The London Respiratory Team (LRT) has detailed workstreams that will be producing guidance on how to make change happen. These will complement, but not duplicate, work expected shortly from the DH on an outcomes strategy, and a commissioning pack including guidance on models, costing tools and monitoring.

The case for change

In London the spend on the respiratory programme budget increased by an average of 21% between 2008/09 and 2009/10 (range -7% to +64% by PCT). The spend including prescribing but excluding lung cancer and GMS/PMS costs for 2009/10 was £646 million or an average of £17.5m per pathfinder (n=37). In addition, the cost of inpatient care for lung cancer in 2009/2010 for London was just under £15 million whilst the cost for outpatient care was just over £500k. There is scope to extract better value from this total investment and to limit the speed of growth.

Getting the balance of investment right

Nationally, the NHS spends over £2.7 billion a year on treating smoking related illness, but less than £150 million on smoking cessation [DH England]. That is, only 1/20th the spend on stop smoking. In London, up to one in five of all deaths (depending on borough) is due to smoking and nationally 35% of all respiratory deaths for respiratory diseases in 2009 were attributable to smoking (and 29% of all cancer deaths). Yet extremely cost effective interventions that can be used in hospitals and in the community to reduce that mortality, improve health and prevent admissions across general medicine and surgery are not used consistently.

The respiratory problem in London

COPD – too many too late

We spend over £100m on COPD per year or over £2.6m per pathfinder. Depending on borough, between a third and nearly two-thirds of that cost is secondary care because many of the people with COPD on our registers are moderately or severely ill and breathless and prone to acute illness that may require hospital admission. Inpatient costs averaged £5000 per capita across London in 2010 with significant variation. In 2009/10 there was an average admission rate of 1.9 per 1000 practice population; the highest was in Tower Hamlets at 4.9. In Q1 2009/10 COPD was the second highest cause of emergency admission. In 2008-09 the total number of bed days

for emergency hospital admissions for COPD as a primary diagnosis was 91,140. Average length of stay in London is 6.7 days ranging from 8.6 in Tower Hamlets to 4.9 in Hillingdon. Nationally 13% of patients admitted to hospital with COPD die within 3 months and a quarter die within a year of admission. We estimate as many as a third of those with a first admission for COPD are only diagnosed as a result of that admission. We also know that between 35 and 55% of people with COPD still smoke. There is therefore a need to focus on both those at high risk and also to reduce the populations’ risk of poor outcomes by shifting their risk profile curve to the left as in CVD.

Obstructive airways disease spend (2009/10) and premature mortality from COPD (2007-2009)

Source: COPD Pathway Profile, NHS London Health Programmes. © Crown Copyright 2011
The respiratory problem in London

Asthma – opportunities for self management and responsible prescribing

London spends about £100m on asthma a year, or over £2.6m per pathfinder excluding PMS and GMS costs. Much of the cost is prescribing and there is scope to reduce the costs of wastage, and prescribing appropriate to disease severity and particularly considering high-cost combination inhalers. National data suggest 45% of the population with asthma exhibit sub-optimal control, yet prescribing data suggests that of the remaining 55% many may be over-treated with the most potent combinations. Patients may be readily stepped up to these medications, but many may not be stepped down again once good control has been achieved as recommended by the Asthma Guidelines. A body of evidence suggests that smokers with asthma are insensitive to standard doses of inhaled corticosteroids creating a number of problems of waste and use of higher cost interventions [Tomlinson]. Intensive and repeated stop smoking support should be offered to all smokers with asthma. There is also scope to make care more effective by promoting self-management, ensuring compliance and good inhaler technique, and improving parent and carer support to bring the level of asthma hospital admissions into line with those of other OECD countries and to reduce A&E attendances.

Respiratory prescribing costs across COPD and asthma

Three out of the top 5 drugs in terms of total spend to the NHS are respiratory inhalers (LRT Responsible Prescribing Message 1). The use of combination inhalers varies across London as does the choice between the two most commonly used, Seretide and Symbicort. There is no obvious explanation for this variance. We spend in total about £46 million pa on ICS/LABA combinations, yet there are more cost-effective options. It is important to look at your data and audit them locally. In particular, if combination therapy (ICS+LABA) is required for the management of severe COPD, there may be other more cost effective alternatives than Seretide 250 evohaler (which is not licensed for COPD anyway). Earlier intervention with Pulmonary Rehabilitation may delay the need to progress to expensive treatment with triple therapy (ICS+LABA+LAMA).

No placebo devices are available for patients to try prior to a first prescription nor to learn inhaler technique due to infection control measures and changes in supply by the pharmaceutical industry. This means inhaled therapy is wasted by the wrong choice of inhaler and in the teaching process. The solution is not certain, but needs coordinated effort.

Lung cancer – significant variation across London

There is significant scope to reduce variation. The average length of stay for lung cancer in 2009/10 was 11.9 days across London, but this varied across PCTs from <9 to >19 days. Lung cancer patients took up 53,000 bed days. The directly age standardised rate of incidence of lung cancer in London is 48.3/100,000 population but this varies by borough between 33.5 to 70.9. The directly age standardised mortality rate for London is 40.8/100,000 population and varies from 27.8 to 61.2. This is a significant variation not wholly explained by case-mix and is thought to be related to late diagnosis, access to treatment and patient characteristics. The 1-year survival rate in England is 28% versus France 42%, Scandinavia 37%, Austria 37% (1995-9 data). The median 1-year survival by PCT in London is 30% but varies from 22-44%.

Thirty-eight percent of lung cancer cases first contact with secondary care is as an emergency presentation (4th highest rate for any cancer) and these patients have lower survival rates than those that are referred by their GP (9% vs 35%). Treatment rates are increasing but there is large variation across the country: the percentage of patients with NSCLC being treated with surgery in 2008 in England and Wales was median 9.9% (range 4.4-25.2%) and in 2009 the median increased to 14.4% (range 8.5-20.3%).

London Respiratory Team
Case for change in London respiratory services using a right care approach
More commitment to stop smoking support

Stop smoking is associated with a 43% decreased risk in hospitalisation in COPD [Godtfredsen] and it reduces the risk of developing bronchitis and pneumonia compared to continued smoking. Introduction before the initiation of radiation therapy in lung cancer is associated with an increased rate of complete response to treatment compared to those who continue to smoke through treatment; it reduces the risk of re-hospitalisation for people with heart disorders.

Stop smoking as a treatment for COPD

When prescribing any new respiratory inhaler, ensure that the patient has been offered NICE-recommended support to stop smoking (LRT Responsible Prescribing Message 2). Stop smoking support is highly cost-effective and effective long term for people with COPD as shown in a systematic review of 9 studies [Hoogendoorn] as long as the support is evidence-based and manages the higher relapse rate and the time needed (90 minutes). The incidence of lung cancer in men has decreased since the male smoking prevalence has reduced. We propose that practices have a stratification for their stop smoking support and a stable disease management protocol for people with COPD who have smoked within the last year. This builds on the knowledge that 50% of patients with COPD who smoke reported a willingness to stop smoking within 6 months in the Hoogendoorn study. All patients should be included in this stratification. Forty-two percent of all cigarettes smoked by the English general population are smoked by people with a mental disorder [McManus]; those with schizophrenia have a 10 fold increased death rate from respiratory disease mainly due to smoking. Smoking induces metabolism of some antipsychotic medication, resulting in smokers requiring increased doses which can be reduced by up to half following stopping smoking [Lester].

"Smoking cessation is still the most important intervention to slow down the disease progression of chronic obstructive pulmonary disease. It decreases the annual decline in lung function, reduces symptoms of cough and sputum, improves health status and reduces exacerbations of COPD. Because of the strong association between use of healthcare services and disease severity, slowing down disease progression is likely to reduce annual COPD-related healthcare costs" [Hoogendoorn 2010]

Stop smoking as primary prevention

Illnesses among children caused by exposure to second-hand smoke lead to an estimated 300,000 GP consultations and about 9,500 hospital admissions in England [DH England]; and there is no reason to expect London’s experience is proportionately different. Therefore we should invest in interventions to prevent smoking and explain the impact of second-hand smoke.

Earlier diagnosis – go where the people at risk are

Londoners and healthcare professionals should take COPD as seriously as lung cancer (or TB or other serious illness). This means using tools to help communicate effectively with patients at risk; quality-assured diagnostic measurement and interpretation and adding simple spirometry in the community to triage those who need this, and clear stop smoking protocols. Integration of care pathways should be optimised, such as follow up plans from A&E attendances and commissioning radiology to report where appropriate “if a diagnosis of COPD has not already been made, suggest consider arranging spirometry.” One-third of diagnoses for COPD in some settings may be inaccurate [Bolton]. Improving diagnostic accuracy in COPD would reduce medicines wastage and the delay in determining the real diagnosis. The strong association of COPD with smoking suggests the need to go where the smokers are who do not routinely attend GPs eg pharmacists, stop smoking services, mental health services and local employers. This would have multiple benefits. For example in those with psychosis 66% of premature deaths are due to treatable cardiovascular, pulmonary and infectious diseases compared to 33% from suicide and injury. In addition, adverse lifestyle factors including smoking, anti-psychotic medication related weight gain and diabetes operate very early on in the course of psychosis and are powerfully influenced by social determinants of health [Lester]. Having achieved earlier diagnosis, the main intervention should be high quality stop smoking support that is highly cost-effective. Patients with mild COPD may not require medication (or may require only short-acting bronchodilators) but they will benefit from advice on exercise and encouragement to consider smoking cessation.

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A cost-effective intervention in COPD

<table>
<thead>
<tr>
<th></th>
<th>1 year abstinence</th>
<th>QALY £</th>
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<tbody>
<tr>
<td>Usual care</td>
<td>1.4</td>
<td></td>
</tr>
<tr>
<td>Minimal counselling</td>
<td>2.6</td>
<td>14,735</td>
</tr>
<tr>
<td>Intensive counselling</td>
<td>6</td>
<td>7,149</td>
</tr>
<tr>
<td>Intensive counselling+pharmacotherapy</td>
<td>12.3</td>
<td>2,092</td>
</tr>
</tbody>
</table>

"An inexpensive intervention with a relatively low success rate can make an important difference if it has great potential and is applied early in the course of the diseases of interest" [Anthonisen 2005]
So what should commissioners commission and what changes can be made?

LRT Responsible Respiratory Prescribing (RRP) messages

LRT RRP message 1. Three out of the top 5 drugs in terms of total spend to the NHS are respiratory inhalers

LRT RRP message 2. When prescribing any new respiratory inhaler, ensure that the patient has been offered NICE-recommended support to stop smoking

LRT RRP message 3. Pulmonary rehabilitation is a cost effective alternative to stepping up to triple therapy and should be the preferred option if available and the patient is suitable

LRT RRP message 4. When prescribing any inhaled medication, ensure that the patient has undergone patient-centred education about the disease and inhaler technique training by a competent trainer

LRT RRP message 5. When prescribing an MDI (except salbutamol), ensure that a spacer is also prescribed and will be used

LRT RRP message 6. When prescribing high dose inhaled corticosteroids (>1000mcg BDP equivalent), ensure that the patient is issued an inhaled steroid safety card

LRT RRP message 7. No Prednisolone EC prescribing without specific clinical reason Red coated steroid tablets are no more effective or protective than white steroid tablets but are much more expensive.

LRT responsible oxygen (RO) prescribing messages

LRT RO message 1. Oxygen is for treating hypoxia not breathlessness, so have and use a pulse oximeter.

LRT RO message 2. A specialist team for oxygen assessment should be part of a commissioned integrated respiratory service. This will improve effectiveness of oxygen therapy, reduce waste and reduce costs. See http://tinyurl.com/4ye3nws

LRT RO message 3. Protect patients who are at risk from excessive oxygen. Identify at risk patients and use a combination of limiting oxygen to 28% in ambulance transit (universal precautions), 02 alert cards and/or patient specific protocols (PSPs) and report adverse events through the local SUI system. See http://tinyurl.com/4ye3nws for a step-by-step guide to oxygen.

Invest in well-organised pulmonary rehabilitation (PR) integrated into the COPD pathway

Pulmonary rehabilitation is very cost effective in the management of COPD. Not only is the cost per QALY gained very favourable (£2,000–£8,000 per QALY), the numbers needed to treat to reduce admissions is only 3, and it is the only intervention that has been shown to reduce readmission rates at 3 months [Seymour]. Physical health issues also impact negatively on self-esteem, mental health, stigma, discrimination and quality of life [Lester]. The LRT has mapped PR services across London. Across London, five boroughs (Harlow, Hounslow, Havering, Kingston, Enfield) currently provide none, and there is considerable variation in the availability by boroughs where it is available. Pulmonary rehabilitation is a cost effective alternative to stepping up to triple therapy and should be the preferred option if available and the patient is suitable (LRT RRP message 3). Pulmonary rehabilitation should be commissioned as part of a pathway of care and be available in sufficient quantity. We propose that the annual capacity of PR compared to expected incidence and prevalence of people with COPD with an MRC score of 3 or above (or MRC 2 plus admission) is monitored. In addition, we propose that commissioners monitor the number and % of patients accepted onto a PR programme that complete 75% of the programme over a 3 month period (i.e. over 10 out of 14 sessions or 9 sessions out of 12) because benefit depends on this and is often as low as 50%. We encourage general practice to use available patient education [http://tinyurl.com/3oe5mv6] to promote PR to potentially fearful or sceptical patients and review completion rates.

Contact the London team for benchmark data, guidance on standards and costing. Note that the team is also developing a position on maintenance programmes in view of patient demand and the evidence showing a decline can start 12 months after the programme [Griffiths].

Responsible and cost-effective prescribing of oxygen

It is estimated 30% of patients on home oxygen therapy derive no clinical benefit from it, and some people with COPD would benefit from long term and/or ambulatory oxygen therapy but do not get it. We also know many patients with an acute exacerbation of COPD receive inappropriately high flow oxygen and this increases the risk of death [Austin]. There are 2000–4000 deaths per year in England (of which London contributes about 10%).
London Respiratory Team
Case for change in London respiratory services using a right care approach

So what should commissioners commission and what changes can be made?

Supportive and end of life care for people with COPD and lung cancer

People with COPD have symptoms which may be as or more severe than lung cancer and which they suffer for longer, but are supported by fewer services at the end of their life. The outlook for long term survival for lung cancer is still very poor and excellent palliative care with end of life support is a mandatory part of a pathway of care.

Patients dying from COPD have a heavy physical and psychological suffering, not only from disabling breathlessness but also from pain, anxiety and depression, all of which are poorly addressed. Patients with COPD have a different illness trajectory compared to those patients for whom most end of life services have been set up. For example in organ failure such as COPD, death can appear ‘sudden’ against a background of inexorable decline, often during an exacerbation or due to comorbid cardiovascular disease.

A service designed for cancer may not be appropriate. It is much harder to make a prognosis. Fifty percent of people after an admission with acute respiratory failure in COPD (a key marker for inclusion on a palliative care register) will be dead in two years; it follows that 50% will be alive in two years. It is thus not at all clear at what point the patient should go on a register.

An acute admission for an exacerbation may be appropriate for end-stage COPD but is less likely to be appropriate for end-stage cancer. For patients who are breathless from COPD, and very often isolated, hospital is often their own, and their carers’ preference. It is the quality of the experience rather than the location that is important. The measure should be patients dying in their preferred place – this needs to be discussed sensitively, recorded, reassessed over time and audited as part of advance care planning that might be in hospital or in the community. Wherever it takes place, the decision needs to be available to all care providers, with the consent of the patient.

Good care requires whole systems working and services integrated to meet all the patient’s needs. The starting point should be the adoption of the Gold Standards Framework in every practice and the inclusion of people with COPD on the register – we propose that admission for a COPD exacerbation should trigger consideration for inclusion on the register.

Shift care closer to home and shift costs out of hospital

Higher continuity of care with a GP is associated with lower risk of admission. There is mixed evidence about size of practice: small size/single handed may be associated with increased admissions for asthma but not COPD [Purdy].

The point is to get the diagnosis right, and aim to provide the patient with the right care in the right place, at the right time, reliably, by the professional(s) most competent to provide their care. Ways to do this include:

Integration
Integration (between primary and secondary health care and social care at the individual and systems level) can be effective in reducing admissions. As a first step, all community professionals should seek specialist advice before calling an ambulance or arranging admission.

If this is not available, it should be a commissioning priority.

In the medium term, consider joint teams, pooled budgets and a holistic needs assessment, a negotiated care plan, a named key worker for vulnerable patients, and flagging those patients for the system including OOH. Read http://tinyurl.com/63dd4dq

Substitution
Substitute location: most care can be provided in general practice. There remains scope to reduce the number of first outpatient appointments and follow-ups. The NHS Institute estimates £2.28m could be saved in London respiratory care by shifting first adult respiratory outpatient attendances to the community to achieve the position of the top quartile. However, it may also be worth asking the question “where are the people at risk” and going to them, given the known association between deprivation, COPD, lung cancer and also hospital admission. Hospital at home produces similar outcomes to between deprivation, COPD, lung cancer and also hospital

Substitute skills: the patient should have access to professionals competent to meet their needs. This may require a team approach rather than just the substitution of one practitioner for another. [Click this link http://tinyurl.com/3nryy7b to see key questions for commissioners and Skills for Health competences]. For people who have mental health problems joint working with families and community mental health is likely to be most successful. The most important question is whether there are sufficient skills to diagnose as everything hinges on making and recording an accurate diagnosis. There is very little evidence to suggest that clinics provided by hospital specialists in primary care reduce hospitalisation rates when delivered in isolation. However, as part of more complex multifaceted interventions involving collaboration with primary care, education or other services, there may be less use of inpatient services. A fivefold variation in out-of-hours admission rates has been observed between GPs working for the same out-of-hours service and caring for the same patient population, suggesting that clinician factors play an important part in determining admission rates. Being seen by a specialist team in hospital reduces length of stay but, in the national audit 2008, was only achieved in 78% of admissions nationally and the proportion of patients discharged under the care of a respiratory consultant was 55% nationally (34% by a general physician and 11% by a care of the elderly physician). Structured discharge planning is effective in reducing future

(Contd page 6...)
re-admissions and needs specialist team input. We recommend that the COPD discharge bundle approach (see link http://tinyurl.com/4y5129v) should be commissioned and that the recent BLF/BTS guide to improving hospital discharge discharge (see http://tinyurl.com/3njwoqa) be considered.

Substitute technology: keep this simple. There is little evidence that telemedicine is effective for respiratory conditions. Use pulse oximetry routinely as the fifth vital sign. Commission services that offer patients the choice of phone or email contact. Use technology for reminders. Consider the use of clinics where test results and other information are reviewed by an expert without the patient present eg for solitary pulmonary nodules, or COPD.

Substitute organisation: we recommend integration of care, not as an end in itself but as a way of delivering care at the level of the individual, and system. However, there may be services that could be commissioned separately from non-NHS organisations eg from the British Lung Foundation.

Substitute model: There is evidence from systematic reviews that self-management seems to be effective in reducing unplanned admissions for patients with COPD and asthma however there is some debate over which ‘active ingredient’ is the most effective. However, “co-creating health” models are worth considering. Paradoxically, whilst demedicalising much of COPD care, we advocate medicalising smoking as tobacco dependence, to ensure as much clinical input as possible is provided to help people quit.

The generic approach to working with patients as partners in long term conditions care applies to chronic lung disease very well, and we recommend increasing effort to provide useful, appropriate and accurate patient information about the diseases and the interventions available (including NIV) and working with partners such as the Breathe Easy groups supported by the British Lung Foundation as well as the London team that can offer good examples.

Stratification (of patients with similar needs)
What risk stratification model are you using? The best integrate multiple data sets to identify people at risk of unplanned care. These people require specialist services to meet their needs and are likely to have a complex mix of social, mental and physical health problems. Localise protocols across the COPD spectrum according to an agreed stratification policy. Set appropriate therapeutic standards for each grade of disease. QOF review targets are minimum standards and most patients need more review. The primary care data [http://tinyurl.com/3zx9n8c] also show you the gap between expected and observed prevalence, giving you an indication of the number of patients that remain undiagnosed. People who have been through pulmonary rehabilitation form a natural support group, but breathless people need ongoing access to appropriate exercise.

Simplification
Are any of your team aware of ways to reduce handoffs along the pathway or ways to improve the efficiency of follow-up and review? The National Cancer Survey London results show patients in London are less satisfied with their cancer journey than other parts of England; hand-offs between hospitals are felt to contribute to poor care. If the radiologist identifies suspicious lesions on imaging does she/he book a staging scan and specialist out-patient appointment on behalf of the patient and notify the GP?

Essential elements of your respiratory pathway

<table>
<thead>
<tr>
<th>Primary prevention and earlier diagnosis</th>
<th>Secondary prevention</th>
<th>Supportive and palliative care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence-based stop smoking support for all smokers including those with mental health problems</td>
<td>Evidence-based stop smoking support for all smokers including those with asthma, COPD and those with mental health problems</td>
<td>Oxygen assessment by specialist teams of existing patients and prospective patients</td>
</tr>
<tr>
<td>Achievement of QOF COPD 8: The percentage of patients with COPD who have had influenza immunisation in the preceding 1 September to 31 March (England average is 92.7%, England highest is 100% (APHO practice profiles)</td>
<td>Prescribing in line with the guidelines and the LRT guidance on responsible prescribing</td>
<td>Holistic needs assessment for people with lung cancer, interstitial lung disease (pulmonary fibrosis) and COPD</td>
</tr>
<tr>
<td></td>
<td>Referral for those disabled by breathlessness to pulmonary rehabilitation and care plan to include maintenance classes</td>
<td>Active symptom management</td>
</tr>
<tr>
<td></td>
<td>Evidence-based review of medication and inhaler technique scheduled in practice to avoid times when patients likely to be ill and therefore DNA</td>
<td>Trained staff discussing advance care plans including NIV, preferred place of death, and DNR</td>
</tr>
<tr>
<td></td>
<td>Assessment of anxiety and depression</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assessment of co-morbidity</td>
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</tbody>
</table>
Conclusions

What do you need to know?

- Your QOF performance compared to your peers
- Expected vs actual prevalence
- Percentage of your patients with lung disease who smoke and evidence that your activity is having an influence
- Your prescribing patterns including inhalers and oxygen
- Admission costs for asthma, COPD and lung cancer and A&E attendance for asthma
- Total annual bed days and numbers of admissions by patient
- What risk stratification system is used locally to identify those at risk who need personalised care
- The LRT messages [http://www.london.nhs.uk/lrt]
- % of patients admitted due to their respiratory disease seen by a specialist respiratory team
- % of patients discharged by the specialist respiratory team

What do you need to “make” in the practice?

- Earlier diagnosis with quality assured spirometry
- Linked registers (risk, smoking, COPD, asthma, end of life)
- A significant event review of every patient in the practice admitted to hospital with asthma or COPD as an emergency should be considered
- Stop smoking support with analysis of effectiveness to avoid rising drug costs for poor outcome
- Consider implementation of the LRT 7 responsible respiratory prescribing messages
- Timely and time-efficient routine review

What might you need to “buy”?

- Enhanced primary care services to supplement services that would not normally fit into the 10 minute consultation
- Stop smoking support for highly dependent smokers
- Pulmonary rehabilitation
- Education and training including motivational behaviour change eg co-creating health
- Written and other patient information eg from British Lung Foundation
- Selected and supported community spirometry/ diagnostic specialists
- Prompt CXR in those with suspicious symptoms to support early diagnosis of lung cancer
- Any patient admitted to have COPD discharge bundle completed before discharge
- Multi-disciplinary specialist service including social care support for those identified as being most at risk of admission
- Oxygen assessment
- Non-invasive ventilation
- Thoracic surgery
- Oncology care
- End of life support

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“Right care” for COPD patients is a fast-evolving field, and so the London Respiratory team suggests that if you want to make changes, we facilitate you contacting others with a similar interest. For example there are a number of tests of integrated working, of discharge bundles, of case-finding and of community-based specialists. Email us and we’ll make the introductions.

See
http://www.london.nhs.uk/lrt
http://www.london.nhs.uk/cquins
www.impressresp.com
http://www.londonhp.nhs.uk/publications/copd/copd-profiles/