Respiratory Disease in Northamptonshire

JSNA Insight Pack
July 2019
The Northamptonshire JSNA

From 2019 the Northamptonshire JSNA will consist of a collection of three types of presentation, an Insight Pack, a JSNA Briefing Document and an In-Depth Needs Assessment. Definitions of these products are below. In addition other work that compliments the JSNA, or is of interest or is similar to the three types of product mentioned will be published alongside the JSNA products if it is appropriate and helpful to do so.

This is a JSNA Insight Pack focused on Respiratory Disease.

**Insight Pack**

An Insight Pack will highlight the key facts and local needs about a particular subject. This will be presented, where possible, in a very visual format with charts and infographics and will include relevant data produced with comparisons.

There will be a short narrative accompanying this which will provide an overview of the subject. This may result in recommendations for further, more detailed work in the JSNA programme.

**JSNA Briefing Document**

A JSNA Briefing Document is designed to provide an overview of a subject area, usually accompanied by an Insight Pack (though not all Insight Packs will be accompanied by a Briefing Document).

The Briefing Document will summarise the local needs, risk factors, current services in place, evidence to support commissioners and considerations and recommendations for local commissioning. This product may result in recommendations for more detailed analysis and/or an in-depth Needs Assessment.

**In-Depth Needs Assessment**

An In-Depth Needs Assessment will include a detailed analysis of the subject area. Typically this can take up to 6 months to deliver and will usually only be completed if it is either clear at the outset that one is required or a JSNA Briefing Document has been completed that recommended an In-Depth Needs Assessment be delivered.

Each full needs assessment will be delivered by a working group and truly delivered in partnership across all relevant organisations for the subject area.
Introduction

What is respiratory disease?

Respiratory diseases (RDs) are diseases of the airways and other structures of the lung (WHO). Among the most common are **chronic obstructive pulmonary disease (COPD)**, **asthma**, **occupational lung diseases** and **pulmonary hypertension**.

Respiratory disease affects one in five people and is the third biggest cause of death, after cancer and cardiovascular disease in England. Lung cancer, pneumonia and COPD (chronic obstructive pulmonary disease) are the biggest causes of respiratory disease death.

The annual economic burden of asthma and COPD is an estimated £5bn. Diseases of the lung, including lung cancer, have an estimated direct cost to the NHS of £11bn. Hospital admissions for lung diseases have risen over the last 7 years at three times the rate of general admissions and respiratory diseases are a major factor in the pressures faced by the NHS in winter; non-elective respiratory admissions double in the winter months.

Incidence and mortality rates from respiratory disease are highest in disadvantaged groups and in areas of high deprivation. The gap is widening and resulting in worse health outcomes for people in those groups. Deprived communities are more likely to smoke, be exposed to poorer quality air, have poorer housing and greater exposure to occupational hazards.

Definitions

A type of disease that affects the lungs and other parts of the respiratory system. Respiratory diseases may be caused by infection, by smoking tobacco, or by breathing in second-hand tobacco smoke, radon, asbestos, or other forms of air pollution. Respiratory diseases include asthma, chronic obstructive pulmonary disease (COPD), pulmonary fibrosis, pneumonia, and lung cancer.

**Chronic Obstructive Pulmonary Disease (COPD)** is not one single disease but an umbrella term used to describe chronic lung diseases that cause limitations in lung airflow. The more familiar terms 'chronic bronchitis' and 'emphysema' are no longer used, but are now included within the COPD diagnosis. The most common symptoms of COPD are breathlessness, or a ‘need for air’, excessive sputum production and a chronic cough. However, COPD is not just simply a “smoker’s cough”, but an under-diagnosed, life threatening lung disease that may progressively lead to death.

**Asthma** affects all age groups but often starts in childhood. It is a disease characterized by recurrent attacks of breathlessness and wheezing, which vary in severity and frequency from person to person. In an individual, they may occur from hour to hour and day to day.

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.

Local strategies

- Respiratory/Chest Clinic, Northampton General Hospital
- Local prescribing guidelines
- Northamptonshire STP Respiratory Priorities
- Be Clear on Cancer – Respiratory
- Breathing Space Northampton

National policies / legislation / Guidance

The NHS Long Term Plan set outs the ambitions for the NHS over the next 10 years, identifying respiratory disease as a clinical priority.

- NHS RightCare COPD pathway
- NICE Respiratory Disease Pathways
- NICE Guidance – respiratory disease
- Focussing on respiratory disease

- Dr Philip Getson
  
  Been coughing for 3 weeks? Tell your doctor.
  
  A persistent cough could be a sign of lung cancer. Finding it early makes it more treatable.
Overview

This page contains a summary of the key points raised within this pack.

Throughout this insight pack, colours are used to show statistical significance. The two methods will be a Red Amber Green (RAG) rating where indicators can be described as better or worse, or light blue, amber, dark blue.

The proportion of deaths in Northamptonshire attributable to respiratory disease is **14.2%** (2015-17).

In 2015 to 2017, **702 Northamptonshire residents** died from respiratory disease and *more than half of these are considered preventable.*

**In 2017-18 there were 584 emergency admissions per 100,000 for COPD**

**In 2017-18, 651 people were referred urgently where lung cancer was suspected**

**In 2015-17 there were 20.4 deaths per 100,000 from respiratory disease considered preventable**

**In 2017-18 there were 584 emergency admissions per 100,000 for COPD**

In 2015 to 2017, **702 Northamptonshire residents** died from respiratory disease and *more than half of these are considered preventable.*

**49 premature deaths could be prevented each year if Northamptonshire’s Respiratory Disease mortality rate matched the average of its statistical neighbours.**

**95 premature deaths could be prevented per year if Northamptonshire’s Respiratory Disease mortality rate matched that of Suffolk, the best performing of our statistical neighbours.**

**The number of Respiratory Disease related hospital admissions that could have been avoided had Northamptonshire performed at the national average.**

**2,057**

**Nearly 87,000 adults, 15.1% of the over 18 population, in Northamptonshire are smokers (2018).**

**8.7% of 15 year olds are smokers (2015). 6.2% smoke regularly, 2.5% occasionally.**

**13.1% of women in Northamptonshire were smokers at the time of delivery of their baby in 2017/18.**
Symptoms

Symptoms of COPD

Around 1 million people in the UK are diagnosed with COPD, it is estimated that double that number are affected by COPD but are undiagnosed.

There is no single diagnosis of COPD. Making a diagnosis relies on clinical judgement based on a combination of history, physical examination and confirmation of the presence of airflow obstruction using spirometry. A spirometer is a machine that measures the volume of air exhaled in one second and the total volume of air expelled. The readings obtained are compared with normal results for the age of the patient to determine if airways are obstructed.

NICE guidance suggests a diagnosis of COPD in people over 35 with a risk factor (most commonly a smoker or former smoker) presenting with one or more of the following:
- Breathlessness
- Chronic cough
- Regular sputum production
- Frequent winter bronchitis
- Wheezing.

Other symptoms can include:
- Weight loss
- Reduced exercise tolerance
- Waking at night with breathlessness
- Swollen ankles
- Fatigue.

The primary symptom of COPD is breathlessness, this can be measured with the Medical Research Council’s dyspnoea scale.

Symptoms of Asthma

Asthma affects around 5 million people in the UK.

NICE guidance suggests checking for the following in adults, young people and children in cases where asthma is suspected:
- Wheezing, coughing or breathlessness and any daily or seasonal variation in these symptoms
- Triggers that make symptoms worse
- A personal or family history of atopic disorders.

The guidance is at pains to stress that an objective test is required to diagnose asthma, not just symptoms or a history of atopic disorders.

Symptoms of Pneumonia

Pneumonia is swelling (inflammation) of the tissue in one or both lungs. It’s usually caused by a bacterial infection. At the end of the breathing tubes in your lungs are clusters of tiny air sacs. If you have pneumonia, these tiny sacs become inflamed and fill with fluid.

The symptoms of pneumonia can develop suddenly or over the course of several days and include:
- A cough, either dry or producing thick, perhaps blood stained, mucus
- Difficulty breathing
- Increased heart rate
- High temperature
- Sweating and shivering
- Chest pain
- Loss of appetite.
**Asthma**

Asthma is a respiratory condition that is caused by inflammation of the air passages in the lungs. Asthma is the most common long term condition in children and one of the biggest causes of hospital admissions amongst young people.

Untreated asthma is a risk factor for developing chronic respiratory diseases such as COPD.

An estimated 8.9% of the population of England have asthma, according to the Health Survey for England. Projected onto the population of Northamptonshire this equates to around 65,900 people.

Common symptoms of asthma include coughing, wheezing, a tightness in the chest and a feeling of shortness of breath.

Recorded asthma prevalence in Northamptonshire is 6.05%.

Asthma is more common in children and young people than in adults. Public Health England produce two asthma indicators related to the younger population; the rate of admissions to hospital for children aged 0 to 9 and young people aged 10 to 18 with a diagnosis of asthma. The trends for both indicators for Northamptonshire are static, but it’s worth noting that the rate in the youngest age group has moved from being statistically better than the national average to being similar between the last two data points, 2015/16 and 2016/17.

Asthma treatment commonly comes in the form of inhalers or tablets.

Inhalers can be used to relieve symptoms when they occur, prevent symptoms from developing or a combination of both. Reliever inhalers are for occasional use, preventer and combination inhalers are used daily.

There are three main types of tablet medication, LTRA, theophylline and steroids. All need to be taken daily.
Causes and Risk Factors

Asthma and COPD are chronic (long-term) respiratory diseases that cannot be cured. While childhood symptoms of asthma can go into remission in adulthood, symptoms of COPD usually get worse. Many people are unaware they have a respiratory disease.

The NHS identifies the main causes of respiratory disease as the following:

**Smoking**

Smoking is the main cause of COPD and is thought to be responsible for 9 of every 10 cases. Avoiding smoking, or quitting, is the most effective way to minimise the risk of developing respiratory disease.

**Air pollution**

Air pollution can exacerbate symptoms of COPD and asthma. Research also suggests that long-term exposure to air pollution can contribute to the development of some lung conditions such as lung cancer and development of asthma. It’s unclear yet whether UK levels of outdoor air pollution has a role in causing COPD. (British Lung Foundation)

**Fumes and dust at work**

Fumes and dust at work such as exposure to chemicals and dusts like cadmium, grain and flour dust, silica, fumes from welding and coal dust

**Genetics**

Approximately 1 in 100 people with COPD have a genetic tendency to alpha-1-antitrypsin deficiency. Alpha-1-antitrypsin is a substance that protects the lungs, a deficiency leaves the lungs more vulnerable to damage.
Risk factors – Smoking

Tobacco is the leading risk factor for ill-health and deaths in Northamptonshire. Smoking is attributable to 935 deaths in 2017 and accounts for 6,244 years lived in disability for the local population (Global Burden of Disease, 2017).

Nearly **87,000** adults, **15.1%** of the over 18 population in Northamptonshire are smokers (2018).

Amongst people in manual or routine occupations this percentage rises to **20.6%**. Smoking rates are almost three times higher amongst the lowest earners compared to the highest earners.

15.5% of people attending a health check identified as being a smoker.

8.7% of **15 year olds** are smokers (2015), **6.2%** smoke **regularly** and **2.5%** occasionally.

**Smoking related indicators**

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking attributable hospital admissions per 100,000 people (2017/18)</td>
<td>1,748</td>
</tr>
<tr>
<td>Emergency hospital admissions for COPD in 2017/18</td>
<td>584</td>
</tr>
<tr>
<td>Deaths per 100,000 people from COPD (2015-17)</td>
<td>58.6</td>
</tr>
<tr>
<td>Smoking attributable deaths from heart disease per 100,000 people (2015-17)</td>
<td>24.1</td>
</tr>
<tr>
<td>Deaths from oral cancer per 100,000 people (2015/17)</td>
<td>3.8</td>
</tr>
<tr>
<td>Potential years of life lost due to smoking related illnesses per 100,000 people (2015-17)</td>
<td>1,469</td>
</tr>
<tr>
<td>Smoking attributable deaths from stroke per 100,000 people (2015-17)</td>
<td>8.2</td>
</tr>
<tr>
<td>Deaths from lung cancer per 100,000 people (2015-17)</td>
<td>55.5</td>
</tr>
</tbody>
</table>

The proportion of people smoking is decreasing across the country and this trend is replicated in Northamptonshire as a whole. It decreases in four of Northamptonshire’s seven boroughs and districts; Corby, Daventry and Wellingborough have seen an increase in the proportion of smokers from 2017 to 2018.

**RAG Rating Key**
- Red – Statistically worse than national benchmark
- Amber – Statistically similar to national benchmark
- Green – Statistically better than national benchmark

8.7% of 15 year olds are smokers (2015), 6.2% smoke regularly and 2.5% occasionally.
Tobacco smoking is the leading risk factor in disability and early death. The younger the age of smoking uptake the greater the harm is likely to be.

13.2%, around 1 in 8 people who completed a health check were identified as smokers in 2018/19 and this presents an opportunity to refer on to smoking cessation services.

Proportion of residents setting a quit date with a stop smoking service who quit, did not quit or their quit status is unknown, 2018/19 (Source – Quit Manager 2019)

<table>
<thead>
<tr>
<th>Location</th>
<th>% who quit</th>
<th>% who did not quit</th>
<th>% unknown/lost to follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corby</td>
<td>35.6%</td>
<td>24.6%</td>
<td>42.8%</td>
</tr>
<tr>
<td>Daventry</td>
<td>33.4%</td>
<td>22.7%</td>
<td>43.9%</td>
</tr>
<tr>
<td>East Northants</td>
<td>38.6%</td>
<td>19.9%</td>
<td>41.5%</td>
</tr>
<tr>
<td>Kettering</td>
<td>37.5%</td>
<td>20.7%</td>
<td>41.8%</td>
</tr>
<tr>
<td>Northampton</td>
<td>35.3%</td>
<td>17.7%</td>
<td>47.0%</td>
</tr>
<tr>
<td>South Northants</td>
<td>38.2%</td>
<td>17.2%</td>
<td>45.6%</td>
</tr>
<tr>
<td>Wellingborough</td>
<td>38.6%</td>
<td>15.3%</td>
<td>48.5%</td>
</tr>
<tr>
<td>Northamptonshire</td>
<td>35.8%</td>
<td>18.9%</td>
<td>45.3%</td>
</tr>
</tbody>
</table>

Proportion of pregnant residents setting a quit date with a stop smoking service who quit, did not quit, or their quit status is unknown in Northamptonshire, 2018-19

<table>
<thead>
<tr>
<th>Location</th>
<th>% who quit</th>
<th>% who did not quit</th>
<th>% unknown/lost to follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northamptonshire</td>
<td>47.3%</td>
<td>23.7%</td>
<td>29.0%</td>
</tr>
</tbody>
</table>

The costs of hospital admissions attributed to smoking in 2017/18 for Northamptonshire are nearly £13.4 million. This equates to £33.40 per capita, the highest published in the East Midlands. The national per capita burden is £28.40.
Nickel compounds are human carcinogenic effects. Lung cancer is most obviously linked to exposure to PAHs through inhaled air.

Arsenic (As) is a toxic element emitted into the atmosphere in the form of particulate matter. Historically the largest source was coal combustion but as this has declined, the use of wood treated with preservatives containing As has become the most significant component of As emissions.

Effect - Acute inhalation exposure to high levels of arsenic primarily affects the respiratory system and can cause coughs, sore throat, breathlessness and wheezing. Long term inhalation exposure is associated with toxic effects on the respiratory tract and can cause lung cancer.

Nickel (Ni) is a toxic metallic element found in ambient air as a result of releases from oil and coal combustion, metal processes, manufacturing and other sources.

Effects - Nickel compounds are human carcinogens caused by inhalation exposure. Long-term exposure may lead to respiratory diseases and cancers.

Particulate Matter: PM2.5. Has the same sources as PM10. Road transport becomes an increasingly important sector as the particle size decreases.

Effects - Fine particulate matter can penetrate deep into the lungs and research in recent years has strengthened the evidence that both short-term and long-term exposure to PM2.5 is linked with a range of ill-health outcomes including (but not restricted to) respiratory and cardiovascular effects. The burden can be represented as a loss of approximately six months life expectancy from birth. (Source: COMEAP 2010).

Ozone (O3) is a secondary pollutant produced by the effect of sunlight on NOx and VOCs* from vehicles and industry. Ozone concentrations are greatest in the summer on hot, sunny, windless days. O3 can travel long distances, accumulate and reach high concentrations far away from the original sources.

Effects - A respiratory irritant: short-term exposure to high ambient concentrations can cause inflammation of the respiratory tract and irritation of the eyes, nose, and throat. High levels may exacerbate asthma or trigger asthma attacks in susceptible people and some non-asthmatic individuals may also experience chest discomfort whilst breathing.

Risk factors – Air Quality

There are 8 Air Quality Management Areas (AQMA) in Northamptonshire. Seven are in Northampton and are shown in blue on the map. The eighth is the A5 through Towcester.

Local Air Quality in Northamptonshire

Air pollution: fine particulate matter

The main pollutants of concern in Northamptonshire, as in most areas of the UK, are associated with road traffic, in particular Nitrogen Dioxide (NO2) and particulate matter (PM) at locations close to busy, congested roads where people may live, work or shop. Vehicle emissions are the main contributing factor, particularly diesel exhausts.

Sources - Local analysis of Global Burden of Disease data for 2017, NCC; Fingertips

Public Health Northamptonshire

RAG Rating Key
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Risk factors – Air Quality

DEFRA have one air monitoring station in Northamptonshire, located near Spring Park to the north of the town. The graph on the right shows the level of pollutants in the air during a typical week, in this case the third week of June 2019.

An interactive version of this graph with more detail and other date ranges can be found here.

The graph to the left shows the annual percentage of deaths from all causes that can be attributed to long term exposure to current levels of PM2.5 fine particulates. PM2.5 is commonly comprised of dust, ash and soot emitted from the combustion of solid and liquid fuels, for example for power generation, domestic heating and vehicle engines.

In 2017, 5.3% of deaths in Northamptonshire could be attributed to these fine particles. This is similar to the national average of 5.1%. Northampton has the highest percentage at 5.6%, Daventry the lowest at 4.9%.

Certain industrial installations that have the potential to cause pollution are required to have a pollution permit before they operate. There are three types of classification, A1 installations, regulated by the Environment Agency, and A2 and Part B installations regulated by local authorities.

The local authority public registers can be downloaded at the links below.

Corby District Council
Daventry District Council
East Northamptonshire Council
Kettering Borough Council
Northampton Borough Council
South Northamptonshire District Council
The Borough Council of Wellingborough

More information about the Environment Agency A1 register is available here.

The Environment Agency registers can be searched here.
Prevalence

GPs keep a register of people with a recorded diagnosis of COPD and Asthma. This information is submitted as part of the Quality and Outcome Framework (QOF) data.

Recorded COPD prevalence is shown below with Nene CCG having significantly lower and Corby CCG significantly higher prevalence.

Asthma data is shown on the right and shows that Corby CCG is significantly lower and Nene CCG significantly higher than England for recorded Asthma prevalence.

It is important to note that this is only recorded prevalence and therefore does not necessarily represent population prevalence as there will be some of the population undiagnosed.
Prevalence

The maps shown on this page illustrate the estimated recorded prevalence of COPD and Asthma across Northamptonshire by Middle Layer Super Output Layer (MSOA). Both conditions have higher prevalence in the more urban and more deprived areas of the county, this is shown by the darker colours on the maps.
QOF Prevalence – GP practice level

The figure below compares the number of people estimated (diagnosed and undiagnosed) to have COPD in 2015 (blue) with those recorded in 2017/18 (grey diamonds) in each GP practice.

For a full summary of all GP practices please see the tables at the end of this document.

There are no estimates of undiagnosed asthma prevalence at GP practice level, but the chart below shows the prevalence for each practice compared to the prevalence for England, highlighting those practices that are significantly above and below average.
The management of respiratory conditions is recorded as part of the QOF data. The charts below show those who have had diagnosis confirmed by spirometry and those who have had a review and assessment of breathlessness by GP practice. Light blue indicates a statistically significant higher percentage of people diagnosed than England and dark blue indicates statistically significant lower percentage. For a full summary of all GP practices please see the tables at the end of this document.
Treatment

The chart below shows the percentage COPD patients who have received influenza immunisation by GP practice. For a full summary of all GP practices please see the tables at the end of this document.

The second chart shows the percentage of asthma patients who have had a review in the preceding 12 months.
The intention of exception reporting is to allow practices to ‘achieve’ quality improvement indicators without being penalised for patient-specific clinical circumstances or other reasons beyond their control.

The overriding principle is that blanket exception reporting is not acceptable and individual decisions based on clinical judgment should be made.


Rates of exception reporting for COPD and asthma in Northamptonshire are significantly higher than the national average. Further review is recommended to ensure there is no unjustified variation locally.

![Exception rate (%) for COPD indicators 2017/18](image)

<table>
<thead>
<tr>
<th>Region</th>
<th>Exception Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northamptonshire STP</td>
<td>14.7</td>
</tr>
<tr>
<td>NHS Corby CCG</td>
<td>12.5</td>
</tr>
<tr>
<td>NHS Nene CCG</td>
<td>15.1</td>
</tr>
</tbody>
</table>

![Exception rate (%) for Asthma indicators 2017/18](image)

<table>
<thead>
<tr>
<th>Region</th>
<th>Exception Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northamptonshire STP</td>
<td>7.6</td>
</tr>
<tr>
<td>NHS Corby CCG</td>
<td>4.6</td>
</tr>
<tr>
<td>NHS Nene CCG</td>
<td>7.9</td>
</tr>
</tbody>
</table>

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- Green – Statistically better than national benchmark
Flu is a potentially fatal lung disease. People with chronic lung disease are significantly more likely to get flu and are more likely to need hospitalised if infected.

The annual flu immunisation programme is a critical component of the system-wide approach to managing demand for health and social care and ensuring a more robust and resilient health and social care service; helping to reduce unplanned hospital admissions and prevent avoidable deaths; and reduce the impact on wider economy due to increased work-force absenteeism (BLF, 2019).

The following eligible groups are offered flu vaccination and monitored for immunisation uptake:
- people aged 65 years of age and above
- people under 65 years of age with long term conditions
- pregnant women
- carers (formal/informal)
- other groups including children aged between 2-9 years of age.

Increased uptake of vaccination in all groups will contribute to:
- Reducing the risk of hospitalisation due to pneumonia
- Reducing mortality where Influenza related pneumonia is an underlying cause
- Decreased risk of flu in late pregnancy
- Reduced hospitalisation among infants whose mother received the vaccination
- Decreased risk of premature and small-for-gestational-age births
- Achieve cost benefits due to a reduction in emergency admissions
- Improve the occupational health programme, thereby reducing the likelihood of developing flu amongst staff, resulting in lower absenteeism of the workforce and reduced transmission of infection to the ‘at risk’ population.

**Seasonal flu vaccine uptake (GP) 2018/19**

<table>
<thead>
<tr>
<th>Group</th>
<th>Uptake 2018/19</th>
<th>National Benchmark 2017/18</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 year olds</td>
<td>48.5%</td>
<td>(50%, England – 43.8%)</td>
<td></td>
</tr>
<tr>
<td>Pregnant women</td>
<td>40.9%</td>
<td>(40.7%, England – 45.2%)</td>
<td></td>
</tr>
<tr>
<td>3 year olds</td>
<td>48.3%</td>
<td>(43%, England – 45.9%)</td>
<td></td>
</tr>
<tr>
<td>People with respiratory</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>disease</td>
<td>46.6%</td>
<td>(48.3%, Target – 55%)</td>
<td></td>
</tr>
<tr>
<td>Under 65 and at risk</td>
<td></td>
<td>(47.2%, England – 48%, Target 55%)</td>
<td></td>
</tr>
<tr>
<td>2 and 3 year olds</td>
<td>48.4%</td>
<td>(43.5%, England – 44.9%)</td>
<td></td>
</tr>
<tr>
<td>65 and over</td>
<td>70.2%</td>
<td>(71%, England – 72%, Target 75%)</td>
<td></td>
</tr>
</tbody>
</table>
Flu immunisation

Seasonal flu vaccine uptake in at risk adults aged 16-64 years 2017-18 and 2018-19 in Northamptonshire. Source: Immform & PHE, 2019

Seasonal flu vaccine uptake in adults 2017-18 and 2018-19 in Northamptonshire. Source: Immform & PHE, 2019

- Flu immunisation uptake in various at-risk groups:
  - 65 and over
  - At-risk under 65
  - Total + pregnant women
  - Total carers

- Comparison of uptake across years (2017/18 vs. 2018/19) and targets.

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Public Health Northamptonshire
Northamptonshire Health & Wellbeing Board
Northamptonshire County Council
There are many different diseases that are included in the definition of respiratory disease. Some diseases are more likely to result in an emergency admission than others. The proportions are shown in the chart to the right.

In the three year period between 2015/16 to 2017/18, Pneumonia was the largest cause (26%) of emergency admissions, followed by other acute lower respiratory infections (24%). COPD is the next largest portion with 17%.

In the period shown, influenza was responsible for only 1% of emergency admissions; the proportion could become significantly larger in an epidemic year.
Hospital admissions

Directly standardised rates of emergency admission for respiratory disease by district are shown in the chart below. The rates have been calculated for a three year period and have been directly age standardised per 100,000 population to account for the variation of different age structures across the areas. Corby, Kettering, Northampton and Wellingborough have significantly higher rates than the overall rate for Northamptonshire and Daventry. East and South Northamptonshire have significantly lower rates.

Directly standardised rates of emergency admission for respiratory disease by GP practice are shown in the chart below. The rates have been calculated for a five year period (to ensure numbers are large enough) and have been directly age standardised per 100,000 population so that practices with different age structures can be compared. Those with a significantly higher rate than the overall rate for Northamptonshire GPs are shown in red and those with significantly lower rates are shown in green.
Hospital admissions

Emergency admission for respiratory disease are shown in the maps on this page.

The first map shows the areas (MSOAs) with the highest rates of admission divided into 5 equal groups with those that have the highest rate of admission in the darkest blue. The rates have been age standardised per 100,000 population over a three year period, so the difference is not simply due to different age structures (as the very young and very old are more likely to be admitted).

The GP practices have been shown on this first map in 3 colours, green if they have significantly lower rates, red if significantly higher, and amber if not significantly different to Northamptonshire as a whole. The rates for GPs are for a five year period.

The second map to the far right shows the areas (MSOAs) in three colours highlighting those that have significantly higher (red), not significantly different (white), and lower (green) rates of emergency respiratory admissions than Northamptonshire as a whole.
Hospital admissions

The previous pages have shown all respiratory diseases, but in order to show individual respiratory diseases at district level it is usually necessary to pool 3 years of data. COPD is an exception as it is shown as a single year on PHE fingertips for people aged 35+ (see chart below).

Northamptonshire had a significantly higher emergency rate of admission for COPD than England in 2017/18. Daventry and South Northamptonshire had significantly lower rates than England while the remaining districts all have significantly higher rates.

Rates of admission for respiratory tract infections in infants in Northamptonshire are significantly higher than England in all age groups shown (above right).

The final three charts show district rates for COPD, Asthma and Pneumonia. In each case they are age standardised to all ages, and have used three years data (2015/16 – 2017/18). Northampton has significantly higher rates and Daventry and East Northants significantly lower rates than Northamptonshire for all three diseases. Corby and Wellingborough have significantly higher rate and South Northants have significantly higher rates than Northamptonshire for COPD and Pneumonia.
Deaths

Under 75 mortality from respiratory disease 2015-17 (DSR per 100,000) - Northamptonshire and nearest statistical neighbours

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The rate of mortality from respiratory disease considered preventable in under 75’s is also similar in Northamptonshire to the national average (2016), but variation is shown across districts.

The proportion of deaths in Northamptonshire attributable to respiratory disease is 14.2%, this is similar to the national average (2015-17). The rate of premature mortality (per 100,000 population) is similar to the national average.

However, in 2015 to 2017, 702 Northamptonshire residents died from respiratory disease and more than half of these are considered preventable.

The rate of deaths per 100,000 population from COPD is significantly higher in Northamptonshire than the national benchmark (2015-17). This is as a result of a high rate in Corby; the highest of all the boroughs and districts in the country. The other districts are statistically similar to the national average.

RAG Rating Key
Red – Statistically worse than national benchmark
Amber – Statistically similar to national benchmark
Green – Statistically better than national benchmark
Deaths

Lung cancer mortality rate 2014-2018 by district, DSR per 100,000 population (source: PCMD and NHS Digital 2019)

Northamptonshire GP average

RAG Rating Key
Red – Statistically worse than national benchmark
Amber – Statistically similar to national benchmark
Green – Statistically better than national benchmark

Northamptonshire Health & Wellbeing Board

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Created by Public Health Intelligence, Northamptonshire County Council

NB: Rate not calculated for practice K83081 (Summerlee Medical Centre) due to low numbers. Value for K83081 has been merged from Earls Barton Medical Centre and Penvale Park Medical Centre.

Practice info can be found here

49 premature deaths could be prevented each year if Northamptonshire’s respiratory disease mortality rate matched the average of its statistical neighbours.

95 premature deaths could be prevented per year if Northamptonshire’s respiratory disease mortality rate matched that of Suffolk, the best performing of the statistical neighbours.

2,057 the number respiratory disease related hospital admissions that could have been avoided had Northamptonshire performed at the national average.
Spend

The RightCare pack for respiratory disease identifies high spend per 1,000 population across the two CCGs compared to the national average.

Spend is high for COPD, significantly higher than the national average for both CCGs but highest in the country for Corby per 1,000 population; more than double the lowest spend CCGs in their comparator group. Non-elective spend is significantly higher for both CCGs and elective spend is significantly higher for Corby CCG.

Spend is also significantly higher per 1,000 population for acute and chronic lower respiratory infection, Corby CCG has the highest spend in the country. Spend was also high for Corby CCG for influenza and pneumonia.

Non-elective spend per 1,000 age-sex weighted population, 2017/18

Non-elective spend in Nene and Corby CCGs were significantly higher than the national average (£34,766 per 1,000 population for Nene, £48,391 for Corby, £30,943 for England).

The non-elective spends in Nene and Corby were the highest compared to 10 similar CCGs in their comparison groups. Spend in Corby was the 5th highest across all CCGs in the country.

Total spend per 1,000 age-sex weighted population, 2017/18

Total spend on respiratory diseases for both Nene and Corby CCGs was significantly higher than the England average (£55,052 per 1,000 for Corby, £39,469 per 1,000 for Nene, £35,412 per 1,000 for England).

Spend in Nene and Corby was the highest compared to 10 similar CCGs in their comparison groups.

Elective spend per 1,000 age-sex weighted population, 2017/18

Elective spend in Corby CCG was significantly higher than the national average and the 4th highest across all CCGs in the country (£6,697 per 1,000 for Corby and £4,469 for England).

The elective spend in Nene CCG was similar to the national average, but it was the 5th highest in the comparison group (£4,713 per 1,000 for Nene).

An elective admission is planned in advance with a patient attending hospital on a pre-arranged date for a procedure. These admissions can be either overnight admissions or day cases (where patients are admitted and discharged from hospital on the same day). Non-elective admissions are typically emergency admissions into hospital and can be either day cases or overnight admissions and also include transfers within hospitals or maternity admissions.
Spend by condition

**Obstructive Airways Disease** – Total spend on obstructive airways disease in Nene and Corby CCGs was significantly higher than the national average. £5,528 per 1,000 for Nene CCG, £11,685 for Corby CCG, £4,161 for England (total spend per 1,000 age-sex weighted population 2017/18).

**Acute lower respiratory infection** - Total spend on acute lower respiratory infection in Nene and Corby CCGs was significantly higher than the national average. £8,879 per 1,000 for Corby CCG, £6,137 for Nene CCG, £4,042 for England (total spend per 1,000 age-sex weighted population 2017/18). Spend in Corby CCG was the highest across all CCGs in the country.

**Chronic lower respiratory** - Total spend on chronic lower respiratory disease in Nene and Corby CCGs was significantly higher than the national average. £13,222 per 1,000 for Corby CCG, £7,287 for Nene CCG, £6,054 for England (total spend per 1,000 age-sex weighted population 2017/18).

**Influenza and pneumonia** - Total spend on influenza and pneumonia in Corby CCG was significantly higher than the national average (£19,142 per 1,000 for Corby CCG and £14,037 for England) and the highest out of its CCG comparator group. Nene CCG’s spend was similar to the national average (£14,193 per 1,000).

**Obstructive Airways Disease - elective** - Elective spend on obstructive airways disease in Corby CCG was significantly higher than the national average, and was the highest across all CCGs in the country (£625 per 1,000 for Corby CCG, £150 for England).

**Obstructive Airways Disease – Non-elective** - Non-elective spends on obstructive airways disease for both Nene and Corby CCGs was significantly higher than the national average (£5,378 per 1,000 for Nene CCG, £11,041 for Corby CCG, £4,012 for England), and were the highest compared to other CCGs in their comparison groups. Spend in Corby CCG was the highest in all CCGs in the country.

**Acute upper respiratory infection – Non-elective** - Non-elective spend on acute upper respiratory infection for Nene and Corby CCGs was significantly higher than the national average (£1,356 per 1,000 for Nene CCG, £1,397 for Corby CCG, £1,188 for England).

**Pneumonia – Non-elective** - Non-elective spend on pneumonia for Corby CCG was significantly higher than the national average (£17,965 per 1,000 for Corby CCG, £12,955 for England).

The largest opportunities for highest cost savings by RightCare include total spend for asthma, acute upper respiratory infections, chronic upper respiratory infections, lung diseases due to external agents, other diseases of pleura. More information can be obtained by contacting the **RightCare local delivery partner**.
**Best practice / Evidence**

**NHS RightCare COPD pathway**

Commissioners responsible for COPD for their population should:

- Focus on the key components for COPD care across a system;
- Ensuring early detection with accurate diagnosis
- Optimising long-term management to reduce exacerbations, hospital admissions and premature mortality.

Work across the system to ensure that all **priorities to optimisation** are in place including the cross cutting themes;

- Multidisciplinary supportive care approach
- Signposting and care navigation
- Psychological support, including for frightening breathlessness
- Community activation to overcome social isolation and stay physically active, including peer support
- Self-management plan supported by good information and patient training.

**PHE - Respiratory Disease: applying all our health**

Interventions;

**Population level**
- Raising awareness of health issues and influencing policies that affect health
- Minimising the impact of seasonal temperature on health by using the cold weather plan and heatwave plan.

**Community level**
- Supporting patients to quit smoking through direct action and referral and the uptake of flu and pneumonia vaccinations to reduce complications and avoidable hospital admissions
- Referring patients to pulmonary rehabilitation when appropriate; this is a treatment that has been shown to reduce admissions, improve exercise capacity and quality of life
- Supporting post-discharge to ensure patients who have been admitted to hospital with an exacerbation of COPD or asthma attack are given support to prevent readmissions.

**Family and individual level**
- Promoting and checking inhaler techniques in all children and adults on an annual basis
- Following NICE Quality Standard QS43 for smoking cessation advice and support
- Providing a personalised action plan for all patients as these reduce readmission rates, increase patient wellbeing, and reduced attacks.

**NHS England Long Term Plan – Focus on Respiratory**

Commitments outlines;

- Enable early and accurate diagnosis of respiratory diseases, by supporting the training of staff to deliver tests such as spirometry
- Expand pulmonary rehabilitation services across the country so that patients who would benefit complete treatment in a good quality service
- Improve the way medicines are prescribed and reviewed and supporting patients to use their inhalers properly
- Design services that support patients to manage their conditions themselves, and receive personalised care.

**NICE Products on Respiratory Disease**

- NICE Respiratory Disease Pathways
- NICE Guidance – respiratory disease
- Air Information Resource

**Examples of Good Practice:**

The Association of Respiratory Nurse Specialists provides latest updates and network support. The British Lung Foundation (BLF) supports professionals by offering study days and workshops to increase professionals’ knowledge and outline the BLF self-management tools.

The BLF has issued a COPD patient passport so everyone living with COPD can check with their health care professional that they are getting the recommended care.

The British Thoracic Society produces a number of guidelines to support NICE clinical guidelines and quality standards.

The British Thoracic Society also produces clinical audit tools and undertakes research studies to support the quality of care provided.

Asthma UK provides tools and resources for healthcare professionals to use.

The Primary Care Respiratory Society UK produces improvement tools that provide a structured, systematic way of reviewing the respiratory care being delivered and identifies ways in which the standards of care can be optimised within a single practice or across multiple practices in a given locality.
### GP Practice summary

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- **Light blue** – Statistically higher than national average
- **Amber** – Statistically similar to national average
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## GP Practice Summary

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QOF and prevalence compared with England

Emergency admissions and mortality compared with all Northamptonshire GPs

* not calculated due to insufficient numbers
References and acknowledgements

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