NHS commissioners and providers are being supported to deliver improved outcomes for people with COPD with a new toolkit that brings together the clinical, financial and commercial aspects of commissioning in one place.

The COPD Commissioning Toolkit has been released as part of the suite of documents produced by the Department of Health and the national respiratory programme to support the delivery of the Outcomes Strategy for COPD & Asthma.

The toolkit does much of the hard work in the commissioning process - such as the development of best practice specifications and costing tools - enabling a commissioner to spend more time having informed discussions with providers about service delivery, and focusing on matters that will make the most difference to patients.

The toolkit makes the clinical and financial case for four key steps in the patient pathway. This includes service specifications for

- Spirometry & Assessment
- Managing Exacerbations,
- Pulmonary Rehabilitation, and
- Home Oxygen Assessment & Review

There is also cost benefit analysis by Primary Care Trust (PCT) for Spirometry & Assessment, Pulmonary Rehabilitation and Home Oxygen Assessment & Review. Patient leaflets are also being developed for the specifications, in conjunction with the British Lung Foundation.

It is important that commissioners focus on COPD and use these toolkits because:

* More than 25% of people with a diagnostic label of COPD have been wrongly diagnosed.

* Pulmonary Rehabilitation after discharge from hospital can reduce readmissions within three months from a 33% to just 7%.

* Prompt treatment at the onset of exacerbation symptoms has been shown to improve outcomes. It can result in less lung damage, faster recovery and fewer admissions (and subsequent readmissions) to hospital.

* Home oxygen can typically improve survival rates by around 40%, but importantly around 25% of those currently prescribed oxygen either do not use it, or do not clinically benefit from its use.

Kevin Holton, Head of the Respiratory Programme at the Department of Health, explained: “This toolkit offers the NHS in England support to make a step change in the commissioning of these services for people with COPD.”

“The document sets out the case for change, including evidence showing how these services can improve outcomes. Following the guidance will lead to improved outcomes, better patient care and cost savings to the NHS.”

“We’re urging colleagues across the NHS to use the toolkit to make a real difference to the lives of people with COPD.”

Read more about the COPD Commissioning Toolkit at http://bit.ly/COPDtoolkit
Last month (September 2012) saw the launch of the Respiratory section of the The NHS Atlas of Variation in Healthcare series, developed by Muir Gray’s ‘Right Care’ department. Matt Kearney from the DoH Respiratory Programme, a practicing GP with a Public Health background, contributed, and there were several partner organisations, including BLF and Asthma UK.

The introduction reminds us that over 6 million people in England have COPD or asthma and that Respiratory Disease is the 3rd most frequent cause of death (after circulatory disease and cancer). The premise of the Atlas of Variation in Healthcare series is synthesised in the introductory statement: ‘an individual’s chance of being admitted or readmitted to hospital as an emergency, of receiving appropriate treatment, of dying from lung disease, or even being diagnosed in the first place, differs according to where they live...’ Of course some degree of variation may be explained by population composition, levels of deprivation or disease prevalence. However, much of the variation highlighted in the Respiratory Disease Atlas is unwarranted and it is this that requires action.

The Atlas itself comprises a set of 21 Indicators (some of which are identical to those included in our own SHA COPD Dashboard), covering COPD and Asthma, but also extending to sleep services, plus indicators for children’s respiratory disease. The data are arranged by PCT. There is a colour coded map and a graphic table for each Indicator demonstrating rates across the country. For example the first indicator is ‘Ratio of Reported to Expected COPD...’

You can access it via the Right Care website http://www.rightcare.nhs.uk/index.php/atlas/respiratory_disease, either as an online ‘Instant Atlas’ interactive version, or as a downloadable PDF; this article gives an overview of the facility.
Prevalence' (recognize that one?) and below is the associated map and chart. If you are using the online interactive version the rate pops up as you move your mouse over the screen and this shows the rate in Brighton and Hove City is 0.352, as opposed to 0.806 in Medway. This means that there is a much larger tranche of undiagnosed COPD in Brighton and Hove than Medway. This huge apparent difference has been looked into in BHPC and in part is thought to be due to the relatively young population in the City, i.e. the predictive model weights more heavily for smoking than age. However this has raised the subject of finding some ‘Missing Millions’ and highlighted work required around smoking rates and disease prevention.

It is worth playing around with the document yourself, but here are a few things that I found interesting. The second Indicator is ‘The % of COPD patients with a recorded FEV1 with exception reported patients included’. Dudley scores highest in the country with 86.6% and Liverpool the lowest at 65.8%. Our highest scoring PCT is Hastings and Rother at 81.4%, and West Sussex, East Sussex Downs and Weald and East Kent are all around 75%, which puts them all into the lowest quintile in the country for this metric.

There is some interesting data on Oxygen spend per population, and Oxygen spend per COPD patient. We can debate what this means and what is good or bad. Is Surrey giving a better service to its COPD patients than Medway by spending at a rate of 188.6 as opposed to a rate of 98.4? Or is Medway getting better value per patient from our Oxygen supplier? I don’t know the answer right now, but the point of the Atlas is to demonstrate variation and it is up to us to understand the reason for it and use this to inform changes in practice.

There are some ‘Case Studies’ included in the document, e.g. the description of Dudley PCT commissioning a Home Oxygen And Review Service, which realized savings of over £115,000 for the PCT. Perhaps some of our own PCTs could take note, or explain to us why they are not commissioning these services when there is increasing evidence of their quality AND financial benefit.

Another Indicator that caught my eye was ‘Rate of sleep studies per 1,000 population by PCT 2011’. There was a massive difference between our highest and lowest rates in the region with Medway carrying out 4.25 per 1,000 population, and Hastings & Rother only reported as carrying out 0.15 per 1,000, which is the lowest rate in England. Local knowledge may be able to explain this 28 fold difference, answers on an e-postcard please…

Our South of England ‘Commissioning Masterclass’, held in Reading on October 16, was a way for areas to use the Atlas in locality groups. An enthusiastic team from Central Surrey used the Atlas and the information at CCG level available on the INHALE website, http://www.inhale.nhs.uk/, to find an outcome that they felt reflected a potential problem and, through the workshop, planned a project to try to improve their performance in this metric.

This was a terrific example of a constructive use of the information. If you like the idea of undertaking a similar exercise in your locality, but not sure where to start, get in touch and we may be able to help.
Practice Nurses working in partnership with Specialist teams in Management of COPD patient

HOW CAN RESPIRATORY SPECIALIST TEAMS HELP PRACTICE NURSES?

View from Primary Care

The Community Team play an important role in supporting families with complex respiratory care needs. Practice Nurses do not visit patients at home so the support of the team is invaluable.

As the teams are often multi-disciplinary they are able to provide holistic care for patients covering nursing, physiotherapy and psychological aspects of the disease. The teams are able to see how they function in their own home as opposed to within a hospital / GP clinic and this helps them give appropriate advice on lifestyle changes. Patient education can complement the education given in the practice.

The Specialist Teams are a valuable point of contact for patients with problems or exacerbations; this can play a role in reducing admissions to hospital. In addition they can help support patients post admission. It may be many days, if not weeks, before the surgery are made aware of any admission but specialist teams often have close links with the hospital based respiratory nurses.

The detailed letters back to GPs and practice nurses provide valuable feedback and education.

Other specific functions:

- Oxygen service support, this is not a skill many GPs or practice nurses have due to low level of exposure within practices and is best left to the experts!
- Compressors Another specialist role is supporting patients who use nebulised medication and assessing those who think that they should have this!
- Providing education and updates for GPs and Practice Nurses. Having approachable team members available to answer questions regarding patient care at these sessions is appreciated and it helps us deliver ‘best practice care’.

Your contact with Respiratory consultants means investigations can often be arranged promptly leading to better integration of care for the patient.

We appreciate the support with more unusual respiratory diseases, we may only have 1-2 patients per practice and therefore lack experience in these conditions.

And finally just being there as a point of contact we are never afraid to use, even if it is a silly question the team never make use feel stupid. That is invaluable.

Thanks girls!

Kathy Clarke
Dr Mellor and Partners,
Woking, Surrey

The Most Important Functions of a Community Respiratory Team
Views of a Practice Nurse

- Regular training and education of Healthcare professionals based on a needs analysis to up skill Practice Nurses
- Supporting nurses wishing to go further in education on respiratory disease to develop more in-depth knowledge of the disease in Primary Care to lessen demands on the specialist team
- Admission Avoidance: Clear referral pathway for Practice Nurses to use when a patient has an exacerbation. A fast response from the Respiratory Care team can avoid admission
- Case Studies: Help with educational needs of patients, perhaps through supported case study work with specialist team especially when patients find it difficult to adhere to medication or has difficulty stopping smoking.
- Provision of Pulmonary Rehabilitation close to patients’ homes, in the community rather than the secondary care setting
- Support with oxygen therapy in the community setting and feedback to Practice Nurse on how the patient is managing
- Respiratory Care Team to act as a “go – between” following discharge from an in-patient episode. To support the patient during this time when confidence may be lacking and to support the Practice Nurse who will be the point of contact for the patient in the long term.

Thanks to Mary Braddock, North West Surrey CCG, for supplying this list
Breathing Matters

COPD is a multisystem disorder affecting not only cardio-respiratory health but also the muscular skeletal system and cognitive ability. Early prevention and recognition of COPD can reduce both significant morbidity and mortality associated with the disease.

Practice Nurses are on the frontline of COPD management. This affords opportunities to anticipate and reduce the damage as early as possible. It is important therefore that the nurses in general practice know how to recognise and assess the risk factors and symptoms of COPD, as early diagnosis can improve outcomes and quality of life. They can do this by understanding the risk factors, armed with smoking cessation tools and the knowledge of who and when to screen for COPD by accurate use of spirometry testing.

Both pharmacological and non-pharmacological approaches can have a significant impact on the lives of people with, or at risk of developing, COPD. Effective management of COPD patients in the community requires a Multi-Disciplinary Team effort and the Practice Nurses play a vital role as often they get involved with the patient’s care from the very onset of the disease. The nurses need to arrange regular reviews to ensure appropriate interventions at every stage of the disease. These reviews should include education, symptom control and assessment of the response to therapy.

Often Practice Nurses refer patients with COPD to the Community Specialist Teams for a second opinion and help in management of the patients who have had deterioration of their lung condition and often housebound. To ensure seamless multi-disciplinary working, it is vital that the Practice Nurses complete the referral forms correctly indicating spirometry and results of any other tests done both at the surgery and acute settings. This avoids the specialist teams having to contact surgeries for more details before the initial consultation making the process more efficient. It is important to highlight vulnerable adults and where Do Not Attempt to Resuscitate orders are in place.

Regular discussions when there are changes in a patient’s condition e.g. updated spirometry after reviews, smoking status, Oxygen therapy and any other social circumstances that could affect the patient’s ability to manage their long term conditions is always welcomed as it ensures continuity of care.

In West Sussex the Community respiratory nurse specialists are privileged to work very closely with the practice nurses for regular consultations on patients’ management. They update and upskill the Practice Nurses and often support clinics for reviews and education. This working partnership ensures optimised care for the patients.

Betty Njuguna
Lead Community Respiratory (COPD) and Heart Failure Services
Respiratory Nurse Practitioner
Sussex Community NHS Trust - West Sussex

Very Brief Advice (VBA)
A training module developed by the National Centre for Smoking Cessation and Training (NCSCT) on how to deliver very brief advice to smokers. This training module should take you less than 30 minutes to complete.
http://ncsct-training.co.uk/player/play/VBA
The aim of this article is to give people an understanding of the role of NIV in managing acute exacerbations of COPD and to point out some of the pitfalls. It is not a ‘user manual’ but we have put a more detailed document on our website. (Note this was written in 2002 so some of the information about machine models is out of date but the rest of the information remains valid).

As mentioned previously in the Emergency oxygen article in Breathing Matters, some exacerbations of COPD will result in the patient developing acute hypercapnic respiratory failure, or acute on chronic hypercapnic respiratory failure, despite optimal treatment (listen to the 1st part of our Oxygen Masterclass Webinar if you want to find out more on respiratory failure and learn how to interpret arterial blood gases, http://youtu.be/ylA7yLm6l0).

The risk of a COPD patient developing respiratory acidosis can be minimised by using controlled oxygen (Venturi system, perhaps with an increased flow rate if the Minute Volume is high, as per the BTS Emergency Oxygen Guidelines www.brit-thoracic.org.uk/guidelines/emergency-oxygen-use-in-adult-patients.aspx and using target saturations as part of the management. However, if you have given all the appropriate initial treatment and the patient remains in respiratory acidosis, then augmentation of ventilation is required. There are two ways to do this in the UK in the acute setting:

1. Sedation, intubation and mechanical ventilation. The patient is then managed only on ICU. This is Invasive Ventilation (IV) – invasive as the tracheal tube is placed, yes you’ve guessed it, into the trachea! But invasive also in that the patient’s body needs to be further ‘invaded’ to put in lines, drips, NG tube, catheters, both urinary and for suction etc., since once sedated, many body functions then need to be externally controlled.

2. By using an interface (usually a mask in this setting) fitting close to the face, linked to a portable ventilator – Non-invasive ventilation (NIV), as there is no invasion of body cavities.

There are two main classes of NIV machine:

**Volume Controlled:**

The tidal volume to be delivered is set and the pressure generated is a consequence of that.

**Pressure Support:**

The (positive airway) pressure is set to support every breath to a predetermined pressure, whether patient triggered or machine driven, ideally the former. The commonest form is Bi-level Positive Airway pressure (BiPAP), where both an inspiratory pressure (IPAP) and an expiratory pressure (EPAP) are delivered, and the (tidal) volume the patient receives is a consequence of the difference between these pressures, This type of machine and ventilation is the type you are most likely to come across since it is comfortable and easy to use.

NIV machines sense when the patient starts to breathe in as a signal to start the (higher) airflow, with a backup rate in case no breath is initiated. Machines are increasingly sophisticated, with many having the ability to produce differing rates of pressure change (ramp), the time for inspiration to occur, and several other parameters, short of washing the dishes, but the basic principle remains the same. Don’t get befuddled by all the knobs and dials, remember the machine is just acting like the bellows used to resuscitate in the past and you can alter the speed of the bellows and how hard they work.

In Italy (Bologna to be precise) Negative Pressure ventilation is used for exacerbations of COPD. Negative pressure ventilators include the ‘Iron Lung’ which saved thousands of lives in the polio epidemic of the 50’s and was used for decades before NIV was commonly used. It is a form of Non-invasive ventilation but is used rarely now in the UK, although the smaller types, like jackets, have had a bit of resurgence...

Read the trial if you are interested!

It is now well established that using NIV first line leads to reduced mortality, reduced morbidity, reduced length of stay, and reduced use of health care resources, compared to IV, so it is the treatment of choice in this situation. A BMJ meta-analysis shows summary mortality data2. The trial by our own Julia Bött was the landmark ‘proof of concept’ study and the YONIV trial by Paul Plant was an important study as it showed that it was possible to successfully provide acute NIV on general respiratory wards in a UK DGH setting.

<table>
<thead>
<tr>
<th>Study</th>
<th>NPPV</th>
<th>Usual medical care</th>
<th>Risk ratio (fixed 95% CI)</th>
<th>Weight (%)</th>
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<td>57/261</td>
<td></td>
<td>100</td>
<td>0.41 (0.26 to 0.64)</td>
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</table>

Test for heterogeneity: $\chi^2$=0.82, df=5, P=0.98
Test for overall effect: Z=–3.96, P=0.00008

When to start Acute NIV

The joint RCP/BTS guidelines from 20083 state that NIV should be considered in all patients with an acute exacerbation of COPD in whom a respiratory acidosis ($\text{pH} <7.35$, $\text{PaCO}_2 >6$ kPa) persists, despite immediate maximum standard medical treatment on controlled oxygen therapy, but for no more than one hour. It should be delivered by staff trained in its application, experienced in its use and aware of its limitations.
Educational Article

Things to consider before commencing NIV

You should consider whether moving straight to invasive ventilation is more appropriate, for example, if the patient is moribund, or if there are copious secretions. You should consider whether the patient can protect their airway and you should always consider whether ventilation is indicated at all. Is this a patient who has been on a downward trajectory where there is, or should be, an end-of-life plan already in place? Once the decision to commence NIV has been made, the next thing you need to decide is what to do if it isn’t working.

How to do it

This is a practical procedure and there is no substitute for hands on practice. There are several courses that run sporadically which you may consider looking out for. Here are a few pointers. There are many makes and models of NIV machines, but you will probably find that your Trust keeps a limited number of types for acute use, perhaps just one type. Ensure you are familiar with the model you are likely to use!

Assemble all the kit you need, ventilator, connections, mask and ensure they all fit together. Always entrain oxygen initially, usually only a low flow rate (1-2/l/min is required). Test the circuit by turning on the machine and holding it against your hand. Explain to the patient what you are going to do. Choose a mask of the correct size – the packs often have a template to help you here. Let the patient hold the mask themselves and have a few short tries holding it against their arm and then face. Once they are used to the feeling then put the headstraps on.

Start with lowish pressures, e.g. IPAP (inspiratory pressure) of say 10mmH₂O and an EPAP (expiratory pressure) of 4mmH₂O. Try and set the inspiratory/expiratory time to match the patients breathing and adjust as you watch how they synchronise with the machine. You need to put time in at the beginning of the process, and encourage and support your patient. Doing so will pay dividends. Once you are happy with the synchronisation, increase the IPAP in 1-2 CmH₂O increments at fairly rapid intervals as long as the patient is tolerating it, until you are achieving a better breath than the patient could take on their own and getting an improvement in the ABGs. The final IPAP will be determined by the amount of ‘welly’ needed to move the chest wall and lungs, so the key determinants are: size of the patient (bigger people require bigger pressures) and chest compliance (stiffer lungs from disease or stiffer chest walls from age or deformity need higher pressures). Of course you also need to take account of how well the patient tolerates NIV, but be mindful that if they cannot tolerate enough IPAP to ‘do the job’, your NIV will be ineffective, one of the commonest reasons for failure. The bigger the difference between IPAP and EPAP the greater the ability to ventilate and blow off CO₂ but remember, this is not a completely closed system and sometimes increasing pressure leads to greater leaks.

Increasing EPAP may improve oxygenation by recruiting alveoli, but I wouldn’t increase higher than 8mmH₂O as an absolute maximum.

Common Errors

🔥 Trying to use NIV as management of metabolic acidosis – strangely, it won’t help!
🔥 Trying to use NIV when the prime pathology is not pump failure (failure of ventilation) but hypoxaemic respiratory failure. Most deteriorating sick people will become acidic eventually, as the CO₂ will rise as they tire and weaken. When this occurs, e.g. in severe pneumonia, the patient needs to be managed on ICU with invasive ventilation.
🔥 Beware of increasing EPAP too cavalierly, particularly in small patients; titrate it very carefully (exactly as you would, hopefully, with CPAP) and look for signs of decreasing work of breathing (WOB) and improved oxygenation. The effort to exhale against the resistance of the EPAP will increase WOB at a certain point; if that happens, you have overshot!
🔥 Not recognizing when it is time to discontinue NIV! In the YONIV trial the average time that patients required NIV for was 4 hours. NIV can help reverse the balance of increasing load on the respiratory system with reducing capacity and, once recovery starts, it usually continues as the other therapies (bronchodilators, corticosteroids) are starting to take effect. Some patients do require weaning from NIV and this is done by spending longer periods of time off it, (rather than reducing pressures). Perhaps spending the morning off NIV 1st, then moving to NIV just overnight for a few nights. Always leave the night time wean to the end as ventilation is reduced at night.
🔥 Not recognizing when it is NOT time to discontinue NIV! The patient must be able to maintain satisfactory gases without it before discharge. I have seen patients sent home in ventilatory failure and confusion. For some this may never happen and the patient might need to continue with home NIV.
🔥 Taking too many ABGs. I have come in the following morning to find a patient having had multiple ABG sampling overnight. This is not good practice. An ABG is required to show the indication for NIV, then a repeat 30min to 1 hour after commencing NIV to assess response and help adjust settings. After that, as long as the patient’s condition is improving, monitoring with SpO₂ is usually sufficient.

‘When patients are started on NIV, there should be a clear plan covering what to do in the event of deterioration and ceilings of therapy should be agreed’. Grade A NICE 2010

Continue on page 8
Good Practice

- Having a patient (and relatives) information leaflet; there is one with the Bipap guidelines.
- Using an episode requiring acute NIV to prompt an End of Life discussion.
- Having a system for initiating acute NIV that works 24 hours a day, 7 days a week.
- Giving the patient time off NIV for drinking, eating.
- Paying attention to pressure areas (especially the bridge of the nose) so avoid sores developing.
- Having a hospital NIV policy that explains protocols.
- Performing regular audit of performance. The BTS audit programme has an NIV proforma which can help you here.
- Remember patients with COPD may have secretions that they need help with clearing.
- Remember patients will fare better in the long run if you can keep them mobile and moving throughout their in-patient stay with NIV; if needs, the patient can mobilise round the bed on NIV.

In summary,

acute NIV is an essential part of managing the patient with acute exacerbation of COPD, as an adjunct to controlled oxygen and pharmaceutical treatments. It is initiated and guided by ABGs, and attention to all parts of the process is required to give your patients the best chance of a good outcome.

The BTS Audit system allows you to compare your own unit’s performance with national figures and I would really recommend Acute NIV performance being a regular fixture. It is a process/procedure that is easy to do badly.

Audit Topics to consider in your department

- Door to mask time
- Outcome of NIV, i.e. survival, including at 30 or 90 days; little point in saving the patient in hospital for them to die a few days or weeks later.
- % of patients initiated on NIV who don’t meet guideline criteria.
- % of patients with ceiling of care documented.

References


(or via BTS website: http://www.britthoracic.org.uk/guidelines/nippy--niv-in-acute-respiratory-failure-guideline.aspx)
Breathing Matters

Winter BTS

You may have missed the ‘Early Bird’ rate but its not too late to register for the Winter BTS. The Winter Meeting takes place from Wednesday 5 to Friday 7 December 2012 at the Queen Elizabeth II Conference Centre, Westminster, London. Its easy to go to just a day of it - have a look at the programme and see if there is one of the days that grabs your attention. The Wednesday morning promises to be an excellent COPD session, (see below). This is the UK’s most important Respiratory Scientific Meeting. It’s a great way to keep up to date, find out what other people are up to, get ideas meet up with old friends and NETWORK! Here is the link to see the Winter Meeting programme and book your place, (you can also turn up and pay on the day). There are concessionary rates which will apply for many of you.

Wed 5th December 8.30-10.15
CHRONIC DISEASE MANAGEMENT IN COPD: WHERE SHOULD WE FOCUS OUR EFFORTS?

Chaired by: Professor Michael Morgan and Dr Louise Restrick

1) Assessment of value in COPD treatments Dr Mike Ward (Sutton-in-Ashfield)

2) Self management of COPD Professor Mike Morgan (Leicester)

3) Technology in COPD Professor Sally Singh (Leicester)

4) Investing in the Quit game: smoking cessation Professor John Britton (Nottingham)

Leaders in the field will take a fresh look to update the evidence behind some of the different themes in COPD chronic disease care. Is it time to evaluate which we should be concentrating on?


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