

Chronic Obstructive Pulmonary Disease (COPD): Factsheet

Tower Hamlets Joint Strategic Needs Assessment 2010-2011

Executive Summary

- Chronic Obstructive Pulmonary Disease (COPD) is predominately caused by smoking and leads to progressive airway obstruction. It is common and under-diagnosed.
- About 2900 people have COPD in Tower Hamlets. The age-standardised prevalence (1.9%) is higher than the London average.
- Last data from 2009/10 shows Tower Hamlets has the highest emergency admission rate for COPD in the country. Readmission rates and COPD mortality are also high.
- Since 2009, NHS Tower Hamlets has invested over £1m in primary care, community/outreach services and pulmonary rehabilitation to address these issues. There has also been significant investment in smoking cessation services in recognition of the particularly high smoking prevalence in the population.
- In April 2011, NHS Tower Hamlets implemented a COPD Care Package which aims to provide effective interventions to all COPD patient across the borough, decrease hospital admissions and readmissions and extend healthy life expectancy. It involves primary, secondary and community care services, and focuses on delivering care at a local level.
- Data is not yet available on the effectiveness of the care package.
- Our priorities are to embed the Care Package in the health service within the borough and to monitor its effectiveness, particularly with respect to the current high emergency admission and readmission rates.

What is COPD?

Chronic obstructive pulmonary disease (COPD) is characterised by airflow obstruction. The airflow obstruction is usually progressive, not fully reversible and does not change markedly over several months¹. Chronic obstructive pulmonary disease (COPD) is a general term which includes the conditions chronic bronchitis and emphysema.

Prevalence

- COPD is common. An estimated three million people are affected by COPD in the UK, about 2-4% of the population. About 900,000 have been diagnosed with COPD (1.5% of the population) and an estimated two million people have COPD which remains undiagnosed, among whom it is considered that 5.5% will have COPD at the mild end of the spectrum².

Mortality

- COPD is the fifth leading cause of death in the UK, accounting for 30,000 deaths each year in the UK, with more than 90% occurring in the over 65 age group in 2004³.

Risk factors

- Most COPD cases are caused by smoking. The lifetime risk of developing COPD as a smoker is 10-25%. COPD cases caused by other risk factors (such as air pollution, polluted working conditions and a genetic condition called alpha-1-antitripsin deficiency) are rarer in the UK. COPD is closely associated with levels of deprivation - rates of COPD are higher in more deprived communities.
- COPD mainly affects people over the age of 40 and becomes more common with increasing age. The average age of diagnosis is around 67 years. It is more common in men than women. Prevalence rates appear to be increasing steadily in women but have reached a plateau in men, reflecting historical patterns in smoking prevalence⁴. COPD is most common amongst the white population, also reflecting historically higher smoking rates.

Impact on the individual

- Symptoms include cough, shortness of breath and excessive sputum production. Chest infections are much more common. Exacerbations, which may be precipitated by infection, can result in hospital admissions. Breathlessness has a significant impact on quality of life.

Impact on business

- COPD accounts for more time off work than any other illness.

Impact on NHS

- Direct health care costs are an estimated £800 million, with over half related to hospital-based care. COPD is among the most costly inpatient conditions treated by the NHS.

What is the local picture?

Prevalence

COPD prevalence in Tower Hamlets is high, reflecting high levels of smoking and deprivation. About 2900 people have COPD in the borough⁵.

The crude prevalence of COPD is higher than the London average, but not higher than the England average, which is likely to be due to the young age profile of the borough (and that COPD is more common in older age). The age-standardised prevalence, which takes this into account, shows that Tower Hamlets has a higher burden of COPD than nationally.

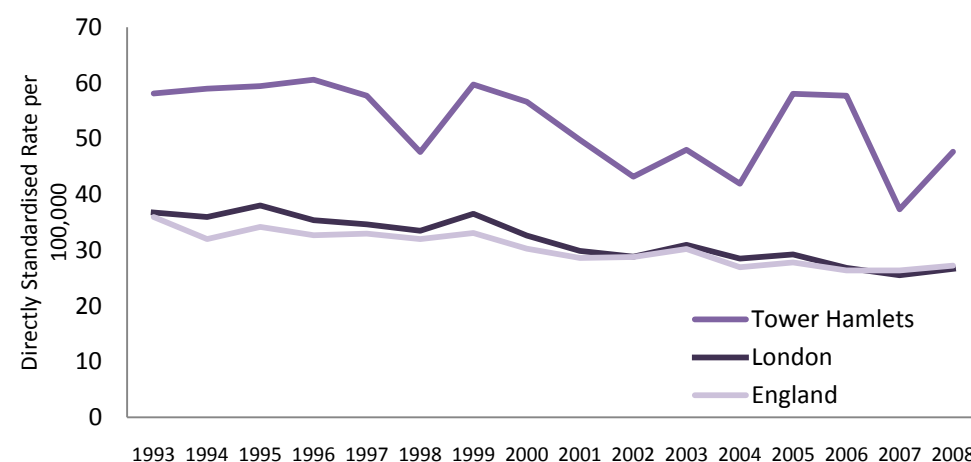
	Tower Hamlets		National (England)	
	COPD prevalence	Data source	COPD prevalence	Data source
Crude prevalence	1.1%	CEG SQUID Audit	1.5%	NICE
Age-standardised prevalence	1.9%	CEG SQUID Audit	N/A	N/A

There is likely to be an increase in COPD prevalence seen in the borough, both due to real increases in disease levels as a result of increases in overall population size and population ageing, and due to changes in diagnostic criteria which will label previously 'borderline' cases as 'mild COPD'.

Mortality

Mortality from COPD is significantly higher than the London and England average (Tower Hamlets SMR 172 (95% CI 151-195), compared to London 98, England 100) (Figure 1). Mortality rates (SMR) are the same in males and females. In 2006-08, there were 134 male deaths and 101 female deaths (235 deaths overall). The mortality rate of inpatients with COPD in Tower Hamlets is not significantly different from the national average (Dr Foster 09/10).

Figure 1: COPD Mortality trend (All Ages, all persons). Source: NCHOD



Health care services

Emergency admission rates are high level indicators of the overall function of a health service, particularly its

ability to prevent admissions through early intervention, effective primary and community services and appropriate hospital discharges. However, crude rates do not take into account the local characteristics, which in Tower Hamlets are quite unique – a young, diverse and deprived population. Therefore crude rates reflect both health service performance and high levels of need in a deprived population, but still reflect that this need is unmet.

The emergency admission rate for COPD amongst all registered patients is the highest in the country (4.9 per 1000 GP registered population, 2009/10). The emergency admission rate for COPD amongst COPD registered patients (those on the GP COPD register) is significantly higher than the England average, but not the worst. The difference in admission rates between all COPD patients and those on COPD registers may indicate that those on the COPD register receive better care, which may prevent admissions to hospital.

There have been similar figures over the past few years, which are being addressed through the design and implementation of the new COPD Care package, described. Furthermore, this data has not been adjusted for Tower Hamlets population characteristics and

Figure 2: Key health service performance indicators

Key:

- Significantly better than England average
- Not significantly different from England average
- Significantly worse than England average
- No significance can be calculated

England Key:



Domain	Indicator	Local Number	Local Value	Lon Avg	Eng Avg	Eng Worst	England Range	Eng Best
Secondary Care	19 Length of stay, emergency inpatient COPD admissions*	4,721	8.6	6.7	6.8	9.6		3.2
	20 Emergency admissions for COPD, overall*	563	4.9	1.9	1.8	4.9		0.9
	21 Emergency admissions for COPD, COPD registered patients*	465	15.8	13.6	12.5	17.9		9.6
	22 Emergency readmissions within 28 days, overall*	42	33.9	23.3	21.6	44.2		9.9
	23 Emergency readmissions within 90 days, COPD admitted patients	181	55.9	40.2	33.9	63.8		7.5
Mortality & End of Life Care	24 Deaths from COPD, all ages	210	41.3	25.4	26.2	48.7		11.9
	25 Deaths from COPD, <75yrs	63	18.4	11.4	11.8	27.5		3.4
	26 Years of life lost due to mortality from COPD	63	17.4	9.8	10.5	26.0		1.2
	27 Deaths with any mention of respiratory disease as cause	1,208	35.7	35.1	33.9	41.1		25.7
	28 Respiratory deaths at own residence	55	12.8	12.9	13.7	7.5		29.1

Figure 2 also shows that emergency readmission rates for COPD within both 28 days and 90 days of admission are significantly higher than the England average. The profile data is unadjusted, however Dr Foster data also shows Tower Hamlets had a significantly higher readmission rate (28 days) for COPD even after adjusting for the population characteristics – about 22% more readmissions than we would expect to see (2009/10).

However, for 2010/11, the available data for this period however shows that we have made progress – there is no evidence of a higher readmission rate in Tower Hamlets compared to England, after adjusting for our unique population characteristics.

The average length of stay for COPD emergency inpatient admissions is 8.6 days (London average 6.7 days, England worse 9.6 days). However, after adjusting for Tower Hamlets’ unique population characteristics, using

Dr Foster data for both 09/10 and 10/11, the length of stay for Tower Hamlets COPD patients is no higher than would be expected for our population.

Inequalities

The majority of COPD cases occur in later life, reflecting the cumulative damage of smoking. The burden of COPD is predominately amongst the white population, although Bangladeshi males are expected to share an increase burden in coming decades due to very high smoking levels in this group. COPD cases are slightly higher amongst men, again reflecting a higher proportion of male smokers (Figure 3).

Figure 3: COPD cases in Tower Hamlets

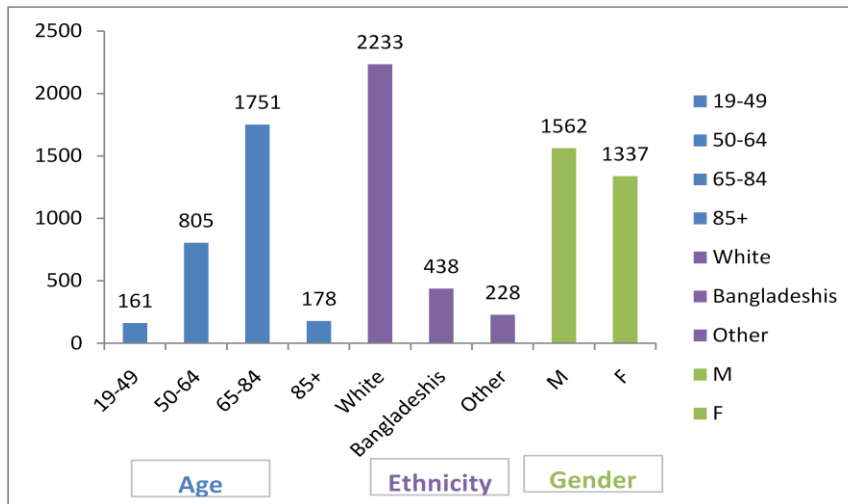
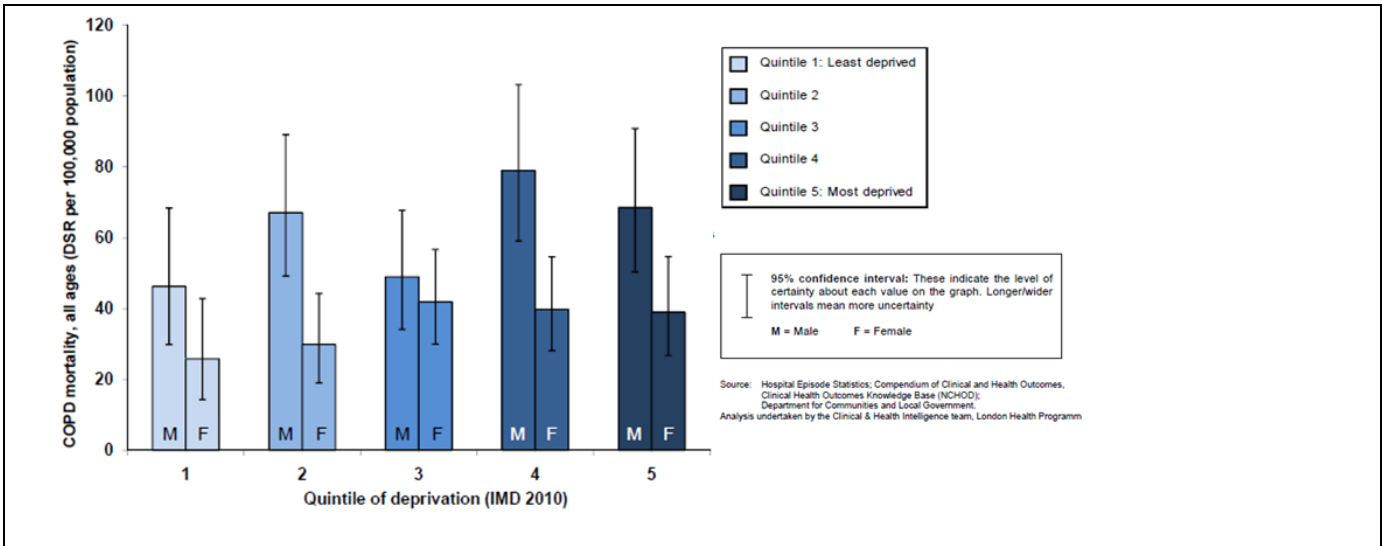


Figure 4 shows that there is no difference in mortality from COPD between the different levels of deprivation in Tower Hamlets, but that there is some evidence of a difference between genders in some of the deprivation categories. For example, COPD mortality amongst men is higher than women in groups 2 and 4, but not in 1, 3 and 5. This weak finding is likely to be due to small numbers – a strong pattern may arise if comparing data over a longer time period.

Figure 4: Mortality from COPD (2005-09) and level of deprivation (Source: LHP COPD profile 2011)



What are the effective interventions?

The NICE National Clinical Guidelines for COPD makes nearly 200 specific recommendations concerning the management of COPD. These deal with diagnosis and assessment, management of stable COPD and management of exacerbations, and include:

Pulmonary rehabilitation: This should be made available to all appropriate people, including those who consider themselves functionally disabled by COPD or those who have had a recent hospitalisation for an acute exacerbation. Programmes must meet clinical needs in terms of access, location and availability.

Non-invasive ventilation (NIV): This should be used as the treatment of choice for persistent hypercapnic ventilatory failure during exacerbations not responding to medical therapy.

Spirometry: The presence of airflow obstruction should be confirmed by performing post-bronchodilator spirometry. All health professionals involved in the care of people with COPD should have access to spirometry and be competent in the interpretation of the results.

Multidisciplinary teams: COPD care should be delivered by a multidisciplinary team.

To address under-diagnosis: A diagnosis of COPD should be considered in patients over the age of 35 who have a risk factor (generally smoking) and who present with exertional breathlessness, chronic cough, regular sputum production, frequent winter 'bronchitis' or wheeze.

NICE also performed a cost-effectiveness analysis for opportunistic COPD case finding and found that it was a relatively cost-effective strategy to identify patients early in their disease course such that smoking cessation interventions could have maximal benefit to delay progression.

Smoking cessation: Encouraging patients with COPD to stop smoking is one of the most important components of their management. All COPD patients still smoking, regardless of age should be encouraged to stop, and offered help to do so, at every opportunity.

Self-management: Patients at risk of having an exacerbation of COPD should be given self-management advice

that encourages them to respond promptly to the symptoms of an exacerbation and should be given a course of antibiotic and corticosteroid tablets to keep at home for use as part of a self-management strategy.

Palliative care: Patients with end-stage COPD and their family and carers should have access to the full range of services offered by multidisciplinary palliative care teams, including admission to hospices.

What are we doing locally to address this issue?

Since 2009, NHS Tower Hamlets has invested over £1m in primary care, community/outreach services and pulmonary rehabilitation to address the issues outlined in this JSNA factsheet. There has also been significant investment in smoking cessation services in recognition of the particularly high smoking prevalence in the population.

NHS Tower Hamlets has recently rolled out a COPD Care Package, effective from April 2011, which aims to provide effective interventions to all COPD patients across the borough, decrease hospital admissions and readmissions and extend healthy life expectancy. It involves primary secondary and community care services, and focuses on delivering care at a local level.

The Care Package has been developed in conjunction with local clinicians and service leads. There are eight streams within the COPD Care Package, which stratify COPD patients according to their severity and other needs. This aims to ensure all patients access the highest quality of care. Each stream has funding for a range of appropriate interventions for that patient group:

1. Case finding
2. First review
3. Mild/moderate/severe management
4. Very severe management
5. Housebound management
6. LTOT and NIV
7. (Re)admission avoidance
8. Enhanced care (2 or more COPD admissions in past 12 months)

The key services delivered for COPD patients are described below:

Prevention

Smoking cessation services are the cornerstone of COPD prevention. Please see the relevant JSNA for more detail on smoking cessation services.

Primary care

Primary care has a dominant role in the management of COPD. This includes initial diagnosis, referrals to specialists and COPD services (e.g. RDOT, CRT), administering seasonal flu jabs, annual reviews, self-management plans, inhaler checks etc.

Secondary care

- **Emergency Department:** COPD patients can be discharged to intermediate care or back home with appropriate acute follow-up, however, these services are not available out-of hours.
- **Integrated care pathway:** On admission with an exacerbation, a patient's care is defined with an integrated COPD pathway to ensure high quality care and that all appropriate interventions are addressed.

Community COPD Services

- **Community Respiratory Team (CRT)**
 - Started in 2008 with the intention to reduced emergency bed spells and readmission rates for patients under the CRT's care
 - Split into two arms, a case-management arm and a schedule/acute-care arm (which also provide spirometry assessment and training)
- **Respiratory Discharge Outreach Team**
 - Funded by BLT to provide inpatient education and supported discharge, including making evidence-based management recommendations and appropriate referrals to other services.
 - Depending on clinical need, such as newly prescribed long term oxygen therapy (LTOT), RDOT may facilitate a supported discharge; this involves visiting the patient in the community shortly after discharge to check progress, reinforce disease education, and to ensure that referrals and handovers are made to community teams such as CRT, the district nurse and the community matron.
- **Pulmonary Rehabilitation**
 - Pulmonary rehabilitation is funded by THPCT and delivered by Action East to provide community based self management programmes for people with COPD, heart failure, and intermittent claudication.

What evidence is there that we are making a difference?

It is too early to assess the effects of the new COPD Care Package, which represented a step change in COPD care delivered to patients in Tower Hamlets. However, we have a range of indicators of current performance in the care of COPD patients.

Prevention

97% of registered COPD patients have their smoking status recorded on practice records⁶. Recorded smoking prevalence amongst COPD patients is 42%⁷. Please see the relevant JSNA for more detail on smoking cessation services.

Primary care

Information collected as part of the monitoring for the Local Enhanced Service for COPD, prior to the implementation of the COPD Care Package has shown that, of all COPD patients registered with GPs in Tower Hamlets:

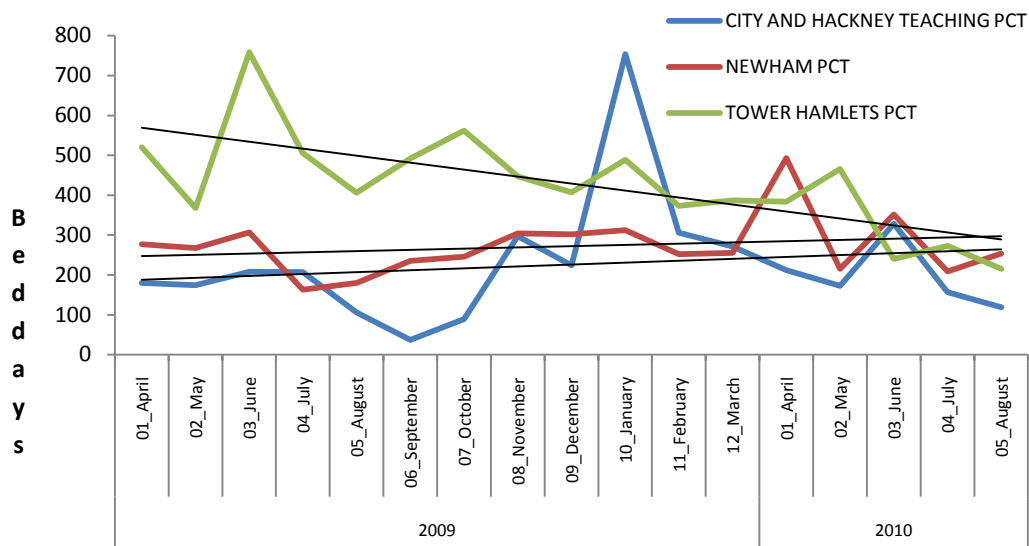
- 74% have had an annual review and their smoking status recorded
- 70% have had an annual review and received a flu vaccination

- 44% have had an annual review and have a self-management plan
- 10% have had an annual review and been referred to pulmonary rehabilitation
- 55% have been screened for depression
- 73% have had an annual review and had their body mass index (BMI) measured

Secondary care

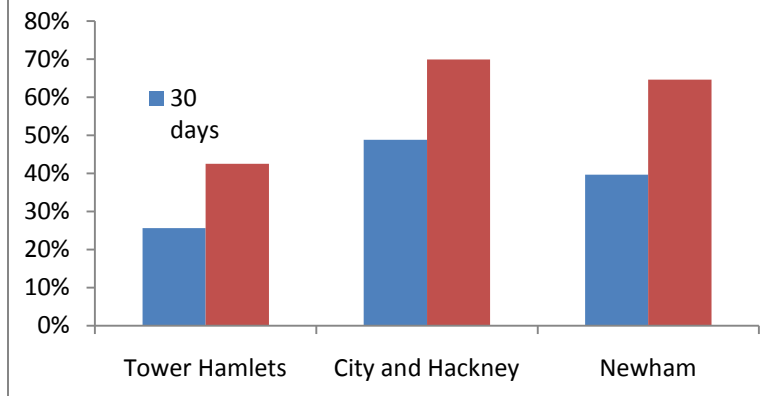
- **Unplanned admissions:** There appears to be a downward trend over the past year in unplanned admissions, measured by total bed-days, bed-days per 1000 population and total unplanned admissions.

Figure 5: Total bed-days for unplanned admissions



- Readmissions: There is some evidence that Tower Hamlets has a lower proportion of readmissions to admissions compared to Newham and City & Hackney as shown below.

Figure 6: Ratio of admissions to readmissions (Approximately: % of admissions that result in readmissions - April-Aug 2010)



Between April-August 2010, there were 70 readmissions at 30 days post-discharge and 166 readmissions at 90 days.

Community COPD Services

An evaluation of community COPD services in April 2010 had the following findings:

- Community Respiratory Team (CRT)
 - In April 2010, there were 60 case-managed patients and 36 patients under the schedule arm
 - Educational GP sessions are provided to each GP surgery approximately once every 3 years
 - There was a waiting time of 9 weeks before being seen by the schedule arm (April 2010)
 - Patient co-morbidities make it difficult to discharge patients
- Respiratory Discharge Outreach Team
 - COPD accounts for approximately 70% of caseload – 148 admissions between April 2009 and September 2009
 - 37% of patients were either referred to or already known to CRT
 - 26% of patients were either referred to or already known to pulmonary rehabilitation
 - In January 2010 RDOT introduced an early discharge scheme for COPD patients
- Pulmonary Rehabilitation
 - On average around 45 patients are referred for pulmonary rehabilitation a month
 - Between May 2009 and December 2009, 36% of patients referred completed pulmonary rehabilitation, this compares to 37% of patients in 2008
 - The main problems are with patients failing to attend initial assessment and with patients dropping out mid-course. Patients with worse breathlessness and more anxiety are less likely to complete pulmonary rehabilitation.

What is the perspective of the public on services?

Patient perspectives

The two CRT patients were interviewed as part of the COPD evaluation in 2009. Each was seen once a month by the CRT and from their perspective the role of the CRT in both patients appeared to be more in coordinating care rather than delivering it. Patient BR appeared very independent and despite his 3-4 weekly exacerbations and LTOT he hadn't been to hospital for a year and only needed to see the CRT once every month. When he gets a problem he will always phone the GP rather than the CRT and he is not sure of the role of CRT in his care aside from arranging his portable oxygen; in this type of well motivated and sensible patient there may be a potential for discharge with re-referral should he deteriorate.

What are the priorities for improvement over the next 5 years?

The priorities for improvement over the next 5 years have been incorporated into the COPD Care Package. The aims of the Care Package, and hence the priorities for improvement are:

1. To improve the diagnosis of COPD to enable primary care to provide targeted early interventions. Improved diagnosis will increase the observed prevalence in Tower Hamlets.
2. To provide best evidence, best practice primary care for all patients diagnosed with COPD
3. To incentivise a proactive response in the community for patient at risk of, or post non-elective acute attendance
4. To provide an equitable level of primary care management for housebound patients with COPD

The COPD Care Package has been designed to meet these priorities. Key performance metrics will be measured through regularly reporting and through a performance dashboard. These metrics will be regularly assessed to ensure that the Care Package is delivering on its objectives. In subsequent years, the Care Package will be revisited to ensure that it continues to address the needs of the population.

What more do we need to know?

Performance data for the new COPD Care Package will be very useful in assessing its effectiveness. More specifically, the following information would also be useful:

- Better patient perspectives on all services
- Age-standardised emergency admission rates
- Trends in smoking prevalence amongst COPD patients

Key Contacts & Links to Further Information

- For general JSNA queries email: JSNA@towerhamlets.gov.uk
- Factsheet contact Katie Cole, Respiratory Public Health Lead, Specialty Registrar in Public Health, Katie.cole@thpct.nhs.uk

Further Information

The COPD Patient Pathway – an evaluation.

Contact Katie Cole Katie.cole@thpct.nhs.uk for a copy

NICE 2010 - Chronic obstructive pulmonary disease: Management of chronic obstructive pulmonary disease in adults in primary and secondary care

www.nice.org.uk

Date updated:	21/6/2010	Updated by:	Dr Katie Cole Specialty Registrar in Public Health	Next Update Due:	
----------------------	-----------	--------------------	--	-------------------------	--

¹ NICE 2010. COPD guidance – full version.
² NICE 2010. COPD guidance – full version.
³ NICE 2010. COPD guidance – full version
⁴ NICE 2010. COPD guidance – full version.
⁵ CEG data 1/12/10 (COPD dashboard working 16 12 2010.doc file)
⁶ CEG SQUID Audit April 2010
⁷ CEG SQUID Audit April 2010