

# Chronic Respiratory Disease in North Lincolnshire

**North Lincolnshire** Public Health Intelligence Team 2023

**North Lincolnshire JSNA**

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**North  
Lincolnshire  
Council**

[www.northlincs.gov.uk](http://www.northlincs.gov.uk)

# This briefing report seeks to answer the following questions:

- What is chronic respiratory disease [CRD]?
- What is asthma and chronic obstructive pulmonary disease [COPD]?
- What are the risk factors affecting CRD?
- How prevalent is CRD in North Lincolnshire?
- What effect does deprivation have upon diagnosis?
- What is the mortality rate for COPD in North Lincolnshire and how does this compare to the England average?
- What does the emergency admissions trend, for CRD, look like?
- How does age, sex, ward and deprivation affect emergency admissions for CRD?

# Key Points

- In England, respiratory disease is the third biggest cause of death after cancer and CVD, accounting for 15% of all deaths and 7% of years lived with disability (Global Burden of Disease 2019).
- In England, COPD accounts for 83% of all ill health and mortality due to chronic respiratory conditions, with asthma being the second largest contributor (Global Burden of Disease, 2019).
- Risk factors for development of CRD and exacerbation of symptoms, include smoking, air pollution, extreme temperatures and excess weight.
- Over the last decade the, the proportion of patients in North Lincolnshire with COPD and/or asthma has steadily increased.
- COPD and asthma prevalence is available by GP practice, with the most deprived practices showing lower than expected rates because there is more undiagnosed disease within deprived populations.
- In North Lincolnshire, the number of deaths related to COPD has risen over the last decade, particularly for men, whilst the number of emergency admissions has fallen, although both consistently remain above the England average.
- Emergency admissions for COPD increase with age, with admissions for males predominantly higher than for females; whilst admissions for asthma vary between age and gender, although female admissions are generally higher than males.
- Emergency admissions for COPD and asthma are highest within the most deprived quintile

11,975 (6.6%)

of patients in North Lincolnshire living with diagnosed **asthma** in 2019/20



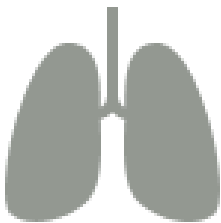
More than **1 in 10** COPD cases are associated with exposures in the workplace

12.3%

of adults in North Lincolnshire currently smoke



Temperature extremes exacerbate respiratory conditions



**15%**  
of all deaths in England caused by respiratory disease



Two thirds of COPD cases are not diagnosed

4,525 (2.5%)

of patients in North Lincolnshire living with diagnosed **COPD** in 2020/21



**9 in 10** COPD cases occur in current or ex smokers

**83%**

of all ill health and mortality due to chronic respiratory conditions, in England, is from COPD

# Respiratory Disease

- Respiratory disease affects the airways and other structures of the lungs and can include infections, cancer and chronic long term conditions.
- In England, respiratory disease is the third biggest cause of death after cancer and CVD, accounting for 15% of all deaths and 7% of years lived with disability (Global Burden of Disease 2019).
- Many conditions contribute to poor respiratory health:
  - Pneumonia
  - Lung Cancer
  - COPD
  - Asthma
  - Pulmonary Fibrosis
  - Asbestosis
- There are many causes:
  - Smoking
  - Second Hand Smoke
  - Air Pollution
  - Occupational Hazards
  - Living Conditions
  - Excess Weight
- Asthma and COPD are the predominant forms of chronic respiratory disease (CRD).

# What is Asthma?

- ‘Asthma is a chronic inflammatory disease of the airways leading to cough, wheeze, shortness of breath, and chest tightness. Asthma symptoms are driven by the inflammation of the airways which triggers processes such as mucus production, remodeling of the airway wall, and bronchial hyperresponsiveness which is the tendency of smooth muscle cells to react to non-specific stimuli such as cold air’ (Hammad & Lambrecht, 2021, p.1469)
- Asthma may be described as being allergic and non-allergic, with the onset of allergic asthma being most common in early childhood, whilst non-allergic asthma diagnosis is more frequent in adulthood, particularly in patients aged over 40 (Pakkasela et al., 2020, p.1).
- While there is currently no cure for asthma, there are treatments available to help control the symptoms, such as inhalers, as well as treatments for more severe cases including tablets, injections and surgery (NHS, 2021). Inhalers are the most common treatment and includes the use of reliever inhalers, to treat symptoms when they occur, and preventer inhalers, to reduce the inflammation and sensitivity of the patients airways, and are taken daily, even when the patient is not presenting symptoms (NHS, 2021). If the use of individual preventer and reliever inhalers fail to control a patients asthma, they may use a combination inhaler daily, even without symptoms, to help stop the occurrence of symptoms, as well as providing relief if they do occur (NHS, 2021).
- Day-to-day asthma management, is the responsibility of the patient and is dependant upon their perception of need (O’Byrne et al., 2017, p.2). A study by Partridge et al. (2006) found that asthma patients were more likely to increase their use of a short-acting reliever medication than their controller medication in response to worsening symptoms,. While medical professionals monitor and advise patients on management strategies, patient behaviour can mean that patients adjust their medication inappropriately, meaning they miss the opportunity to intervene early and prevent symptoms from getting worse (Partridge et al., 2006).

# What is COPD?

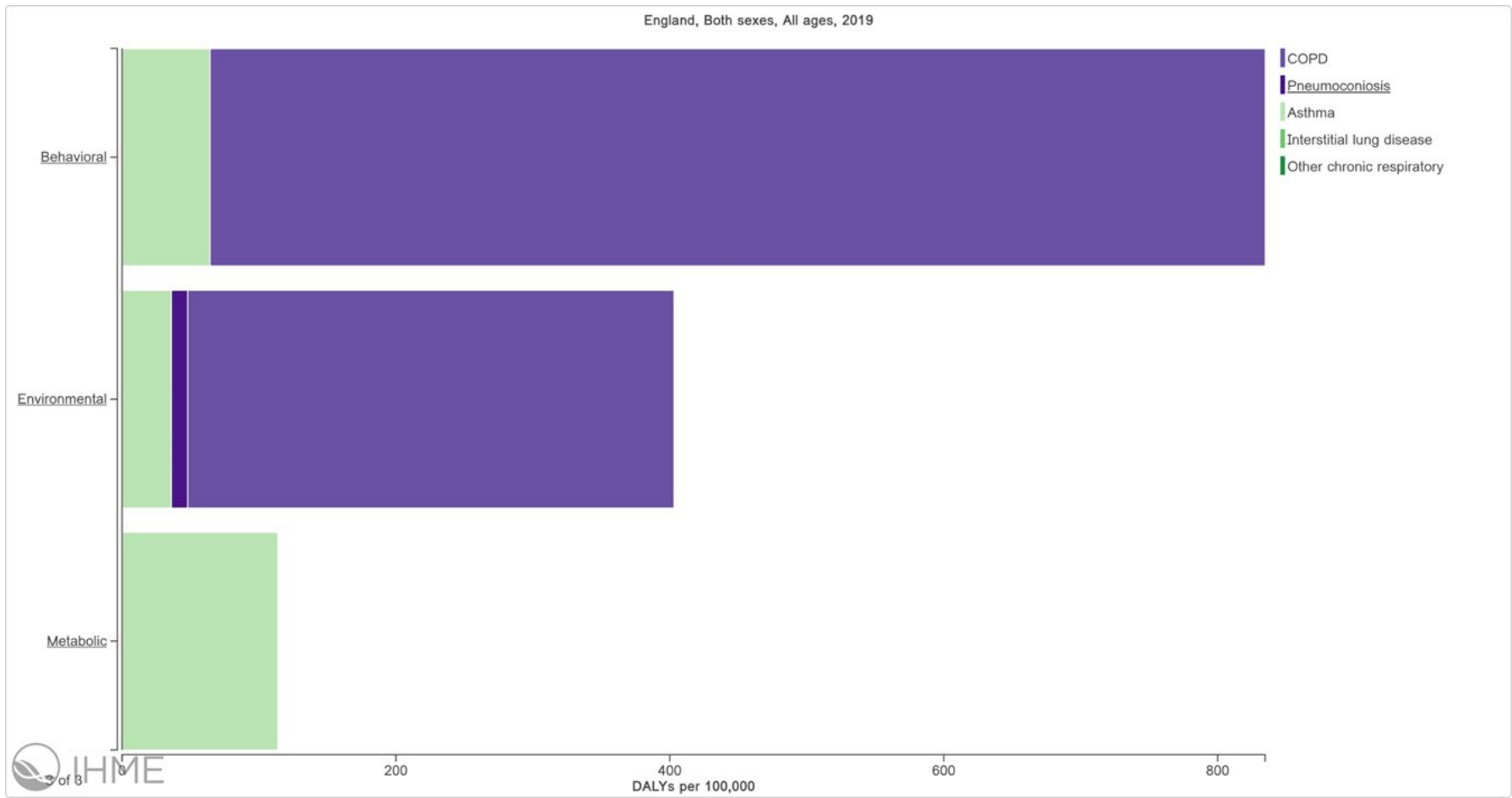
- Chronic obstructive pulmonary disease [COPD] is the name given to a group of lung conditions which makes it hard to breathe air in and out of the lungs (NHS, 2019). Chronic bronchitis and emphysema are common conditions associated with COPD and commonly occur together making it harder for the patient to breathe (Asthma and Lung UK, 2022). Emphysema is a condition where the air sacks in the lungs become damaged and chronic bronchitis causes inflammation of the airways causing them to become narrowed (NHS, 2019; Mayo Clinic, 2020). Common symptoms include breathlessness, coughing and increased phlegm production as well as less common symptoms such as wheezing, chest tightness and chest congestion (Miravittles & Ribera, 2017).
- One of the most common risk factors associated with COPD is smoking, although other risk factors include exposure to air pollutants, occupational exposure to dust and fumes, chronic asthma, treated pulmonary tuberculosis, poor nutrition, low educational attainment and poor socioeconomic status (Salvi & Barnes, 2009, p.737).
- While there is no cure for COPD, treatment and some changes to lifestyle can help to slow the progression of symptoms and reduce flare-ups (World Health Organisation [WHO], 2022). The NHS (2019) explains how stopping smoking is one of the most important lifestyle changes for a patient with COPD to make, explaining how any lung and airway damage already incurred cannot be undone, but it can prevent any further damage. Patients may also be referred to attend a pulmonary rehabilitation programme, lasting 6 to 8 weeks which is designed to educate and support patients to manage their COPD (Asthma and Lung UK, 2022).
- Common medical treatment includes the use of short-acting bronchodilator inhalers to help make breathing easier by relaxing the airways, enabling them to widen, and long-acting bronchodilator inhalers which can help provide relief for at least 12 hours at a time (NHS, 2019). If these inhalers are not effective enough and the patient is still experiencing frequent flare-ups they may be prescribed the use of a steroid inhaler or tablets too (NHS, 2019).

# COPD, Asthma and Misdiagnosis

- Asthma and COPD share common symptoms including a cough, wheezing, breathing difficulties and some people may be impacted upon by both conditions (WHO, 2022). Barnes (2016) explains some common differences between the conditions including; asthma typically having an earlier onset, its association with allergies, intermittent symptoms and a good response to inhaled therapy; whilst COPD usually has a later onset, an association with long-term smoking, slowly progressive symptoms and a poor response to inhaled therapy (p.7). A patient with COPD's airways will have become permanently narrowed, whereas with asthma the narrowing of airways is temporary, usually as the result of a trigger (Asthma and Lung UK, 2022).
- Diagnosis of COPD is complex and dependant on many factors including persistent inhalation of harmful substances, detection of a chronic non-reversible airway obstruction through spirometry and symptoms consistent with COPD (Fernandez-Villar et al., 2017, p.183). For this reason both under and over diagnosis of COPD may be frequent, with underdiagnosis occurring because a patient has not communicated their symptoms to a medical professional or a medical professional attributing their symptoms to a disease other than COPD, such as asthma or bronchiectasis, or potentially offering no disease diagnosis at all (Diab et al., 2018; Ho et al., 2015). Overdiagnosis however occurs when a patient is diagnosed with COPD when COPD is not the cause of their respiratory symptoms (Diab et al., 2018, p.1131).
- Community-based population studies across the world suggest that 10-12% of adults aged over 40 demonstrate persistent airflow limitation on spirometry, with only 20-30% of those subjects already having a COPD diagnosis suggesting that 70% of worldwide COPD cases may be undiagnosed (Diab et al., 2018, p.1130). Meanwhile other studies suggest that 30-60% of patients diagnosed with COPD do not actually have the disease (Diab et al., 2018, p.1130).
- Both under and overdiagnosis of COPD means that patients are not able to access optimal treatments for their conditions which can mean a greater burden upon healthcare services as the true cause of a patients symptoms remain untreated as well as implications for the patient such as preventable reductions in health related quality of life (Diab et al., 2018, p.1136).



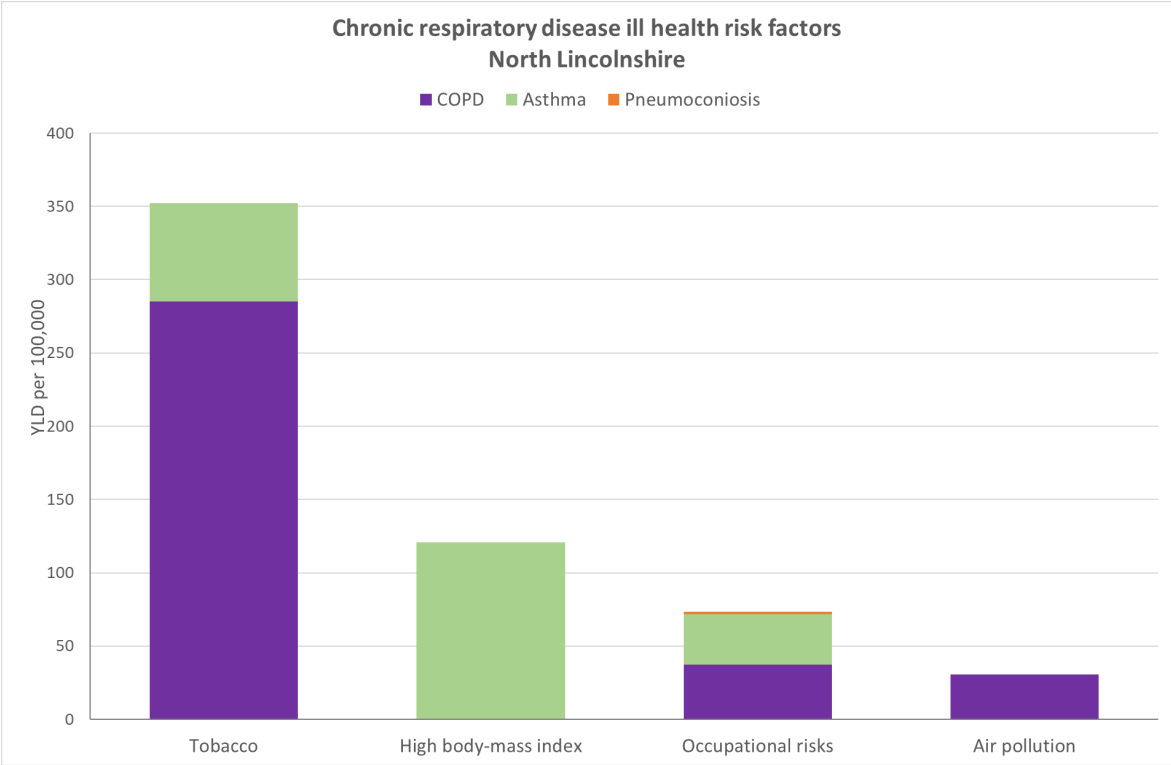
# Chronic Respiratory Disease



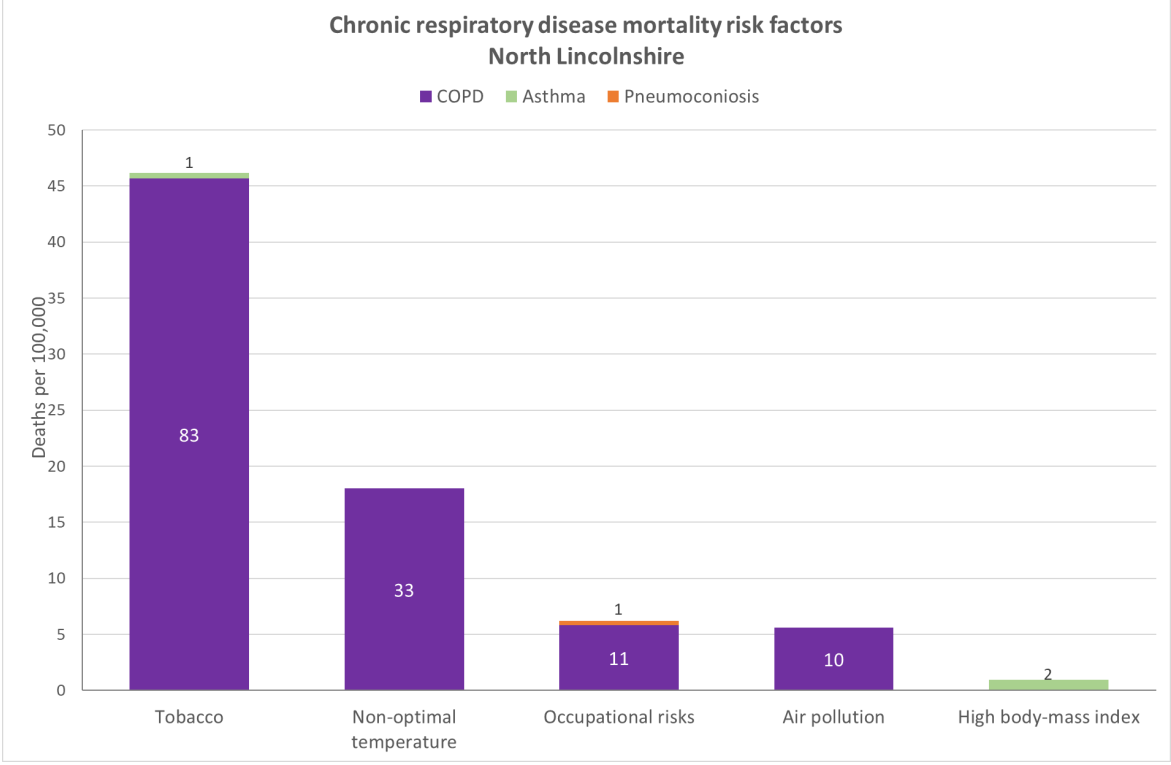
Global Burden of Disease 2019

- In England, COPD (purple) accounts for 83% of all ill health and mortality due to chronic respiratory conditions.
- Asthma (green) is the second largest contributor.
- The largest numbers of people suffering ill health and dying from chronic respiratory disease can be attributed to behavioural risks followed by environmental factors.

# Risk Factors Affecting Chronic Respiratory Disease



- For people living with COPD, smoking is the biggest risk factor, but it may also be attributed to occupational risks and air pollution.
- Excess weight and smoking are significant risks to people suffering from asthma.



- Most people dying from chronic respiratory disease suffer from COPD which contributed to nearly 140 deaths in 2019.
- The majority of people dying from COPD smoke but living in cold conditions also has a significant impact.

Global Burden of Disease 2019

# Smoking and CRD

- Exposure to tobacco smoke both through active and passive smoking increases a person's risk of developing asthma, as well as making symptoms worse, and placing them at a higher risk of developing COPD, in comparison to non-smokers (Pietinalho et al., 2009, p.1722). 'In developed countries, smoking is the greatest risk factor for the development of COPD', with 90% of COPD cases occurring in current or ex smokers (Hansel et al., 2015, p.372; Gibson et al., 2013, p.153). A study undertaken by Piipari et al. (2004) investigated the relationship between smoking and asthma development in adults, with results showing there to be an increased risk of asthma in both current and former smokers, with females appearing to be more susceptible to the effects than males (p.737).
- According to data collected as part of the Annual Population Survey 2021, 13% of adults (aged 18+), in England, declared that they were current smokers, and 25.7% stated they were ex smokers (OHID, 2023). Values in North Lincolnshire were statistically similar with 12.3% responding that they currently smoked and 29.3% stating themselves to be ex smokers (OHID, 2023).
- If a child is exposed to environmental tobacco smoke in utero and/or during early childhood their risk of developing asthma is increased (Pietinalho et al., 2009, p.1722). In 2018/19, 19.4% of mothers smoked during early pregnancy which is statistically significantly higher than the England average of 12.8%, in the same time period (OHID, 2023).
- Quitting smoking is one of the most important steps that a patient with COPD can make, with direct benefits including; reduced disease progression, improvement of symptoms and reduced mortality rate (Tashkin, 2021, p.545). However, despite receiving smoking cessation support, many individuals still continue to smoke. Research undertaken by Eklund et al. (2012) investigated reasons why some smokers diagnosed with COPD do not quit with findings falling into two main categories; one centring around the difficulty to break a habitual behaviour, while the other found that patients were aware of the risks and consequences of continued smoking, but felt they wanted to make decisions under their own autonomy.

# Air Pollution and CRD

- Duan et al. (2020) defines air pollution as being a 'complex mix of particles, vapors, and gases emitted from natural and synthetic sources' (p.261). Air pollution can create negative health outcomes in all age groups, through both indoor and outdoor exposure over a long period of time, contributing to the initiation, development and exacerbation of respiratory and cardiovascular diseases (Exley et al., 2022, p.1). As result, the UK Government's Clean Air Strategy aims to reduce emissions from damaging air pollutants including fine particulate matter, ammonia, nitrogen oxides, sulphur dioxide and non-methane volatile organic compounds (Department for Business, Energy & Industrial Strategy et al., 2019).
- Exley et al. (2022) explains that the conditions and locations where people live, learn and work can impact upon an individuals exposure to air pollutants and ultimately the associated health risks (p.13). Today people, particularly those living in cities and urban areas, are exposed to increasingly high levels of harmful pollutants including particulate matter and nitrogen dioxide (Arbex, 2012, p.643; Tiotiu, 2020). The term particulate matter is used to describe a mixture of solid and liquid particles of various sizes, shapes and compositions, emitted directly or formed in the atmosphere, and will vary depending on location and emission sources (Exley et al., 2022, p.7). Nitrogen oxide is mostly formed during combustion with the main sources being power generation, industrial combustion and road transport, before reacting with other gases in the air to produce nitrogen dioxide (Exley et al., 2022, p.9).
- Research undertaken by Matteis et al. (2016) concluded that people in certain occupations, including coal miners, construction works and industrial process workers, were at an increased risk of developing COPD (p.382). Fishwick et al. (2015) suggests that 10-15% of COPD cases are associated with exposures in the workplace (p.270). This is because long-term exposure to highly polluted air has been found to increase the incidence of COPD development (Duan et al., 2020, p.260). For patients living with chronic respiratory conditions, even short-term exposure to air pollutants can cause an exacerbation of symptoms, as well as an increase in hospital admissions (Arbex et al., 2009, p.777).

# Temperature and CRD

- Research undertaken by Donaldson et al. (2012) found that COPD patients would experience exacerbations of their condition most frequently within the winter months, as well as an increase in the rate of exacerbations requiring hospitalisation (p.94). Similarly, asthma patients also reported cold temperatures causing increased breathing difficulties, particularly if the air was cold and damp (Millqvist et al., 1987, p.444). As a result, asthma patients have explained that they go out less in the winter and that they are unable to exercise outdoors due to the affects of the cold upon their airways (D'Amato et al., 2018). This avoidance of exercising outdoors or even going out in cold weather, can have negative physical and mental implications for patients with respiratory conditions, as they are less able to exercise and the risk of isolation and loneliness increases (Stubbs et al., 2021, p.1535).
- This winter, with the cost of living crisis and rising energy costs, many people, especially those on low incomes, will be unable to afford to heat their homes (Marmot, 2022). This means that those living with respiratory conditions, such as COPD and asthma, may suffer from more frequent flare ups and reduced quality of life (McCormack et al., 2017). Individuals from lower-income households are also at increased risk of developing respiratory conditions, as a result of poor housing conditions, poor nutrition, occupational exposures and indoor air quality (Doiron et al., 2019, p.9). This includes children as well as adults living in the home. Barrett et al. (2021) explains how a young child's lungs are particularly vulnerable and how living in a damp cold home can put them at risk of developing lifelong pulmonary function deficit (p.229).
- However, it is not only cold temperatures which may have a negative impact upon patients with respiratory conditions but instead the extremes of temperatures, both hot and cold (Hansel et al., 2015, p.372). Research undertaken by Lin et al. (2009) found that for every 1°C increase in temperature between 29°C and 36°C, same day hospital admissions for respiratory diseases increased by between 2.7% and 3.1% (p.738). Unfortunately, the effects of climate change are likely to bring more extremes of temperature, and therefore increasing the vulnerability of patients living with respiratory conditions (Arnell & Freeman, 2021).

# Excess Weight and CRD

- Forno (2017) explains how asthma and obesity have a bi-directional relationship, with evidence suggesting that obesity raises the risk of asthma and that in some cases asthma can also increase the risk of obesity (p.1124). Obesity increases the risk for incidence and prevalence of asthma, as well as increasing the risk of severe asthma, which may include steroid resistance and airway inflammation (Tashiro & Shore, 2018, p.135). Boulet & Franssen (2007) examined the relationship between increasing body mass index [BMI] and asthma control through the use of inhaled treatments, finding that overweight patients were less likely to achieve asthma control using inhaled therapies than non-overweight patients (p.2240). As a result, overweight asthma patients are also at an increased risk of being hospitalised in relation to their asthma (Mosen et al., 2008, p.507).
- Research undertaken by Pakhale et al. (2015) studied the effects of weight reduction in obese adults with asthma, and concluded that weight loss could 'improve asthma severity, asthma control, lung function, and quality of life' (p.1582). For this reason, Marko and Pawliczak (2018) recommend that treatment for asthma should also include weight control, for patients carrying excess weight (p.563).
- Whilst obesity in patients with COPD can also be associated with increased breathlessness, increased prescription for use of inhaled medications and to some extent reduced quality of life; obesity has also been linked to less severe airflow obstruction than non-obese patients (Cecere, 2011, p.281). In association with this, the 'obesity paradox' highlights that patients with a low BMI have an increased risk of mortality, whilst some studies have found that patients with a BMI which is  $\geq 30$  kg/m<sup>2</sup>, and categorised as being overweight, have the lowest overall mortality rate, from COPD (Divo et al., 2014, p.235). However, obesity is associated with increased risk of cardiovascular disease, decreased exercise capacity and overall reduction in health, highlighting the need for weight management strategies (McDonald et al., 2016, p.82). Cecere et al. (2011) considers the risk to benefit ratio, suggesting that emphasis should be placed on weight management strategies for overweight COPD patients to improve symptoms of breathlessness and at the same time reduce the patients risk of developing weight related ill health (p. 281).

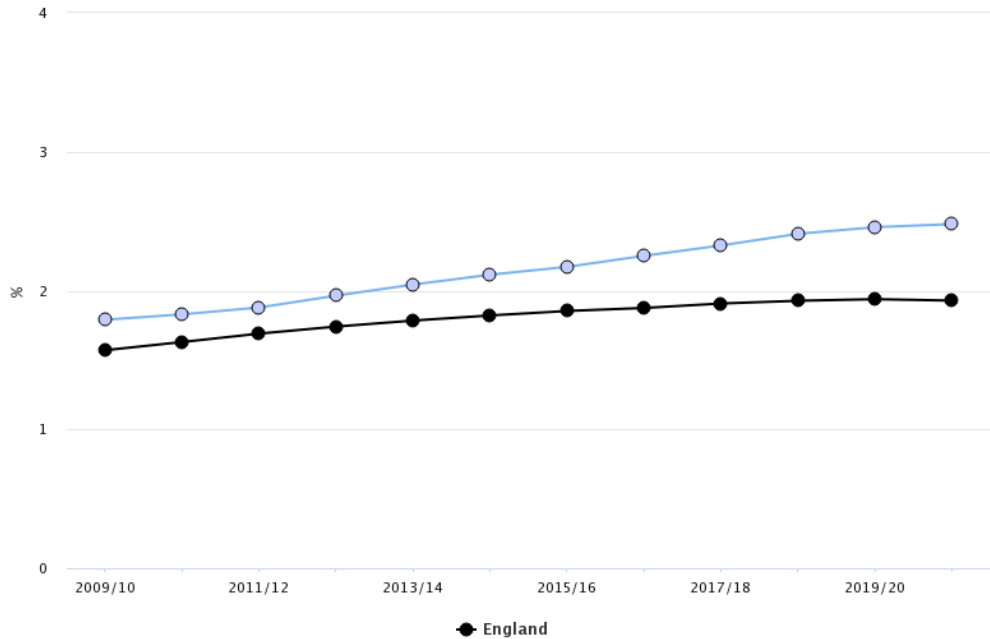


# Summary of Risk Factors for CRD

Smoking	Air Pollution	Temperature	Excess Weight
<ul style="list-style-type: none"><li>• The greatest risk factor for developing COPD (Hansel et al., 2015, p.372).</li><li>• 90% of COPD cases occur in current or ex smokers (Gibson et al., 2013, p.153).</li><li>• Both active and passive smoking increases a person’s risk of developing asthma and exacerbates symptoms (Pietinalho et al., 2009, p.1722).</li><li>• 12.3% of adults in North Lincolnshire currently smoke and 29.3% are ex-smokers (OHID, 2022).</li></ul> <p>The risk factors associated with chronic respiratory conditions are likely to change over time, due to the changes in smoking and vaping, as well as differences in air pollution dependant on the location, types of industry and new technology, including the move away from fossil fuel combustion for energy production (Guarnieri &amp; Balmes, 2014; Mathioudakis et al., 2020, p.2).</p>	<ul style="list-style-type: none"><li>• The conditions and locations where people live, learn and work can impact upon an individual’s exposure (Exley et al., 2022).</li><li>• Certain occupations including coal mining, construction work and industrial process work increase individuals’ risk of developing COPD (Matteis et al. 2016, p.382).</li><li>• Even short-term exposure to can cause an exacerbation of CRD symptoms, as well as an increase in hospital admissions (Arbex et al., 2009, p.777).</li></ul>	<ul style="list-style-type: none"><li>• Temperatures extremes, both and hot and cold, can cause an exacerbation of symptoms for people living with asthma and COPD (Hansel et al., 2015, p.372).</li><li>• Hospital admissions for respiratory conditions rise during extreme temperatures (Donaldson et al., 2012; Lin et al., 2009, p.738).</li><li>• This raises concerns amidst the cost-of-living crisis and rising energy costs as more people struggle to heat their homes (Marmot, 2022).</li></ul>	<ul style="list-style-type: none"><li>• Increases the risk for incidence and prevalence of asthma, as well as increasing the risk of severe asthma (Tashiro &amp; Shore, 2018, p.135).</li><li>• Severe asthma may be less likely to be managed using inhaled therapies and therefore placing patients at a greater risk of being hospitalised (Boulet &amp; Franssen, 2007, p.2240; Mosen et al., 2008, p.507).</li><li>• Weight reduction in overweight adults with asthma could ‘improve asthma severity, asthma control, lung function, and quality of life’ (Pakhale et al., 2015).</li></ul>

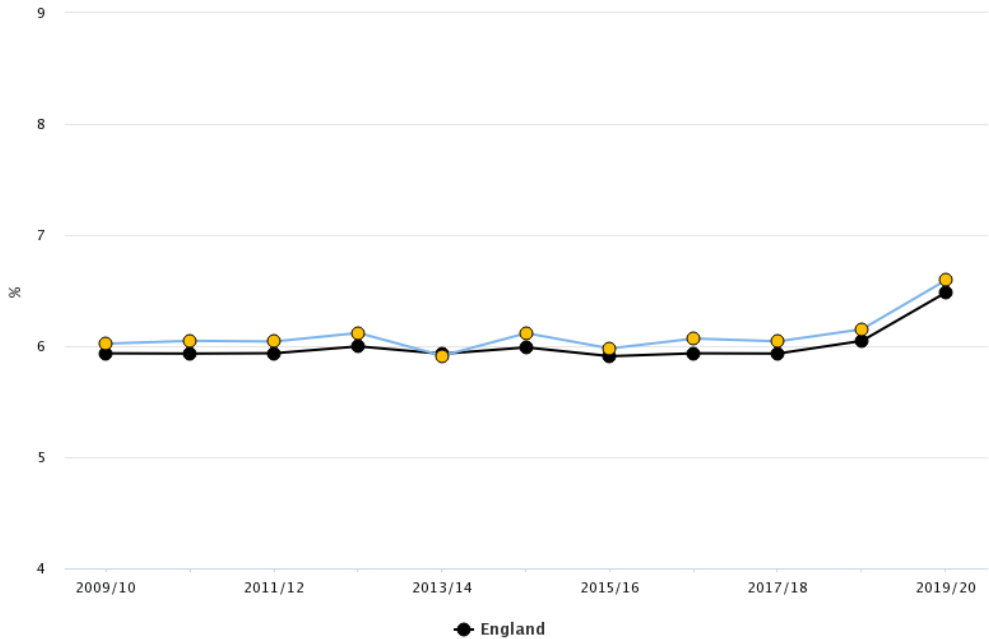
# Prevalence of Chronic Respiratory Disease

COPD: QOF prevalence (all ages) for NHS North Lincolnshire CCG



- Over the last decade, the proportion of North Lincolnshire patients with COPD has been steadily increasing from 1.8% to 2.5%
- In 2020/21 there were 4,525 patients diagnosed with COPD

Asthma: QOF prevalence (all ages) – retired after 2019/20 (now 6+ yrs) for NHS North Lincolnshire CCG

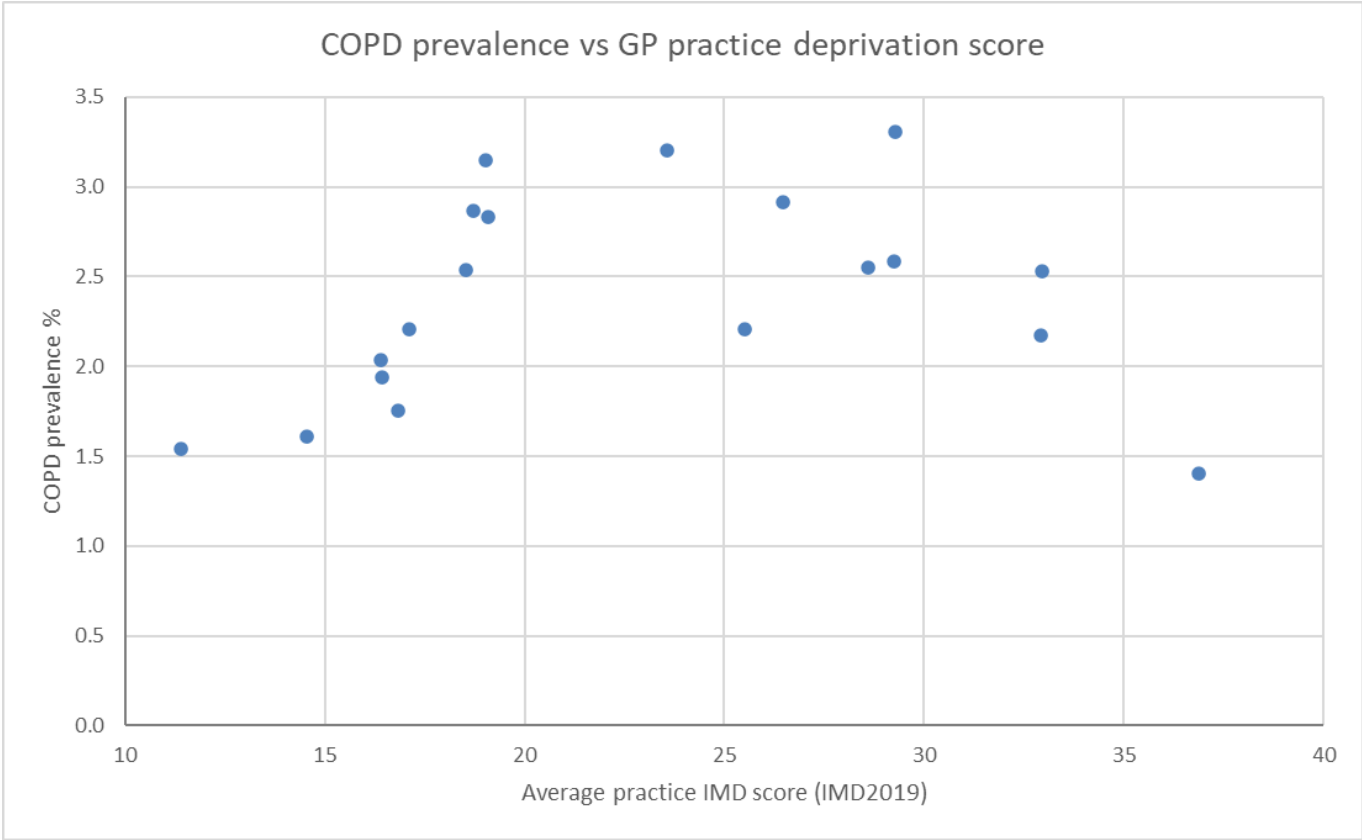


- Between 2009/10 and 2018/19, about 6% of North Lincolnshire patients suffered with asthma rising to 6.6% in 2019/20
- In 2019/20 there were 11,975 patients diagnosed with asthma

Quality Outcomes Framework



# Undiagnosed COPD

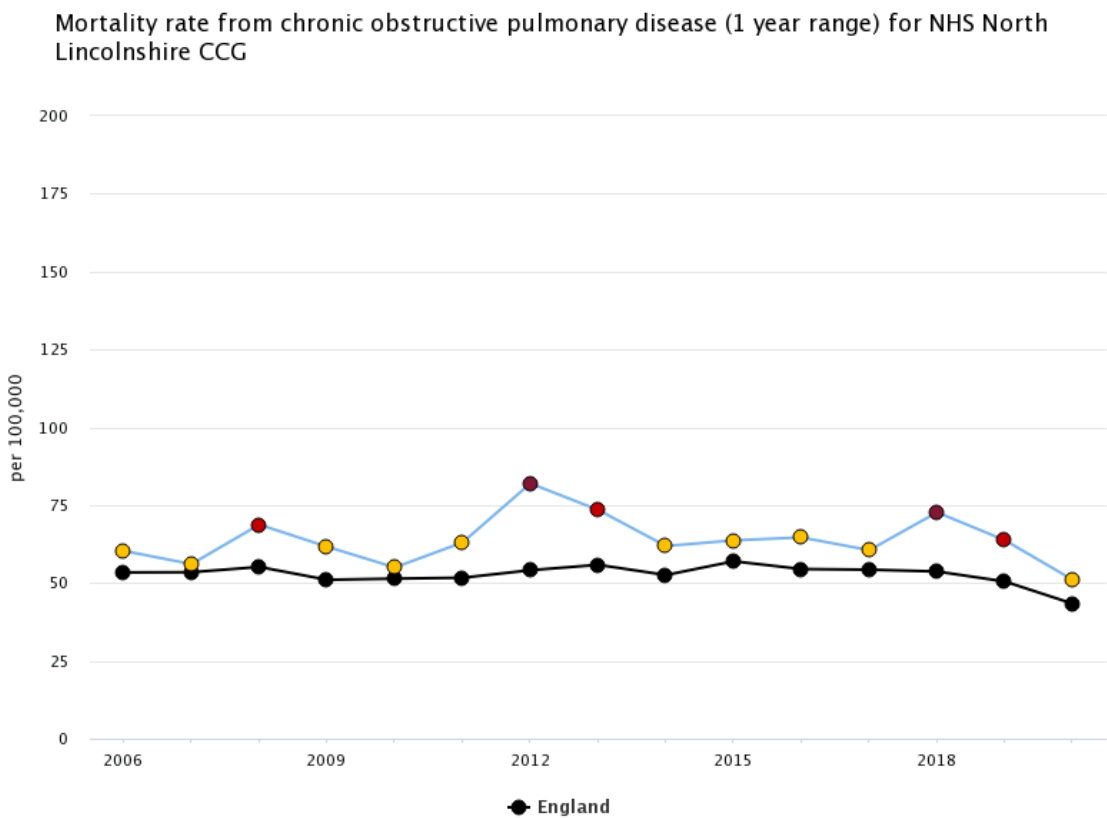


- COPD and asthma prevalence is available by GP practice so we don't know where patients live.
- As COPD is strongly related to smoking and smoking is strongly related to deprivation we would expect the highest prevalence in the most deprived practices.
- However the most deprived practices show lower than expected rates.
- This is because there is more undiagnosed disease within deprived populations.

RAIDR October 2022

- It is estimated that two thirds of COPD cases are not diagnosed (NICE QS10).
- This means that in North Lincolnshire there could be an extra 9000 patients with undiagnosed COPD on top of the 4500 who are already known.

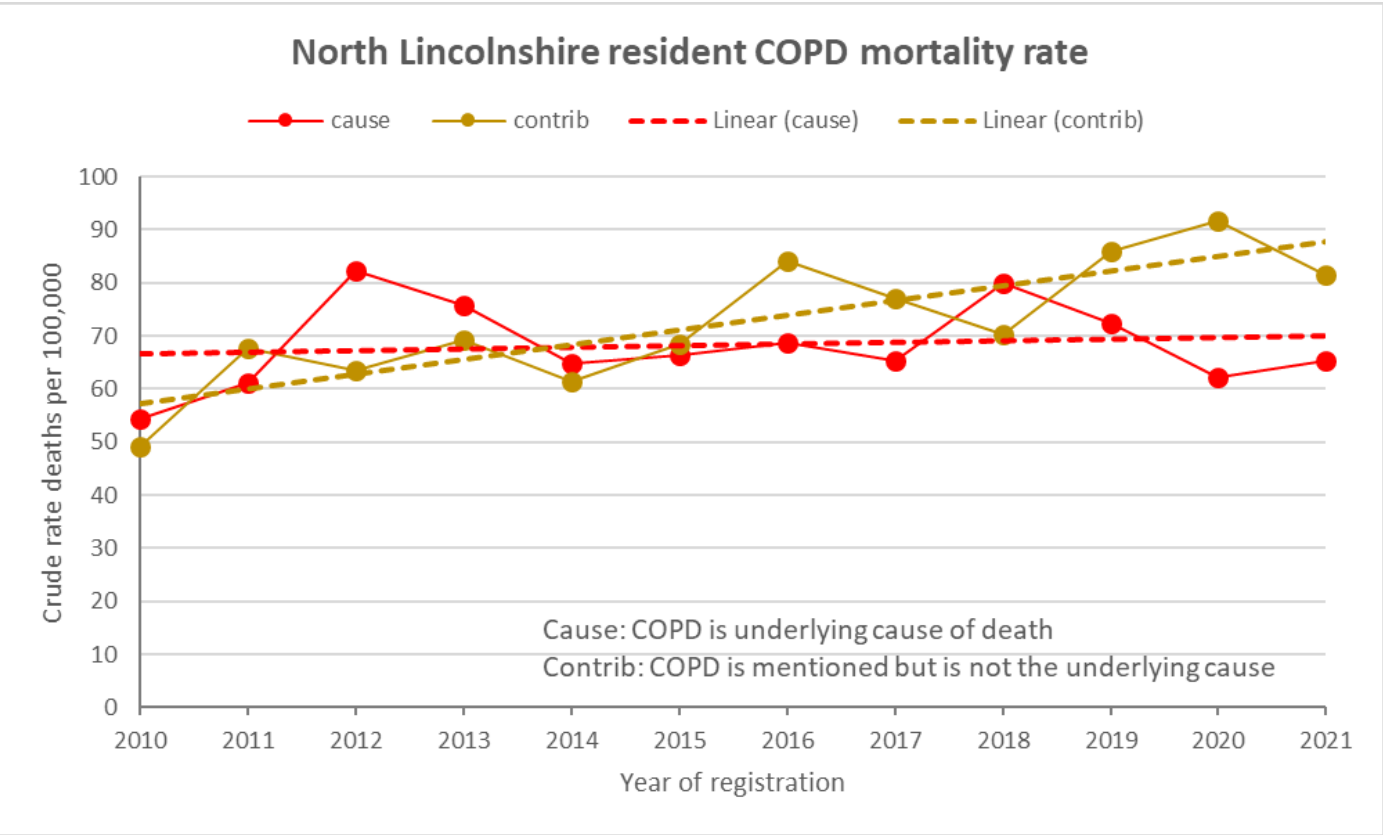
# Chronic Respiratory Disease Mortality



OHID 'Inhale' profile

- Mortality from chronic respiratory disease is dominated by COPD with deaths from asthma in North Lincolnshire generally numbering less than 10 per year.
- Over the last decade (2010-2019), the number of annual deaths with COPD as the cause has remained relatively stable averaging 113 per year and ranging from 85 (2010) to 135(2012 & 2018)
- Equivalent death rates over the same period average 66/100,000 compared to 54 in England overall
- Death rates due to COPD in North Lincolnshire are generally higher than the England average.

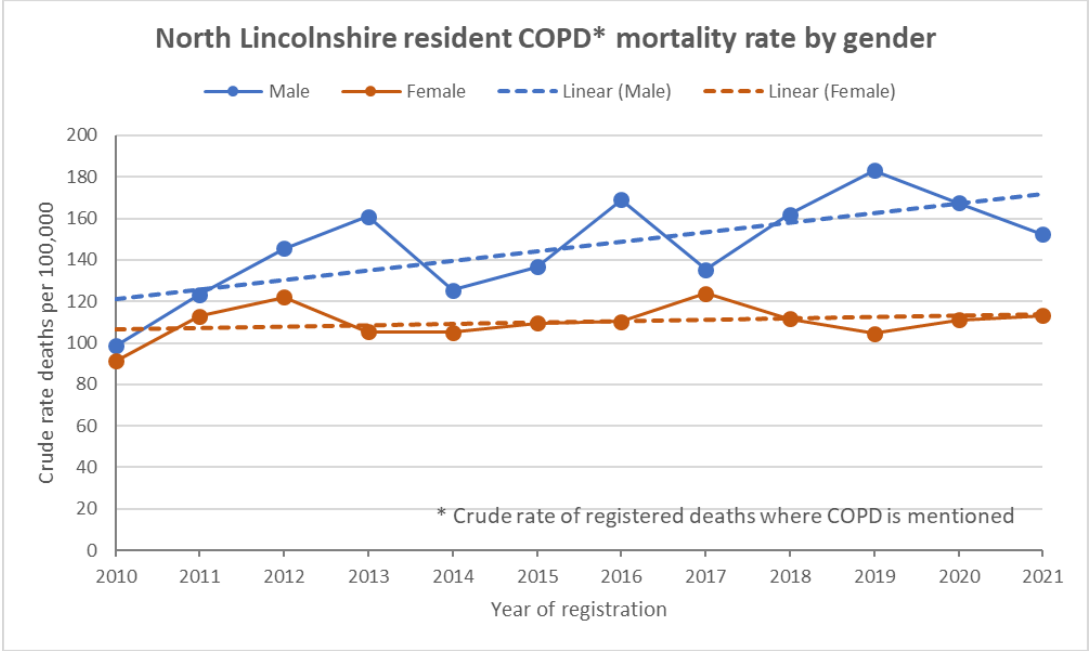
# COPD Mortality



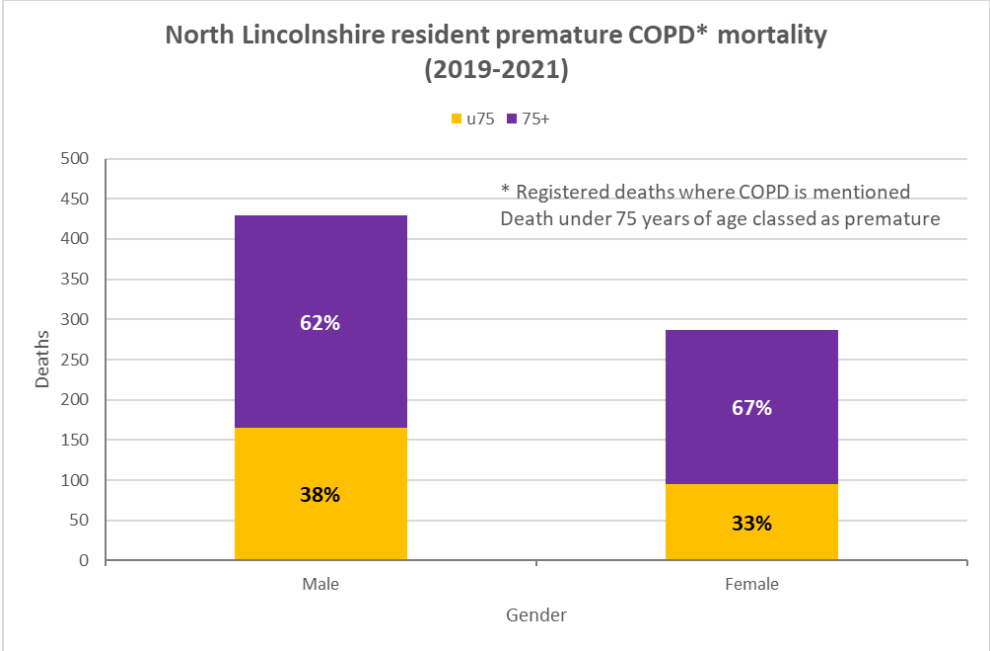
Source: PCMD

- COPD not only causes death directly but it can also contribute to the death even though something else is the main cause
- Until 2014 there were generally more deaths caused than contributed to by COPD but in the latter half of the decade the pattern has switched with less deaths being attributed directly to COPD
- Whilst deaths caused by COPD have remained relatively stable since 2010, those where COPD has played a contributory role have nearly doubled from 49 to 92/100,000 in 2020, equivalent to an extra 5 deaths per year (although this rise will have been inflated by the impact of COVID-19 following 2019)
- In 2019-2021 the most common causes of death to which COPD contributed were lung cancer, COVID-19 and heart disease

# COPD Mortality



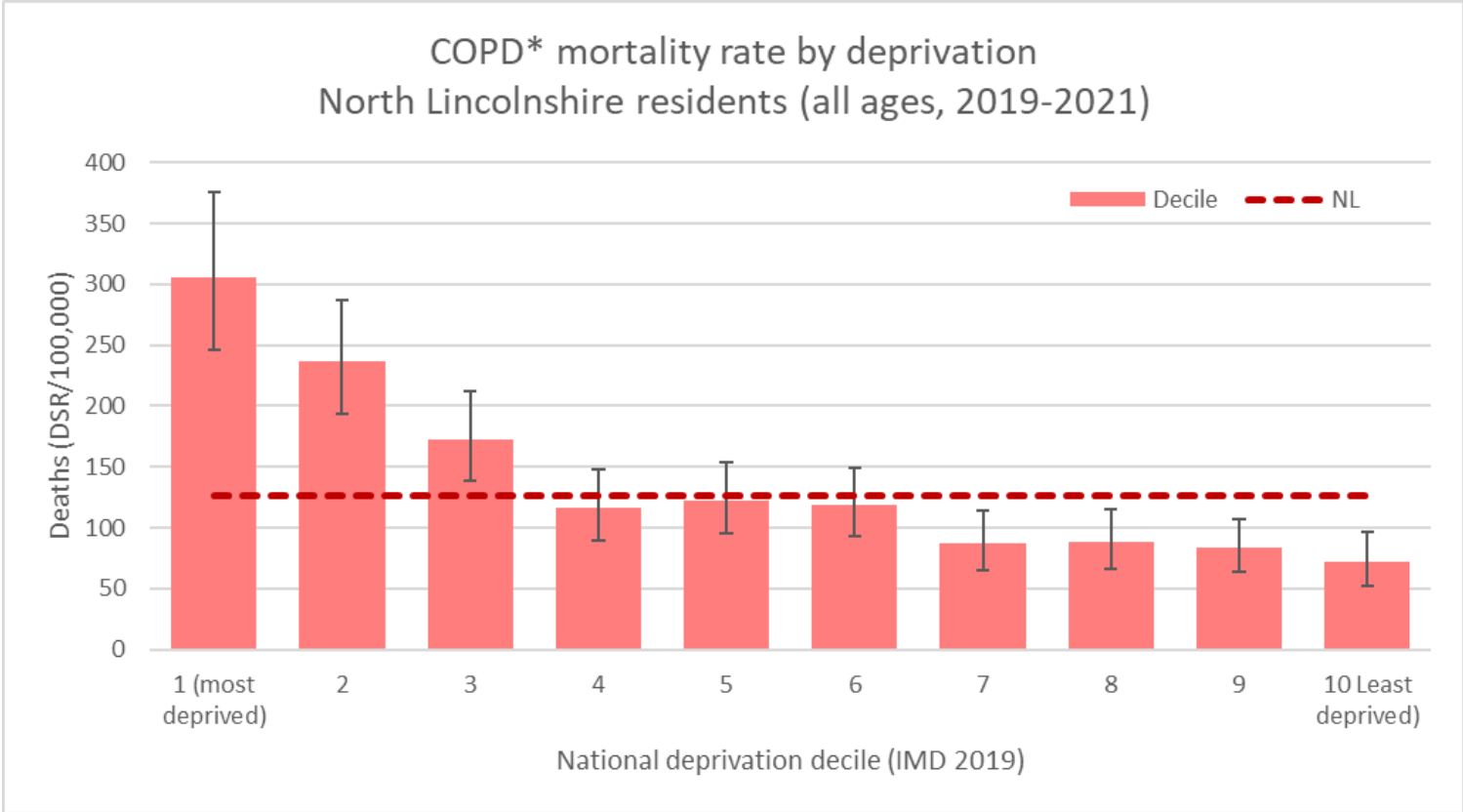
- Deaths where COPD was involved (both cause and contributory) are more common amongst males than females with, on average, 50% more
- Since 2010 overall COPD crude mortality rates have increased for both genders but those for men have increased most from 99 to 152/100,000 in 2021 equivalent to 4 extra male deaths per year



- Deaths of people aged under 75 years are classed as premature and give an indication of the extreme impact of a condition which is not managed properly or remains undiagnosed
- During 2019-2021 a slightly bigger proportion of male deaths (38%) involving COPD were premature than for females (33%)

Source: PCMD

# COPD Mortality by Deprivation

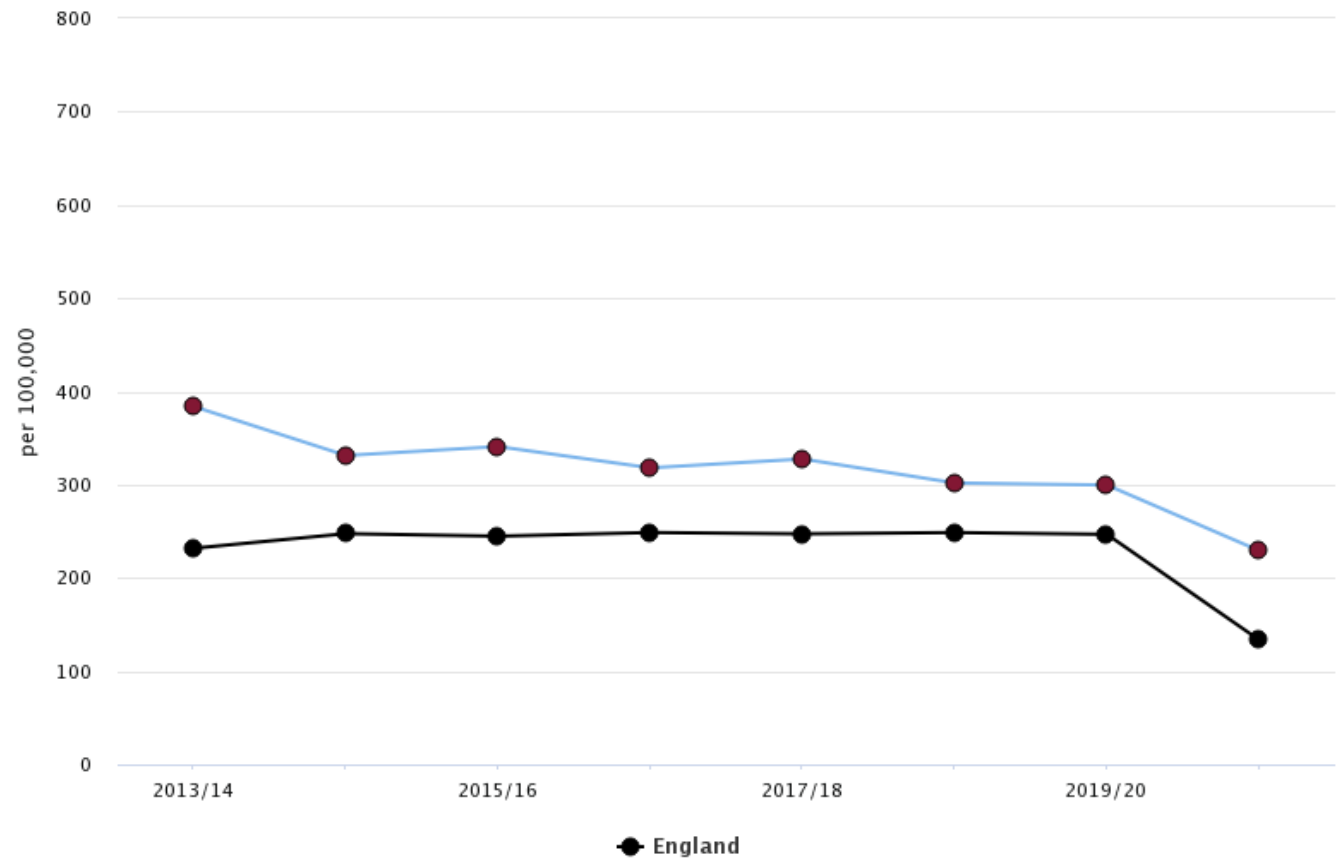


- As COPD is strongly related to smoking and smoking is strongly related to deprivation we would expect the highest COPD related mortality in the most deprived areas of North Lincolnshire
- This is evident across the whole social gradient with rates in the 30% most deprived areas significantly higher than the North Lincolnshire average and those in the 40% least deprived areas significantly lower
- Mortality rates where COPD is involved are over 4 times higher in the 10% most deprived areas than in the 10% least deprived areas

Source: PCMD

# Admission Trend for COPD

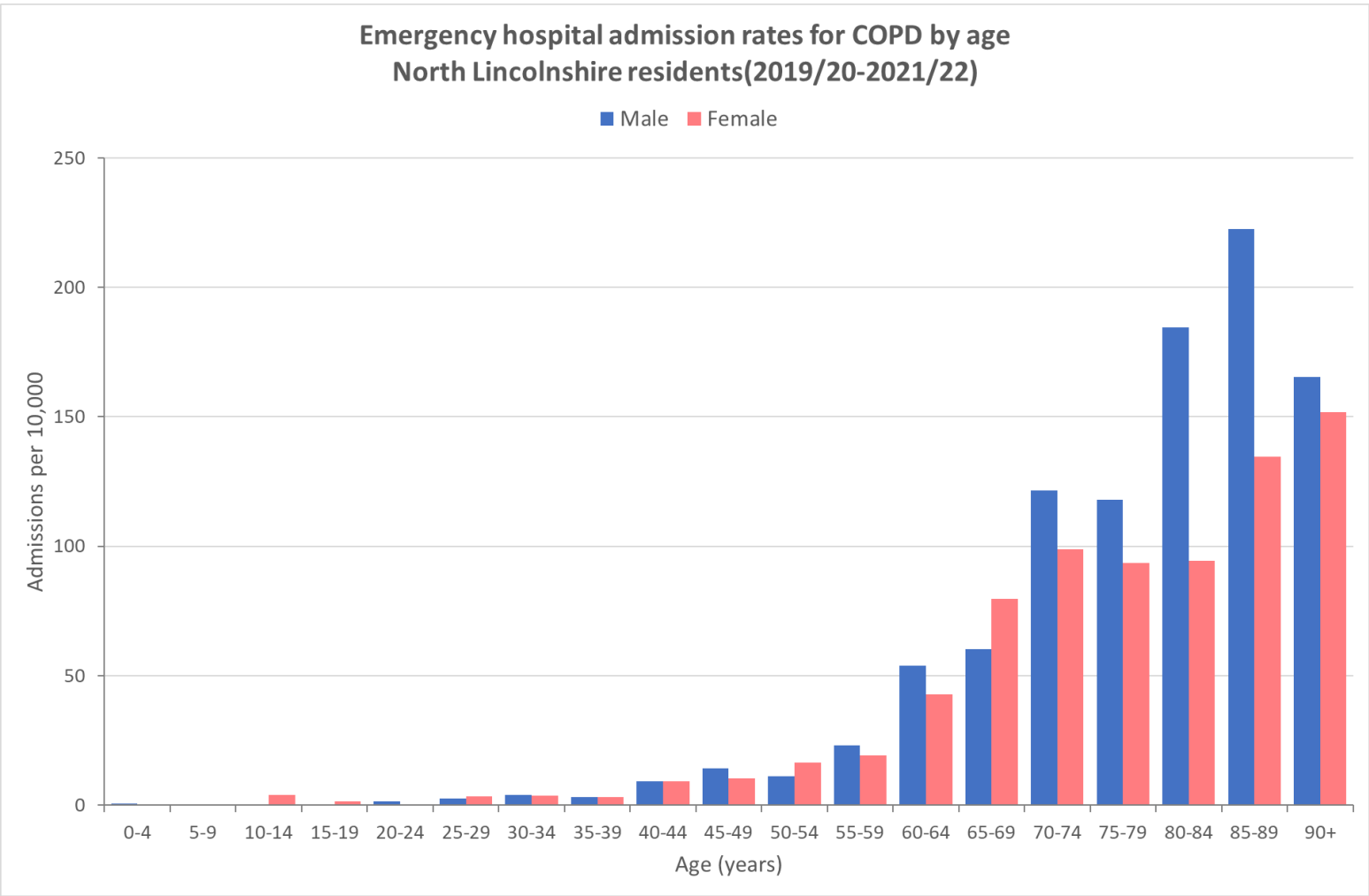
Emergency hospital admissions for COPD, all ages for NHS North Lincolnshire CCG



- Emergency (unplanned) hospital admissions represent the most urgent consequences of a health condition.
- During the last decade, the number of emergency admissions for COPD has fallen gradually from 384/100,000 in 2013/14 to 229 in 2020/21.
- This is equivalent to a fall of about 28 admissions per year.
- Admission rates for COPD in North Lincolnshire are consistently higher than the England average.

OHID 'Inhale' profile

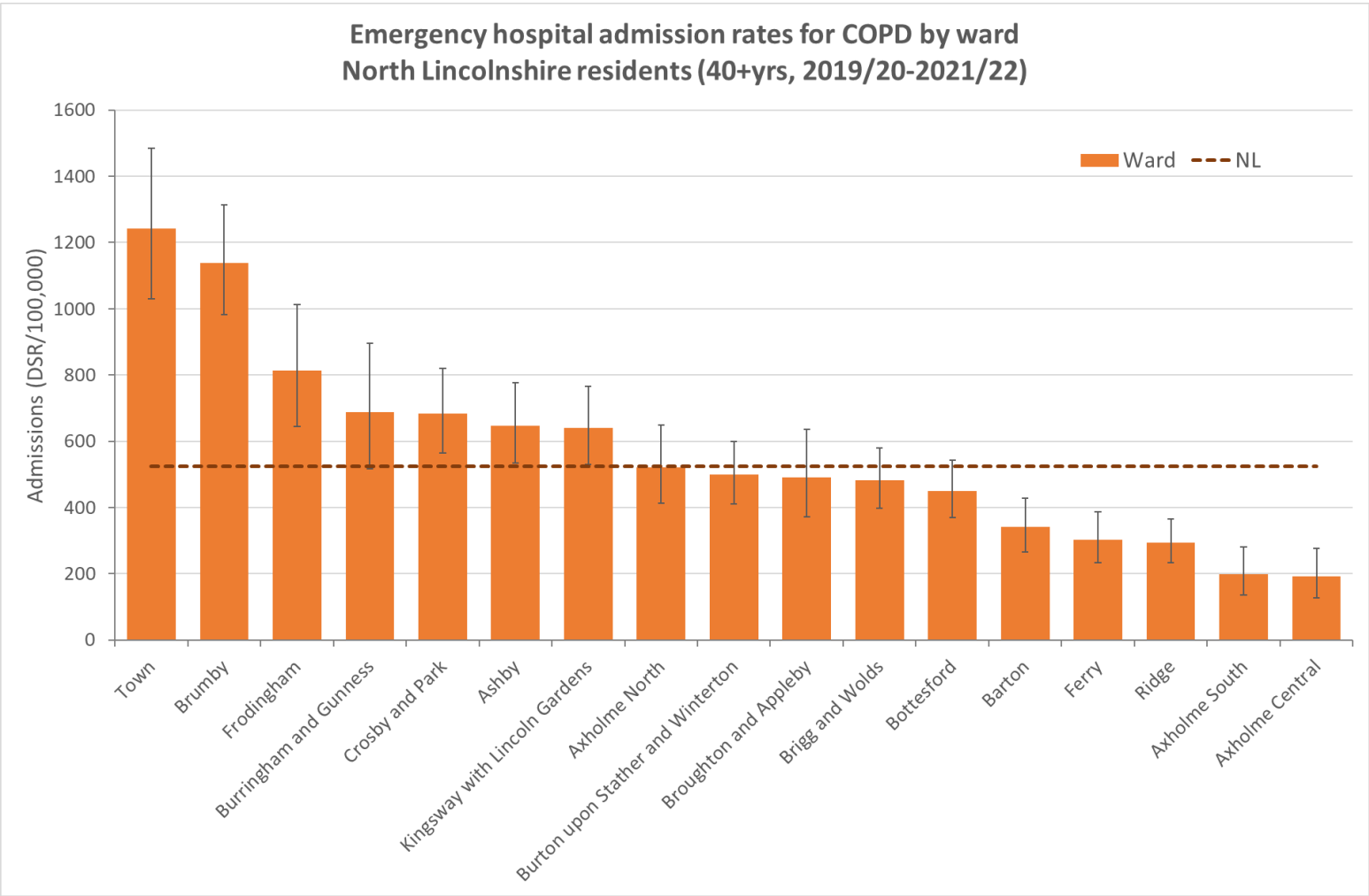
# Emergency COPD Admissions by Age



- Emergency hospital admission rates for COPD increase with age.
- Rates start to rise at 40 years with low numbers of patients below this age (<4/10,000).
- Rates peak at 85-89 years at 222/10,000 which is 25 times higher than for 40-45 year olds (9/10,000).
- Admission rates for male residents are predominantly higher than for females with nearly twice as many amongst 80-84 year olds.

Source: HES

# Emergency COPD Admissions by Ward

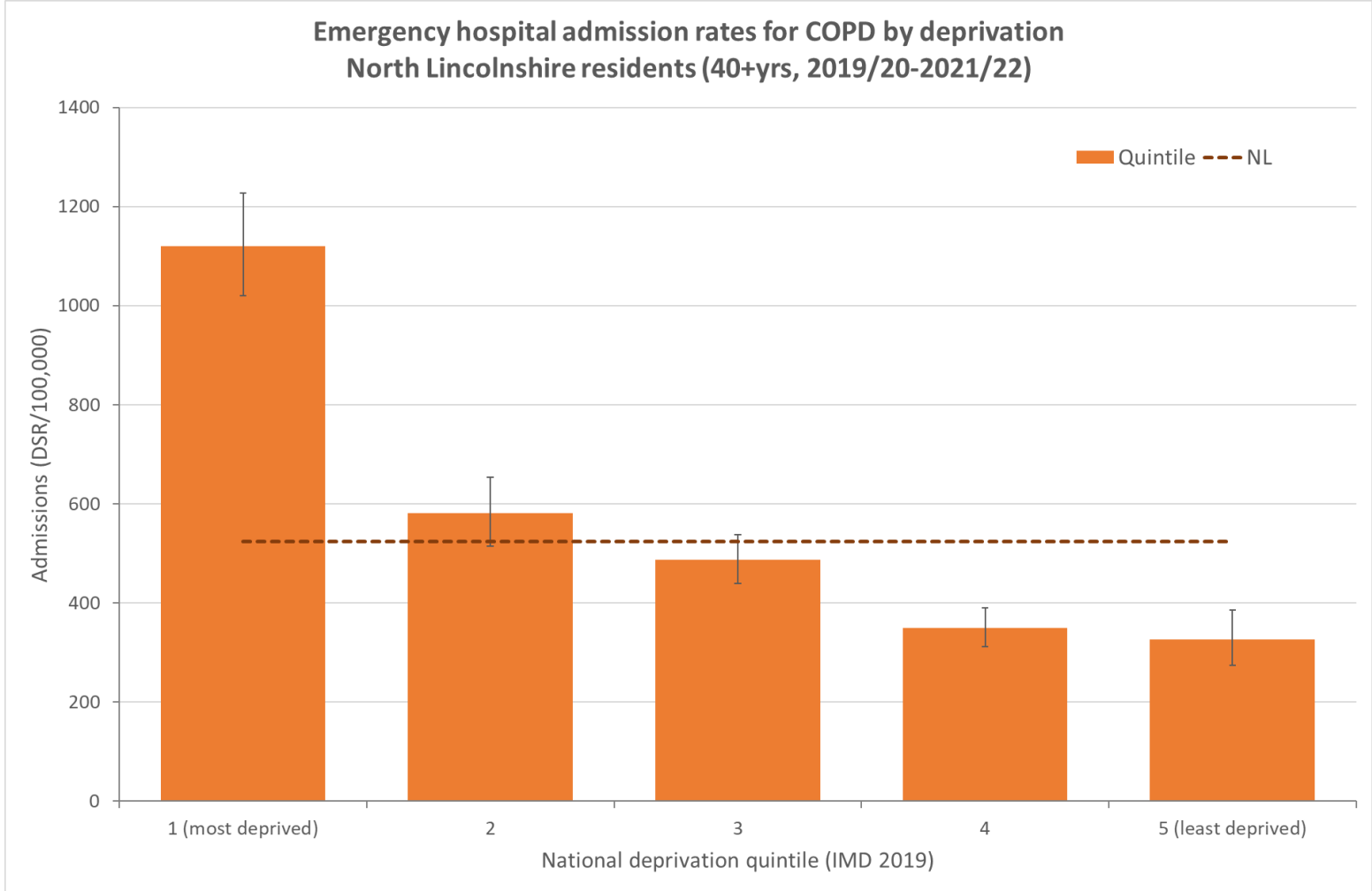


- Emergency hospital admission rates for COPD are highest in the most deprived wards of Scunthorpe and lowest in Central and South Axholme.
- Town, Brumby, Frodingham and Crosby and Park wards are all significantly above the average for North Lincolnshire (524/100,000).
- Admission rates in Town ward (1243/100,000) are 6.5 times higher than those for Axholme Central (192/100,000).

Source: HES



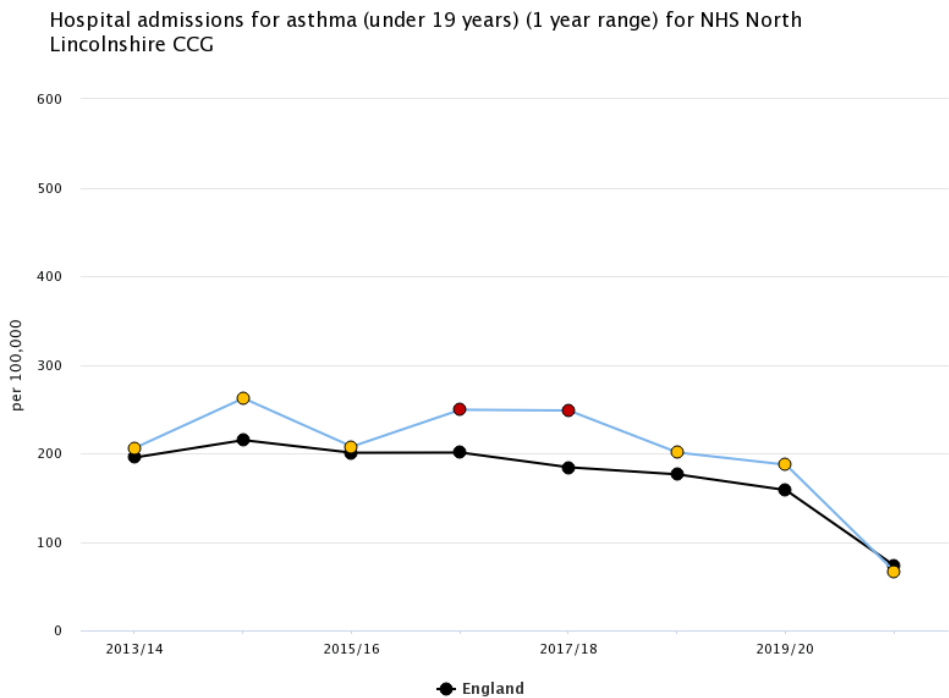
# Emergency COPD Admissions by Deprivation



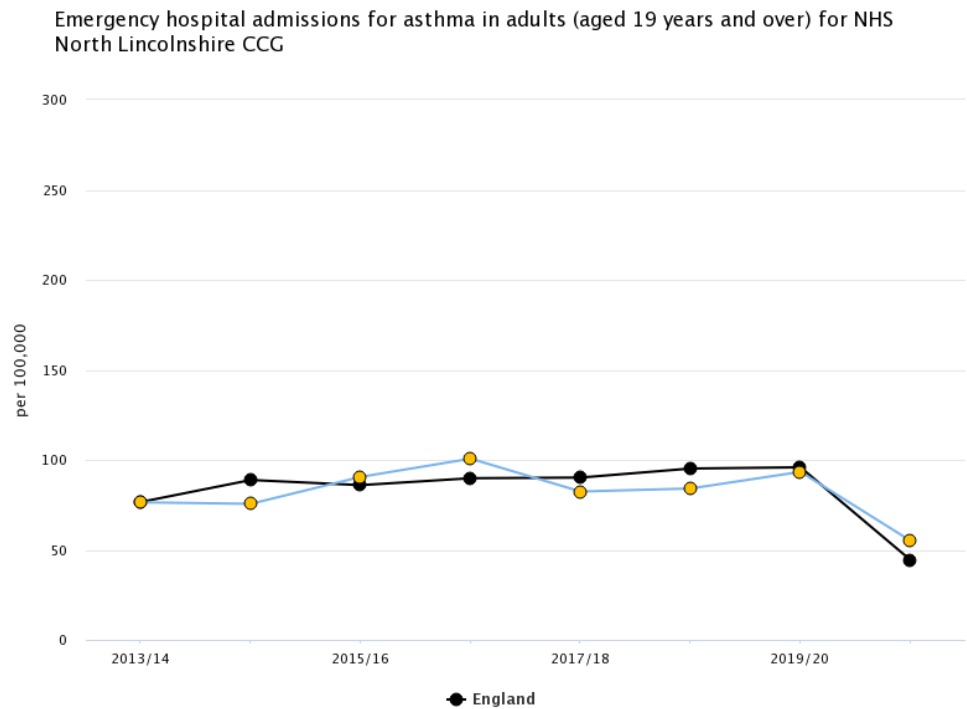
- Emergency hospital admission rates for COPD increase with increasing levels of deprivation.
- Rates in the 20% most deprived areas of England are significantly above the average for North Lincolnshire and those in the 40% least deprived areas are significantly lower.
- Admission rates in the most deprived areas (1121/100,000) are nearly 3.5 times higher than those in the least deprived areas (326/100,000).

Source: HES

# Admission Trends for Asthma

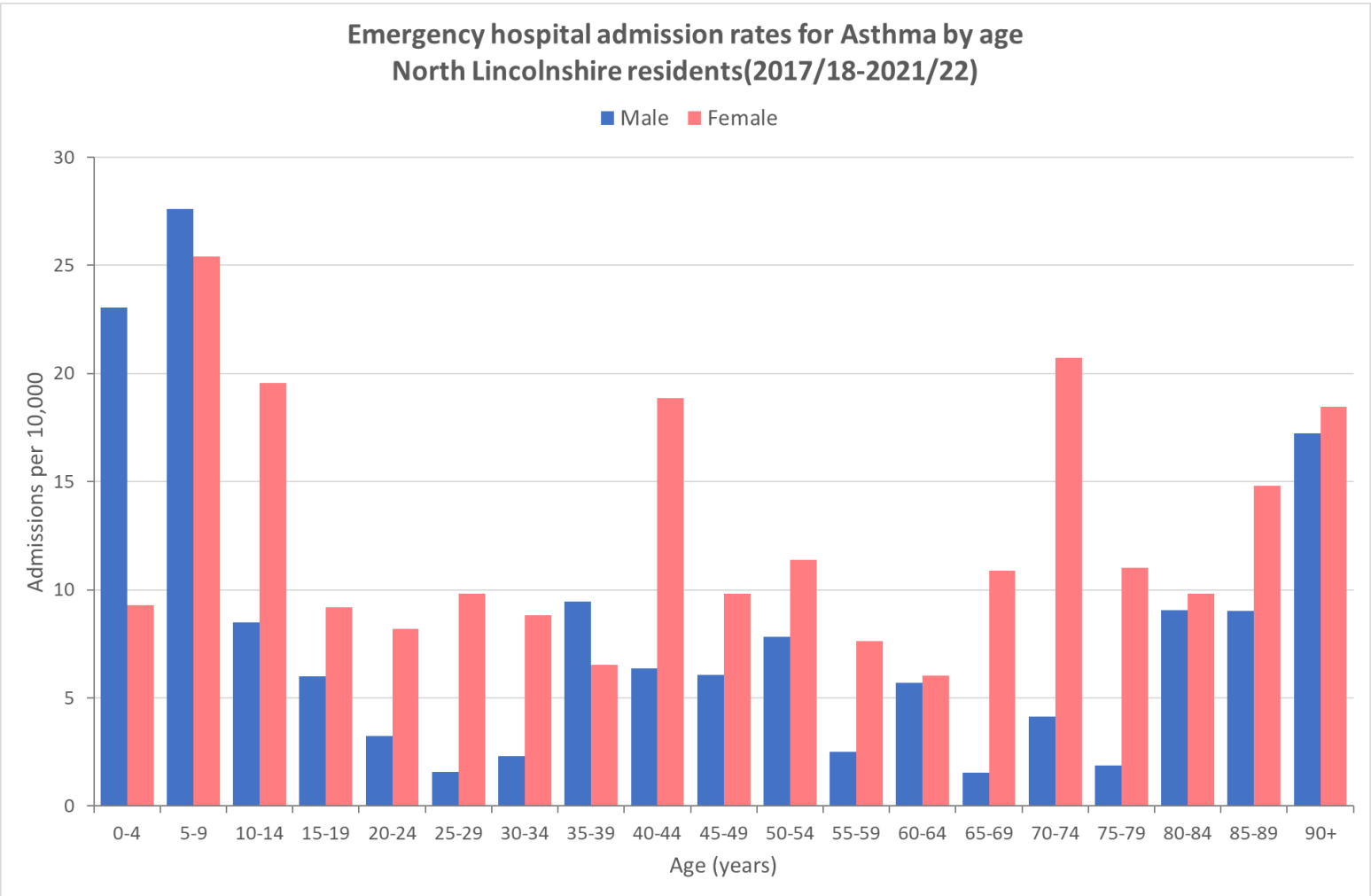


- During the last decade, emergency admissions for asthma in under 19yrs have fluctuated, rising above the England average in 2016/17 and 2017/18 and falling post 2018/19
- In 2019/20 and 2020/21 there were 70 and 25 emergency admissions respectively



- Between 2013/14 and 2019/20, admission rates for asthma in 19+yrs have remained steady before falling in 2020/21 in a pattern similar to the national average
- In 2019/20 and 2020/21 there were 135 and 75 emergency admissions respectively *OHID 'Inhale' profile*

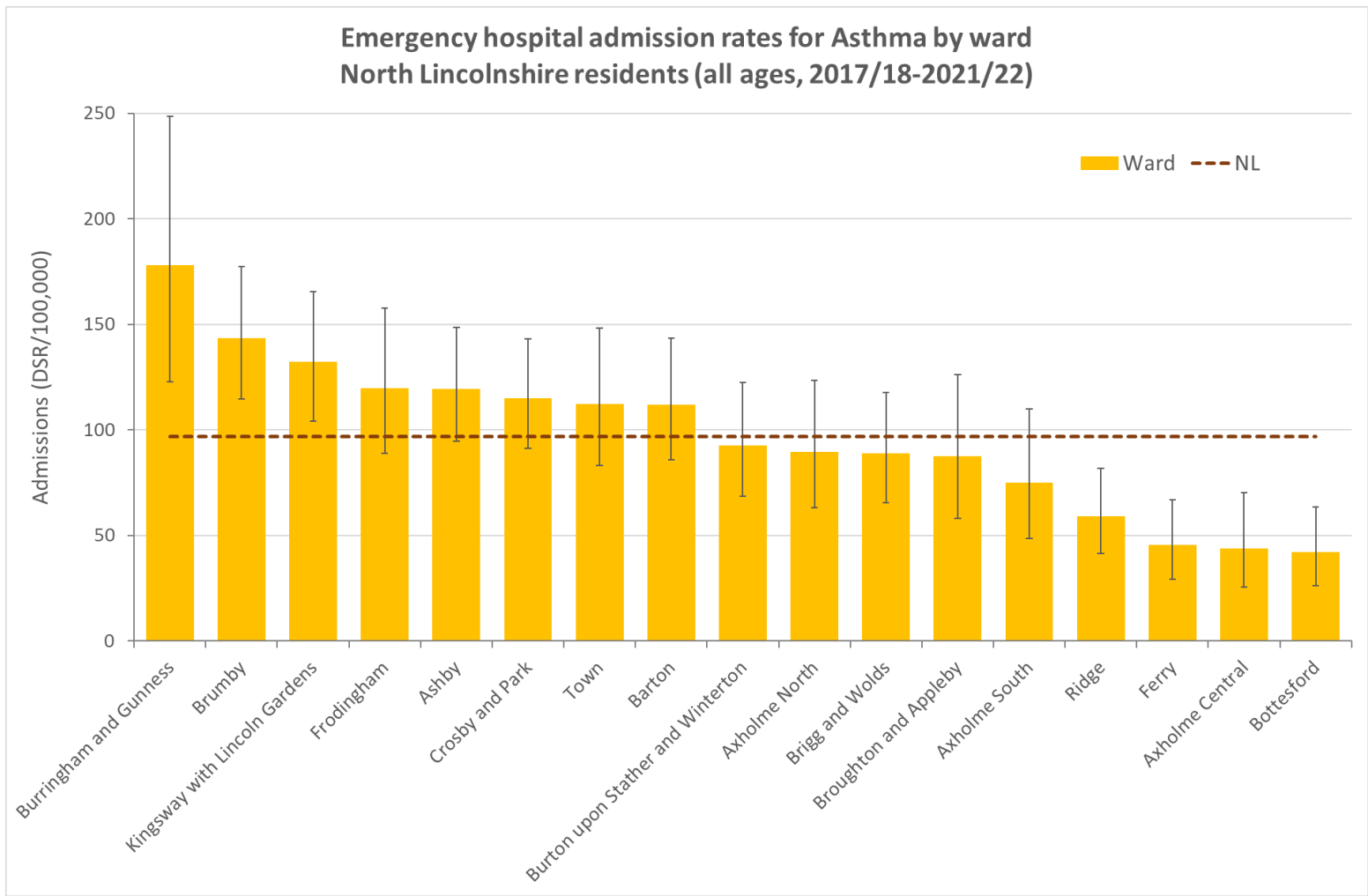
# Emergency Asthma Admissions by Age



- Emergency hospital admission rates for Asthma vary between age and gender.
- Admission rates amongst females are generally higher than males; up to 7 times for 65-69yrs.
- The highest rates overall are amongst 5-9 year olds at 27.6/10,000 for males and 25.4 for females.
- Rates for 10-14, 40-44, 70-74 and 90+ year old females are all above 19/10,000.

Source: HES

# Emergency Asthma Admissions by Ward

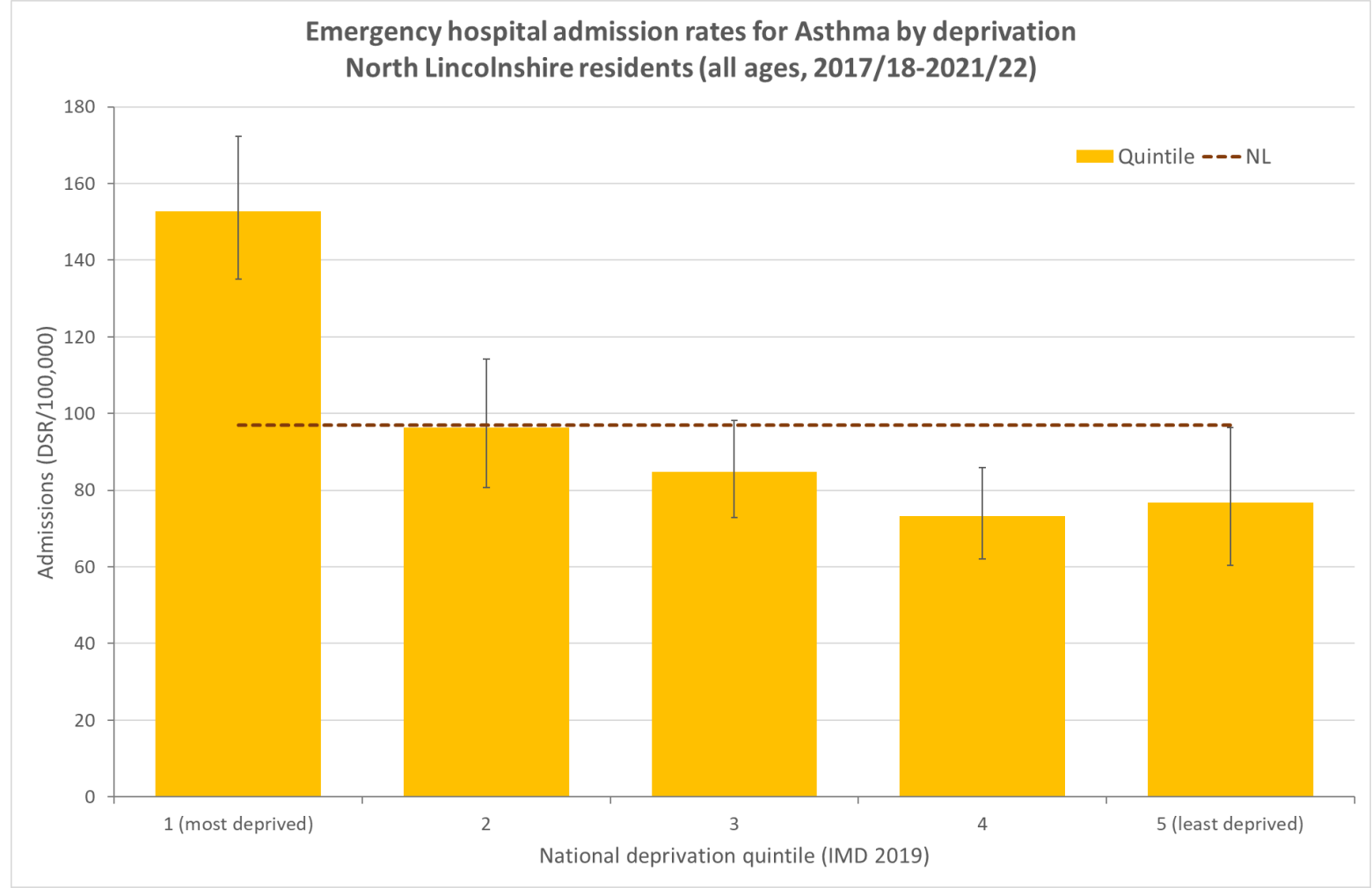


- Emergency hospital admission rates for asthma are highest in Burringham and Gunness ward and lowest in Bottesford.
- Burringham and Gunness, Brumby and Frodingham wards are all significantly above the average for North Lincolnshire (97/100,000).
- Admission rates in Burringham and Gunness ward (178/100,000) are 4 times higher than those for Bottesford ward (42/100,000).

Source: HES

# Emergency Asthma Admissions by Deprivation

Emergency hospital admission rates for Asthma by deprivation  
North Lincolnshire residents (all ages, 2017/18-2021/22)



- Emergency hospital admission rates for asthma are highest amongst the most deprived areas.
- Rates in the 20% most deprived areas of England are significantly above the average for North Lincolnshire and those in the 20% second least deprived areas are significantly lower.
- Admission rates in the most deprived areas (153/100,000) are twice those in the least deprived areas (74/100,000).

Source: HES

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