5 Years ago on the 1st of August 2008

The South Lakes Community Respiratory Service was launched.

Since then we have delivered community based Specialist Respiratory Care to hundreds of patients across the South Lakes Locality, in the form of: acute admission prevention interventions in patients’ homes; pulmonary rehabilitation classes in community venues; OT, Physio and Nursing management of respiratory symptoms in the clinic and home setting, and Multi-disciplinary case management of the respiratory patient with complex needs.

In these 5 years we have worked closely with our colleagues in primary and secondary care, implementing educational events, practice educational visits and providing support with patient management, including creating reference tools such as the ‘South Lakes Respiratory Resource Pack’ and Self management plans.

The aim of our Service is to provide specialist respiratory care in the community, influence the standards of Respiratory care across the locality and reduce unnecessary Respiratory hospital admissions...

In this edition of our Newsletter it is time again to focus on...

How can General Practice & Community Services Reduce Unnecessary Respiratory Admissions to Hospital
5 Key interventions that reduce exacerbations in COPD

1. Correct diagnosis & Quality Spirometry
   A high prevalence of undiagnosed COPD in a population increases exacerbation rates. Those patients who have failed to be diagnosed with COPD are denied treatment options that can reduce the risk of exacerbations. Mis-diagnosis or lack of screening for those patients ‘at-risk of a lung disease’ contributes to under-diagnosis, and poor quality spirometry contributes further to mis-diagnosis (*see details of spirometry training on page 7) (Jones 2011 - Hospital admission rates for COPD: the inverse care law is alive and well).

2. Smoking Cessation
   Smoking cessation is the single most effective therapy for preventing loss of lung function in COPD and is associated with an improvement in symptoms and improved health status. Smoking cessation reduces the rate of exacerbations in those with COPD (Au et al (2009) the effects of smoking cessation on the risk of COPD exacerbations J.Gen. Intern. Med 24(4) 457-463).

3. Pulmonary Rehabilitation
   Pulmonary rehabilitation reduces morbidity; re-exacerbation rate and the use of health care services, it improves symptoms; health related quality of life and psycho-social outcomes in COPD & other chronic lung diseases. Pulmonary rehabilitation is suitable for patients of all levels of breathlessness (*see page 6 for details) (Ries et al (2007) Pulmonary rehabilitation joint ACCp/AACVPR evidence-based clinical practice guidelines. CHEST 131).

4. Inhaler technique & compliance with inhaled therapy
   Device suitability and a patient’s inhaler technique is often overlooked when prescribing inhaled therapy, but is crucial for the success of any therapy choice. Inhaler technique is quick to teach and is cost effective and checking technique should form part of every review of COPD by all clinicians involved in COPD care. (*see page 8 & 9 for details)

5. Self management education, plans and home-held medication
   Educating patients about the sign and symptoms of exacerbations, as well as supplying home held antibiotics & steroids (where appropriate) improves early detection and management of exacerbations. (*see pages 3 & 4 for details)

In COPD, an increased number of exacerbations is directly linked to accelerated decline in lung function, and increased mortality.

Sundh et al. (2012) The Dyspnoea, Obstruction, Smoking, Exacerbation (DOSE) index is predictive of mortality in COPD. PCRJ; 21 (3): 295-301.
Managing Exacerbations of COPD in the community

When is a Hospital Admission Advised?:

This summer together with our colleagues from the North West Ambulance Service, Primary Care Assessment Service (Kendal) and Cumbria Health On-Call we will launch a new COPD exacerbation pathway. With the aim of reducing unnecessary admissions to hospital in those patients who phone 999.

From September, all patients who pass through the care of our service will be issued with a Yellow NWAS community care plan, containing a COPD self management plan and in conjunction with home held antibiotics and steroids (arranged with each patient’s GP). When patients phone an ambulance for an exacerbation of COPD, the paramedics will assess their situation and grade the severity of their presentation into one of the following categories, which will then aide in the decision making process for the patients further management.

We would like to encourage all GPs & Community staff to start to use this simple triage tool* (*designed by Dr Wilkinson—Consultant in intensive care and respiratory medicine (UHMBT), and to consider the use of local community services in the management of exacerbations of COPD when clinically appropriate (Green & Amber presentations).

<table>
<thead>
<tr>
<th>Green</th>
<th>Amber</th>
<th>Red</th>
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</thead>
<tbody>
<tr>
<td>Suitable for care at home with suitable treatment</td>
<td>Requires assistance to stay at home</td>
<td>Requires admission through MAU or A&amp;E</td>
</tr>
<tr>
<td>All of:</td>
<td>Any of:</td>
<td>Any of:</td>
</tr>
<tr>
<td>• Respiratory Rate &lt;20</td>
<td>• Respiratory Rate 20-30</td>
<td>• Respiratory Rate &gt;30</td>
</tr>
<tr>
<td>• 02 Sats &gt;92% on air/usual oxygen flow</td>
<td>• 02 Sats 88-92% on air/usual oxygen flow</td>
<td>• 02 Sats &lt;88% on air/usual oxygen flow</td>
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<tr>
<td>• Pulse &lt;100</td>
<td>• Pulse 100-120</td>
<td>• Pulse &gt;120</td>
</tr>
<tr>
<td>• Apyrexial</td>
<td>• Mild Pyrexia &lt;38°C</td>
<td>• Marked Pyrexia &gt;38°C</td>
</tr>
<tr>
<td>• Normal conscious level</td>
<td>AND</td>
<td>• Reduced conscious level</td>
</tr>
<tr>
<td>• No confusion</td>
<td>• Normal conscious level</td>
<td>• New confusion</td>
</tr>
<tr>
<td>• Able to cope at home</td>
<td>• No confusion</td>
<td>• Unable to cope at home</td>
</tr>
<tr>
<td>• Stable (or no significant) Co-morbidities</td>
<td>• Able to cope at home</td>
<td>• Bedbound</td>
</tr>
<tr>
<td>Safe to Stay at home with appropriate treatment, refer to South Lakes Community Respiratory Service for a ‘within 3 day’ follow up 07768020845(mobile) or 01539 716670 (office)</td>
<td>Consider a ‘same day’ review by South Lakes Community Respiratory Service to manage this episode at home*</td>
<td>If SLCRS do not have capacity to respond that day, advice will be offered on the management of the patient</td>
</tr>
<tr>
<td></td>
<td>Admit to Acute Hospital</td>
<td></td>
</tr>
</tbody>
</table>
What treatment can be administered in the Community Setting to manage COPD exacerbations?

**Non-Infective exacerbations of COPD**
- Treat with Prednisolone 40mg 7-14 days

**Typical symptoms:**
* Much more breathless than patients usual level for 24-48 hours or more
* Struggling with their usual level of activity (because of their chest)
* Feeling generally unwell

**Infective exacerbations of COPD**
- Treat with Prednisolone 40mg & Amoxicillin or Doxycycline for 7-14 days

**Typical symptoms:**
* Much more breathless than patients usual level for 24-48 hours or more
* Increased **Purulence** of sputum
* Increased sputum volume or coughing more

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**Additional symptom relief options:**

**Difficulty expectorating sputum:**
* Ensure patient is systemically hydrated (dehydration impairs sputum clearance);
* If additional help is required contact community physiotherapy / South Lakes Community Respiratory Service for Acute Chest Physiotherapy interventions.

**Breathlessness:**
* Increase short-acting bronchodilators for symptom relief: 10 separate actuations of 100mcg Salbutamol MDI via a volumatic 30 seconds apart, inhaled using a gentle tidal breathing technique is as effective as a nebuliser. *If patients are requiring high doses of SABA a review is recommended*
* Advise patients simple techniques on ‘how to get your breath back’ see appendix 1

**Struggling with activities of daily living / self care:**

where patients do not have additional options for help at home consider involving community services to help support patients through their exacerbation (e.g. SLCRS; STINT & Langdale unit (step-up/step down wards at WGH and unscheduled services at FGH))

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**O2?** New oxygen therapy should **never be initiated in the community setting** during an acute exacerbation even if hypoxia is present.

* It does not reduce breathlessness any more than an electric fan or open window would
* If a patient presents with new hypoxia (saturations <88-92% on air) a hospital admission is required to give controlled & carefully monitored oxygen therapy whilst assessing for the presence of Type II respiratory failure (which can only be detected using blood gas analysis).
* Type II respiratory failure requires prompt treatment with Non-Invasive Ventilation to prevent death.
What to do after a hospital admission to prevent re-admission & deterioration in health status?

The COPD Review in Practice

After every exacerbation of COPD or hospital admission a patient’s management should be reviewed and optimised where possible. Page 2 outlines 5 Key interventions that will help to reduce the risk of exacerbations, and further detail can be found in your team’s copy of the ‘Respiratory resource pack’.

Ensure all patients who DNA their annual reviews are followed up - patients who are not regularly reviewed, who’s care is not optimised, or who are too unwell to attend a clinic are at increased risk of exacerbation.

If additional help, advice or support is needed in optimising a patient’s care why not contact our service, you can speak to one of our senior clinicians by phoning the service mobile: 07768020845 or why not arrange a practice educational visit from one of our senior clinicians for more advice.

Did you Know…

*There is an increased risk of re-admission to hospital in the 3 months following a hospital admission for an exacerbation of COPD*

For all patients with COPD who have been discharged following an acute admission (for an exacerbation of COPD) please notify the South Lakes Community Respiratory Service.

We are aiming to increase the number of patients who are registered on our NWAS / COPD community care pathway to pro-actively prevent admissions and re-admissions to hospital.

Simply notify us either by phone call (we will require their name / DOB / contact details) or by using our simple service referral form (see appendix 2). And we will contact patients for a discharge review, issue a community care plan and offer a place on the pulmonary rehabilitation programme (when appropriate).

We are also rolling this scheme out in the respiratory wards, MAU and A&E at both acute sites to encourage secondary care staff to tell us when patients have had an admission for an exacerbation of COPD & from September 2013 a project piloting the use of ‘Telehealth’ in these patients will be undertaken by members of our service (for details contact Emma Gaitskell 01539 716670)

If we can all identify more patients at risk of exacerbations and re-admissions to hospital then collectively we can start to optimise care in this ‘at-risk’ group and reduce further admissions.
MRC Dyspnoea scores 1-5 now suitable for a referral

From August 2013 we are opening up our Pulmonary Rehabilitation Service to include those patients with COPD and other chronic respiratory disease who have mild breathlessness and who are less functionally impaired.

The systemic inflammatory process that occurs in COPD results in an accelerated loss of muscle mass even in those patients who are only minimally breathless and functionally impaired. Exercise, coupled with comprehensive disease education is delivered in a supportive setting to enable patients to understand their disease, improve their physical capability and promote behaviour changes to improve overall management of their disease and lifestyle.

Did you know...?

On our current Kendal programme there are 14 patients benefitting from exercise and disease education, who scored their level of impairment at either MRC Dyspnoea score 1, 2 or 3! But we won’t forget to mention the 10 more functionally impaired patients (MRC Score 4 & 5), who are also benefitting tremendously from the programme.

! Before you refer please check...

Is the patient informed about the commitment to twice weekly classes for 7 weeks?
Are they motivated to attend and can travel to a community venue?
Do they have any unstable cardiac disease / unstable diabetes / unstable epilepsy / severe joint pain (e.g. Rheumatoid Arthritis) or other condition that would impair their ability to exercise safely? If in doubt—phone our team to speak to Karen or another senior clinician at SLCRS
Have you confirmed their diagnosis and optimised their treatment?
See our updated referral form attached to email
Quality Spirometry
Are you sure you are doing it right?

The performance and interpretation of spirometry are key skills that are required by all clinicians who are involved in the assessment and management of patients with lung disease. The complexity of both performing and interpreting spirometry is frequently underestimated and simple, easy to make errors can have significant implications on the diagnosis and management of a person's condition.

Why not take the test below to see if you really are sure that you are up to speed with spirometry...

How would you check the technical acceptability of spirometry manoeuvres using the Flow/Volume traces?
How would you determine the reproducibility of spirometry using the values?
How would you determine if airflow obstruction was present?
How would you determine if a restrictive deficit was present?

Answers can be found on the back page..

If you scored 4/4: Well Done you can be confident that you know your stuff but if you want to learn more why not enquire about attending one of SLCRS Spirometry Workshops?

If you scored 3 or less: Time to Sharpen your knowledge of Spirometry - To perform and interpret spirometry accurately you should be able to answer these - you would benefit from attending a SLCRS Spirometry workshop.

In June 2013, following numerous requests from South Lakes GPs, SLCRS delivered two full day workshops on the performance and interpretation of spirometry. These days were very well received by all who attended (mainly our practice nurse and health care assistant colleagues).

Unfortunately only 2 South Lakes GPs attended the advanced interpretation workshop, but the feedback from both of our GP colleagues was that the workshops were very useful, a good detailed refresher with plenty of new information - well worth other GPs attending!

SLCRS are prepared to run a second comprehensive workshop (covering interpretation of spirometry) in Autumn if we have enough demand (20+) and would strongly encourage all GPs & Practice nurses who are required to interpret spirometry as part of their work with respiratory disease to attend.

If you would like to attend an interpretation workshop please highlight your interest to Karen Donaldson - Clinical Lead for SLCRS
karen.stephenson@cumbria.nhs.uk or 01539 716670

These duration of future sessions can be adjusted to 1/2 day events if this would better suit clinicians needs.
Inhaler technique: focus on…

The MDI & Spacer

Checking and correcting a patient’s Inhaler technique is a simple, quick and easy intervention that improves drug deposition into the lungs and maximises the effectiveness of inhaled therapy.

It should be checked by all clinicians who are involved in the management of COPD and Asthma as a routine part of the assessment and management process.

There is wide discrepancies in how we all teach inhaler technique, and in this edition we will focus on the correct technique in using metered dose inhalers to achieve optimum technique.

**Correct Technique:**
- Remove cap
- Shake the inhaler (mixing propellant & drug)
- Spray once into spacer
- Slowly and gently inhale fully through the spacer
- Hold the breath in for up to 10 seconds (or as long as able up to 10 seconds) to increase drug deposition (or tidal breathing via a volumetric if patients cannot manage a breath hold)
- Relax, breathe out, wait 30 seconds then repeat for additional doses.

**Common errors:**
- Not shaking inhaler (propellant will settle to bottom of canister)
- Not using a spacer device - MDI alone propels aerosol particles from the MDI device at a fast speed, resulting in most of the drug depositing in the mouth / throat. More oral side effects and less effective symptom relief will be achieved with MDI alone.
- Double spray into spacer—MDI canisters need time to allow their temperature to change after each dose, not allowing time between doses reduces the size of the second dose
- Fast breath in - momentum of the aerosol particles increases with a fast breath, causing more drug to be deposited in the mouth & throat, rather than lower down the respiratory tract
- Not holding breath - the aerosol particles have minimal time to settle on the airway walls if the breath is exhaled straight away

**Trouble shooting…**
- Struggles pressing canister? - try adding a ‘haler-aid’ device, designed to ease pressing of the canister
- Struggles to inhale slow enough? - check inspiratory flow using an ‘in-check’ device, if patients technique favours a fast inspiration then try prescribing the same (or alternative) drug in a dry power device, or invest time in coaching a slow gentle breath in.
- Reluctant to carry bulky spacers outdoors? - why not issue a smaller spacer (e.g. able spacer or Aerochamber) for use outside of the home environment.
- Clean spacers no more than once per month in warm water (drop of washing up liquid), avoid wiping inside when washing & drying (this generates static) and replace 6-12 monthly
Breathless or exercise limitation due to COPD?

Trial a Short Acting β₂-Agonist (SABA (can also be used as required at all stages)) or a Short Acting Muscarinic Antagonist (SAMA).

Persistent Breathlessness or Exacerbations?

FEV₁ ≥ 50%

Long Acting β₂-Agonist (LABA)

Long Acting Muscarinic Antagonist (LAMA) *Discontinue SAMA*

FEV₁ ≤ 50%

LABA + Inhaled corticosteroid (ICS) in a combination inhaler

Consider LABA + LAMA if ICS declined or not tolerated

LAMA

Offer LAMA in preference to regular 4 times a day SAMA *Discontinue SAMA*

Persistent Exacerbations or breathlessness?

LABA + Inhaled corticosteroid (ICS) in a combination inhaler

Consider LABA + LAMA if ICS declined or not tolerated

LAMA + LABA + ICS

Key

Offer Therapy

Consider Therapy

### Medication Step Wise Approach to Asthma

**Step 1**
- **Inhaled Short Acting Beta-2 Agonist as needed**
- **Mild Intermittent Asthma**
- **Regular Preventer Therapy**
- **Initial add-on therapy**

**Step 2**
- **Inhaled Corticosteroids 200-800 µg per day**
  - (400 µg is an appropriate starting dose)

**Step 3**
- **Add on Long Acting Beta-2 Agonist (LABA) & assess control**
  - "If control still inadequate trial other 'Add-on' therapy: Leukotriene Receptor Antagonist (LTRA) or SR Theophylline"  
  - "Continue if beneficial"  
  - "If beneficial but still not achieved control increase ICS to 800 µg per day"  
  - "If no benefit: Discontinue & increase ICS to 1000 µg per day"  

**Step 4**
- **Increasing Dose of Inhaled Corticosteroids Up to 2000 µg per day**
- **Addition of a fourth drug e.g. LTRA, SR Theophylline or Beta-2 agonist tablet**

**Step 5**
- **Use daily steroid tablet in lowest dose providing adequate control**
- **Maintain high dose inhaled steroid at 2000 mcg/day**
- **Consider other treatments to minimise the use of steroid tablets**
- **Refer patient for specialist care**

**Continuous or frequent use of oral steroids**

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**Aim to balance treatment with symptom control, stepping-up or stepping-down treatment as needed**

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**Good Practice**

Always check inhaler device suitability, inhaler technique and patient compliance with current regime, before increasing drug treatment. If compliance or technique is poor, try an alternative device regime or explore reasons for non-compliance. Often patients have little understanding of the importance of 'preventer' medication so education surrounding the 'purpose' of each drug will aide compliance.

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Welcome to...
Jan Noble and Helen Sugars - both Helen & Jan started their permanent contracts as part-time respiratory nurses in August.

Farewell to...
Helen Tirvengadum & Tracy Minkema. After completing her 3 year advanced practitioner course Helen has started a new role in a GP practice in Morecambe - We would like to wish her good luck in her new post.

Tracy has left our service to become a full time mum of 2! We will miss you Tracy and hope you enjoy your new role.

Team Member Updates

Spirometry answers...

1. How would you check the technical acceptability of spirometry manoeuvres using the Flow/Volume traces? The traces start rising steeply and smoothly until a sharp point (peak flow) is reached (smooth hump suggests poor effort) then the traces descend smoothly until they merge seamlessly with the horizontal axis (a short ‘Cliff-drop' indicates the patient did not exhale fully)

2. How would you determine the reproducibility of spirometry using the values? At least 3 technical acceptable (correct) blows were performed by the patient, and of these 3, 2 FEV1 values and 2 FVC values should be within 5% or 100mls of each other. Wider variation that this, or less than 3 technically acceptable blows is not accurate enough to use spirometry to confirm / dismiss diagnosis, nor use values for annual reviews.

3. How would you determine if airflow obstruction was present? Using only spirometry that meets both technically acceptability and reproducibility criteria a FEV1/FVC (or VC) ratio. Of < 70 (actual not %predicted!) identifies the presence of airflow obstruction. FEV1 (%predicted) only grades the severity of airflow in the presence of an FEV1/FVC ratio of <70; A concave shape can be seen on the Flow/Volume trace; a shallow-rising trace and prolonged expiratory time can be seen on the Volume/Time trace.

4. How would you determine if a restrictive deficit was present? The largest value taken from VC or FVC is <80% predicted when spirometry meets both technical acceptability and reproducibility criteria; the flow/volume trace is a steep angled triangle that merges with the horizontal axis at a lower than predicted volume; Volume/Time trace shows a normal shape but plateaus at a lower volume than predicted. FEV1/FVC ratio >80 (actual not %predicted)

How did you do…? Contact us if you think you need to attend a spirometry workshop for an update
**Getting Your Breath Back**

When you have a lung condition the effort involved in breathing (‘Work of Breathing’) is increased. Below are some useful techniques to reduce breathlessness:

**STOP!** Continuing to exert yourself will make you more breathless

Adopt a **POSITION** of ease

- Leaning forwards onto your hands, elbows, pillows or against a wall reduces

**BLOW out every breath**

When breathless we often focus on ‘getting air in’ which leads to overfilling of the lungs - making breathlessness worse so try to EMPTYING…

- Blow out through pursed lips (similar to blowing onto hot food)
- Blow out after every breath in
- Try to keep your breathing rate **steady and regular**, establishing a

**SLOW the breathing down**

Slowing fast breathing down will help settle your breathlessness (but don’t rush it !) try to: **Gradually blow out a little longer every few breaths**

- Use the ‘breathing rectangle’ (around the edge of this paper) to help encourage a short breath in and a long breath out—follow the rectangle with your eyes and co-ordinate your breathing. You could use any rectangle (e.g. TV, picture frame etc to do this)
- Try counting in your head the length of your ‘out breath’, start by blowing out for 1 second, when comfortable blow out for 2 seconds, gradually increasing to 3 and

! **Remember:** **STOP - POSITION - BLOW - SLOW**

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This advice sheet is a pilot produced by the South Lakes Community Respiratory Team. Your feedback is welcome; Tel: 01539 716670 / Email southlakesrespteam@cumbria.nhs.uk