KENT PUBLIC HEALTH OBSERVATORY

Kent Joint Strategic Needs Assessment (Kent JSNA)

Kent 'Chronic Obstructive Pulmonary Disease' JSNA Chapter Summary Update '2014/15'

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Kent & Medway Public Health Observatory

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Kent Chronic Obstructive Pulmonary Disease (COPD) JSNA Chapter Update 2014

Introduction

Chronic obstructive pulmonary disease (COPD) is a preventable and treatable disease state characterised by airflow limitation that is not fully reversible. It includes two main diseases: bronchitis - in which inflammation of the bronchi (tubes carrying air to and from the lungs), both narrows them and causes chronic bronchial secretions, and emphysema - a permanent destructive enlargement of the airspaces within the lung without any accompanying fibrosis of the lung tissue. Asthma may also be included within the term COPD if there is some degree of chronic airway obstruction. COPD not only affects the lungs but has extra pulmonary effects such as muscle wasting and weight loss, pulmonary hypertension, or pulmonale (enlargement of the right side of the heart), anxiety, and depression.

Since the last publication of the COPD chapter the number of people on COPD registers in England has risen to 1,004,920, (2013-14) an increase of 29,921 from the previous year (2012-13). COPD kills over 27,000 people a year in England and Wales; the majority of these deaths are in the 75-84 year age band, as lungs become more obstructed over time. There are 1,251,166 people in the UK diagnosed with COPD (a prevalence of 1.8%, the same rate as England and Wales). COPD is thought to affect over three million people in the UK, the majority are undiagnosed.

COPD should be suspected if patients have a cough, sputum production, dyspnoea or a history of exposure to risk factors for the disease. Tobacco accounts for 80% of the burden of COPD (see chapter on smoking for more on interventions), other important risk factors are occupational exposure, which is thought to account for 4,000 deaths a year, air quality, socio-economic status and genetic causes. There are clear social class gradients in respiratory disease mortality; social class gradients are steeper for respiratory disease.

There is no single diagnostic test for 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 following the administration of a bronchodilator. COPD is classified into four stages of severity and although it cannot be cured, a patient's COPD stage may vary over time dependent on the level of exposure to noxious agents. The impact of COPD is also related to other co-morbidities the patient may have.

Key Issues and Gaps

The Royal College of Physicians is leading on a programme of national COPD audits. This has been implemented because of concerns about the quality of care for this group of patients. The audit of Secondary Care (3) with recommendations for health economies was published in November 2014, with a further audit, to include Pulmonary Rehabilitation planned for 2015.

Table 1: Kent Hospitals National COPD Audit scores, 2014

Kent Hospitals	Senior Review on admission ((0-6)	Access to Specialist Care (0-14)	Managing respiratory failure, oxygen (0-8)	Non-invasive ventilation (0-6)	Primary/Secondary Care Integration (0-9)	Extra items score (0-8)	TOTAL		
Darent Valley	4	5	6	6	7	8	36		
Queen Elizabeth Queen Mother	2	6	6	6	4	8	32		
William Harvey	2	6	6	6	4	8	32		
Kent & Canterbury	2	5	6	6	4	8	31		
Maidstone	3	3	6	7	4	8	31		
Tunbridge Wells	3	5	6	7	5	8	33		
source: COPD: Who cares? National Chronic Obstructive Pulmonary Disease (COPD) Audit Programme									

The extra items score comprises on-site early warning detection, smoking cessation, ICU outreach and palliative care.

Scores available range from 0-51, the median is 33 and the inter-quartile range is 30-37.

The report recommends that COPD patients admitted with exacerbation should be cared for by a multidisciplinary team (MDT) of respiratory specialists on a respiratory ward, and that the service should be organised and resourced to provide that care seven days a week.
Darent Valley Hospital was the best performing hospital but scores show that there is much scope for improvement across secondary care in Kent.

Who's at Risk and Why?

COPD is a long-latency disease, symptoms are not usually apparent until some years following exposure. Tobacco accounts for 80% of the burden of COPD, other important risk factors are occupational exposure, which is thought to account for 4,000 deaths a year. Estimates are based on work in other countries as according to the Health and Safety Executive (HSE) there is no detailed assessment available in the UK. Exposure to coal dust over a long period is known to be a high risk and exposure to other dusts such as grain, flour and cotton as well as minerals and other chemicals, notably cadmium. Annually 20-150 cases are reported to the Health and Occupational Reporting Network. www.hse.gov.uk/statistics/causdis/copd/ Socio-economic status and genetic causes may also be risk factors. There are clear social class gradients in respiratory disease mortality, social class gradients are steeper for respiratory disease.

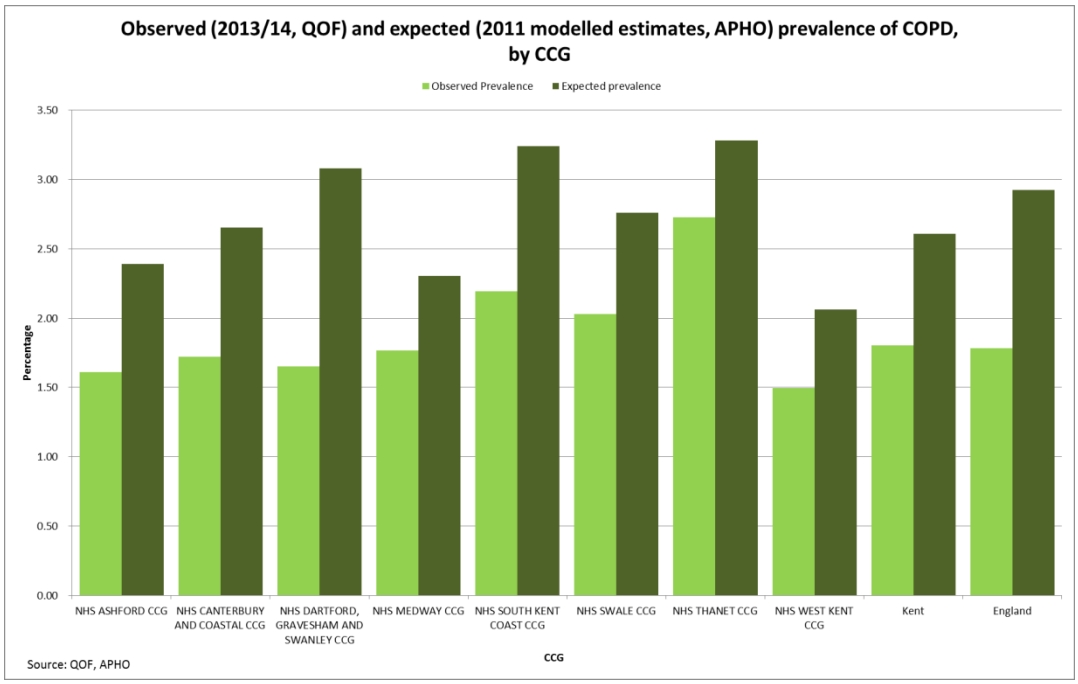
The Level of Need in the Population

Prevalence

The Clinical Commissioning Groups (CCGs) that have the worst COPD rates in Kent are Thanet, South Kent Coast and Swale. Thanet has the worst rates in the South of England, with a rising trend in all these areas. All other CCGs in Kent have rates that are better than the South of England average.

However, when the expected prevalence is modelled, a slightly different emphasis can be put on the data. Thanet CCG rates best represent what is thought to be the actual prevalence, whilst Dartford Gravesham and Swanley CCG appears to have a large number of patients who are undiagnosed.

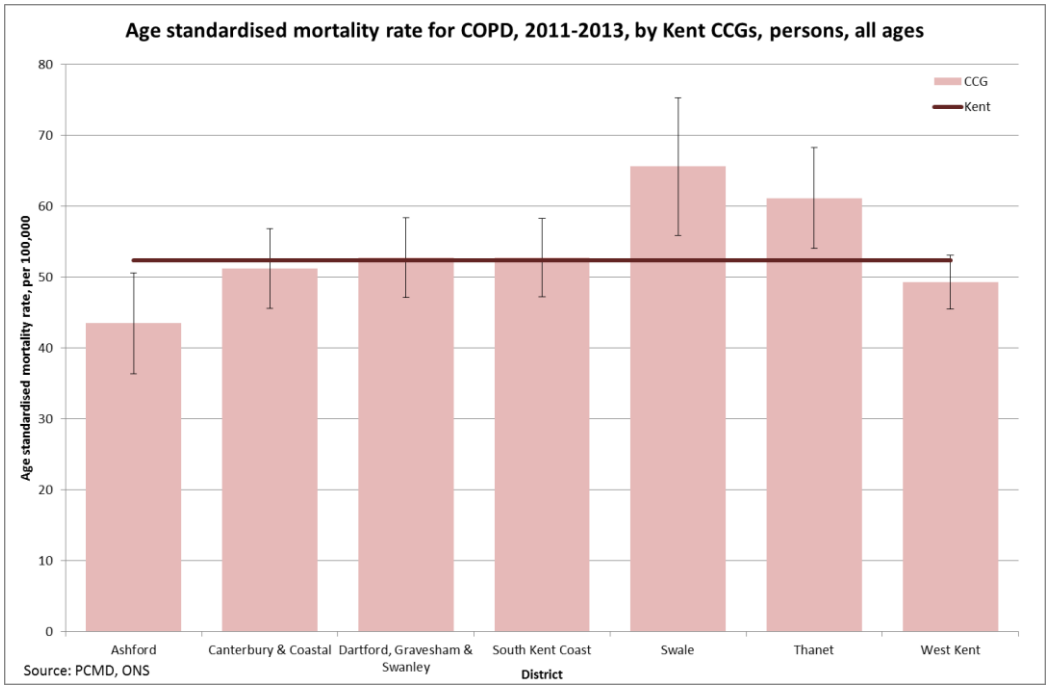
Figure 1: Observed and Expected COPD prevalence by CCGs in Kent



Mortality

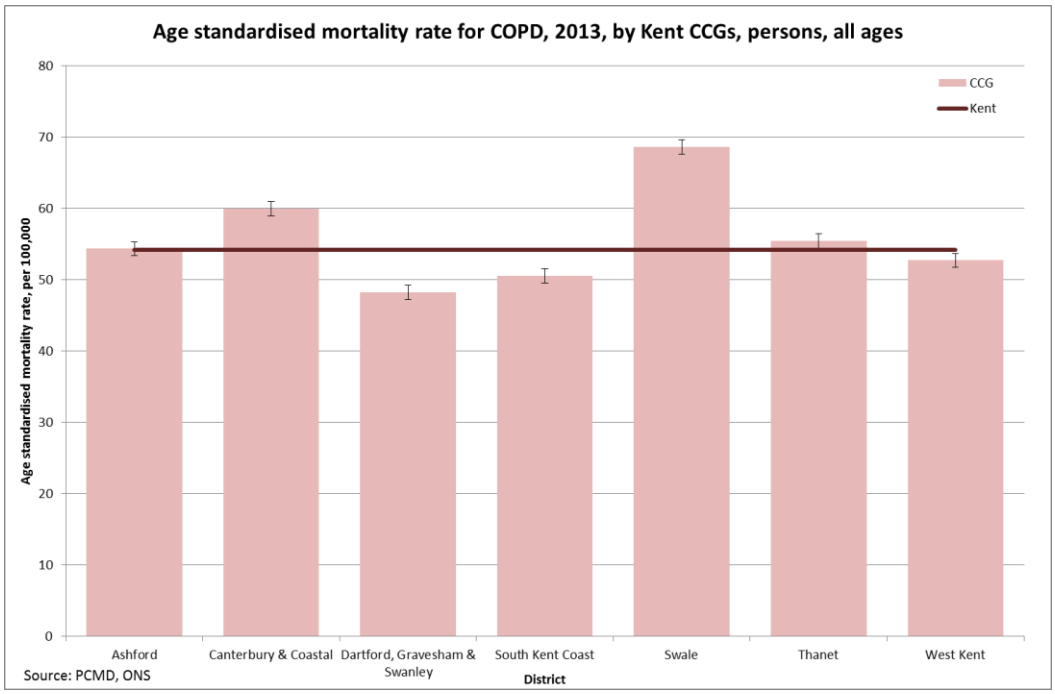
Between 2011 and 2013 mortality rates for COPD were highest in Swale and Thanet and lowest in Ashford.

Figure2: COPD Mortality Rates by Kent CCGs (2011-2013)



In 2013 alone the picture is slightly different, rates are increasing except in Dartford Gravesham and Swanley and South Coast Kent. Overall Swale still has the highest rates, which seem to be increasing but there is more variation between other CCGs. Ashford rates have also risen.

Figure 3: COPD Mortality Rates in Kent CCGs (2013)



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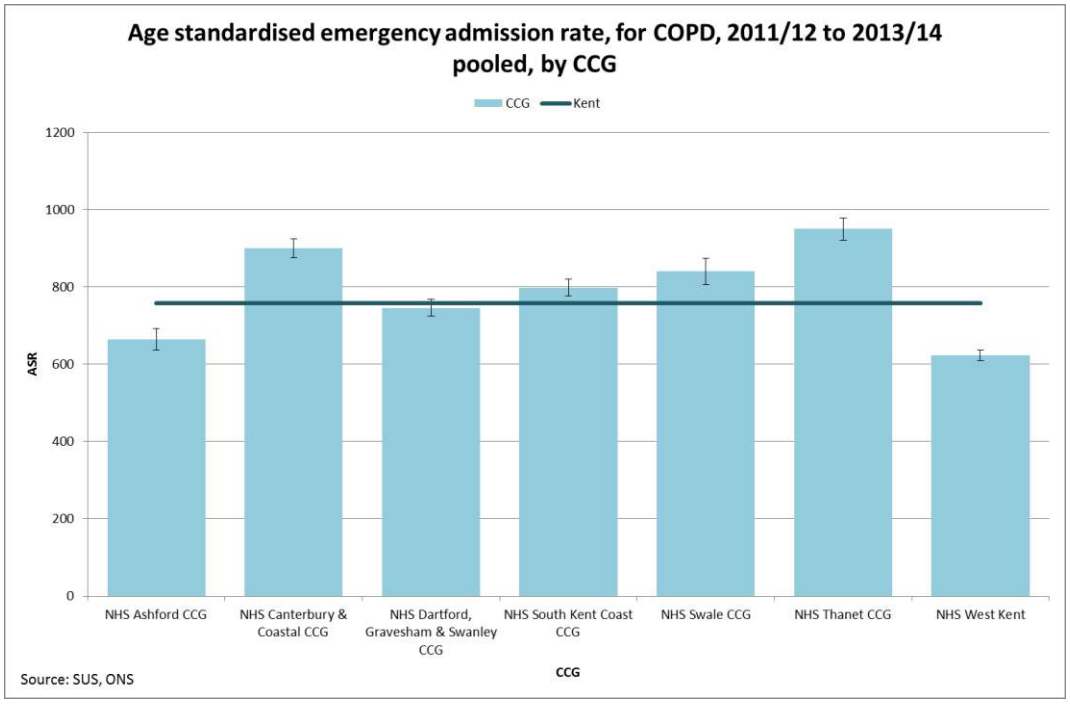
Emergency admissions

NHS Thanet and NHS Canterbury and Coastal have the highest emergency admission rates for COPD. NHS Ashford and NHS West Kent have the lowest rates, which seems to reflect deprivation.

Figure 4: COPD Emergency admission rates by Kent CCGs (2011/12-2013/14)



Length of stay

NHS Swale has the highest average length of stay for both emergency and non-emergency admissions, 8.52 and 11.37 days respectively. NHS Thanet and NHS Canterbury and Coastal have the lowest.

The 65 and 65+ age groups make up the highest number of hospital **stays following an emergency admission** by all CCGs. Across all CCGs the majority of patients were in hospital for 1-3 days (35%). Following an emergency admission, 77% of patients stay in hospital for 1-14 days.

The annual number of emergency admissions for a primary diagnosis of COPD has reduced slightly between 2012-13 and 2013-14 with 3,153 and 3,054 admissions respectively, weather is a likely contributing factor.

Table 2: Emergency admission length of stay by Kent CCGs 2013/14

Number of patients admitted as an emergency with a primary diagnosis of COPD by length of stay, 2013/14

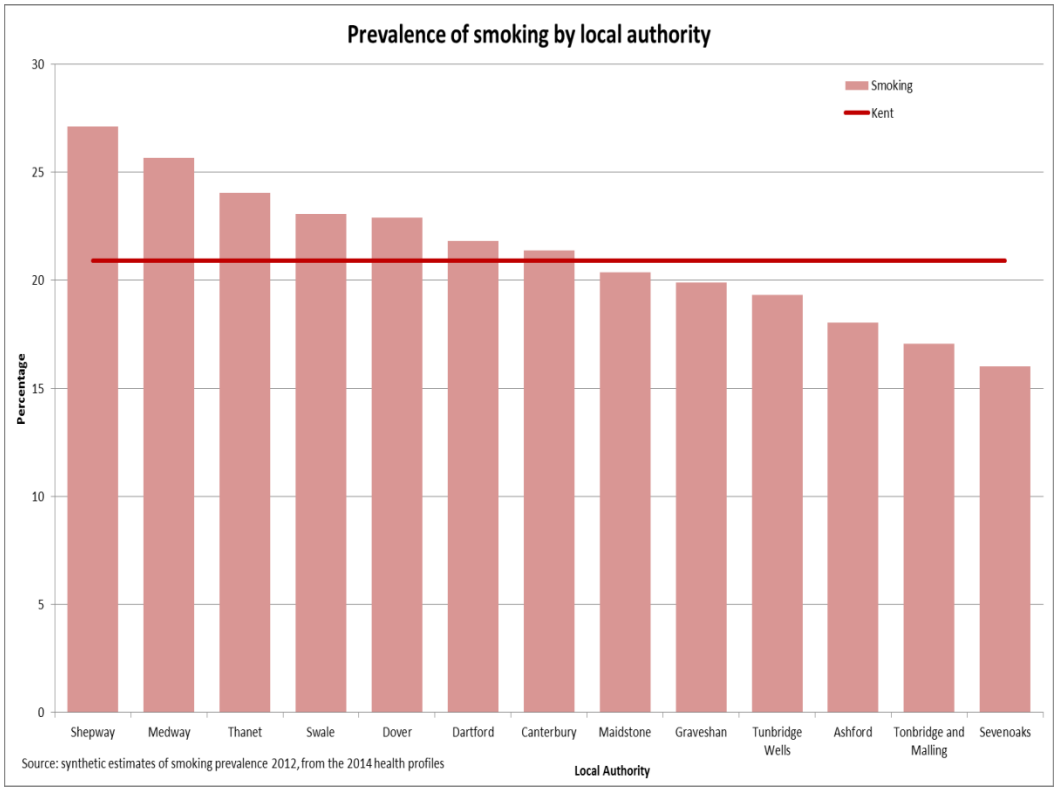
	Length of Stay							
CCG	0	1-3	4-7	8-14	15-21	22-28	Over 4 weeks	Total
NHS Ashford CCG	**19**	**63**	**51**	**26**	**18**	*	*	**182**
Male	14	28	19	11	*	*		78
Female	5	35	32	15	14	*	*	104
NHS Canterbury & Coastal CCG	**114**	**232**	**71**	**31**	**17**	*	*	**473**
Male	57	111	33	16	7	*	*	229
Female	57	121	38	15	10	*	*	244
NHS Dartford, Gravesham & Swanley CCG	**47**	**129**	**161**	**88**	**36**	**14**	**12**	**487**
Male	32	61	68	46	25	7	6	245
Female	15	68	93	42	11	7	6	242
NHS South Kent Coast CCG	**55**	**203**	**105**	**72**	**24**	*	*	**468**
Male	31	96	44	22	11	*	*	210
Female	24	107	61	50	13	*	*	258
NHS Swale CCG	**20**	**46**	**63**	**62**	**23**	**6**	**9**	**229**
Male	10	33	29	30	9	*	*	116
Female	10	13	34	32	14	5	5	113
NHS Thanet CCG	**70**	**126**	**87**	**47**	**6**	*	*	**342**
Male	39	71	45	20	*	*	*	181
Female	31	55	42	27	*		*	161
NHS West Kent	**102**	**284**	**242**	**153**	**42**	**26**	**24**	**873**
Male	45	161	121	73	22	14	10	446
Female	57	123	121	80	20	12	14	427
Kent	**427**	**1083**	**780**	**479**	**166**	**57**	**62**	**3054**

Source: SUS

Current Services in Relation to Need

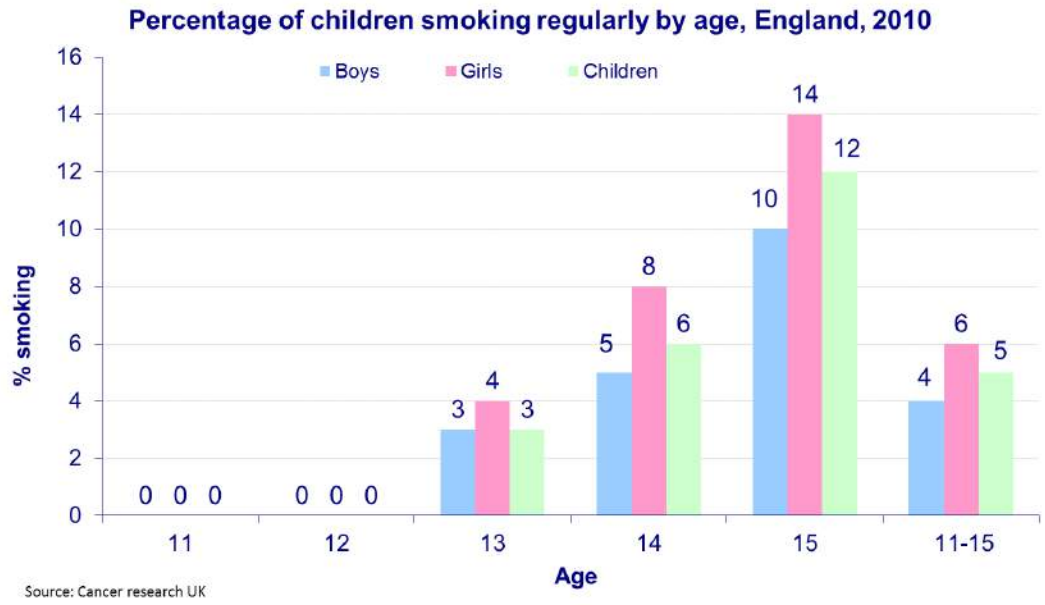
It is expected that smoking, which accounts for approximately 80% of causation, is predictive of future cases of COPD. With the exception of Dartford, which has a higher prevalence than other districts in the former West Kent PCT area, it is the former Eastern Coastal Kent PCT districts which have highest rates of smoking. This reflects the higher level of deprivation and may also reflect some manual occupational causes, for example coal mining, paper manufacture, cement and flour milling industries in these areas.

Figure 5: Smoking Prevalence by Local Authority (2012)



Action is needed to prevent the younger generation from smoking, and interventions to help children and young people to quit. The national rates of children smoking by age are shown on the following chart.

Figure 6: Percentage of Under 15 Smoking England (2010)



See outcomes of secondary care audit above.

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QoF outcomes

The following table shows the latest COPD QoF achievement (2013-14) across Kent CCGs. Although there is some variation there is a real improvement in outcomes since 2012-13, reported in the last JSNA. Some of the indicators have changed but FEV1 records, review of breathlessness and flu immunisation indicators have all improved across the board.

Table 3: QoF outcomes by Kent CCGs (2013/14)

COPD QOF Indicator achievement (2013/14) for all CCGs

QOF Indicator	Ashford CCG	Canterbury and Coastal CCG	Dartford, Gravesham and Swanley CCG	Medway CCG	South Kent Coast CCG	Swale CCG	Thanet CCG	West Kent CCG
COPD002 The percentage of patients with COPD (diagnosed on or after 1 April 2011) in whom the diagnosis has been confirmed by post bronchodilator spirometry between 3 months before and 12 months after entering on to the register	88.24	93.48	91.77	92.75	92.32	87.08	91.03	91.07
COPD003 The percentage of patients with COPD who have had a review, undertaken by a healthcare professional, including an assessment of breathlessness using the Medical Research Council dyspnoea scale in the preceding 12 months	89.81	90.18	86.96	89.51	89.66	85.29	86.40	90.89
COPD004 The percentage of petients with COPD with a record of FEV1 in the preceding 12 months	84.79	85.91	86.87	86.39	87.14	80.71	83.19	88.15
COPD005 The percentage of patients with COPD and Medical Research council dyspnoea grade ≥3 at any time in the preceding 12 months, with a record of oxygen saturation value within the preceding 12 months	91.25	96.44	89.90	90.05	95.71	93.70	95.40	93.13
COPD006 The percentage of patients with COPD who have had influenza immunisation in the preceing 1 September to 31 March	95.73	96.46	96.09	97.15	96.42	95.03	93.40	96.63

Source: QOF

Kent Service Information

Secondary Care

- Respiratory service provided at Maidstone and Tunbridge Wells Hospitals: http://www.mtw.nhs.uk/a-z-of-services/chest-unit.asp

- Respiratory service provided at Dartford and Gravesham NHS Trust: http://www.dvh.nhs.uk/services/a-to-z-of-services/general-medicine/respiratory/

- Respiratory Services provided by East Kent Hospitals NHS University Foundation Trust http://www.ekhuft.nhs.uk/patients-and-visitors/services/a-z-of-services/respiratory-lungs-services/

Projected Service Use and Outcomes in Three-Five Years and Five-10 Years

Respiratory disease costs the European Union 6% of its total healthcare budget, COPD accounts for 56% of this (estimated at 38.6bn euros). UK costs are estimated at £1bn per annum.

Public Health England has published Inhale profiles for all CCGs from which this data has been taken. The table shows admission and emergency admission rates for all Kent CCGs as well as some prescribing costs. This is compared with England and South England and with similar demographic areas (ONS cluster). NHS Canterbury and Coastal costs are the lowest across Kent. NHS Dartford,

Gravesham and Swanley, NHS West Kent and NHS Swale are all higher than the South of England. All Kent CCGs have higher costs for daily quantities of corticosteroids than England. NHS Thanet, NHS Swale and NHS South Kent Coast are the highest spenders in the South of England when prescribing costs take into account age and gender (STAR-PU).

Table 4: Selected COPD costs by Kent CCGs

		Dartford Gravesham and Swanley (ONS cluster)	West Kent (ONS cluster)	Ashford (ONS cluster)	Canterbury and Coastal (ONS cluster)	Swale (ONS cluster)	South Kent Coast (ONS cluster)
COPD cost per admission (£)	2010-2011	2,310	2,308	2,060	1,948	2,352	2,255
COPD cost per emergency admission (£)	2010-2011	2,354	2,331	2,071	1,943	2,287	2,112
Cost of prescribed inhaled corticosteroids per average daily quantity	2011-2012	0.609	0.562	0.554	0.551	0.622	0.639
Cost of prescribed inhaled corticosteroids per STAR-PU	2012-2013	0.48	0.44	0.47	0.48	0.56	0.56

The spend and outcome factsheets and tool (SPOT) produced by York and Humber PHO show that for all respiratory conditions NHS Ashford, NHS Canterbury, NHS Dartford Gravesham and Swanley all have higher spend and better outcomes when compared to ONS statistical neighbours. South Kent Coast, Swale and Thanet have lower spend and worse outcomes and NHS West Kent has lower spend and better outcomes.

Inhale has also completed some work which indicates that lower quality education and self-care in primary care impacts on secondary care admissions costs.

Evidence of What Works

Evidence suggests that delivery of services for people with COPD are effective where an integrated care model is developed using multidisciplinary teams.

Key features are:

a Early recognition of disease to minimise late diagnosis through opportunist systematic case finding and better recognition of signs and symptoms by health care professionals especially those in primary care and by the population itself. Personalised care and support for self-management for people with COPD (and their carers) receiving disease specific education and training to become active partners in a systematic approach to care planning and management.

b Proactive management by healthcare professionals starting with an accurate diagnosis and a disease register, monitoring and assessment of severity, co-morbid conditions and impact of disease, regular review with specialist input depending on severity of condition, and early and specialist rehabilitation and social services support to prevent disability and improve quality of life and community equipment and other support to promote independent living and activities of daily living and re-enablement.

c Effective prevention and management of acute episodes with prompt identification and treatment (where possible in the community) in a care model

which facilitates admission avoidance, early supported discharge and with structured admission/specialist intervention, proactive follow up post exacerbation for treatment review and optimisation.

d Treatment intervention using evidence based pharmacological and non pharmacological treatments and regular review to ensure optimisation as well as community provision of specialist interventions/devices to support treatment and monitoring of signs and symptoms.

e Effective and equitable end of life care including palliation of symptoms, end of life care management, bereavement care and support of relatives.

User Views

Breathe Easy Groups are established in:
Ashford and Tenterden
Canterbury
Dover
Gravesham
Maidstone and District
Thanet
Tunbridge Wells

As part of the work on developing the national Outcomes Strategy for Chronic Obstructive Pulmonary Disease and Asthma the DH asked patients and clinicians for their views.

People with COPD and asthma and their carers said that they wanted:

- timely access to comprehensive quality assured assessment and diagnostic services
- information related to their condition and how it is managed to be available to all practitioners involved in their care irrespective of the setting
- access to reliable information about their condition which sets out all the options so that they can make choices which are appropriate for them
- easy access to comprehensive information about the services available to them and the outcomes achieved by these services
- to be empowered to make choices about their care where these are clinically appropriate and to be supported in decision making to the extent that they wish
- to know that they will receive the support they need whilst living with their condition and to be supported to remain in work and play an active role in society and local communities
- to be treated as a whole person, often with a range of other conditions
- to know that everyone involved in their care has the necessary skills, training and expertise and be reassured that everyone involved in their care will work effectively together, so that their care will feel seamless even when delivered in different locations
- to be able to access specialist services without delay should they need to do so; and to be assisted where necessary to remain at home

- to know that if they are approaching the end of life their preferences for care will be discussed with them and every effort will be made to meet their needs and their preferences
- to be treated as a whole to enable them to fully undertake activities of daily living and for the care providers to act as one team.

Unmet Needs and Service Gaps

Access to spirometry does continue to be a problem and where there have been schemes for identifying patients who are suitable for further diagnosis including spirometry the capacity within primary care has been a barrier to the success of this work.

It is estimated that for every patient enrolled in a pulmonary rehabilitation programme there is a saving of £210 per patient in reduced health resource utilisation and a £1,500 improvement per patient in Quality Adjusted Life Years (QUALYs). Access to and acceptability of these programmes for patients means that uptake is not as good as it could be, although there has been some improvement. Access to transport has been identified as a problem.

Patients with COPD may feel guilty, depressed and angry about their condition. Many patients with COPD are elderly and/or from lower socio-economic groups, both of which pose challenges to the caregiver, as does the stigma the disease carries, which stems from its strong link with smoking. Good communication and non-judgmental engagement is needed by the health professional to involve patients in the self-management of their condition.

Recommendations for Commissioning

There is still variation in provision across Kent. Swale, Thanet and South Coast Kent have the greatest burden of disease but also fare worse in terms of outcomes and expenditure. Even within better performing CCGs there is also variation in outcomes between practices. Using data to inform targeting and prioritisation for service improvement particularly in areas of deprivation and in addressing the disparity of outcomes between CCGs and practices will be necessary.

There needs to be a higher priority for targeted prevention, particularly Smoke Free interventions and improvement in smoking cessation outcomes in areas of higher deprivation particularly.

The capacity of primary care to identify the undiagnosed patients and provide earlier interventions is key, capacity and capability for performing spirometry in primary care has been identified as a key gap.

The creation of local referral units for long term conditions which includes investment in community respiratory services is to be welcomed. Good communication between these services and primary and secondary care is vital to success. The learning from developing these models of care could be shared across areas with poorer outcomes.

Patient education for self-management is key to improved outcomes. Barriers to uptake of evidence based programmes such as pulmonary rehabilitation should be identified and strategies developed to improve uptake of patient education.

COPD patients admitted to hospital with exacerbation should be cared for by an MDT of respiratory specialists on a respiratory ward, services should be organised and resourced to provide that care seven days a week.

Recommendations for Needs Assessment Work

Pulmonary rehabilitation (will partly be met by national COPD audit in 2015)
Oxygen therapy
Early supportive discharge

Key contacts

Malti Varshney	Consultant in Public Health
Val Miller	Public Health Specialist

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