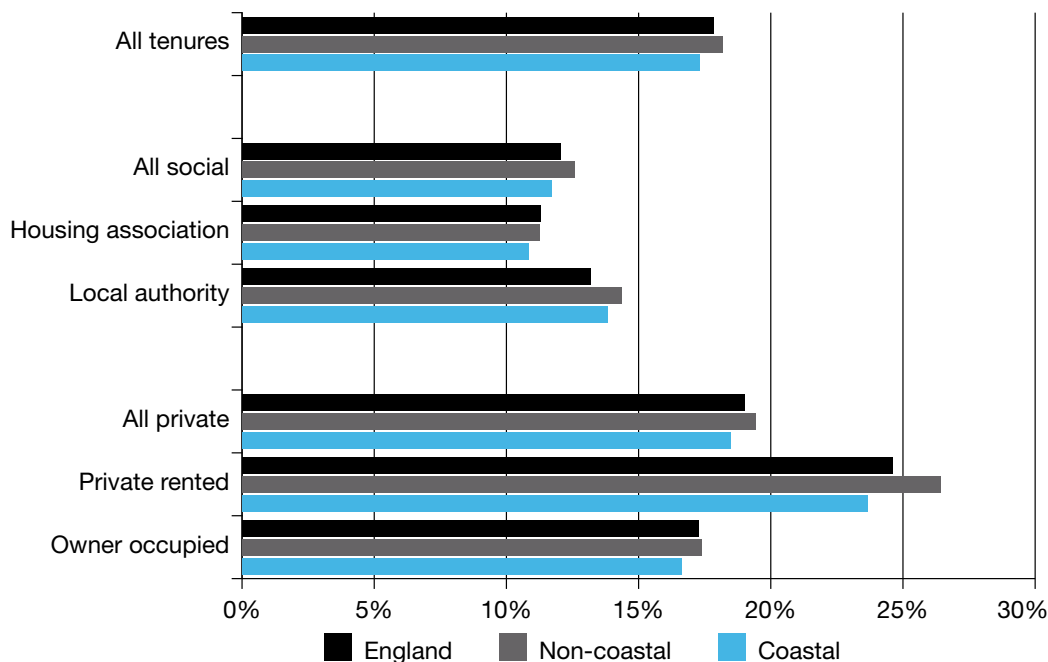
Source: Ministry of Housing, Communities & Local Government, English Housing Survey, dwelling sample

Looking at the homes with damp problems, the share of homes in coastal towns and cities with damp problems was similar to the share in non-coastal towns and cities, at 3% and 4% respectively. Local authority homes were an exception. Local authority homes located in coastal towns and cities were less likely to have problems with damp (1%) compared with non-coastal towns and cities (7%).

Considering homes that had a Category 1 Hazard, homes in coastal towns and cities were just as likely as those in non-coastal towns and cities to have a Category 1 Hazard. The only significant difference was for private rented homes in coastal towns and cities at 6% compared with non-coastal towns and cities (16%).

Private-tenant households in coastal towns and cities were more likely to contain someone with a limiting long-standing illness or disability. Figure 29 shows that 39% of private renting households in coastal towns and cities had someone with a long-standing illness or disability compared with non-coastal towns and cities at 28%. The prevalence of disability among households in other tenures did not vary significantly.

Figure 29: Household containing someone with a limiting long-standing illness or disability, by tenure and location, 2017-2018 and 2018-2019
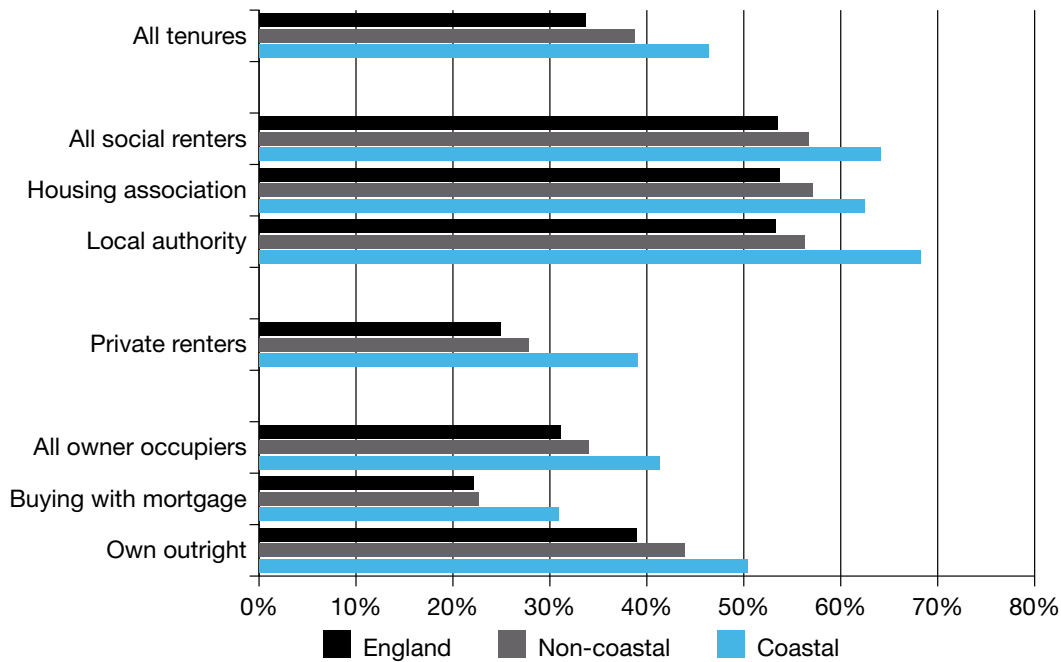
Source: Ministry of Housing, Communities & Local Government, English Housing Survey, full household sample

Examining the English Housing Survey wellbeing measures, "life is worthwhile" and "life satisfaction" scores were not statistically different in both overall and in individual tenure groups for coastal and non-coastal towns and cities.

Figure 30 shows that the overall "happiness" score was similar for coastal and non-coastal towns and cities at 7.56 and 7.46. However, household reference persons (HRPs) with a mortgage in coastal towns and cities had a higher average "happiness" score (8.07) than those in non-coastal towns and cities (7.59).

When considering overall "anxiety" score, there was no difference between coastal and non-coastal towns and cities with 2.8 and 2.78 scores respectively. However, a statistically significant difference was found between HRPs. Housing association tenants HPRs in coastal towns and cities had a higher average anxiety score (3.82) compared with housing association tenants HPRs in non-coastal towns and cities (3.13).
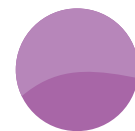
Figure 30: Overall wellbeing, by location, 2017-2018 and 2018-2019

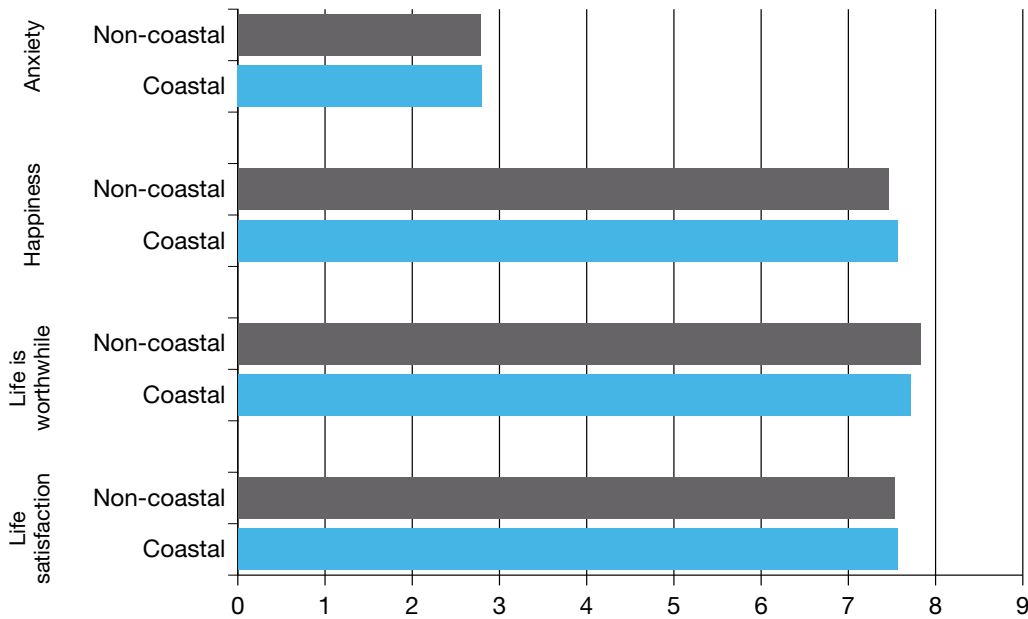**Source:** Ministry of Housing, Communities & Local Government, English Housing Survey, full household sample

Notes:

[1]   Overall, how satisfied are you with your life nowadays? Referred to as 'life satisfaction'.
Overall, how anxious did you feel yesterday? Referred to as 'anxiety'.
Overall, to what extent do you feel the things you do in your life are worthwhile? Referred to as 'life is worthwhile'.
Overall, how happy did you feel yesterday? Referred to as 'happiness'.

[2]   During the interview, the Household Reference Person (HRP) is asked to give their answers on a scale of 0 to 10, where 0 is 'not at all' and 10 is 'completely'.

[3]   The Household reference person (HRP) is the person in whose name the dwelling is owned or rented or who is otherwise responsible for the accommodation. In the case of joint owners and tenants, the person with the highest income is taken as the HRP. Where incomes are equal, the older is taken as the HRP. This procedure increases the likelihood that the HRP better characterises the household's social and economic position.

[4]   These questions are the standard wellbeing questions developed by the Office for National Statistics (ONS) for the Measuring National Well-being Programme which aims to produce accepted and trusted measures on wellbeing in the UK. See here for further information: http://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing

2.8 Housing and health: Private rented sector and coastal communities

Housing, especially poor quality private rented housing and other accommodation including caravans, is a key issue for coastal communities. The House of Lords Select Committee on Seaside Towns[1], along with multiple conversations with Directors of Public Health and council officials in coastal communities, have highlighted the important role of poor quality and multi-occupancy accommodation in contributing to adverse health outcomes. ONS found minimal housing data available at small area geography and were unable to capture data on Houses in Multiple Occupation (HMOs) in their coastal analysis. Given the concerns raised by Directors of Public Health and local leaders, the following section covers the private rented sector in further detail, including a case study by Blackpool Council.

Background

Good quality housing can contribute to better health - the converse is also true. The private rented sector has undergone significant growth in the past decade. In 2019-20, the private rented sector accounted for 4.4 million or 19% of households in England, double that of the early 2000s. Despite improvement over time, the private rented sector has the highest proportion of less well maintained homes for renters at 23%, while the owner-occupied and social rented sector stood at 16% and 12% respectively[2].

The housing stock in many coastal areas has some specific features in common, which can attract people with heath needs to move to the coast. This leads to concentrations of people with ill-health, and can also contribute directly to ill-health.

Houses in Multiple Occupation (HMOs)

HMOs form part of the private rented sector. They are a common and positive contribution to certain groups such as student accommodation, but can also provide a high-density but low quality housing stock. This second group is often found in coastal towns. The definition of an HMO is set out in the Housing Act 2004[3]. To rent a property as an HMO, a licence is required from the local authority. Mandatory licensing applies to properties with five or more people from two or more households who share facilities, such as a kitchen and bathroom. Local authorities, however, can introduce additional measures which require HMOs of three or more to also be licensed. It is the responsibility of the landlord to apply for a licence and to meet the minimum physical standards required. Based on local authority returns to MHCLG (2019/20), there are 510,277 estimated total HMOs, a number which has been increasing over time. 134,353

HMOs are mandatory licensable of which 59,591 are unlicensed[4]. Granular data below local authority level on the location of these HMOs is not readily available nationally, however local authorities collect this data for licensed HMOs.

Relatively little is systematically recorded about HMOs in coastal communities, although there is recognition that they are common, and existing research has typically focussed on HMOs in inner cities and university towns. Coastal HMOs (although not homogenous) are often converted guesthouses or previous tourist accommodation, which provide cheap, but often poor-quality accommodation[,4,5]. They are not commonly built for multiple occupation, and the risk of overcrowding and fire can be greater than with other types of accommodation[4]. They tend to be highly concentrated geographically, and aim to appeal to those who need the lowest possible rent.

The House of Lords Select Committee on Seaside Towns describes well the disproportionally high levels of poor-quality HMOs as a key issue in their 2019 report. Their main findings include challenges relating to; population transience; quality of local housing stock; the impact on local housing market values; and local authorities lacking the powers and resources to tackle the problem. The report highlights that the availability of affordable but low-quality accommodation draws a vulnerable, transient population, often with multiple and complex needs to coastal areas. This high concentration of people with health needs in turn places additional pressure on local services and the constant churn can have an impact on community cohesion and support mechanisms[1]. This migratory phenomenon is supported in the literature with evidence suggesting that the housing patterns in coastal resorts may draw in benefit claimants from neighbouring areas and elsewhere[6].

The evidence also suggests that affordable housing and the willingness of landlords to accept multiple tenants on housing and incapacity benefit are key factors in the initial migration of a high concentration of vulnerable/benefit-claiming populations into seaside towns[7]. Building on this, it was found that HMOs provide a higher percentage of housing in coastal communities in comparison to other inland areas (apart from student accommodation in university towns) and are a key factor in the concentration of deprived social groups and ongoing socioeconomic decline in some coastal towns. This can lead to exclusion from the labour market with the clustering of some of the most deprived groups into neighbourhoods where there is minimal economic investment and isolation from higher education and larger centres of employment[8].

Housing is a critical factor that can exacerbate multiple and complex needs[9]. HMOs alone, however, are not deterministic of poor outcomes and recent research suggests that some residents suggested that it was possible for new arrivals attracted by cheap housing to have positive experiences and rebuild their lives when appropriate support is provided[9]. Good property management can

also reduce the potential harmful effects of living in an HMO, and in addition to regulation and enforcement, appropriate support for tenants with multiple and complex needs can have a positive impact[9].

The expansion of the HMO sector has also raised concerns that it encourages a significant minority of landlords who exploit vulnerable tenants and manage substandard accommodation[6]. The House of Lords Select Committee concluded that *"there are perverse incentives on private landlords to populate the local housing stock; but also, a complete lack of incentives for either private landlords to make improvements to their properties, or for local investors to intervene and undertake housing redevelopment".* The report highlighted several areas for urgent action to tackle perverse incentives and support local authorities to tackle sub-standard accommodation. This, amongst others, included linking the payment of housing benefit/universal credit to the achievement of minimum condition. Changing the current model would be likely to have health benefits.

Caravans

Local leaders also raise concerns for the health outcomes of populations living in caravans. Caravan parks along the coastline are common and for some residents, despite the restrictions on year-round living, it is their primary accommodation. The East Lindsey coastline in Lincolnshire, for instance, is home to more than 200 caravan sites and around 25,000 static caravans, and it is estimated that there are around 3,500 households (6,600 people) who live for some or all of the year in caravans or chalets[10].

This population is often under identified as they are less likely to be registered with a GP or be represented in the Census[10,11,12]. This has implications for funding formulas and service delivery. Very little is known about this population however there is evidence to suggest the population are often older and have worse health and limiting long-term illness compared with regional and national data[10,12,]. There is also evidence, however, to suggest that for many living in a caravan or chalet is a positive experience and that this decision was made due to their preference for the lifestyle and the local environment[10]. Fundamentally, the scale, health needs and challenges of this population are relatively unknown.

Overall, there is a lack of research and data analysis on housing, specifically the private rental sector including HMOs (but also other accommodation such as caravans) in coastal communities, although Directors of Public Health are clear that they contribute to the health problems of coastal communities. The public health impact of poor housing and the link between housing and health outcomes (including mental health) is well established and coastal communities have specific challenges in relation to housing that require further exploration. The following case study focuses on the challenges faced by Blackpool council and public health team.

Written by Dr Bethan Loveless – Public Health Registrar
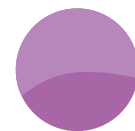
Case study - Poor quality private rented housing, health and deprivation in inner Blackpool

Private rented housing and health outcomes

Blackpool, as detailed elsewhere in this report, has a rich history as one of Britain's most famous seaside town. It continues to attract some 18 million visitors a year, and tourism remains the heartbeat of this vibrant resort. However, inner Blackpool is the single most deprived local area in England, to include the lowest life expectancy in the country. Indeed, for male life expectancy, four of Blackpool's inner wards are amongst the worst fifteen nationwide, with male life expectancy as low as 66.6 years. In these inner areas, rates of death from respiratory and circulatory disease are some of the highest in England - over two- and three-times England averages respectively. Six of Blackpool's inner wards are amongst the top fifteen wards nationally for hospital admission as a result of alcohol-related harm.

Failed private sector housing plays a crucial role in the continual reproduction of such poor outcomes. This can be witnessed in many coastal towns and cities but finds its single largest expression in inner Blackpool.

Like many coastal towns, Blackpool has a core of accommodation built with little by the way of supporting community infrastructure, given it was established to serve a visiting rather than residential population. The town subsequently experienced a decline in the number of longer staying visitors (five days or more) from the later twentieth century. This contraction in the number of staying visitors has led to a reduction in the need for traditional bed and breakfast accommodation. Over successive decades, thousands of former bed and breakfasts and other properties have been turned into the next viable business model of poor quality private rented accommodation, typically houses in multiple occupation (HMOs).

In inner Blackpool, over 50% of all properties are now poor quality privately rented, with the area dominated by small flats and bedsits in former guest houses. These small flats and bedsits by the sea attract typically vulnerable new residents from across the country; around 8,000 people migrate into Blackpool every year, and they are consistently in worse health than the wider population. Over 80% of private rented tenants in this area receive housing subsidy (HB/UC) and 40% of landlords receive rent directly because of tenants' vulnerability. "Market" rents are therefore inappropriately and unintentionally set around Local Housing Allowance (LHA) levels to reflect tenants' benefits entitlement. The ready supply of tens of millions of pounds of public subsidy per year is the source of high yields for landlords in this lucrative market.
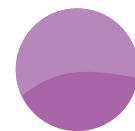
In inner Blackpool there is no discernible link between housing subsidy and the size or quality of the accommodation other than the number of bedrooms. This system therefore creates perverse incentives for landlords to pack as many small units into their properties as possible. The outcome of this is that inner Blackpool now houses the single most vulnerable population in the country in the most inappropriate accommodation, compounding disadvantage. This population commonly have multiple and complex health needs. The continued expansion of unregulated supported housing is serving to further intensify these dangerous dynamics, with landlords targeting and drawing in individuals with complex needs, thereby extracting inflated levels of housing benefit, alongside sustaining artificially high capital values that are frequently sold on to remote investors.

The consequences of this cycle of decline, and the role of private rented housing, are undeniable. In fact, Dr Arif Rajpura, Director of Public Health, focused his 10th annual report on the relationship between failed housing in inner Blackpool and extremely poor health outcomes. This report mapped the tight relationship between poor quality private rented housing and low life expectancy. The analysis clearly demonstrated that Blackpool's low life expectancy statistics are driven by people dying young in the failing private rented housing of inner Blackpool, and that most premature mortality occurs in groups that have been drawn in from across the country.

Approximate location of HMOs
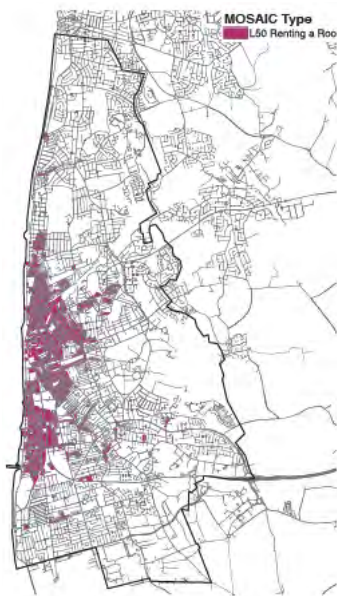
Source: Blackpool Public Health Annual Report 2017

Male Life Expectancy
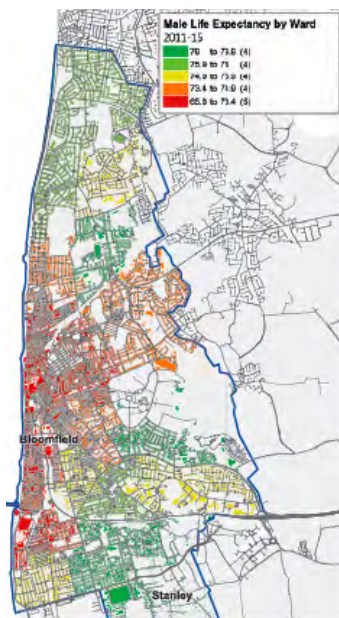
Source: Public Health England Local Health

Existing interventions

Blackpool Council continues to exhaust all available means to intervene in the housing market in inner Blackpool. For example, the Council regulates and enforces against statutory minimum housing standards as far as the law will permit. Over many years the Council has used mandatory, additional and selective licensing across the inner area, targeting the poorest private rented housing stock. These licensing regimes typically involve a detailed approval process from central Government and have enabled the Council to enter and inspect thousands of homes, and enforce against statutory minimum housing standards via the Housing, Health and Safety Rating System (HHSRS). The HHSRS is a risk-based evaluation tool to help local authorities identify and protect against potential risks and hazards to health and safety from any deficiencies identified in dwellings. It was introduced under the Housing Act 2004 and applies to residential properties in England and Wales. This assessment method focuses on the hazards that are present in housing. Through use of the HHSRS as part of licensing and enforcement activity, the Council has issued hundreds of improvement notices, and has successfully prosecuted a number of Landlords for letting very poor quality, hazardous accommodation. The ability to enter homes has also enabled the Council to link up vulnerable tenants with other support services.

Unfortunately, licensing and enforcement measures, whilst valuable, are not a tool for driving strategic change or indeed transforming health outcomes. Licensing and enforcement has enabled the Council to tackle some of the worst excesses within the private rented market, but it has not led to the kind of changes required to reverse the fundamental dynamics that continue to drive the intensification of deprivation in this stock in inner Blackpool.

The Council has long recognised that positive change will require a fundamental shift in the type and quality of properties that currently dominate the inner areas. Intervention in this market is very difficult and expensive, as property values (especially HMOs) are driven by the rental yields on offer, funded almost exclusively by public subsidy. However, Blackpool Council has utilised the full breadth of its powers and borrowing capacity to develop a unique intervention model; a model that has gone on to win national recognition. The Council formed Blackpool Housing Company Ltd as a wholly owned private housing company in 2016 operating with the brand My Blackpool Home (MBH). The company's mission is to acquire, remodel and manage problematic property in inner Blackpool, creating quality, affordable new homes for rent. To date, MBH has now created over 500 quality new homes out of failed B&Bs, HMOs and private rented accommodation. This intervention has been made possible via £70m of investment from the Council, and MBH is on track to deliver approximately 1,000 quality new homes in inner Blackpool by 2025/6. Within the last year, the Council has worked with MBH to establish a subsidiary registered provider

– Lumen Housing Ltd. This subsidiary is now accessing Homes England's
Affordable Housing Programme to support investment in the creation of further
quality housing.

MBH is setting a new bar in inner Blackpool's failed market. It has enabled
hundreds of individuals and families to rent a well-managed, affordable property,
put down roots, stabilise lives and improve outcomes. The Council is rightly
proud of what has been achieved. Nevertheless, such is the scale of private
sector housing failure in inner Blackpool, MBH is only able to acquire and
remodel a small minority of the poor private rented housing stock. Transformation
of housing quality – and wider health and socioeconomic outcomes in inner
Blackpool – therefore requires national, as well as local action.

Changes for a better future

Delivery of significantly better health outcomes in inner Blackpool is predicated
in large part on the ability to intervene at scale in a chronically failed housing
market. The many thousands of vulnerable people that populate inner Blackpool
need to be provided with a housing solution and wider community that acts as
a platform for the improvement of their lives, not the opposite. Public policy and
resource needs to be recast to aggressively incentivise the wholesale remodelling
of failed private rented sector property, in particular HMOs, and also enable the
clearance of some legacy property that is now obsolete or cannot be adapted.

Over recent decades Blackpool Council has explored a number of potential
routes to reform with central government departments (DWP, MHCLG). The
purpose of reform would be to remove the existing perverse incentives that drive
failure, and lead to the creation of a more balanced market that can support the
improvement we seek in health and other outcomes.

As an example, the Council has proposed that localised Local Housing
Allowance (LHA) rates are introduced that link directly to the standard of
accommodation, offering lower payments than current rates for small and low
quality flats and higher payments for larger and better quality homes. The Council
has also argued for the adoption of far tougher, localised standards in the private
rented sector, recognising that special measures are needed to attack the extent
of failure in inner Blackpool. In recent years, Blackpool Council has worked with
MHCLG and DWP to explore how the payment of housing subsidy could be
made conditional on proof that **minimum statutory standards** (as defined in the
HHSRS) had been met.

As yet, none of the above proposals have migrated into a deliverable change, as
each would be likely to require a variation to national policy and require primary
legislation. Furthermore, Blackpool recognises that any solution needs to be
applicable in other deprived towns and cities with poor quality private rented
housing, often found in other coastal communities.

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Contributors: Arif Rajpura, Stephen Boydell, Vikki Piper, John Donnellon, David Galvin

References

1   House of Lords Select Committee on Regenerating Seaside Towns and Communities (2019). The Future of Seaside Towns. Available at: https://publications.parliament.uk/pa/ld201719/ldselect/ldseaside/320/32002.htm

2   Ministry of Housing, Communities and Local Government (2020). English Housing Survey 2019-2020. Available at: https://www.gov.uk/government/statistics/english-housing-survey-2019-to-2020-headline-report

3   Housing Act 2004 https://www.legislation.gov.uk/ukpga/2004/34/part/2

4   Ministry of Housing, Communities and Local Government. Local Authority Housing Statistics data for returns for 2019 to 2020. https://www.gov.uk/government/statistical-data-sets/local-authority-housing-statistics-data-returns-for-2019-to-2020

5   Coastal Community Alliance (2018). Policy Strategy. Available at: https://www.coastalcommunities.co.uk/wp-content/uploads/2018/05/national-coastal-story-and-lobbying-final-april-2018-1.pdf

6   Beatty, C and Fothergill, S (2003) The seaside economy: Final report of the seaside towns research project. Centre for Regional Economic and Social Research. Sheffield Hallam University. Available at: https://www4.shu.ac.uk/research/cresr/sites/shu.ac.uk/files/seaside-economy.pdf

7   Ward, K. (2015). Geographies of exclusion: seaside towns and houses in multiple occupancy. Journal of Rural Studies, 37(1), 98-107. Available at: https://www.sciencedirect.com/science/article/abs/pii/S0743016714001090

8   Smith, D. (2012). The social and economic consequences of housing in multiple occupation (HMO) in UK coastal towns: geographies of segregation. Transactions of the Institute of British Geographers, 37, 3,461–76. Available at: https://www.jstor.org/stable/41678645?seq=1

9   Iafrati, S. (2021). Supporting Tenants with Multiple and Complex Needs in Houses in Multiple Occupation: The Need to Balance Planning Restrictions and Housing Enforcement with Support. Social Policy and Society, 20(1), 62-73. doi:10.1017/S1474746420000251

10 Beatty, C. Fothergill, S. & Powell, R. Scott, S (2010) The Caravan Communities of the Lincolnshire Coast: A report to East Lindsey DC Sheffield: CRESR, Sheffield Hallam University. Available at: https://www.e-lindsey.gov.uk/media/17891/CD24-The-Caravan-Communities-of-the-Lincs-Coast/pdf/CD24_-_The_Caravan_Communities_of_the_Lincs_Coast.pdf?m=637478750351070000

11 Cave 201 Cave B 2010 Health, well-being and regeneration in coastal resorts in Walton J K and Brown P eds Coastal regeneration in English resorts 2010 Coastal Communities Alliance, East Lindsey 159–74 Available at: https://www.coastalcommunities.co.uk/wp-content/uploads/2015/07/coastal-regeneration-handbook.pdf

12 D Zennor and T Allison (2010) 'Health of caravan park residents: a pilot cross-sectional study in the East Riding of Yorkshire, Health and Place, vol 16, pp 309-314. Available at: https://www.sciencedirect.com/science/article/abs/pii/S1353829209001270?via%3Dihub

Analysis of coastal health outcomes

Plymouth University

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Summary

There has been relatively little research focusing on health and health care in coastal communities. The following chapter is an exploratory analysis comparing coastal and non-coastal areas using Quality Outcome Framework (QOF) data.

The key findings of this chapter suggest that:

- There is a higher burden of disease and health risk factors in coastal areas, including heart disease, diabetes, cancer, mental health and Chronic Obstructive Pulmonary Disease (COPD).

- This difference is partly explained by age and deprivation. However, even after adjusting for these factors (and others including ethnicity), there remains a 'coastal excess' in the prevalence of disease and risk factors.

- There is some evidence of a health service deficit in terms of recorded service standards, cancers indicators and emergency admissions. The cause of this is unclear.

- Standardised Mortality Ratios (SMR) for a range of conditions, including preventable mortality, are significantly higher in coastal areas compared with non-coastal.

- Life expectancy (LE), healthy life expectancy (HLE) and disability free life expectancy (DFLE) are all, on average, significantly lower in coastal areas for both males and females.

- Lower participation in higher education and higher rates of hospital admissions due to health-risking behaviour by children and young people may point to a degree of socio-psychological as well as economic dislocation in coastal communities.

- There is a lack of available small area data for detailed analysis of the health of local communities, both on and beyond the coastal fringe.

The additional burden of ill-health in coastal areas

For most people in England, the coast is a place of leisure and recreation – of beach holidays, lively seaside towns and coastal walks. This, however, can blind us to the social and economic challenges faced by many coastal communities, including a disproportionately high burden of ill-health[1].

Crude burden of disease

The scale and nature of the problem is graphically illustrated by mapping the crude prevalence of Coronary Heart Disease (CHD) (Figure 1)[2]. This reveals a pattern of low rates in London and adjacent counties, with higher rates around much of the coastal periphery, as well as across many northern and western areas. The prevalence of poor health in post-industrialised areas is well recognised, but in coastal areas much less so.

The unusually granular perspective provided by this map has been obtained by attributing GP-level Quality Outcomes Framework (QOF) disease prevalence data to 32,844 Lower Layer Super Output Areas (LSOAs), each containing between 1,000 and 3,000 people[3] (see technical appendix). The key advantage of this approach is the level of granularity. Rather than relying on data at local authority or Clinical Commissioning Group (CCG) level – both of which cover large and diverse populations – LSOA-level data can be used to describe the prevalence of QOF-recorded conditions in local areas, or, when aggregated, in particular types of areas.

Having established which LSOAs should be categorised as 'coastal' (as detailed in the Technical Appendix), the data shows that during the period 2014/15 – 2018/19 there were on average, 59,981 (17.8%) more people on CHD registers in coastal LSOAs than expected, given the overall national prevalence rate of 3.16%.

LSOA-level maps for hypertension, stroke and transient ischemic attack (TIA), heart failure and peripheral arterial disease (PAD) show a similar core/periphery (Figure 2) and, as detailed in Table 1, there are again many more people on GP disease registers in coastal LSOAs than might be expected given national prevalence rates.

Figure 1: Crude GP QOF Prevalence of CHD attributed to LSOAs:
2014/15 – 2018/19

**Prevalence Deciles
(Equal Count)**

Highest (>4.41%)
(4.03% - 4.41%)
(3.76% - 4.03%)
(3.50% - 3.76%)
(3.26% - 3.50%)
(3.02% - 3.26%)
(2.77% - 3.02%)
(2.47% - 2.77%)
(1.47% - 2.47%)
Lowest (<1.47%)

London and Environs
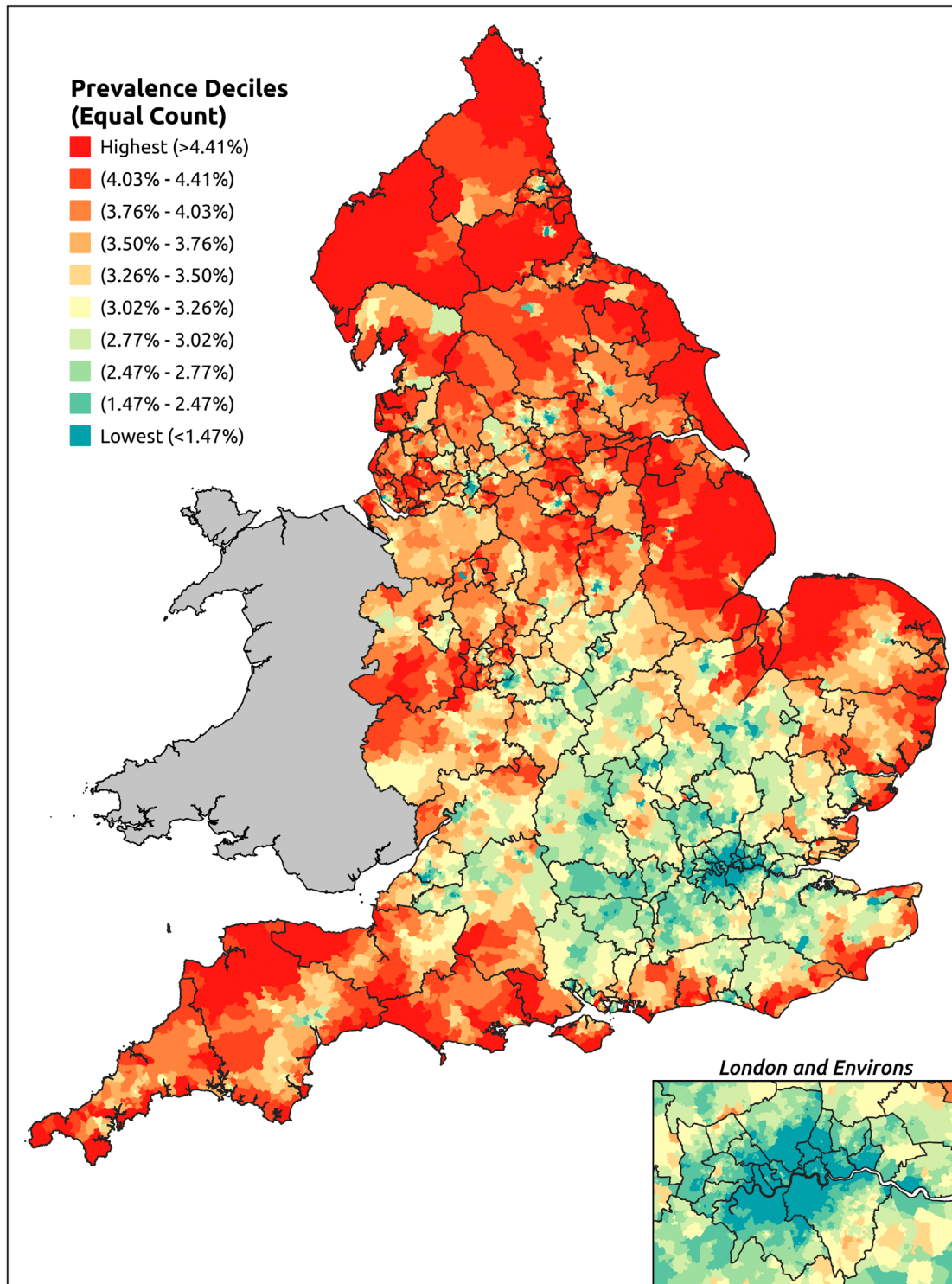
Figure 2: Crude GP QOF prevalence of hypertension & selected CVDs; LSOAs: 2014/15 – 2018/19
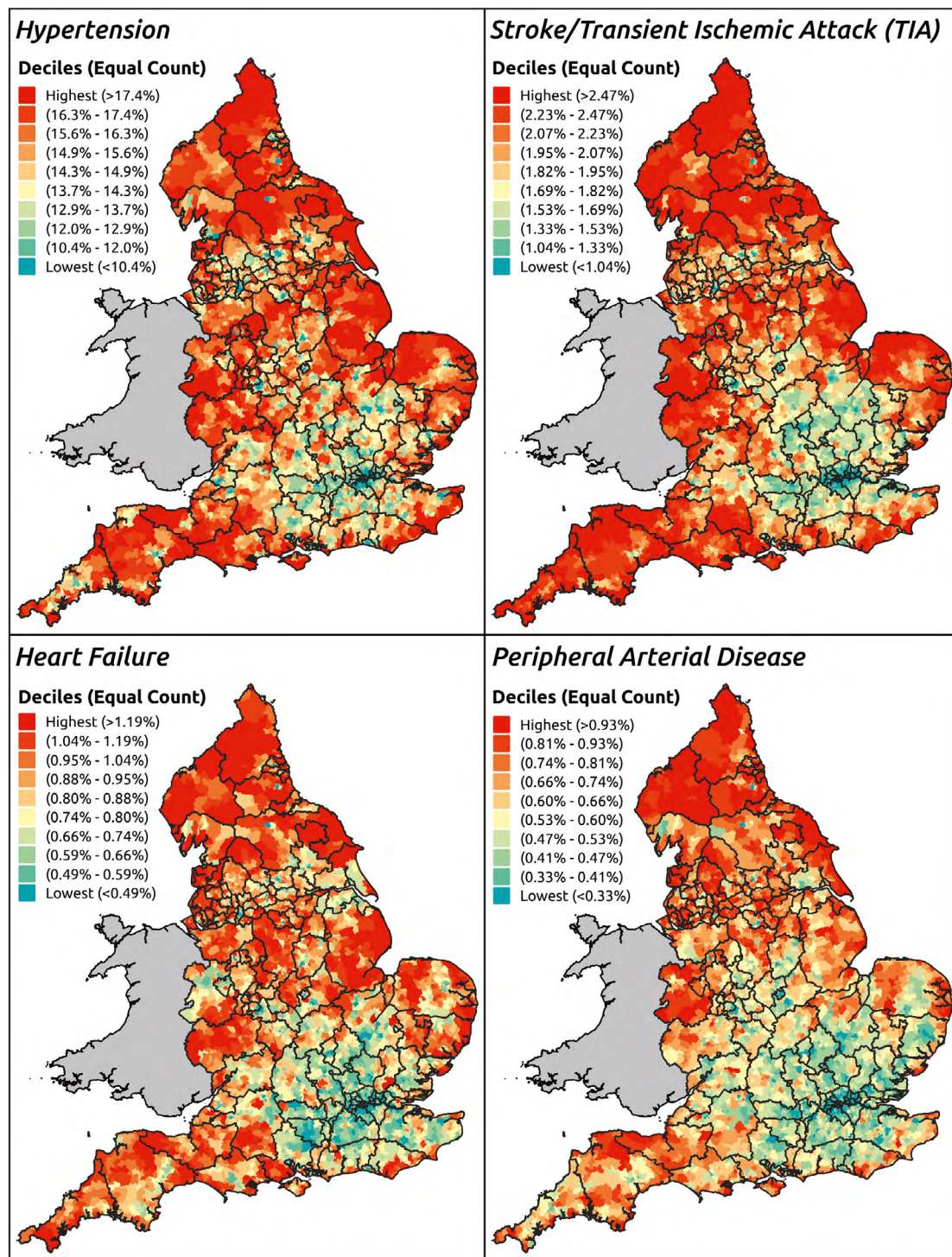
Table 1: Actual, expected & 'additional' patients with CVD in coastal areas: 2014/15 – 2018/19

QOF CVD Condition	National Prevalence Rate	Coastal LSOAs (n=6344)			
		Actual Patients (5 yr average)	Expected patients	'Additional' patients	Coastal Excess
CHD	3.16%	377,048	320,067	56,981	17.8%
Hypertension	13.87%	1,531,661	1,403,129	128,532	9.16%
PAD	0.60%	76,688	61,795	14,893	24.1%
Stroke/TIA	1.75%	209,176	177,337	31,839	18.0%
Heart Failure	0.81%	96,981	81,925	15,056	18.4%

Adjusting for demography and deprivation

This 'coastal excess' largely reflects that coastal populations tend to be both older and more deprived than non-coastal populations. As illustrated in Figure 3, 16.6% of coastal residents live in one of the 10% most deprived LSOAs in the country; compared with 8.4% of non-coastal residents. At the other end of the scale, 5.1% of coastal residents live in one of the least deprived LSOAs, compared with 10.6% of people living in non-coastal areas.

Figure 3: Deprivation and Demography: Coastal versus non-coastal LSOAs
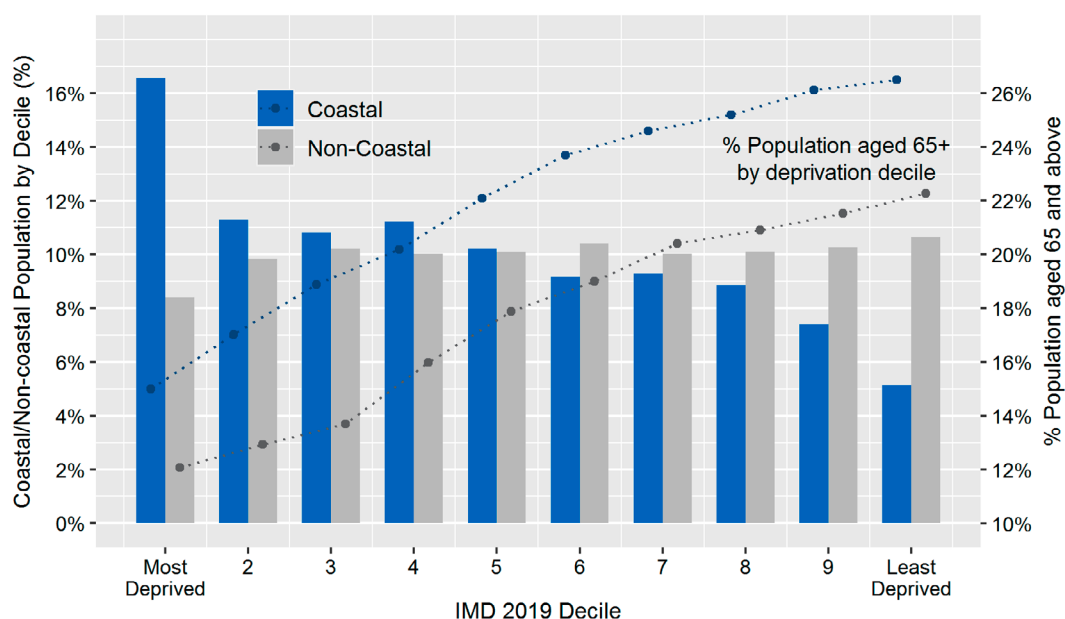
With both age and deprivation associated with an increased risk of disease, the higher prevalence of CHD and other cardiovascular diseases in coastal communities is expected. However, age and deprivation do not fully account for this difference.

To demonstrate this, a heatmap of the prevalence of CHD in coastal and non-coastal areas can be drawn (Figure 4). All 32,844 LSOAs have been assigned to 'Demography Deciles' (Decile 1 = the 10% of LSOAs with the highest proportion aged 65 and above[4]) and 'Deprivation Deciles' (Decile 1 = the 10% of LSOAs with the highest Index of Multiple Deprivation 2019 (IMD2019) scores[5]).

As expected, prevalence rates tend to be highest in older, more deprived LSOAs (the top left-hand quadrant of each heatmap) and lowest in younger, less deprived LSOAs (the bottom right-hand quadrant). However, rates are higher in coastal LSOAs than in equivalent non-coastal LSOAs.

Figure 4: CHD prevalence rates in coastal and non-coastal LSOAs by deprivation and demography decile.

CHD Prevalence Rates in Coastal LSOAs by Deprivation and Demography

Demography Deciles (%65plus)

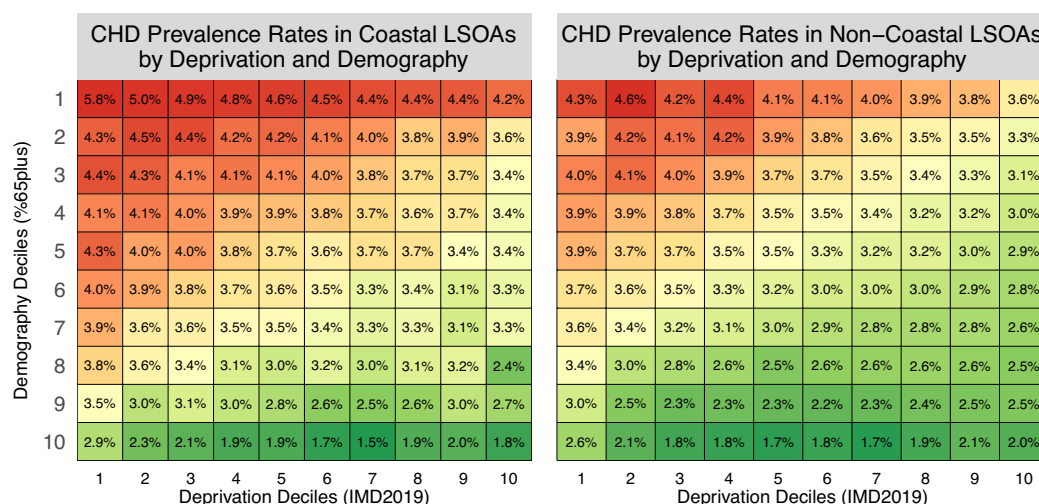|	1	2	3	4	5	6	7	8	9	10
1	5.8%	5.0%	4.9%	4.8%	4.6%	4.5%	4.4%	4.4%	4.4%	4.2%
2	4.3%	4.5%	4.4%	4.2%	4.2%	4.1%	4.0%	3.8%	3.9%	3.6%
3	4.4%	4.3%	4.1%	4.1%	4.1%	4.0%	3.8%	3.7%	3.7%	3.4%
4	4.1%	4.1%	4.0%	3.9%	3.9%	3.8%	3.7%	3.6%	3.7%	3.4%
5	4.3%	4.0%	4.0%	3.8%	3.7%	3.6%	3.7%	3.7%	3.4%	3.4%
6	4.0%	3.9%	3.8%	3.7%	3.6%	3.5%	3.3%	3.4%	3.1%	3.3%
7	3.9%	3.6%	3.6%	3.5%	3.5%	3.4%	3.3%	3.3%	3.1%	3.3%
8	3.8%	3.6%	3.4%	3.1%	3.0%	3.2%	3.0%	3.1%	3.2%	2.4%
9	3.5%	3.0%	3.1%	3.0%	2.8%	2.6%	2.5%	2.6%	3.0%	2.7%
10	2.9%	2.3%	2.1%	1.9%	1.9%	1.7%	1.5%	1.9%	2.0%	1.8%

Deprivation Deciles (IMD2019)

CHD Prevalence Rates in Non–Coastal LSOAs by Deprivation and Demography

	1	2	3	4	5	6	7	8	9	10
1	4.3%	4.6%	4.2%	4.4%	4.1%	4.1%	4.0%	3.9%	3.8%	3.6%
2	3.9%	4.2%	4.1%	4.2%	3.9%	3.8%	3.6%	3.5%	3.5%	3.3%
3	4.0%	4.1%	4.0%	3.9%	3.7%	3.7%	3.5%	3.4%	3.3%	3.1%
4	3.9%	3.9%	3.8%	3.7%	3.5%	3.5%	3.4%	3.2%	3.2%	3.0%
5	3.9%	3.7%	3.7%	3.5%	3.5%	3.3%	3.2%	3.2%	3.0%	2.9%
6	3.7%	3.6%	3.5%	3.3%	3.2%	3.0%	3.0%	3.0%	2.9%	2.8%
7	3.6%	3.4%	3.2%	3.1%	3.0%	2.9%	2.8%	2.8%	2.8%	2.6%
8	3.4%	3.0%	2.8%	2.6%	2.5%	2.6%	2.6%	2.6%	2.6%	2.5%
9	3.0%	2.5%	2.3%	2.3%	2.3%	2.2%	2.3%	2.4%	2.5%	2.5%
10	2.6%	2.1%	1.8%	1.8%	1.7%	1.8%	1.7%	1.9%	2.1%	2.0%

Deprivation Deciles (IMD2019)

For some conditions, rates respond primarily to demography (e.g. Stroke/TIA and Hypertension), whilst for others there is a stronger deprivation gradient (e.g. diabetes and smoking) but, for all conditions other than diabetes, rates in coastal LSOAs tend to be higher than in equivalent non-coastal LSOAs (see technical appendix for heatmaps of each condition).

Interestingly, for all conditions other than diabetes and mental health, the **difference** in prevalence rates between coastal and non-coastal areas tends to be highest where populations are both **relatively** young (deciles 7-9) and **relatively** deprived (deciles 2-6). The reasons for this are unclear. This can again be demonstrated visually through heat maps. The 'green-yellow-red' colour ramp

in Figure 5 denotes low-to-high differences between coastal and non-coastal prevalence rates, with light blue denoting where rates are actually higher in non-coastal LSOAs.

Figure 5: Relative *difference* between prevalence rates coastal and non-coastal LSOAs by demographic and IMD2019 deprivation deciles
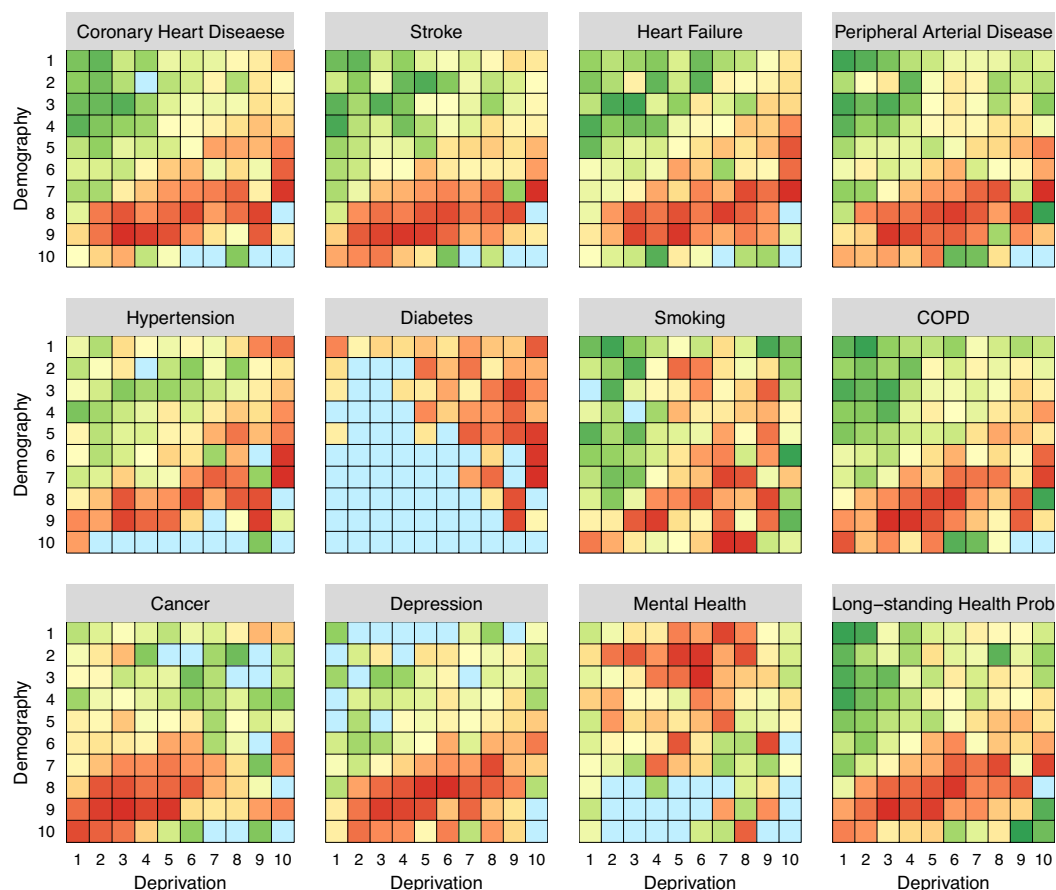
Mental health rates are higher in coastal LSOAs, however the difference is greatest in LSOAs with older populations. Diabetes, on the other hand, tends to be more prevalent in non-coastal LSOAs than equivalent coastal LSOAs. This could be for a number of reasons including that coastal areas have a far lower proportion of people of Indian, Pakistani and Bangladeshi ancestry (1.6%) than non-coastal areas (7.0%)[6]. People of South Asian ancestry are between two- and six-times more likely to develop Type 2 diabetes than those with European ancestry[7]. The difference in coastal and non-coastal prevalence, is even more marked (2.1% as opposed to 13.1%) where diabetes tends to be more prevalent (deprivation deciles 1 and 2).

In summary, Table 2 describes that after adjusting for age and deprivation for all conditions and risk factors (apart from diabetes), there are more cases in coastal areas. There therefore remains an overall 'coastal excess'.

Table 2: Actual, expected & 'additional' patients in coastal areas, adjusting for demography and deprivation: 2014/15 – 2018/19

QOF CVD Condition	National Prevalence Rate	Coastal LSOAs (n=6344)			
		Actual Patients (5 yr average)	Expected patients	'Additional' patients	Coastal Excess
CHD	3.16%	377,048	320,067	56,981	17.8%
Hypertension	13.87%	1,531,661	1,403,129	128,532	9.16%
PAD	0.60%	76,688	61,795	14,893	24.1%
Stroke/TIA	1.75%	209,176	177,337	31,839	18.0%
Heart Failure	0.81%	96,981	81,925	15,056	18.4%
Diabetes	6.66%	561,339	573,470	-12,131	-2.12%
Smoking	17.51%	1,645,610	1,542,141	103,469	6.71%
COPD	1.87%	242,297	212,203	30,094	14.18%
Cancer	2.61%	295,673	277,905	17,768	6.39%
Depression	9.10%	816,112	774,552	41,559	5.37%
Mental Health	0.92%	100,808	94,550	6,257	6.62%
Long-standing Health Problem†	52.73%	78,392	75,585	2,807	3.71%
Obesity	9.75%	877,574	861,581	15,992	1.86%
Chronic Kidney Disease	4.11%	398,933	362,822	36,111	9.95%
Atrial Fibrillation	1.82%	219,073	198,711	20,362	10.25%
Dementia	0.76%	90,028	82,740	7,288	8.81%

QOF CVD Condition	National Prevalence Rate	Coastal LSOAs (n=6344)			
		Actual Patients (5 yr average)	Expected patients	'Additional' patients	Coastal Excess
Asthma	5.97%	619,021	607,549	11,472	1.89%
Epilepsy	0.80%	72,541	67,515	5,026	7.45%
Learning Disability	0.47%	53,215	49,952	3,262	6.53%
Rheumatoid Arthritis	0.74%	66,386	64,175	2,212	3.45%

†Self-reported long-standing health problems from GP Survey data. Numbers refer to number of survey respondents, weighted to reduce the impact of non-response bias[8]

Controlling for additional factors

The additional burden of ill-health is not necessarily due to factors specifically associated with living in coastal communities. As demonstrated by the likely influence of ethnicity on diabetes, other factors clearly play a role. Describing the socio-demographic characteristics of LSOAs in terms of the proportion of people aged 65+ and IMD2019 scores may not fully capture the impact of demographic and socio-economic factors. The IMD2019 is particularly problematic as it is a weighted index incorporating a range of socio-economic characteristics. It is widely used in public health, but may not be particularly useful in this context.

It is therefore necessary, as detailed in the Technical Appendix, to construct condition-specific models predicting LSOA-level variations in the number of patients on QOF disease registers. The models include six of the seven IMD2019 domains (the health domain was excluded as it is based on various measures of morbidity and mortality), the proportion of people in each non-white ethnic category (Asian, Black, Mixed and Other), the proportion of people aged 65 and over and, to capture additional socio-economic characteristics of local areas, the ONS's Residential Classification of LSOAs.[9] By also including location (i.e. whether coastal or non-coastal) as a categorical variable, it is possible to quantify the extent to which, having accounted for all other factors in the condition-specific models, populations in coastal areas experience higher or lower disease prevalence rates. These 'coastal effects', with their 95% Confidence Intervals, are plotted in Figure 6.

Our analysis is exploratory, and the inclusion of additional variables may affect the model, however the findings suggest that coastal communities experience a higher burden of disease after adjusting for the included variables. For COPD

and mental health, for instance, prevalence rates are respectively 10.7% (95%CI: 10.0% - 11.4%) and 10.9% (95%CI: 10.0% - 11.7%) higher in coastal than non-coastal communities. Indeed, once the effect of ethnicity has been accounted for, there is even a small 'coastal effect' with respect to diabetes. Only for asthma does there appear to be a negative effect, and this is not statistically significant.

Figure 6: Estimates of the 'coastal effect' on the number of patients on selected GP disease registers: 2014/15 – 2018/19
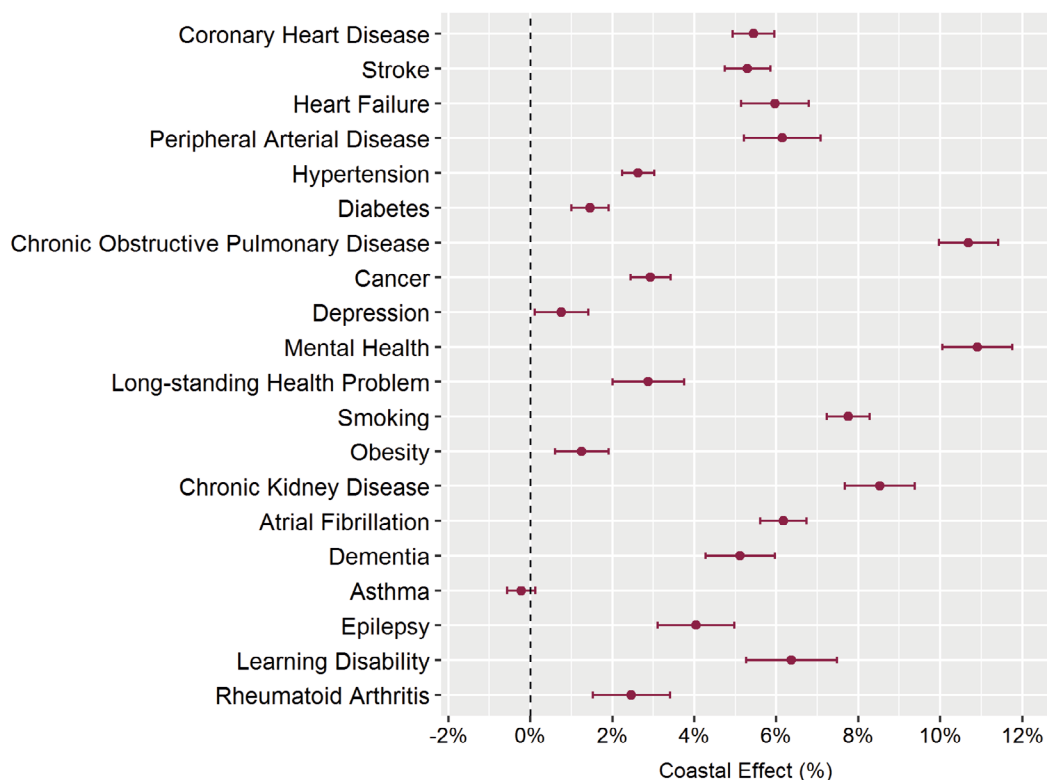
This widespread and statistically significant 'coastal effect' suggests that living on the coastal fringe is associated with an increased risk of ill-health, over and above that which can be explained by demography, ethnicity and socio-economic deprivation (based on IMD2019 and ONS residential categories). Disease prevalence data is, however, drawn from GP registers and, as such, it is important to consider the possibility that they reflect differences in case finding/recording rather than variations in the underlying burden of ill-health. Whilst this is possible, and further research is clearly necessary, we are unaware of any evidence of a coastal bias in case finding. The following section will consider service standards, cancer indicators and emergency admissions to further explore this possibility.

Primary health care in coastal areas

Service standards (QOF-recorded recommended treatments)

The QOF dataset also includes data on the extent to which GPs meet a variety of service standards,[10] often based on National Institute for Clinical Excellence (NICE) guidelines[11]. Attributing these data to LSOA populations suggests lower recorded recommended treatment rates in coastal areas for a range of key indicators. For instance, in coastal areas 64.9% of new hypertension patients with a cardiovascular risk assessment >=20% receive the recommended treatment with statins, compared with 66.9% of patients in non-coastal areas. Similarly, 39.9% of Type I diabetes patients in coastal areas received at least eight of NICE's recommended care processes, compared with 40.8% of patients in non-coastal areas.

These 'recommended treatment rates' are only marginally lower in coastal areas (2.9% and 2.3% respectively), but are statistically significant. There are similar findings of lower rates for a) the proportion of newly diagnosed patients with depression or cancer who are reviewed by their GP within the recommended time period; b) the proportion diagnosed with atrial fibrillation who receive the recommended stroke risk assessment protocol, and c) the proportion who then appropriately receive anti-coagulation therapy (Table 3).

Table 3: Coastal and non-coastal use of QOF-recorded recommended treatments

QOF-recorded treatment	Coastal	Non-coastal	Coastal relative to non-coastal[†]	
	Mean	**Mean**	**% Point difference**	**Percentage difference**
Appropriate statins treatment	64.9%	66.9%	-2.0%	-2.9%
Diabetes 8+ care processes	39.9%	40.8%	-1.0%	-2.3%
Depression review (10-56 days)	64.0%	65.0%	-1.0%	-1.5%
Cancer review (6 months)	70.5%	72.1%	-1.6%	-2.2%
AF stroke risk assessment	93.5%	94.0%	-0.5%	-0.5%
AF anti-coagulation therapy	81.7%	82.4%	-0.7%	-0.9%

[†]t-test p<.001@ alpha level .05 (two-sided) for all difference of means tests

Cancer indicators

More substantial differences between coastal and non-coastal areas are to be found in Public Health England (PHE) National General Practice Profile data on per capita cancer referrals, presentations, investigative procedures and GP

referral conversion rates[12]. Figure 7 summarises these data, with vertical bars indicating the difference between mean coastal and non-coastal rates expressed as a percent of non-coastal rates (along with confidence intervals).

Figure 7: Differences in the use of investigative procedures, referrals, presentations and cancer conversion rates in coastal and non-coastal LSOAs (as a percent of rates in non-coastal LSOAs)
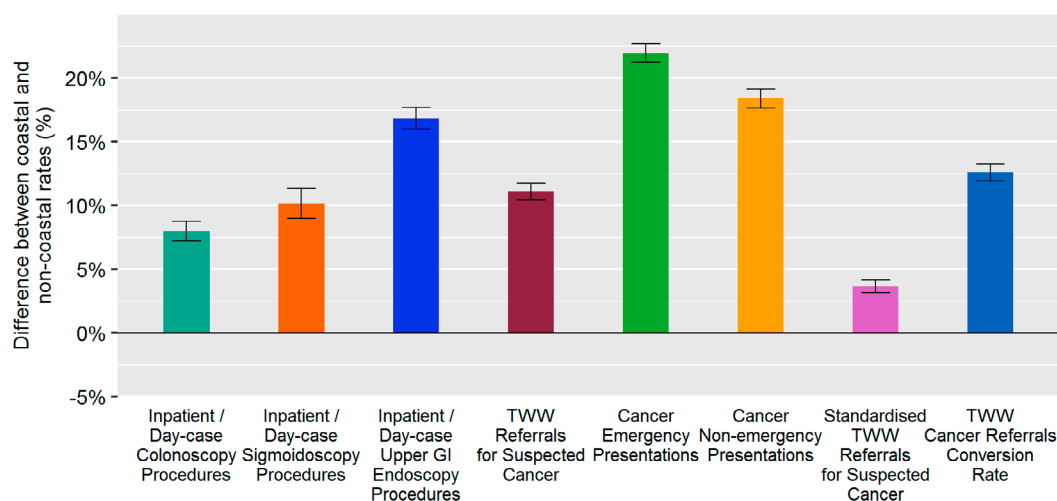
As might be expected given the older age profile of coastal populations, the crude per capita use of colonoscopy, sigmoidoscopy and upper gastrointestinal tract endoscopy procedures is much higher in coastal areas, as are GP 'Two Week Wait' (TWW) referrals for suspected cancer and rates of both emergency and non-emergency cancer presentations.

The higher age-sex standardised TWW referral ratio reflects that, overall, coastal areas tend to be more deprived than other parts of the country. But it is the difference in cancer conversion rates that stands out: 8.40% in coastal areas compared with 7.46% in non-coastal areas.

The significantly higher proportion of TWW cancer referrals that result in a positive diagnosis may be due to late presentation by older more deprived populations, but it is possible that patients in coastal areas face greater barriers to referral and secondary treatment than patients elsewhere in the country. In this respect, it is worth noting that NHS Digital workforce statistics suggest that between 2015 and 2019 there were, on average, 2,127 patients per Full-Time Equivalent GP in coastal areas compared with 2,079 patients per FTE-GP in non-coastal areas, even though coastal populations are both older and more deprived.

Emergency admissions

Middle Layer Super Output Area (MSOA) level age-standardised emergency hospital admission ratios for all causes, as well as those for CHD, stroke, myocardial infarction (MI) and COPD, are all significantly higher in coastal areas (Figure 8). Published by PHE as part of its Local Health collection,[13] emergency admissions are often taken as an indication of the poor management of chronic conditions[14].

Figure 8: Differences in age-standardised emergency admission ratios between coastal and non-coastal populations (as a percent of rates in non-coastal areas)
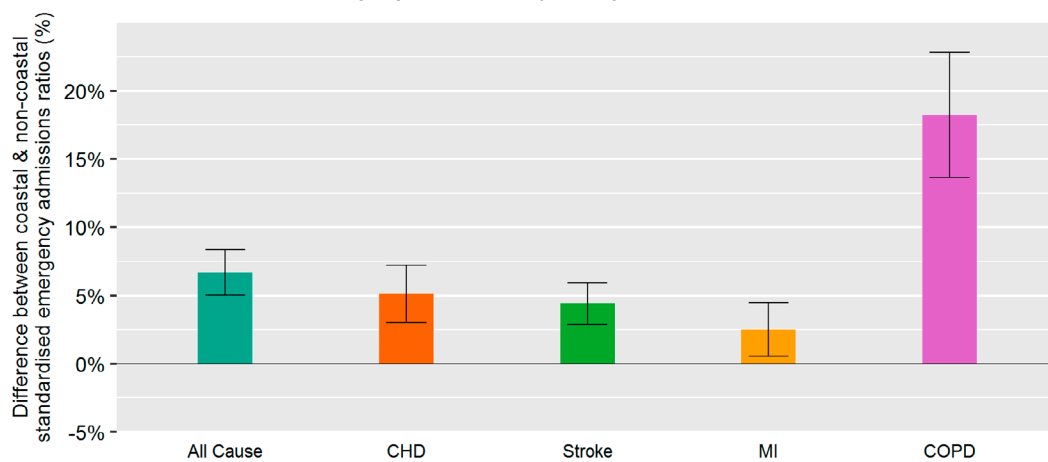
In summary, variations in case-finding cannot be entirely discounted, but it seems most likely that there is both a substantial health service deficit in coastal communities and a small but significant 'coastal effect' which serves to exacerbate the impact of age and deprivation. Such would certainly help explain evidence of relatively high levels of standardised mortality and relatively poor life expectancy in coastal areas.

Standardised Mortality and Life Expectancy in coastal areas

Almost all standardised mortality and life-expectancy data are published at LA- and CCG-level or above[15]. A notable exception is a limited range of MSOA-level included in PHE's Local Health website[16].

Although MSOAs (n=6791) cover larger populations than LSOAs (of between 5,000 and 15,000 people), they are small enough to provide a useful insight into the relative health status of communities in coastal areas. MSOAs have been categorised as coastal if more than 50% of their population live in coastal LSOAs.

Figure 9 illustrates how average standardised mortality ratios (SMRs) for coastal and non-coastal MSOAs compare. To take the example of deaths from all causes (all ages), the average SMR for the 1,280 coastal MSOAs is 109.3, which is 8.8% higher than the average SMR of 100.4 for the 5,511 non-coastal MSOAs (95% confidence interval 7.2% - 10.4%).

Figure 9: Difference between average MSOA-level SMRs in coastal and non-coastal areas as a percent of average SMR for non-coastal MSOAs
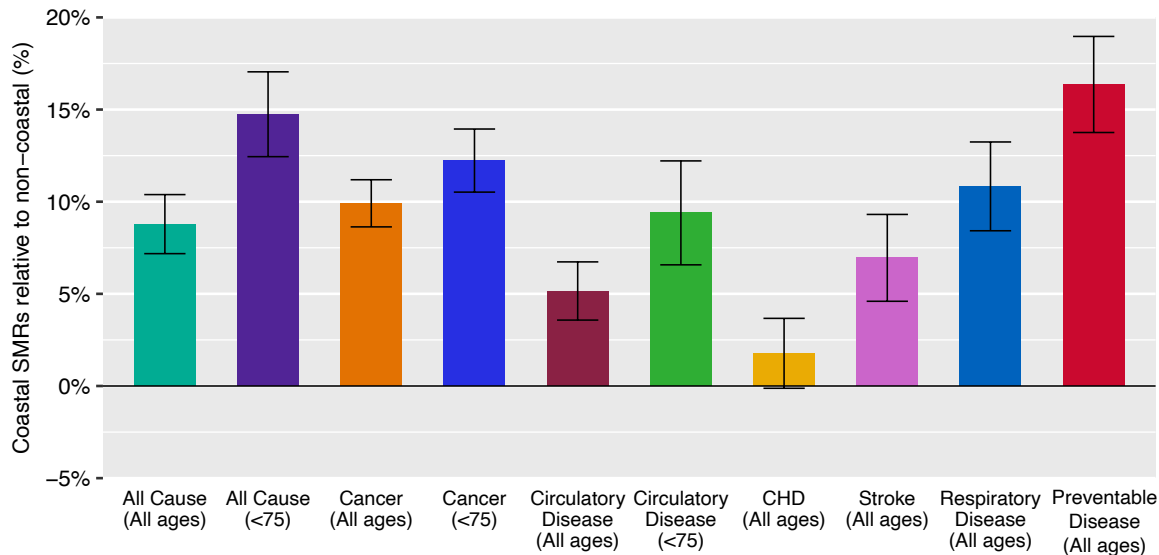

With the exception of CHD, SMRs are significantly higher in coastal areas. Notably, the SMR for preventable mortality (all ages) is much higher in coastal MSOAs (116.9 as opposed to 100.4). This refers to "causes where all or most deaths could potentially be prevented by public health interventions in the broadest sense"[17].

It is worth emphasising that, according to QOF data, a greater proportion of people smoke in coastal areas (19.4% compared to 17.1% in non-coastal areas) and a greater proportion are obese (10.6% compared with 9.6%). There is also evidence (discussed further in the final section below) that health-risking behaviour among young people is also much more common in coastal communities.

Further evidence of a health deficit in coastal areas is provided by MSOA-level life expectancy data. Figure 10 illustrates that the average MSOA-level life expectancy (LE), healthy life expectancy (HLE) and disability-free life expectancy (DFLE) are all, on average, lower in coastal areas for both males and females. These differences are small, but statistically significant (Table 4).

Figure 10: Difference between average MSOA-level Life Expectancy in coastal and non-coastal areas as a percent of average Life Expectancy in non-coastal MSOAs
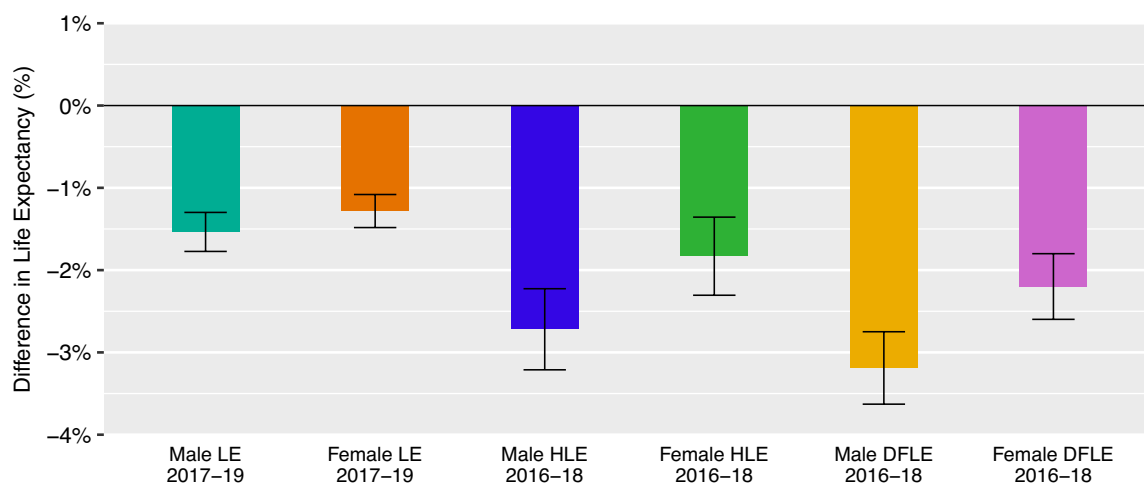
Table 4: Average life expectancy estimates for coastal and non-coastal MSOAs

Life Expectancy Estimates*	Coastal Mean	Non-coastal Mean	Coastal relative to non-coastal[†]	
			Difference (years)	Percentage difference
LE 2017-19 (Males)	78.7	79.9	-1.2	-1.5%
LE 2017-19 (Females)	82.6	83.7	-1.1	-1.3%
HLE 2016-18 (Males)	61.9	63.6	-1.7	-2.7%
HLE 2016-18 (Females)	63.6	64.8	-1.2	-1.8%
DFLE 2016-18 (Males)	62.2	64.3	-2.0	-3.2%
DFLE 2016-18 (Females)	63.6	65.1	-1.4	-2.2%

[†]t-test p<.001@ alpha level .05 (two-sided) for all difference of means tests
*90+ upper age band used for calculation of Life Expectancy; HLE & DFLE based on upper age band 85+

Living on the periphery

There has been limited research on coastal health, other than, perhaps paradoxically, recent public health interest in the positive effects of coastal proximity on health and well-being[18]. However, there are a number of plausible explanations why coastal communities are characterised by poorer than expected health outcomes, even allowing for patterns of deprivation and demography. The first relates to the labour market.

The coastal labour force tends to work in sectors that are relatively low-skilled, low-paid and service-sector oriented. While median gross weekly earnings data published by the Office for National Statistics[19] are based on a small sample and are not considered particularly robust, it is notable that, in 2020, nine of the

13 council areas with the lowest average weekly wages were in coastal areas (Boston, Rother, Blackpool, Great Yarmouth, North Devon, North Norfolk, Torbay, Cornwall, and Kingston upon Hull).

Low pay and low job security reduce access to material resources such as decent housing and healthy food, and increase exposure to occupational hazards[20]. In general terms, these factors are captured by generic measures of deprivation such as the IMD2019, but low job status with less autonomy and income insecurity is itself an important risk factor for chronic psychological distress[21] and the development of a wide range of non-communicable diseases[22]. An additional concern at present is that coastal economies, which rely disproportionately on tourism, have been hard hit by COVID-19.

The adverse socio-psychological factors associated with a limited range of employment opportunities are likely to particularly affect the development of children and young people and may help explain the worrying disparity between coastal and non-coastal areas in terms of hospital admissions due to health-risking behaviour. As illustrated in Figure 11, per capita admissions for self-harm among 10 - 24 year-olds, and due to drug and alcohol misuse among <18 year-olds (the latter using PHE's measure of alcohol-attributable hospital admissions), are substantially higher in coastal areas[23].

Figure 11: Educational capital, health-risking behaviour and progression to higher education
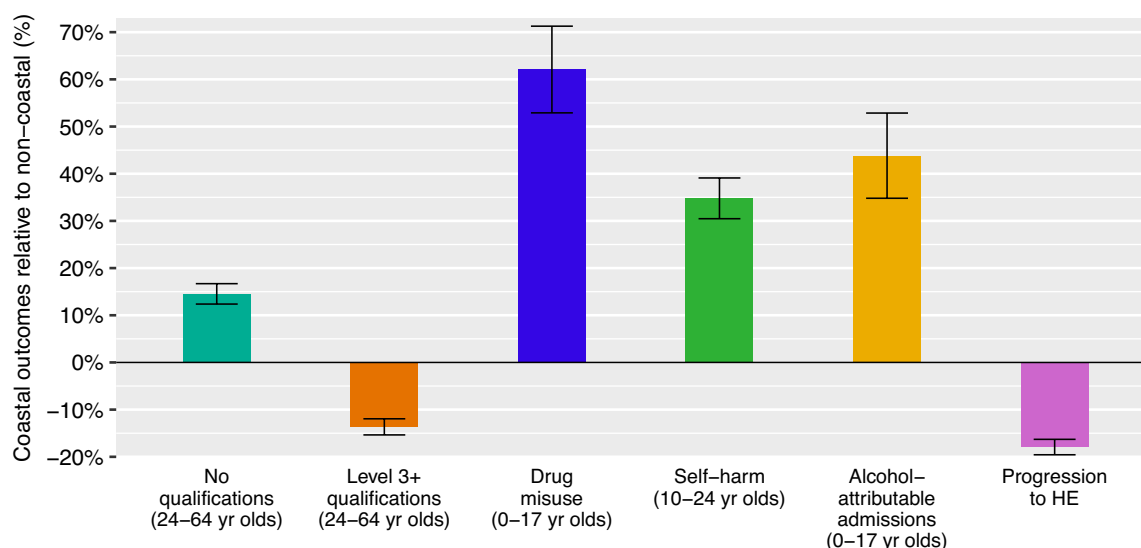
Such negative outcomes are often associated with poor educational performance, but Key Stage 4 data on educational attainment at school[24] suggests that children in coastal authorities perform only slightly less well than elsewhere. There is, however, a marked difference in terms of both the educational capital supporting children and the proportion progressing onto higher education[25].

As illustrated in Figure 11, the 2011 Census shows that coastal populations have a significantly higher proportion of working-age adults without educational qualifications, and a correspondingly lower proportion who achieve at least Level 3 qualifications (two A-levels or equivalent). Educational capital is known to play an important role in determining academic outcomes[26] but, along with exposure to social, economic and cultural opportunities, will also have a broader impact on the aspirations, expectations and attitudes of young people, including those which foster harmful behaviours. The much lower participation of coastal children in higher education is perhaps indicative of the fact that, for many, the full spectrum of career opportunities and the role educational success plays in seizing those opportunities is a rather abstract concept[27]. More generally, this may point to a degree of socio-psychological as well as economic dislocation in many coastal communities.

Summary

Drawing on the relatively limited range of small area data that are available, this exploratory analysis presents compelling evidence that coastal communities experience a significantly higher burden of disease than their non-coastal counterparts.

Age and deprivation are driving factors, and addressing the factors that have led to high levels of deprivation in many coastal communities is an important policy objective, but the analysis also suggests that ill-health is more prevalent in coastal areas than can be explained by socio-economic and demographic factors. This 'excess coastal morbidity' is reflected in adverse standardised morbidity ratios and lower life expectancy, and is associated with a range of health service indicators which appear to lag behind those for non-coastal areas. There are also particularly worrying trends in public health-related outcomes for children and young people. Policy needs to recognise, understand and respond to the particular circumstances that have resulted in this excess coastal morbidity.

Coastal health has received little policy attention and attracted remarkably little research; with existing literature on coastal communities tending to focus on the coastal environment rather than the economic, social, cultural and associated health issues faced by coastal communities. A future emphasis on the collation and publication of local data will help redress this gap in the evidence and allow for a fuller investigation of the health problems faced by peripheral communities, both on and beyond the coastal fringe.

References

1   Sheena Asthana, Alex Gibson, Averting a public health crisis in England's coastal communities: a call for public health research and policy, Journal of Public Health, 2021; fdab130, https://doi.org/10.1093/pubmed/fdab130

2   All maps based on digital boundaries obtained via the ONS Open Geography Portal (https://geoportal.statistics.gov.uk/). Source: Office for National Statistics licensed under the Open Government Licence v.3.0. Contains OS data © Crown copyright and database right [2021]. Specifically: Lower Layer Super Output Areas (December 2011) Boundaries Generalised Clipped (BGC) EW V3. [Online. Accessed 20/02/2021] (https://geoportal.statistics.gov.uk/datasets/ons::lower-layer-super-output-areas-december-2011-boundaries-generalised-clipped-bgc-ew-v3/explore); Clinical Commissioning Groups (April 2020) EN BFC V2. [Online. Accessed 20/02/2021] (https://geoportal.statistics.gov.uk/datasets/clinical-commissioning-groups-april-2020-en-bfc-v2); Countries (December 2011) Boundaries EW BGC. [Online. Accessed 20/02/2021] (https://geoportal.statistics.gov.uk/datasets/countries-december-2011-boundaries-ew-bgc)

3   Office for National Statistics (2021). Census geography: An overview of the various geographies used in the production of statistics collected via the UK census. [Online. Accessed 14/4/2021] https://www.ons.gov.uk/methodology/geography/ukgeographies/censusgeography#super-output-area-soa

4   Office for National Statistics (2020). Lower layer Super Output Area population estimates, Mid-2019: SAPE22DT22. [Online. Accessed 10/11/2020] https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/lowersuperoutputareamidyearpopulationestimates

5   Office for National Statistics (2019) English indices of deprivation 2019. MHCLG. [Online. Accessed 12/12/2020] (https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019)

6   UK Census (2011). KS201EW – Ethnic group (2011 super output areas – lower layer). Nomis. Office for National Statistics. [Online. Accessed 08/10/2020] (https://www.nomisweb.co.uk/census/2011)

7   Wasim Hanif, Radhika Susarla (2018) Diabetes and cardiovascular risk in UK South Asians: an overview. Br J Cardiol 2018;25(suppl 2):S8–S13.doi:10.5837/bjc.2018.s08.

8   NHS (2021). GP Survey Data: Surveys and Reports [Online. Accessed 13/01/2021] (http://www.gp-patient.co.uk/SurveysAndReports); Fingertips API (https://fingertips.phe.org.uk/) used to extract data from Public Health England (2020), National General Practices Profiles. GP patients survey: % with long-standing health condition (weighted). Indicator ID 351.

9   Office for National Statistics (2016). 2011 residential-based area classification. [Online. Accessed 4/12/2020] (https://www.ons.gov.uk/methodology/geography/geographicalproducts/areaclassifications/2011areaclassifications).

10 Public Health England (2021). Public Health Profiles: National General Practices Profiles. [Online. Accessed 12/01/2021] (https://fingertips.phe.org.uk/profile/general-practice). Crown copyright. Data extracted using Fingertips API (https://fingertips.phe.org.uk/); Indicators 91243, 91244, 91248, 92587, 92594 and 92872.

11 National Institute for Health and Care (2021). NICE Quality and Outcomes Framework indicator. [Online. Accessed 16/01/2021]) https://www.nice.org.uk/standards-and-indicators/qofindicators). Indicators NM13, 50, 62, 81, 82 and 133.

12 Public Health England (2021). Public Health Profiles: Cancer Services. [Online. Accessed 13/01/2021] (https://fingertips.phe.org.uk/cancerservices). Crown copyright. Data extracted using Fingertips API (https://fingertips.phe.org.uk/); Indicators 91344-45, 91352-54, 91356-57, 91882.

13 Public Health England (2021) Local Health > T3 – Disease and Poor Health. [Online. Accessed 12/01/2021] (https://www.localhealth.org.uk/). Data produced by PHE from NHS Digital Hospital Episode Statistics (HES), NHS Digital. Copyright 2019.

14 Busby J, Purdy S, Hollingworth W. How do population, general practice and hospital factors influence ambulatory care sensitive admissions: a cross sectional study. BMC Fam Pract. 2017 May 25;18(1):67. doi: 10.1186/s12875-017-0638-9. PMID: 28545412; PMCID: PMC5445441.

15 NHS Digital (2021) Compendium: Mortality [Online. Accessed 24/03/2021] (https://digital.nhs.uk/data-and-information/publications/statistical/compendium-mortality); NHS Digital (2020) CCG Outcomes Indicator Set - March 2020 [Online. Accessed 24/03/2021] (https://digital.nhs.uk/data-and-information/publications/statistical/ccg-outcomes-indicator-set/march-2020).

16 Public Health England (2021) Local Health > T4 – Life Expectancy and Causes of Death. [Online. Accessed 12/01/2021] (https://www.localhealth.org.uk/). Data produced from mortality data supplied by Office for National Statistics, Crown Copyright.

17 Public Health England (2020) Mortality Profile [Online. Accessed 24/03/2021] (https://fingertips.phe.org.uk/profile/mortality-profile).

18 Wheeler BW, White M, Stahl-Timmins W, Depledge MH. (2012). Does living by the coast improve health and wellbeing? Health Place. 18(5):1198-201; White MP, Wheeler BW, Herbert S, Alcock I, Depledge MH. (2014). Coastal proximity and physical activity: is the coast an under-appreciated public health resource? Prev Med. 69:135-40. doi: 10.1016/j.ypmed.2014.09.016; Garrett JK, Clitherow TJ, White MP, Wheeler BW, Fleming LE. (2019). Coastal proximity and mental health among urban adults in England: The moderating effect of household income. Health Place. Sep;59:102200. doi: 10.1016/j.healthplace.2019.102200.

19 Office for National Statistics (2020). Earnings and hours worked, place of residence by local authority: ASHE Table 8. [Online. Accessed 15/01/2021]. (https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/placeofresidencebylocalauthorityashetable8).

20 Bambra C. (2016). Health divides: where you live can kill you. Bristol: Policy Press.

21 Dieker AC, IJzelenberg W, Proper KI, et al. (2019). The contribution of work and lifestyle factors to socioeconomic inequalities in self-rated health - a systematic review. Scand J Work Environ Health. 45(2):114-125; Watson B, Osberg L. Healing and/or breaking? The mental health implications of repeated economic insecurity. Soc Sci Med. 2017;188:119–127.

22 Steptoe A, Hamer M, Chida Y, 2007. The effects of acute psychological stress on circulating inflammatory factors in humans: a review and meta-analysis. Brain Behav. Immun 21, 901–91; Poole L, Steptoe A. The combined association of depressive symptoms and C-reactive protein for incident disease risk up to 12 years later. Findings from the English Longitudinal Study of Ageing (ELSA). Brain Behav Immun. 2020 Jan 20. pii: S0889-1591(19)31179-1. doi: 10.1016/j.bbi.2020.01.010

23 We are grateful to Yiu-Shing Lau and Matthew Sutton, University of Manchester, for extracting LSOA-level data from NHS Hospital Episode Statistics for 2013/14 – 2017/18. Self-harm (19-24yr olds) as defined by NHS Digital (2019) Hospital admissions for self-harm (https://digital.nhs.uk/data-and-information/find-data-and-publications/supplementary-information/2019-supplementary-information-files/hospital-admissions-for-intentional-self-poisoning-and-self-harm-amongst-young-people); alcohol-attributable admissions (0-17yr olds) as defined by Public Health (2017) Local Alcohol Profiles for England 2017: user guide, pp11-14 (https://fingertips.phe.org.uk/documents/LAPE_2017_User_Guide_071117.pdf); and drug misuse (0-17yr olds) as defined by NHS Digital (2019) Statistics on Drugs Misuse, England, 2019: Appendices, p8#3 (https://files.digital.nhs.uk/A6/E73EE5/drug-misu-eng-2019-app.pdf).

24 Department for Education (2020). Statistics: GCSEs (key stage 4) [Online. Accessed 14/12/2020] (https://www.gov.uk/government/collections/statistics-gcses-key-stage-4).

25 UK Census (2011). KS501EW – Qualifications and students (2011 super output areas – lower layer). Nomis. Office for National Statistics. [Online. Accessed 08/10/2020] (https://www.nomisweb.co.uk/census/2011); Office for Students (2020). Young participation by area: Area-based measure data: TUNDRA [Online. Accessed 09/10/2020] (https://www.officeforstudents.org.uk/data-and-analysis/young-participation-by-area/get-the-area-based-measures-data/).

26 Reay, D. (2017). *Miseducation: Inequality, education and the working classes*. London: Policy Press.

27 Gibson, A., Asthana, S. (2020). Written evidence (LBP0034) submitted to "Left behind white pupils from disadvantaged backgrounds" Inquiry. UK Parliament Education Committee. [Online. Accessed 04/04/2021] (https://committees.parliament.uk/work/237/left-behind-white-pupils-from-disadvantaged-backgrounds/publications/written-evidence/?page=3)

Medical workforce

Health Education England

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The NHS workforce for coastal communities and the alignment of geographical and specialty need

At Health Education England (HEE), we have used geographical information systems (GIS) to place NHS trusts into a natural geographical space. This allows analysis of healthcare workforces, relative to demography, level of deprivation and prevalence of disease This analysis, considers the age profile using Office for National Statistics (ONS) population data, and the rates at which diseases are diagnosed using data from the General Practice Quality Outcomes Framework (QOF). We have then explored how these data relate to coastal communities.

Figure 1a shows the overall age profile of coastal and inland communities served by their respective NHS Trusts.

Figure 1a
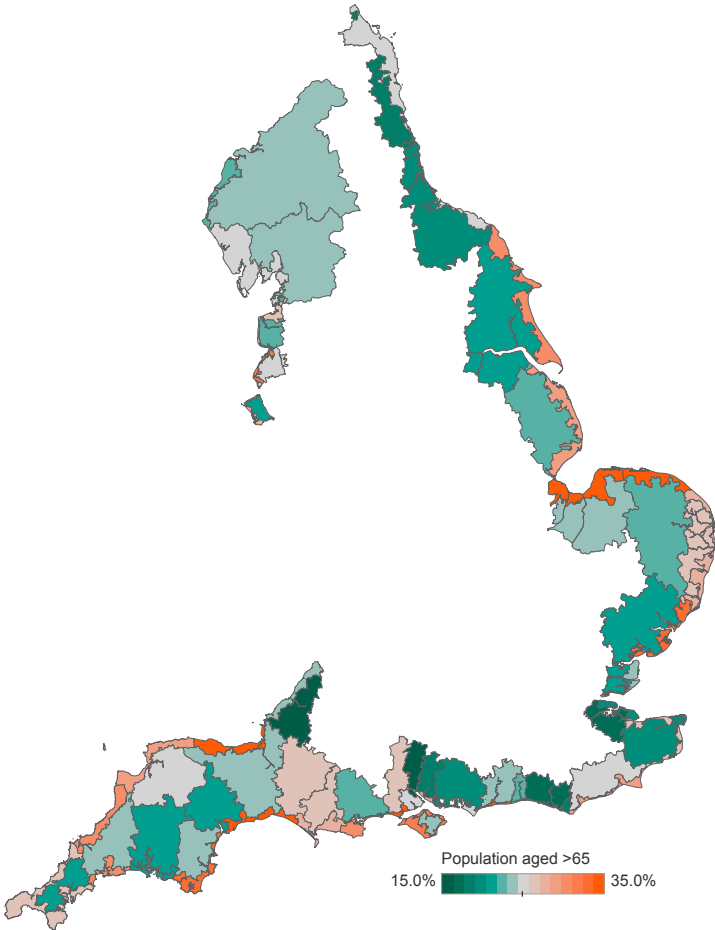
Figures 1b and 1c show this in greater detail for the Southwest and East of England.
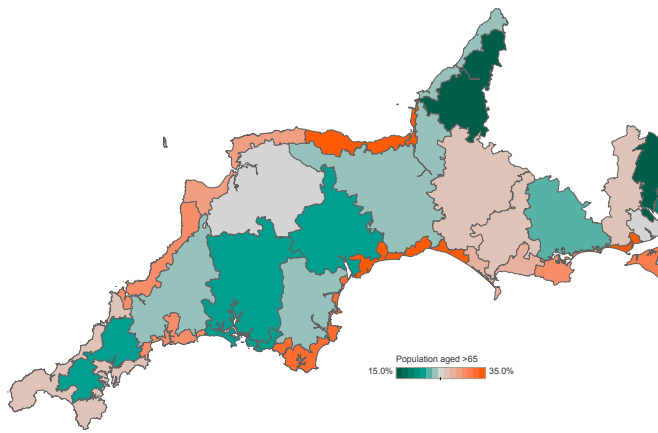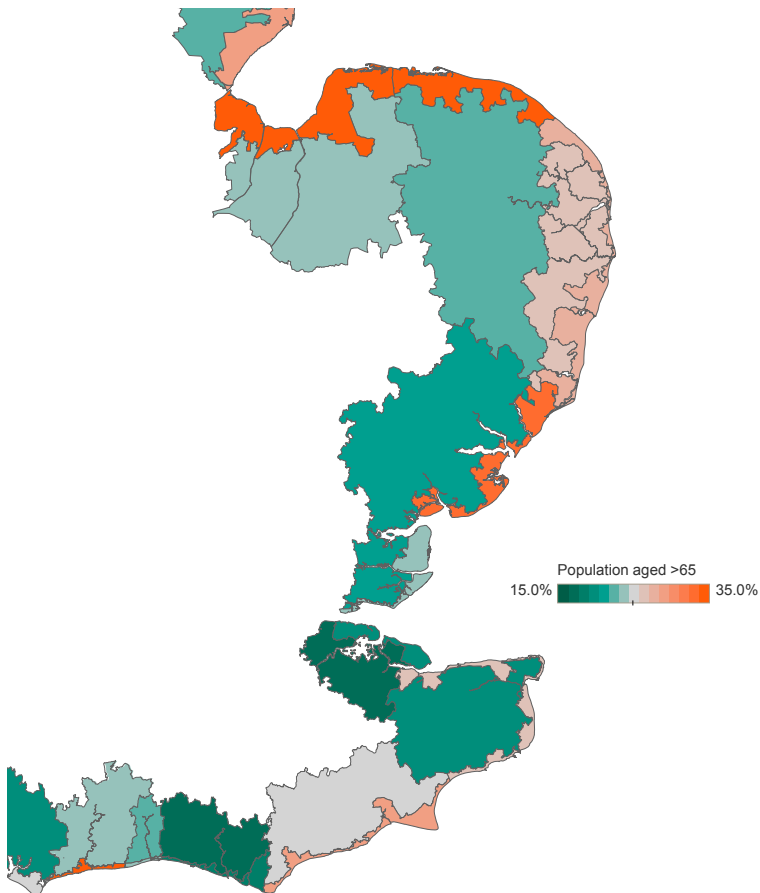
Figure 1b

Figure 1c

Coastal communities have an older population

The age profile of coastal areas, especially the areas nearest the shoreline, are significantly older than the national average of 18.2%. Shoreline populations are older still than more inland coastal areas served by the corresponding trust, with an average of 27.7% of these populations being over 65, compared to 20.1% in the inland coastal areas. Overall, a substantial majority of these areas are older than the national average, with only coastal cities, such as Bristol, Brighton, and Newcastle, being younger than the national average.

Coastal communities experience more deprivation than their inland counterparts

In addition to being older than the national average, these communities are also more deprived, (as defined by their Index of Multiple Deprivation (IMD) Score[1] compared to the national average, with deprivation being even greater in the North of England.

Figure 2: IMD Score as compared to the national average in each of these coastal areas

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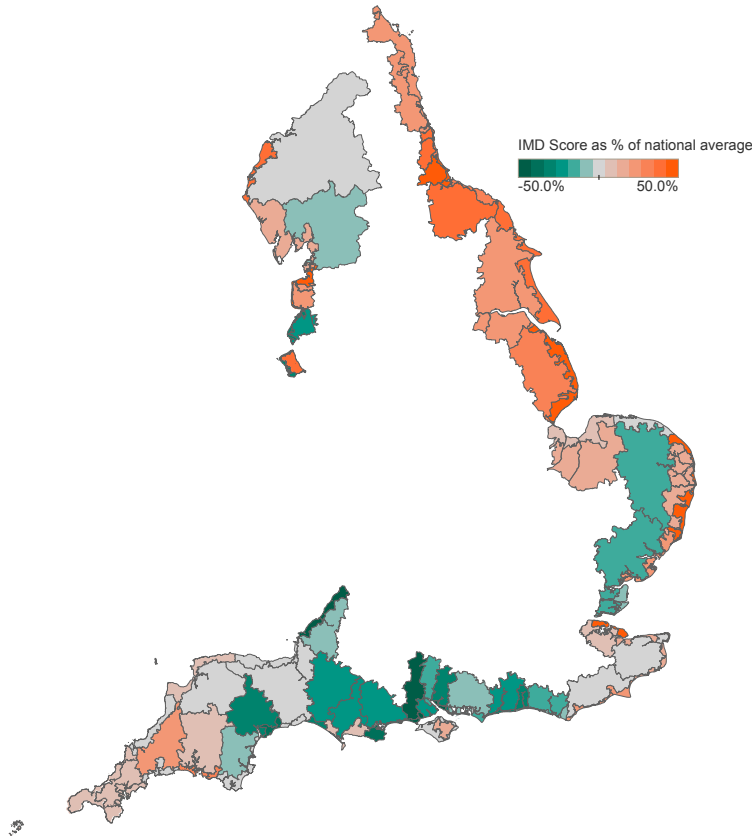
[1]   The Index of Multiple Deprivation (IMD) is the official measure of relative deprivation in England and is part of a suite of outputs that form the Indices of Deprivation (IoD). It follows an established methodological framework in broadly defining deprivation to encompass a wide range of an individual's living conditions.

Older and more deprived coastal communities experience worse health than the national average

Figure 3 shows the prevalence of Chronic Obstructive Pulmonary Disease (COPD) relative to the national average. In coastal areas 2.4% of the population have COPD, as opposed to 1.9% nationally. COPD is therefore 22% more prevalent amongst coastal communities. Every other disease recorded by QOF statistics is also more prevalent in coastal communities as compared to the national average. For example, learning disability, depression and cancer are 13.3%, 10% and 19.3% more prevalent, respectively [1].

Figure 3

COPD prevalence as % of national average
-50.0%   50.0%
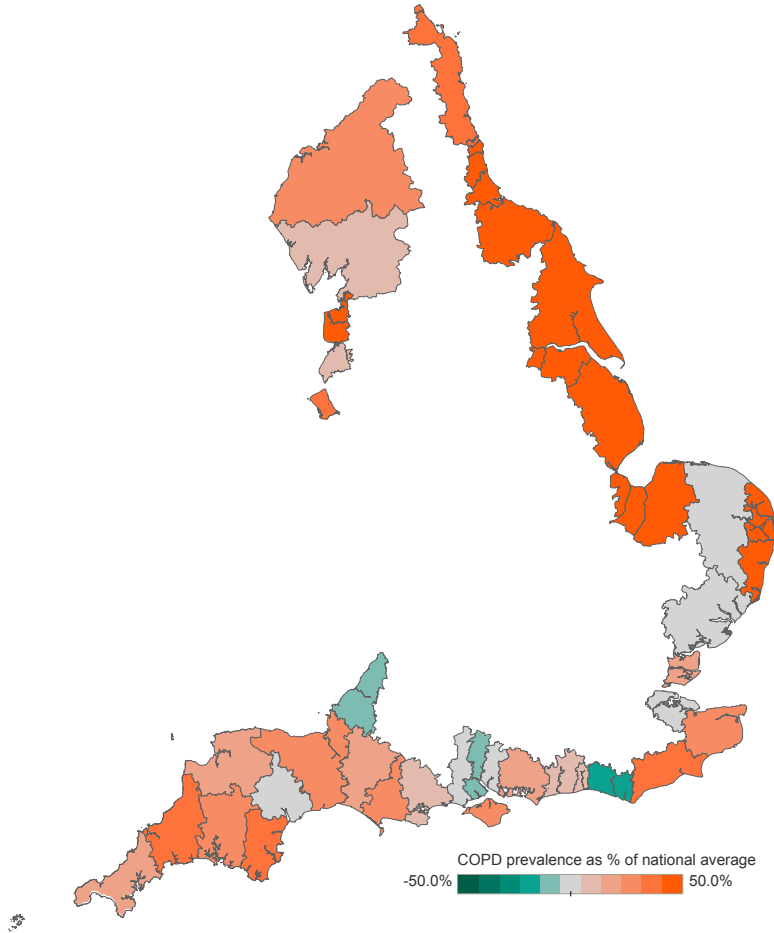
Coastal communities are looked after by fewer NHS Staff

Despite these older, more deprived communities suffering a greater prevalence of disease, they have fewer doctors and nurses per patient compared to the national average. Overall, coastal communities, as defined above, have 14.6% fewer postgraduate medical trainees, 15% fewer consultants and 7.4% fewer nurses per patient. This is shown on figure 4a.

Figure 4a
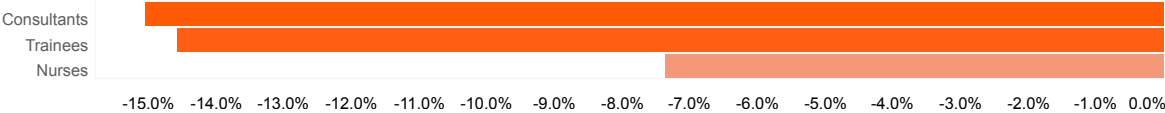
An example for COPD is shown in figure 4b. Per patient with COPD, there are 22.1% fewer GP trainees, 10.5% fewer respiratory medicine trainees, 17.1% fewer respiratory medicine consultants, and 9.4% fewer nurses in coastal communities.

Figure 4b
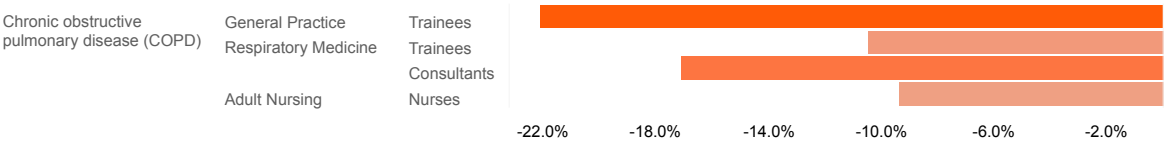
Chronic kidney disease is shown in figure 4c. This shows that per patient with chronic kidney disease, there are 21.3% fewer GP trainees, 8% fewer renal medicine trainees, 14% fewer consultants and 8.4% fewer nurses compared with national levels.

Figure 4c
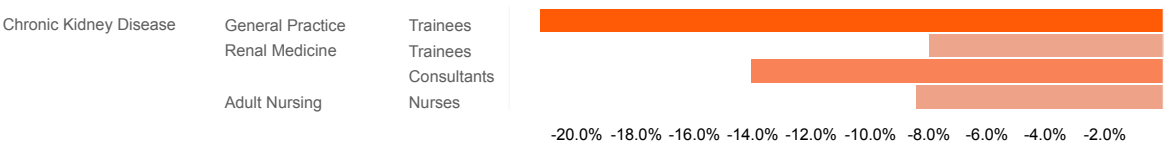
Figure 4d shows a similar picture for learning disability (LD). Here there are 16.1% fewer GP trainees, 64% fewer LD psychiatry trainees, 60.4% fewer LD psychiatry consultants and 29.7% fewer LD nurses.

Figure 4d
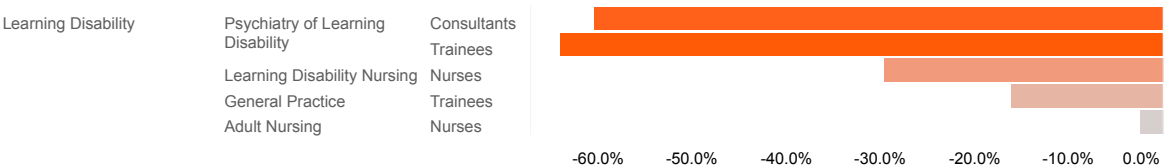
HEE has recognised that the training of doctors at both undergraduate and postgraduate levels has not always aligned with healthcare need, contributing to health inequalities. Data from the General Medical Council (GMC) has shown that doctors tend to settle close to areas in which they have undertaken postgraduate training to practice as consultants or GPs. HEE together with colleagues across the NHS are working in partnership to distribute medical training more equitably to better match the NHS workforce to geographical and specialty need. This analysis has highlighted the need to specifically consider the challenges facing coastal communities and to ensure we are training the future workforce to better align with where their skills are needed. The following section outlines HEEs work to achieve this.

HEE is reforming medical education to help address long standing health inequalities

It is clear coastal communities face significant and long-standing challenges in relation to health inequalities. One of the central principles for HEE medical education reforms is the need to address long standing health inequalities. There are points within the medical education reform programme across the lifespan of a medical career, where the opportunity to address health inequalities present themselves. These span from establishing new medical schools and widening participation, to where doctors are trained and deliver care during their lifetime career. By understanding the geographical modelling of health inequalities, we can use these data to enhance care for under-doctored areas (including coastal areas) and also determine how to incentivise any changes required.

Reform of undergraduate education

Coastal areas have been long underserved by medical professionals. In 2016 there was the expansion of 1500 medical school places, two thirds of which were established within areas that had been previously underserved by medical professionals including coastal communities. However, the location where medical careers start is not always aligned to the further stages of the training pathway once students graduate. The location of these schools is centred on areas of long-standing deprivation and are therefore starting to address health inequality. The collective health and care system must take account of this early career input to ensure that subsequent foundation and postgraduate training locations align to the output of the new medical schools wherever possible.

Future plans for undergraduate medicine will look at the contestability of existing medical school places. This will mean more places to study medicine in universities that are best able to prepare undergraduates for life as a doctor and are also addressing health inequalities through widening participation or more diverse routes for graduation (such as apprenticeship schemes). As these medical education reform initiatives progress, we will continue to review postgraduation training capacity.

Medical apprenticeships will provide individuals already committed to local communities and who are already on health or care career paths with an alternative route to attain a medical degree. There will be a need to ensure that at postgraduate level, there is sufficient training and careers capacity to ensure this locally recruited, more diverse and representative workforce can complete their training and practice permanently local to those areas.

Reform of postgraduate medical education

Distribution of training programme

Despite greater healthcare need and higher levels of deprivation, coastal communities have fewer doctors and nurses per patient as outlined in the analysis. HEE is responsible for the training of approximately 55,000 junior doctors per year. Our distribution programme has highlighted that the location of current HEE-funded training posts does not align geographically with either current or future patient need, as measured with the NHS healthcare resource allocation methodology or future population trends. We also know that where trainees progress in their postgraduate programmes corresponds strongly to where they will permanently settle and practice. By addressing the inequalities in geographic distribution of these posts, we will reduce the long-term health inequalities by co-locating population need with medical staff which will continue throughout a Consultant or GP's career, stretching over many decades.

The movement of training posts, gives areas where allocations of trainees are likely to decrease, a prompt to review their healthcare workforce. These areas will be able to explore how a multidisciplinary workforce may provide a more sustainable solution to providing healthcare where they may have previously relied on a junior doctor. Using other doctors, advanced care practitioners, physician associates and others can provide safe and high-quality healthcare.

We already know that the concentrations of medical professionals and trainees in an area correspond to hospital mortality indices and information from the NHS and Care Quality Commission (CQC) has shown the relationship between this workforce and the ability to attract other health professionals to an area. This 'gravitational effect' has been shown to correspond to the financial stability of health provision in local economies. Economic analysis has shown that a thriving NHS medical and wider workforce in a community can boost local economies[2].

The movement of trainees to under-doctored areas presents an ideal opportunity to review how we incentivise training to areas of increased need. This movement will be augmented by our proposals to enhance the generalist skills of all doctors. The combined output of these reforms means we will be able to prime a local training workforce in the foundation and core stages of their training to become firmly embedded in the community, learning stewardship and gaining a sense of ownership which will set them up to address inequalities locally through their professional career.

Enhancing generalist skills for all doctors for the wider benefit of the population

Multiple long-term conditions are a major problem in older age and in deprived areas. Coastal communities have been shown to have both an older and more deprived population and are therefore more likely to need a workforce with generalist skills.

Adaptability in staff skills and approach have been key to the NHS' COVID-19 pandemic response. Learning from improvements in cross-discipline and organisational communication, rapid training and redeployment, HEE aim to harness the unpredictability of the last year to pivot on the findings of the Future Doctor programme creating a development offer for doctors for their first five years following qualification[3]. This universal wraparound professional development offer will support junior doctors to feel confident in taking a holistic or 'whole person' approach when caring for patients with complex and multiple conditions.

By embedding generalist skills early on in medical careers, we will enable a broader future career for all doctors in training. Importantly, the programme aims to support junior doctors to address key 21st century health and care needs including:

- Supporting equitable healthcare delivery across maturing integrated care systems including remote, rural and coastal regions
- Understanding and addressing population health and care needs in the communities they serve, the profile of which has been demonstrated to be unique in coastal communities;
- Application of learning to reduce health inequalities and address local health priorities such as poverty, deprivation and other social justice agendas, all of which are directly relevant in coastal communities.

Our approach does not alter established curricula or training pathways. We are neither creating a new generalist specialty nor diminishing the role of either specialist or general practitioners, rather are putting forward a new vision of professional practice for the 21st Century – working collaboratively to reduce health inequalities and support delivery of care across all types of health and care settings.

Synergy between the distribution and enhancing generalist skills programmes

Addressing long standing health inequalities is a central theme of the enhancing generalist skills programme. Coming together with the uplift of workforce following geographic distribution will allow a much more integrated approach to the healthcare being developed by the Integrated Care Systems (ICSs). This will include opportunities to ensure that trainee rotations are as localised as possible (depending on individual curriculum need) and will aid the sense of ownership and community of its learners. This reorganisation will need adequate resourcing from an educational and learning perspective and require partnership working between HEE, NHSEI, other partners in health, local authorities and communities.

Embedding trainees in local communities for most of their training, is likely to reduce the stress of travel and relocation. We have discovered that in response to the pandemic, de-centralised healthcare can work well. It is hoped this will help improve the quality of life for trainees and their families without the need to live in more expensive, urban environments to access training and careers. This change in domicile may reduce their own cost of living, with the savings being passed on to local economies through increased trainee spending power to the benefit of the wider community.

Having a more locally distributed and better embedded local training workforce will reduce bank, agency and locum costs for junior doctors and in the longer term reduce the same for consultants and GP's. This will reduce waste on our spending, leading to improved continuity and safety of care. Adequate resourcing of the learning environments and training will help trainees feel less anonymous and more valued as part of the future workforce for an area. This will have positive impacts on reducing attrition for training, improving morale and most importantly better outcomes for patient care and will reduce health inequalities including in coastal communities.

References

1   https://digital.nhs.uk/data-and-information/data-tools-and-services/data-services/general-practice-data-hub/quality-outcomes-framework-qof

2   The Economic Influence of the NHS at local level (2020) Kings Fund. Available at : https://www.kingsfund.org.uk/publications/economic-influence-nhs-local-level

3   https://www.hee.nhs.uk/sites/default/files/documents/Future%20Doctor%20Co-Created%20Vision%20-%20FINAL%20%28typo%20corrected%29.pdf

Flooding and coastal communities

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Current and future flood risk

The United Kingdom (UK) is typically affected by four types of flooding: river (also known as fluvial), coastal, groundwater and surface water. Coastal flooding occurs when low lying coastal land is flooded by seawater from windstorms and high tides. Fluvial flooding of coastal areas can also occur due to building development on river estuaries and floodplains.

The Climate Change Risk Assessment (CCRA) for the UK is a statutory requirement under the Climate Change Act (2008)[1]. The effect of flooding and coastal change on communities, business and infrastructure is one of the main climate change risks to the UK identified by the national risk assessment (see ukclimaterisk.org for risk assessments and evidence reports). The UK coast is highly vulnerable to climate change due to changes to wave height, increased frequency of storm surges, sea level rise and potentially accelerated coastal erosion. Modelling of future flood risk undertaken for the UK's Third CCRA (2021) indicates significant increases in future coastal flood risks[2]. Coastal local authorities with large future flood risk include Hull, the City of Portsmouth, and Sedgemoor District Council.

Coastal communities are a key contributor to the UK economy through fishing and tourism industries, ports and offshore energy regeneration. However, despite these assets, many UK seaside towns have experienced economic decline and rising social deprivation. Among localised areas at high risk of coastal flooding are some of the most deprived neighbourhoods in England, for example, locations in the Jaywick area of Clacton on Sea and in Blackpool.

The health consequences of flooding

Flooding has significant impacts on health and is frequently associated with acute and long-term effects on mental health and wellbeing. Floods may also cause injuries, infections and exposure to chemical hazards. Often, only the immediate traumatic deaths from flooding are recorded. Longer-term health impacts associated with flooding can be caused by secondary stressors such as displacement, destruction of homes, delayed recovery, power outages, water shortages and disruption of access to health and other essential services. Capturing these medium to long-term health impacts of flooding presents methodological challenges, including identification and follow-up of affected individuals, identification of a suitable control population, and self-reporting bias. Routine surveillance methods may not capture the true extent of the health burden due to displacement of affected individuals. Table 1 details the immediate and long-term effects of flooding and health.

Table 1: Mortality and morbidity associated with flooding (adapted from the National Flood Emergency Framework for England, 2014)[3]

Immediate and short-term effects of flooding on health	Drowning
	Physical trauma and injuries
	Water shortages and contamination, including by sewage and chemicals
	Electrocution and fire
	Infectious diseases from contaminated water*.
Medium to long-term effects	Effects on mental health and wellbeing, both acute and long-term
	Carbon monoxide poisoning when petrol or diesel generators or other similar fuel driven equipment is used indoors for drying or pumping out flood water
	Illness associated with disruption and reduced access to healthcare and other services
	Loss of employment or income

* During flooding, sewerage systems may become inundated by flood water. Consequently, flood water in the UK is likely to be contaminated by disease producing bacteria and viruses, but not high-risk enteric infectious diseases (e.g. cholera, typhoid) which are not naturally endemic in the human population of the UK. The relative risks to people from bacterial contamination of flood water is, therefore, low, especially if public health advice is followed.

The largest current burden of flood-related ill health in England is due to mental health. The English National Study of Flooding and Health was established by Public Health England (PHE) in 2014 to investigate the long-term impacts of flooding on health and wellbeing. This study found a significant increase in rates of probable post-traumatic stress disorder (PTSD), depression and anxiety among those who had been flooded one year after the event, with flooded participants six to seven times more likely to experience probable PTSD, depression and/or anxiety compared to non-flooded participants. The study also found that impacts on mental health persisted for the three years of follow up, demonstrating that flooding can have long term impacts on health and wellbeing[4]. Figure 1 displays the adjusted odds of psychological morbidity one year after flooding.

Figure 1: Adjusted odds of psychological morbidity one year after flooding
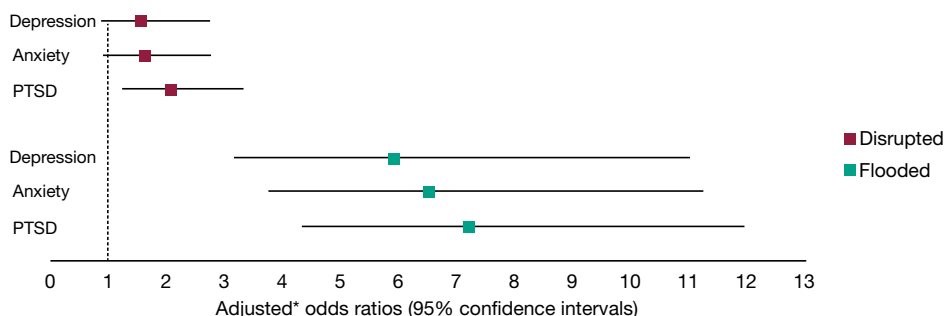
*Adjusted odds ratios are adjusted for age, sex, pre-existing illness, deprivation, local authority, ethnicity, marital, education and employment statuses. The reference is participants unaffected by flooding

Displacement after a flooding event was associated with higher psychological morbidity although the duration of displacement was not associated with additional negative effects. The lack of any warning prior to displacement or evacuation was also associated with worse outcomes. Secondary stressors such as trouble with insurance and concerns about health, relationship problems, loss of personal items were also associated with poorer mental health outcomes. Notably, the study also reported that impacts were not restricted only to those directly affected by flood water in the home, the group whose lives were disrupted by the flooding event also experienced poor mental health. For example, the group with no flood water in the home but who were disrupted and lost access to health and social care were five times more likely to have depression than the unaffected group one year after the event[5].

Those who were disrupted and lost access to Health and Social care, were:

5x Times more likely to have depression

7x Times more likely to have anxiety

10x Times more likely to have PTSD

The risk of flooding and vulnerability to those impacts are not equally distributed. Some individuals are at greater risk of experiencing negative health and wellbeing impacts from flooding, this includes:

- Children
- Pregnant women
- The elderly
- People with physical, sensory and cognitive impairments
- People with chronic illnesses
- Those receiving care at home (e.g. home oxygen, dialysis)
- People who are homeless
- People with language and cultural-based vulnerabilities
- Tourists[6].

Therefore, the magnitude of the impacts on health will depend on a complex interaction of a range of factors, including: severity and rapidity of the onset of flooding; health status and need for regular medical treatment; individual and community levels of resilience and adaptive capacity; accuracy and lead time of flood warnings; rapidity of response measures; and being located in high-risk areas and high-risk buildings (i.e. basement flats).

Health system resilience

Coastal flooding is considered a significant risk to the UK and has been shown to damage critical national infrastructure, including health care facilities[7]. Landeg et al explored health system resilience during the East Coast surge in December 2013, providing insight into the healthcare disruption caused by flooding[8]. All sectors of the healthcare system were found to suffer disruption, the cumulative effect of which was reduced capacity of the health sector overall.

Coastal flood risks to health infrastructure will increase with sea level rise. Central estimates of future flood risk to coastal health infrastructure by the 2080s, based on mid-range projections for sea-level rise, indicate that the number of emergency service sites at significant (greater than one in 75) annual probability of flooding will increase by 72% (from 42 to 72), General Practice surgery sites will increase by 35% (from 77 to 100) and care homes by 63% (from 65 to 110). These estimates assume no change in assets and current rates of protection[9]. The number of people affected by flooding is also projected to increase significantly without additional flood defences.

Communities and flood risk management

Sea level rise and coastal change may threaten the viability of some coastal communities in the future. The extent to which communities are affected will depend on the local geography: locations on the South and East coasts of England are likely to be the most affected. Coastal risk management strategies include, among other interventions, the building and maintaining of flood defences; timely and effective warning; insurance policies; planning and guidance; and community engagement. Current government policy for investment in coastal risk management prioritises areas with higher levels of deprivation. Measures to ensure household-level resilience nevertheless require both individual-level behavioural change as well as sufficient household resources to cover the economic cost. Such policies may therefore require additional effort to ensure that low income households are sufficiently prepared for the challenge the future climate will bring. A recent review of adaptive response measures to climate change in coastal communities found good evidence that some adaptation policies and measures have unequal benefits and risk disadvantaging poorer households[10].

Finally, isolated rural communities are typically more dependent on their immediate supporting community infrastructure, such as transport and communications links, jobs, local shops and social activities, some of which may also be threatened by coastal erosion. If not identified as vulnerable, infrastructure development could continue in these areas, which may lead to stranded assets.

Conclusion

Over the course of this century flooding may become an increasingly important risk factor for poor health in the absence of adequate protective action, particularly in some coastal communities on the South and East coasts of England. Further work is needed to understand whether the health impacts associated with other types of flooding events are the same or similar to those experienced following coastal flooding events. Further work is also required to understand the economic impact of the burden of ill health associated with flooding. There are currently no UK studies of the effectiveness of psychological interventions to support adult or child mental health following exposure to a flood and limited international studies. There is therefore a need to design and evaluate interventions to prevent and reduce the mental health impacts associated with flooding.

References

1   The UK government, 2008. *Climate Change Act 2008. London: The Stationery Office Limited. Available at:* https://www.legislation.gov.uk/ukpga/2008/27/contents

2   Sayers, PB., Horritt, M, Carr, S, Kay, A, Mauz, J., Lamb R, and Penning-Rowsell E (2020) Third UK Climate Change Risk Assessment (CCRA3): Future flood risk. Research undertaken by Sayers and Partners for the Committee on Climate Change. Published by Committee on Climate Change, London.

3   Dept for Environment, Food and Rural Affairs, 2014. The National Flood Emergency Framework for England. Available at: https://www.gov.uk/government/publications/the-national-flood-emergency-framework-for-england

4   Public Health England, 2020. The English National Study of Flooding and Health: Summary of the evidence generated to date. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/872710/Summary_of_findings_NSFH_January_2020_Final_for_DsPH__3_.pdf

5   Public Health England, 2020. Ibid.

6   Public Health England and Dept for Environment, Food and Rural Affairs, 2014. National Flood Emergency Framework for England. Available at: https://www.gov.uk/government/publications/the-national-flood-emergency-framework-for-england

7   Cabinet Office, 2020. The UK National Risk Register. Available at: https://www.gov.uk/government/publications/national-risk-register-2020

8   Landeg O, Whitman G, Walker-Springett K, Butler C, Bone A, Kovats S. (2019) *Coastal flooding and frontline health care services: challenges for flood risk resilience in the English health care system*. J Health Serv Res Policy. 2019 Oct;24(4):219-228.

9   Edwards, T. (2017) *Current and Future Impacts of Sea Level Rise on the UK. Foresight – Future of the Sea Evidence Review. Foresight, Government Office for Science.*

10   Turner G, Kovats S, Brisley R, Landeg O, Brown S, Bennett-Lloyd P (2021b) *Can we adapt fairly? Systematic review of equity implications of adaptive response measures to climate change in coastal communities.* Journal of Epidemiology and Community Health, submitted.

The benefits of coastal living

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Introduction

The links between the coasts and our health has a long history. In the 18th and 19th centuries several sea-bathing hospitals were established around the English coast and coastal 'convalescence' continued to be prescribed by doctors well into the 20th century[1]. Medical advances, including antibiotics, appeared to make such 'treatments' redundant, but modern public health challenges, such as the rise of non-communicable diseases, have reawakened interest in the potential benefits of coastal living for 21st century public health[2].

A decade of research has demonstrated that there are health benefits (both physical and mental) to living near the coast which are not merely the result of selective migration[3]. Whilst the reasons for this comparatively better health are varied, evidence demonstrates that the nature of, and human interactions with, the coastal environment are contributory factors.

This chapter focuses predominantly on the contribution of the natural environment to the health and wellbeing of coastal residents. This chapter highlights how successfully protecting and improving coastal environments can simultaneously foster and promote human health. The use of the coast as a therapeutic setting is also briefly discussed.

Health in coastal communities

There is a clear link overall between many coastal areas and poor health outcomes. Once socio-economic and demographic characteristics are taken into account however, analysis of census data has shown that those living closer to the coast report better health on average than their inland counterparts[4]. More in-depth studies demonstrate that these relationships are unlikely to be driven wholly by the migration of healthier individuals to coastal communities. White et al.'s[5] 18-year longitudinal study showed that those who moved to the coast reported improved physical and mental health, and vice versa. The pattern of better mental health, in particular, in coastal living communities has been repeatedly confirmed in subsequent studies [6].

Tantalisingly, there is evidence from a range of sources that living along England's coastal environments could provide some degree of resilience to some aspects of health inequality. The evidence from the census for England in both 2001 and 2011 suggests that the benefits to general health associated with living on or near the coast are most strongly experienced by communities living in the most socio-economically deprived areas[7]. This is also reflected in more specific health outcomes. For example, analysis of the Health Survey for England shows better mental health amongst coastal residents, but primarily amongst those in lower socio-economic groups[8].

Contribution of the natural environment to health in coastal communities

Whilst there are many factors influencing patterns of health in coastal communities, the weight of evidence from a number of robust studies suggests that the natural environment is important.

The English coastal environment comprises a complex range of marine ecosystems, including sandy beaches, rocky shores, cliffs, saltmarshes and estuaries, as well as coastal urban green and 'blue spaces' (defined as outdoor environments – either natural or made by people – that prominently feature water and are accessible[9]). Three main processes act as mechanisms that link coastal natural environments to better health[10]. These reflect the extensive evidence and numerous theories around the linkages between natural environments with health more generally[11]:

- *Mitigation of environmental stressors:* Coastal environments without major ports are typically associated with reduced exposure to air pollution[12], noise[13], urban heat[14], and their attendant negative consequences for health[15] in comparison with inland areas.

- *Building of personal capacity:* Coastal environments have the potential to facilitate physical activity and exercise to a greater degree than other inland or natural settings[16]. Coasts also provide spaces for social activities serving to promote physical and mental health[17].

- *Alleviation of psycho-physiological stress or 'restoration':* Coastal environments can provide a setting for relaxation[18] that can lead to reduced anxiety and cognitive fatigue. The strong cultural associations of coastal environments with recuperation and escape from stressors contribute to supporting wellbeing for many people[19].

One of the key ways that coastal environments can promote health is by providing opportunities for recreational visits. Analysis of Natural England's Monitor of Engagement with the Natural Environment (MENE) data indicates that people make over 270 million recreational visits to England's coasts each year[20]. Those who live near the coast access it most frequently[21]. While some of these visits involve getting into the water, most are land-based, with the vast majority being walking. Walking has been found to partially explain the relationship between coastal proximity and better health and wellbeing[22]. Analysis of MENE data shows that coastal recreational visits are more likely to be made by women, older adults and people from lower socio-economic backgrounds, in contrast, for example, to walks in other natural environments such as woodland settings (Elliott et al., 2018). The quality and perceptions of the natural environment may also affect health outcomes; with litter, biodiversity, water quality and perceived safety of coastal areas all related to wellbeing[23].

Nature-based social prescribing in coastal communities

The growing understanding of the role of the environment in building personal capacity and the alleviation of symptoms of physical and mental health conditions has contributed to increased interest in the coast as a setting for therapeutic interventions[24].

'Social prescribing' is a place-based, asset-driven approach intended to support people with complex health needs[25]. Typically, 'community connectors' or 'link workers', often based in or linked to GP surgeries, work with an individual to identify local community-based options that could help address challenges such as poor mental health or low levels of physical activity, and help build resilience. Environmental activities are offered as a nature-based social prescription in many areas. In coastal areas, nature-based activities vary, but usually include group-based nature experiences and range from surf therapy to conservation activities. Often led by environmental and other community organisations, the activities integrate specific therapeutic options, such as talking therapies, and use the coastal environment as a setting or, in some cases, as an active component of the delivery[26].

Evidence supporting the effectiveness of nature-based activities accessed through social prescribing pathways is growing and suggests that nature-based activities can be beneficial in promoting wellbeing, mental health and in reducing social isolation[27]. The tailoring of the activity to the specific need or interest can help reach groups previously hard to engage. Efforts are underway to identify: the types of nature-based activity that works best and for whom; the cost-effectiveness of the approach; and the ways in which delivery can be sustainably commissioned and funded.

There is also a need to find ways to ensure nature-based social prescribing does not contribute to exacerbating the socio-economic inequalities in health in many coastal areas nor contribute to the further destruction of the quality of the natural environment. Defra is working with DHSC, and other Departments, to invest in, and learn more about the potential of nature-based social prescribing[28]. Contributing to the commitment in the NHS Long-Term Plan, seven pilots have been funded around England to scale up the commissioning and delivery of nature based social prescribing.

Protecting health in coastal environments

There is a synergistic relationship between the state of the environment and health and wellbeing in coastal communities[29]. Global and local processes of environmental degradation and climate change currently, and will increasingly, negatively affect human health, with coastal environments and, therefore, coastal communities particularly at risk[30]. It is also important to recognise that the impact of environmentally-related risks (e.g. floods, severe storms) often falls disproportionately on more deprived and marginalised coastal communities[31].

Appropriate environmental management and protection may result in significant co-benefits for human and environmental health. For example, more severe storms and a rise in sea level are likely to result in coastal flooding, putting health and essential infrastructure at risk. An important response is the development of high-quality, co-beneficial green and built infrastructure that mitigates the impacts of environmental change, facilitates safe access to the coast, while protecting fragile coastal ecosystems[32]. The use of the coastal environment as recreational space must also be managed to protect human health. For example, around 38% of the 400 drowning deaths each year happen in coastal areas[33]. Steps to reduce and prevent accidents should incorporate risk assessment, the resourcing and targeting of educational and risk reduction programmes, and environmental modification where necessary[34].

Conclusions

There is a considerable weight of evidence that living on or near the coast offers physical health and mental wellbeing benefits. A key contributory factor for good health outcomes is the natural environment, providing spaces and places for recuperation, physical activity and meaningful social contact. The seaside can also provide a context for therapeutic activities to address a range of conditions and needs.

However, the health promoting facets of coastal environments should not be taken for granted. They are threatened by increasingly rapid and human-generated environmental change, social and environmental inequalities, poor investment in infrastructure, and a lack of a long-term vision.

References

1   Fox, R.F. and Lloyd, W.B., (1938). Convalescence on the coast. The Lancet, 232(5992), pp.37-39.

2   Depledge, M.H., White, M.P., Maycock, B., & Fleming, L.E. (2019). Time and tide: Our future health and well-being depends on the Oceans. British Medical Journal, 366:4671

3   White, M. P., Pahl, S., Ashbullby, K., Herbert, S., & Depledge, M. H. (2013). Feelings of restoration from recent nature visits. Journal of Environmental Psychology, 35, pp40–51.

4   Wheeler, B.W., White, M., Stahl-Timmins, W., Depledge, M.H. (2012). Does living by the coast improve health and wellbeing? Health & Place. 18(5),1198-201.

5   White, M. P., Pahl, S., Ashbullby, K., Herbert, S., & Depledge, M. H. (2013). Feelings of restoration from recent nature visits. Journal of Environmental Psychology, 35, pp40–51.

6   Gascon, M., Zijlema, W., Vert, C., White, M. P., & Nieuwenhuijsen, M. J. (2017). Outdoor blue spaces, human health and well-being: A systematic review of quantitative studies. International journal of hygiene and environmental health, 220(8), pp1207-1221

    Georgiou, M., Morison, G., Smith, N., Tieges, Z., & Chastin, S. (2021). Mechanisms of impact of blue spaces on human health: a systematic literature review and meta-analysis. International journal of environmental research and public health, 18(5), 2486

    White, M.P., Elliott, L.R. Grellier, J., Economou, T., Bell, S., Bratman G.N., Criach, M., Gascon, M., Ojala, A, Roiko, A., Lima, M.L., Lohmus, M., Nieuwenhuijsen, M., Schultz, P. W., van den Bosch, M.A., & Fleming, L.E. (2021). Associations between green/blue spaces and mental health across 18 countries. Scientific Reports, 11:8903

7   Wheeler, B.W., White, M., Stahl-Timmins, W., & Depledge, M.H. (2012). Does living by the coast improve health and wellbeing?. Health & Place. 18(5), pp1198-201.

    Wheeler, B.W., Lovell, R., Higgins, S.L., White, M.P., Alcock, I., Osborne, N.J., Husk, K., Sabel, C.E. & Depledge, M.H., (2015). Beyond greenspace: an ecological study of population general health and indicators of natural environment type and quality. International journal of health geographics, 14(1), pp1-17.

8   Garrett, J.K., Clitherow, T.J., White, M.P., Elliott, L.R., & Wheeler, B.W., & Fleming, L.E. (2019). Coastal proximity and mental health among urban adults in England: The moderating effect of household income. Health & Place, 59, 102200

9   Grellier, J., White, M. P., Albin, M., Bell, S., Elliott, L. R., Gascon, M., Gualdi, S., Mancini, L., Nieuwenhuijsen, M. J., Sarigiannis, D. A., van den Bosch, M., Wolf, T., Wuijts, S., & Fleming, L. E. (2017) BlueHealth: a study programme protocol for mapping and quantifying the potential benefits to public health and well-being from Europe's blue spaces. BMJ Open 7

10 White, M.P., Elliott, L.R., Gascon, M., Roberts, B., & Fleming, L.E. (2020). Blue space, health and well-being: A narrative overview and synthesis of potential benefits. Environmental Research, 191, 110169

11 Markevych, I., Schoierer, J., Hartig, T., Chudnovsky, A., Hystad, P., Dzhambov, A.M., de Vries, S., Triguero-Mas, M., Brauer, M., Nieuwenhuijsen, M.J., Lupp, G., Richardson, E.A., Astell-Burt, T., Dimitrova, D., Feng, X., Sadeh, M., Standl, M., Heinrich, J., & Fuertes, E., (2017). Exploring pathways linking greenspace to health: Theoretical and methodological guidance. Environmental Research 158, pp301-317.

12 Clappier, A., Martilli, A., Grossi, P., Thunis, P., Pasi, F., Krueger, B. C., Calpini, B., Graziani, G., & van den Bergh, H. (2000). Effect of sea breeze on air pollution in the greater Athens area. Part I: numerical simulations and field observations. Journal of Applied Meteorology, 39(4), pp546-562.

13 Ratcliffe, E. (2021). Sound and soundscape in restorative natural environments: A narrative literature review. Frontiers in Psychology, 12, 963.

14 Burkart, K., Meier, F., Schneider, A., Breitner, S., Can´ario, P., Alcoforado, M.J., Scherer, D., & Endlicher, W., (2015). Modification of heat-related mortality in an Elderly urban population by vegetation (urban green) and proximity to water (urban blue): evidence from Lisbon, Portugal. Environ. Health Perspectives. 124, pp927–934

15 Hoek, G., Krishnan, R. M., Beelen, R., Peters, A., Ostro, B., Brunekreef, B., & Kaufman, J. D. (2013). Long-term air pollution exposure and cardio-respiratory mortality: A review. Environmental Health, 12(1), pp1–16

Murage, P., Kovats, S., Sarran, C., Taylor, J., McInnes, R., & Hajat, S. (2020). What individual and neighbourhood-level factors increase the risk of heat-related mortality? A case-crossover study of over 185,000 deaths in London using high-resolution climate datasets. Environment International, 134, 105292.

Vivanco-Hidalgo, R. M., Avellaneda-Gómez, C., Dadvand, P., Cirach, M., Ois, Á., Gómez González, A., Rodriguez-Campello, A., de Ceballos, P., Basagaña, X., Zabalza, A., Cuadrado-Godia, E., Sunyer, J., Roquer, J., & Wellenius, G. A. (2019). Association of residential air pollution, noise, and greenspace with initial ischemic stroke severity. Environmental research, 179, 108725.

[16] Elliott, L. R., White, M. P., Taylor, A. H., & Herbert, S. (2015). Energy expenditure on recreational visits to different natural environments. Social Science & Medicine, 139, pp53–60

Garrett, J.K., Clitherow, T.J., White, M.P., Elliott, L.R., & Wheeler, B.W., & Fleming, L.E. (2019). Coastal proximity and mental health among urban adults in England: The moderating effect of household income. Health & Place, 59, 102200

Pasanen, T., White M.P., Wheeler, B., Garrett, J., & Elliott, L. (2019). Neighbourhood blue space, health and wellbeing: The mediating role of different types of physical activity. Environment International, 131, 105136

White, M. P., Wheeler, B. W., Herbert, S., Alcock, I., & Depledge, M. H. (2014). Coastal proximity and physical activity: Is the coast an under-appreciated public health resource? Preventive Medicine, 69, pp135–140.

[17] Elliott, L.R., White, M.P., Grellier, J., Rees, S., Waters, R. & Fleming, L.E.F. (2018). Recreational visits to inland and coastal waters in England: Who, where, when, what and why. Marine Policy, 97, pp305-314

Triguero-Mas, M., Dadvand, P., Cirach, M., Martínez, D., Medina, A., Mompart, A., Basagaña, X., Gražulevičienė, R., & Nieuwenhuijsen, M. J. (2015). Natural outdoor environments and mental and physical health: Relationships and mechanisms. Environment International, 77, 35–41. https://doi.org/10.1016/j.envint.2015.01.012

[18] MacKerron, G., & Mourato, S., (2013). Happiness is greater in natural environments. Global Environ. Change 23 (5), pp992–1000

White, M. P., Alcock, I., Wheeler, B. W., & Depledge, M. H. (2013). Would You Be Happier Living in a Greener Urban Area? A Fixed-Effects Analysis of Panel Data. Psychological Science, 6, pp920-928

[19] Bell, S. L., Phoenix, C., Lovell, R., & Wheeler, B. W. (2015). Seeking everyday wellbeing: The coast as a therapeutic landscape. Social Science & Medicine, 142, pp56-67.

Cairns-Nagi, J. M., & Bambra, C. (2013). Defying the odds: A mixed-methods study of health resilience in deprived areas of England. Social Science & Medicine, 91(0), pp229-237.

[20] Elliott, L.R., White, M.P., Grellier, J., Rees, S., Waters, R. & Fleming, L.E.F. (2018). Recreational visits to inland and coastal waters in England: Who, where, when, what and why. Marine Policy, 97, pp305-314

[21] Elliott, L. R., White, M. P., Grellier, J., Garrett, J. K., Cirach, M., Wheeler, B. W., Bratman, G. N., van den Bosch, M. A., Ojala, A., Roiko, A., Lima, M. L., O'Connor, A., Gascon, M., Nieuwenhuijsen, M., & Fleming, L. E. (2020). Research Note: Residential distance and recreational visits to coastal and inland blue spaces in eighteen countries. Landscape and Urban Planning, 198, 103800.

[22] Pasanen, T., White M.P., Wheeler, B., Garrett, J., & Elliott, L. (2019). Neighbourhood blue space, health and wellbeing: The mediating role of different types of physical activity. Environment International, 131, 105136

[23] Börger, T., Campbell, D., White, M.P., Elliott, L.R., Garrett, J., Hattam, C., Hynes, S., Ojala, A., Taylor, T., & Fleming, L.E.F. (2021). The value of blue-space recreation and perceived water quality across Europe: A contingent behaviour study. Science of the Total Environment, 145597

Garrett, J.K., Clitherow, T.J., White, M.P., Elliott, L.R., & Wheeler, B.W., & Fleming, L.E. (2019). Coastal proximity and mental health among urban adults in England: The moderating effect of household income. Health & Place, 59, 102200

Wyles, K.J., Pahl, S., Thomas, K. and Thompson, R.C., (2016). Factors that can undermine the psychological benefits of coastal environments: exploring the effect of tidal state, presence, and type of litter. Environment and Behavior, 48(9), pp1095-1126.

[24] Britton, E., Kindermann, G., Domegan, C., & Carlin, C. (2020). Blue care: a systematic review of blue space interventions for health and wellbeing. Health Promotion International, 35(1), pp50-69.

Husk, K., Blockley, K., Lovell, R., Bethel, A., Lang, I., Byng, R. & Garside, R., (2020). What approaches to social prescribing work, for whom, and in what circumstances? A realist review. Health & social care in the community, 28(2), pp309-324.

[25] Husk, K., Blockley, K., Lovell, R., Bethel, A., Lang, I., Byng, R. & Garside, R., (2020). What approaches to social prescribing work, for whom, and in what circumstances? A realist review. Health & social care in the community, 28(2), pp309-324.

[26] Garside, R., Orr, N., Short, R., Lovell, R., Husk, K., McEachan, R., Rashid, R., & Dickie, I. (2021). Therapeutic Nature: Nature-based social prescribing for diagnosed mental health conditions in the UK. Report for Defra.

[27] Britton, E., Kindermann, G., Domegan, C., & Carlin, C. (2020). Blue care: a systematic review of blue space interventions for health and wellbeing. Health Promotion International, 35(1), pp50-69.

Garside, R., Orr, N., Short, R., Lovell, R., Husk, K., McEachan, R., Rashid, R., & Dickie, I. (2021). Therapeutic Nature: Nature-based social prescribing for diagnosed mental health conditions in the UK. Report for Defra.

Husk, K., Lovell, R., Cooper, C., Stahl-Timmins, W. & Garside, R., (2016). Participation in environmental enhancement and conservation activities for health and well-being in adults: a review of quantitative and qualitative evidence. Cochrane Database of Systematic Reviews, (5).

Maund, P.R., Irvine, K.N., Reeves, J., Strong, E., Cromie, R., Dallimer, M. & Davies, Z.G., (2019). Wetlands for wellbeing: piloting a nature-based health intervention for the management of anxiety and depression. International journal of environmental research and public health, 16(22), 4413.

[28] https://www.gov.uk/government/news/new-sites-to-test-how-connecting-people-with-nature-can-improve-mental-health

https://beyondgreenspace.net/2021/05/12/evaluating-the-green-social-prescribing-test-and-learn-pilots/

[29] Depledge, M.H., White, M.P., Maycock, B., & Fleming, L.E. (2019). Time and tide: Our future health and well-being depends on the Oceans. British Medical Journal, 366:4671

Fleming, L.E., Maycock, B., White, M.P., Depledge, M.H. (2019) Fostering human health through ocean sustainability in the 21st century. People and Nature. 00. pp1–8.

White, M.P., Elliott, L.R., Gascon, M., Roberts, B., & Fleming, L.E. (2020). Blue space, health and well-being: A narrative overview and synthesis of potential benefits. Environmental Research, 191, 110169

[30] Depledge, M., Lovell,R., Wheeler, B.W., Morrissey, K., White, M. & Fleming, L. (2017) Future of the Sea: Health and Wellbeing of Coastal Communities. London: Government Office for Science.

[31] Zsamboky, M.,Fernández-Bilbao, A.,Smith, D., Knight, J. & Allan, A. (2011) Impacts of Climate Change on Disadvantaged UK Coastal Communities. York,UK: Joseph Rowntree Trust.

[32] https://jncc.gov.uk/advice/marine-protected-areas/

[33] Ige-Elegbede, J., Pilkington, P., Gray, S. and Powell, J., (2019). Barriers and facilitators of physical activity among adults and older adults from Black and Minority Ethnic groups in the UK: A systematic review of qualitative studies. Preventive medicine reports, 15, p.100952.

National Water Safety Forum (2016) The UK Drowning Prevention Strategy. https://www.nationalwatersafety.org.uk/media/1005/uk-drowning-prevention-strategy.pdf

[34] National Water Safety Forum (2016) The UK Drowning Prevention Strategy. https://www.nationalwatersafety.org.uk/media/1005/uk-drowning-prevention-strategy.pdf https://www.bbc.co.uk/sport/swimming/51664922

Appendix

Appendix

Appendix 1

Coastal definition

Coastal towns' classification process

There is no nationally agreed definition or consensus on what constitutes a 'coastal community'. Academics, institutions, and policy makers have adopted a variety of definitions. These range from the narrower specification of seaside resorts, to broader classifications which include every local authority with a coastline or estuary. Beatty and Fothergill (2008), for example, in their benchmarking study, identified 37 *principle Seaside towns* in England, drawn up in consultation with the British Resorts Association [1].The study included towns with a population over 10,000 which share a number of features that distinguish them from other places along the coast or inland. This includes a "specialist tourist infrastructure (promenades, piers, parks etc), holiday accommodation (hotels, boarding houses, caravan sites) and a distinctive resort character that is often reflected in the built environment". Other examples include MHCLG who have commonly used the following definition "A coastal community is any coastal settlement within an English local authority area whose boundaries include English foreshore, including local authorities whose boundaries only include estuarine foreshore. Coastal settlements include seaside towns, ports and other areas which have a clear connection to the coastal economy".

Each definition has its limitations and there is commonly an element of subjectivity in the categorisation. Certain 'sub-categories', for example, port-towns or seaside towns may sometimes be an appropriate narrower definition, depending on the purpose for categorisation e.g research, policy.

This report does not seek to provide a coastal definition, instead a broad definition is accepted in order to explore the health and wellbeing challenges facing coastal areas. Definition at local authority level, however, is primarily avoided given that this does not provide granular enough information, especially in large local authorities with small coastlines where outcomes are likely to be masked. The term **'coastal community'** will therefore be used throughout this report to encompass any settlement along the coast (including village, town and city).

References

[1]   Beatty, C. Fothergill, S. & Wilson, I. (2008). England's Seaside Towns: A 'Benchmarking' Study. London: Department for Communities and Local Government. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7624/englishseasidetowns.pdf

Appendix 2

Office for National Statistics

Coastal towns' classification process

Coastal towns' classification in this report is the extended version (addition of coastal and non-coastal cities) of classification from the Coastal towns in England and Wales: October 2020 article:

Step 1: Start with 1,186 towns in England and Wales defined in Understanding towns in England and Wales: an introduction article,

Step 2: Add BUA/BUASD's with population above 225,000 in the Census 2011 (cities),

Step 3: Calculate the distance between the town/city centroid and the boundary (Mean Low Water Mark shapefile has been used to exclude towns next to estuaries and rivers),

Step 4: Filter out non-coastal towns based on Step 3 distance, exact geographical location (whether the town is in direct line with the coast or whether there is another town between) and specific BUA/BUASD's characteristics (for example, an RAF station is not regarded as a coastal town),

Step 5: Further split the 169 coastal towns between seaside towns and 'other coastal' (non-seaside) towns. The distinction between a seaside town and 'other coastal' town is made by consulting several lists of seaside towns previously published as well as examining a range of information on each town. The aim has been to split the towns depending on whether the town has a tourist beach and associated visitor attractions or whether the town is focused on other activities such as being a port town or a town with an industrial heritage,

Step 6: Split the towns based on their 2011 Census population with towns with populations between 5,000 and 20,000 in the smaller town category, and those with population greater than 20,000 in the larger town category.

Table 2: List of all coastal areas included in the analysis

Area Code	Area Name	Region/Country	Area classification
E34000776	Mablethorpe BUA	East Midlands	Smaller seaside town
E34004327	Skegness BUA	East Midlands	Larger seaside town
E34004315	Lowestoft BUA	East of England	Larger seaside town
E35000390	Southend-on-Sea BUASD	East of England	Larger seaside town
E34001609	Caister-on-Sea BUA	East of England	Smaller seaside town
E34003679	Clacton-on-Sea BUA	East of England	Larger seaside town
E35000402	Harwich BUASD	East of England	Smaller 'other coastal' town
E34003490	Hemsby BUA	East of England	Smaller seaside town
E35001424	Leiston BUASD	East of England	Smaller 'other coastal' town
E35000084	Walton-on-the-Naze BUASD	East of England	Smaller seaside town
E35000707	Cromer BUASD	East of England	Smaller seaside town
E35000079	Gorleston-on-Sea BUASD	East of England	Larger seaside town
E35000843	Great Yarmouth BUASD	East of England	Larger seaside town
E35001404	Hunstanton BUASD	East of England	Smaller seaside town
E34002505	West Mersea BUA	East of England	Smaller seaside town
E34001940	Brightlingsea BUA	East of England	Smaller 'other coastal' town
E35000431	Felixstowe BUASD	East of England	Larger seaside town
E35000634	Sheringham BUASD	East of England	Smaller seaside town
E34001445	Ashington (Northumberland) BUA	North East	Larger 'other coastal' town
E35000002	Redcar BUASD	North East	Larger seaside town
E35001196	Sunderland BUASD	North East	Larger 'other coastal' town
E34000188	Amble BUA	North East	Smaller seaside town
E34002074	Blyth (Northumberland) BUA	North East	Larger 'other coastal' town
E34001750	Easington (County Durham) BUA	North East	Smaller 'other coastal' town

Area Code	Area Name	Region/Country	Area classification
E35001161	Hartlepool BUASD	North East	Larger 'other coastal' town
E34002694	Newbiggin-by-the-Sea BUA	North East	Smaller seaside town
E35001258	Peterlee BUASD	North East	Larger 'other coastal' town
E34002678	Saltburn-by-the-Sea BUA	North East	Smaller seaside town
E34004190	Seaham BUA	North East	Larger 'other coastal' town
E35000405	South Shields BUASD	North East	Larger 'other coastal' town
E35000601	Whitburn BUASD	North East	Smaller 'other coastal' town
E34004204	Berwick-upon-Tweed BUA	North East	Smaller 'other coastal' town
E35001354	Tynemouth BUASD	North East	Larger 'other coastal' town
E35001492	Whitley Bay BUASD	North East	Larger seaside town
E34000879	Marske-by-the-Sea BUA	North East	Smaller 'other coastal' town
E35000841	Birkenhead BUASD	North West	Larger 'other coastal' town
E34003462	Fleetwood BUA	North West	Larger seaside town
E34000633	Southport BUA	North West	Larger seaside town
E35000439	Whitehaven BUASD	North West	Larger 'other coastal' town
E35000575	Workington BUASD	North West	Larger 'other coastal' town
E35001061	Cleveleys BUASD	North West	Smaller seaside town
E35000514	Crosby BUASD	North West	Larger 'other coastal' town
E35001007	Heysham BUASD	North West	Smaller 'other coastal' town
E34003862	Maryport BUA	North West	Smaller 'other coastal' town
E35001185	North Walney BUASD	North West	Smaller 'other coastal' town
E34004474	Preesall BUA	North West	Smaller 'other coastal' town
E35000398	Wallasey BUASD	North West	Larger 'other coastal' town
E34003078	Barrow-in-Furness BUA	North West	Larger 'other coastal' town
E35001472	Blackpool BUASD	North West	Larger seaside town

Area Code	Area Name	Region/Country	Area classification
E35000538	Bootle BUASD	North West	Larger 'other coastal' town
E35001056	Morecambe BUASD	North West	Larger seaside town
E34004335	Formby BUA	North West	Larger seaside town
E35001375	Hoylake BUASD	North West	Smaller seaside town
E35001480	Seaton BUASD	North West	Smaller 'other coastal' town
E35001127	West Kirby BUASD	North West	Smaller seaside town
E35000997	Lytham St Anne's BUASD	North West	Larger seaside town
E35001470	Liverpool BUASD	North West	Coastal city
E35001397	Bexhill BUASD	South East	Larger seaside town
E34004398	Dover BUA	South East	Larger 'other coastal' town
E35000639	Eastbourne BUASD	South East	Larger seaside town
E35001192	Folkestone BUASD	South East	Larger seaside town
E35001268	Hastings BUASD	South East	Larger seaside town
E34001759	New Romney BUA	South East	Smaller seaside town
E34001491	Sheerness BUA	South East	Smaller seaside town
E34000490	Deal BUA	South East	Larger seaside town
E35000986	East Cowes BUASD	South East	Smaller seaside town
E34000109	Freshwater BUA	South East	Smaller seaside town
E35001486	Herne Bay BUASD	South East	Larger seaside town
E35001458	Margate BUASD	South East	Larger seaside town
E35001373	Minster (Swale) BUASD	South East	Smaller 'other coastal' town
E34003343	Peacehaven BUA	South East	Smaller 'other coastal' town
E35001118	Portslade-by-Sea BUASD	South East	Smaller seaside town
E35000923	Ramsgate BUASD	South East	Larger seaside town
E35001361	Ryde BUASD	South East	Larger seaside town

Area Code	Area Name	Region/Country	Area classification
E35000516	Sandown BUASD	South East	Smaller seaside town
E35001106	Shanklin BUASD	South East	Smaller seaside town
E35000829	Southwick BUASD	South East	Smaller seaside town
E34002686	Ventnor BUA	South East	Smaller seaside town
E34004141	Newhaven BUA	South East	Smaller 'other coastal' town
E35000473	Whitstable BUASD	South East	Larger seaside town
E34000852	Netley BUA	South East	Smaller 'other coastal' town
E35000153	Saltdean BUASD	South East	Smaller seaside town
E34003761	Stubbington BUA	South East	Larger seaside town
E35001171	Lymington BUASD	South East	Smaller 'other coastal' town
E34002766	Blackfield BUA	South East	Smaller 'other coastal' town
E35001155	Cowes BUASD	South East	Smaller seaside town
E35000690	Littlehampton BUASD	South East	Larger seaside town
E34002637	Selsey BUA	South East	Smaller seaside town
E35001442	Shoreham-by-Sea BUASD	South East	Larger seaside town
E34004154	Bognor Regis BUA	South East	Larger seaside town
E35000699	East Wittering BUASD	South East	Smaller seaside town
E35001479	Gosport BUASD	South East	Larger 'other coastal' town
E35001112	Hythe BUASD	South East	Smaller seaside town
E34000231	Seaford BUA	South East	Larger seaside town
E34003129	South Hayling BUA	South East	Smaller seaside town
E35000565	Broadstairs BUASD	South East	Larger seaside town
E35000148	Worthing BUASD	South East	Larger seaside town
E35000260	Brighton and Hove BUASD	South East	Coastal city
E35001312	Portsmouth BUASD	South East	Coastal city

Area Code	Area Name	Region/Country	Area classification
E35001237	Southampton BUASD	South East	Coastal city
E35001234	Bideford BUASD	South West	Smaller 'other coastal' town
E35000462	Falmouth BUASD	South West	Larger seaside town
E34000980	Hayle BUA	South West	Smaller seaside town
E34002653	Ilfracombe BUA	South West	Smaller seaside town
E34002180	Newquay BUA	South West	Larger seaside town
E35001318	Paignton BUASD	South West	Larger seaside town
E35000718	Penryn BUASD	South West	Smaller 'other coastal' town
E35000280	St Austell BUASD	South West	Larger 'other coastal' town
E35000334	St Blazey BUASD	South West	Smaller 'other coastal' town
E35001322	Weston-Super-Mare BUASD	South West	Larger seaside town
E35001241	Weymouth BUASD	South West	Larger seaside town
E34003104	Brixham BUA	South West	Smaller seaside town
E34001067	Dawlish BUA	South West	Smaller seaside town
E35000106	Northam BUASD	South West	Smaller seaside town
E35001036	Teignmouth BUASD	South West	Smaller seaside town
E34000830	Torpoint BUA	South West	Smaller 'other coastal' town
E35000355	Weston BUASD	South West	Smaller seaside town
E35001146	Bournemouth BUASD	South West	Larger seaside town
E35001476	Bude BUASD	South West	Smaller seaside town
E35000507	Burnham-on-Sea BUASD	South West	Larger seaside town
E34002161	Looe BUA	South West	Smaller seaside town
E34000469	Minehead BUA	South West	Smaller seaside town
E35000926	Penzance BUASD	South West	Smaller seaside town
E34004338	St Ives (Cornwall) BUA	South West	Smaller seaside town

Area Code	Area Name	Region/Country	Area classification
E35001315	Torquay BUASD	South West	Larger seaside town
E35000835	Christchurch BUASD	South West	Larger seaside town
E34003928	Clevedon BUA	South West	Larger seaside town
E34004282	Swanage BUA	South West	Smaller seaside town
E34000242	Budleigh Salterton BUA	South West	Smaller seaside town
E35000255	Plymstock BUASD	South West	Larger 'other coastal' town
E34001039	Portishead BUA	South West	Larger 'other coastal' town
E34000796	Sidmouth BUA	South West	Smaller seaside town
E34000403	Exmouth BUA	South West	Larger seaside town
E34003892	Saltash BUA	South West	Smaller 'other coastal' town
E34004484	Bridport BUA	South West	Smaller 'other coastal' town
E35000831	Dartmouth BUASD	South West	Smaller seaside town
E34004441	Kingsbridge BUA	South West	Smaller 'other coastal' town
E35000801	Poole BUASD	South West	Larger seaside town
E34003628	Seaton (East Devon) BUA	South West	Smaller seaside town
E35001398	Plymouth BUASD	South West	Coastal city
E34002993	Barton-upon-Humber BUA	Yorkshire and The Humber	Smaller 'other coastal' town
E35000950	Bridlington BUASD	Yorkshire and The Humber	Larger seaside town
E35001011	Cleethorpes BUASD	Yorkshire and The Humber	Larger seaside town
E34002712	Filey BUA	Yorkshire and The Humber	Smaller seaside town
E34000589	Hornsea BUA	Yorkshire and The Humber	Smaller seaside town
E34003793	Withernsea BUA	Yorkshire and The Humber	Smaller seaside town

Area Code	Area Name	Region/Country	Area classification
E35001320	Grimsby BUASD	Yorkshire and The Humber	Larger 'other coastal' town
E35000529	Immingham BUASD	Yorkshire and The Humber	Smaller 'other coastal' town
E34004408	Scarborough BUA	Yorkshire and The Humber	Larger seaside town
E34003687	Whitby BUA	Yorkshire and The Humber	Smaller seaside town
E35000523	Hessle BUASD	Yorkshire and The Humber	Smaller 'other coastal' town
E35001335	Kingston upon Hull BUASD	Yorkshire and The Humber	Coastal city

Definition of suicide

Suicide is where the cause of death was recorded as intentional self-harm or injury/poisoning of undetermined intent. Figures are for those aged 10 years and above.

In England and Wales, data on suicide concern all deaths that were assigned underlying cause of intentional self-harm (for those aged 10 years and above). We also include deaths caused by injury or poisoning of undetermined intent (for those aged 15 years and above), based on the assumption that the majority of these deaths will be suicide. This is referred to as the National Statistics definition of suicide (see Box 1).

Box 1: The National Statistics definition of suicide based on codes from the International Classification of Diseases (ICD), England and Wales.

Codes	Description	Notes
X60-X84	Intentional self-harm	Persons aged 10 years and above
Y10-Y34	Injury/poisoning of undetermined intent	Persons aged 15 years and above; excludes Y33.9 where the coroner's verdict was pending for the years 2001-2006

Definition of drug poisoning

Drug poisoning deaths involve a broad spectrum of substances, including controlled and non-controlled drugs, prescription medicines (either prescribed to the individual or obtained by other means) and over-the-counter medications. As well as deaths from drug abuse and dependence, figures include accidents and suicides involving drug poisonings, and complications of drug abuse such as deep vein thrombosis or septicaemia from intravenous drug use. They do not include other adverse effects of drugs, for example, anaphylactic shock, or accidents caused by an individual being under the influence of drugs.

Box 2: International Classification of Diseases, Ninth Revision (ICD-9) and Tenth Revision (ICD-10) codes used to define deaths related to drug poisoning

Description	ICD-10 Codes
Mental and behavioural disorders due to drug use (excluding alcohol and tobacco)	F11-F16, F18-F19
Accidental poisoning by drugs, medicaments and biological substances	X40-X44
Intentional self-poisoning by drugs, medicaments and biological substances	X60-X64
Assault by drugs, medicaments and biological substances	X85
Poisoning by drugs, medicaments and biological substances, undetermined intent	Y10-Y14

Definition of alcohol-specific deaths

Alcohol-specific deaths are those where each death is a direct consequence of alcohol misuse, such as alcoholic liver disease. The definition does not include other causes of death, such as certain cancers, that are known to be associated with alcohol misuse.

National Statistics definition of alcohol-specific deaths

The definition of alcohol-specific deaths includes any death which has an underlying cause listed below.

ICD-10 code	Description of condition
E24.4	Alcohol-induced pseudo-Cushing's syndrome
F10	Mental and behavioural disorders due to use of alcohol
G31.2	Degeneration of nervous system due to alcohol
G62.1	Alcoholic polyneuropathy
G72.1	Alcoholic myopathy
I42.6	Alcoholic cardiomyopathy
K29.2	Alcoholic gastritis
K70	Alcoholic liver disease
K85.2	Alcohol-induced acute pancreatitis
K86.0	Alcohol-induced chronic pancreatitis
Q86.0	Fetal-induced alcohol syndrome (dysmorphic)
R78.0	Excess alcohol blood levels
X45	Accidental poisoning by and exposure to alcohol
X65	Intentional self-poisoning by and exposure to alcohol
Y15	Poisoning by and exposure to alcohol, undetermined intent

Definition of family unit in the Annual Population Survey

9. Family unit calculated based on Relationship to person variable XR:
   (1) Spouse
   (2) Cohabiting partner
   (3) Natural son or daughter
   (4) Stepson or stepdaughter
   (5) Foster child
   (6) Son- or daughter-in-law
   (7) Parent/Guardian
   (8) Step parent
   (10) Foster parent
   (11) Parent-in-law
   (12) Brother or sister
   (13) Stepbrother or stepsister
   (14) Foster brother or sister
   (15) Brother- or sister-in-law
   (16) Grandchild
   (17) Grandparent
   (18) Other relation
   (19) Other non-relative
   (20) Civil Partner

10. Family unit is extended to include same sex partners in the same family unit.

11. This extended measure is used to calculate the Figure 29 values (Total number of family units in households = maximum extended family units from point 2)

12. In general, the following is the list of possible family units:

(1) 1 person – male

(2) 1 person – female

(3) Same sex couple

(4) Married couple with no children

(5) Married couple with non-dependent children only

(6) Married couple with dependent children

(7) Cohabiting couple with no children

(8) Cohabiting couple with non-dependent children only

(9) Cohabiting couple with dependent children

(10) Male lone parent with dependent children

(11) Male lone parent with non-dependent children only

(12) Female lone parent with dependent children

(13) Female lone parent with non-dependent children only

(14) Same sex cohabiting couple with no children

(15) Same sex cohabiting couple with non-dependent children only

(16) Same sex cohabiting couple with dependent children

(17) Civil partners/same sex marriage couple with no children
(from July 2014)

(18) Civil partners/same sex marriage couple with non-dependent children
only (from July 2014)

(19) Civil partners couple/same sex marriage with dependent children
(from July 2014)

Appendix 3

Technical appendix Plymouth University

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Introduction: the problem of scale

A range of health, health-related and health service data are now routinely published, often via online portals providing graphical and mapping tools to aid interpretation. These usually relate to NHS provider trusts and/or large administrative areas such as Clinical Commissioning Groups (CCGs) and local authorities (LAs). Without more granular data, the needs of specific communities are all but invisible to the national policy debate.

This is a particular issue for coastal communities, as few CCGs or local authorities serve wholly, or even predominantly, coastal populations. It also affects smaller towns and cities which, like coastal communities, tend to comprise only a fraction of the CCG or local authority of which they are a part. North East Essex CCG illustrates the problem with respect to a variety of cardiovascular diseases (Figure 1).

Attributing (as detailed below) GP-level Quality Outcomes Framework (QOF) disease register data to Lower Super Output Areas (LSOAs) reveals prevalence rates in the coastal fringe which, on average, are between 38% and 88% higher than in non-coastal LSOAs. Clearly, data relating to the whole CCG will mask internal diversity. It is only where administrative boundaries happen to be drawn around predominately coastal communities (such as Torbay, Brighton and Blackpool) that CCG and local authority level data can throw light on the problems they face.

Figure 1: LSOA-level variation in prevalence of selected CVD conditions within NE Essex CCG
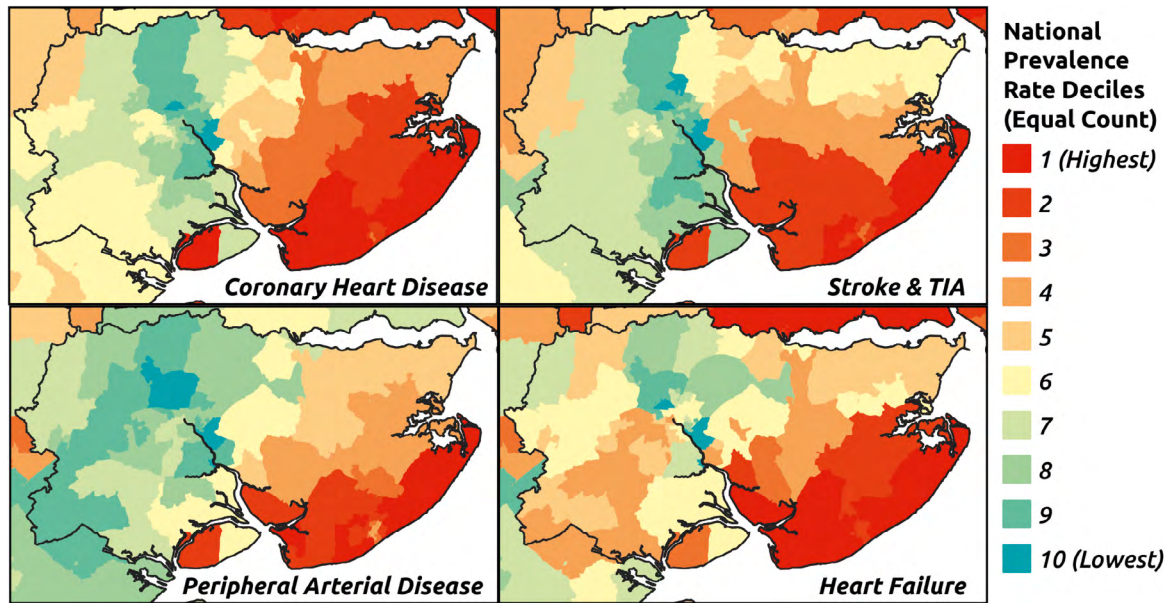
Some health and health service data are available for defined local areas, and the analysis uses Middle Layer Super Output Area (MSOA) data on emergency hospital admissions, standardised mortality ratios (SMRs) and Life Expectancy[1]. Unfortunately, data on the prevalence of disease in local communities relate to general practice populations. These comprise non-contiguous and overlapping populations of widely varying size about which relatively little is known (or at least made public). The first part of this Technical Appendix describes how these data have been attributed to LSOAs, the smallest unit in a widely used 'statistical geography' of England and Wales.

Attributing GP QOF Disease Register Data to LSOAs

Introduced in 2004, the QOF is an incentive payment scheme designed to encourage the improvement of primary care services. It provides a mechanism for rewarding practices for the provision of 'quality care' across a wide range of key areas of clinical care and public health. It has also emerged as an invaluable national data collection relating to the quality of primary care services and the prevalence of key diseases and disease risk factors. GP participation remains voluntary, but almost all practices in England submit summary disease register data and, even after data validation exclusions, these are available for about 95% of eligible practices.

Practice-level counts of the number of people on each GP's disease register, and of the number of people in the relevant denominator populations, are published annually by NHS Digital[2]. Collated by PHE as part of the National General

Practice Profiles section of its Public Health Profiles website,[3] practice-level data for 2014/15 to 2018/19 (for 7,779; 7,619; 7,392; 7,100 and 6,873 practices respectively) were extracted using the Fingertips API[4].

Although these data relate to practice populations, with little evidence of systematic socio-economic bias in patient choice of GPs,[5] it is reasonable to attribute QOF data to LSOAs using NHS Digital data on the LSOAs in which practice patients live[6]. This cannot be as precise as the direct attribution of individual-level data to LSOAs but, with nearly 60 million patients distributed between 32,844 LSOAs, contrasts drawn between populations living in coastal and non-coastal areas are likely to be reliable[7].

In practice, a Julia script[8] was written to automate the population-weighted attribution of data from all disease registers for all English GPs for each of the five years, 2014/15- 2018/19. For each year, attribution was based on NHS Digital's April snapshot of the LSOAs in which GP patients lived. Estimates of the number of GP patients in each LSOA, and of the number and proportion with each QOF-recorded condition, were then calculated as the population-weighted average from across all five years. The same approach was used to attribute QOF data on the number of patients receiving appropriate care (e.g. those with a diagnosis of depression reviewed by their GP within the recommended 10-56 days), GP Survey data[9] (e.g. on patients self-reporting long-term health problems), and NHS Digital GP-level workforce data[10].

The specific advantage of using LSOAs lies in the fact that they were designed to facilitate the publication of data at neighbourhood level. Containing between 1,000 and 3,000 people (or 400 to 1,200 households), the 32,844 LSOAs nest within 6,791 somewhat larger MSOAs (Table 1).

Table 1: Population and household minimum and maximum thresholds for SOAs in England[11]

Statistical Geography	Population			Households		N (England)
	Minimum	Maximum	2019 Average	Minimum	Maximum	
LSOA	1,000	3,000	1,700	400	1,200	32,844
MSOA	5,000	15,000	8,300	2,000	6,000	6,791

As intended, LSOAs and MSOAs are now widely used to compare local areas and monitor changes over time. The Index of Multiple Deprivation, for instance, has been calculated for LSOAs in 2004, 2007, 2010, 2015 and 2019, allowing for a long-term perspective on changing patterns of deprivation. It is significant that during this period the proportion of coastal residents living in one of the 10% most deprived LSOAs in the country increased from 14.2% to 16.6%.

Categorising LSOAs and MSOAs as 'coastal'

Maps usefully illustrate how the burden of ill-health varies across the country, but they have their limitations and can be deceptive. The maps in the main report are striking[12] but, as the 32,844 LSOAs upon which they are based vary hugely in size, rural areas do tend to dominate visually. A more reliable approach is to compare summary statistics describing the characteristics of populations categorised as either coastal or non-coastal.

The problem is that no such categorisation currently exists, certainly not at a sufficiently local scale. The ONS Coastal Towns in England and Wales report[13] only covers towns of between 5,000 and 225,000 people, and thus excludes large swathes of the country, whilst other recent reports examining aspects of coastal health[14] focus on local authorities.

For the purposes of this analysis, "coastal" LSOAs have therefore been defined as those which include or overlap built-up areas[15] which lie within 500m of the "Mean High Water Mark" (excluding tidal rivers). The categorisation of LSOAs was undertaken using QGIS[16] and ONS boundary data[17]. An important, but intended, consequence of this approach is that some rural LSOAs adjacent to the coast, but which have no built-up coastal presence, are categorised as "non-coastal". MSOAs, meanwhile, have been defined as coastal if more than 50% of their 2019 mid-year population[18] live in coastal LSOAs.

The extent of the coastal fringe differs slightly depending on whether it is defined using LSOAs or MSOAs but, overall, both approaches place about 18.5% of the English population in coastal areas (Table 2). This contrasts markedly with the 25.4% of people who live within local authorities which include coastal foreshore.

Adopting a more granular perspective means, for instance, that it is not necessary to treat everybody living in Northumberland as a "coastal resident". This local authority (and its geographically identical CCG) has a long coast (90km as the crow flies), but some parts lie fully 75km from the sea. Overall, less than 40% of people live in coastal LSOAs and, although in Northumberland the coastal population is slightly younger, it is, as elsewhere in the country, markedly more deprived than more inland areas (Figure 2).

Table 2: Coastal and Non-Coastal Areas: LSOA- and MSOA-based categorisations

		Count	Population (%)	Demography & Deprivation: LSOAs			
				% Pop. aged 65+	Pop.-weighted average IMD 2019	% Income-deprived children 0-15	% Deprived older people (60+)
LSOAs	Coastal	6,344	10,442,851 (18.6%)	21.0%	26.1	20.2%	15.5%
	Non-coastal	26,500	45,844,110 (81.5%)	17.8%	20.8	16.4%	13.8%
		32,844	56,286,961				
MSOAs	Coastal	1,280	10,328,654 (18.35%)	20.9%	26.2	20.3%	15.7%
	Non-coastal	5,511	45,958,307 (81.65%)	17.8%	20.8	16.4%	13.8%
		6,791	56,286,961				

Figure 2: Coastal & Non-Coastal Northumberland: Demography and Deprivation
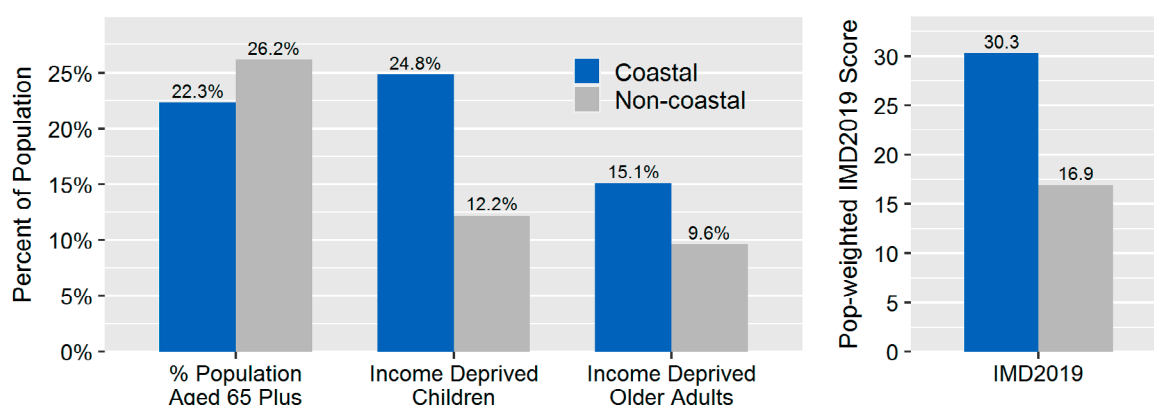
As illustrated with respect to NE Essex CCG (Figure 1 above), the key advantage of using LSOA and MSOA level data is that it cuts beneath and across the administrative geography of local authorities and CCGs, but it also means that it is possible to draw upon a wealth of existing data on the characteristics of local communities to investigate the impact of potential drivers of local variations in the prevalence of disease.

To that end, the main report used contrasting 'heatmaps' to illustrate how CHD prevalence rates compared between coastal and non-coastal LSOAs with broadly similar levels of deprivation (IMD2019) and age profiles (% population aged 65 and above). The observation made was that although CHD prevalence rates were higher in older more deprived populations than in younger less deprived populations, rates were also almost always higher in coastal LSOAs than in equivalent non-coastal LSOAs.

It is important to recognise, as illustrated in Figure 3, that, with one exception, a similar contrast between coastal and non-coastal populations is found with respect to other CVD conditions (Stroke/TIA, Heart Failure and Peripheral Arterial Disease) as well as with respect to CVD risk factors (Hypertension, Diabetes and Smoking).

In these heatmaps, as in the CHD example used in the main report, the colour scale is shared between each pair of coastal and non-coastal 'deprivation by demography' heatmaps. With high-to-low prevalence rates being represented by a red-yellow-green colour ramp, the predominance of reds and yellows on the coastal heatmaps illustrates the extent to which rates are higher in coastal LSOAs. The only exception is diabetes where, probably due to the greater concentration of people with South Asian ancestry, prevalence rates tend to be higher in non-coastal areas.

Figure 3: CVD & CVD-risk prevalence rates in coastal and non-coastal LSOAs
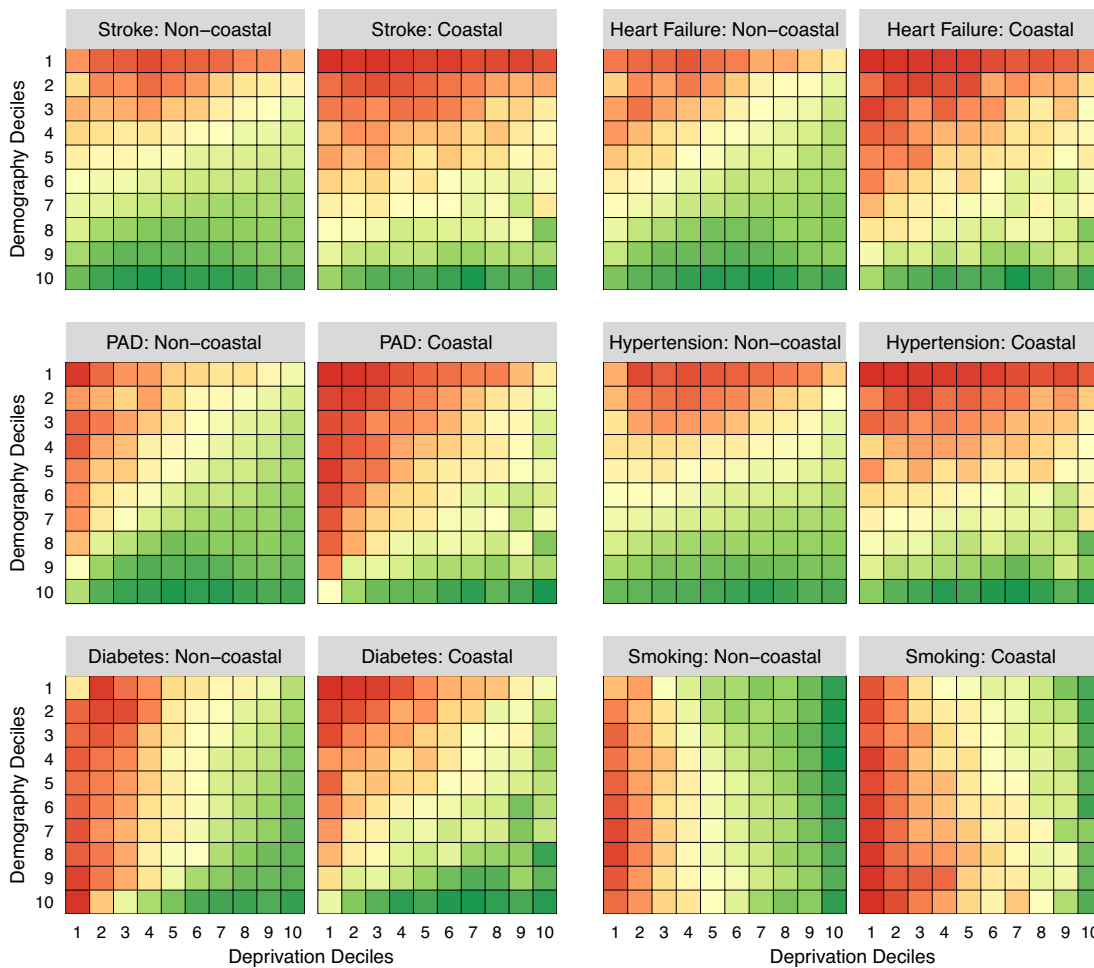
Higher prevalence rates in coastal LSOAs are found for almost all other conditions for which GP-level QOF disease register data are available; illustrated by Figure 4 with respect to Chronic Kidney Disease (CKD), Atrial Fibrillation (AF), Cancer, Asthma, Epilepsy, Chronic Obstructive Pulmonary Disease (COPD), Depression and Mental Health (which covers patients with schizophrenia, bipolar affective disorder and other psychoses). The precise way in which prevalence rates respond to deprivation and demography varies, but like-for-like comparisons between coastal and non-coastal LSOAs show that rates are almost invariably higher in coastal areas.

Figure 4: Selected other QOF-based prevalence rates in coastal and non-coastal populations
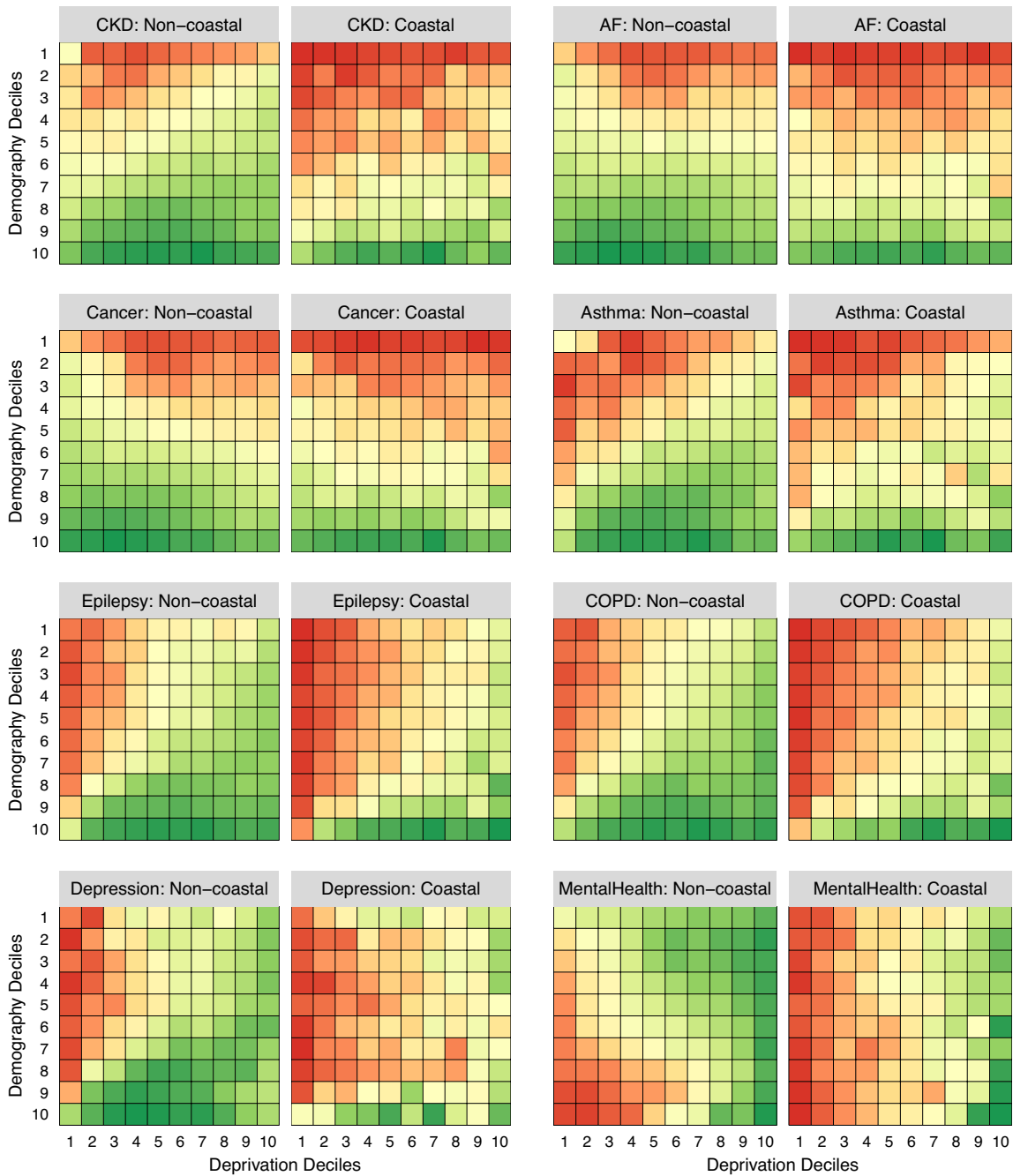
Modelling the 'coastal effect'

The main report emphasises that coastal areas tend to be more deprived and have older populations than other parts of the country. Given that most diseases are more common in older and more deprived populations, this 'compositional' effect means that, on average, coastal areas experience a significantly higher burden of ill-health. However, the report also explores whether there is an additional 'contextual' effect on morbidity; i.e. whether coastal communities experience higher levels of ill-health having controlled for their socio-economic and demographic composition.

The approach taken has been to specify and fit a series of Poisson regression models[19] of the estimated count of patients in each LSOA with each QOF condition, relative to the appropriate total number of QOF-denominator patients in each LSOA. (Most QOF disease registers use the total population as the denominator, but some, for instance COPD, have age-restricted denominator populations.) Where there is evidence of over-dispersed count data, negative binomial regressions have been used to ensure more appropriate parameter confidence intervals.

The same set of LSOA-level candidate predictor variables were offered to each model (listed below). Variable selection to identify a suitably parsimonious model for each QOF condition was based on minimising the Akaike Information Criterion. Standard diagnostic criteria were used to confirm that the final regression models did not unduly violate assumptions of linearity, homoscedasticity, independence and normality.

- A summary measure of the age-profile of the population; namely the proportion of people aged 65 and above (from ONS mid-2019 population estimates). This was included in all final models except obesity.

- Six of the seven IMD2019 'deprivation domains (Income, Employment, Education, Crime, Barriers to Housing and Services, and Living Environment). The seventh domain, Health, "measures the risk of premature death and the impairment of quality of life through poor physical or mental health"[20] was excluded as being potentially too closely related to outcome variables concerned with morbidity.

- Summary measures of the non-white ethnic composition of the local population, incorporating the percent of (a) Black/Black British ethnicity, (b) Asian/Asian British ethnicity, (c) mixed ethnicity, and (d) other ethnicity. Taken from 2011 Census data,[21] all ethnicity variables were included in all models except dementia.

- ONS Residential Group. A 24-category classification of LSOAs based on 60 variables relating to "demographic structure, household composition, housing, socio-economic character, and employment" drawn from the 2011 Census. As variable selection criteria suggested this variable should

be included in all models, this classification clearly captures aspects of the socio-economic character of local areas over and above that which is proxied by the various IMD2019 deprivation domains.

• Whether the LSOA was in a coastal area as defined above.

The particular focus of interest is the last variable in the model. This quantifies the extent to which being a coastal LSOA predicts variations in the prevalence of each QOF condition *given the influence of all other factors in the model*. The 'coastal effect' is multiplicative and is plotted in Figure 6 of the main report as how much higher (or lower) prevalence rates are in coastal LSOAs than non-coastal LSOAs. The observed association does not, in itself, imply any particular causal mechanism, but it does raise important questions about why, across almost all conditions included in the QOF, morbidity appears to be worse in coastal communities than might otherwise be expected.

References

1   Public Health England (2020). *Public Health Profiles: Local Health* [Online. Accessed 12/01/2021] (https://fingertips.phe.org.uk/profile/local-health). Crown copyright.

2   NHS Digital (2020). *Quality and Outcomes Framework, Achievement, prevalence and exceptions data.* [Online. Accessed 23/1/2021] (https://digital.nhs.uk/data-and-information/publications/statistical/quality-and-outcomes-framework-achievement-prevalence-and-exceptions-data)

3   Public Health England (2020). *Public Health Profiles: National General Practices Profiles*. [Online. Accessed 12/01/2021] (https://fingertips.phe.org.uk/profile/general-practice).

4   Public Health England (2020). *Fingertips API*. [Online. Accessed 22/01/2021] (https://fingertips.phe.org.uk/).

5   Santos, R., Gravelle, H, Propper, C. (2017) Does Quality Affect Patients' Choice of Doctor? Evidence from England. *The Economic Journal*, Volume 127, Issue 600, pp445-494 (https://doi.org/10.1111/ecoj.12282); Gravelle, H, Liu, D., Propper, C., Santos, R. (2019). Spatial competition and quality: Evidence from the English family doctor market, *Journal of Health Economics*, 68, 102249 (https://doi.org/10.1016/j.jhealeco.2019.102249)

6   NHS Digital (2020). *Patients Registered at a GP Practice*. [Online. Accessed 22/1/2021] (https://digital.nhs.uk/data-and-information/publications/statistical/patients-registered-at-a-gp-practice).

7   Our approach mirrors that implemented by Asaria, M., Cookson, R., Fleetcroft, R., Ali, S. (2016) Unequal socioeconomic distribution of the primary care workforce: whole-population small area longitudinal study. *BMJ OPEN*, 6(1). (doi.org/10.1136/bmjopen-2015-008783), and that currently being used to produce an expanding range of LSOA-level datasets for the *Place-based Longitudinal Data Resource* (https://pldr.org/). This includes a number of QOF-based datasets.

8   Bezanson, J., Edelman, A, Karpinski, S. & Shah, V. (2017) *Julia: A Fresh Approach to Numerical Computing*. Society for Industrial and Applied Mathematics Review, 59(1), 65-98. (https://doi.org/10.1137/141000671).

9   NHS (2021). *GP Survey Data: Surveys and Reports*. [Online. Accessed 13/01/2021] (http://www.gp-patient.co.uk/SurveysAndReports).

10 NHS Digital (2021) *NHS workforce statistics*. [Online. Accessed 03/03/2021] (https://digital.nhs.uk/data-and-information/publications/statistical/nhs-workforce-statistics). Data extracted for 16 quarters from September 2016 to December 2019.

11 Office for National Statistics (2021) *Census geography: An overview of the various geographies used in the production of statistics collected via the UK census*. [Online. Accessed 14/4/2021]. (https://www.ons.gov.uk/methodology/geography/ukgeographies/censusgeography#super-output-area-soa)

12 All maps based on digital boundaries obtained via the ONS Open Geography Portal (https://geoportal.statistics.gov.uk/). Source: Office for National Statistics licensed under the Open Government Licence v.3.0. Contains OS data © Crown copyright and database right [2021]. Specifically: *Lower Layer Super Output Areas (December 2011) Boundaries Generalised Clipped (BGC) EW V3.* [Online. Accessed 20/02/2021] (https://geoportal.statistics.gov.uk/datasets/ons::lower-layer-super-output-areas-december-2011-boundaries-generalised-clipped-bgc-ew-v3/explore); *Clinical Commissioning Groups (April 2020) EN BFC V2*. [Online. Accessed 20/02/2021] (https://geoportal.statistics.gov.uk/datasets/clinical-commissioning-groups-april-2020-en-bfc-v2); *Countries (December 2011) Boundaries EW BGC*. [Online. Accessed 20/02/2021] (https://geoportal.statistics.gov.uk/datasets/countries-december-2011-boundaries-ew-bgc)

13 Office for National Statistics (2020). *Coastal towns in England and Wales: October 2020. Data and analysis on seaside and other coastal towns in England and Wales*. [Online. Accessed 5/1/2021] (https://www.ons.gov.uk/businessindustryandtrade/tourismindustry/articles/coastaltownsinenglandandwales/2020-10-06).

14 Public Health England (2019). *An evidence summary of health inequalities in older populations in coastal and rural areas: Full report* [Online. Accessed 4/1/2021] (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/824723/Health_Inequalities_in_Ageing_in_Rural_and_Coastal_Areas-Full_report.pdf); Corfe, S. (2017). *Living on the edge: Britain's coastal communities*. The Social Market Foundation; London. [Online. Accessed 6/1/2021]. (https://www.smf.co.uk/wp-content/uploads/2017/09/Living-on-the-edge.pdf).

15 Office for National Statistics (2019) Built-up Areas *(December 2011) Boundaries V2*. [Online. Accessed 12/11/2020] (https://geoportal.statistics.gov.uk/datasets/f6684981be23404e83321077306fa837_0); Office for National Statistics (2020). *Built-up Area Sub Divisions (December 2011) Boundaries*. [Online. Accessed 12/11/2020] (https://geoportal.statistics.gov.uk/datasets/built-up-area-sub-divisions-december-2011-boundaries-2).

16 QGIS.org, 2021. *QGIS Geographic Information System*. QGIS Association. (http://www.qgis.org)

17 Office for National Statistics (2021). *Lower Layer Super Output Areas (December 2011) Boundaries Generalised Clipped (BGC) EW V3*. [Online. Accessed 20/02/2021] (https://geoportal.statistics.gov.uk/datasets/ons::lower-layer-super-output-areas-december-2011-boundaries-generalised-clipped-bgc-ew-v3/explore); Office for National Statistics (2020). *Clinical Commissioning Groups (April 2020) EN BFC V2*. [Online. Accessed 20/02/2021] (https://geoportal.statistics.gov.uk/datasets/clinical-commissioning-groups-april-2020-en-bfc-v2); Office for National Statistics (2019). *Countries (December 2011) Boundaries EW BGC*. [Online. Accessed 20/02/2021] (https://geoportal.statistics.gov.uk/datasets/countries-december-2011-boundaries-ew-bgc)

18 Office for National Statistics (2020). *Lower layer Super Output Area population estimates: Mid-2019: SAPE22DT2*. [Online. Accessed 10/11/2020] (https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/lowersuperoutputareamidyearpopulationestimates)

19 All statistical analysis and illustrative plotting undertaken using R: R Core Team (2014). R: *A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria. (http://www.R-project.org/)

20 Ministry of Housing, Communities & Local Government (2019). *The English Indices of Deprivation 2019 (IoD2019)*, p3. [Online. Accessed 16/4/2021] (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/835115/IoD2019_Statistical_Release.pdf)

21 UK Census (2011). *KS201EW – Ethnic group (2011 super output areas – lower layer)*. Nomis. Office for National Statistics. [Online. Accessed 08/10/2020] (https://www.nomisweb.co.uk/census/2011)

Acknowledgments

I would like to thank the following for their work on this report:

Editor-in-Chief – Dr Bethan Loveless

Chapter 1 – Coastal Case Studies

Written by Directors of Public Health:

Dr Arif Rajpura – Blackpool

Dr Mike Gogarty – Clacton

Craig Blundred – Hartlepool

Darrell Gale – Hastings

Julia Weldon – Hull

Professor Derek Ward – Lincolnshire

Dr Sakthi Karunanithi – Morecambe

Stephen Pintus – North East Lincolnshire

Dr Lincoln Sargeant – Torbay

Professor Trudi Grant – West Somerset

With thanks also to all contributors of each case study.

Chapter 2 – Economic, social and demographic trends in coastal areas

Cecilia Campos – Office for National Statistics

Rafal Sikorski – Office for National Statistics

Hamish Anderson – Office for National Statistics

With thanks also to Stephanie Freeth, Ben Windsor-Shellard, Neil Park, Katie Healey and Richard Prothero.

2.8 – Housing and health - Private rented sector and coastal communities

Dr Bethan Loveless – Public Health Registrar

Antony Craig Lockley – Director of Strategy and Assistant Chief Executive, Blackpool Council

With thanks also to contributors Dr Arif Rajpura, Stephen Boydell, Vikki Piper, John Donnellon and David Galvin.

Chapter 3 – Analysis of coastal health outcomes

Dr Alex Gibson – Plymouth University

Professor Sheena Asthana – Plymouth University

Chapter 4 – Medical Workforce

Dr Tahreema Matin – National Clinical Advisor for Education Reform, Health Education England

Professor Adrian Brooke – Deputy Medical Director, Health Education England

Tom Clayton – Deputy Head of Workforce Planning, Health Education England

Professor Wendy Reid – Director of Education & Quality, National Medical Director, Health Education England

With thanks also to Professor Namita Kumar and Dr James Hadlow.

Chapter 5 – Flooding and coastal communities

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Dr Owen Landeg – Scientific and Technical Lead, Extreme Events and Health Protection, Public Health England

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Dr Sari Kovats – Associate Professor, London School of Hygiene and Tropical Medicine

Chapter 6 – Benefits of coastal living

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Dr Lewis R Elliott – Exeter University

Professor Michael H Depledge – Exeter University

Professor Lora E Fleming – Exeter University

Dr Joanne K Garrett – Exeter University

Dr James Grellier – Exeter University

Dr Mathew P White – Exeter University

Dr Benedict W Wheeler – Exeter University

Acknowledgments