Chronic Obstructive Pulmonary Disease

Executive Summary

Chronic obstructive pulmonary disease (COPD) is a leading cause of death and disability in older people and responsible for a large number of emergency hospital admissions. COPD is an umbrella term for a number of lung conditions, mainly emphysema and chronic bronchitis.

Smoking is the most common risk factors, but occupational exposure to chemicals and a genetic predisposition can also cause COPD. Early detection and good long term condition management are key in reducing the effects of the disease.

There are 4,195 people with diagnosed COPD on GP registers in North Somerset. The COPD prevalence is 1.96% compared to 1.78% in England. The number of people diagnosed in North Somerset practices varies greatly between 1.1 % and 4.2 %.

Estimates suggest that the expected prevalence of COPD in the adult population in North Somerset should be 3.08% of the population, which would equate to 5,268 people suggesting there are about 1,000 undiagnosed people currently in the community.

In North Somerset COPD claims approximately 90 deaths per year, and is more common in more economically deprived groups.

In the financial year 2013-2014 there were 431 COPD related admissions to local hospitals for North Somerset residents. The total direct healthcare cost for these admissions was £903,854. Hotspots for hospital admissions have been identified in Weston-super-Mare, Clevedon and Portishead.

Primary care data suggests good management of COPD for those diagnosed is in place in North Somerset. Community services include pulmonary rehabilitation and home oxygen therapy.

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Section 1: Background and needs analysis

Chronic Obstructive Pulmonary Disease (COPD) is a disease of the lungs that is characterised by airflow obstruction or limitation. It is a general term that includes a number of conditions such as diagnoses previously referred to as chronic bronchitis and emphysema.

The airflow obstruction is usually progressive, not fully reversible (unlike asthma) and does not change markedly over several months. It is treatable, but not curable; early diagnosis and treatment can markedly slow decline in lung function and hence lengthen the period in which a patient can enjoy an active life.

COPD is the fifth biggest killer in the UK, the second most common cause of emergency admission to hospital and one of the most costly inpatient conditions treated by the NHS.

In 2012 COPD was the third leading cause of death in those aged 65-79 in England and Wales, after heart disease and lung cancer. That year 26,000 people died of COPD in England and Wales.

The NHS outcomes strategy for COPD and Asthma published in 2012 states that one person dies every 20 minutes from COPD in England and 24 million working days are lost each year from COPD estimated to cost £3.8 billion in reduced productivity.

There are around 975,000 people currently diagnosed with COPD in England, however, whilst the diagnosed population can be quantified through primary care records, the estimated prevalence of COPD when including those without a diagnosis range from 1.5 million to 2.2 million people.

The Health Survey for England 2010 focussed on respiratory health and found 4% of men and 5% of women respond to a question about ever having been told by a doctor that they had chronic bronchitis, emphysema, or COPD.

Risk Factors

Genetic risk

A small proportion of people with COPD have an inherited form linked to alpha-1-antitrypsin deficiency. Alpha-1-antitrypsin (AAT) is protein produced in the liver which is released into the blood and plays in role in the regulation of enzymes involved in the inflammatory response. In the absence of normal production of AAT lung tissue is more susceptible to damage and hence the development of COPD. AAT deficiency affects between 1 in 1,500 and 1 in 3,000 people in European populations. As lung tissue is susceptible to damaging people with AAT deficiency, smoking greatly increases the risk of COPD in these patients.

Smoking

Smoking is the leading risk factor for development of COPD. In the UK, the overall smoking prevalence figure for those over 16 years was 30% in 1990 and had
dropped to 18% in 2013. However, when analysed by socioeconomic group, smoking prevalence in the lowest socioeconomic group is still estimated at 29%. Smoking is covered in detail in the JSNA chapter on smoking. Smoking prevalence has declined and stabilised at around 15.6% in North Somerset. However, the effects of smoke on the lung can take 20+ years to lead to the development of COPD so the historical smoking prevalence is of particular relevance when considering the current and likely future burden of COPD.

**Occupational risk**

Occupational exposure to dusts and chemicals (such as vapours, irritants, and fumes) may result in damage to the lungs causing COPD.

Industrial related incidents nationally have been falling although these data underestimate as the link between occupation and COPD is not always made.

There are two sources of data on occupation-related COPD disease, the health and occupation reporting (THOR) network of respiratory clinicians which report through a surveillance of work related and occupational respiratory diseases (SWORD) database and the industrial injuries and disablement benefit (IIDB) system. Whilst more cases are identified through the industrial injuries claims, both show a decreasing trend in cases linked to occupational exposures. It should be noted however that the incidence of asthma related to exposures to chemicals such as asbestos and latex induced asthma have shown increasing trends which do not follow the pattern presented below for COPD.

**Figure 1:** Data from the surveillance of work related and occupational respiratory diseases (SWORD) database and assessments carried out for industrial injuries and disablement benefit (IIDB).

![Graph showing data from SWORD and IIDB](image)

N.B. Data for 2012 is provisional.

**What are the needs of the North Somerset population?**

There are 4,195 people with diagnosed COPD on GP registers in North Somerset (QOF 2013-2014). The COPD prevalence is 1.96% compared to 1.78% in England.
The number and prevalence of people diagnosed with COPD has been increasing by around 2% per year with approximately 500 patients more identified by GPs than four years ago. Figure 1 demonstrates the increasing trend in COPD prevalence.

Respiratory disease is the 3rd leading cause of premature death in North Somerset (a death occurring under the age of 75). COPD claims around 90 deaths per year in total across North Somerset, which is around 4% of all deaths. Of those which are premature, data from 2010 to 2012 shows 29% (77 out of 269) of these deaths were in people aged under 75 years.

Lung diseases are the 3rd leading cause of premature death in North Somerset. Between 2010 and 2012 COPD deaths accounted for 6% of the gap in life expectancy between deprivation quintiles for both men and women.9

Years of life lost to chronic lower respiratory disease (excludes influenza and pneumonia) 289 from 8,799 annual number of years of life lost analysis from 2008-2012. This is the rate of 14.9 per 10,000 people under the age of 75 compared to 15.2 per 10,000 for England.10

Across all ages, a similar pattern is seen with additional deaths in more deprived quintiles. Data for a ten year period 2001-2011 shows there was an 86% difference across deprivation quintiles for both male and female deaths.

**Figure 2** COPD deaths for males and females over ten years (2001-2011) across deprivation quintiles in North Somerset.

Source: ONS mortality file

Note: rates were calculated from LSOA population sizes corresponding to the deprivation quintiles and found to follow the same pattern as above. Numbers of deaths are therefore reported in above graph to show difference in actual deaths across quintiles.
COPD disproportionately affects people from more economically deprived backgrounds. As Figure 4 indicates there are twice as many people with COPD living in the most deprived areas in North Somerset compared to the most affluent areas.

**Figure 3:** Prevalence of COPD in North Somerset (2008/09 - 2013/14)

Source: HSCIC Quality and Outcomes Framework

**Figure 4:** COPD prevalence by deprivation (2013/14)

Source: HSCIC Quality and Outcomes Framework average prevalence by practice level income deprivation, Index of Multiple Deprivation 2010
Undiagnosed population

Estimates suggest that the expected prevalence of COPD in the adult population in North Somerset should be 3.08% of the population, which would equate to 5,268 people. Based on the current primary care data for 2013-2014 there are 4,195 people with diagnosed COPD in North Somerset, suggesting there are about 1,000 undiagnosed people currently in the community.

Primary care

The number of people diagnosed in North Somerset practices varies greatly between 1.1 % and 4.2 % (see Figure 5).

Figure 5: Prevalence of COPD by practice (2013-14)

Source: Quality and Outcome Framework 2013/14
There is a need to ensure those diagnosed with COPD have an accurate diagnosis. The gold standard test for the diagnosis of COPD is the use of spirometry.

Figure 7 below demonstrates that diagnosis rates by spirometry are good across North Somerset GP practices based on QOF payments.
**Figure 7:** Percentage of COPD patients diagnosed with spirometry by practice (2013-14)

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<tr>
<th>Practice Name</th>
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<tr>
<td>THE VILLAGE SURGERY</td>
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<td>PORTISHEAD MEDICAL GROUP</td>
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<td>GRAHAM ROAD SURGERY</td>
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<td>WINSOMBE SURGERY</td>
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<td>CLEVEDON RIVERSIDE GROUP</td>
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<td>LONGTON GROVE SURGERY</td>
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<td>LONG ASHTON SURGERY</td>
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<td>THE MILTON SURGERY</td>
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<td>BACKWELL AND NAILSE</td>
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<td>STAFFORD MEDICAL GROUP</td>
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Source: Quality and Outcome Framework 2013/14

It is important patients are reviewed by a healthcare professional which includes an assessment of breathlessness and medication review.
COPD patients are eligible for annual ‘flu vaccination to protect against the risk of developing an influenza infection. The 2013-2014 North Somerset average coverage of the ‘flu vaccine in those with COPD was 83.5%.

Generally practices achieve good uptake of the influenza vaccine but it is important to maintain coverage each year as the circulating influenza virus will change and previous year’s vaccine will not offer sufficient protection.
Figure 9: Influenza vaccine coverage in North Somerset residents with COPD (2013/2014)

In the financial year 2013-2014 there were 431 COPD related admissions to local hospitals for North Somerset residents, the majority (315) of these were at Weston General Hospital. The total direct healthcare cost to the CCG was £903,854. However, there would be a much wider lost productivity cost and impact which cannot be easily quantified.

The most common primary reasons for an admission (excluding the generic ‘other’ code) were for acute bronchitis and emphysema. Looking at data covering the time period of April 2013 to August 2014 related to admissions which were for less than 1 day (generally considered an avoidable admission) shows that there were 163 total admissions and that 60 of those (36.8%) were in that category. The costs of those to the CCG were £28,100.

The British Lung Foundation (BLF) have used Hospital Episode Statistics (HES) for a year’s worth of hospital admissions for COPD (2010 as a baseline) and extrapolated the figures to the 2014 population size in order to identify potential ‘hotspots’ across North Somerset for hospital admissions. This is based on where admissions are above the average for the whole area. Figure 10 shows there are clear hotspots in the
Weston-super-Mare area and additional hotspots in Clevedon and Portishead.

**Figure 10:** Hot spots of previous hospital admissions across North Somerset

*Source: British Lung Foundation 2014. Based on HES data.*
Section 2: Current Services and Strategies

Support To Stop Smoking services are available throughout North Somerset.

NHS England have produced the ‘First Steps To Improving COPD Care’ resource which covers:

- Diagnosis and early intervention
- Quality diagnosis using spirometry
- Patient self-management and disease management
- Recognising and managing exacerbations
- Reviewing patients regularly
- Ensuring appropriate patients are given oxygen therapy
- Specialist review of those admitted with an exacerbation (within 24 hours)
- Informed choices for carers and patients with regard end of life.

Community Services

A number of services are available in the community to support people with COPD. North Somerset Community Partnership (NSCP) provide the following services to support patients to remain in their own homes where appropriate:

- Community Rapid Response Team
- Community Wards
- Community IV service
- Pulmonary rehabilitation
- Specialist Older People Team
- Home Oxygen Therapy Team

Pulmonary Rehabilitation

Pulmonary Rehabilitation is an evidence based programme of exercise and information for patients who have chronic lung disease (not just COPD). The programme supports patients to become fitter and encourages them to self manage their condition.

The programme runs for 6 weeks with 2 sessions a week for up to 18 people at one time. People attend for 2 hours approximately 1 hour of exercise and 1 hour of advice/education/discussion. All patients receive a comprehensive assessment before being accepted onto the programme as well as a pre discharge review.

There are no age limits but there is an exclusion criteria and patients need to have their own transport.

Home Oxygen

The Pulmonary Rehabilitation Service works inherently with the Home Oxygen Service and provides ambulatory oxygen assessments as part of the programme.
The oxygen service is provided by a specialist respiratory team of nurses and physiotherapists. Patients are assessed by the service and then provided with ongoing support and monitoring. The staff also provides a specialist resource for other health care professionals.

Section 3: Summary Points

- Estimates suggest there are approximately 1,000 undiagnosed people with COPD in North Somerset. There is a need to raise awareness of risk factors and promote early identification.

- COPD is a leading cause of Hospital admissions. There is a need for co-ordinated management of at risk individuals to prevent the need for an admission. Hospital admission ‘hot spots’ have been identified in Weston-super-Mare, Clevedon and Portishead.

- Patients must be given information, education and support to enable self-care and management of their condition including when exacerbations occur.

- Must ensure COPD patients have equitable and good access to home oxygen (where needed) and evidence based support programmes such as pulmonary rehabilitation.
References


2 National End of Life Care Intelligence Network. Deaths from Respiratory Diseases: Implications for end of life care in England. 2011


5 Health and Social Care Information Centre; Quality and Outcomes Framework 2012/13.


8 North Somerset Tobacco Profile 2014. Available from Local Tobacco Control Profiles for England


