

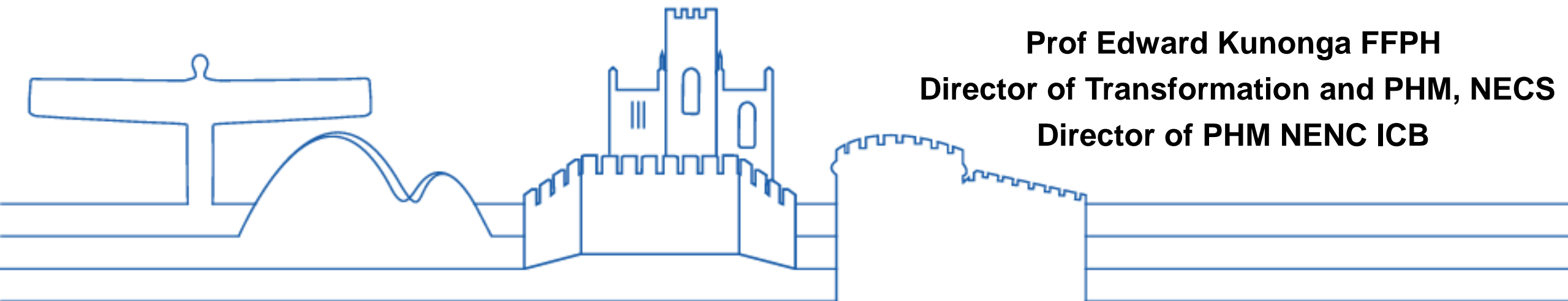


**North East and
North Cumbria**

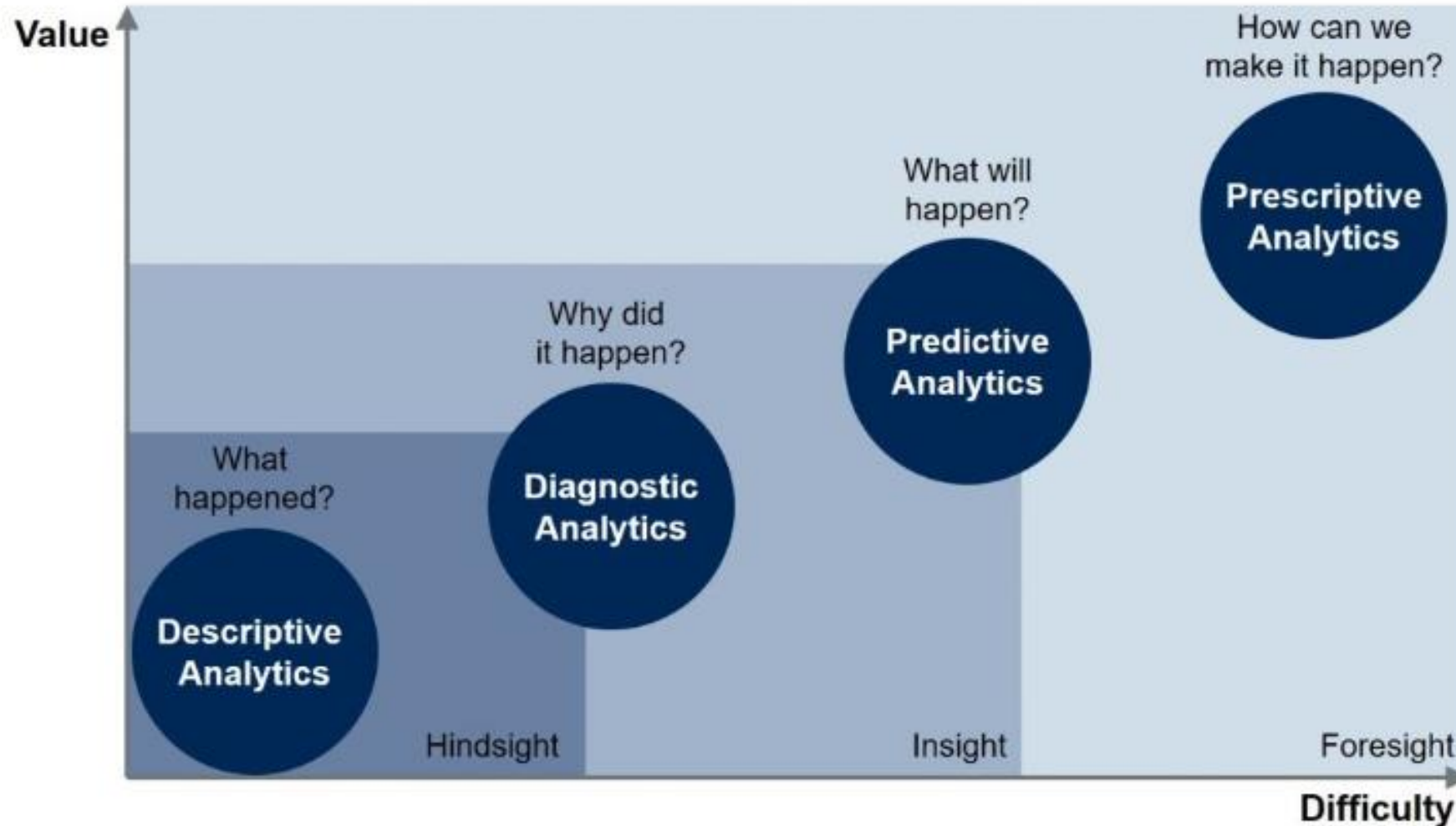
Population health management and pharmacy – using data and insight to drive improvements

**Great North Pharmacy research
13 July 2022**

**Prof Edward Kunonga FFPH
Director of Transformation and PHM, NECS
Director of PHM NENC ICB**

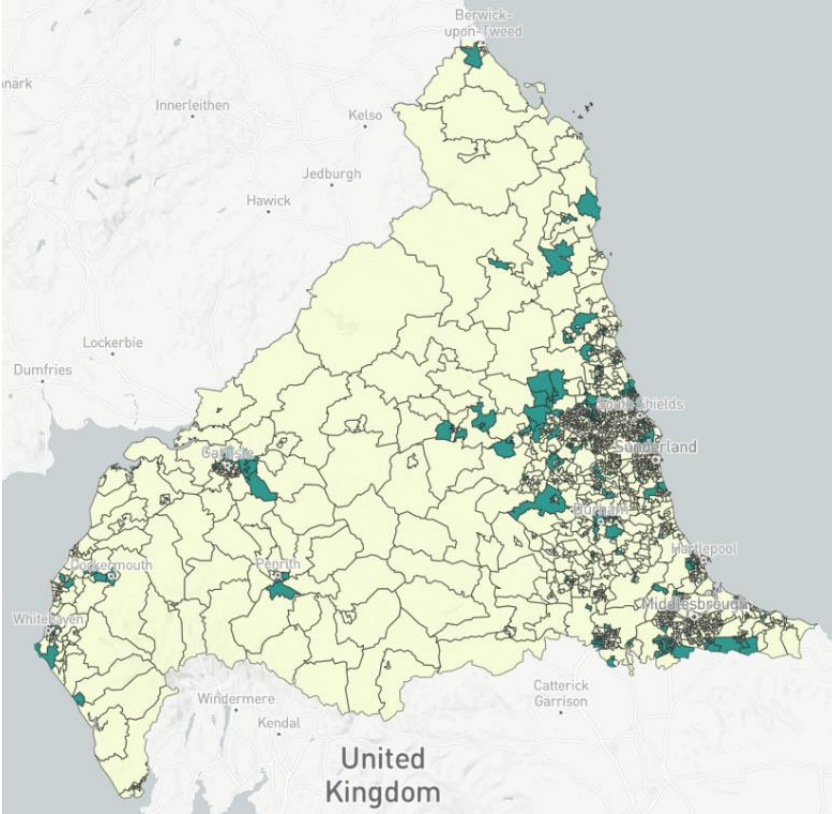
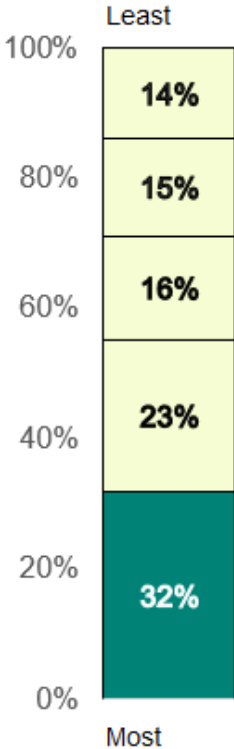


Using data, intelligence and insights to improve population health – Gartner Analytics Maturity matrix



Context – the scale and size of the population health challenge in the NENC population

Index of deprivation 2019 (population by quintile) by Lower Super Output Area (LSOA)



32% of the population within the NENC reside within the most deprived areas of the ICS.

The factors contributing to inequalities across the NENC include; income deprivation, rural disadvantage, children living in poverty and employment and access to training, plus many more.

© Crown copyright and database rights 2019 Ordnance Survey 100016969. DCLG 2019

North East and North Cumbria in numbers

3 million estimated resident population and the largest ICB in the country Census 2021

21% of the population aged 65 and over (England 18.6%) Census 2021

Nearly **1 in 3** live in the 'Core 20%' of the most deprived areas in England MHCLG

Circa **700,000** (55%) households are deprived in one more dimensions: housing, education, employment and health (Census 2021)

91% of the population are white British. (England 74%) Census 2021

79% rate their health as good or very good. (England 82%) Census 2021

Inequalities in life expectancy

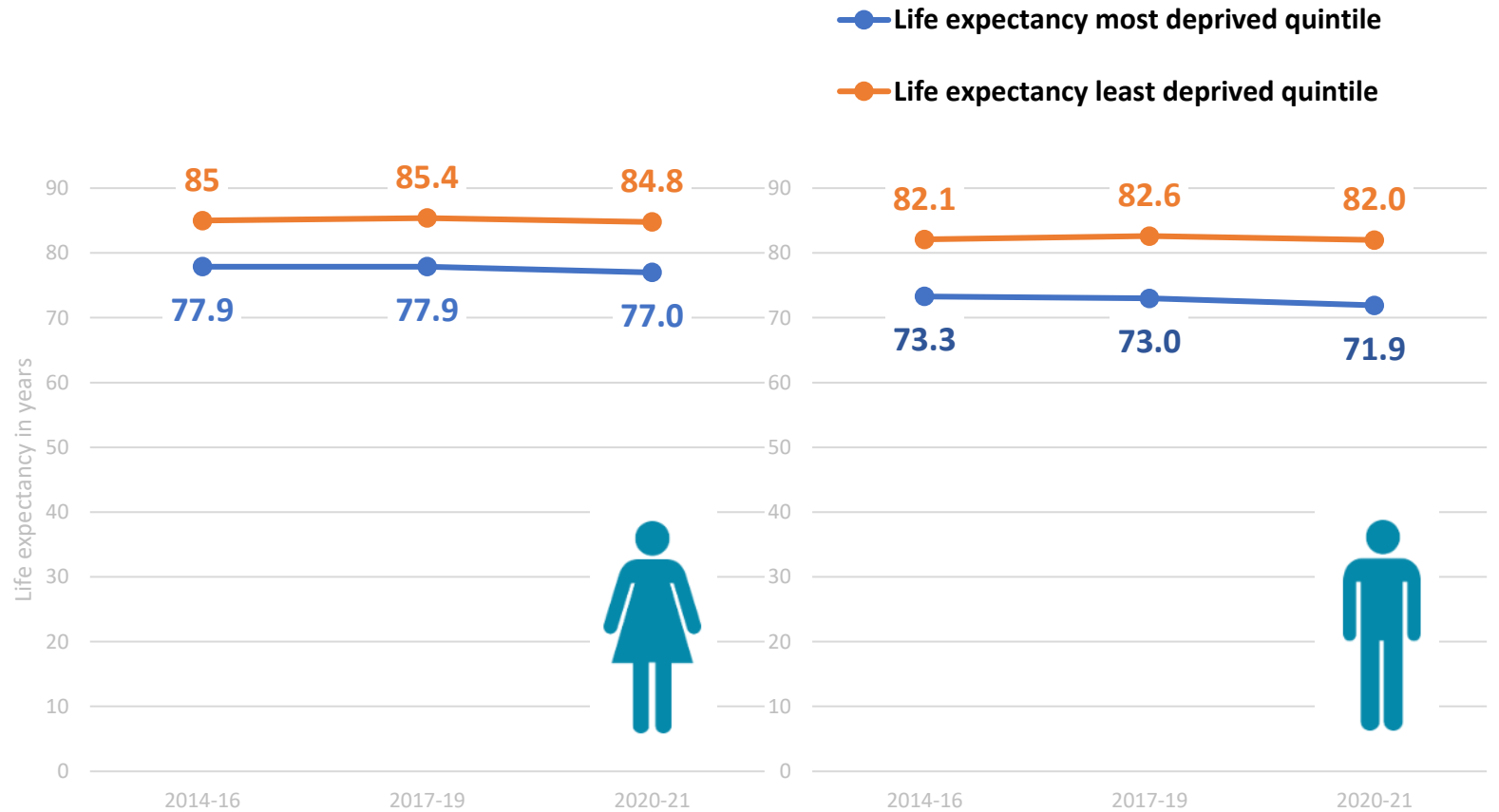
- The gap in life expectancy between the most and least deprived quintiles has increased for both males and females.
- The life expectancy gap in females is 7.8 years and in males 10.2 years.

Gap figures calculated using unrounded life expectancy figures. The absolute gap between the most and least deprived quintile within NENC. The method used in the Segment Tool differs from the slope index of inequality measure presented in Public Health Outcomes Framework

Differences in life expectancy in the most and least deprived areas North East and North Cumbria 2014 - 2016 to 2020 – 2021, Life expectancy (in years) by deprivation quintiles 1 and 5, and sex (within area deprivation quintiles)



North East and North Cumbria



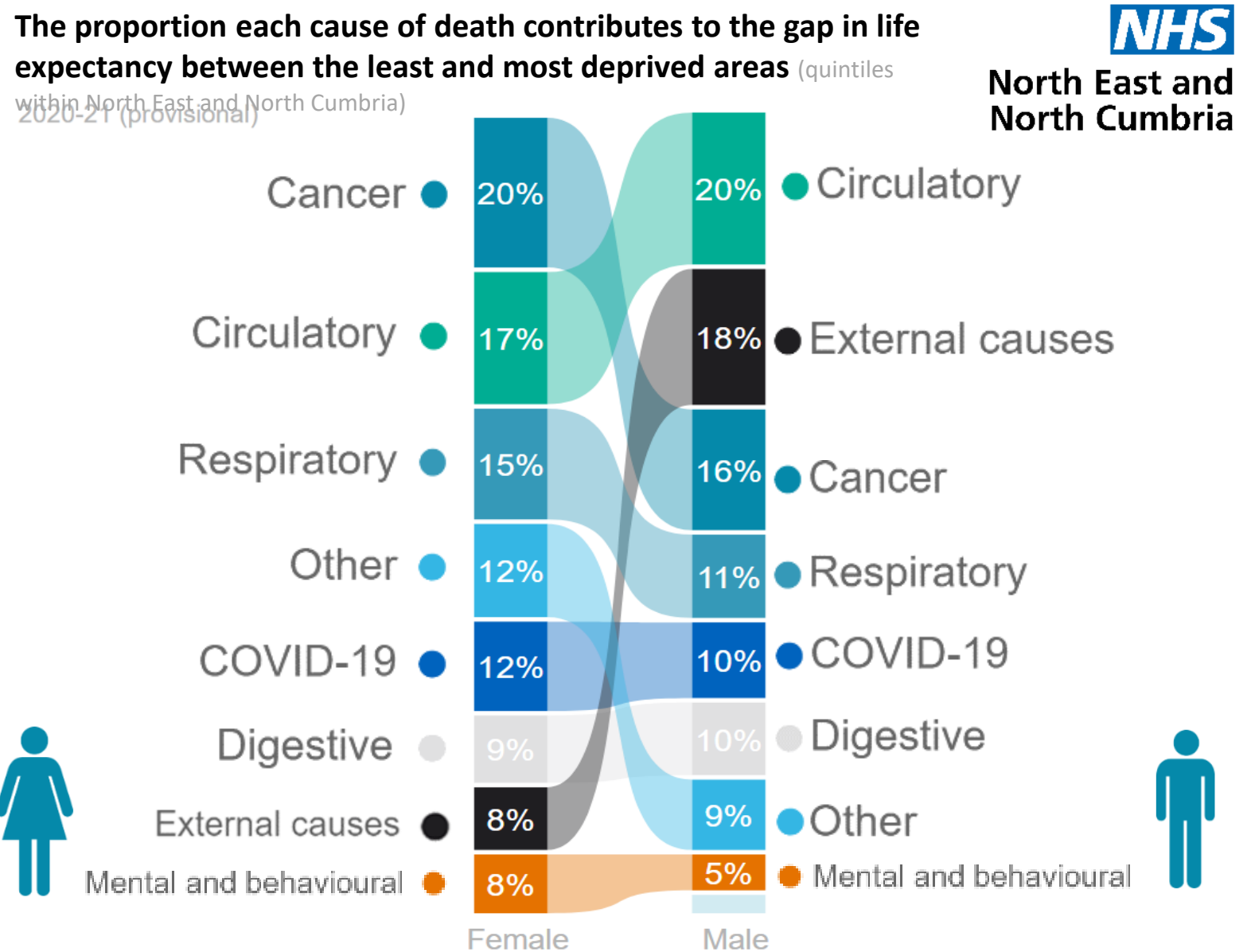
[OHID: Segment tool Jan 2023](#)

Diseases that contribute most to the gap in life expectancy between most and the least deprived areas

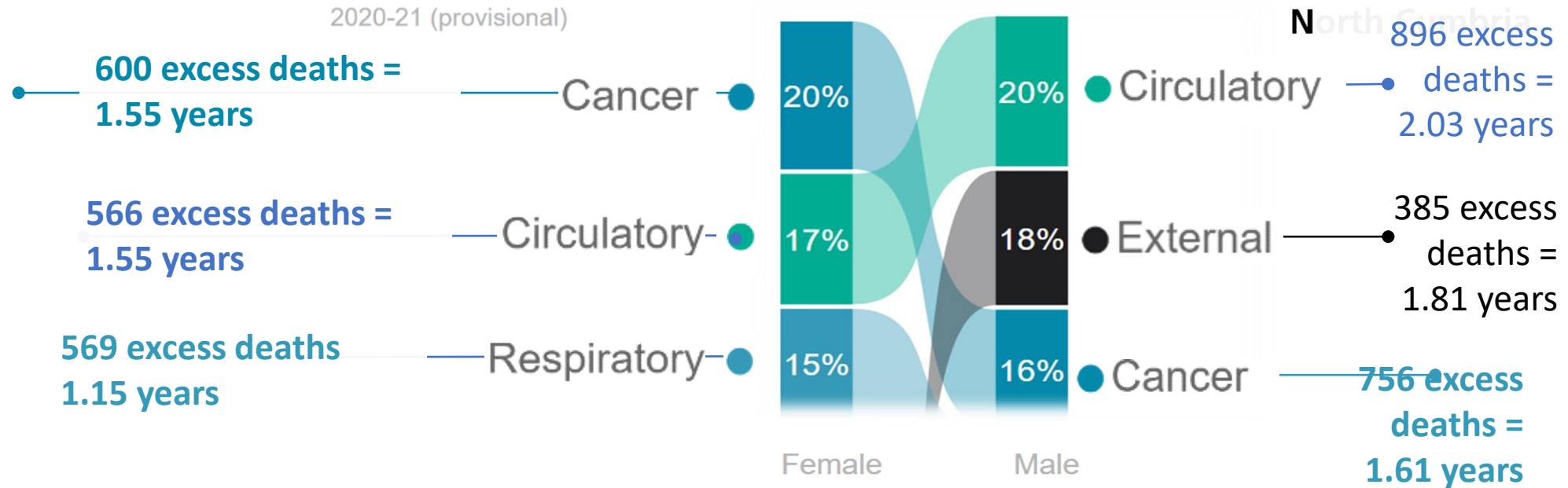
- The main three causes of death in women: Cancer, circulatory* and respiratory disease.
- In men, the main three are circulatory disease, external causes** and cancer.

*heart disease and stroke.

**external causes: deaths from injury, poisoning and suicide



For example:
The 20% represents 600 excess deaths from cancer
 between the most and the least deprived areas. Those deaths make up **1.55 years of the life expectancy gap**, which would not exist without these excess deaths.

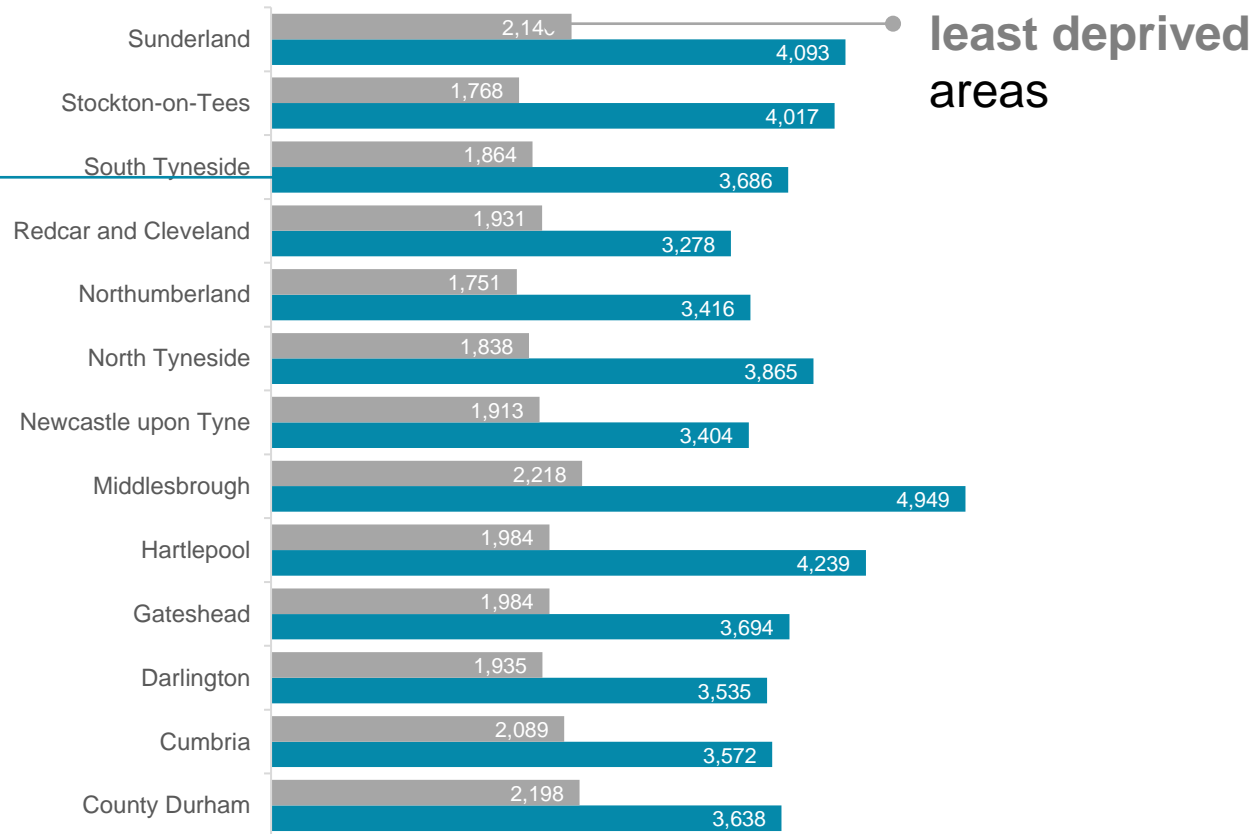


In other words...
 ... to reduce the gap by 1.55 years, 600 excess deaths by cancers in women living in the most deprived areas would need to have been prevented in 2020-21.

Pandemic impact: Disparities in death rates between the least and most deprived neighbourhoods within local authorities

March 2020 to July 2022

Death rates in the **most deprived** areas are around twice as high compared to the least deprived neighbourhoods¹



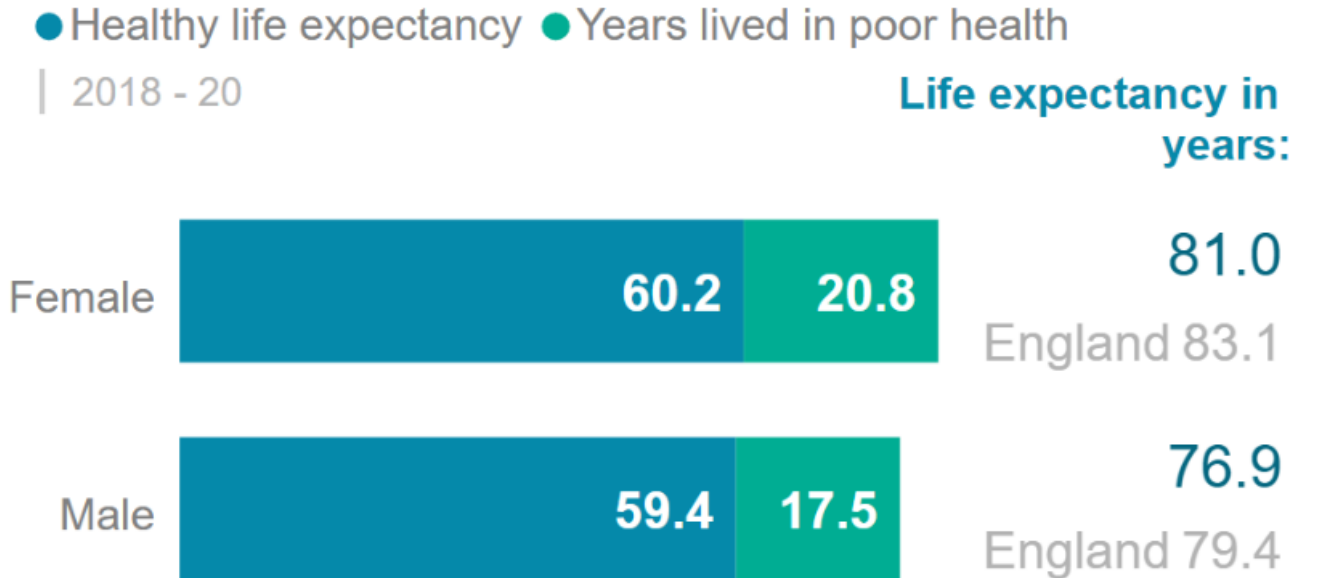
The chart describes cumulative age-standardised mortality rate per 100,000 population, for deaths in North East local authorities and Cumbria², by deprivation quintiles each local authority, all persons, all ages, March 2020 to July 2022

Source: [COVID-19 Health Inequalities Monitoring for England \(CHIME\) tool](#) [15 November 2022]. All cause deaths, including COVID-19 deaths. Based on provisional mortality data, and may be subject to revision ¹ Neighbourhoods refer to lower super output areas divided into quintiles within a local authority – which is different to the quintiles within England (the Core 20) . For example in Middlesbrough over half of LSOAs in the area are within the England’s most deprived quintile, a much higher proportion than the 20% when comparing within area quintiles. ² North Cumbria values unavailable.

Healthy life expectancy and years lived in poor health

- Women continue to outlive men but differences in healthy life expectancy by gender is considerably smaller.

Healthy life expectancy estimates for North East and North Cumbria 
North East and North Cumbria



Trends in healthy life expectancy

- Healthy life expectancy across NENC has reduced by an estimated half a year over the last decade for both females and males.



Females



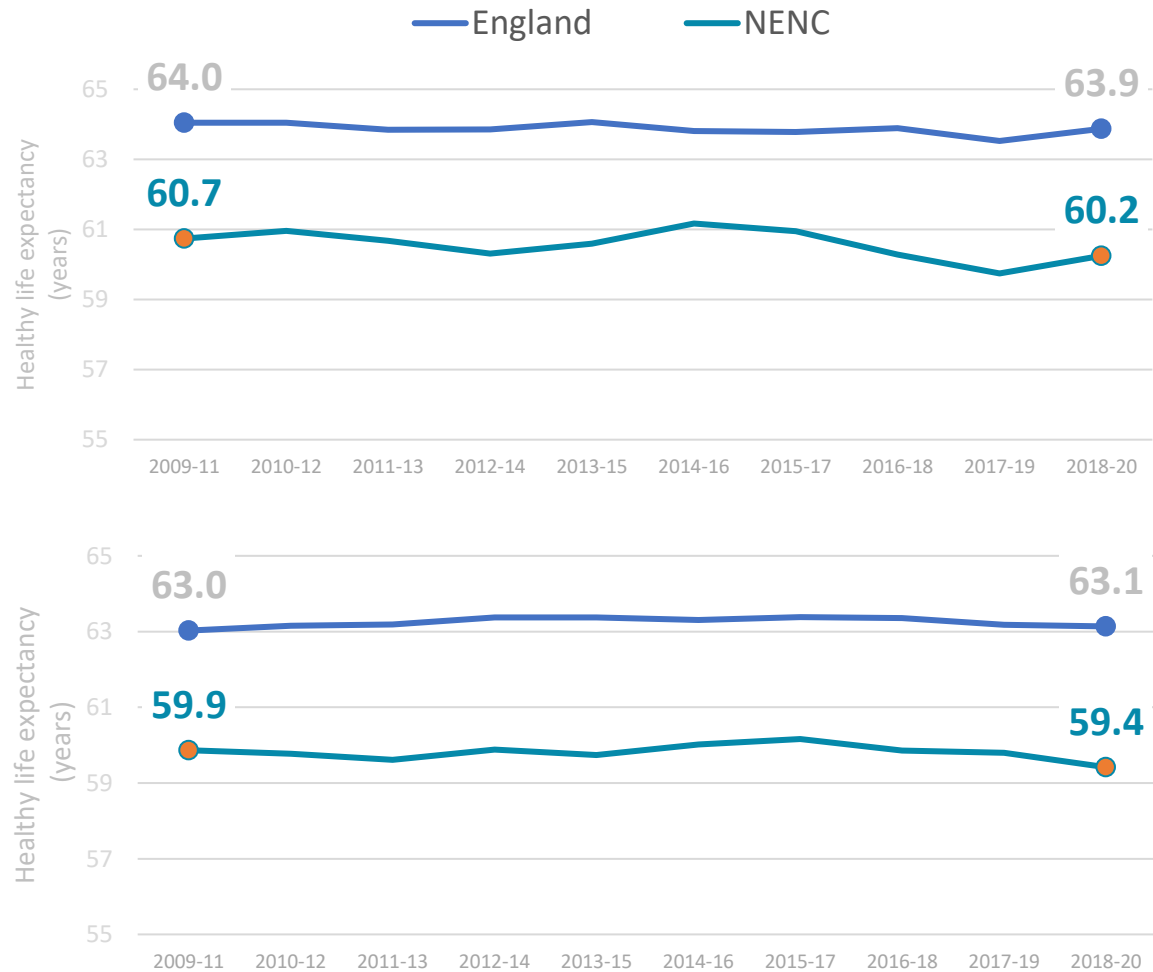
Males

Healthy life expectancy estimates over time for North East and North Cumbria, and England

2009-11 to 2018-20



North East and North Cumbria
Gap between England and NENC:



3.6 years

3.7 years

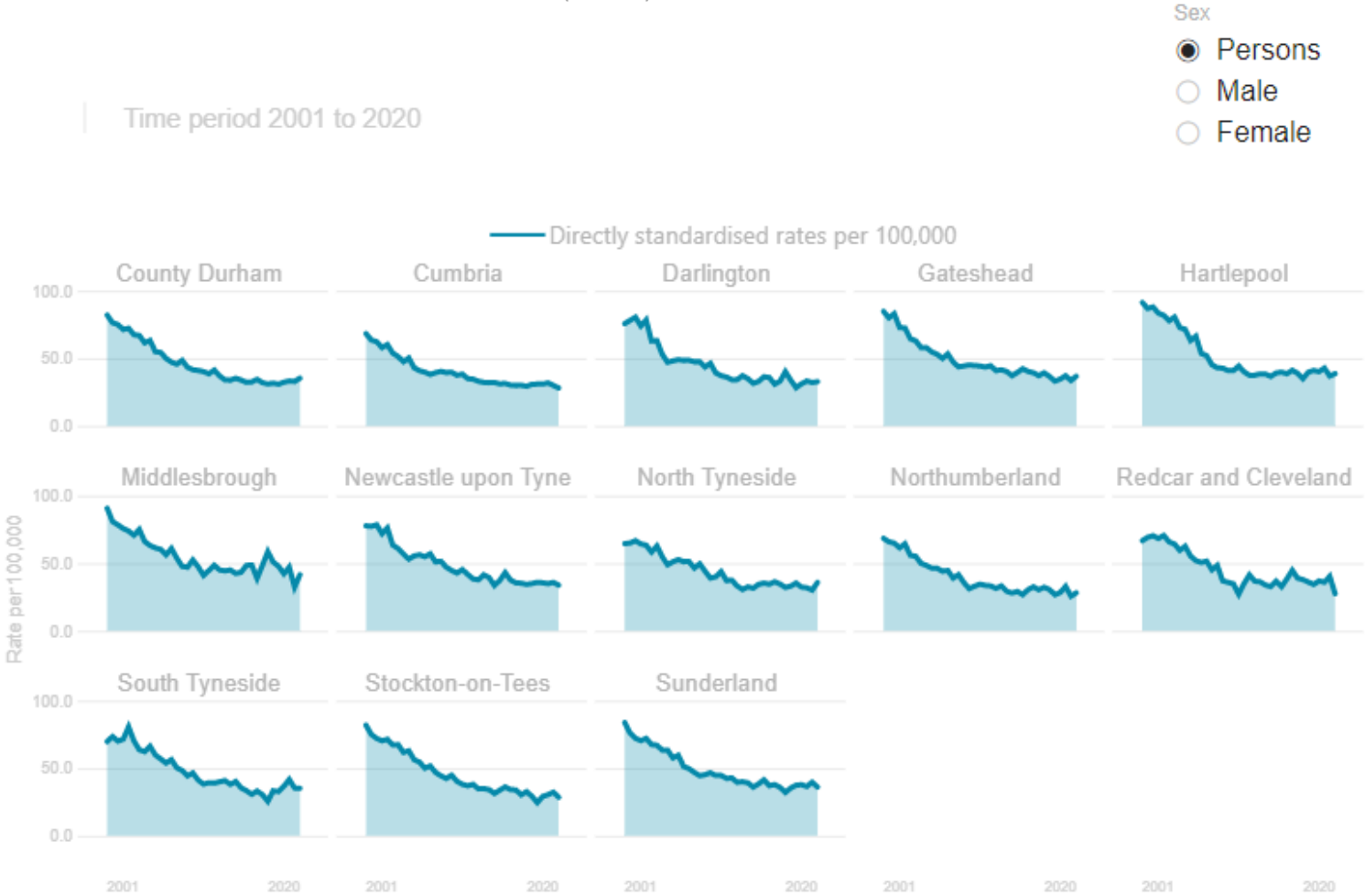
Trends in preventable early mortality from CVD

With some area level differences, the overall trends and improvements in premature mortality from CVD have stalled since 2011.

Rates in England vary significantly by deprivation: Preventable early mortality from CVD is twice as high in the most deprived areas of England compared to the least deprived areas

Under 75 mortality rate from CVD considered preventable.

North East and Cumbria local authorities (UTLAs)



[OHID Public Health Profiles 2022](#). Available via [Picture of Health North East and Yorkshire 2023](#)

Trends in preventable early mortality from cancer

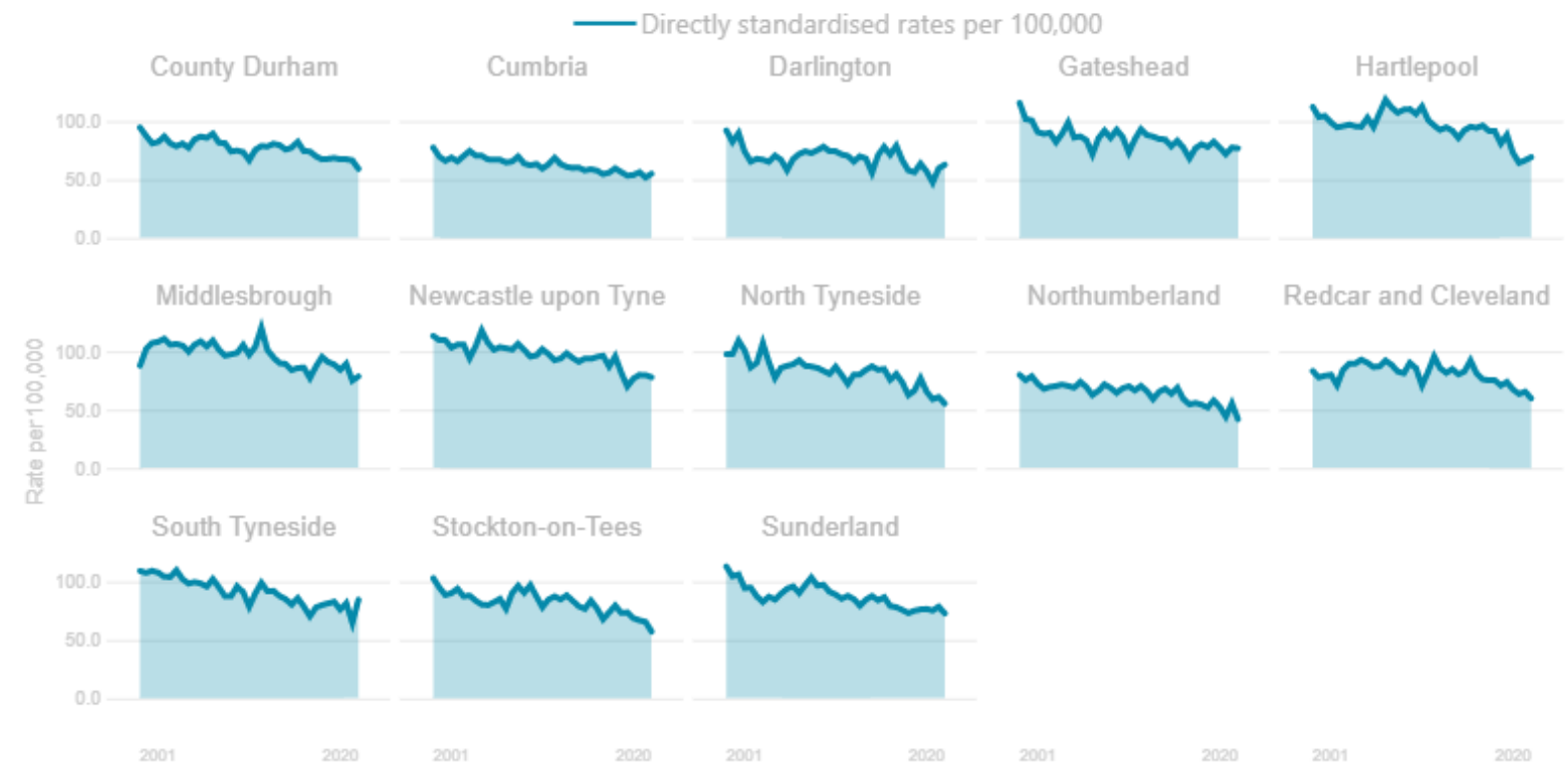
- Although there are some area level differences by local authority, the overall trends have continued to decrease

Under 75 mortality rate from cancer considered preventable.

North East and Cumbria local authorities (UTLAs)

Time period 2001 to 2020

Sex
 ● Persons
 ○ Male
 ○ Female



Trends in preventable early mortality from respiratory disease

- With some area level differences and fluctuation year on year, overall trends have not improved.
- In comparison to CVD or cancers the differences in deaths cause by respiratory disease between male and female in many local authorities are minimal and in some areas higher in females

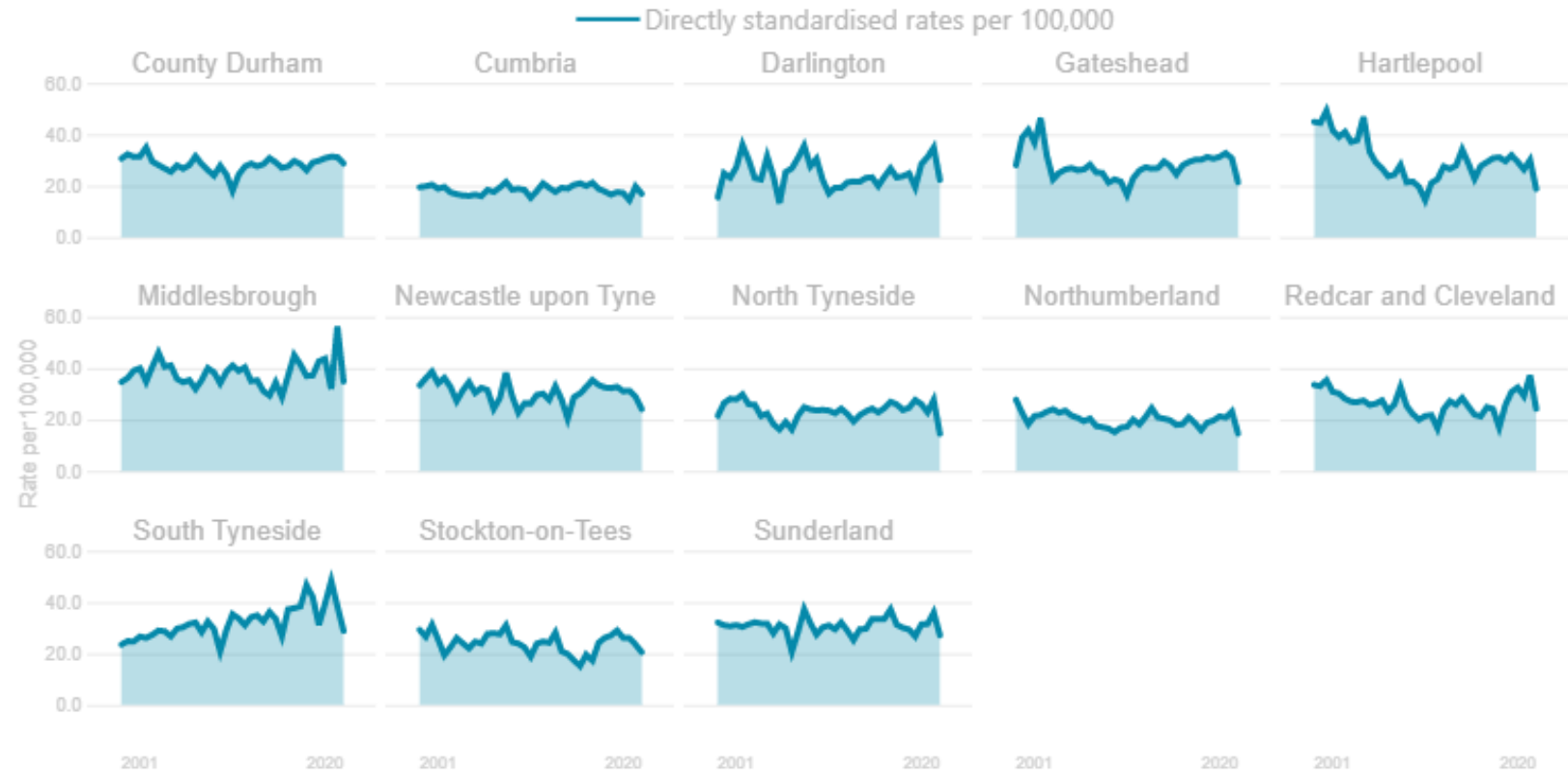
Under 75 mortality rate from respiratory disease considered preventable.

North East and Cumbria local authorities (UTLAs)

Time period 2001 to 2020

Sex

- Persons
- Male
- Female

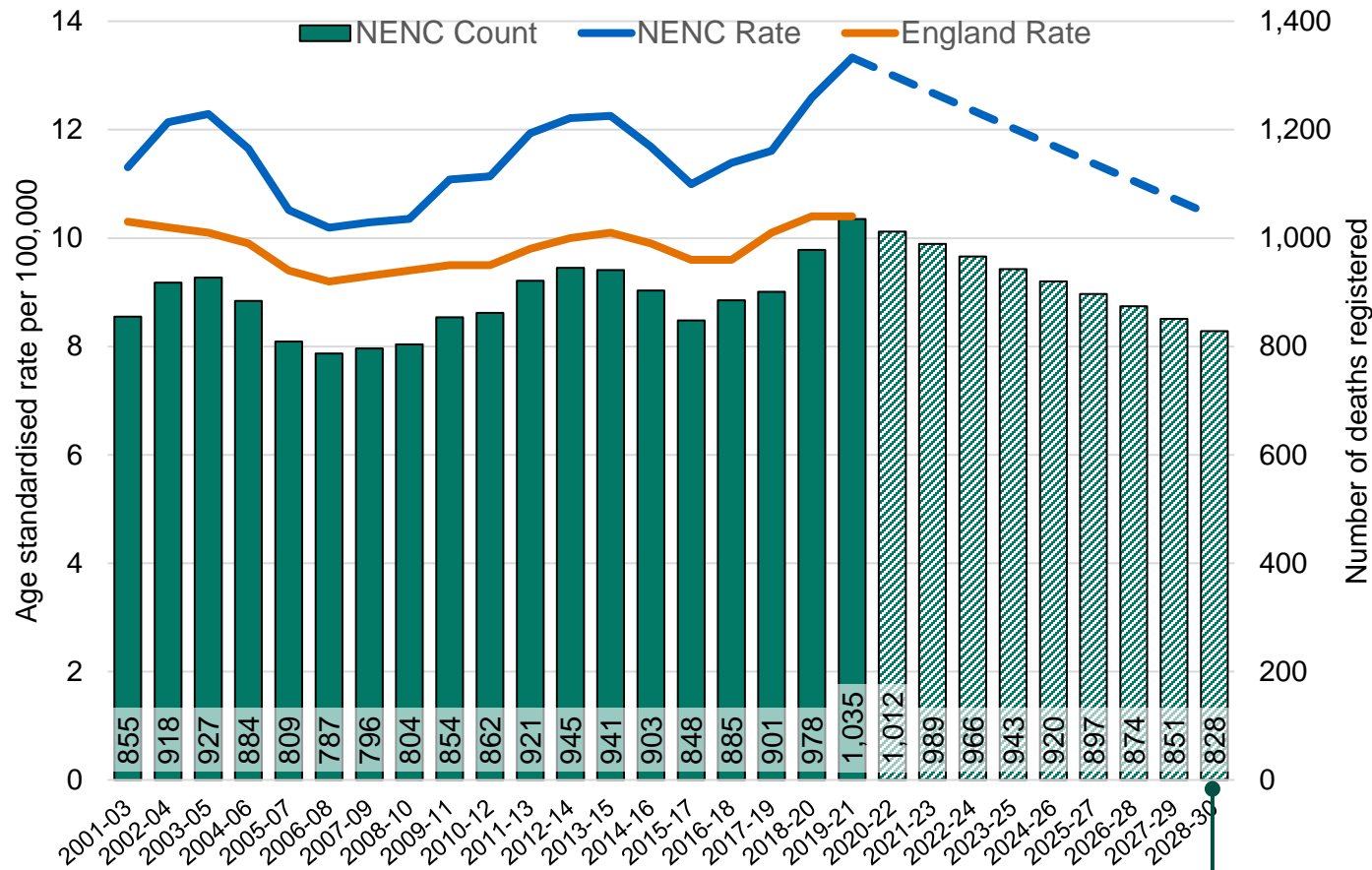


[OHID Public Health Profiles 2022](#). Available via [Picture of Health North East and Yorkshire 2023](#)

Reducing Suicide Ambition

“We will reduce the suicide rate from 13 per 100, 000 population (2019/2021) to below the England average (10.4 per 100,000 population 2019/2021) by 2030.”

Suicide rate and counts, NENC, 2001-03 to 2019-21, plus trajectory to halve rate by 2028-30



To reduce the suicide rate to 10.4 per 100,000 in NENC



23 deaths by suicide would be prevented each year.



This is approximately 2 fewer suicides per month, cumulatively.

Deaths by suicide are not equally distributed. Redcar & Cleveland, Copeland, Darlington, Allerdale, Carlisle, Co. Durham, Middlesbrough and Sunderland all have rates *significantly higher* than England. Only Stockton, Gateshead and South Tyneside currently have rates below 10.4 per 100,000.

Note, these are 2-year pooled figures

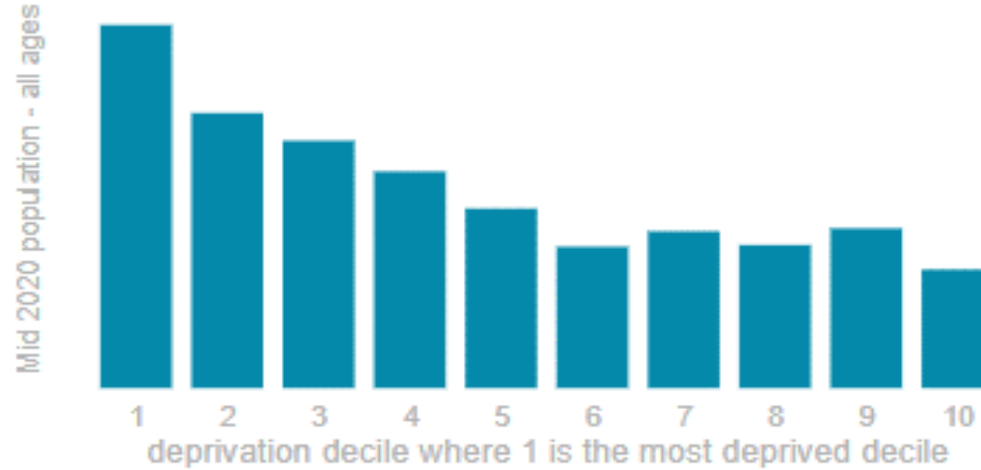
Prevalence of risk factors for health

A vast majority of the North East and North Cumbria population live in the more deprived areas of England

The area fares worse, for example, on employment, weekly earnings, fuel poverty and homelessness indicators compared to England.

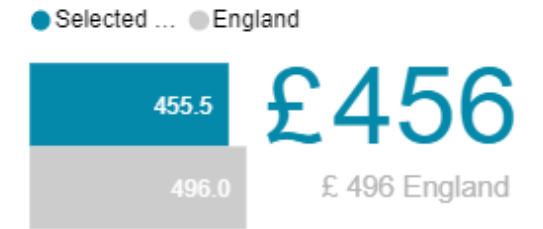
Wider determinants of health: North East and North Cumbria

Population size by deprivation decile



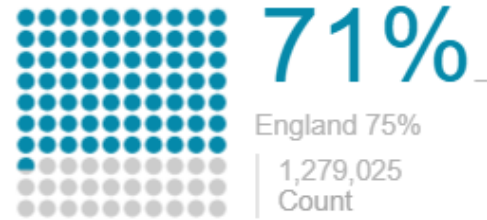
Average weekly earnings

| 2021



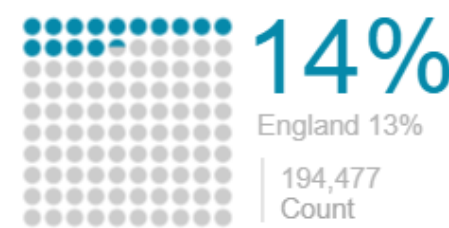
Percentage of people in employment

| 2021/22



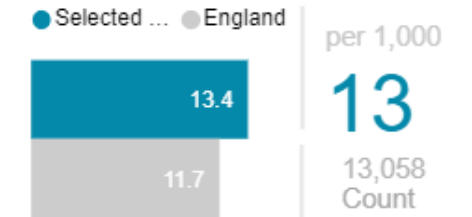
Fuel poverty (low income, high cost methodology)

| 2020



Homelessness - households owed a duty under the Homelessness Reduction Act

| 2021/22



From: [Picture of Health](#). Sources : MHCLG Open data: [English Indices of Deprivation 2019 - LSOA Level](#), and [ONS mid year population 2020 by age](#). Contains public sector information licensed under the Open Government Licence v3.0. © Crown copyright 2020. ¹Deprived neighbourhoods are those lower super output areas (LSOAs) in the first two most deprived deciles of England.

Prevalence of risk factors for health: health behaviours

Over 2 in 3 adults are estimated to be overweight and obese.

Smoking prevalence has continued to decrease but there are large differences by deprivation and socioeconomic groups. More than 1 in 4 adults in routine and manual occupations smoke.

Hospital admissions from alcohol specific conditions are considerably higher, as are deaths from drug misuse compared to England.

Health behaviour indicators: North East and North Cumbria

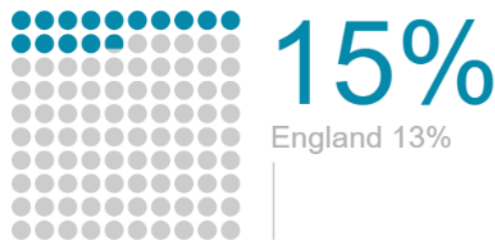
Percentage of adults (aged 18+) classified as overweight or obese

| 2020/21



Smoking Prevalence in adults (18+) - current smokers (APS)

| 2021



Percentage of physically active adults

| 2020/21



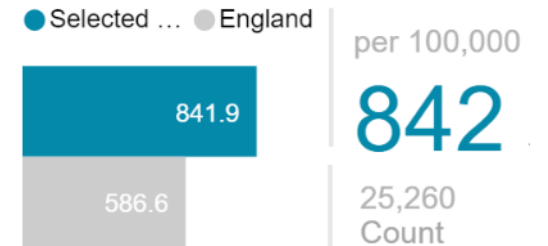
Smoking prevalence in adults in routine and manual occupations (18-64) - current smokers (APS)

| 2020



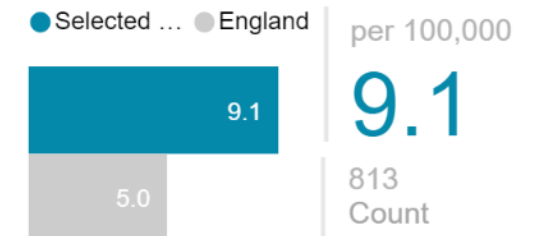
Admission episodes for alcohol-specific conditions

| 2020/21



Deaths from drug misuse

| 2018 - 20



Source. [OHID Public Health Profiles](#). Available via [Picture of Health North East and Yorkshire 2023](#)

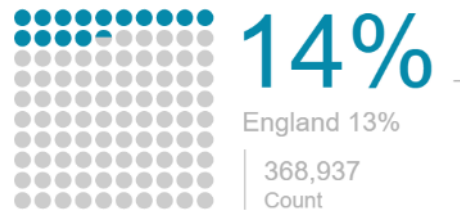
Mental health and wellbeing

Despite less pronounced differences in general mental health and wellbeing prevalence indicators compared to England, emergency hospital admissions for self harm and suicide rates are considerably higher than the England average

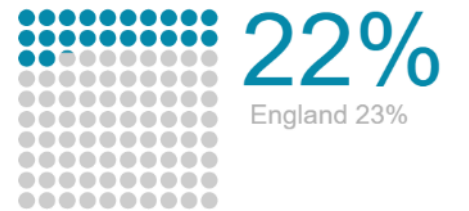
Latest *diagnosed* depression prevalence for NENC is at 1 in 7 registered patients. England and North East region [overall prevalence estimates by ONS](#) for moderate or severe depression symptoms is at 16%, 1 in 6 residents.

Mental health and well-being indicators: North East and North Cumbria

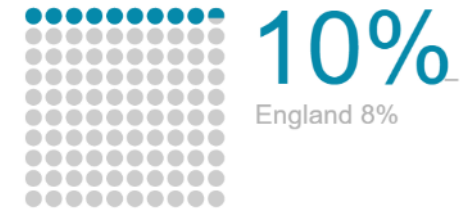
Depression: QOF prevalence (18+ yrs)
| 2021/22



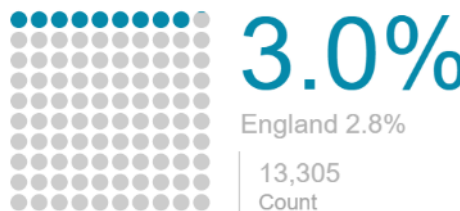
Self-reported wellbeing - people with a high anxiety score
| 2021/22



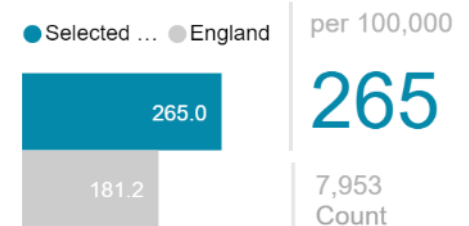
Self-reported wellbeing - people with a low happiness score
| 2021/22



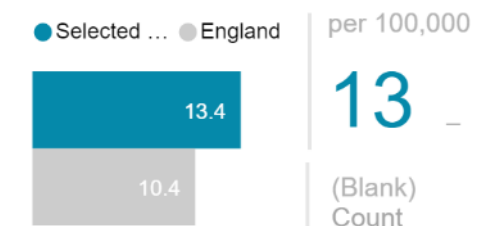
School pupils with social, emotional and mental health needs: % of school pupils ...
| 2021



Emergency Hospital Admissions for Intentional Self-Harm
| 2020/21



Suicide rate
| 2019 - 21



Source. [OHID Public Health Profiles](#). Available via [Picture of Health North East and Yorkshire 2023](#)

Inequalities in infant mortality

England and NENC nearest local authority districts 2019-2021

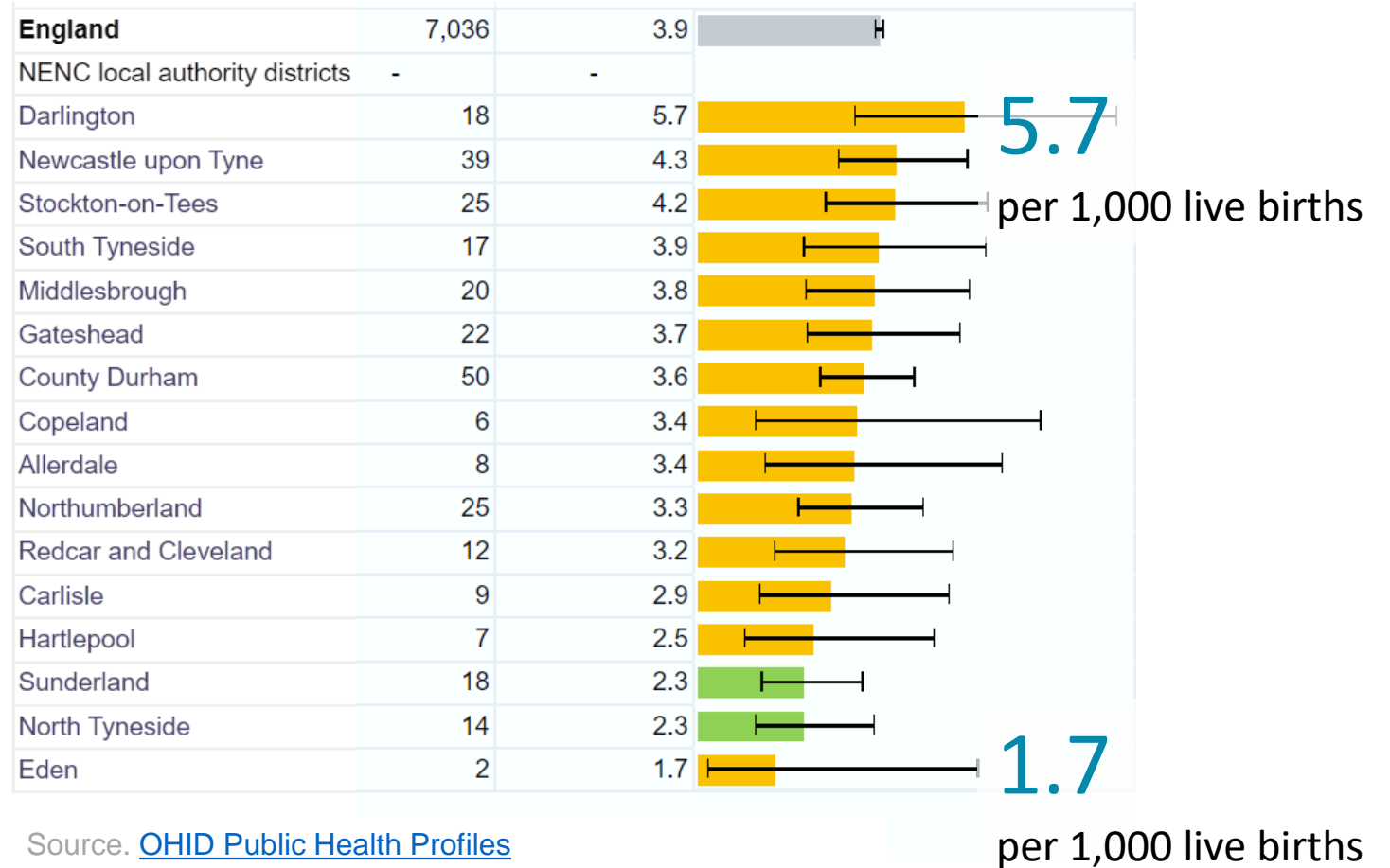
Variation in infant mortality rates in England by deprivation

Infant mortality rate



Source. [OHID Public Health Profiles](#). Available via [Picture of Health North East and Yorkshire 2023](#)

Variation by NENC local authority districts



Child health

For many maternal and early years indicators, North East and North Cumbria overall is estimated at similar level or even better than England, at odds with regional challenges such as area deprivation or number of children in relative low income families. However, smoking at the time of delivery is at 12% (n=3,270). The levels of overweight and obesity are nearly 1 in 4 in reception aged children, and much higher, at 40%, in year 6 children.

Children in relative low income families (under 16s)

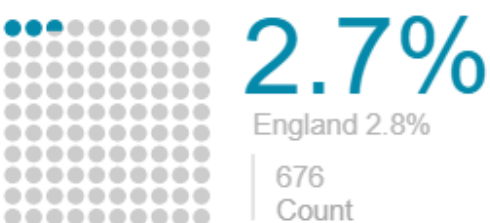
| 2020/21



Indicators for child health, North East and North Cumbria

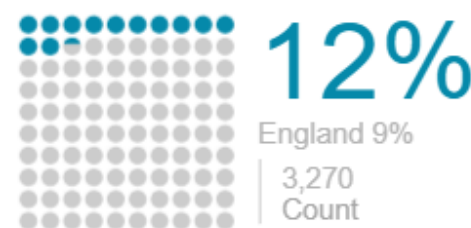
Low birth weight of term babies

| 2021



Smoking status at time of delivery

| 2021/22



Proportion of infants receiving a 6 to 8 week review

| 2021/22



School readiness: percentage of children achieving a good level of development at the ...

| 2021/22



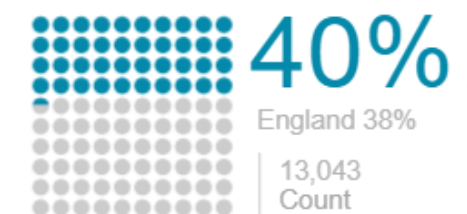
Reception: Prevalence of overweight (including obesity)

| 2021/22



Year 6: Prevalence of overweight (including obesity)

| 2021/22



Source. [OHID Public Health Profiles](#). Available via [Picture of Health North East and Yorkshire 2023](#)



Healthy ageing

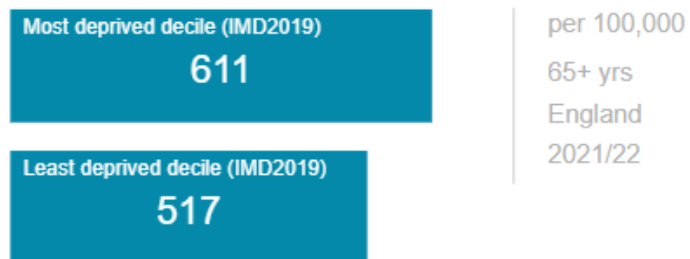
North East and North Cumbria overall performs relatively well for dementia diagnosis (against the [national ambition](#) of the proportion of people with dementia who are able to get a formal diagnosis from under half, to at least two-thirds of people affected.)

39% of social care users are estimated to have as much social contact as they like, a proportion that is slightly higher than the England average.

Compared to England, hospital admissions due to falls in people aged 65 and over are higher in NENC, as is the prevalence of hip fractures per 100,000 population. The rates vary by deprivation as shown in the England level data

The rate of hip fractures in ages 65+ is significantly higher in the most deprived areas compared to least deprived

Hip fractures in people aged 65 and over



Source: OHID [Public Health Profiles](#) 2022

Indicators for healthy ageing and MSK, North East and North Cumbria

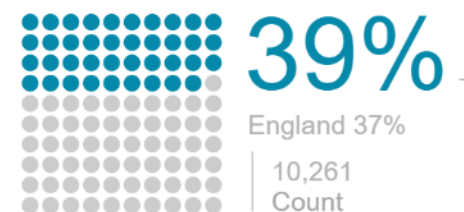
Estimated dementia diagnosis rate (aged 65 and over)

| 2022



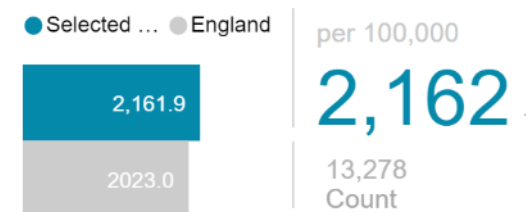
Social Isolation: percentage of adult social care users who have as much social contact as they like

| 2021/22



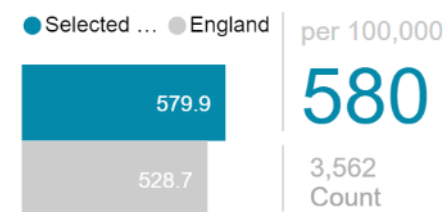
Emergency hospital admissions due to falls in people aged 65 and over

| 2020/21



Hip fractures in people aged 65 and over

| 2020/21



Source: [OHID Public Health Profiles](#). Available via [Picture of Health North East and Yorkshire 2023](#)



Vaccination programmes

The proportions of populations vaccinated against childhood diseases and flu are higher in the North East and North Cumbria compared to England. Although there is some variation by local authority, especially in [flu vaccines in primary school children](#), ranging from 42% in Middlesbrough to 71% in Stockton on Tees in 2020/21.

Vaccination rates in North East and North Cumbria

Population vaccination coverage: Dtap / IPV / Hib (1 year old)
| 2021/22



Population vaccination coverage: MMR for one dose (2 years old)
| 2021/22



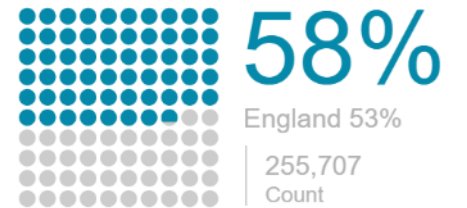
Population vaccination coverage: DTaP and IPV booster (5 years)
| 2021/22



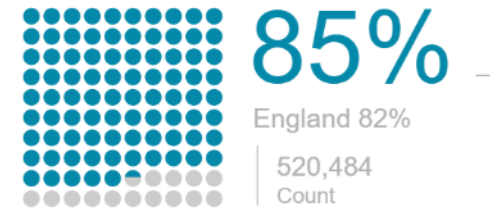
Population vaccination coverage: Flu (primary school aged children)
| 2021



Population vaccination coverage: Flu (at risk individuals)
| 2021/22



Population vaccination coverage: Flu (aged 65+)
| 2021/22

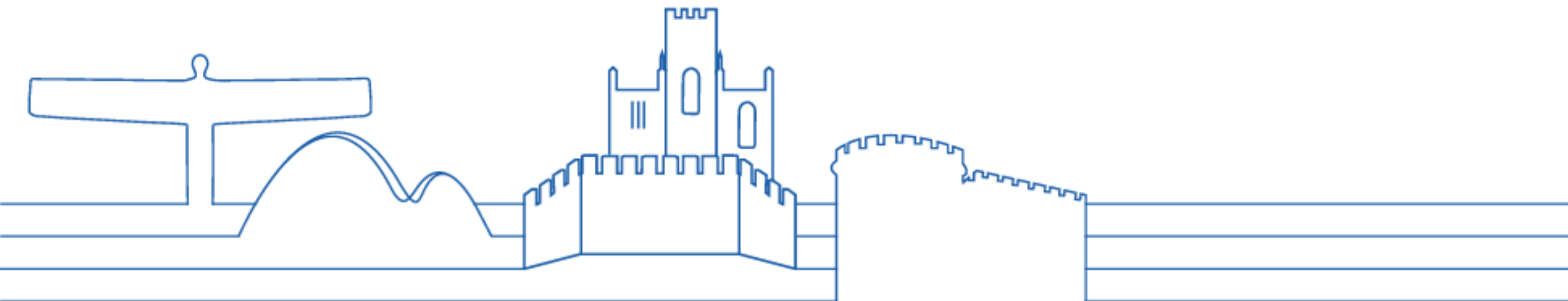


Source. [OHID Public Health Profiles](#). Available via [Picture of Health North East and Yorkshire 2023](#)



**North East and
North Cumbria**

Causes of the most disease and disability across NENC



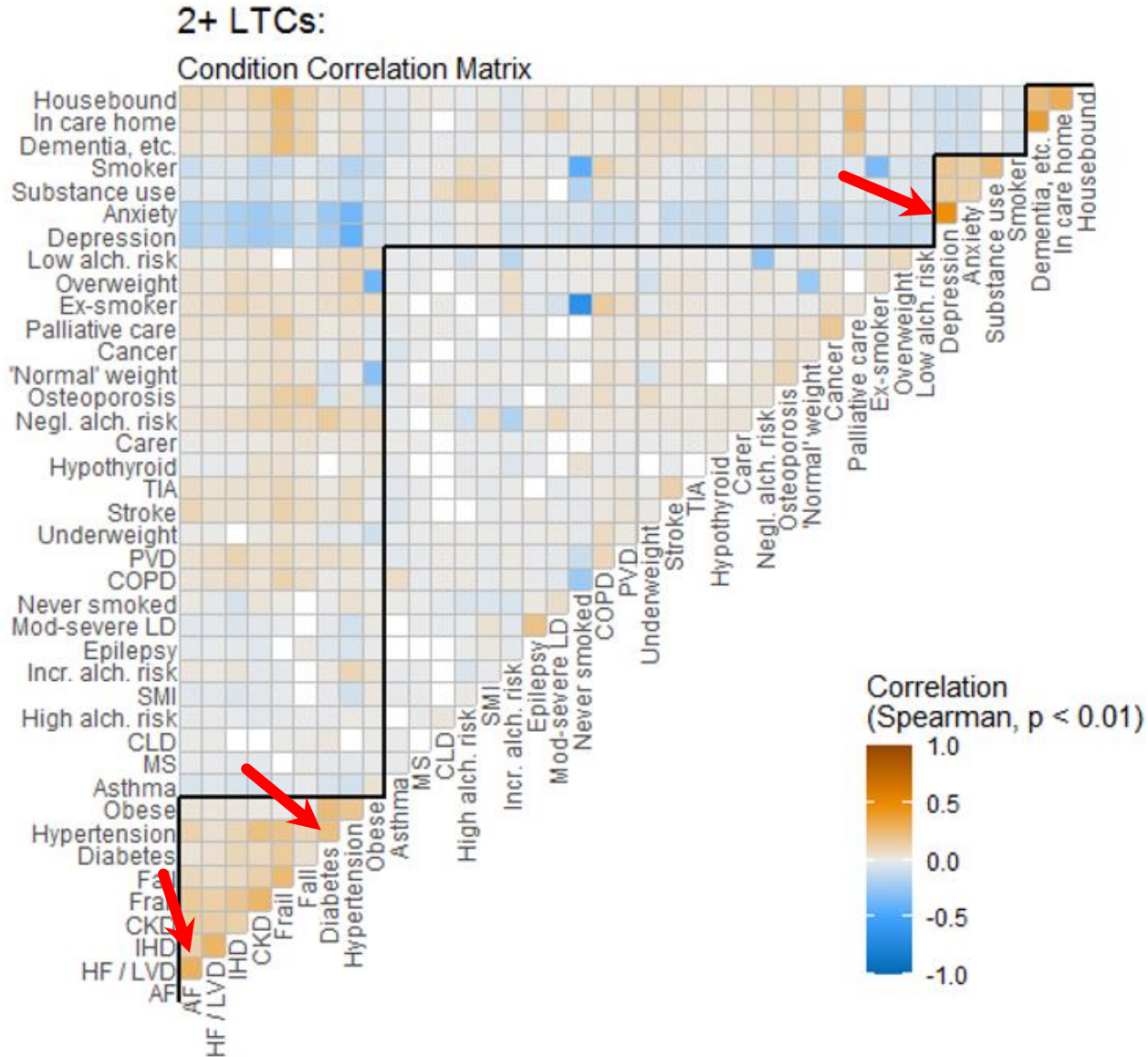
Selected Segments

- Mostly Healthy (patients with no long term conditions)
(1,641,000 people, 53% of the population of NENC)
- Patients with exactly 1 long term condition
(619,000 people, 20% of the population of NENC)
- Patients with 2 or more long term conditions
(843,000 people, 27% of the population of NENC)

Patients of all ages are included in these segments.



Correlation Plot: 2+ LTCs



This matrix shows **correlations** between traits of those with **2+ LTCs**. Darker colours mean a stronger correlation: orange for positive, and blue for negative. Non-significant correlations are removed.

Correlation does not imply causation.

The **black boxes** are **clusters** of correlations, e.g. Dementia, etc., In care home, and Housebound show similar patterns.

Three LTC combinations with highest correlation:

Depression and anxiety: 37% with one condition have the other

Diabetes and hypertension: 21% of those with one have the other

Heart failure / left ventricular dysfunction and atrial fibrillation: 19% of patients with one have the other

Introduction

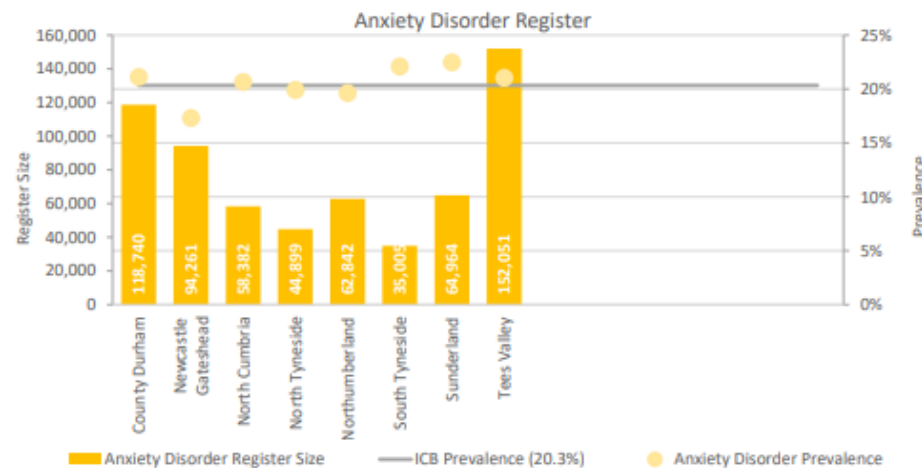
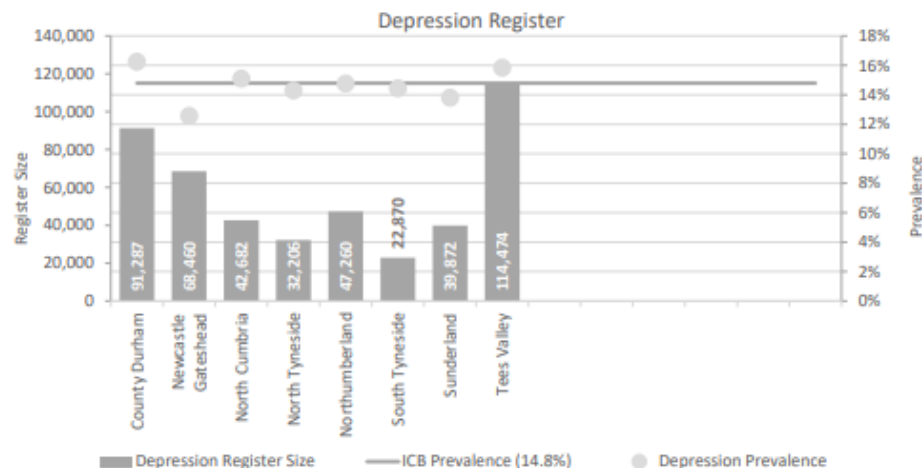
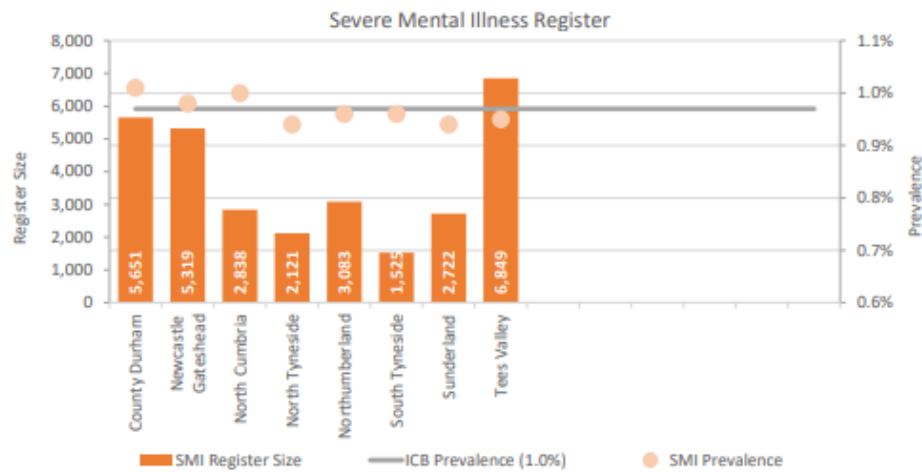
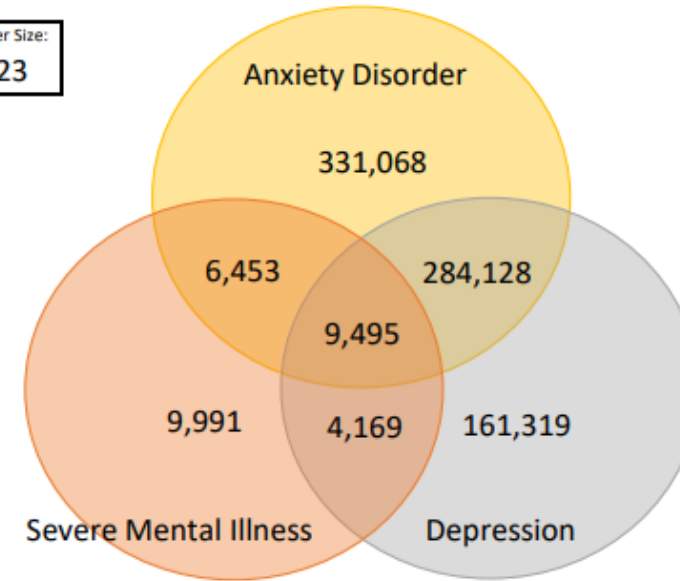
Definition

This report uses the definitions of anxiety disorder, depression and severe mental illness as applied in RAIDR, which will be slightly different to the QOF registers. Patients may appear in more than one cohort depending on their recorded diagnoses, see 'Register Overlap' right.

Where given, numbers in brackets on charts are the actual number of people.

Register Overlap

Total Register Size:
806,623



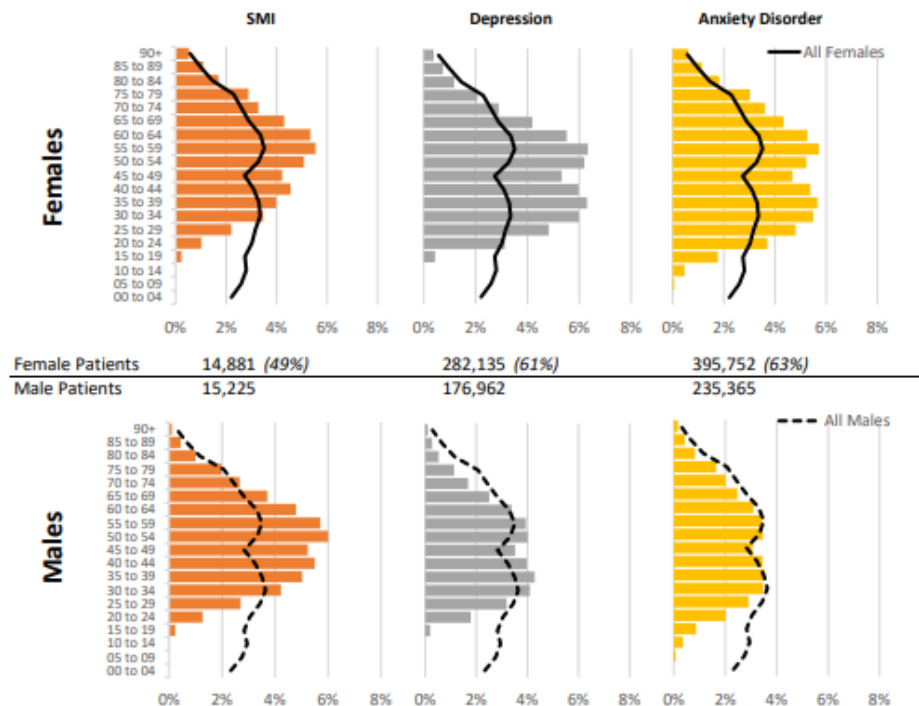
Demographics

While 49.9% of the ICB population is female, 49.4% of patients with severe mental illness are female. Patients with Depression and Anxiety Disorder recorded on their primary care record are much more likely to be female than male.

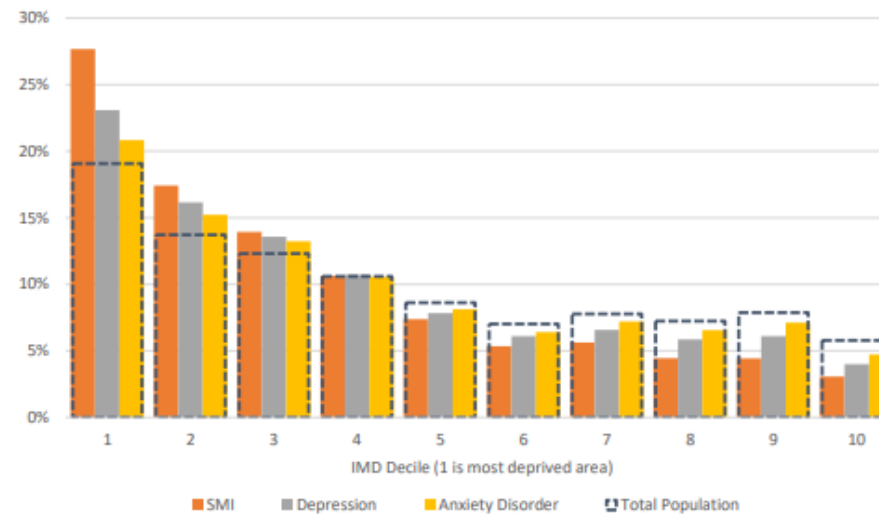
Patients with a severe mental illness are more likely to live in deprived areas – 32.8% of the ICB population live in areas classified as being in the 5th most deprived in the country and 45.1% of those with an SMI live in these areas. They are also more likely to live the most deprived areas than those with Anxiety Disorder or Depression.

Age / Sex Profile

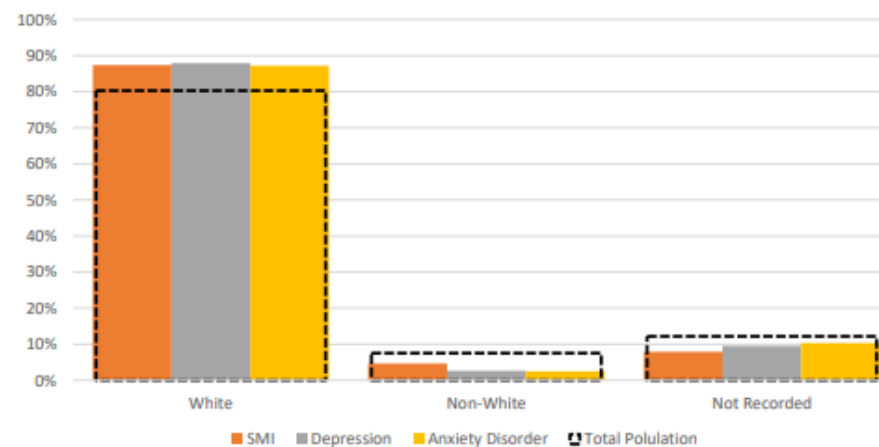
These charts show the percentage of patients with a condition who are in a particular age band and of a particular gender, compared to the ICB population as a whole. Each condition sums to 100%.



Deprivation (Index of Multiple Deprivation)

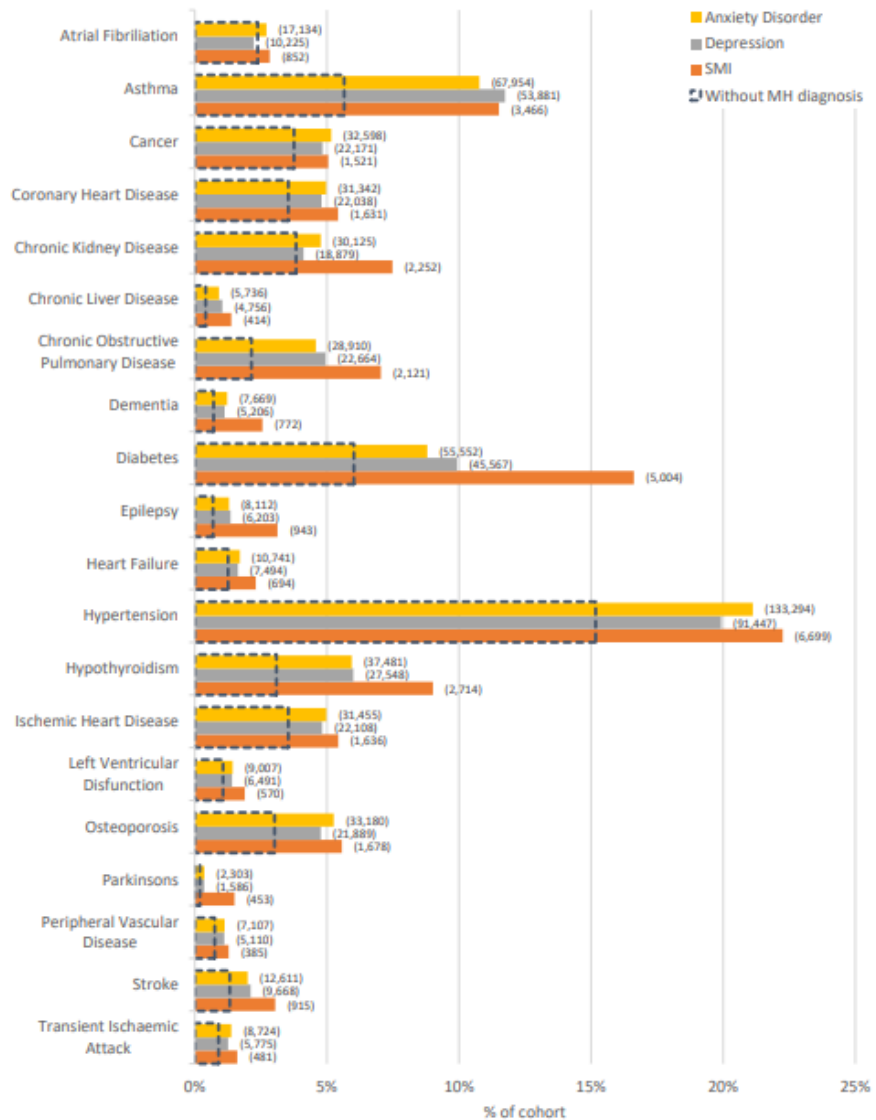


Ethnicity Recorded in Primary Care



Long Term Conditions

Long Term Conditions: % of Cohort with Condition



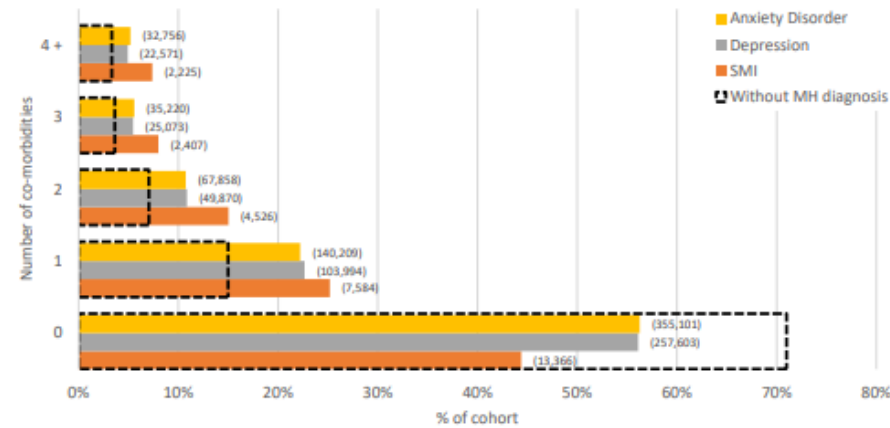
It is striking how many patients with mental health conditions also suffer from additional long term conditions. While 71% of the population without anxiety disorder, depression or SMI are living free from any of the conditions on the left-hand chart, only 44% of patients with an SMI, 56% with depression, and 56% with anxiety disorder are. Within the ICB, 120,252 patients with anxiety disorder, depression or SMI have 3 or more long term conditions, over and above their mental illness.

The page on demographics highlights that the groups of patients with these mental health conditions is older than the general population and potentially from more deprived areas, which may have some bearing on disease prevalence. The incidence of unhealthy behaviours is also higher in this cohort of patients, as shown on the Lifestyle Risk Factors page.

In general, patients with anxiety disorder, depression or severe mental illness are more likely than patients without one of these mental health diagnoses to have any of the long term conditions on the left, with patients with SMI having the highest rates.

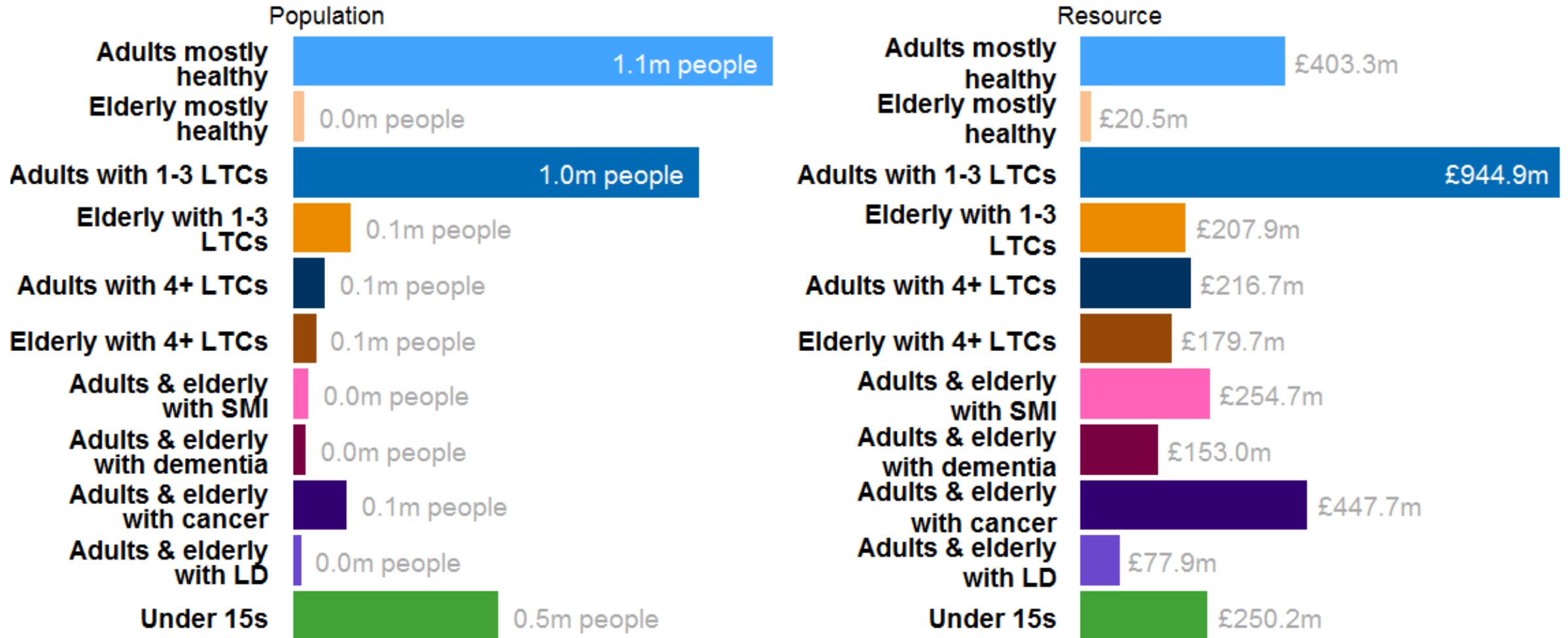
The numbers in brackets gives the number of patients with anxiety disorder, depression or SMI that the prevalence represents.

Number of Co-Morbidities (from the list on the left)



	Number of Co-Morbidities				
	0	1	2	3	4+
Without MH Diagnosis	71.0%	15.0%	7.0%	3.6%	3.3%
Anxiety Disorder	56.3%	22.2%	10.8%	5.6%	5.2%
Depression	56.1%	22.7%	10.9%	5.5%	4.9%
Severe Mental Illness	44.4%	25.2%	15.0%	8.0%	7.4%

NECS Segmentation Resource Use



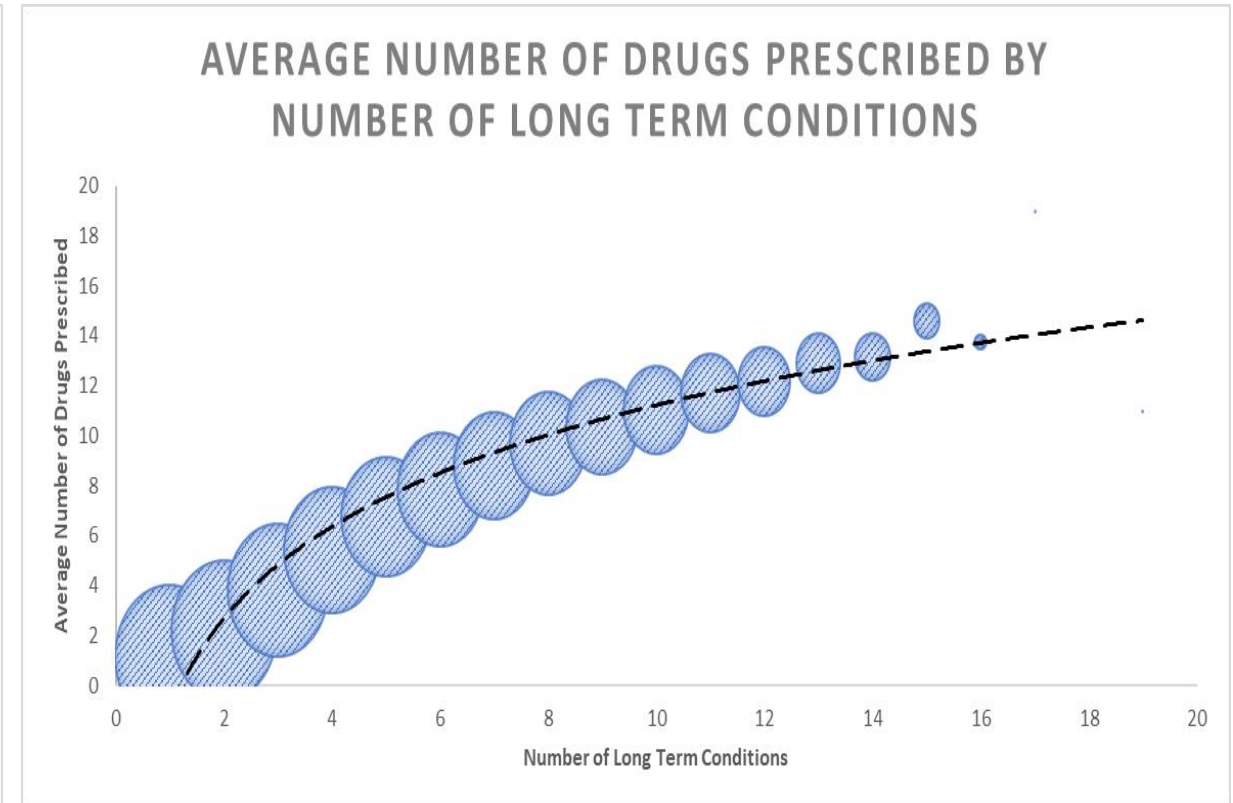
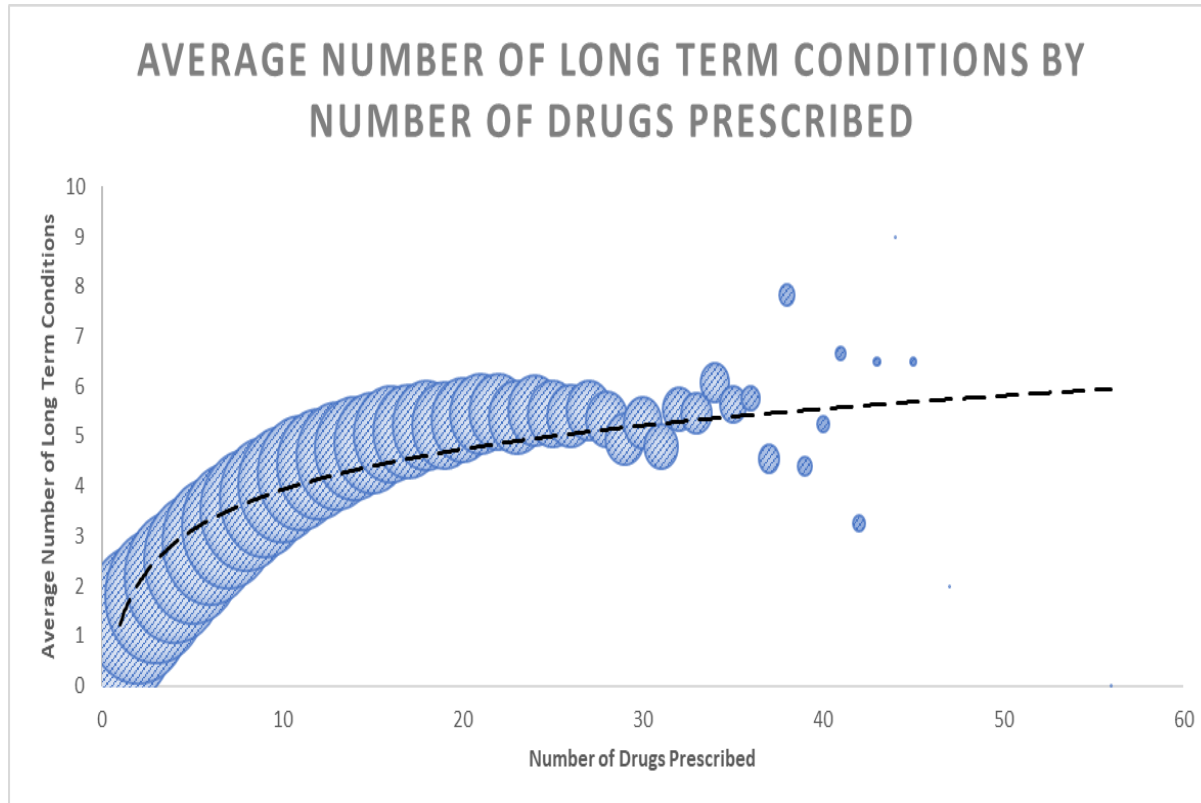
Polypharmacy and Long Term Conditions

We compared the patients with long-term conditions with data from the primary care prescribing dataset.

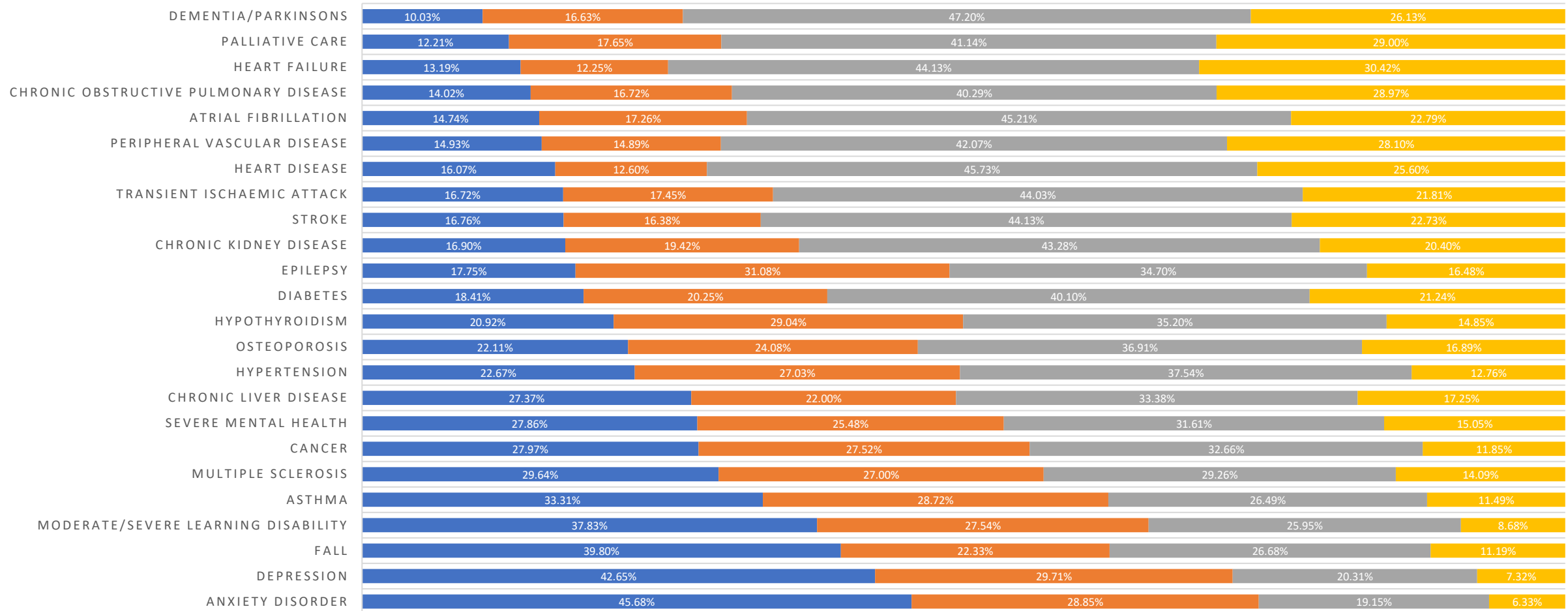
The charts below show how the number of long-term conditions a patient has affects the number of drugs prescribed and vice versa. The size of the bubbles indicate the number of patients (on a log scale). In both cases a positive correlation is seen demonstrating that patients with multiple long-term conditions are more likely to require polypharmaceutical approaches and that polypharmacy patients were more likely to suffer multiple long-term conditions

Data Sets:

- *BSA Primary Care Prescribing – February 2023*
- *RAIDR Population Health Data*
- *BNF Pharmaceutical Reference from UKHD*



Polypharmacy and Long Term Conditions



■ No Drugs ■ 1-3 Drugs ■ 4-9 Drugs ■ 10+ Drugs

What is the role of pharmacy in improving population health and tackling inequalities

- Being a leader, champion and community advocate for population health and tackling inequalities
- Making every contact count
- Effective management of long term conditions – medicines optimisation (managing polypharmacy prescribing and driving efficient use of resources)
- Delivery of primary prevention programmes – smoking cessation, weight management, health checks
- Delivering secondary and tertiary prevention approaches and programmes
- Research on the most effective approaches to address inequalities
- Using your data to understand the challenges - #datasaveslives
- **Healthy Living Pharmacists (and Healthy Living Pharmacies)**

Acknowledgements

- OHID LKIS Team
- NECS BI And intelligence service



**North East and
North Cumbria**

Thank you

