Improving Population Health by 'Turning the Curve'

28 July 2022

Derby City Council

Background

As part of our development work last year, the Health and Wellbeing Board (HWB) agreed to focus on improving the following population health outcomes:

- Life expectancy
- Healthy life expectancy
- Inequalities in life expectancy and healthy life expectancy.

The HWB agreed to focus on key drivers, achieving change across seven ‘markers’ on the way to improving these high-level outcomes:

- Reduce smoking prevalence to below national average
- Increase the proportion of children and adults who are a healthy weight
- Reduce harmful alcohol consumption
- Improve participation in physical activity
- Reduce the number of children living in low-income households
- Improve housing quality (placeholder)
- Improve mental and emotional wellbeing (placeholder).

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Drivers of Life Expectancy, Healthy Life Expectancy and Inequalities

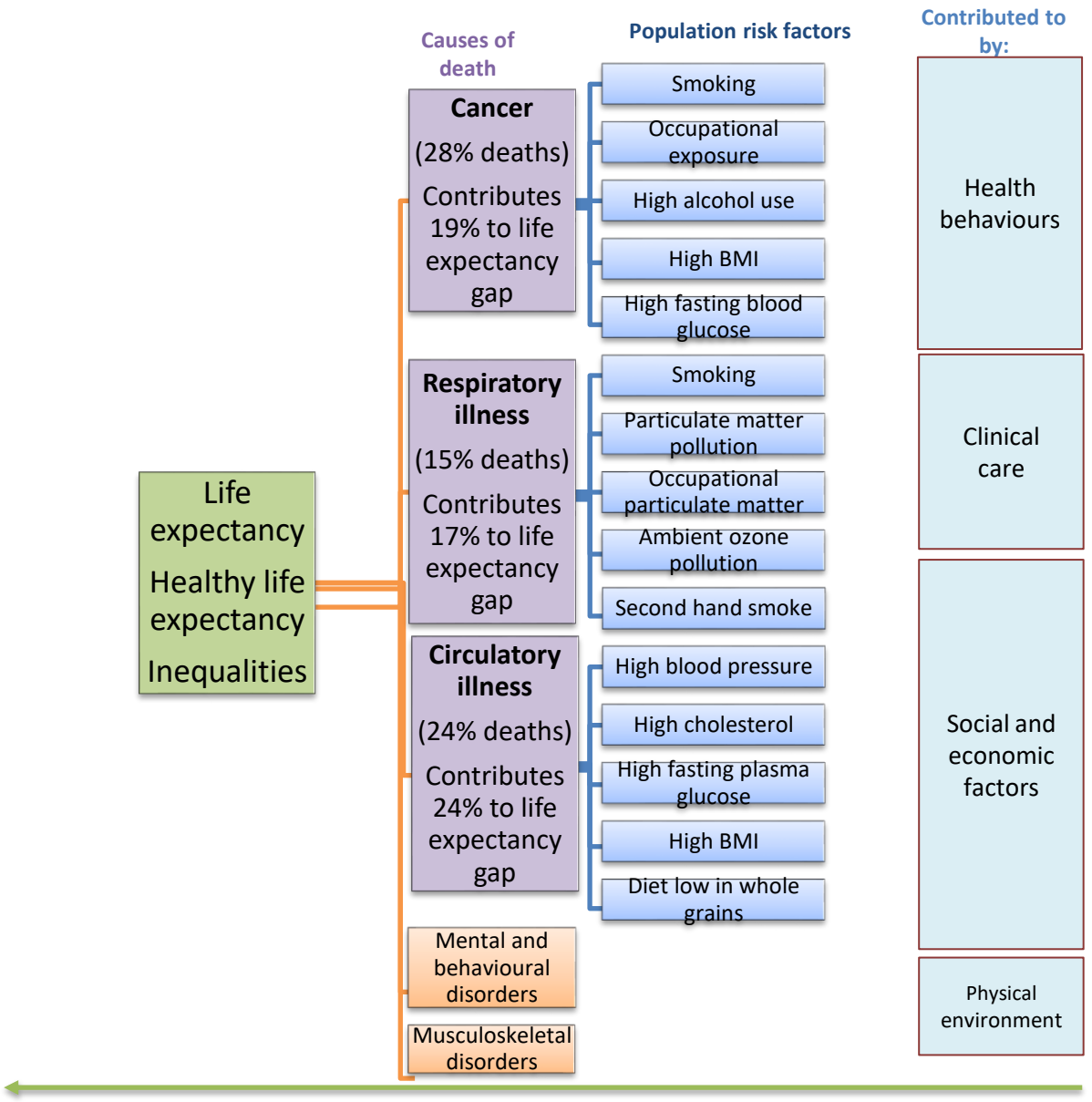
Life expectancy and healthy life expectancy are driven by interaction between multiple factors.

Ultimately the biggest causes of death in our population are cancer, respiratory illness and circulatory diseases. The figure opposite shows these and the top 5 population risk factors for each.

These are also the biggest contributors to the gap in life expectancy i.e., they significantly contribute to early deaths, under the age of 75.

With the addition of musculoskeletal disorders, they are also the main causes of ill health (morbidity) in the population.

Comorbidity is a significant issue, both in younger socially deprived population with high-risk exposure and older populations with accumulated risk.



So, what is the challenge?

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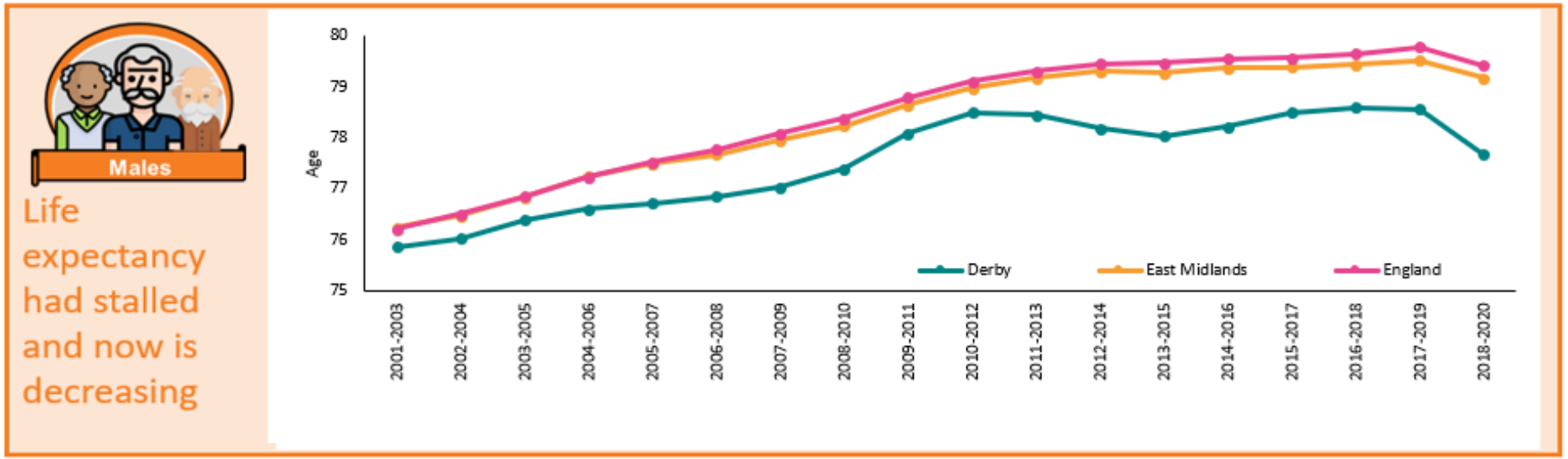
Overall population outcomes for JUCD and HWBBs: Improvements in Life Expectancy and Healthy Life Expectancy

We want children, adults and families who live in our communities to experience a good life expectancy with many of those years in good health. We want to reduce and minimise inequalities between different sections of the population.

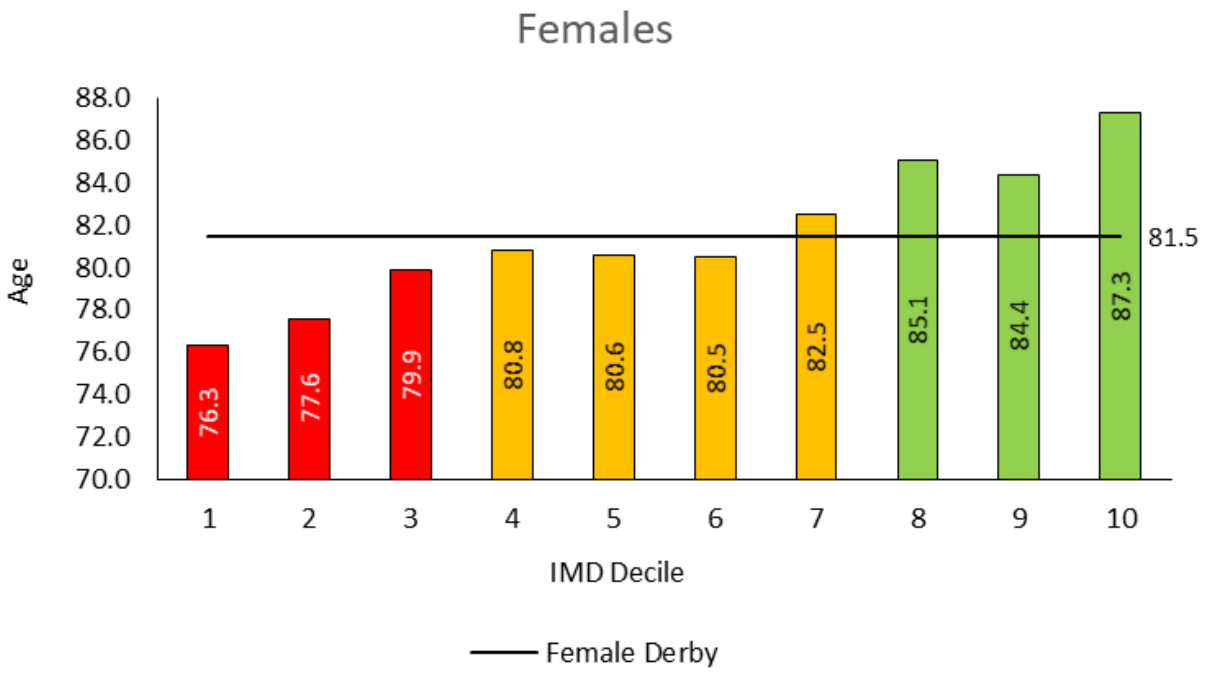
Life expectancy in Derby for both males and females has continued to decline in recent years. A male born today can expect to live for 77.7 years and a female born today can expect to live for 81.5 years.



Source: Life expectancy estimates, all ages, UK - Office for National Statistics (ons.gov.uk) (Latest update: 23/9/21)

Overall population outcomes for JUCD and HWBBs: Improvements in Life Expectancy and Healthy Life Expectancy

The inequality gap between those born in the most deprived areas of the city and those born in least deprived areas is 11 years for females and 10 years for males. The same pattern can be seen for England and the East Midlands. The same pattern is true for healthy life expectancy where only those in the least 20-30% least deprived can expect to reach state pension age in good health.

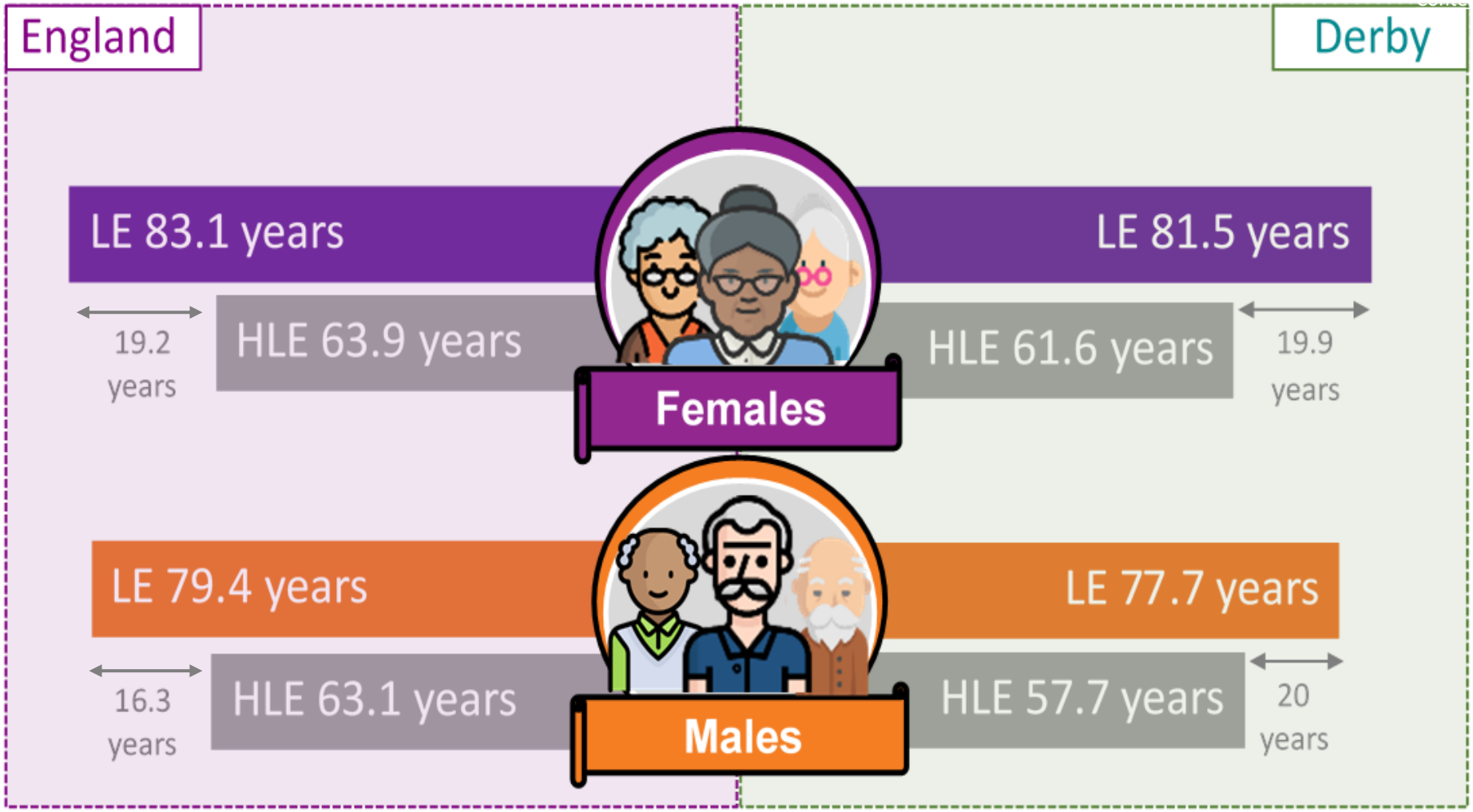


Source: Public Health England. Public Health Outcomes Framework (A01b – Male / Female – 3 Year Range). Date accessed: 5/5/22 https://fingertips.phe.org.uk/profile/public-health-outcomes-framework

Overall population outcomes for JUCD and HWBBs: Improvements in Life Expectancy and Healthy Life Expectancy

Healthy life expectancy is the number of years a person born in Derby can expect to live in good health.

In Derby, a male born today can expect to live for **57.7 years** in good health and a female can expect to live **61.6 years** in good health. This figure is lower than that of the England average for both males and females.



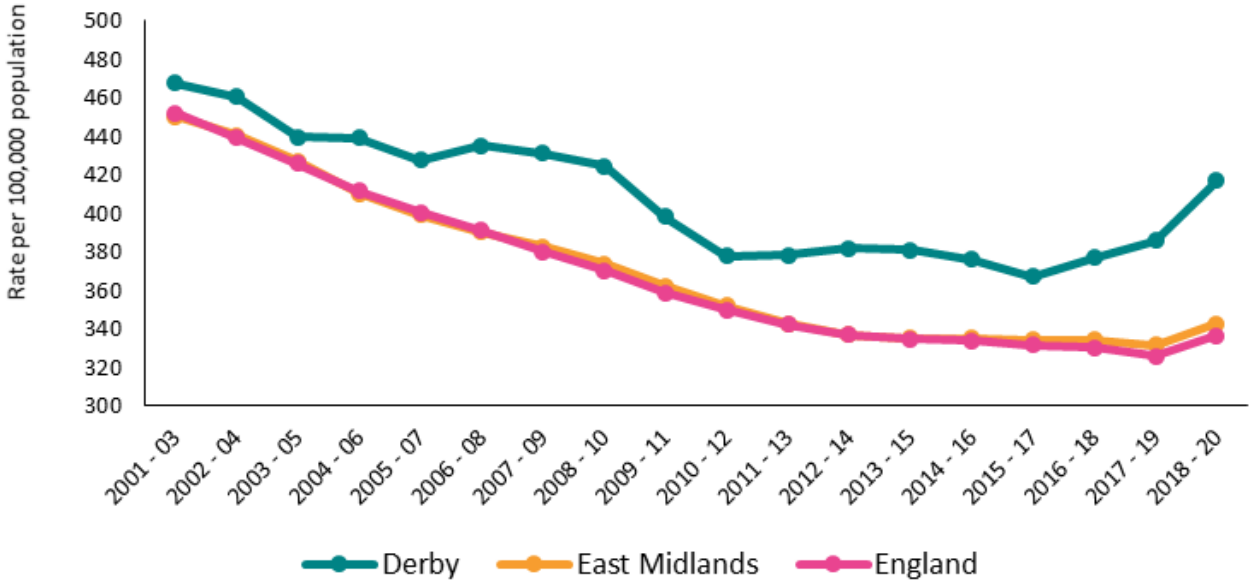
Sources: Health state life expectancy, all ages, UK - Office for National Statistics (ons.gov.uk and Life expectancy estimates, all ages, UK - Office for National Statistics (ons.gov.uk)

Under 75 mortality rate from all causes (persons, 3-year range)

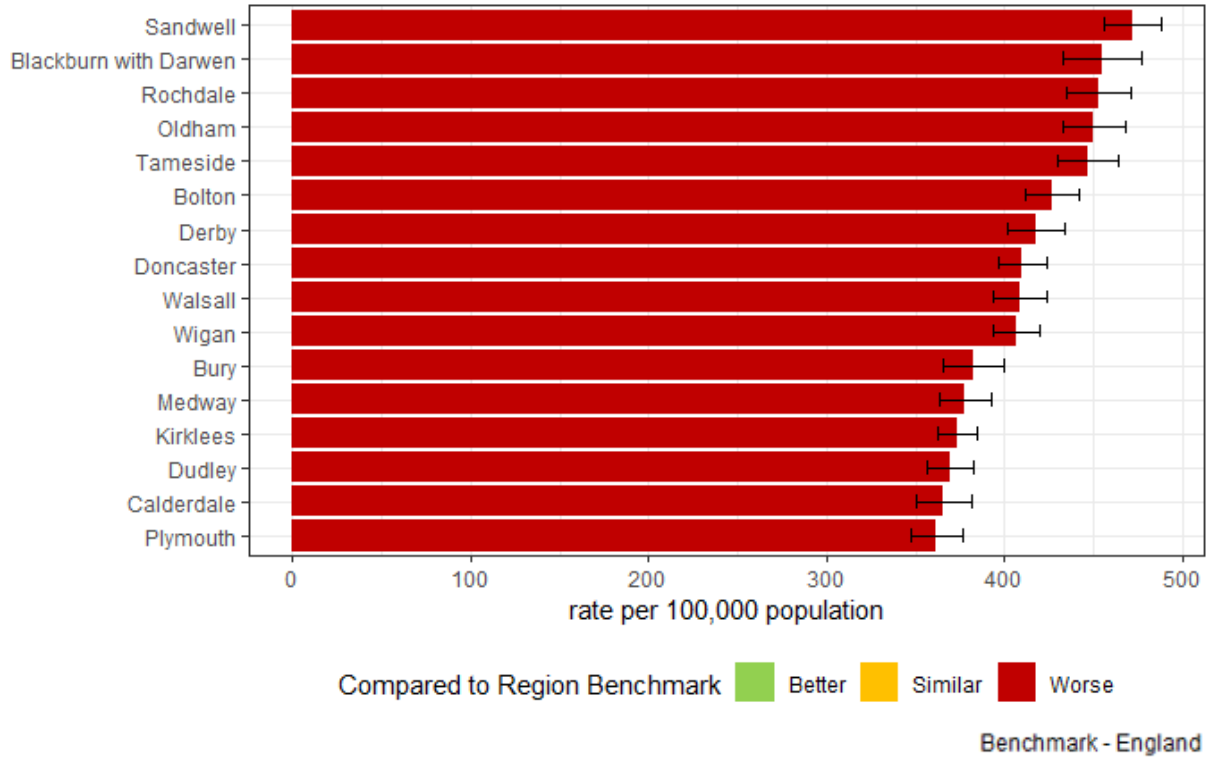
Derby has significantly higher rates of premature mortality (deaths under age 75) than both England and the East Midlands. In 2018-2020 the rate of under 75 mortality was **417 per 100,000.** Whilst this rate as declined from a high of 468 per 100,000 in 2001 following the same pattern as both the East Midlands and England this decreasing trend has reversed in recent years. The gap between rates seen in England (336 per 100,000) and Derby are widening.

Derby is comparable to our CIPFA nearest neighbours in term of under 75 mortality rates in 2018-2020, all of whom have rates of under 75 mortality significantly above that seen for England.

Under 75 mortality from all causes (persons, 3 year range)



Under 75 mortality from all causes (persons, 3 year range) CIPFA comparisons

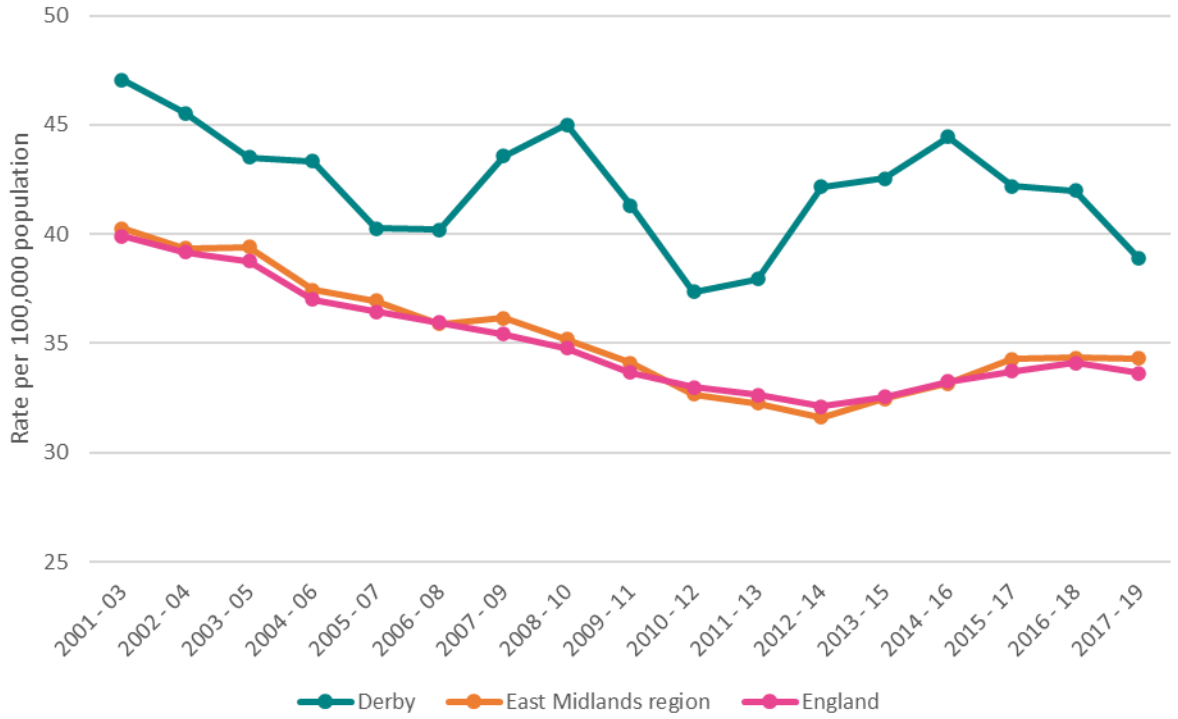


Source: Public Health England. Mortality Profile 108. Date accessed: 5/5/22 https://fingertips.phe.org.uk/mortality-profile

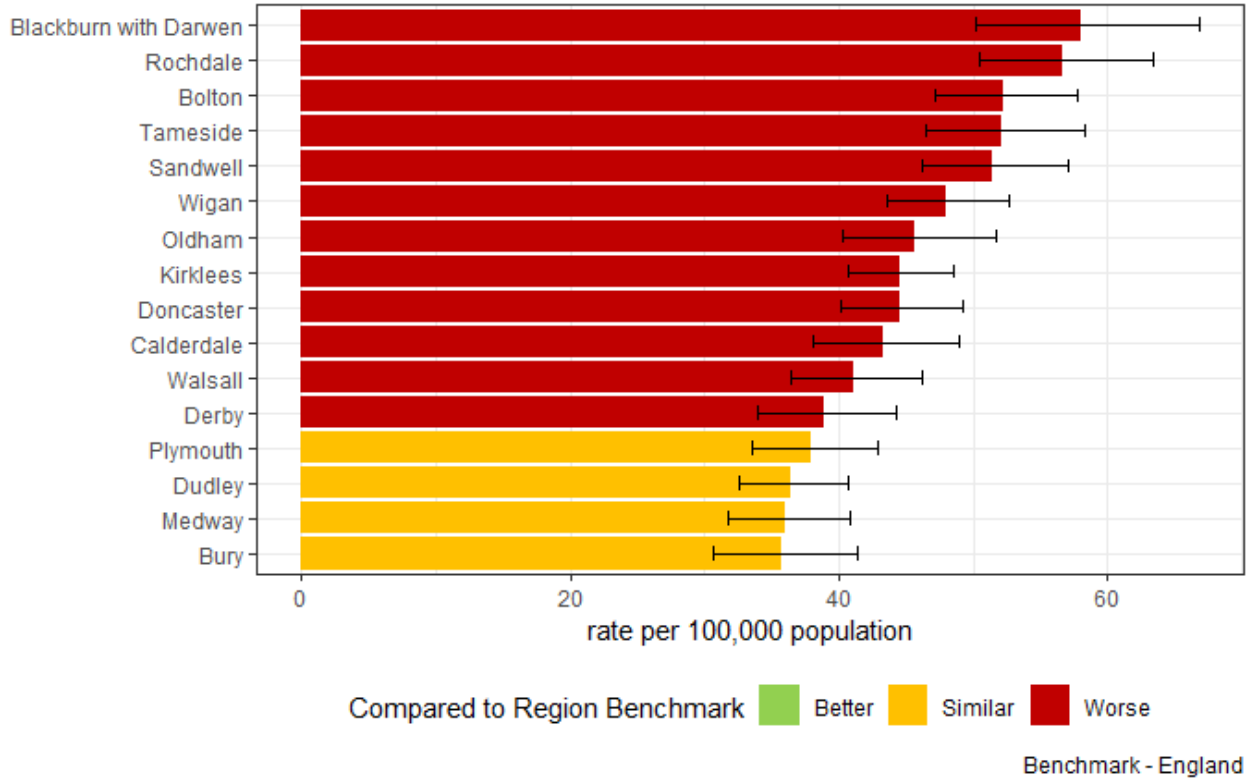
Under 75 mortality rate from respiratory disease (persons, 3 year range)

Respiratory disease is one of the top causes of death in England in under 75s and smoking is the major cause of chronic obstructive pulmonary disease (COPD), one of the major respiratory diseases. Derby has seen consistently higher rates of respiratory disease than both England and the East Midlands with rates in 2017-2019 **38.0 per 100,000**. Rates in Derby have been declining in recent years despite increasing rates in both England and the East Midlands. Amongst our CIPFA nearest neighbours Derby has the 5th lowest rate of death from respiratory disease.

Under 75 mortality from respiratory disease (persons, 3 year range)



Under 75 mortality from respiratory disease (persons, 3 year range) CIPFA comparisons

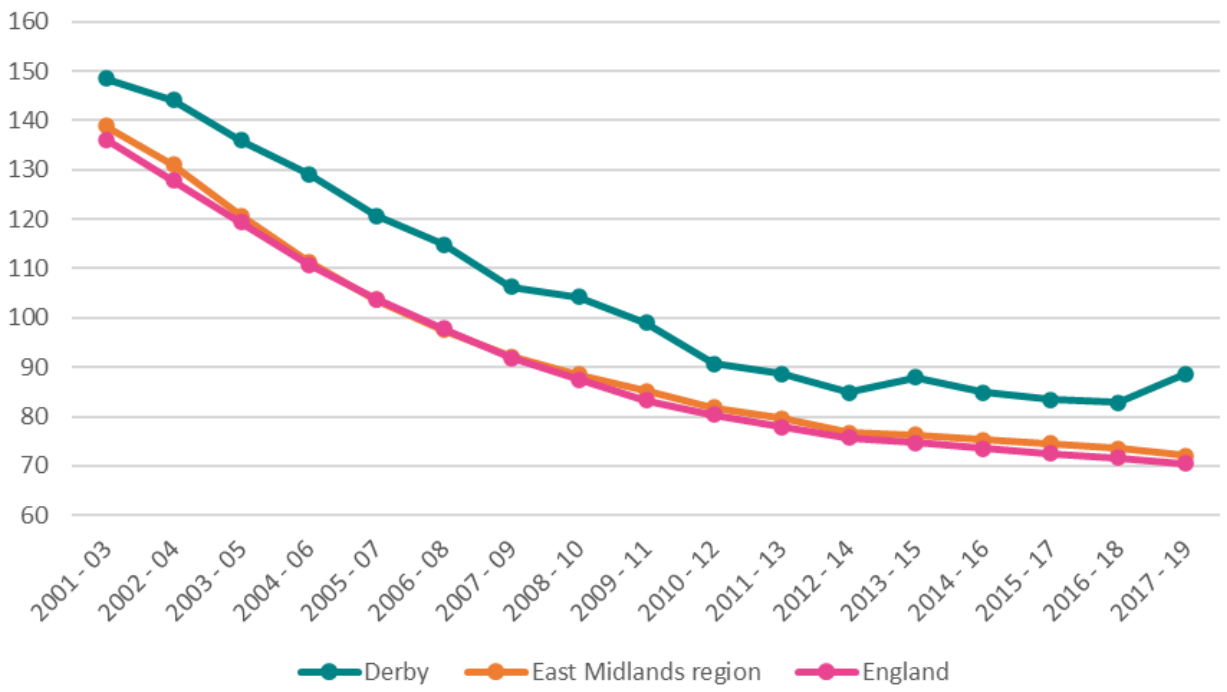


Source: Public Health England. Mortality Profile 108. Date accessed: 5/5/22 https://fingertips.phe.org.uk/mortality-profile

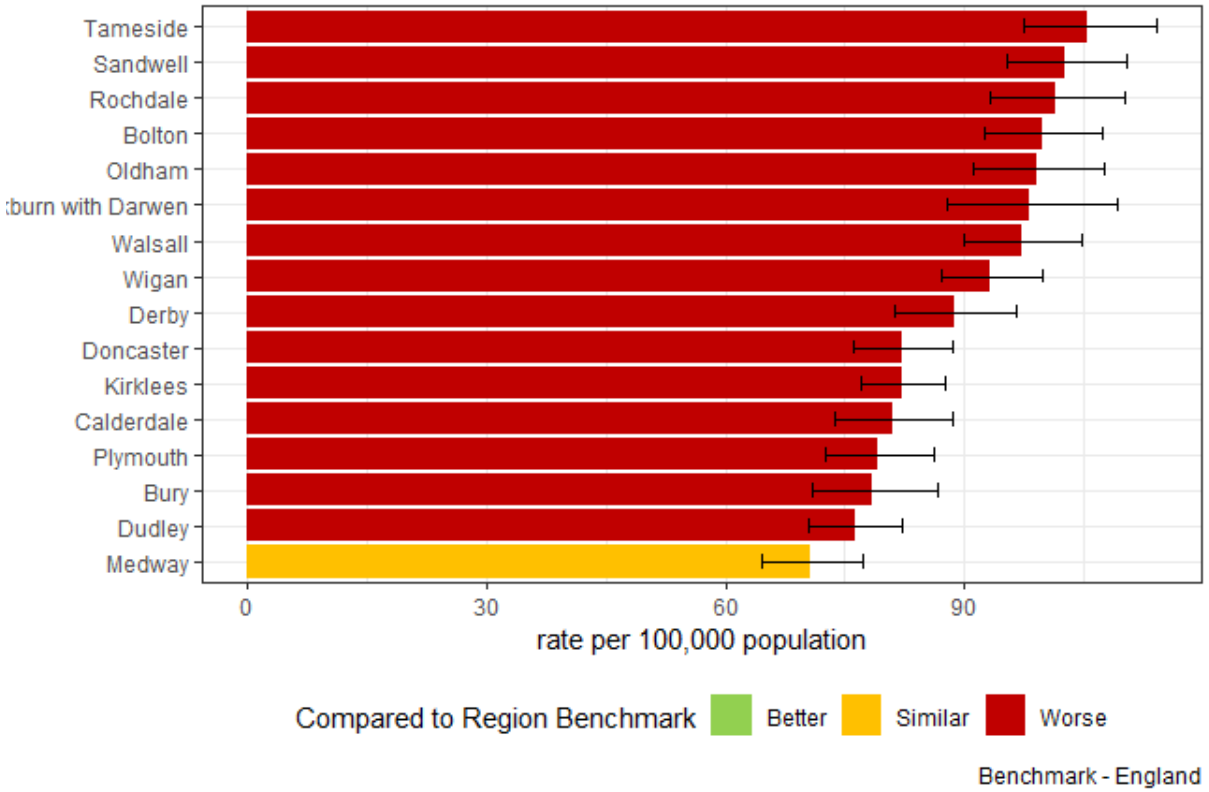
Under 75 mortality rate from CVD

Cardiovascular disease (CVD) is one of the major causes of death in under 75s in England. Derby has seen consistently higher rates of CVD than both England and the East Midlands with rates in 2017-2019 **88.7 per 100,000**. Rates in Derby have been declining in recent years; however, this trend has been reversed in recent years in Derby with the gap between Derby and both the England and East Midlands rates widening

Under 75 mortality from CVD (persons, 3 year range)



Under 75 mortality from CVD (persons, 3 year range) CIPFA comparisons

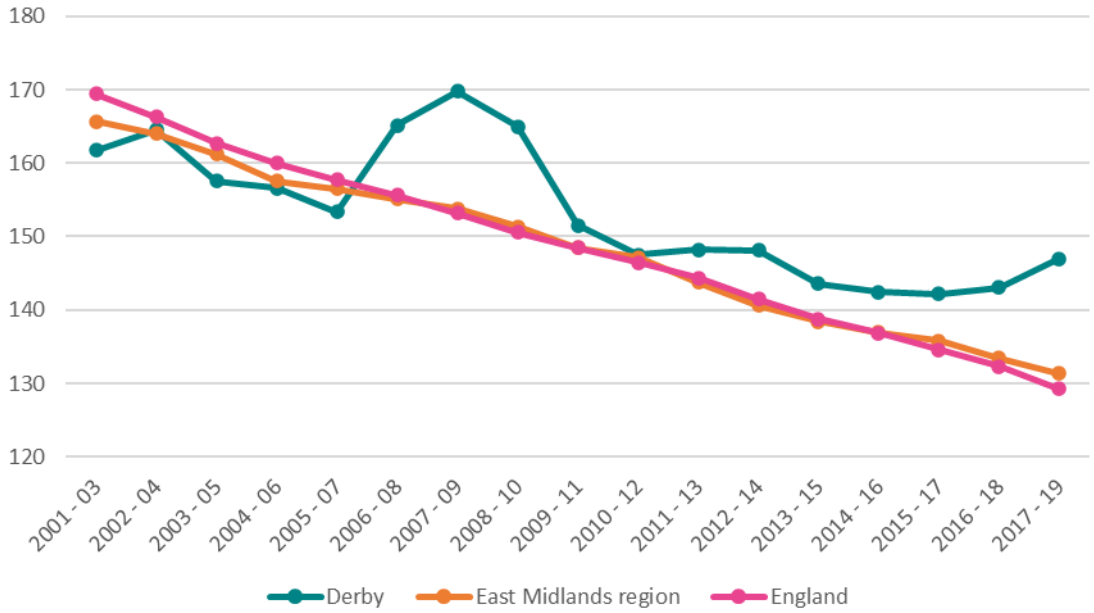


Source: Public Health England. Mortality Profile 108. Date accessed: 5/5/22 https://fingertips.phe.org.uk/mortality-profile

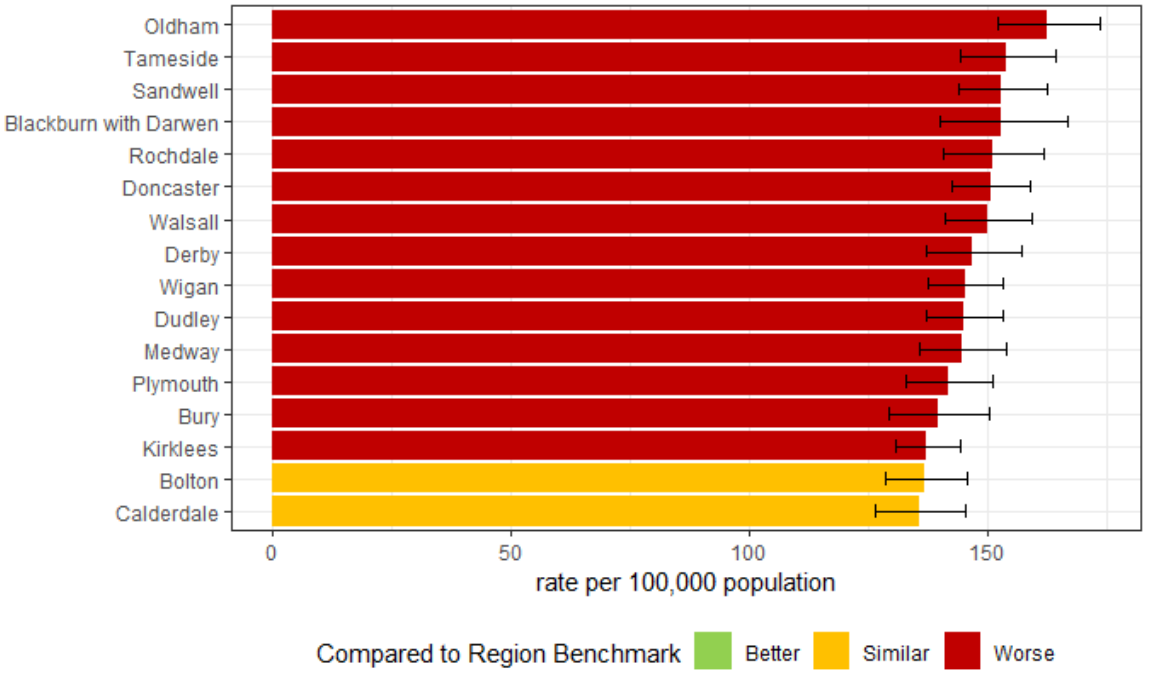
Under 75 mortality rate from cancer

Cancer is the highest cause of death in England in under 75s. Derby has seen consistently higher rates of respiratory disease than both England and the East Midlands with rates in 2017-2019 **147.0 per 100,000**. Rates in Derby have been declining in recent years in line with England and the East Midlands. In recent years, the rate of under 75 mortality from cancer has been increasing. This has increased the gap between both England and the East Midlands and Derby.

Under 75 mortality from Cancer (persons, 3 year range)



Under 75 mortality from Cancer (persons, 3 year range) CIPFA comparisons



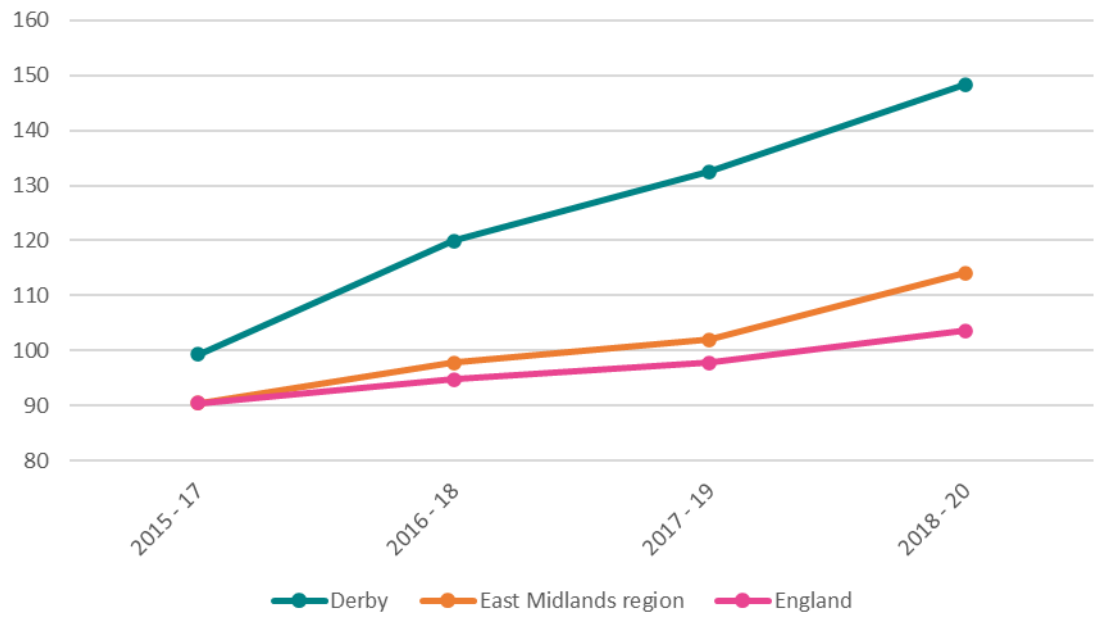
Source: Public Health England. Mortality Profile 108. Date accessed: 5/5/22 https://fingertips.phe.org.uk/mortality-profile

Premature mortality in adults with Severe Mental Illness (SMI)

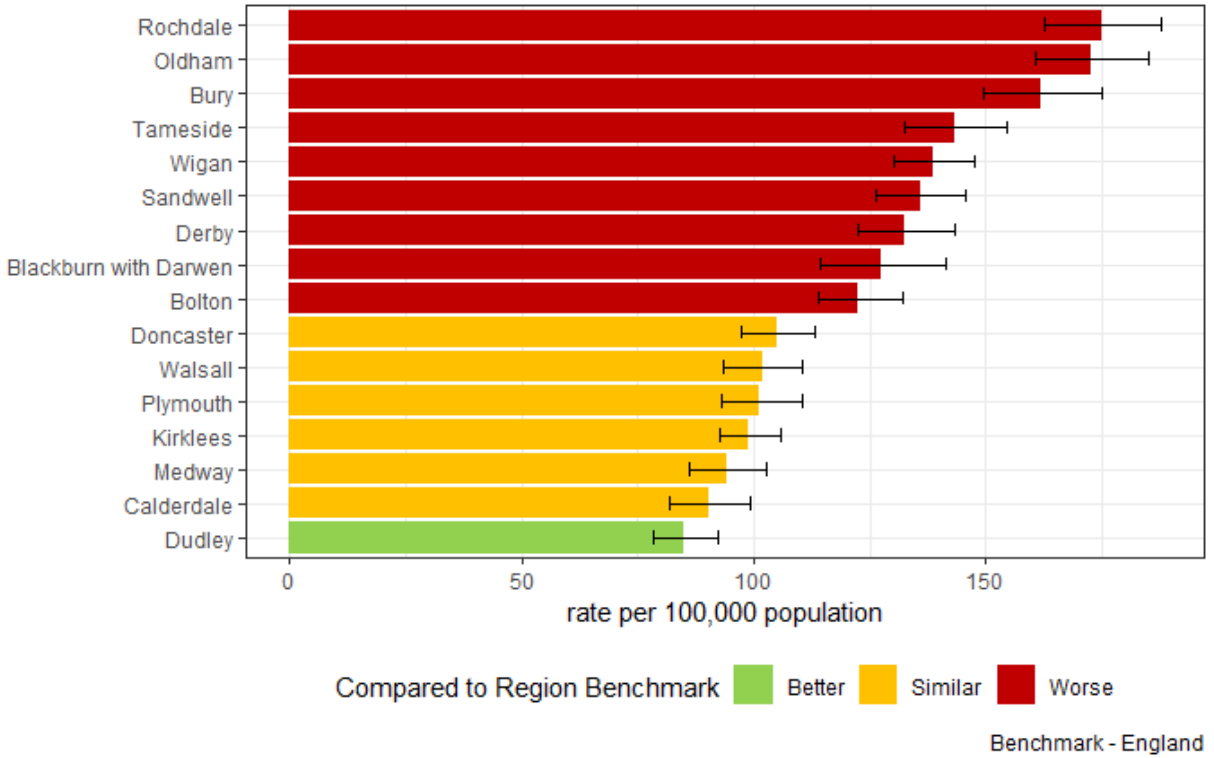
People with a long-standing mental health problem are twice as likely to smoke, with the highest rates among people with psychosis or bipolar disorder. Compared with the general patient population, patients with SMI are at substantially higher risk of obesity, asthma, diabetes, chronic obstructive pulmonary disease (COPD) and cardiovascular disease. People with SMI make more use of secondary urgent and emergency care, and experience higher premature mortality rates

Rate of premature mortality for those with SMI is increasing in Derby with rates in 2018-20 at **148.4 per 100,000** considerably higher than the rates seen for England and the East Midlands.

Premature mortality in adults with SMI (persons, 3 year range)



Premature mortality in adults with SMI(persons, 3 year range) CIPFA comparisons



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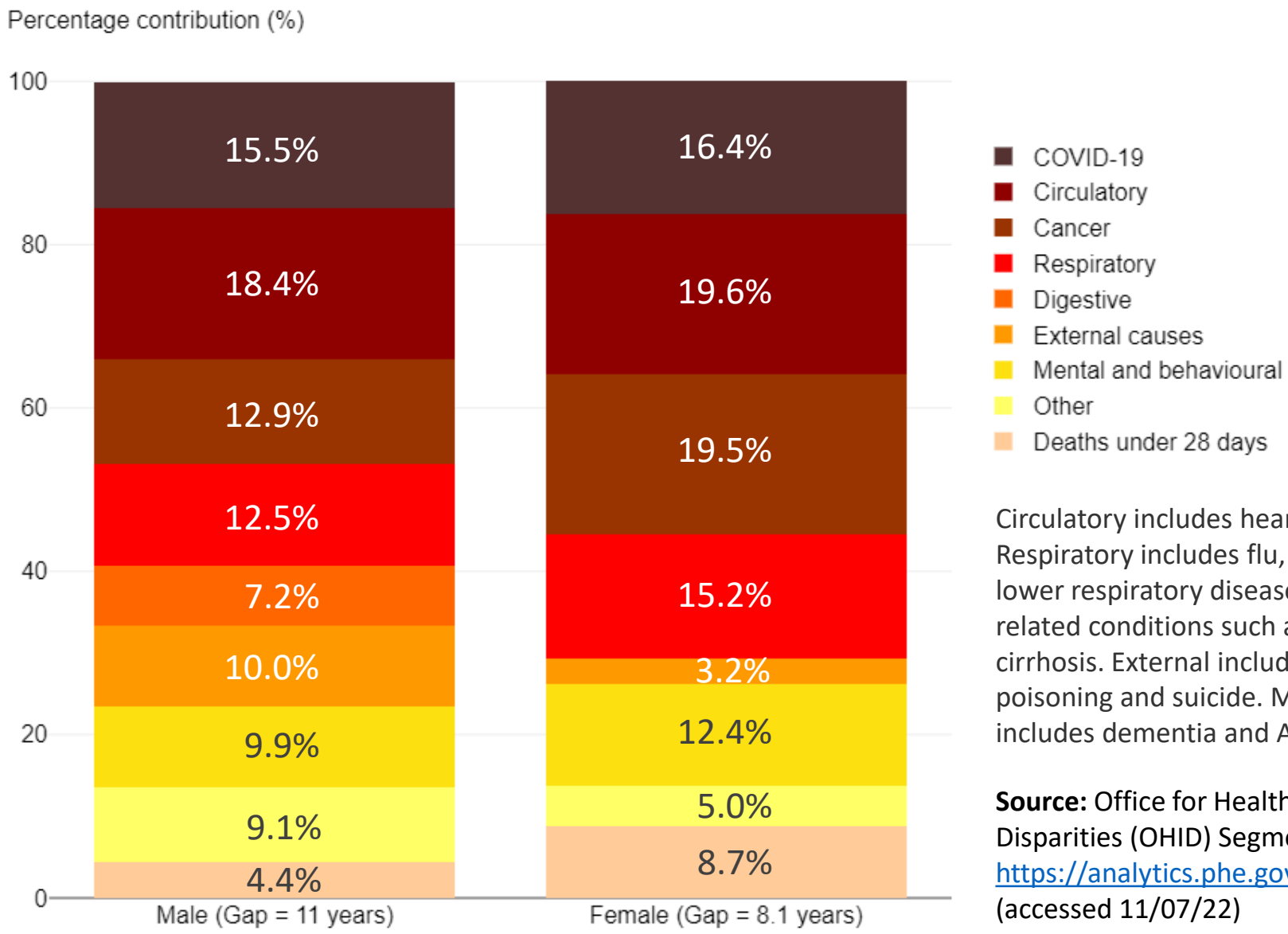
Breakdown of the life expectancy gap between the most and least deprived quintiles of Derby by cause of death, 2020 to 2021 (Provisional)



Circulatory includes heart disease and stroke. Respiratory includes flu, pneumonia, and chronic lower respiratory disease. Digestive includes alcohol-related conditions such as chronic liver disease and cirrhosis. External includes deaths from injury, poisoning and suicide. Mental and behavioral includes dementia and Alzheimer's disease.

Source: Office for Health Improvement and Disparities (OHID) Segment Tool - https://analytics.phe.gov.uk/apps/segment-tool/ (accessed 11/07/22)

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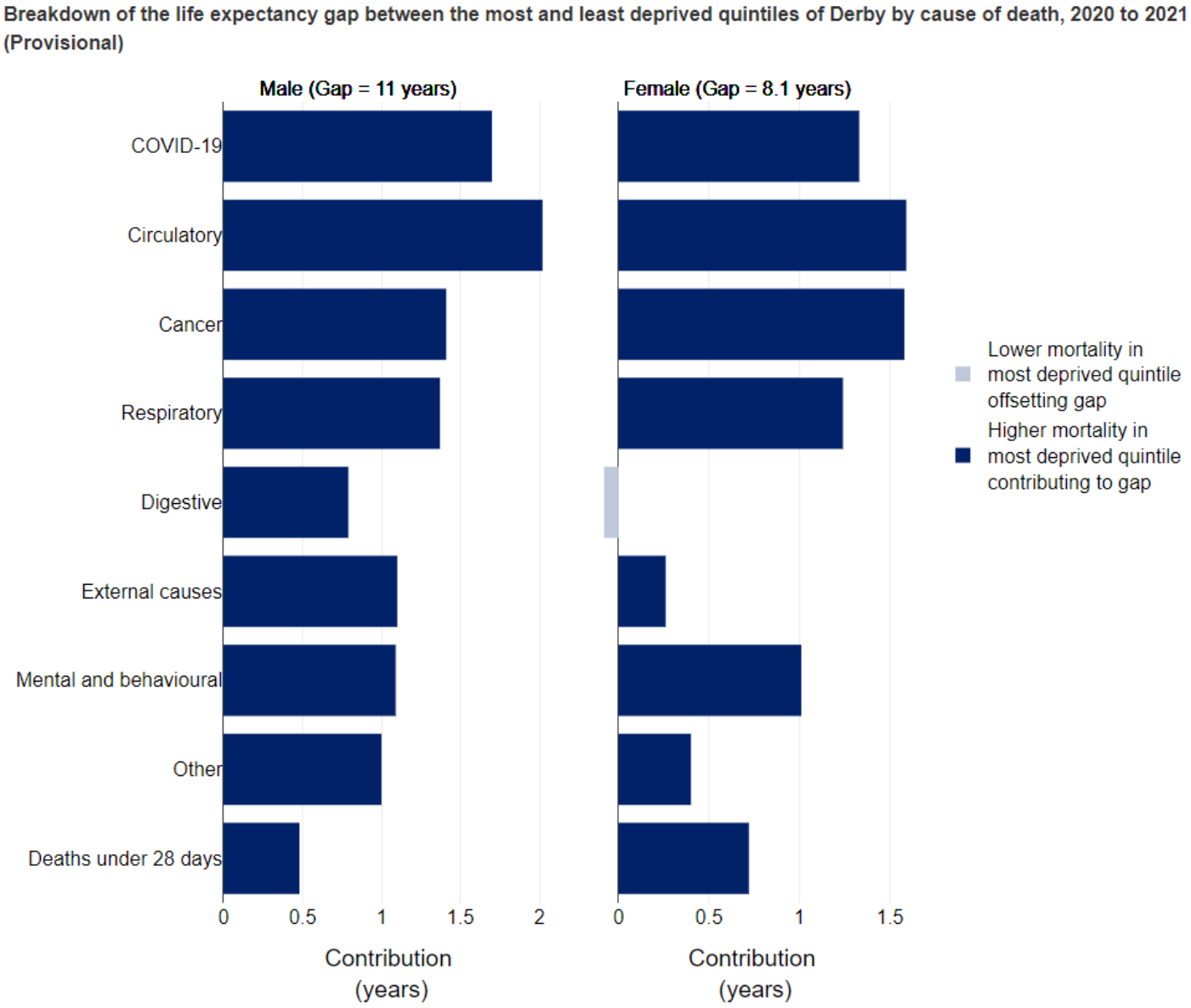

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1. Reduce smoking prevalence to below national average

Smoking is the most important cause of preventable ill health and premature mortality in the UK. Smoking is a major risk factor for many diseases, such as lung cancer, chronic obstructive pulmonary disease (COPD) and heart disease. It is also associated with cancers in other organs, including lip, mouth, throat, bladder, kidney, stomach, liver and cervix.

Over a 3-year period (2017-19) **982 (243.4 per 100,000**) deaths in Derby were estimated to be directly attributable to smoking. This includes 80% of all deaths from lung cancer and COPD. This is a slight reduction from the 1,017 (255.3 per 100,000) in 2016-18.

In 2019/2020, **647 (1,998 per 100,000**) hospital admissions of Derby residents were directly attributable to smoking. This includes 25% of all respiratory admissions.

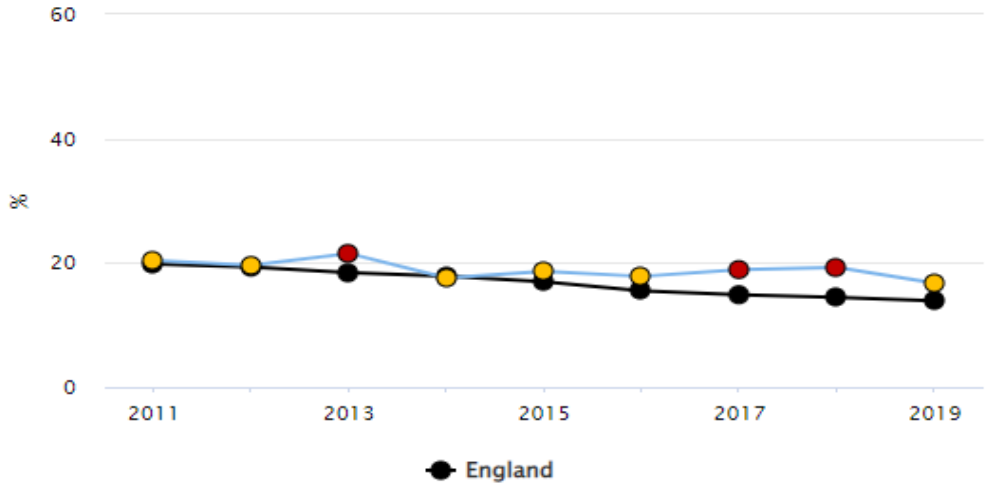
Derby is 14th among our CIPFA nearest neighbours, with both Calderdale and Bury having lower smoking prevalence.

Smoking in pregnancy is the most significant modifiable risk factor associated with antenatal and prenatal outcomes. When a woman smokes during pregnancy or is exposed to secondhand smoke the unborn child sees a reduction in oxygen resulting in the baby's heart having to work fast and the unborn child being exposed to harmful chemicals. Smoking in pregnancy increases the risk of miscarriage, still birth, low birth rate, preterm birth and Sudden Infant Death Syndrome.

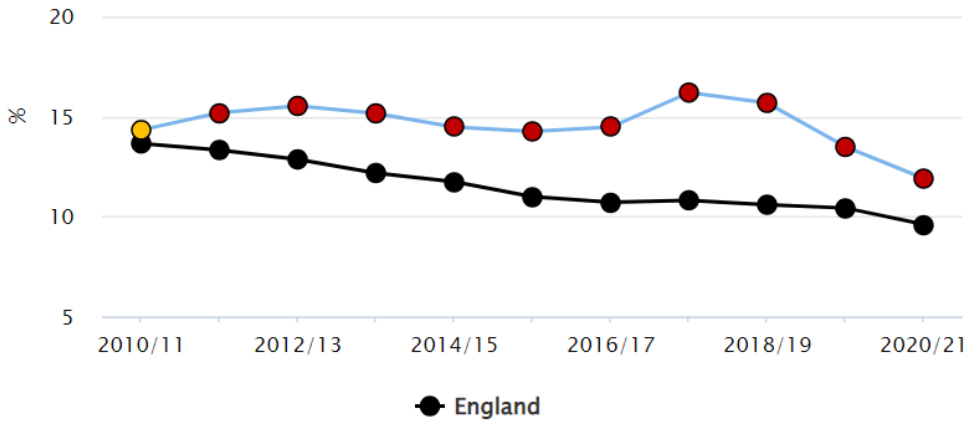
Effective tobacco control measures can reduce the prevalence of smoking in the population. Smoking cessation services whilst a valuable evidence-based tool for supporting people to quit smoking, are not sufficient alone to reduce smoking rates. It requires system level, coordinated action.

In 2020/2021, **332 (11.9%)** of mothers smoked at time of delivery. This figure has been consistently decreasing since 2012/13 when 15.5% of mother smokes at time of delivery. Among our CIPFA nearest neighbours Derby ranks 5th out of 16 similar local authority areas.

Outcome measure 1a: Smoking prevalence in adults, %



Outcome measure 1b: Smoking status at time of delivery, %



2. Increase the proportion of children and adults who are a healthy weight

Obesity in childhood leads to an increased risk of numerous health problems including hypertension and diabetes whilst also increasing the risk of becoming obese as an adult. Childhood obesity is one of the most challenging areas of Public Health. The National Child Measurement Program (NCMP) is a national programme measuring height and weight of Children aged 4-5 years (Reception) and 10-11 years (Year 6).

Adulthood obesity can have a detrimental effect on population for example finding it hard to find and keep work, obesity can also affect mental health and self-esteem. Babies born to obese women have a higher risk of subsequent obesity.

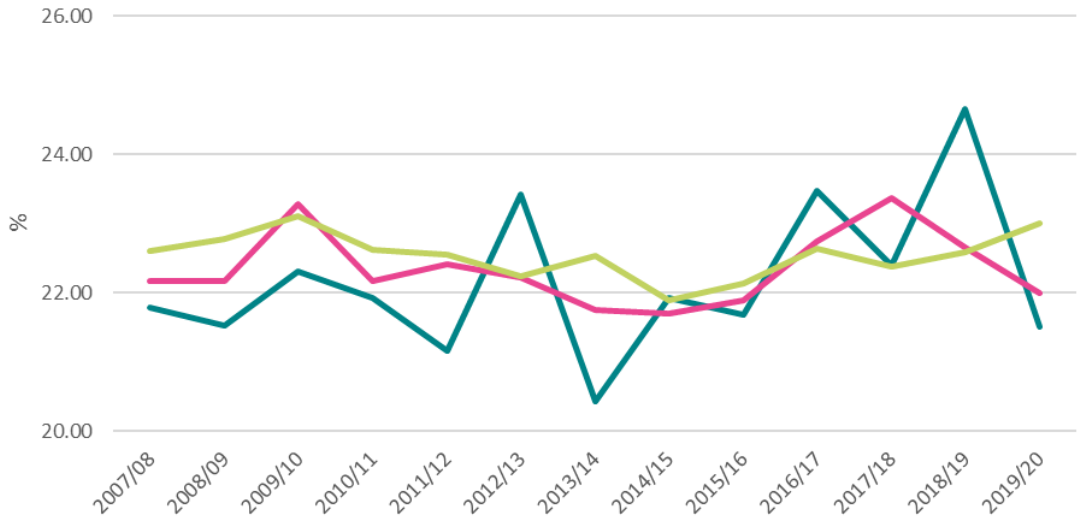
Estimated costs to the NHS in Derbyshire relating to excess weight and obesity is £116m. 90% of Type 2 diabetics have a BMI greater than 23. 66% of hypertension is linked to excess weight and 85% to obesity

NCMP data shows that in 2019/20, **445 (21.5%) YR children** and **1,245 (38.9%) Y6 children** in Derby were overweight or obese. Derby is broadly similar to our CIPFA nearest neighbours in the proportion of children who are overweight or obese in reception and year 6.

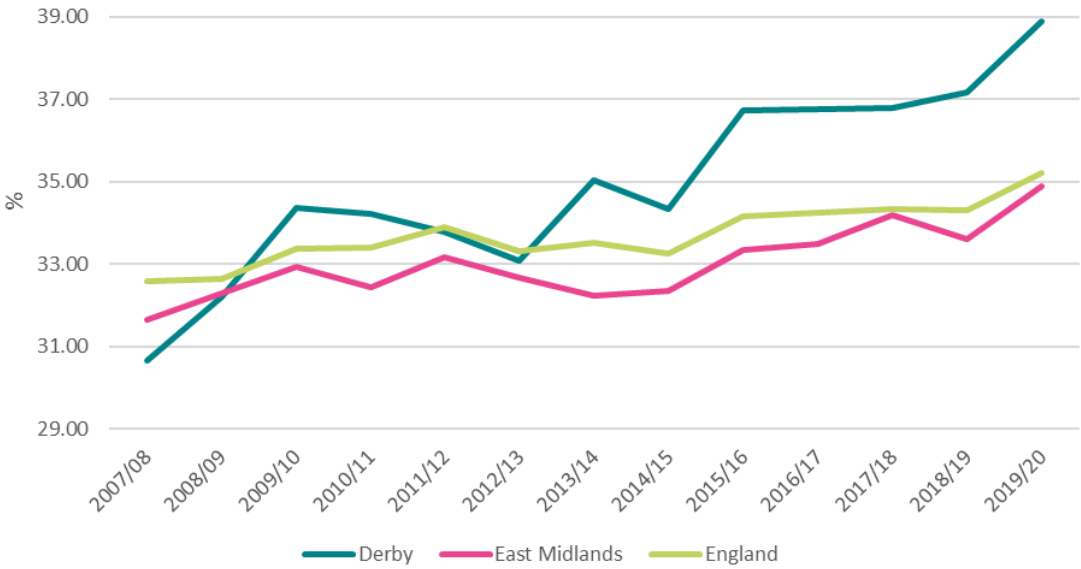
Compared to England, Derby has a significantly greater proportion of children in year 6 who are overweight or obese. The gap between levels over overweight or obese children in England and Derby is continuing to widen.

Self-reported data (Active Lives Survey, 2020/21, shows that **65.4% of Adults** in Derby are overweight of obese and increase from **62.5% of Adults** in 2019/20.

Outcome measure 2a: School reception year, prevalence of overweight, including obesity, %



Outcome measure 2b: School year 6, prevalence of overweight including obesity %



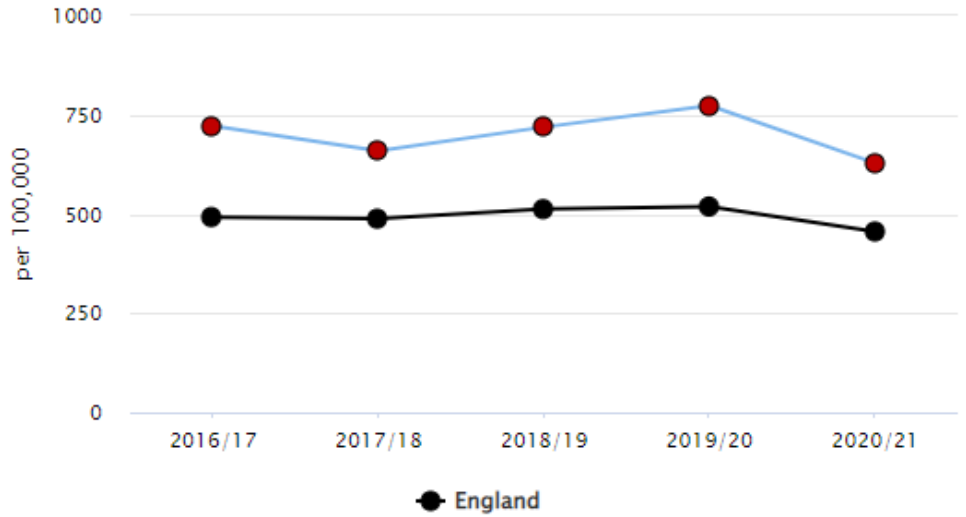
3. Reduce harmful alcohol consumption

Alcohol misuse is the biggest risk factor for death, ill-health and disability among 15-49 year olds in the UK, and the fifth biggest risk factor across all ages. Alcohol is a causal factor in more than 60 medical conditions, including: mouth, throat, stomach, liver and breast cancers, high blood pressure, cirrhosis of the liver, and depression. Alcohol use has health and social consequences borne by individuals, their families, and the wider community.

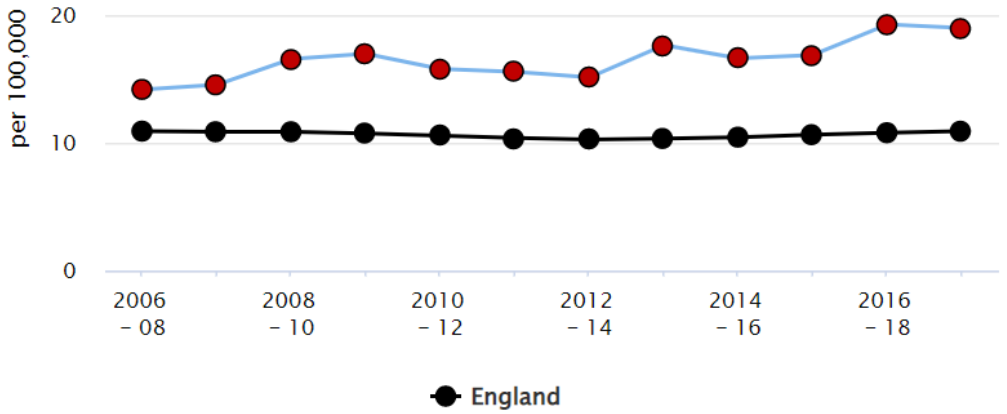
In 2020/21 there were **1,459 (629 per 100,000**) admission episodes for alcohol-related conditions in Derby, this a slight decrease from a high of 1,786 (773 per 100,00) in 2019/20. This remains consistently significantly worse than the rate for England which was 456 per 100,000 in 2020/21. Among our CIPFA nearest neighbours Derby has the highest rate of admission episodes for alcohol-related conditions.

There have been **127 (19 per 100,000)** deaths in Derby in the three year period 2017/20 which can be wholly attributable to alcohol.

Outcome measure 3: Admission episodes for alcohol-related conditions, per 100,000 (directly standardised) (primary or secondary diagnoses)



Outcome measure 3: Alcohol-specific mortality (Persons, 3 year range)



4. Improve participation in physical activity

Physical inactivity is the 4th leading risk factor for global mortality accounting for 6% of deaths globally. People who have a physically active lifestyle have a 20-35% lower risk of cardiovascular disease, coronary heart disease and stroke compared to those who have a sedentary lifestyle. Regular physical activity is also associated with a reduced risk of diabetes, obesity, hypertension, osteoporosis and colon/breast cancer and with improved mental health. In older adults, physical activity is associated with increased functional capacities.

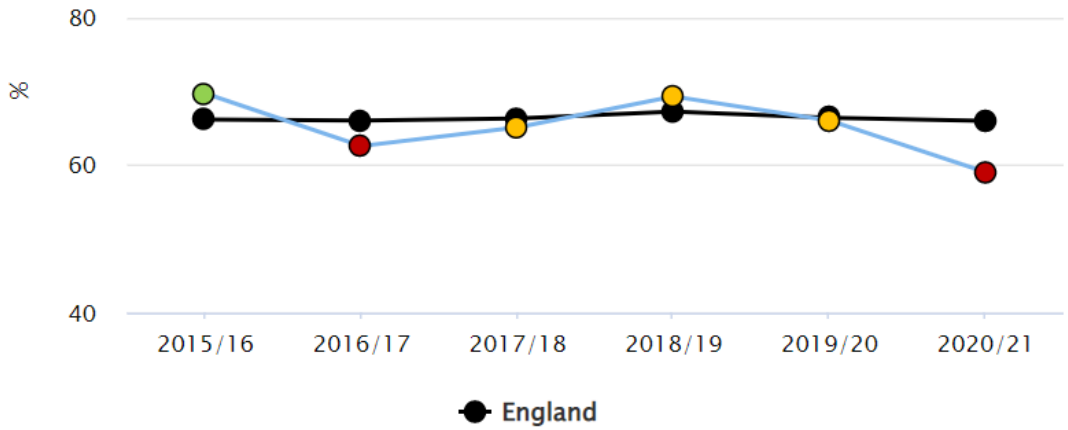
Underlying factors driving physical activity levels include individual health and wellbeing, walkable streets, road safety, access to green space.

In 2020/21, self-reported data (Active Lives Survey) shows that **27.6% of adults** in Derby do not undertake recommended weekly amounts of physical activity: doing at least 150 moderate intensity equivalent (MIE) minutes physical activity per week in bouts of 10 minutes or more

In 2020/21, **59.0% of adults** in Derby were physically active. The proportion of physically active adults in Derby has declined in this most recent year, perhaps, as a consequence of COVID-19 measures.

Compared to our CIPFA nearest neighbours Derby has a greater proportion of physical active adults than 5 comparable areas, including Walsall, Bolton and Blackburn with Darwen.

Outcome measure 4: Physically active adults, %



5. Reduce the number of children living in low-income households

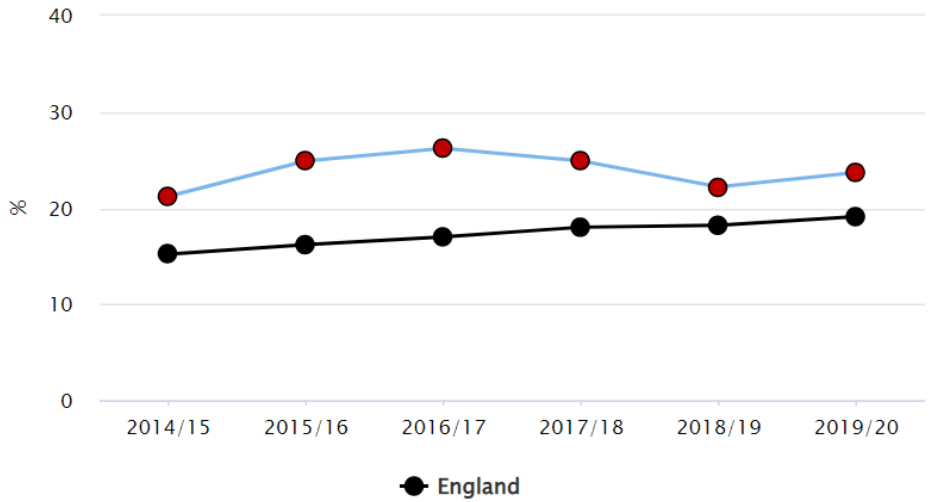
The Marmot Review 10 Years On outlines that since 2010, progress has been made in early years development, as measured by children's readiness for school. However, clear socioeconomic inequalities persist, with a graded relationship between these measures and level of deprivation. Rates of child poverty, a critical measure for early child development, have increased since 2010/11, particularly in families with parents in work. However, child poverty rates are still highest for children living in workless families - more than 70 percent.

Children are the most likely of all age groups to live in poverty. Poverty has lifelong impacts, a child born into poverty is more likely to have a low birthweight, to die in infancy and have poor physical and mental health as a child.

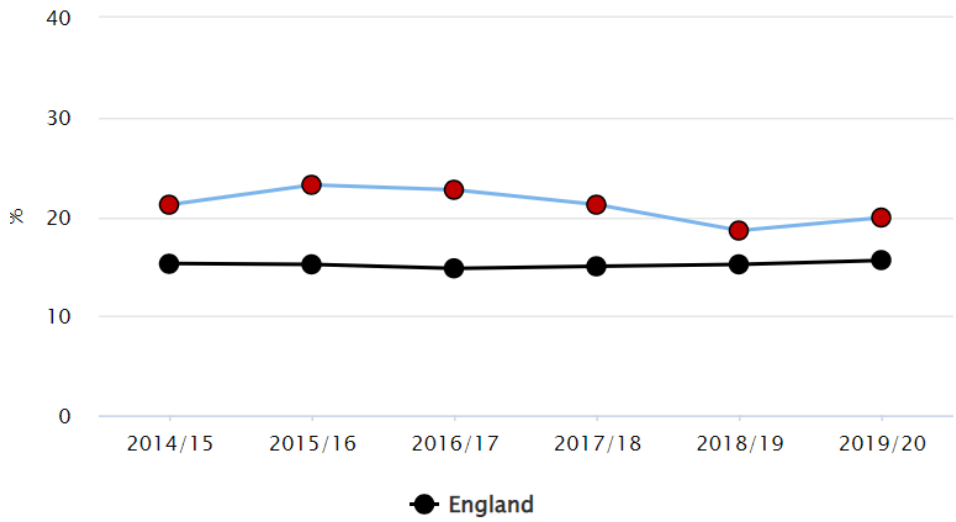
In 2019/20 **12,807 (23.7%) children** in Derby lived in relative low-income families **19.9% (10,735 children)** of these were classes as living in absolute low income. Nationally the proportion of children living in relative low-income families has continued to increase from 15.2% in 2014/15 to 19.1% in 2019/20. In Derby the proportion of under 16's living in relative low income familied had been decreasing to bring Derby closer to the national average, this decrease has halted in the most resent year and once again Derby has followed the national trajectory.

Relative low income measures the number and proportion of individuals who have income below 60% of the UK average (median) income in any given year, before housing costs. A family must have claimed one or more of Universal Credit, Tax Credits or Housing Benefit at any point in the year to be classed as low income in these statistics.

Outcome measure 5: under 16 year old children living in relative low income families, %



Outcome measure 5: under 16 year old children living in absolute low income families, %



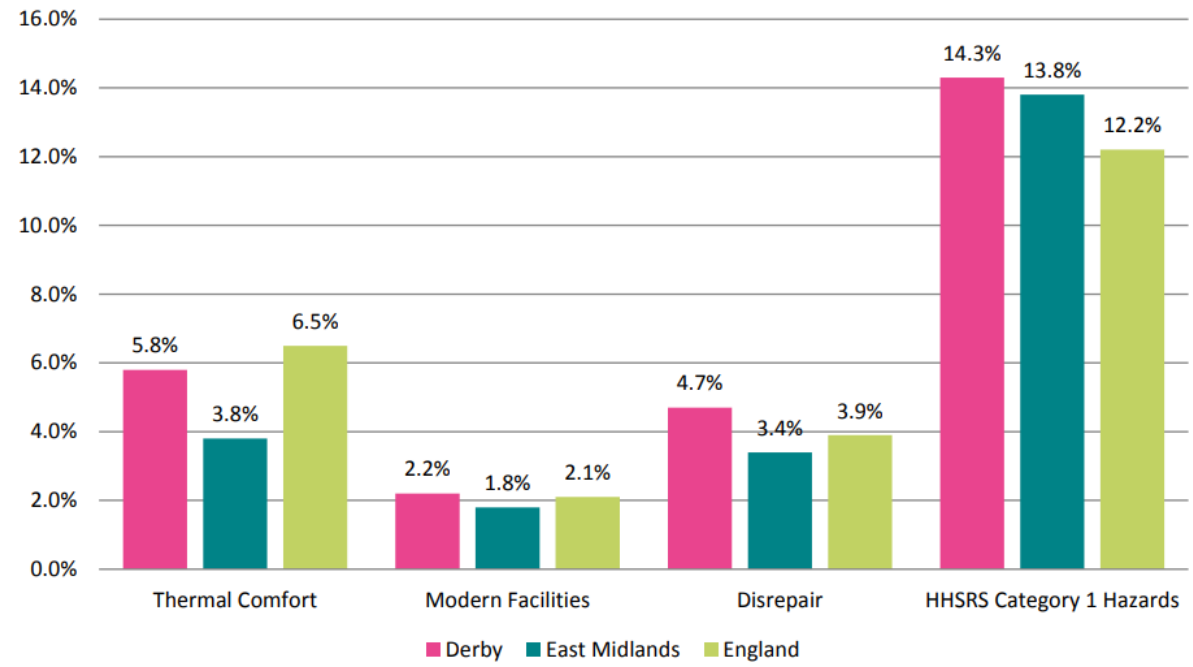
6. Improve housing quality

A safe, settled home is the cornerstone on which individuals and families build a better quality of life, access services they need and gain greater independence. Good quality, well managed housing is essential to our health and wellbeing. It enhances the quality of life of adults and the life chances of children, not only providing shelter but promoting stability and a sense of identity. It has recently been suggested that the wider determinants of health, such as employment opportunities, housing quality and availability, social cohesion and access to good quality education, may have a greater effect on health in localities than National Health Service (NHS) spending.

Poor housing conditions such as damp, cold, overcrowding and pollutants have all been shown to have an impact on physical illnesses such as eczema, asthma, heart disease and respiratory health in both adults and children. Physical features of the home can lead to injuries such as falls, trips, burns, scalds and electrocutions. Poor housing can also have an impact on mental health, often due to living in poor conditions but also due to the insecurity of living in poor housing with threats such as entry by intruders and the need to move more frequently.

The 2019 Housing Stock Condition Survey found that **21.4%** of private sector homes (owner occupied and private rented) did not meet the decent homes standard. This proportion is comparable to the proportion of homes that are non-decent in England (21.6%). Furthermore, **14.3%** of private sector homes contained at least one HHSRS category 1 hazard, these are the most serious hazards that pose immediate risk to the occupant's health and wellbeing.

Proportion of Homes failing Each of the Decent Homes Criteria

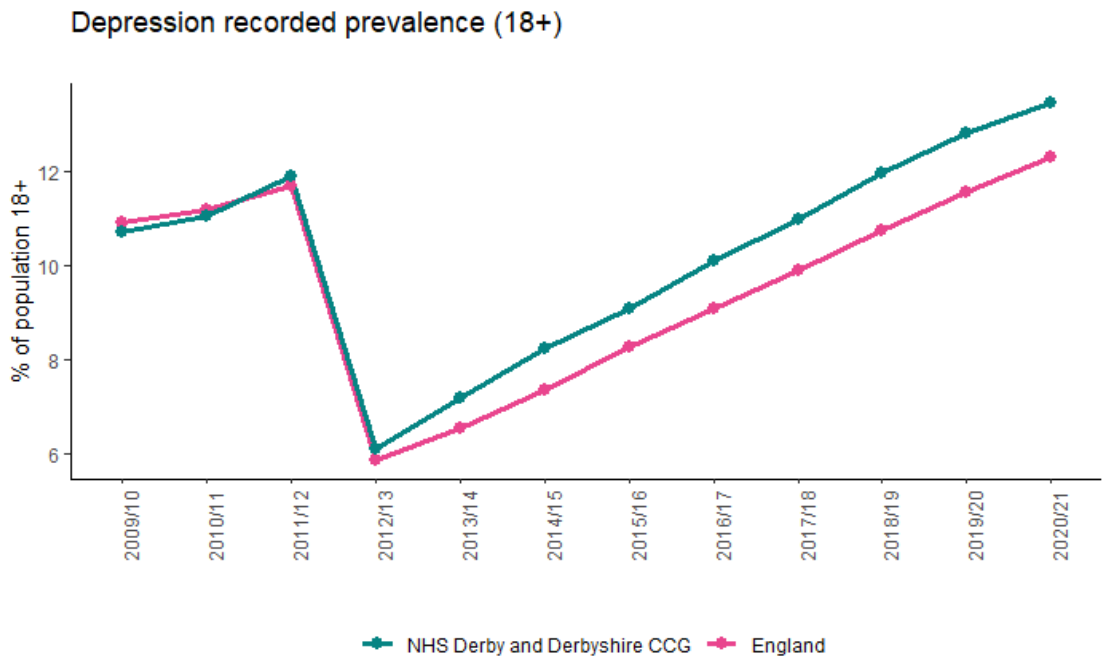


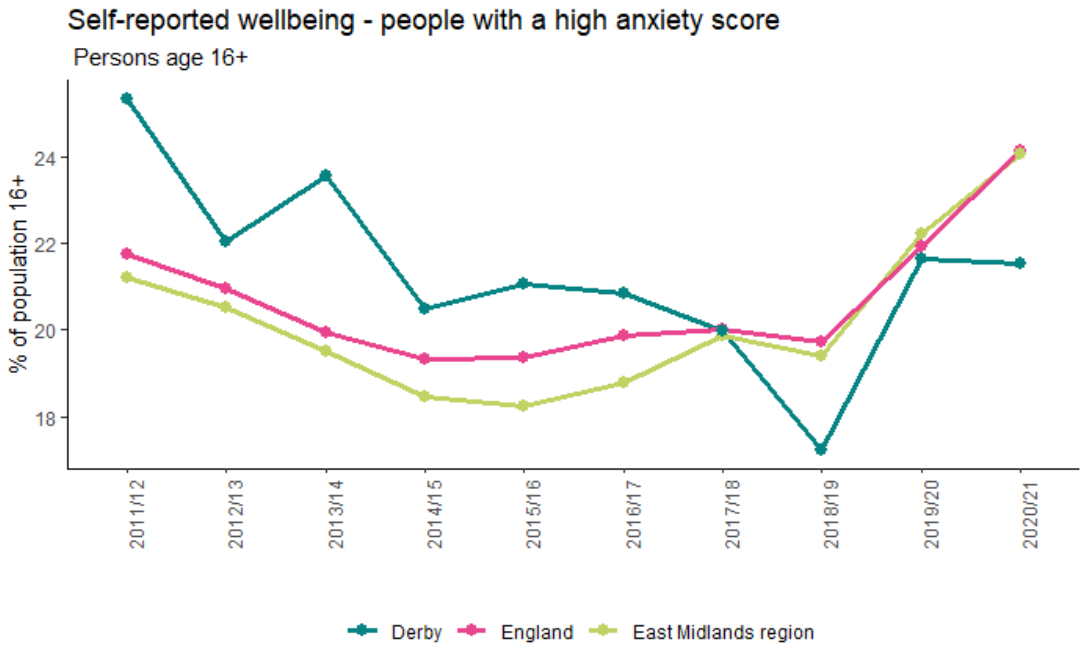
7. Mental and emotional wellbeing

Well-being is a key issue for the Government and ONS are leading a programme of work to develop new measures of national well-being. People with higher well-being have lower rates of illness, recover more quickly and for longer, and generally have better physical and mental health.

The percentage of patients aged 18 and over with depression, as recorded on practice disease registers both nationally and within Derby and Derbyshire CCG has been consistently increasing since 2012/13. Current prevalence of depression in 2020/21 for Derby and Derbyshire CCG is 13.5% this is slightly above that seen for England as a whole (12.3%). This increase could in part be explain by the positive work around reducing the stigma associated with mental health, allowing people to seek help from their GP.

The proportion of people self reporting a high anxiety score on the Annual Population Survey has increased in recent years in Derby, England and the East Midlands. **21.5%** of respondents in Derby had a high anxiety score in 2020/2021





Source: Public Health England. Common Mental Health Disorders 40. Date accessed: 5/5/22 https://fingertips.phe.org.uk/mortality-profile