Last updated 29 July 2024

RESPIRATORY DISEASES IN LEICESTER ADULTS: JOINT STRATEGIC NEEDS ASSESSMENT

A Joint Strategic Needs Assessment (JSNA) is a statutory process by which local authorities and commissioning groups assess the current and future health, care and wellbeing needs of the local community to inform decision making.

The JSNA:

Is concerned with wider social factors that have an impact on people's health and wellbeing such as poverty and employment.

Looks at the health of the population with a focus on behaviours which affect health, such as smoking, diet and exercise.

Provides a view of health and care needs in the local community

Identifies health inequalities

Indicates current service provision

Identifies gaps in health and care services, documenting unmet needs

Respiratory Diseases

1 CONTENTS

2 INTRODUCTION

This JSNA chapter gives a broad overview of respiratory disease in Leicester, with more detailed sections on two of the most common respiratory diseases, asthma and COPD.

Respiratory diseases are a group of disorders of the respiratory system (airways and structures of the lungs). Some of the most common respiratory diseases are:

- Chronic Obstructive Pulmonary Disease (COPD) – Includes emphysema (damage to the air sacs in the lungs) and chronic bronchitis (long term inflammation of the airways). Symptoms include increasing breathlessness, a persistent chesty cough with phlegm, frequent chest infections and persistent wheezing.
- Asthma – airways narrow and swell and may produce extra mucus which can make breathing difficult and can trigger coughing, wheezing and shortness of breath.
- Pneumonia – an infection that inflames the air sacs in one or both lungs. The air sacs may fill with fluid or pus, causing cough with phlegm, fever, chills and difficulty breathing.

Respiratory disease affects one in five people and is the third largest cause of death in England after cancer and cardiovascular disease.[1] Respiratory disease is also a major driver of health inequalities, much of which is preventable.[2] Various forms of treatment which help to dilate major air passages and improve shortness of breath can help to control symptoms and improve the quality of life for people with respiratory disease.

The annual economic burden of asthma and COPD on the NHS in the UK is estimated to be £3 billion and £1.9 billion respectively, making the prevention and management of these conditions a key objective for the health system.[1]

3 WHO'S AT RISK AND WHY?

Many respiratory illnesses share similar risk factors, with some variation between specific diseases. some of the most important risk factors for chronic respiratory diseases are listed below:[3]

- Tobacco smoke (including second hand and pre-natal exposure)
- Air pollution
- Indoor air pollutants, such as those produced by damp and mould, and other such indoor polluters such woodburning stoves
- Occupational chemicals and dusts
- Frequent lower respiratory infections during childhood.

Smoking tobacco is a major contributor to respiratory disease, particularly to COPD. There are also several indoor air pollutants which are associated with asthma and COPD, including second-hand tobacco smoke, indoor allergens, nitrogen oxide, formaldehyde, volatile organic compounds, indoor-generated particulate matter and carbon monoxide. These pollutants can affect the respiratory system and can cause or exacerbate asthma, acute respiratory diseases or COPD. Viral or bacterial infections, such as pulmonary tuberculosis, also increase the risk of COPD. Unhealthy diet and physical inactivity can contribute to the development of respiratory disease, as well as to cardiovascular ill-health.

Advancing age, genetic predisposition or low socio-economic status are the main non-modifiable factors in the development of many respiratory conditions. Preventable mortality due to respiratory disease is three times higher in the most socioeconomically deprived areas in England compared to the least deprived areas.[4] Respiratory disease is, therefore, a major contributor to the overall life expectancy gap between the rich and the poor. Inequality is related to a multitude of factors, such as greater exposure to risk factors (such as smoking, air pollution, poor housing, and occupational hazards) as well as variation in healthcare quality and access. Other specific groups are also at a significantly higher risk of respiratory illness, such as people with severe mental illness, people with learning disabilities, and the homeless.

Damp and mould within homes can cause or aggravate respiratory disease. Living in damp homes is associated with a range of respiratory illness including asthma, lower respiratory infection, and the development of allergic rhinitis.[5] People more likely to be living in homes with damp and mould include those with a long-term illness, people who struggle to heat their homes and/or are experiencing fuel poverty, people on low incomes, people with disabilities, people from ethnic minority backgrounds, and people living in temporary accommodation.

3.1 RISK FACTORS IN LEICESTER'S POPULATION

Leicester's relatively young population likely contributes to the city's lower crude prevalence of respiratory disease compared to England. Characteristics of Leicester's population which may increase the risk of respiratory disease in residents compared to England include the city's poor diet, high levels of deprivation, higher concentrations of air pollution, and lower levels of physical activity.

Figure 1: Respiratory disease risk factors in Leicester's population

Indicator	Age group	Sex	Time period	Leicester	England	DOT
Age (% of population aged over 50 years old)	50+	Persons	2022	28.0	38.0	#N/A
Smoking prevlance in adults (18+) - current smokers (APS)	18+ yrs	Persons	2022	13.1	12.7	1
Smoking status at time of delivery	All ages	Persons	2022/23	9.2	8.8	2
Premature birth (associated with low birth weight)	<37 weeks gestational age at birth	Persons	2022/23	9.2	8.8	2
% of adults (18+) classified as overweight or obese	18+ yrs	Persons	2021/22	68.0	63.8	3
% of physically active adults	19+ yrs	Persons	2021/22	57.0	67.3	
Winter mortality index	All ages	Persons	Aug 2021 - Jul 2022	3.0	8.1	1
Fuel poverty (low income, low energy efficiency methodology)	Not applicable	Persons	2021	18.9	13.1	
Air pollution - fine particulate matter concentrations of PM2.5	Not applicable	Persons	2021	8.3	7.4	3
Deprivation score	All ages	Persons	2019	30.9	21.7	

Significantly worse than England	*Similar to England*
In the highest (worst quintile in England)	*Significantly beter than England*

Sources: OHID Health Profiles, fingertips.phe.org.uk

3.1.1 AIR QUALITY

Air pollution from particulate matter (PM_{10} and $PM_{2.5}$) and nitrogen dioxide (NO_2) is associated with higher prevalence of COPD and lower lung function.[6]

According to the modelling approach based on the Automatic Urban and Rural Network (AURN) In 2022, Leicester had a higher estimated concentration of fine particulate matter ($PM_{2.5}$ of 9.6µg/m^3) compared with the England average (7.8 µg/m^3)**Error! Bookmark not defined.** and a higher estimated proportion of deaths are estimated to be attributable to $PM_{2.5}$ (7.1% compared to 5.8% in England in 2022) **Error! Bookmark not defined.**

Source: Background annual average $PM_{2.5}$ concentrations for the year of interest are modelled on a 1km x 1km grid using an air dispersion model, and calibrated using measured concentrations taken from background sites in Defra's Automatic Urban and Rural Network (https://uk-air.defra.gov.uk/interactive-map). By approximating LA boundaries to the 1km by 1km grid, and using census population data, population weighted background $PM_{2.5}$ concentrations for each lower tier LA are calculated. This work is completed under contract to Defra, as a small extension of its obligations under the Ambient Air Quality Directive (2008/50/EC). Concentrations of total $PM_{2.5}$ are used for estimating the mortality burden attributable to particulate air pollution (COMEAP, 2022).

Within Leicester there is variation in the levels $PM_{2.5}$ and NO_2 across the city. The maps below show the annual mean concentrations for the two pollutants monitored by stations around the city in 2022. Stations in dark red show areas with a concentration of air pollutants which 'exceeds' Defra's legal limits. No sites in Leicester exceeded limits for $PM_{2.5}$. For NO_2, Troon Way in the Rushey Mead area and Charles Street in the city centre indicated 'exceedances' of the legal limit. It should be noted that the these two locations were monitored using equipment not considered laboratory grade by DEFRA (often termed indicative monitoring) and therefore the results should be reviewed with caution.

The purpose of the below maps is to highlight areas of potential pollution hotspots, where interventions should be targeted to improve air quality before they reach exceedance level. Under the Environment Act, Leicester City Council are statutorily responsible for the monitoring of air pollution and the implementation of measures to improve air quality. The authority takes potential exceedances of national air quality objectives very seriously and has developed an Air Quality Action Plan (AQAP) to highlight the measures undertaken to reduce NO2 pollution in the city.

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Figure 2: Map showing Air quality Stations in Leicester and PM2.5 levels

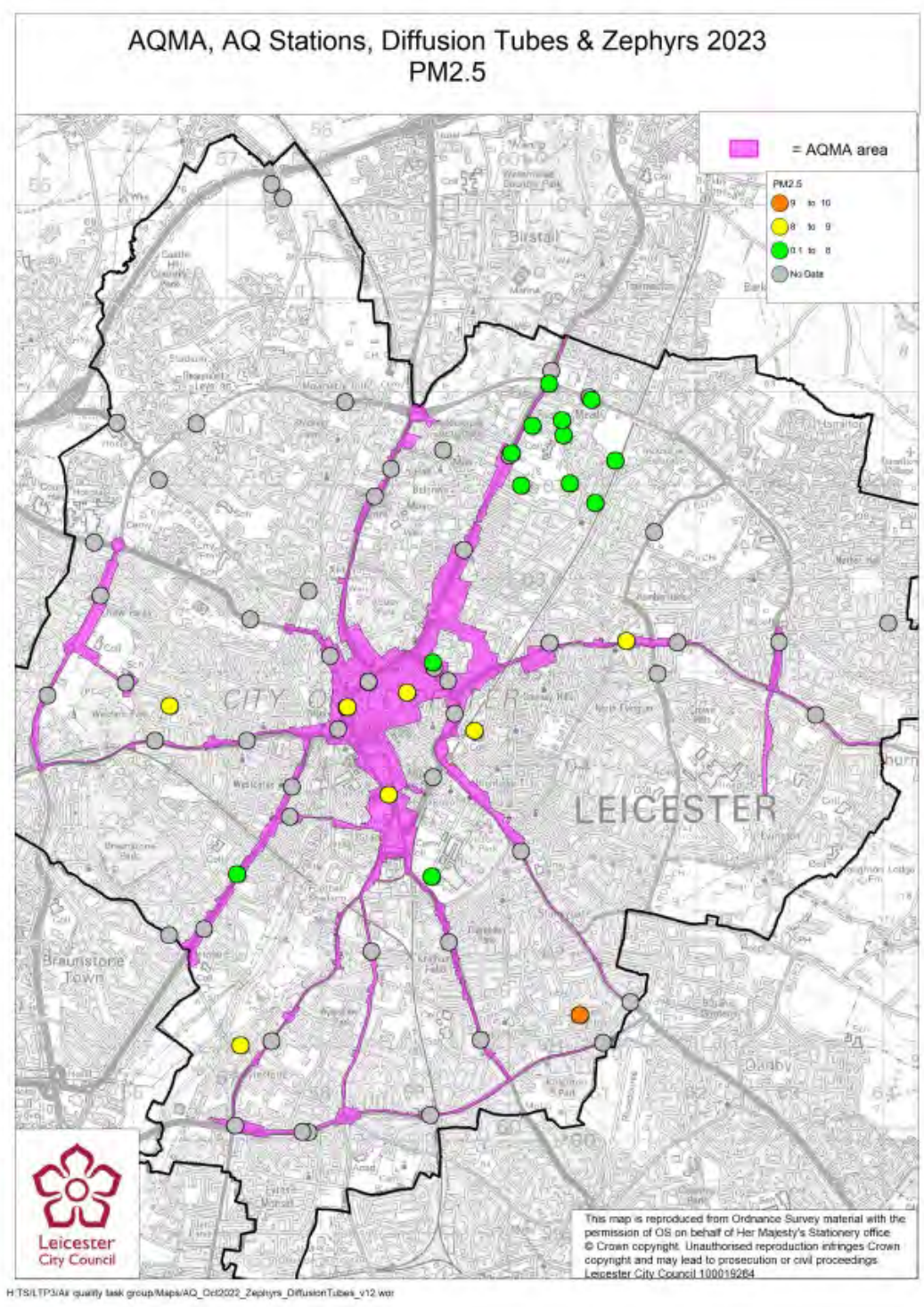
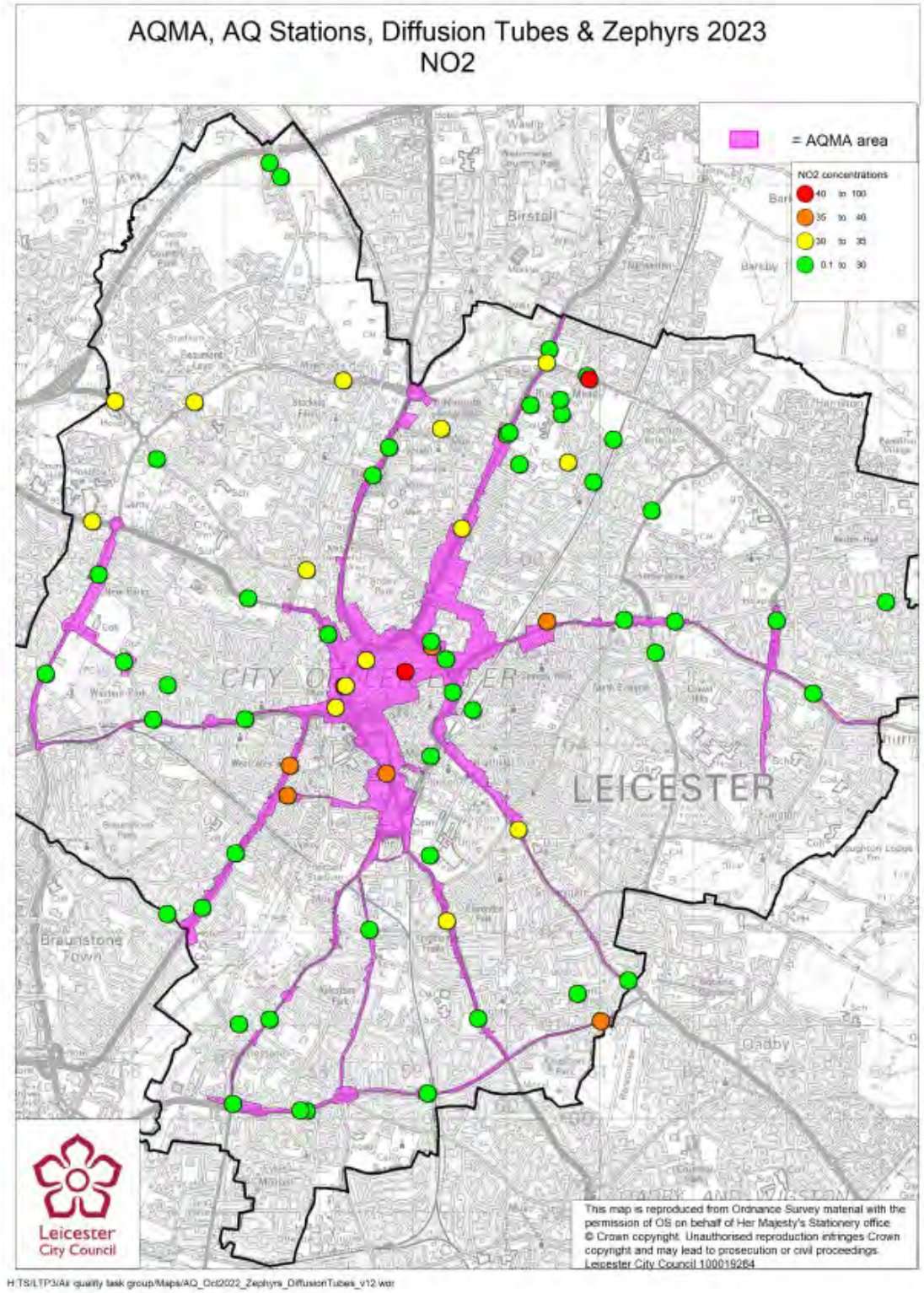


Figure 3: Map showing Air quality Stations in Leicester and NO2 levels



4 THE LEVEL OF NEED IN THE POPULATION

4.1 RESPIRATORY DISEASE

4.1.1 RESPIRATORY DISEASE PREVALENCE

The table below shows the prevalence of the most common respiratory diseases in Leicester, the other sub-locations which make up the Leicester, Leicestershire and Rutland (LLR) Integrated Care Board (ICB), and England. Asthma is the most common condition, affecting around one in twenty of those aged 6+. The prevalence of asthma in Leicester is significantly below England (6.5%) and is lower than other areas in LLR. COPD has a lower prevalence but a greater impact on the lives of those living with the condition. COPD affects 1.3% of the Leicester GP-registered population, which is significantly below the proportion of the population of other LLR areas and England diagnosed with COPD (1.8%).

Figure 4: Crude prevalence of respiratory diseases by LLR ICB sub-location, 2022/23

Long term condition	Leicester count	Leicester (04C)	West Leicestershire (04V)	East Leicestershire &	LLR ICB	England
Asthma: QOF prevalence (6+ yrs)	20,323	5.1	6.9	7.1	6.3	6.5
COPD: QOF prevalence (all ages)	5,311	1.3	1.7	1.7	1.6	1.8

Statistically lower than England
Statistically higher than England

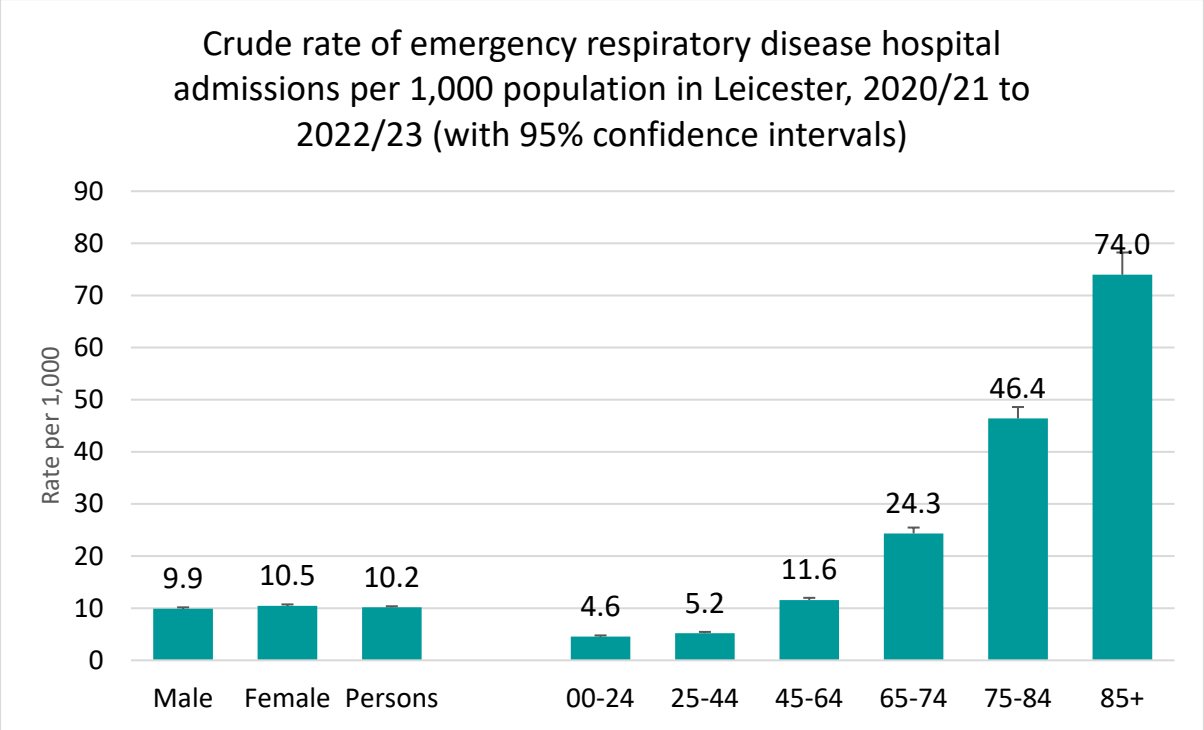
Source: *Quality and Outcomes Framework, 2022/23*

4.1.2 RESPIRATORY DISEASE HOSPITAL ADMISSIONS

Between 2020/21 and 2022/23 there were over 12,700 Leicester resident hospital admissions due to respiratory diseases.[7] Of these, around 88% were emergency admissions and the remainder were planned. Within the emergency hospital admissions for respiratory disease, 18% were for COPD and 11% were for asthma.

Significantly higher rates of emergency admissions were found with increasing age over 44 years. COPD admission rates in the over 85 are almost 3 times higher than in 65-74 year olds.

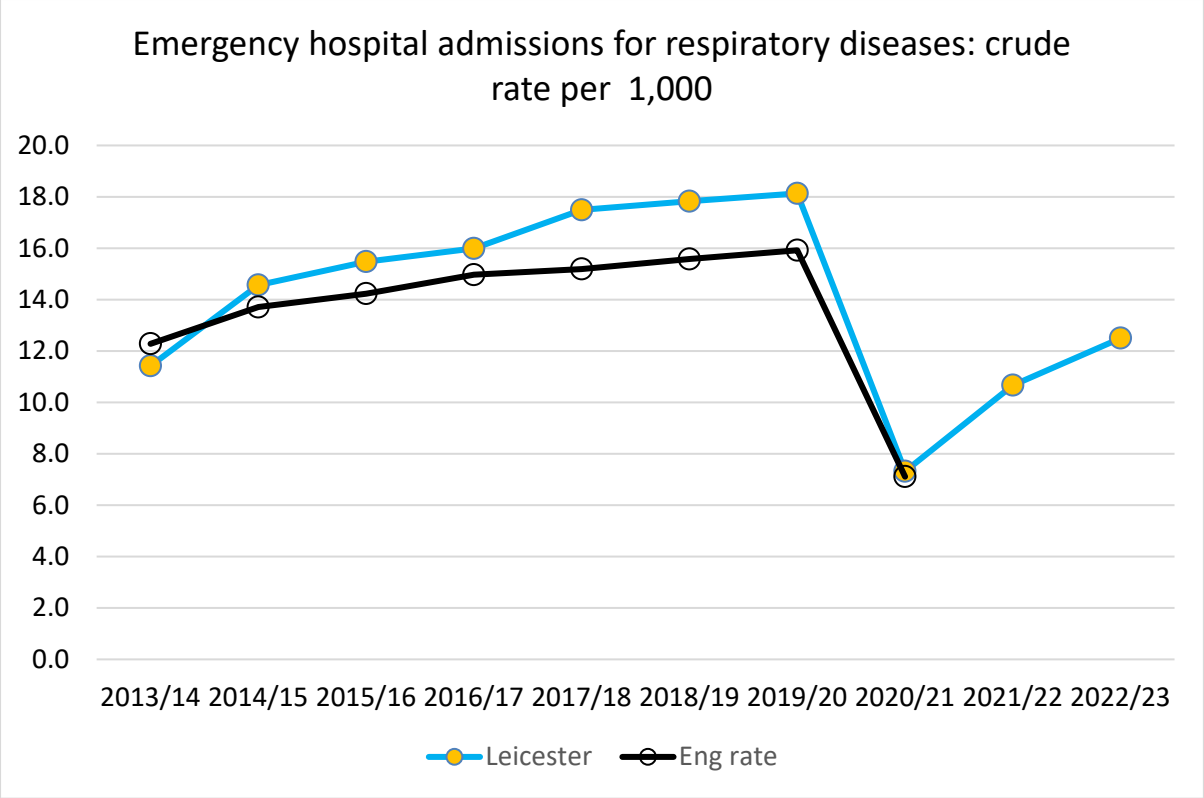
Figure 5: Emergency hospital admission rates for respiratory disease by age and sex in Leicester, 2020/21-2022/23



Data: *Hospital episode Statistics; ONS, mid-year population estimates (2021)*

The rate of emergency admissions has been significantly worse for Leicester than for England between 2014/15 to 2019/20. The significant drop in emergency hospital admissions in 2020/21 is likely related to the Covid-19 pandemic. The rates show an increase over 2021/22 and 2022/23 to 12.5 admissions per 1,000, but this is still lower than pre-pandemic levels.

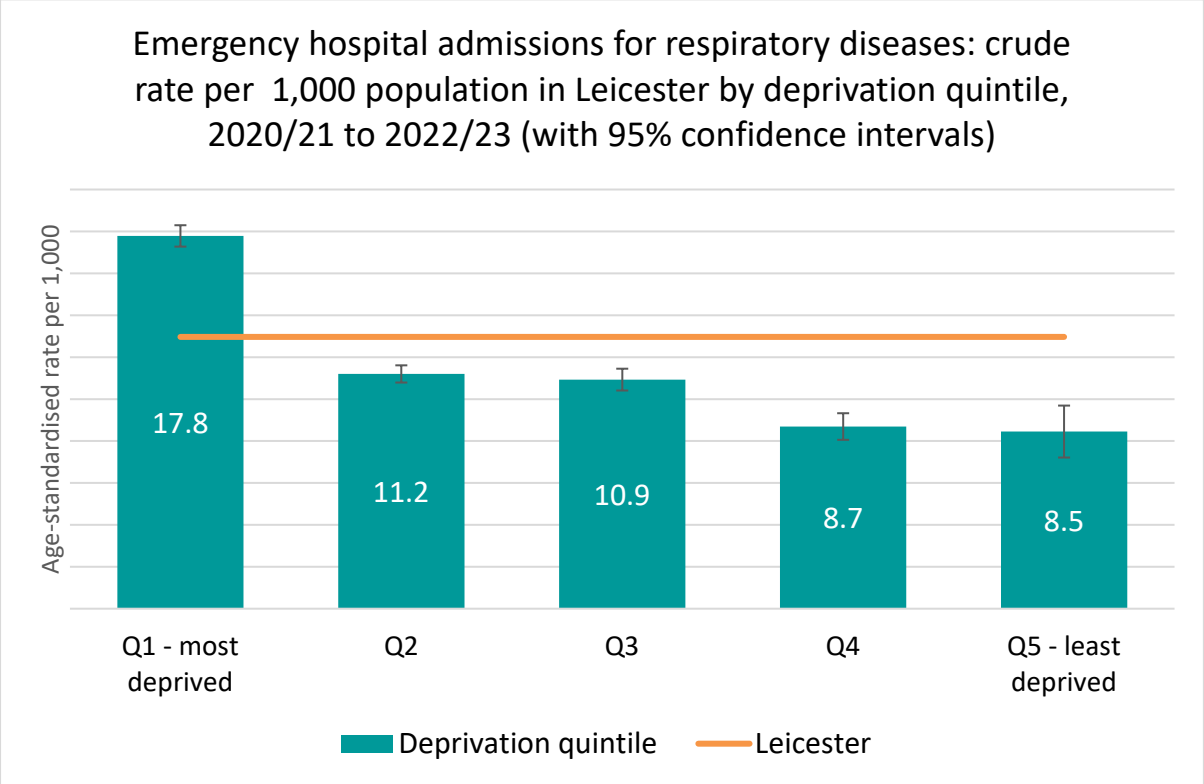
Figure 6: Emergency hospital admission rates for respiratory disease in Leicester, 2013/14-2022/23



Data: *OHID Health Profiles: fingertips.phe.org.uk, Hospital Episode Statistics, ONS population estimates*

The chart below shows a significantly higher emergency hospital admission rate for respiratory disease in the 20% most deprived areas of Leicester (quintile 1), and the rates decrease across the quintiles with the lowest admission rate in the 20% least deprived areas. The rate in the most deprived quintile is double that in the least deprived areas.

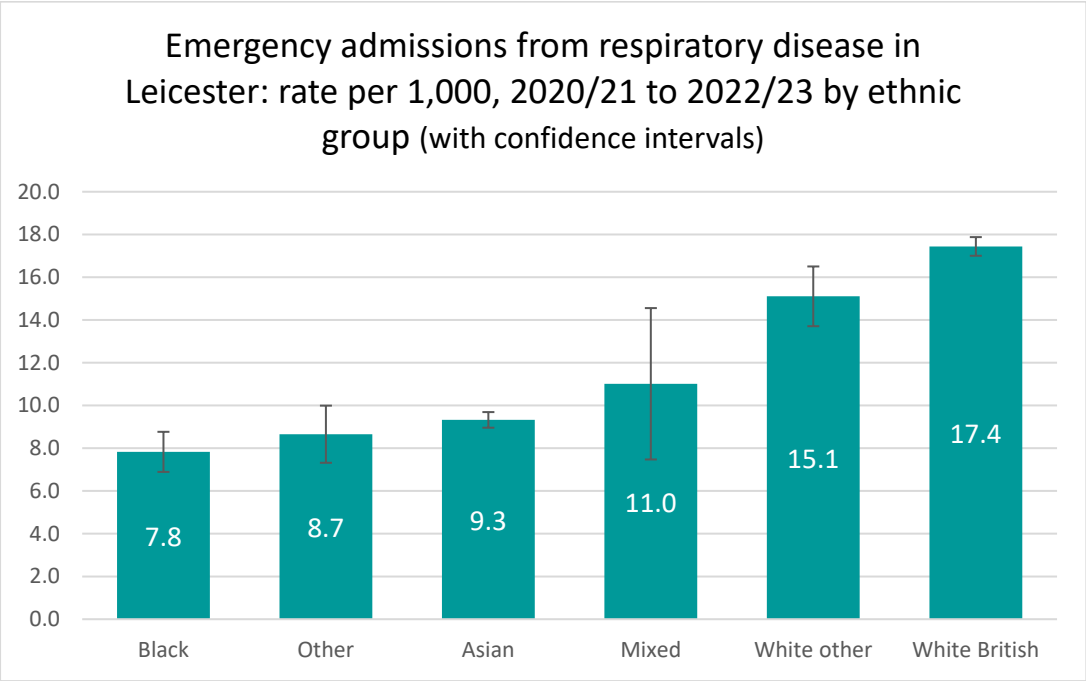
Figure 7: Emergency hospital admission rates for respiratory diseases by deprivation quintile in Leicester, 2020/21 – 2022/23



Data: Hospital episode Statistics; Index of Multiple Deprivation 2019

Leicester's White population has a statistically significantly higher rate of admissions for respiratory disease than Leicester overall and all other ethnic groups.

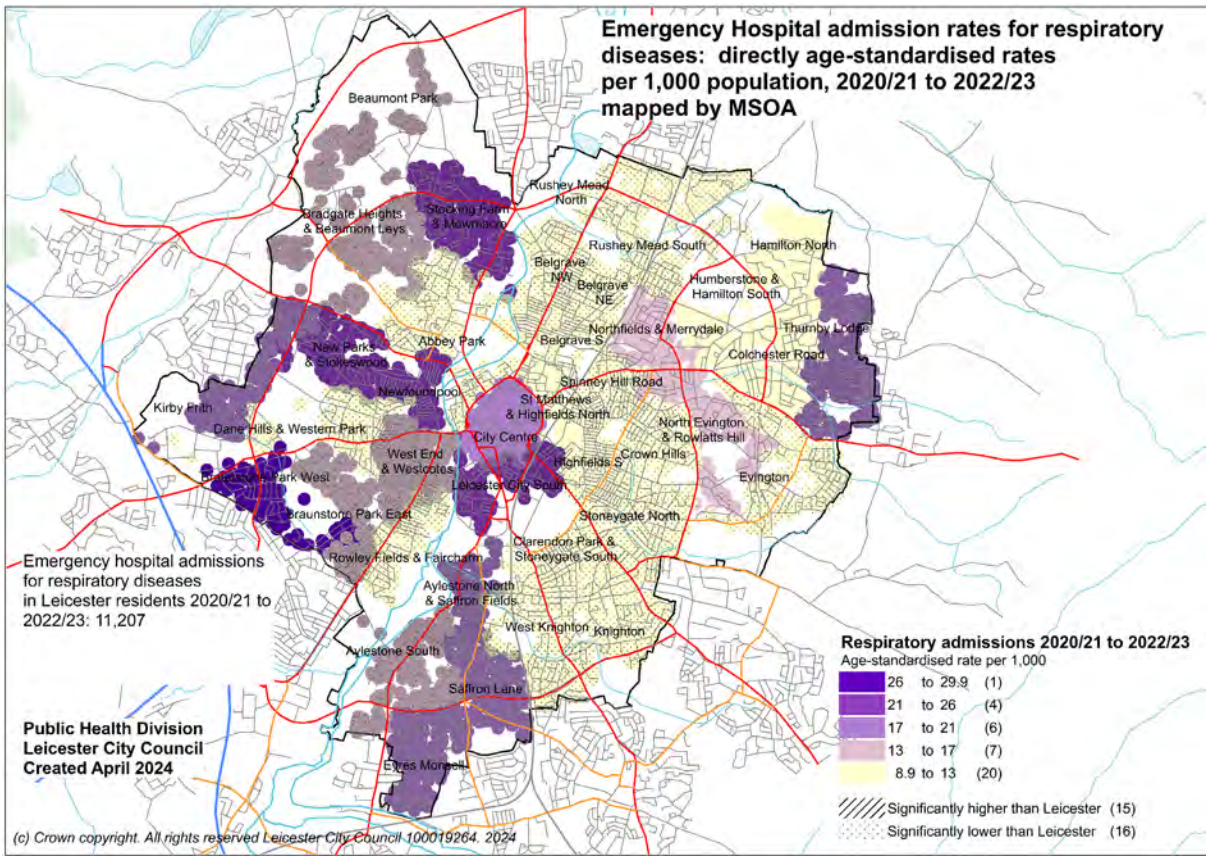
Figure 8: Emergency hospital admission rates for respiratory diseases by ethnic group in Leicester, 2020/21 to 2022/23



Data: Hospital episode Statistics; Census 2021 denominator

The map below shows that Middle Layer Super Output Areas (MSOAs) in the west and south of the city have some of the highest rates of respiratory emergency hospital admissions. Fifteen MSOAs have rates which are significantly higher than Leicester overall. Braunstone Park West, City Centre, Stoking Farm and Mowmacre and New Parks and Stokeswood are the MSOAs in Leicester with the highest rates. These areas also have some of the highest rates of smoking. Sixteen MSOAs have rates which are significantly lower than the Leicester value. Of these, Belgrave South, Crown Hills and Knighton have the lowest rates.

Figure 9: Emergency hospital admission age-standardised rates for respiratory disease by MSOA in Leicester, 2020/21 to 2022/23



Data: Hospital episode Statistics, ONS mid-year population estimates

4.1.3 RESPIRATORY DISEASE MORTALITY

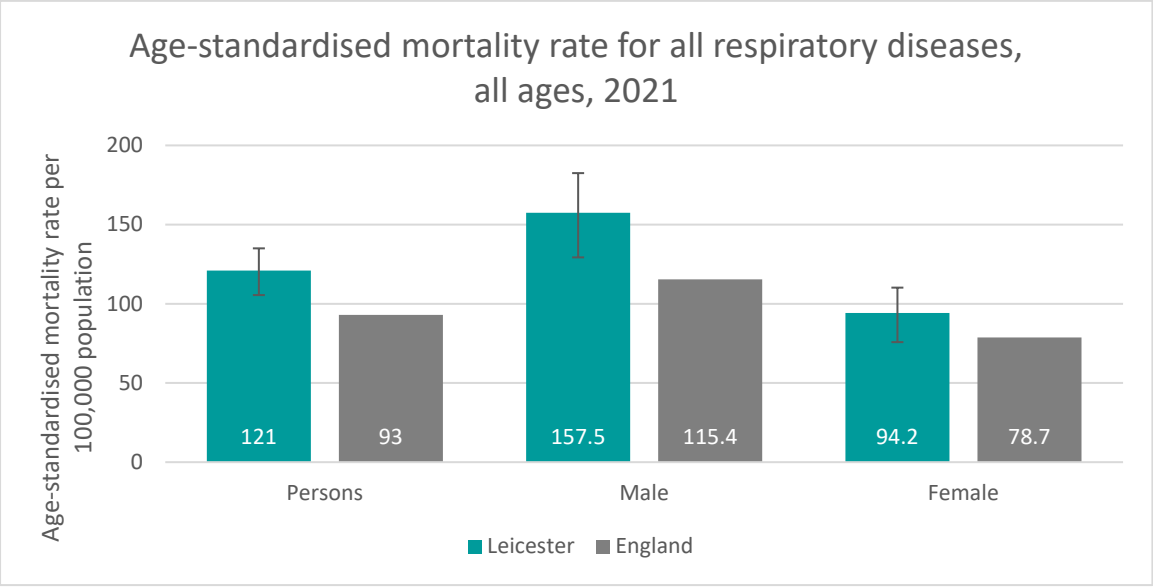
In 2021 there were 273 deaths from respiratory disease in Leicester. This was around 8% of all deaths, similar to the proportion for England.[8] 150 deaths were in males and 123 were in females. In recent years COPD has accounted for around two out of every five deaths caused by respiratory diseases, making it the leading cause of death related to respiratory illness.[8] Other respiratory diseases frequently identified as an underlying cause of death include influenza, pneumonia, and respiratory infections.

For the period 2020-21 respiratory diseases contributed 8.9% of the gap in life expectancy between Leicester and England for males and 9.4% of the gap for females.[9] This means if Leicester had a similar respiratory mortality profile to England, life expectancy would increase by three months for women and four for men. This is a similar contribution to the life expectancy gap as previous periods before the Covid-19 pandemic.

The age-standardised rate for respiratory disease mortality is significantly higher in men than women nationally and in Leicester. Leicester males have a significantly higher

respiratory disease mortality rate compared to England overall while the rate for Leicester females is similar to England.

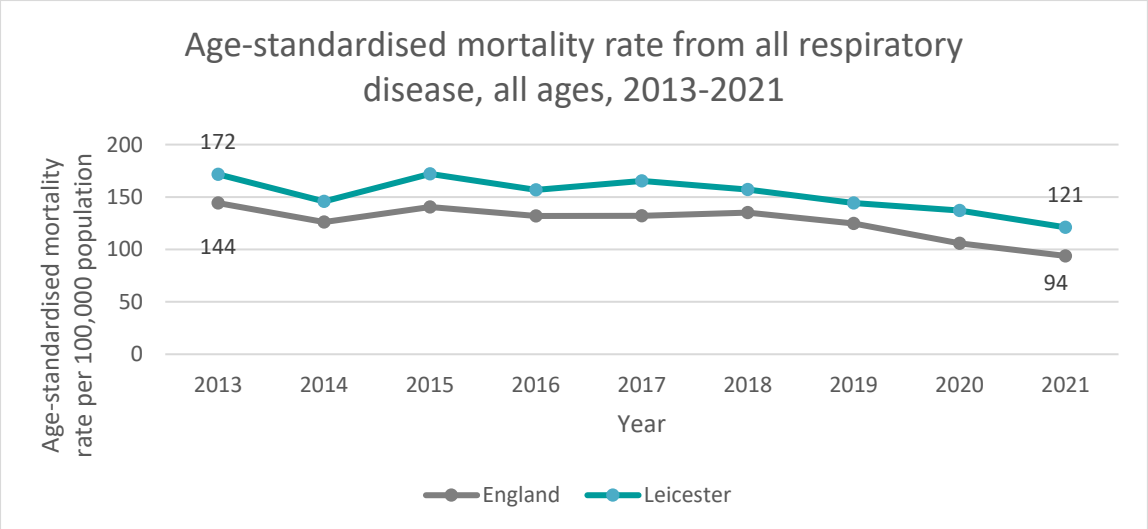
Figure 10: Age-standardised mortality rate from all respiratory disease by sex, 2021



Data: *OHID Health Profiles: fingertips.phe.org.uk*

In recent years, the trend has been for respiratory disease mortality rates to fall for both England and Leicester.

Figure 11: Age-standardised mortality rate from all respiratory disease, 2013-2021

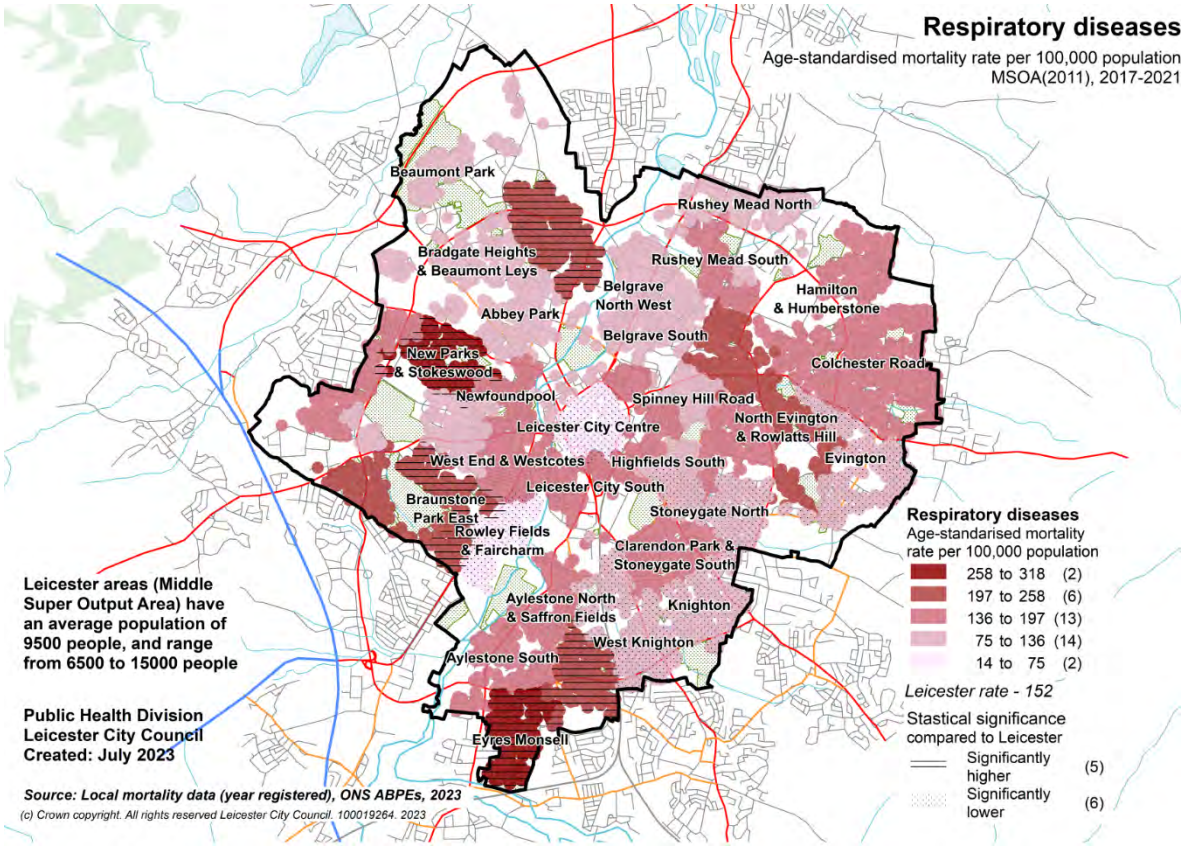


Data: ONS, Mortality Statistics: Underlying cause of death: J00-I99, Nomis

The map below presents age-standardised mortality rates per 100,000 population by Leicester MSOA. Five areas had rates statistically significantly worse than Leicester overall: New Parks & Stokeswood (318), Eyres Monsell (259), Stocking Farm & Mowmacre (256),

Saffron Lane (239), and Braunstone Park East (224). All these areas are in the West of the city, have high levels of social deprivation, and high smoking prevalence. Areas with the lowest respiratory disease mortality rate tended to be in the East (Evington) or be among the least deprived areas of the city (Knighton). The area with the lowest age-standardised rate was Leicester City Centre (14).

Figure 12: Respiratory disease mortality rates in Leicester by MSOA, 2017-21



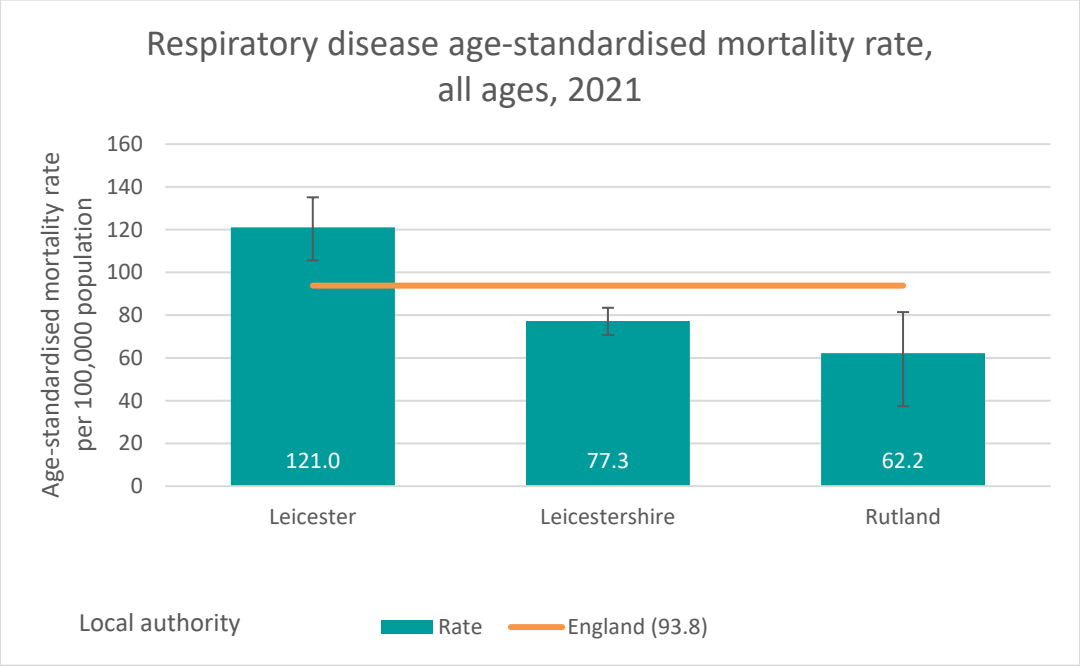
Source: *Local mortality data, ONS admin-based population estimates 2023*

4.1.3.1 LLR MORTALITY

Leicester has a significantly higher respiratory disease mortality rate than the other local authority areas which make up the LLR ICB geographical footprint. Both Leicestershire and Rutland's mortality rates from respiratory diseases are below England while Leicester's is significantly higher.

When only premature mortality (under 75s years) is considered, Leicester has a rate of 40.3 deaths per 100,000 population compared to 14.4 for Leicestershire, and 26.5 for England.[4] Rutland did not have enough premature deaths from respiratory disease to produce age-standardised rates for this age group.

Figure 13: Age-standardised mortality rate from all respiratory disease by LLR local authority



Data: *OHID Health Profiles: fingertips.phe.org.uk*

4.2 ASTHMA

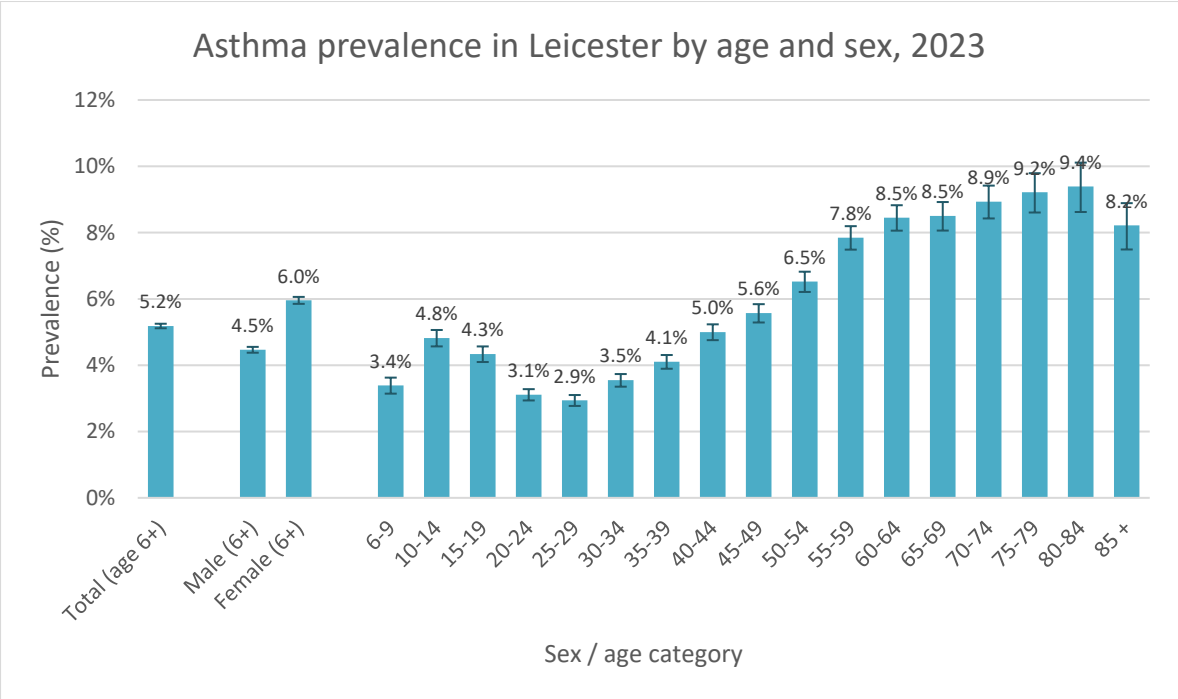
Asthma is characterised by recurrent attacks of breathlessness and wheezing, which vary in severity and frequency from person to person. It affects all age groups but often starts in childhood.

This condition is due to inflammation of the air passages in the lungs and affects the sensitivity of the nerve endings in the airways, so they become easily irritated. In an attack, the lining of the passages swell, causing the airways to narrow and reducing the flow of air in and out of the lungs.

4.2.1 ASTHMA PREVALENCE

There are around 20,662 patients currently diagnosed with Asthma on GP registers in Leicester, representing 5.2% of the GP-registered population (age 6+). Asthma prevalence is significantly higher in females (6%) than males (4.5%). Prevalence is significantly higher in those aged 10-19 than in the age bands either side of the teenage years and rises steadily by age band in those aged over 30 years.

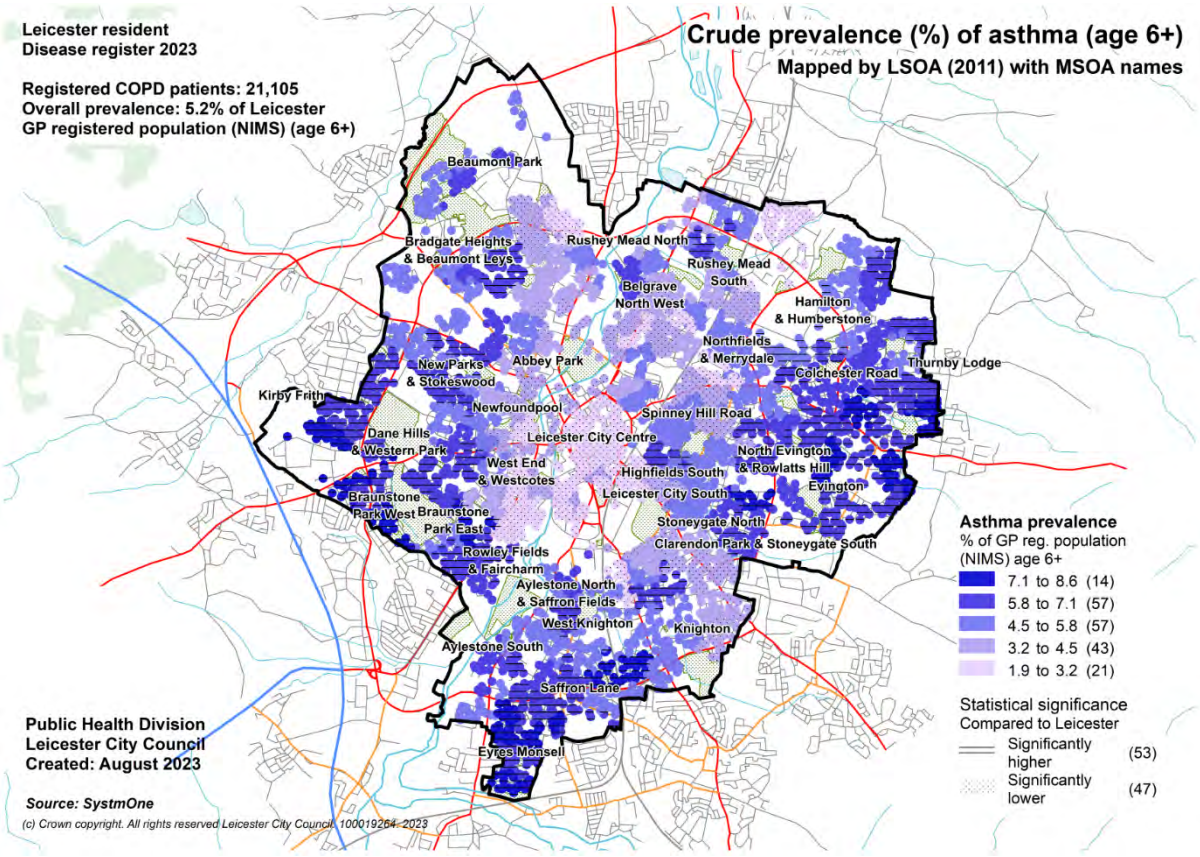
Figure 14: Asthma prevalence (age 6+) in Leicester by age band and sex, 2023



Data: *SystmOne, May 2023*

The map below shows the crude prevalence of asthma across Leicester. The map is not age-standardised, so generally reflects the city's age profile with low prevalence of asthma in the city centre, which has a younger demographic profile, and higher prevalence in areas with a greater concentration of older people such as Dane Hills and Western Park in the West, Eyres Monsell in the South, and Evington in the East of the city. Many of the areas with the highest asthma prevalence are also areas of high deprivation, such as Saffron Lane, Braunstone, and New Parks.

Figure 15: Crude prevalence of asthma by LSOA, May 2023

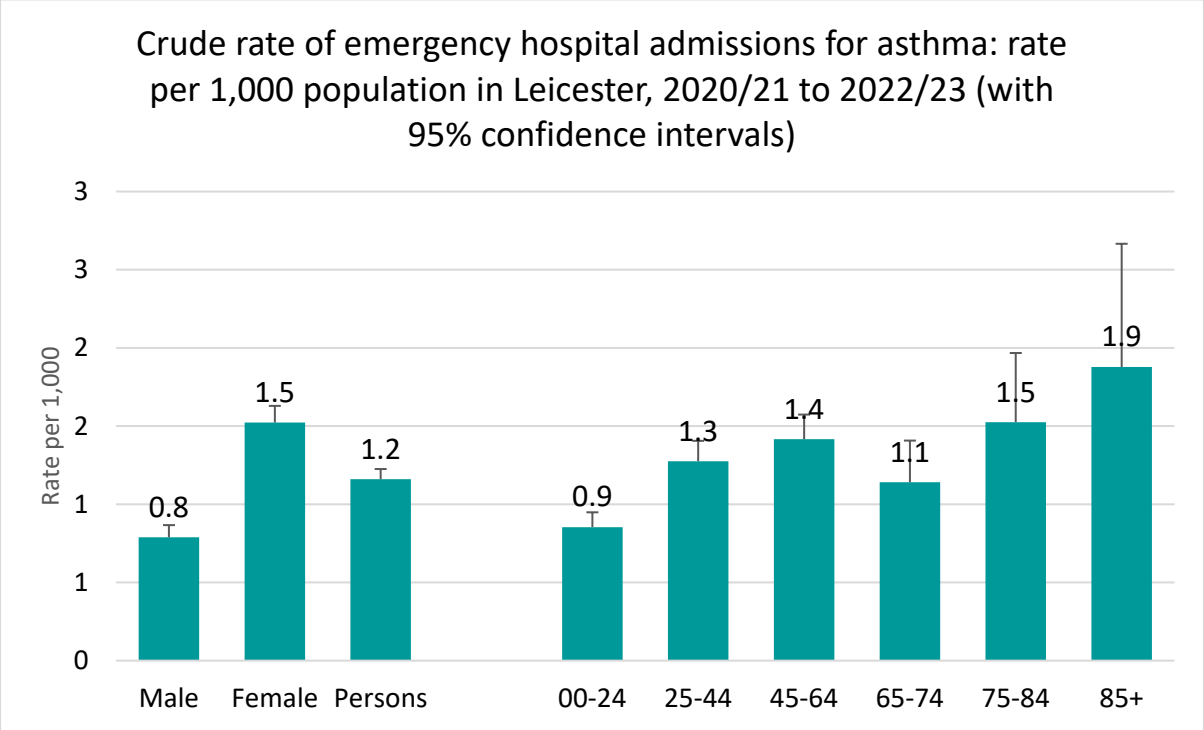


Source: SystmOne, May 2023

4.2.2 ASTHMA HOSPITAL ADMISSIONS

Between 2020/21 and 2022/23 there were almost 1,300 Leicester resident hospital admissions due to asthma. Of these, around 99% were emergency admissions and the remainder were planned. In general, admission rates were higher with increasing age. However, the rate for the 65-74 age band was significantly lower than in immediately younger or older age bands. Emergency admission rates for asthma in Leicester were significantly higher in women (1.5 per 1,000 population) compared to men (1.2 per 1,000 population).

Figure 16: Emergency hospital admission rates for Asthma by age and sex in Leicester, 2020/21 -2022/23



***Data**: Hospital episode Statistics, ONS, mid-year population estimates*

Hospital admission rates for asthma in the under 19s were generally below the national rate until 2019/20. There was a fall in asthma admissions in 2020/21, during the Covid-19 pandemic and rates have gradually risen in the following years. The rate in 2022/23 for Leicester under 19s is 1.0 per 1,000.

In those aged 19 years and over, the rate of hospital admissions for asthma in Leicester is significantly higher than England. There was a fall in rates in 2020/21 during the Covid-19 pandemic and these have seen an increase in the following years, but are still below pre-Covid-19 levels.

Figure 17: Emergency hospital admission rates in those aged under 19 for Asthma in Leicester, 2016/17-2022/23

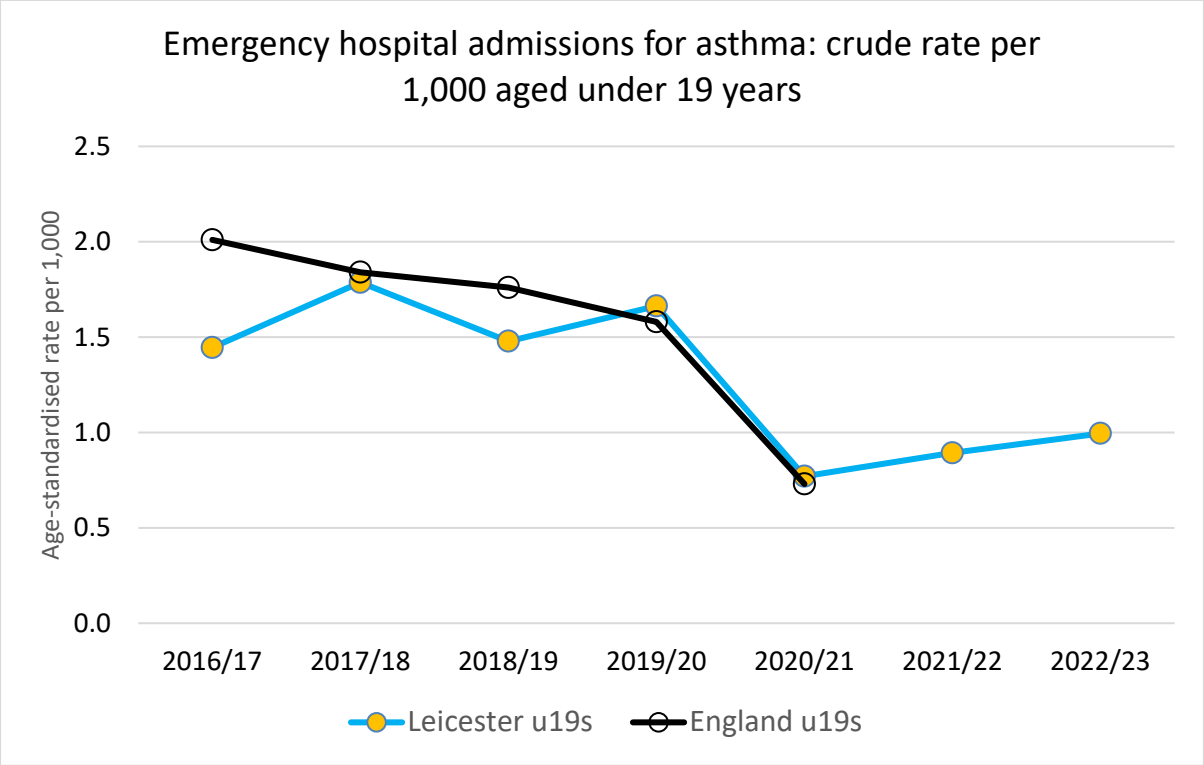
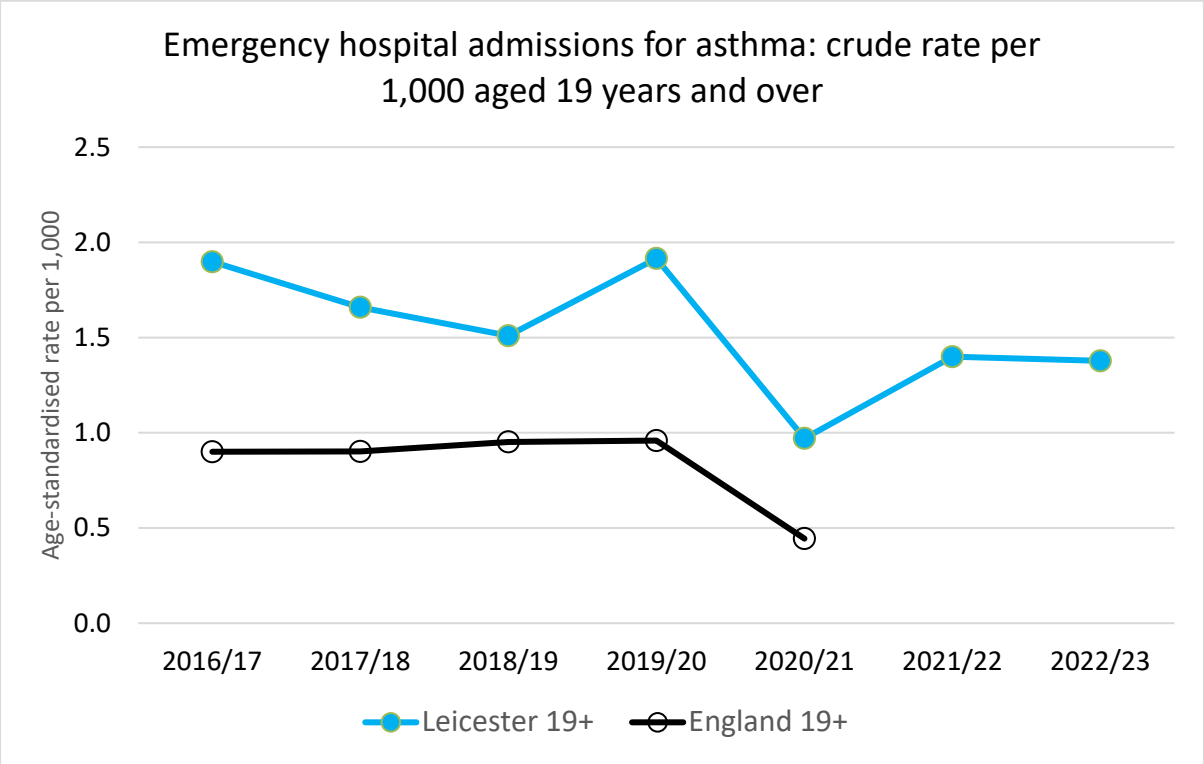


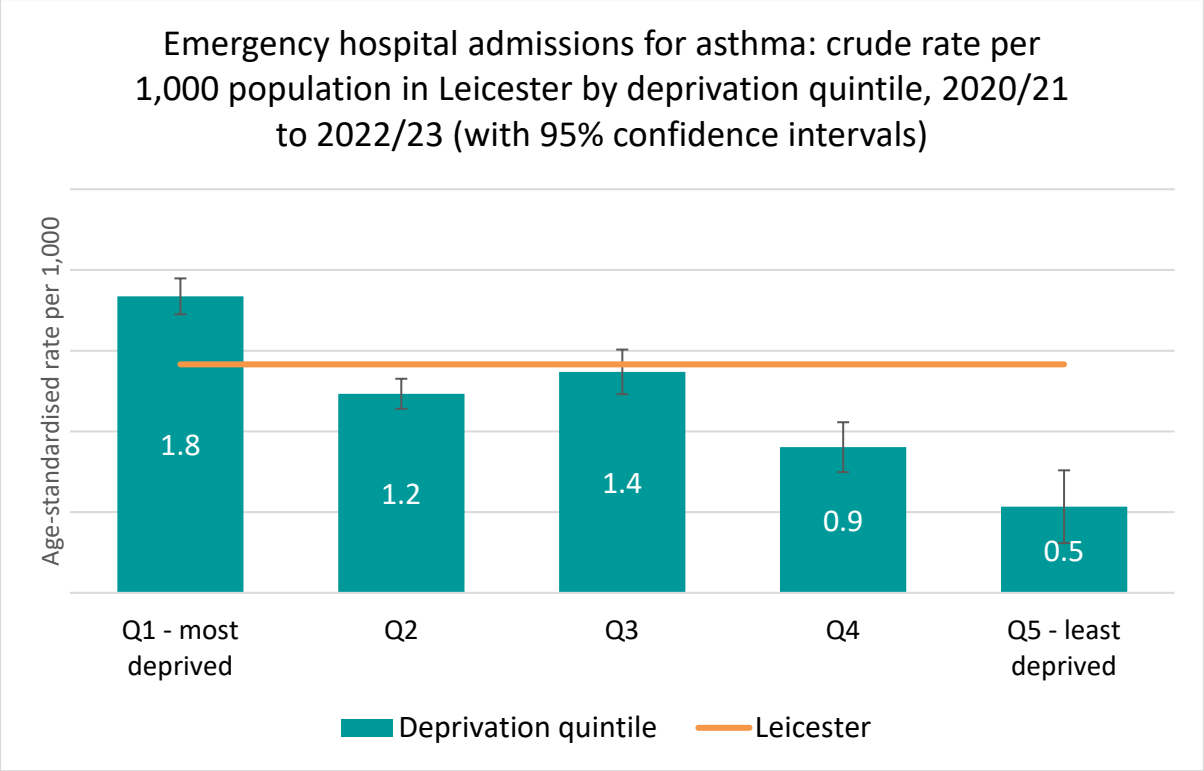
Figure 18: Emergency hospital admission rates in those aged 19 and over for Asthma in Leicester, 2016/17-2022/23



Data: *Hospital Episode Statistics, ONS mid-year population estimates, OHID Health Profiles: fingertips.phe.org.uk*

The chart below shows a deprivation gradient for emergency hospital admission rates for Asthma. The rate is almost four times higher in Leicester's most deprived areas, with a rate of 1.8 admissions per 1,000 population, compared to Leicester's least deprived areas (0.5).

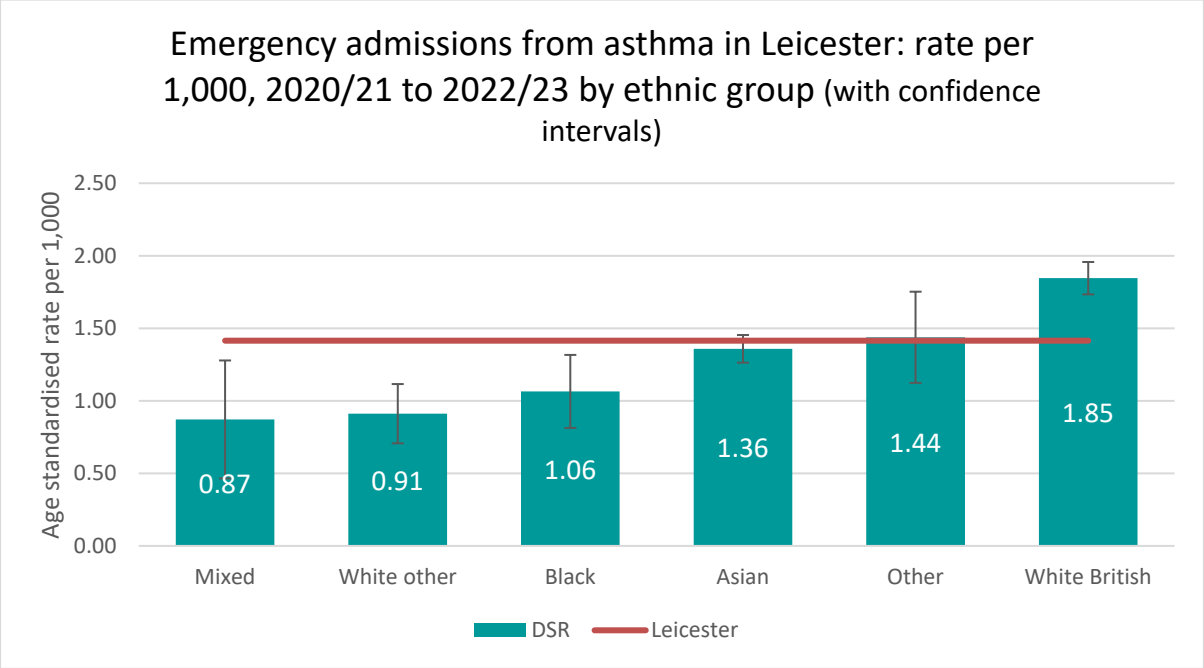
Figure 19: Emergency hospital admission rates for Asthma by deprivation quintile in Leicester, 2020/21 to 2022/23



Data: Hospital episode Statistics; Index of Multiple Deprivation 2019

By ethnicity, emergency asthma admission rates are statistically significantly higher in the White British population than Leicester overall. Rates in the Mixed, White other and Black populations are significantly lower than Leicester overall.

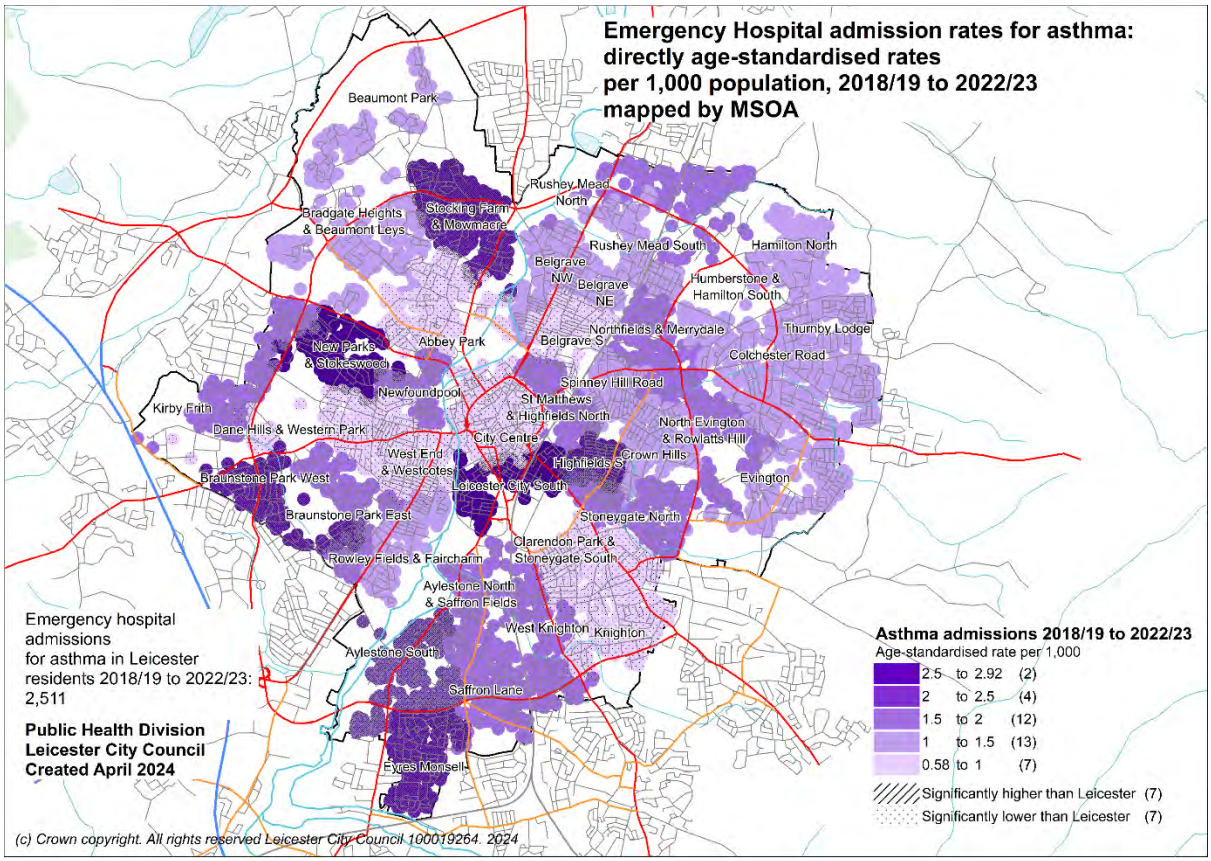
Figure 20: Emergency hospital admission rates for Asthma by ethnicity, 2020/21 to 2022/23



Data: Hospital episode Statistics; Census 2021 denominator

The map below shows how emergency admissions for asthma vary across Leicester. Areas with the highest rates include Braunstone Park West, New Parks & Stokeswood, Stocking Farm and Mowmacre, and Eyres Monsell. These areas have high rates of smoking and deprivation and are significantly worse than Leicester in other indicators presented by geography in this JSNA (respiratory disease/COPD admissions and mortality). Crown Hills and Highfields South also have significantly higher admission rates for asthma and, although these areas are relatively deprived, they do not feature as a significantly worse in the other maps presented here. Dane Hills & Western Park and West End & Westcotes in the west of the city, and Knighton in the south of the city have the lowest rates of emergency admissions.

Figure 21: Emergency hospital admission age-standardised rates for Asthma by MSOA in Leicester, 2018/19 to 2022/23



Data: Hospital episode Statistics, ONS mid-year population estimates

4.2.3 ASTHMA MORTALITY

Although the number of deaths with an underlying cause of asthma is relatively small, each asthma death is important because represents a failure of management of a reversible condition.[10] In the five years from 2017 to 2021 the ONS records 27 deaths in Leicester residents from asthma, although this may be an underestimate due to suppression of counts under five.[11]

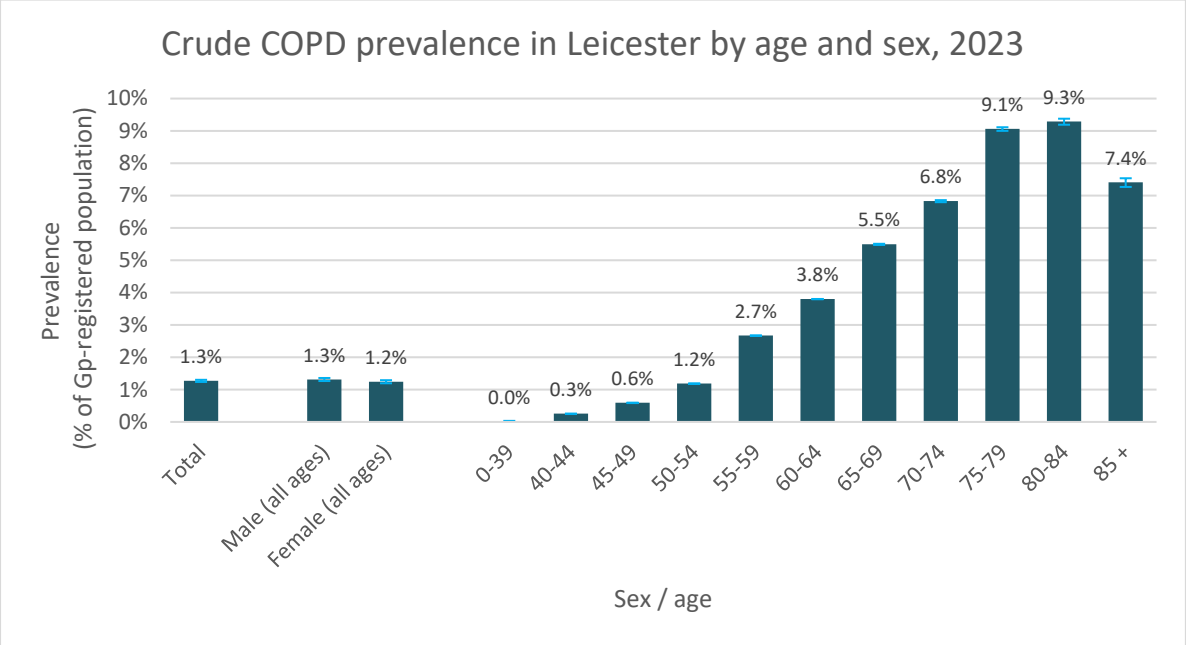
4.3 COPD

COPD is not one single disease, but an umbrella term used to describe chronic lung diseases that cause limitations in lung airflow.[12] COPD is preventable, but not curable. Treatment can help slow disease progression, but COPD generally worsens over time. Because of this, it is most frequently diagnosed in people aged 40 years or older. The most common symptoms of COPD are breathlessness, or a 'need for air', excessive sputum production, persistent wheezing, frequent chest infections and a chronic cough. Daily activities, such as walking up a short flight of stairs, may become very difficult as the disease worsens.

4.3.1 COPD PREVALENCE

There were around 5,500 patients recorded on Leicester City GP registers with COPD in 2023.[13] This is equivalent to a recorded prevalence of 1.3%, which is significantly below the England 2021 prevalence of 1.9%.[14] The prevalence of COPD increases significantly with each age band up to 80-84 years, after which the prevalence is significantly lower. There are no statistically significant differences in COPD prevalence between Leicester males and females overall.

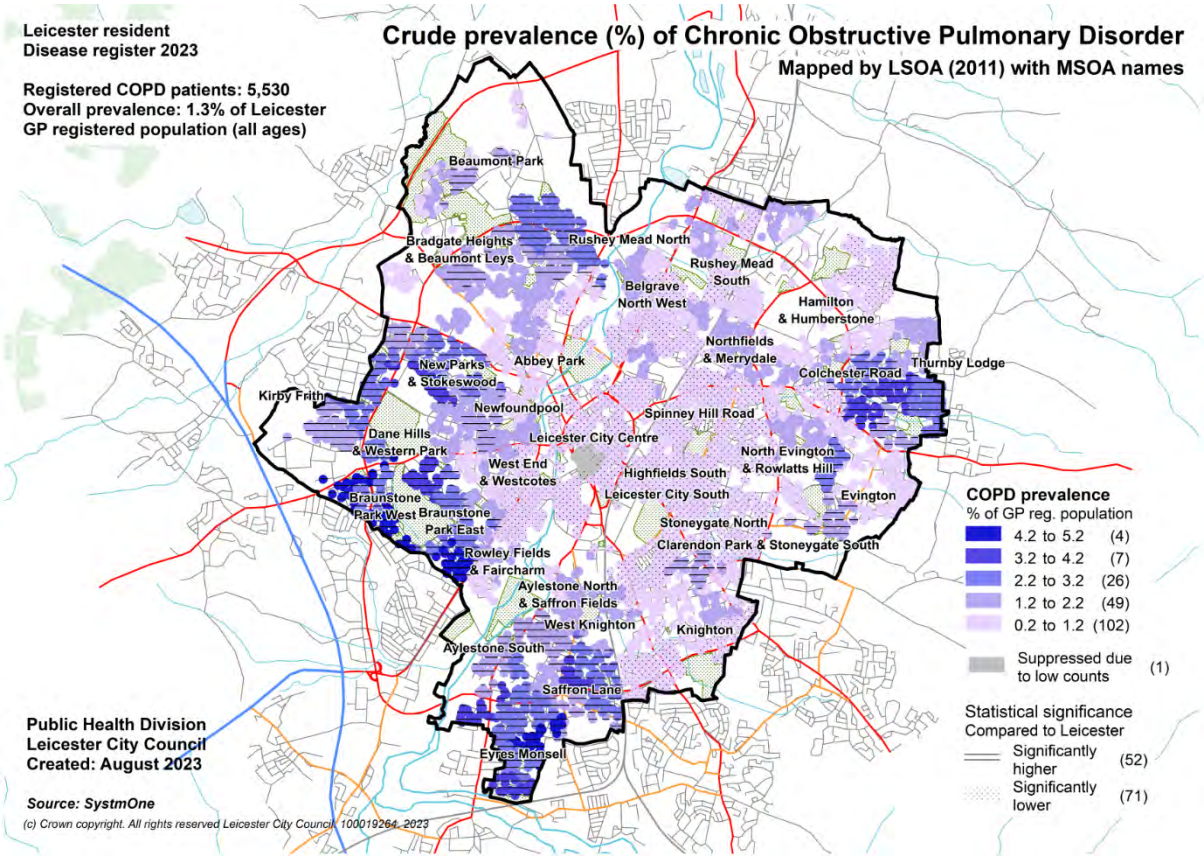
Figure 22: COPD prevalence in Leicester patients by age and sex



Data: *GP practice register data via SystmOne, May 2023*

The map below shows the crude prevalence of COPD by Leicester LSOA. The map is not age-standardised, so some differences are likely attributable to differences in the age profile of each area. For example, prevalence is very low in the city centre which has a median age of 22. However, Knighton has the oldest median age (45) and most LSOAs within the area also have low COPD prevalence. Areas with the highest COPD prevalence tend to correlate with areas of high smoking prevalence and social deprivation such as Braunstone, Eyres Monsell and, New Parks. In the East of the city, the area around Colchester Road also has high prevalence of COPD.

Figure 23: Crude prevalence of COPD (all ages) by LSOA

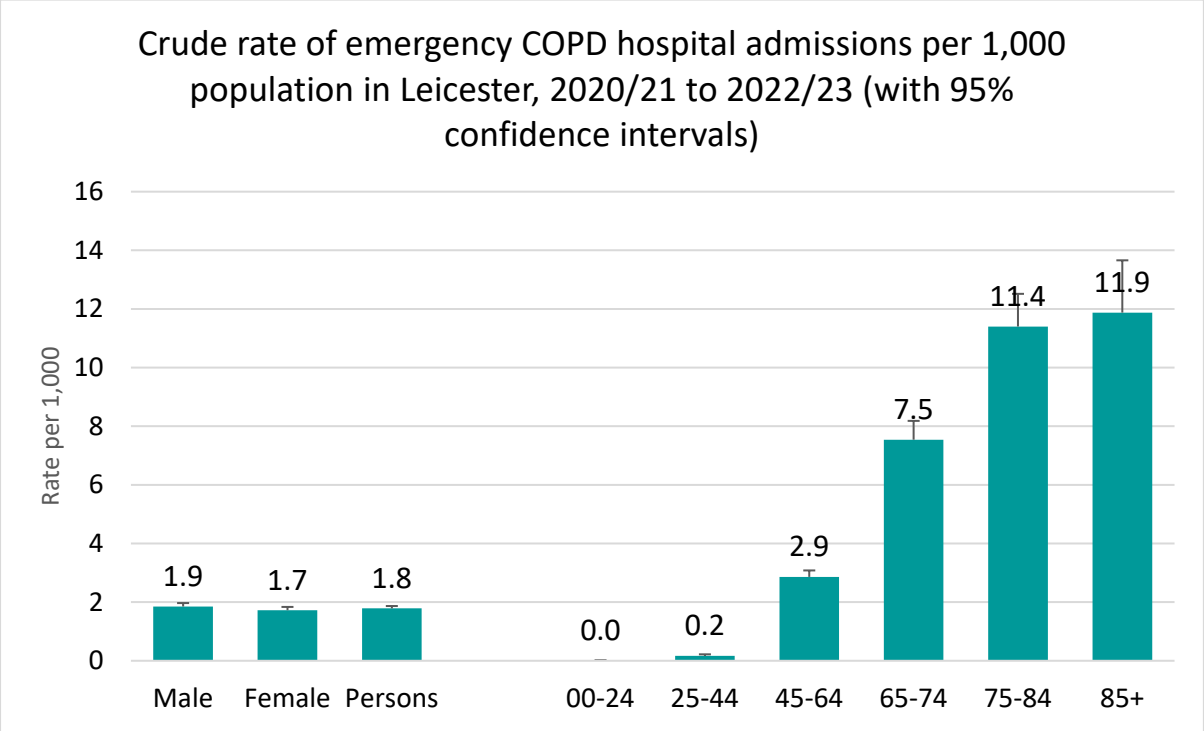


Source: SystmOne, May 2023

4.3.2 COPD HOSPITAL ADMISSIONS

Between 2020/21 and 2022/23 there were almost 2,000 hospital admissions in Leicester residents due to COPD . Of these, 96% were emergency admissions and the remainder were planned. Higher rates of emergency admissions were found with increasing age. Significantly higher rates were in the over 75 age groups. Emergency admission rates for COPD in Leicester are not significantly different between males (1.9 per 1,000 population) and females (1.7 per 1,000 population).

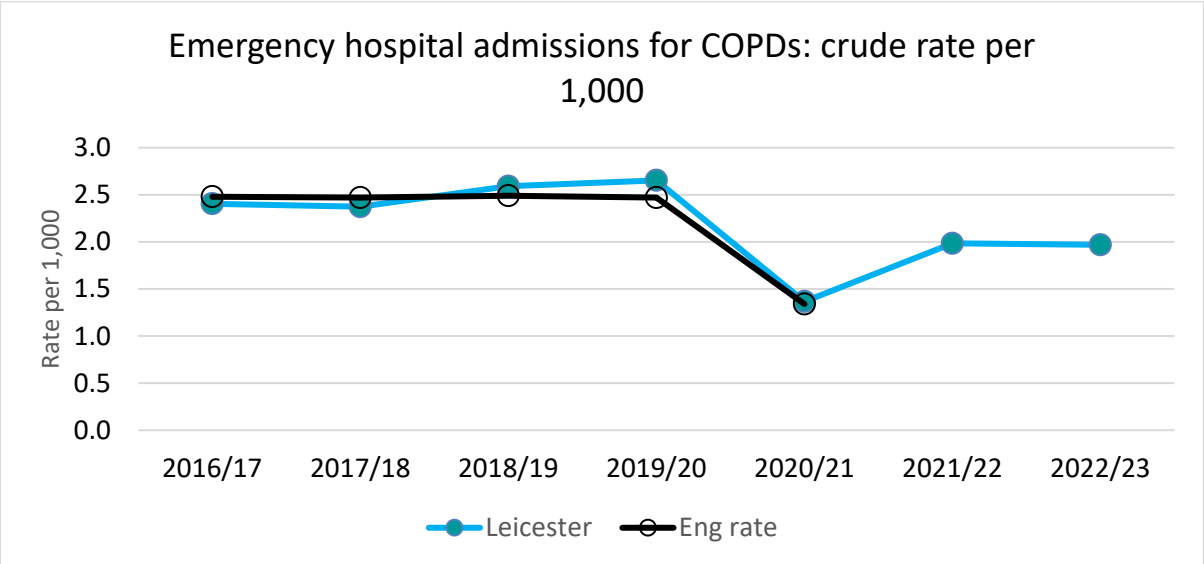
Figure 24: Emergency hospital admission rates for COPD by age and sex in Leicester, 2020/21 to 2022/23



Data: *Hospital episode Statistics, ONS, mid-year population estimates*

The rate of emergency hospital admissions for COPD in Leicester has been higher than nationally, with a fall in 2020/21 during the Covid-19 pandemic. Rates have risen in the following years but are still below the rate prior to Covid-19.

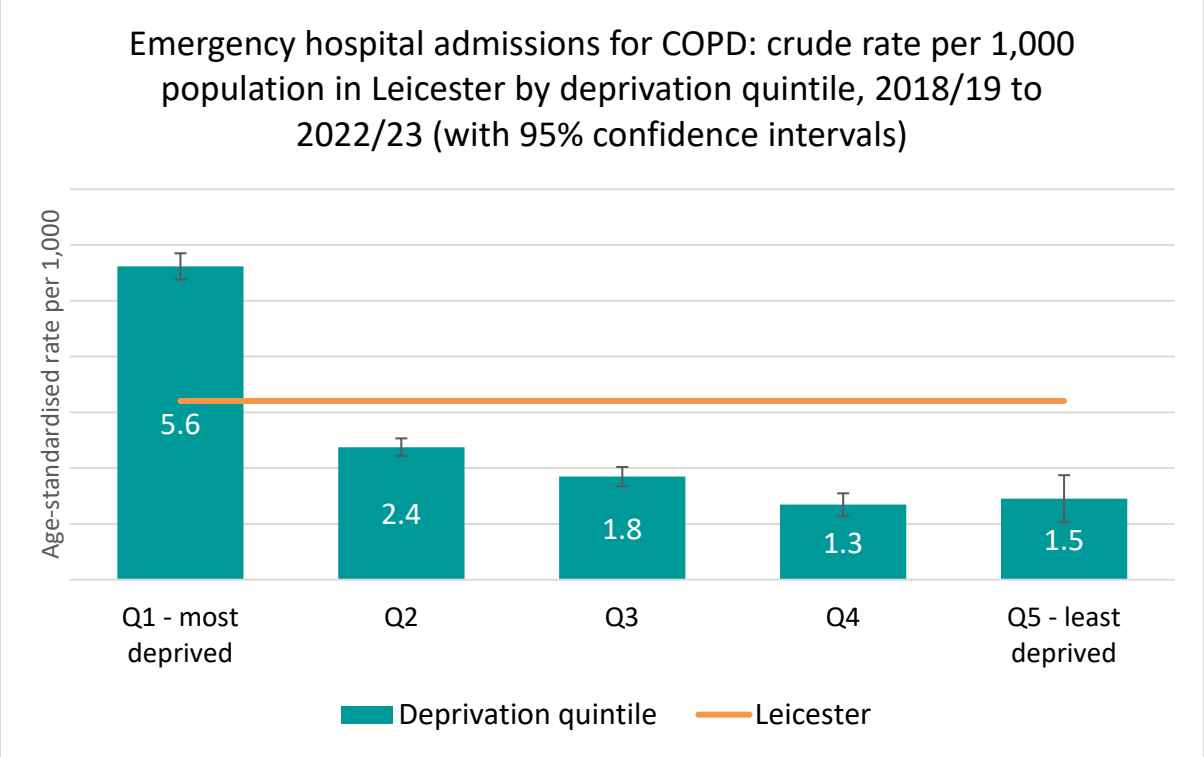
Figure 25: Emergency hospital admission rates for COPD in Leicester City, 2015/16 to 2022/23



Data: *Hospital Episode Statistics, ONS mid-year estimates, OHID Health Profiles: fingertips.phe.org.uk*

The chart below shows a deprivation gradient for emergency hospital admission rates for COPD. The rate declines with deprivation quintile and is significantly higher in Leicester's most deprived areas, with an age-standardised rate of 5.6 admissions per 1,000 population, compared to Leicester's least deprived 20% of areas (1.5).

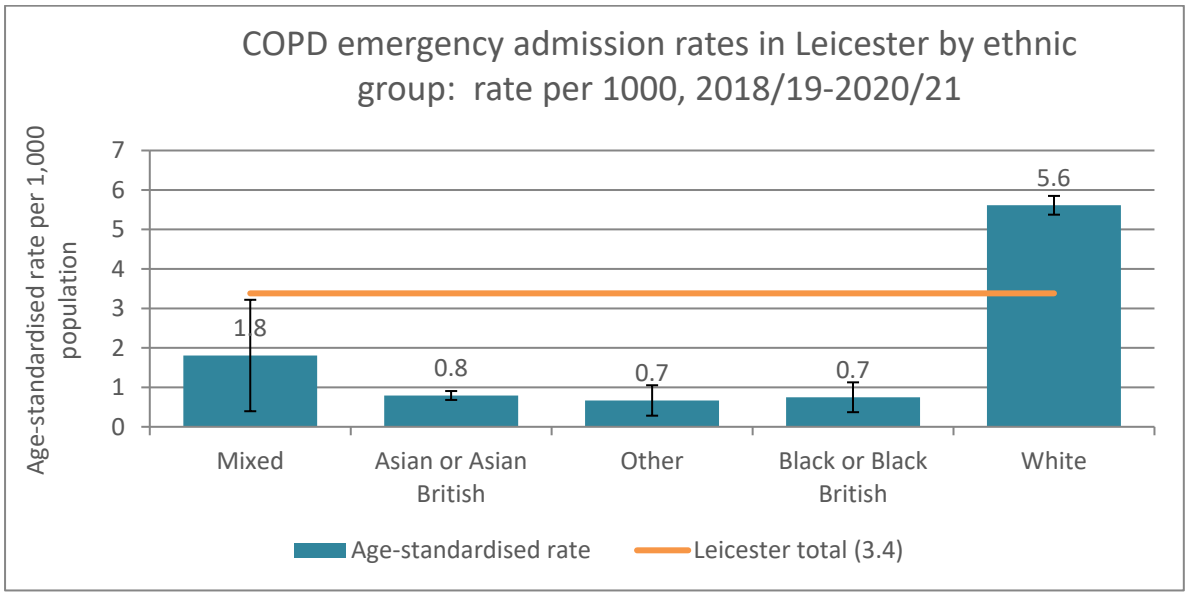
Figure 26: Emergency hospital admission rates for COPD by deprivation quintile in Leicester, 2018/19-2022/23



Data: Hospital episode Statistics; ONS Mid-year population estimates, Index of Multiple Deprivation 2019

Leicester's White population has a rate of COPD admissions which greatly exceeds the Leicester overall rate of any other ethnic group. Compared to the rate for Asian residents, COPD admissions in the White population are seven times higher.

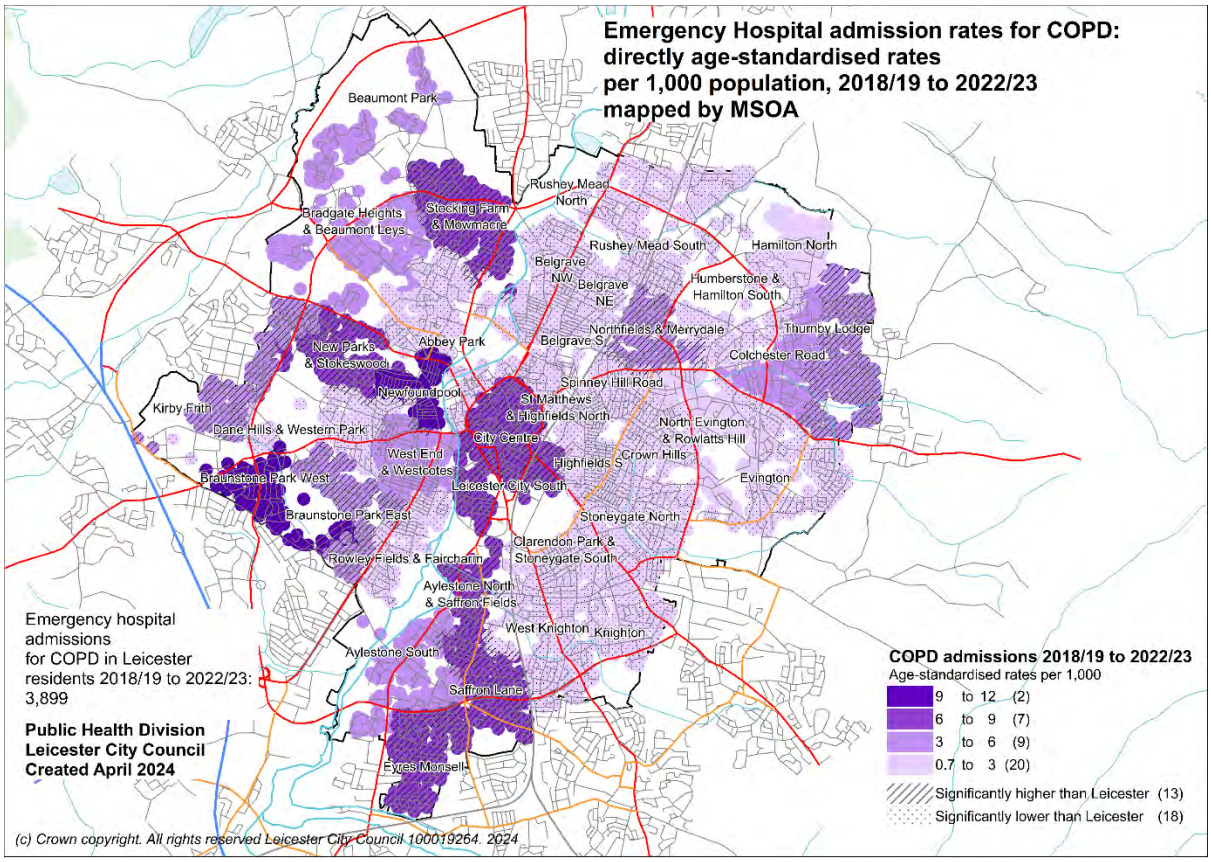
Figure 27: Emergency hospital admission rates for COPD by ethnicity, 2018/19-2020/21



Data: Hospital episode Statistics; Census 2021 denominator

The map below shows that of the 13 MSOAs that had a significantly higher rate of COPD emergency hospital admissions than Leicester between 2018/19 and 2022/23, the majority are located in the West of the city. Braunstone Park West, Leicester City Centre and Stocking Farm and Mowmacre had the highest rates of COPD emergency hospital admissions in Leicester between 2018/19 and 2022/23, whilst Crown Hills, Stoneygate North and Belgrave South had the lowest rates.

Figure 28: Emergency hospital admission age-standardised rates for COPD by MSOA in Leicester, 2018/19 to 2022/23

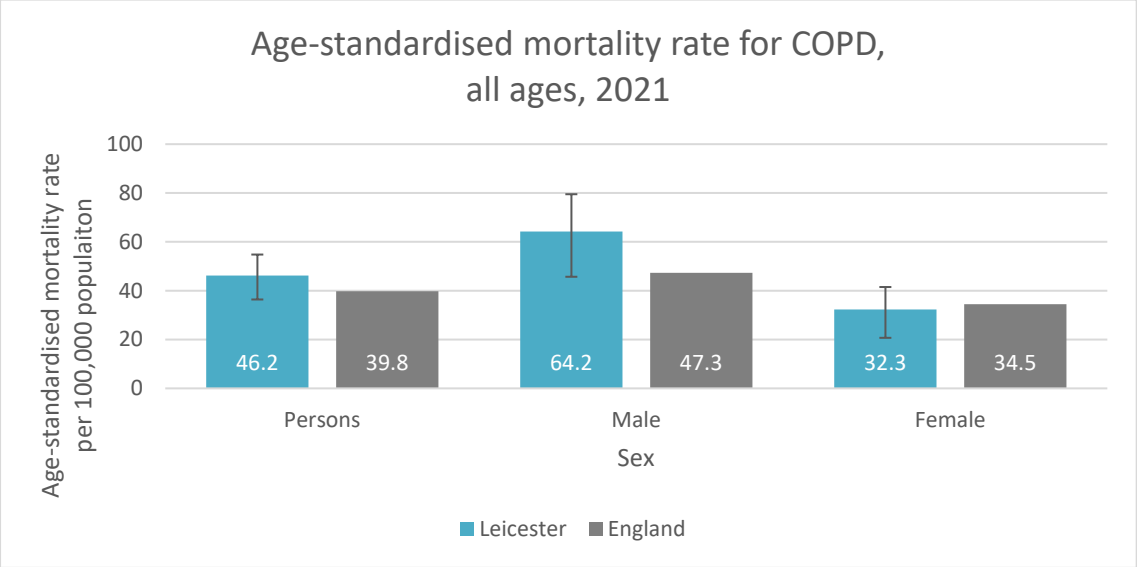


Data: Hospital episode Statistics, ONS mid-year population estimates

4.3.3 COPD MORTALITY

In 2021 there were 104 deaths (41 in females and 63 in males) in Leicester from COPD.[15] COPD age-standardised mortality rates are significantly higher in men than women both nationally and in Leicester. Leicester's COPD mortality rate was higher than England for men and women, but these differences were not statistically significant.

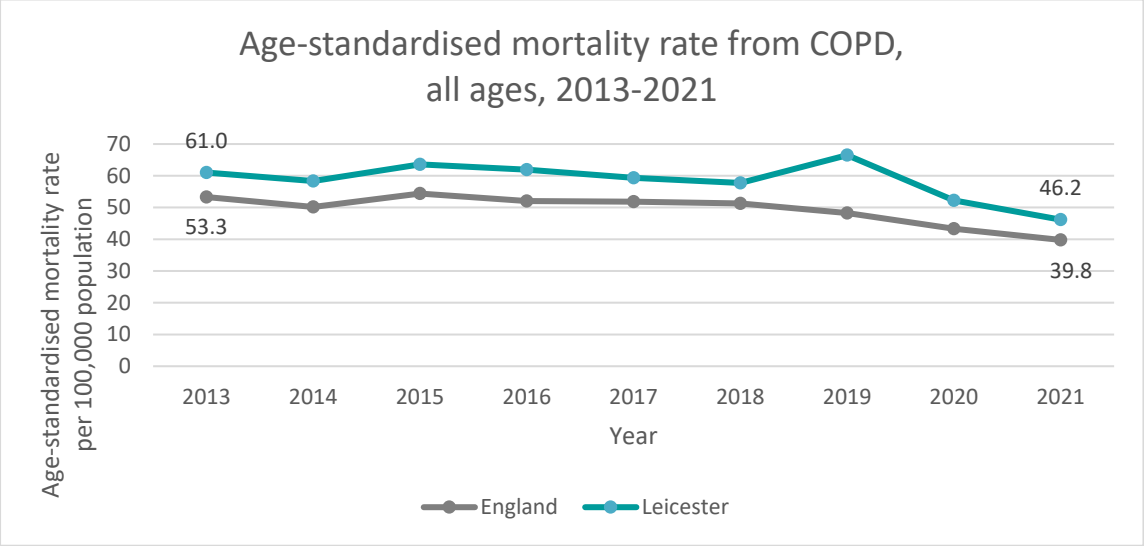
Figure 29: Age-standardised mortality rate from Chronic Obstructive Pulmonary Disease (COPD) by sex, 2021



Data: *OHID Health Profiles: fingertips.phe.org.uk*

COPD mortality rates have decreased both nationally and in Leicester since 2013.

Figure 30: Age-standardised mortality rate from Chronic Obstructive Pulmonary Disease (COPD) 2013-2021

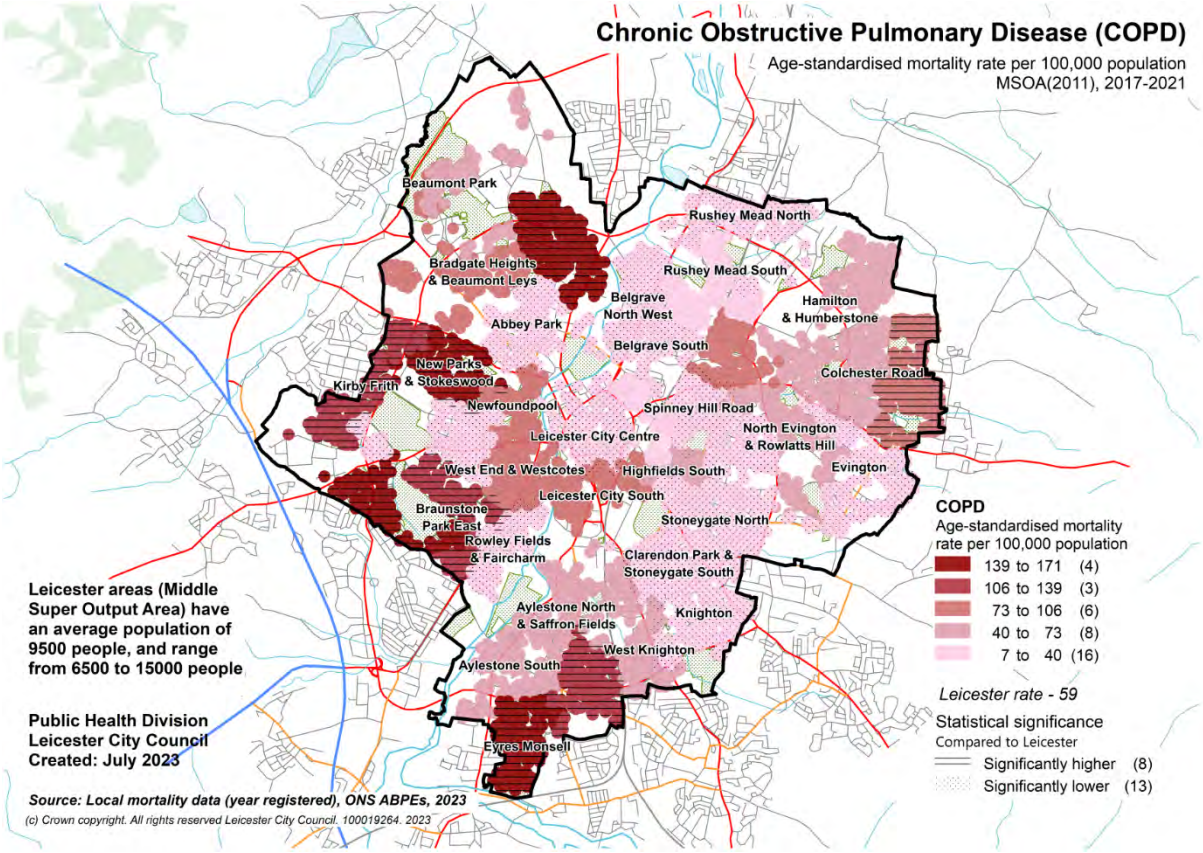


Data: Nomis, Mortality Statistics: Underlying cause of death: J40-J44

The map below presents age-standardised mortality rates per 100,000 population by Leicester MSOA. Eight areas had rates statistically significantly worse than Leicester overall: New Parks & Stokeswood (171), Braunstone Park West (164), Eyres Monsell (148), Stocking Farm & Mowmacre (146), Braunstone Park East (129), Saffron Lane (127), Kirby Frith (119), and Thurnby Lodge (93). All these areas except Thurnby Lodge are in the West of the city,

have high levels of social deprivation, and relatively high smoking prevalence. Areas with a lower COPD disease mortality rate tended to be in the East or have relatively low levels of social deprivation. The area with the lowest COPD mortality rate was Leicester City Centre (8), where there are very few cases of COPD owing to the area's young age profile.

Figure 31: COPD mortality rates in Leicester by MSOA, 2017-21



Source: *Local mortality data, ONS admin-based population estimates 2023*

5 CURRENT SERVICES IN RELATION TO NEED

5.1 PREVENTION

The most important risk factor associated with developing and exacerbating respiratory illness is smoking tobacco. It is a shared priority across local health and wellbeing services to reduce smoking levels in the city:

- Leicester City Council provides a smoking cessation service for its population through Live Well Leicester, which has helped thousands of people in Leicester to stop smoking. The service offers free and non-judgemental support and advice to help the residents of Leicester to stop smoking.[16]
- Leicester City Council promotes a 'Step Right Out' campaign, which aims to encourage residents to pledge to maintain a smokefree home to reduce exposure to second hand smoke.
- The council also supports the NHS Long Term Plan Tobacco Dependency Programme which treats tobacco dependency as part of routine care to all patients who are tobacco users across acute, maternity and mental health.

More information on smoking in Leicester is available in the Leicester Tobacco JSNA. Available at: https://www.leicester.gov.uk/your-council/policies-plans-and-strategies/public-health/data-reports-information/jsna/adults-joint-strategic-needs-assessments/tobacco/

To reduce air pollution in the city, the city council has recently undertaken a range of campaigns and schemes:

- Think Before You Burn campaign aiming to educate residents on the use of woodburning stoves, their health and environmental impacts, and methods to reduce those impacts.
- School Street and educational workshops for Clean Air Day.
- Transport schemes designed to reduce car journeys in the city and promote active and sustainable travel, including increased pedestrianisation, infrastructure improvements for pedestrians and cyclists, bus electrification, support for the CHYM journey planner, and neighbourhood traffic reduction schemes under the Safer Streets Healthier Neighbourhoods (SSHNs) umbrella.

5.2 ASCERTAINMENT

The diagnosis of respiratory disease is principally, but not exclusively, made in primary care. General Practice works to identify COPD and asthma in line with the national Quality and Outcomes Framework and NICE guidance.[17,18] The confirmation of a COPD diagnosis is made by spirometry delivered either by accredited practices or through referral to an acute unit at University Hospitals of Leicester (Glenfield site).

5.3 MANAGEMENT

Management of COPD is delivered across the health community, including primary and secondary care providers.

5.3.1 PRIMARY CARE

Patients with respiratory conditions, primarily asthma and COPD, are mostly managed in the primary care setting, with some specialist support delivered by Leicestershire Partnership Trust (LPT). Under the Quality and Outcomes Framework (QOF), such patients, from the time of diagnosis, are on live disease registers and undergo an annual review, including an assessment of their smoking status.

Between 2013 and 2015, the Leicester City CCG implemented a number of programmes, aiming to improve respiratory disease outcomes in primary care. These resulted in the identification of a number of previously undiagnosed COPD patients, accreditation for a number of additional practices to provide spirometry to enable early diagnosis, and, development of a telehealth scheme, which reduced the number of COPD exacerbations and admissions.

Community pharmacies provide an accessible support for people with respiratory disease. Current contracted services include New Medicine Service (NMS) and Pharmacy Quality Scheme, supporting medicine optimisation including inhaler technique checks.

5.3.2 SPECIALIST NURSING

The respiratory nurse specialist service is delivered by the Leicestershire Partnership NHS Trust. Specialist respiratory nurses and Allied Health Professionals (including Physiotherapists) work alongside GPs and practice nurses to promote best practice in the management of COPD, see housebound patients in their homes and provide respiratory clinics in community hospitals. The service includes a comprehensive assessment of a patient's respiratory problem and aims to optimise the treatment, patient education and support to family and carers to improve the management of each patient’s condition.

5.3.3 ACUTE CARE

Specialised respiratory services for Leicester patients are provided by the University Hospitals of Leicester NHS Trust (Respiratory Specialties, Clinical Immunology and Allergy Business Unit).

UHL provides specialist care to patients admitted with COPD that includes 'best practice care bundle'

- stop smoking advice & provision of NRT

- referral to pulmonary rehabilitation
- inhaler technique check
- referral for on-going specialist nurse support
- referral for anxiety/depression management
- advice about vaccinations

The inpatient part of the service is based at Glenfield Hospital, however clinic sessions are held throughout the city. The Unit has close links with thoracic surgery and general medicine. The service has been spearheading admission avoidance strategies including piloting ambulatory care for patients with suspected pulmonary emboli (blockage in the arteries which carry blood from the heart to the lungs, causing shortness of breath, chest pain or coughing) and pleural disease (diseases affecting area surrounding the lung, often causing breathing problems).

Leicester patients have access locally to a full range of diagnostic investigations including respiratory physiology laboratory, a range of bronchoscopic techniques, computed tomography (CT), magnetic resonance imaging (MRI), as well as intensive care facilities and palliative care.

6 PROJECTED SERVICES USE AND OUTCOMES IN 3-5 YEARS AND 5-10 YEARS

Based on the ONS 2018 population projections, if the current prevalence and detection of respiratory diseases stays the same, Leicester's growing population will increase the number of cases of each condition on GP registers over the next decade. By 2033 there will be an additional 974 people living with asthma and 307 with COPD.

Figure 32: Crude asthma and COPD prevalence projections

Long-term condition	Leicester QOF prevalence 2021/22	Count 2021/22	Projected 2028	Projected 2033
Asthma (6+ years)	5.2%	20,662	21,179	21,636
Chronic Obstructive Pulmonary Disease	1.3%	5,622	5,804	5,929

Source: *Quality and Outcomes Framework 2021/22, ONS Mid-2018 population projections*

7 UNMET NEEDS AND SERVICE GAPS

A large proportion of COPD cases are preventable, principally through reducing exposure to smoking and adequate treatment of asthma, thus preventing the onset of irreversible changes. Even after the onset of the disease, smoking cessation has significant potential to halt disease progression and improve patients' quality of life, thus reducing the overall disease burden.

Early detection and treatment can slow disease progression and reduce the level of disability in patients. Therefore, every effort should be made to enable patients to recognise early symptoms and seek medical help. Within primary care, consistent efforts need to be made to identify patients at risk, targeting the populations most likely to be affected.

Although the main risk factors for developing COPD, such as smoking or age, are well established, individuals respond to them in different ways, with level of exposure to tobacco smoke not always linked directly to the level of morbidity or age of onset.

7.1 HEALTH INEQUALITIES

Health inequalities can be most clearly seen in hospital admissions. For respiratory disease overall, COPD, and asthma there is a clear gradient in admission rates from the most to the least deprived, with rates in Leicester residents from the most deprived areas markedly higher than those in even the second most deprived quintile.

There are also inequalities in admissions by ethnicity. Admission rates in the White population are significantly above Leicester overall for all the conditions in this JSNA. This is likely to be linked to smoking rates which are up to three times higher in the White population than other ethnic groups.[19]

7.2 POLICY DRIVERS

7.2.1 LEICESTER, LEICESTERSHIRE AND RUTLAND INTEGRATED CARE BOARD FIVE YEAR PLAN, 2023/24 – 2027/28

The LLR ICB's plan sets out how local health services will work together to improve outcomes and reduce health inequalities in the next few years. The plan emphasises the importance of prevention through risk factor interventions to help people stay healthy and well. The ICB outlines the following interventions relevant to respiratory disease:[20]

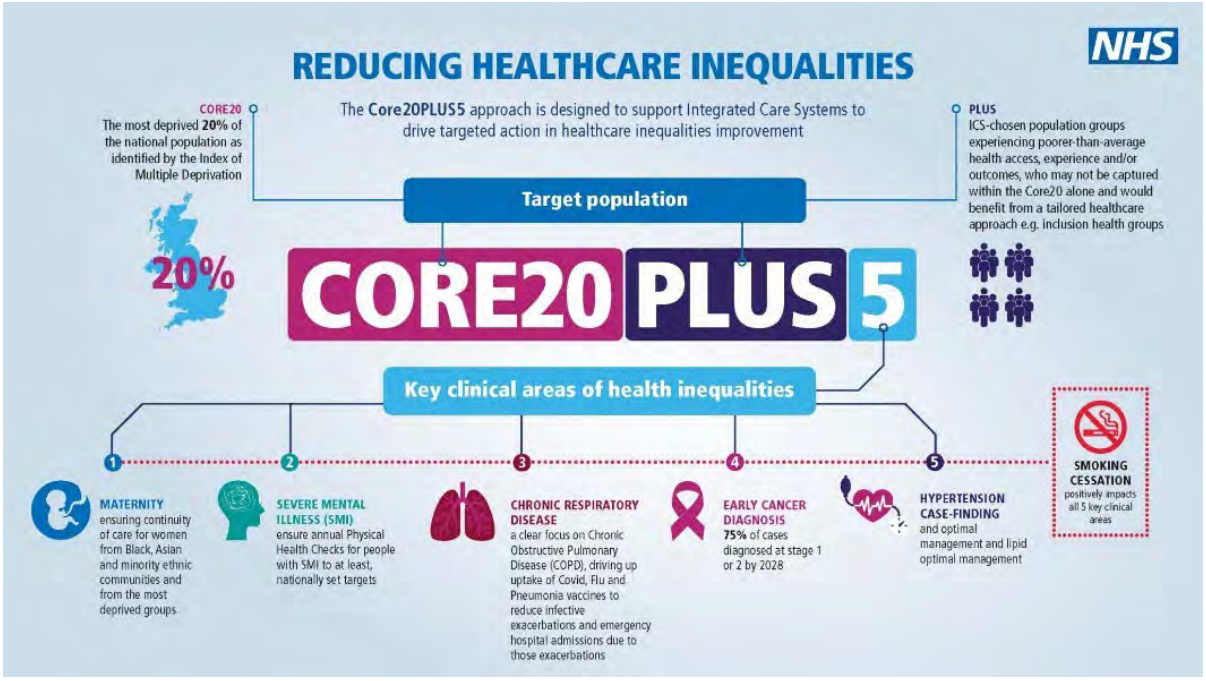
- Redirect a proportion of annual growth allocation monies to prevention.

- Expand Healthy Conversation Skills training and embed in all organisations (Making Every Contact Count Plus) as a key prevention enabler.
- Deliver tobacco dependence identification and treatment services in secondary care, including across inpatient, maternity, and mental health services.
- Improve detection and management of risk factors for respiratory and cardiovascular diseases.

7.2.2 CORE 20 PLUS 5

Core 20 Plus 5 is NHS England's national framework for addressing health inequalities. It helps set system priorities by target population and clinical areas. One of the five clinical is on driving up the uptake of COVID, flu and pneumonia vaccines to reduce infective exacerbations of COPD and emergency hospital admissions due to those exacerbations.

Figure 33: CORE 20 PLUS 5 infographic



Source: NHS England, NHS England » Core20PLUS5 (adults) – an approach to reducing healthcare inequalities

7.2.3 NHS LONG-TERM PLAN

The NHS Long-term plan sets out the following principles for improving respiratory disease:[21]

- Detect and diagnose respiratory problems earlier by supporting the training of staff to deliver tests such as spirometry.

- Expand pulmonary rehabilitation services so that patients who would benefit complete treatment in a good quality service.
- Support those with respiratory disease to receive and use the right medication. Medicine optimisation is essential, including inhaler technique checks, medicine adherence support, cost-effective guideline prescribing.
- Design and develop tools and programmes to support patients to manage their condition themselves and receive personalised care.
- Improve the treatment and care of people who present with community acquired pneumonia.

7.2.4 LEICESTER CITY COUNCIL AIR QUALITY ACTION PLAN 2015-2026

Leicester's Air Quality Action Plan (AQAP) aims to reduce the impact of poor air quality on health by reducing transport emissions, promoting sustainable transport, and enhancing the consideration of air quality in local planning.[22] A new AQAP will be produced prior to the current one finishing in 2026.

8 RECOMMENDATIONS FOR CONSIDERATION BY COMMISSIONERS

It is recommended that commissioners:

- Promote a wider understanding of links between risk factors, particularly smoking, and the development of COPD, such that they may be better understood by the public, in line with the joined-up efforts to reduce tobacco smoking.
- Support current smokers to use the Live Well community stop smoking service.
- Continuing to fund the current inpatient, maternity and mental health tobacco treatment services through the funding provided by NHS England for the Long Term Plan.
- Invest in Healthy Conversation Skills (Making Every Contact Count) training in order to maximise prevention and progression of respiratory disease as per the ICB's Five-year plan.
- Leicester City Council to coordinate and produce a Health Needs Assessment on damp and mould in Leicester housing.

- Reflect on the use of emergency care versus primary care

- Consider use of screening in the community. In 2019 the COPD nurses did spirometry screening at Beaumont Leys shopping centre. We tested about 100 members of the public and provided nearly half with stop smoking advice and information about how to access smoking cessation. Taking screening to people who do not think they need to see their GP but could be picked up sooner in their COPD journey.

9 KEY CONTACTS:

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