November 2020
Issue 21

Primary Care Respiratory Update



Get Winter Wrapped

Edition Highlights

- Safe spirometry and "virtual" peak flow
- Diagnostic work up of the patient presenting with respiratory symptoms during the COVID-19 pandemic
- Flu vaccination
- Rescue packs

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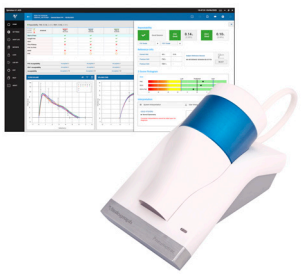

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Primary Care Respiratory Update

The Primary Care Respiratory Update is published quarterly and distributed to members of the Primary Care Respiratory Society.

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Printed in the UK by Caric Print Ltd, Bournemouth, Dorset in association with Stephens & George Magazines Ltd. Printed on acid-free paper

Competing interests are declared to PCRS and this information is kept on file.

The Primary Care Respiratory Society UK is a registered charity (Charity No: 1098117) and a company limited by guarantee registered in England (Company No: 4298947). VAT Registration Number: 866 1543 09. Registered offices: PCRS, Miria House, 1683B High Street, Knowle, B93 0LL. Telephone: +44 (0)1675 477600 Facsimile: +44 (0)121 336 1914 Email: info@pcrs-uk.org Website: http://www.pcrs-uk.org

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See http://www.pcrs-uk.org/sites/pcrs-uk.org/files/files/PI_funding.pdf for PCRS statement on pharmaceutical funding.

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budesonide/formoterol

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DuoResp Spiromax is indicated in adults 18 years of age and older for: 1) the regular treatment of **asthma**, where use of a combination (inhaled corticosteroid and long-acting β_2 adrenoceptor agonist) is appropriate in patients not adequately controlled with inhaled corticosteroids and "as needed" inhaled short-acting β_2 adrenoceptor agonists or in patients already adequately controlled on both inhaled corticosteroids and long-acting β_2 adrenoceptor agonists;[4] AND 2) the symptomatic treatment of patients with **COPD** with forced expiratory volume in 1 second (FEV_1) <70% predicted normal (post bronchodilator) and a history of repeated exacerbations, who have significant symptoms despite regular therapy with long-acting bronchodilators.[4]

COPD, chronic obstructive pulmonary disease; PIL, patient information leaflet
*Correct usage data after reading PIL for Turbohaler® and Easyhaler® were 76.7% and 58.3% respectively (p<0.001, for both comparisons) n=120 for all groups.[1] Patients are advised to read the PIL carefully and follow the instructions for use as detailed in the leaflet.
**Dose delivery study using low, middle and high strength DuoResp Spiromax. Dose consistency was measured over inhaler life. Low dose was included in the study but is not licensed in the UK.[3]

Please refer to the Summary of Product Characteristics (SmPC) for full details of the Prescribing Information. DuoResp® Spiromax® (budesonide/formoterol) 160mcg/4.5mcg inhalation powder and DuoResp® Spiromax® (budesonide/formoterol) 320mcg/9mcg inhalation powder Abbreviated Prescribing Information. **Presentation:** *DuoResp® Spiromax® 160/4.5:* Each delivered dose contains 160mcg of budesonide and 4.5mcg of formoterol fumarate dihydrate. This is equivalent to a metered dose of 200mcg budesonide and 6mcg of formoterol fumarate dihydrate. *DuoResp® Spiromax® 320/9:* Each delivered dose contains 320mcg of budesonide and 9mcg of formoterol fumarate dihydrate. This is equivalent to a metered dose of 400mcg budesonide and 12mcg of formoterol fumarate dihydrate. Inhalation powder. **Indications:** Asthma: Treatment of asthma, where use of a combination (inhaled corticosteroid and long-acting β_2-adrenoceptor agonist) is appropriate. COPD: Symptomatic treatment of patients with COPD with forced expiratory volume in 1 second (FEV_1) < 70% predicted normal (post bronchodilator) and a history of repeated exacerbations, who have significant symptoms despite regular therapy with long-acting bronchodilators. **Dosage and administration:** For use in adults ≥18 years. Not for use in children < 18 years of age. ***Asthma:*** Not intended for the initial management. If an individual patient should require a combination of doses other than those available in the combination inhaler, appropriate doses of β_2-adrenoceptor agonists and/or corticosteroids by individual inhalers should be prescribed. The dose should be titrated to the lowest dose at which effective control of symptoms is maintained. When control of symptoms is achieved titrate to the lowest effective dose, which could include once daily dosing. *DuoResp® Spiromax® 160/4.5:* maintenance therapy - regular maintenance treatment with a separate reliever inhaler: *Adults:* 1-2 inhalations twice daily (maximum of 4 inhalations twice daily). *DuoResp® Spiromax®* maintenance and reliever therapy: For patients taking DuoResp as reliever, preventative use of DuoResp Spiromax for allergen or exercise-induced bronchoconstriction should take into consideration the frequency of need. In case of frequent need of bronchodilation without corresponding need for an increased dose of inhaled corticosteroids, an alternative reliever should be used. Regular maintenance treatment and as needed in response to symptoms: should be considered for patients with: (i) inadequate asthma control and in frequent need of reliever medication (ii) previous asthma exacerbations requiring medical intervention. *Adults:* The recommended maintenance dose is 2 inhalations per day, given either as one inhalation morning and evening or as 2 inhalations in either the morning or evening. For some patients a maintenance dose of 2 inhalations twice daily may be appropriate. Patients should take 1 additional inhalation as needed in response to symptoms. If symptoms persist after a few minutes, an additional inhalation should be taken. Not more than 6 inhalations should be taken on any single occasion. A total daily dose of up to 12 inhalations could be used for a limited period. Patients using more than 8 inhalations daily should be strongly recommended to seek medical advice. *DuoResp® Spiromax® 320/9:* Only to be used as maintenance therapy. *Adults:* 1 inhalation twice daily (maximum of 2 inhalations twice daily). ***COPD:*** *Adults:* 1 inhalation twice daily. *Elderly patients (≥65 years old):* No special requirements. *Patients with renal or hepatic impairment:* No data available. **Contraindications:** Hypersensitivity to the active substance or to any of the excipients. **Precautions and warnings:** If treatment is ineffective, or exceeds the highest recommended dose, medical attention must be sought. Patients with sudden and progressive deterioration in control of asthma or COPD should undergo urgent medical assessment. Patients should have their rescue inhaler available at all times. The reliever inhalations should be taken in response to symptoms and are not intended for regular prophylactic use e.g. before exercise. For such, a separate rapid-acting bronchodilator should be considered. Patients should not be initiated during an exacerbation. Serious asthma-related adverse events and exacerbations may occur. If asthma symptoms remain uncontrolled or worsen, patients should continue treatment and seek medical advice. If paradoxical bronchospasm occurs, treatment should be discontinued immediately. Paradoxical bronchospasm responds to a rapid-acting inhaled bronchodilator and should be treated straightaway. Visual disturbance may be reported with systemic and topical corticosteroid use. Such patients should be considered for referral to an ophthalmologist for evaluation of possible causes. Systemic effects may occur, particularly at high doses prescribed for long periods. Potential effects on bone density should be considered, particularly in patients on high doses for prolonged periods that have co-existing risk factors for osteoporosis. Prolonged treatment with high doses of inhaled corticosteroids may result in clinically significant adrenal suppression. Additional systemic corticosteroid cover should be considered during periods of stress. Treatment should not be stopped abruptly – tapering of dose is recommended. Transfer from oral steroid therapy to a budesonide/formoterol fumarate fixed-dose combination may result in the appearance of allergic or arthritic symptoms which will require treatment. In rare cases, tiredness, headache, nausea and vomiting can occur due to insufficient glucocorticosteroid effect and temporary increase in the dose of oral glucocorticosteroids may be necessary. To minimise risk of oropharyngeal Candida infection patients should rinse mouth with water. Administer with caution in patients with thyrotoxicosis, phaeochromocytoma, diabetes mellitus, untreated hypokalaemia, or severe cardiovascular disorders. The need for, and dose of inhaled corticosteroids should be re-evaluated in patients with active or quiescent pulmonary tuberculosis, fungal and viral infections in the airways. Additional blood glucose controls should be considered in diabetic patients. Hypokalaemia may occur at high doses. Particular caution is recommended in unstable or acute severe asthma. Serum potassium levels should be monitored in these patients. As with other lactose containing products the small amounts of milk proteins present may cause allergic reactions. There is some evidence of an increased risk of pneumonia with increasing steroid dose but this has not been demonstrated conclusively across all studies. Physicians should remain vigilant for the possible development of pneumonia in patients with COPD as the clinical features of such infections overlap with the symptoms of COPD exacerbations. **Interactions:** Concomitant treatment with potent CYP3A4 inhibitors should be avoided. If this is not possible the time interval between administration should be as long as possible. Co-treatment with CYP3A inhibitors, including cobicistat-containing products is expected to increase risk of systemic side effects and the use in combination should be avoided. Not recommended with β-adrenergic blockers (including eye drops) unless compelling reasons. Concomitant treatment with quinidine, disopyramide, procainamide, phenothiazines, antihistamines (terfenadine), and Tricyclic Antidepressants (TCAs) can prolong the QTc-interval and increase the risk of ventricular arrhythmias. L-Dopa, L-thyroxine, oxytocin and alcohol can impair cardiac tolerance. Concomitant treatment with MAOIs, including agents with similar properties, may precipitate hypertensive reactions. Patients receiving anaesthesia with halogenated hydrocarbons have an elevated risk of arrhythmias. Hypokalaemia may increase the disposition towards arrhythmias in patients taking digitalis glycosides. **Pregnancy and lactation:** Use only when benefits outweigh potential risks. Budesonide is excreted in breast milk; at therapeutic doses no effects on infants are anticipated. **Effects on ability to drive and use machines:** No or negligible influence. **Adverse reactions:** Since *DuoResp® Spiromax®* contains both budesonide and formoterol, the same pattern of adverse reactions as reported for these substances may occur. No increased incidence of adverse reactions has been seen following concurrent administration of the two compounds. *Serious:* Immediate and delayed hypersensitivity reactions, e.g. exanthema, urticaria, pruritus, dermatitis, angioedema and anaphylactic reaction, Cushing´s syndrome, adrenal suppression, growth retardation, decrease in bone mineral density, hypokalaemia, hyperglycaemia, aggression, psychomotor hyperactivity, anxiety, sleep disorders, depression, behavioural changes, cataract and glaucoma, tachycardia, cardiac arrhythmias, e.g. atrial fibrillation, supraventricular tachycardia and extrasystoles, angina pectoris, prolongation of QTc-interval, variations in blood pressure, bronchospasm, pneumonia in COPD patients and paradoxical bronchospasm. *Common:* Candida infections in the oropharynx, headache, tremor, palpitations, mild irritation in the throat, coughing, pneumonia in COPD patients, dysphonia including hoarseness. Consult the Summary of Product Characteristics in relation to other side effects. **Overdose:** An overdose of formoterol may lead to: tremor, headache, palpitations. Symptoms reported from isolated cases are tachycardia, hyperglycaemia, hypokalaemia, prolonged QTc-interval, arrhythmia, nausea and vomiting. Supportive and symptomatic treatment may be indicated. **Price per pack:** *DuoResp® Spiromax® 160/4.5 and DuoResp® Spiromax® 320/9:* £27.97. **Legal Category:** POM. **Marketing Authorisation Numbers:** *DuoResp® Spiromax® 160/4.5:* EU/1/14/920/001. *DuoResp® Spiromax® 320/9:* EU/1/14/920/004. **Marketing Authorisation Holder:** Teva Pharma B.V. Swensweg 5, 2031GA Haarlem, The Netherlands. **Job Code:** DUOR-GB-00002. **Date of Preparation:** August 2020.

Adverse events should be reported. Reporting forms and information can be found at www.mhra.gov.uk/yellowcard.
Adverse events should also be reported to Teva UK Limited on 0207 540 7117 or medinfo@tevauk.com

References: 1. Sandler N, et al. *BMJ Open Resp Res.* 2016; 3: e000119. 2. Chrystyn H, et al. *Int J Pharm.* 2015; 491: 268–276. 3. Canonica G, et al. *J Aerosol Med Pulm Drug Deliv.* 2015; 28(5): 309–319. 4. DuoResp Spiromax Summary of Product Characteristics.

Approval Code: DUOR-GB-00012

Teva UK Limited, Ridings Point, Whistler Drive, Castleford, West Yorkshire WF10 5HX

Date of preparation: August 2020

Contents

Primary Care Respiratory Update



Soprobec inhalers have equivalent design and functioning to Clenil® Modulite®[1,3]

For the prophylactic management of mild, moderate or severe asthma in adults or children[4]

Volumatic™ spacer required in patients 15 years of age and under, and all patients requiring daily doses of 1000 mcg and over[4]

Soprobec
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Soprobec (beclometasone dipropionate) 50, 100, 200 or 250 micrograms per actuation pressurised inhalation solution. Please refer to the Summary of Product Characteristics (SmPC) before prescribing. **Indications:** Soprobec is indicated for the prophylactic management of mild, moderate, or severe asthma in adults or children: Mild asthma: Patients requiring intermittent symptomatic bronchodilator asthma medication on a regular basis. Moderate asthma: Patients with unstable or worsening asthma despite prophylactic therapy or bronchodilator alone. Severe asthma: Patients with severe chronic asthma and those who are dependent on systemic corticosteroids for adequate control of symptoms. **Dosage and administration:** Soprobec is for inhalation use only. The Volumatic™ spacer device may be used by patients who have difficulty synchronising aerosol actuation with inspiration of breath. Adjust starting dose of inhaled beclometasone dipropionate to severity of disease, then adjust until control is achieved and then titrate to the lowest dose at which effective control of asthma is maintained. Adults (including the elderly): usual starting dose is 200 micrograms twice daily. Severe cases may be increased to 600 to 800 micrograms daily. Dose may be reduced when the patient's asthma has stabilised. The total daily dosage should be administered as 2 to 4 divided doses. The Volumatic™ spacer device must always be used when Soprobec is administered to adults and adolescents 16 years of age and older taking total daily doses ≥ 1000 micrograms. Children: usual starting dose is 100 micrograms twice daily. Depending on the severity of asthma, the daily dose may be increased up to 400 micrograms administered in 2 to 4 divided doses. Soprobec must always be used with the Volumatic™ spacer device when administered to children and adolescents 15 years of age and under, whatever dose has been prescribed. Patients with hepatic or renal impairment: No dosage adjustment needed. The aerosol spray is inhaled through the mouth into the lungs; correct administration is essential for successful therapy. The patient must be instructed on how to use Soprobec correctly and advised to read and follow the instructions in the Patient Information Leaflet (PIL). If the inhaler is new or has not been used for ≥3 days, one puff should be released into the air. It is not necessary to shake the inhaler before use because this is a solution aerosol. Instruct the patient to remove the mouthpiece cover and check that it is clean and free from foreign objects. Then instruct to breathe out before placing the inhaler into their mouth. They should then close their lips around the mouthpiece and breathe in steadily and deeply. They must not bite the mouthpiece. After starting to breathe in through the mouth, the top of the inhaler should be pressed down. Whilst the patient is still breathing in, the patient should then remove the inhaler from their mouth and hold their breath for about 5 to 10 seconds, or as long as is comfortable, and then breathe out slowly. The patient must not breathe out into the inhaler. If another dose is required the patient should be advised to wait 30 seconds before repeating the procedure just described. Finally, patients should breathe out slowly and replace the mouthpiece cover. The patient should be told not to rush the procedure described. It is important that the patient breathes in as slowly as possible prior to actuation. Inform the patient that if a mist appears on inhalation, the procedure should be repeated. It may be helpful to advise children and patients with weak hands to hold the inhaler with two hands, by placing both forefingers on top of the inhaler and both thumbs at the bottom of the device. Patients who find it difficult to co-ordinate actuation with inspiration of breath should be told to use a Volumatic™ spacer device to ensure proper administration of the product. Young children may find it difficult to use the inhaler properly and will require help. Using the inhaler with the Volumatic™ spacer device with a face mask may help in children under 5 years. Advise the patient to thoroughly rinse the mouth or gargle with water or brush the teeth immediately after using the inhaler. The patient should be told of the importance of cleaning the inhaler at least weekly to prevent any blockage and to carefully follow the instructions on cleaning the inhaler printed on the PIL. The inhaler must not be washed or put in water. The patient should be told also to refer to the PIL accompanying the Volumatic™ spacer device for the correct instructions on its use and cleaning. **Contraindications:** Hypersensitivity to any of the components. **Warnings and precautions:** Patients should be properly instructed on the use of the inhaler to ensure that the drug reaches the target areas within the lungs. Patients should also be informed that Soprobec should be used on a regular basis, even when they are asymptomatic. Soprobec does not provide relief of acute asthma symptoms, which require a short-acting inhaled bronchodilator. Patients should have relief medication available. Severe asthma requires regular medical assessment, including lung-function testing, as there is a risk of severe attacks and even death. Patients should be instructed to seek medical attention if short-acting relief bronchodilator treatment becomes less effective, or more inhalations than usual are required as this may indicate deterioration of asthma control. If this occurs, patients should be assessed and the need for increased therapy considered (e.g. higher doses of inhaled corticosteroid or a course of oral corticosteroid). Treatment with Soprobec should not be stopped abruptly. Systemic effects of inhaled corticosteroids may occur, particularly when prescribed at high doses for prolonged periods. Possible systemic effects include adrenal suppression, growth retardation in children and adolescents, decrease in bone mineral density, cataract and glaucoma and more rarely, a range of psychological or behavioural effects including psychomotor hyperactivity, sleep disorders, anxiety, depression or aggression (particularly in children). It is important that the dose of inhaled corticosteroid is titrated to the lowest dose at which effective control of asthma is maintained. It is recommended that the height of children receiving prolonged treatment with inhaled corticosteroids is regularly monitored. If growth is slowed, therapy should be reviewed with the aim of reducing the dose of inhaled corticosteroids, if possible, to the lowest dose at which effective control of asthma is maintained. In addition, consideration should also be given to referring the patient to a paediatric respiratory specialist. Prolonged treatment with high doses of inhaled corticosteroids may result in clinically significant adrenal suppression. Additional systemic corticosteroid cover should be considered during periods of stress or elective surgery. The transfer to Soprobec of patients who have been treated with systemic steroids for long periods of time or at high doses, needs special care, since recovery from possible adrenocortical suppression may take considerable time. Reduction of the dose of systemic steroid can be commenced approximately one week after initiating treatment with Soprobec. The size of the reduction should correspond to the maintenance dose of systemic steroid. For patients receiving maintenance doses of 10 mg daily or less of prednisolone (or equivalent) reductions in dose of not more than 1 mg are suitable. For higher maintenance doses, larger reductions in dose may be appropriate. These oral dosage reductions should be introduced at not less than weekly intervals. Adrenocortical function should be monitored regularly as the dose of systemic steroid is gradually reduced. Some patients feel unwell during withdrawal of systemic steroids despite maintenance or even improvement of respiratory function. They should be encouraged to persevere with inhaled beclometasone dipropionate and to continue withdrawal of systemic steroid, unless there are objective signs of adrenal insufficiency. Patients weaned off oral steroids whose adrenocortical function is impaired should carry a steroid warning card indicating that they may need supplementary systemic steroids during periods of stress, e.g. worsening asthma attacks, chest infections, major intercurrent illness, surgery, trauma, etc. Replacement of systemic steroid treatment with inhaled therapy sometimes unmasks allergies such as allergic rhinitis or eczema previously controlled by the systemic drug. As with all inhaled corticosteroids, special care is necessary in patients with active or quiescent pulmonary tuberculosis. Patients should be advised that this product contains small amounts of ethanol (approximately 9 mg per actuation) and glycerol. At the normal doses, the amounts of ethanol and glycerol are negligible and do not pose a risk to patients. If a patient presents with symptoms such as blurred vision or other visual disturbances, the patient should be considered for ophthalmologist evaluation of possible causes which may include cataract, glaucoma or rare diseases such as central serous chorioretinopathy (CSCR) which have been reported after use of systemic and topical corticosteroids. **Interactions:** Theoretical potential for interaction of ethanol (excipient) in particularly sensitive patients taking disulfiram or metronidazole. Caution and appropriate monitoring in CYP3A inhibitors (e.g. ritonavir, cobicistat). **Pregnancy and lactation:** There is no experience of the use of this product in pregnancy and lactation in humans. **Adverse reactions:** *Very common and common:* Oral candidiasis (of the mouth and throat), hoarseness, throat irritation. *Uncommon:* hypersensitivity reaction with the following manifestations: Rash, urticaria, pruritus, erythema. *Very rare:* oedema of the eyes, face, lips and throat. Adrenal suppression, growth retardation (in children and adolescents), bone density decreased, cataract, glaucoma, paradoxial bronchospasm, wheezing, dyspnoea, cough. *Unknown frequency:* Psychomotor hyperactivity, sleep disorders, anxiety, depression, aggression, behavioural disorders (predominantly in children), headache, vision blurred. Please consult the summary of product characteristics for a full list of adverse reactions. **Marketing authorization number:** PL 25258/0279. **Marketing Authorization Holder:** Glenmark Pharmaceuticals Europe Limited, Laxmi House, 2B Draycott Avenue, Kenton, Middlesex, HA3 0BU, United Kingdom **Distributor:** As above. **Legal classification:** POM. **Price:** 50mcg £2.78, 100mcg £5.57, 200mcg £12.13, 250mcg £12.22. **Job code:** PP-UK-SOP-0004 **Date PI was drawn up:** Feb 2019

Adverse events should be reported.
Reporting forms and information can be found at https://yellowcard.mhra.gov.uk.
Adverse events should also be reported to medical_information@glenmarkpharma.com or call 0800 458 0383

PIP codes: Soprobec 50 mcg/actuation - 4098620, Soprobec 100 mcg/actuation - 4098638, Soprobec 200 mcg/actuation - 4098646, Soprobec 250 mcg/actuation - 4098653.

References: 1. MHRA April 2019 Public Assessment Report: Soprobec 50, 100, 200, 250 mcg, UK/H/6818/001-004/DC. Available at: mhraproductsprod.blob.core.windows.net/docs-20200302/3bc836d253 49185931b189bf3ba25c395c23447b. Accessed May 2020. **2.** BNF. May 2020. (See NHS indicative price). Available at: bnf.nice.org.uk/medicinal-forms/beclometasonedipropionate.html. Accessed May 2020. **3.** Data on file, Glenmark Pharmaceuticals Europe Ltd (Device equivalence). **4.** Soprobec Summary of Product Characteristics.

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Primary Care Respiratory Society
Get Winter Wrapped

Editor's Round-up

Dr Iain Small, *Editor Primary Care Respiratory Update*

Welcome to this edition of the *Primary Care Respiratory Update*. The editorial team hope you are keeping safe and well; and we hope you are managing to find the energy and resilience needed to get through this difficult time.

To help support the clinical work you do, particularly in the midst of this global pandemic, we have put together an issue focusing on the twin challenges of winter pressures and coping with COVID-19.

Given that Christmas (albeit a very different Christmas to what we are used to) is just around the corner, we have badged this edition, and indeed the PCRS's campaign as 'Winter Wrapped', providing you with the knowledge and the tools to wrap around your patients, colleagues and not forgetting yourselves, as we move from 2020 to 2021.

Some of the material in this issue is new, and has been especially prepared for *PCRU*, at pace, and I am grateful to our colleagues who have stepped up to give of their time and expertise. Other items are part of the 'Winter Wrapped' campaign with additional tools and videos available via the PCRS website (https://www.pcrs-uk.org/resource/winter-wrapped).

I would commend the whole edition to you but want to highlight in particular Carol Stonham's piece on safe spirometry, Duncan Keeley's article on 'virtual' peak flow monitoring and the PCRS position statement on respiratory diagnosis whilst practising safe working.

All of us here at *PCRU* wish you a happy festive season, may you find friendship and fellowship throughout, despite the obvious restrictions and challenges. We look forward to a (hopefully) very different 2021. If Santa can deliver us a vaccine, I for one will be waiting at the bottom of the chimney.

Iain R Small, *Editor PCRU*
General Practitioner, FRCGP
Associate Medical Director Primary Care and Hosted Services NHS Grampian
Executive Committee Member, Primary Care Respiratory Society

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* The maximum licensed dose of fluticasone propionate delivered by Combisal inhaler in children is 100 microgram twice daily.

† Use of an AeroChamber Plus spacer device with Combisal is recommended in those who may have difficulties coordinating actuation with inspiration e.g. children <12 years.

Reference 1. Drug Tariff March 2020

Combisal (Salmeterol/ Fluticasone) Prescribing Information (please refer to the full SmPC before prescribing)

Indications: Regular treatment of asthma where use of combination product (long-acting β2 agonist and inhaled corticosteroid) is appropriate: patients not adequately controlled with inhaled corticosteroids and 'as needed' inhaled short-acting β2 agonist or patients already adequately controlled on both inhaled corticosteroid and long-acting β2 agonist **Available strengths:** 25µg/50µg; 25µg/125µg & 25µg/250µg salmeterol/fluticasone per metered dose pressurised inhalation, suspension. **Dosage and method of use:** Inhalation use. Adults and adolescents 12 years and older: two inhalations twice daily. Children 4 years and older: two inhalations 25 µg/50 µg twice daily. Titrate to lowest dose at which effective control of symptoms is maintained and if long-term control maintained at lowest dose, consider testing inhaled corticosteroid alone or combination once daily. Combisal 25 µg /50 µg not appropriate for adults and children with severe asthma. Maximum licensed dose of fluticasone propionate in children is 100 µg twice daily. No data in children under 4 years. AeroChamber Plus® spacer device can be used. This may increase drug delivery to lungs with increase in risk of systemic adverse effects. Advise patients to rinse mouth out with water and spit out, and/or brush teeth after each dose of medicine to minimize risk of oropharyngeal candidiasis and hoarseness. **Contraindications:** Hypersensitivity to active substance or excipients. **Special warnings and precautions for use:** Do not use to treat acute asthma for which fast- and short-acting bronchodilator required or initiate Combisal during an exacerbation, or if asthma is significantly worsening or acutely deteriorating. Use with caution in patients with active or quiescent pulmonary tuberculosis and fungal, viral or other infections of the airway; severe cardiovascular disorders or heart rhythm abnormalities, diabetes mellitus, thyrotoxicosis, uncorrected hypokalaemia or predisposed to low levels of serum potassium. Discontinue if paradoxical bronchospasm occurs. Prolonged use of high doses of ICS may result in adrenal suppression and acute adrenal crisis. Consider additional systemic corticosteroid cover during periods of stress or elective surgery. Monitor patients transferring from oral steroids for impaired adrenal reserve. Safety and efficacy in COPD not established. Patients of black African or Afro-Caribbean ancestry should seek medical advice if asthma uncontrolled or worsens on Combisal. If prolonged treatment in children, monitor height. Interactions: The following combinations should be avoided: Ritonavir or other potent CYP3A inhibitors; ketoconazole or other potent CYP3A4 inhibitors; non- selective and selective β blockers; xanthine derivatives, steroids and diuretics in acute severe asthma. Other β adrenergic containing drugs can have an additive effect. **Pregnancy & Lactation:** Administer only if expected benefit to mother is greater than any possible risk to fetus. Not to be used during breastfeeding. **Side effects:** For full list of side effects consult SmPC. 'Very Common' 'Common' and 'Serious' side effects included in prescribing information. Very common (≥1/10) side effects: headache, nasopharyngitis. Common (≥1/100 to <1/10) side effects: candidiasis of mouth and throat, pneumonia, bronchitis, hypokalaemia, throat irritation, hoarseness/dysphonia, sinusitis, contusions, muscle cramps, traumatic fractures, arthralgia, myalgia. Uncommon Serious (≥1/1000 to <1/100) side effects: cutaneous hypersensitivity reactions, dyspnoea, hyperglycaemia, anxiety, sleep disorders, tremor, cataract, palpitations, tachycardia, atrial fibrillation, angina pectoris. Rare serious (≥1/10,000 to <1/1000) side effects: oesophageal candidiasis, facial and oropharyngeal angioedema, bronchospasm, anaphylactic reactions including anaphylactic shock, Cushing's syndrome, Cushingoid features, adrenal suppression, growth retardation in children and adolescents, decreased bone mineral density, behavioural changes (psychomotor hyperactivity and irritability predominantly in children), glaucoma, cardiac arrhythmias, paradoxical bronchospasm. Serious side effects (unknown frequency): depression, aggression (predominantly in children). **MA number:** PL 36532/0001-0003. **Cost:** £13.50 for 25/50µg, £17.59 for 25/125µg, £27.99 for 25/250µg. **MAH:** Genetic S.p.A., Via G. Della Monica 26, 84083 Castel San Giorgio (SA), Italy. **Distributed in the UK by:** Aspire Pharma Ltd, Unit 4, Rotherbrook Court, Bedford Road, Petersfield, Hampshire, GU32 3QG. **Legal category:** POM. **Date reviewed:** March 2020. **Version number:** 1010422348 v 5.0

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1010422403 v 4.0 August 2020

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The differential diagnosis of the breathless patient

Noel Baxter *PCRS Policy Lead* and **Tracey Lonergan** *PCRS Policy Coordinator*

Introduction

Breathlessness is the subjective sensation of difficulty in breathing, which may be laboured or uncomfortable.[1] In health it is not always unpleasant and not associated with anxiety or fear. It results from multiple interactions of signals and receptors in the autonomic nervous system, motor cortex and peripheral receptors in the upper airways, lungs and chest wall.[2] Behaviour and emotional state also exert an important influence on the expression of respiratory sensations.[3] Breathlessness commonly presents in primary care and establishing a diagnosis represents a challenge. Whilst approximately two thirds of cases are due to a pulmonary or cardiac disorder[4] there are other causes that need to be considered. It often has multiple causes particularly in the elderly.[5] As with the symptom of pain, patients use distinct descriptors when describing it. 'Chest tightness', 'choking', 'suffocation' and 'air hunger' are some of the terms used. However, the language used to describe it is not specific, and individual descriptions are dependent upon physiological context, personality, social and ethnic factors.[6,7]

Common causes of breathlessness include asthma, chronic obstructive pulmonary disease (COPD) pneumonia, pulmonary embolism, lung cancer or pleural effusion.[8] Distinguishing between these potential causes requires a careful evaluation of the presenting breathlessness, patient history, physical examination and, in some cases, further investigations.

Taking a history

A careful history will yield important diagnostic clues (Table 1). Key points include the speed of onset and duration of breathlessness. Sudden onset is characteristic of pulmonary embolism or pneumothorax whereas a progressive history associated with fever, cough and purulent sputum would suggest a chest infection. Association with characteristic central chest pain may suggest a myocardial infarction (MI), pleuritic pain may point to pericarditis, and palpitations to an arrhythmia (often fast atrial fibrillation). Acute cause (Table 2) often overlaps with chronic (duration greater than four weeks) (see Table 3). In primary care, telephone triage is an important initial step in assessing the degree of urgency, and adequate training of reception staff and a framework to identify urgent cases is recommended to provide proper care and to minimise risk.[9] Those describing severe breathlessness or sudden onset of chest pain should be directed to the emergency department as an emergency usually by ambulance. Rapid assessment will establish if the patient is unstable (Table 4). Unstable patients requiring emergency hospital care may present with one or more of the following (adapted from reference 2):

- Hypotension
- Altered mental status
- Hypoxia and low oxygen saturation
- Central chest pain
- Unstable arrhythmia
- Stridor and breathing effort without air movement (suspect upper airway obstruction)
- Unilateral tracheal deviation, unilateral breath sounds (suspect tension pneumothorax)

Table 1: Diagnostic clues from the history (adapted from references 2 and 4)

Clues from symptoms or history	Possible diagnosis
Nocturnal cough; intermittent breathlessness; wheezing; triggering asthma factors; allergic rhinitis	Asthma
Pleuritic chest pain	Pericarditis, pulmonary embolism, pneumothorax, pneumonia, empyema
History of hypertension; CAD; MI; diabetes; orthopneoa; nocturnal paroxysmal dyspnoea; oedema	Congestive heart failure
Recent trauma; surgery; pregnancy; prolonged immobility	Pulmonary embolism
Haemoptysis	Pulmonary embolism, malignancy, bronchiectasis, pulmonary vasculitis/pneumonia; mitral stenosis; arteriovenous malformation
Orthopnoea; weakness; hoarseness of voice	Neuro-muscular weakness; diaphragmatic dysfunction
Tobacco dependency	COPD, congestive heart failure, malignancy
Indigestion, dysphagia, cough after eating	GERD, aspiration (foreign body)
Postprandial dyspnoea	GERD, aspiration, food allergy; coronary artery disease
Recurrent pneumonia	Lung cancer, bronchiectasis, aspiration, organising pneumonia
Drug exposure	Beta blockers aggravating airways disease Amiodarone / nitrofurantoin / Methotrexate lung fibrosis Illicit drugs (e.g., heroin): talcosis
History of immunosuppressive disease or therapy; acquired immunodeficiency syndrome	Opportunistic infections: Pneumocystis carinii pneumonia; bacterial (tuberculosis; Legionella); viral (cytomegalovirus); or fungal (Aspergillus)
Exposure to inorganic dust, asbestos, or volatile chemicals	Pneumoconiosis; silicosis; berylliosis; coal workers lung; asbestosis
Organic exposure to dust (birds, laboratory workers)	Hypersensitivity pneumonitis (bird fancier's lung)
Stress/emotional problems	Hyperventilation/dysfunctional breathing

CAD, coronary artery disease; COPD, chronic obstructive pulmonary disease; GERD, gastroesophageal reflux disease; MI, myocardial infarction

Table 2: Differential diagnosis of acute breathlessness in adults (NICE 2020)

Cardiac	Silent MI, cardiac arrhythmia, acute pulmonary oedema, cardiac tamponade, chronic heart failure
Pulmonary	Asthma, COPD, pneumonia, pulmonary embolism, pneumothorax/tension pneumothorax, pleural effusion, lung/lobar collapse, bronchiectasis, interstitial lung disease, lung or pleural cancer
Other causes	Anaemia, diaphragmatic splinting, anxiety-related breathlessness

COPD, chronic obstructive pulmonary disease; MI, myocardial infarction

Table 3: Differential diagnosis of chronic breathlessness	
Cardiac	Cardiac failure (left ventricular systolic or diastolic dysfunction), coronary artery disease, left ventricular hypertrophy, cardiomyopathy, cardiac arrhythmias (especially atrial fibrillation), pericardial disease, valvular heart disease, pulmonary hypertension, congenital heart disease
Pulmonary	COPD, asthma, interstitial lung disease, pleural effusion, malignancy (primary or metastatic), bronchiectasis, upper airway obstruction (laryngeal disease, tracheal stenosis)
Other causes	Thromboembolic disease, neuromuscular disorders (myasthenia gravis, amyotrophic lateral sclerosis), chest wall deformities (kyphoscoliosis), anaemia, obesity, psychogenic causes (GAD, PTSD, panic disorders, dysfunctional breathing), deconditioning, GERD, metabolic conditions (acidosis, uraemia), liver cirrhosis, thyroid disease

COPD, chronic obstructive pulmonary disease; GAD, generalised disorder; GERD, gastroesophageal reflux disease; PTSD, post-traumatic stress

Table 4: The initial face to face assessment of patients with breathlessness[2]

- Assess airway patency and listen to the lungs
- Observe breathing pattern including use of accessory muscles
- Monitor cardiac rhythm
- Measure vital signs and pulse oximetry
- Obtain history of cardiac, pulmonary disease or trauma
- Evaluate mental status

- Respiratory rate above 30 breaths per minute, cyanosis, and signs of respiratory distress.

In stable patients and those with a long term established cause a comprehensive history and analysis of clinical signs are the most important factors in establishing the current cause.[2,4] The timing of breathlessness is important as paroxysmal nocturnal dyspnoea is characteristic of left ventricular failure (LVF). Early morning wakening with wheeze and breathlessness is typical of asthma. A diagnosis of COPD should be considered in patients over the age of 35 who have a risk factor (generally smoking) and who present with exertional breathlessness, chronic cough, regular sputum production, frequent winter 'bronchitis' or wheeze.[10] Breathlessness when supine (orthopnoea) commonly occurs in LVF. The presence of cough, chest pain or palpitation can help narrow the diagnosis.[11] The severity of dyspnoea can be measured in terms of how it limits daily activities. Personal and family history of chest or cardiac disease is important. A patient with a previous MI and breathlessness is likely to have heart failure. Ask about current medication and tobacco consumption. Social and occupational history can reveal important clues as to possible causes. It is helpful to enquire about associated feelings of anxiety.

Physical examination

Examination should be systematic and should include a general observation looking for respiratory distress, anaemia, cyanosis, clubbing or lymphadenopathy (Table 5). Nasal passages and pharynx should be examined to look for evidence of obstruction and the neck should be palpated for an enlarged thyroid gland and evidence of any tracheal deviation. The thorax should be examined for chest deformity or kyphosis and the movements should be observed for evidence of any asymmetry. Percussion may indicate dullness over a pleural effusion or hyperresonance over a pneumothorax. Auscultation of the chest should look for the presence of bronchial breathing or added sounds such as rhonchi, crepitations or stridor. Cardiovascular examination may identify abnormalities such as an abnormal heart rate or rhythm, hypertension, dis placement of the apex, murmurs and added heart sounds. The presence of carotid bruits or diminished peripheral pulses should be noted. The legs should be examined for oedema and evidence of deep vein thrombosis. A systolic murmur may indicate aortic stenosis or mitral regurgitation and the presence of a third heart sound, a displaced apex beat and a raised JVP could indicate the presence of cardiac failure. Non-cardiac and non-pulmonary disease should be considered in patients with minimal risk factors and no clinic evidence of cardiac or pulmonary disease.

Investigations

Following a careful history and physical examination, certain tests should be carried out in order to confirm a diagnosis or to provide further information. Routine blood tests should include a full blood count, urea and electrolytes, random blood sugar and thyroid function tests, a normal B-type natriuretic peptide (BNP or NT proBNP) rules out heart failure. ECG may reveal abnormal heart

Table 5: Diagnostic clues from physical examination (adapted from references 2 and 4)

Physical exam findings	Possible diagnosis
Wheezing, pulsus paradoxus, accessory muscle use	Acute asthma, COPD exacerbation
Wheezing, barrel chest, decreased breath sounds, flap, peripheral vasodilation	COPD exacerbation (+/- acute CO2 retention)
Fever, crackles, increased fremitus, bronchial breathing	Pneumonia
Oedema, neck vein distension, S3 or S4, hepatojugular reflux, murmurs, coarse Congestive heart failure, pulmonary oedema crepitations, wheezing	Congestive heart failure, pulmonary oedema
Pleuritic rub, tachycardia, lower extremity swelling	Pulmonary embolism
Localised, decreased or absent breath sounds	Pneumothorax, pleural effusion
Inspiratory stridor, rhonchi, tracheal tug	Croup, tracheitis
Stridor, drooling, fever	Epiglottitis
Stridor, wheezing, persistent pneumonia	Foreign body aspiration
Finger clubbing	Bronchial carcinoma, intrathoracic suppuration (bronchiectasis, empyema) fibrosing alveolitis, bacterial endocarditis, cyanotic congenital heart disease
Sighing, peripheral or peri-oral paraesthesia	Hyperventilation
Abnormal inspiratory or expiratory sounds heard over the trachea	Central airway obstruction; vocal cord paralysis; tracheal stenosis
Accentuated P_2; right ventricular heave; murmurs	Pulmonary hypertension

COPD, chronic obstructive pulmonary disease

rate or rhythm. There may be evidence of ischaemic changes, ventricular hypertrophy or pericardial disease. Heart failure is unlikely in the presence of a normal ECG.[12,13] If BNP and/or ECG are abnormal the patient should be referred for echocardiography, which will help to confirm the presence of valve abnormality as well identifying left ventricular systolic dysfunction, left ventricular hypertrophy and raised pulmonary arterial pressure.[12] Chest x-ray may reveal chest wall abnormalities, evidence of pleural disease, neoplastic lesions, interstitial lung disease, cardiomegaly or cardiac failure. Pulse oximetry abnormalities may indicate desaturation at rest or after exercise – an indicator of gas exchange abnormalities. Serial peak flow monitoring will identify variable airway obstruction and spirometry may show evidence of obstructive and restrictive lung disease. Fractional exhaled nitric oxide levels can support a clinical suspicion of asthma. Capnography or blood gas analysis may reveal hypocapnia indicative of hyperventilation.

Remote assessment of breathlessness

Where initial face to face assessment of a patient presenting in primary care with breathlessness is not possible or appropriate, assessment can be undertaken remotely via telephone or video messaging. While there are currently no validated tests for the remote assessment of breathlessness in patients presenting with breathlessness the ability of a patient to complete full sentences and the recently proposed algorithm from the Centre for Evidence-Based Medicine (CEBM) are helpful.

In response to the COVID-19 situation and the challenge of face to face evaluations, the CEBM proposed an algorithm for the remote assessment of breathlessness in the acute primary care setting. The algorithm takes into account the patient's own description of their problem, asks specific questions to enable the patient to describe their breathing in more detail and focuses

Table 6: Centre for Evidence-Based Medicine (CEBM) recommendations for the remote assessment of breathlessness[14]	
1	Ask the patient to **describe the problem with their breathing in their own words** and assess the ease and comfort of their speech. Ask open-ended questions and listen to **whether the patient can complete their sentences** **"How is your breathing today?"**
2	**Align with NHS111 symptom checker**, which asks three questions (developed through user testing but not evaluated in formal research): "Are you so breathless that you are unable to speak more than a few words?" "Are you breathing harder or faster than usual when doing nothing at all?" "Are you so ill that you've stopped doing all of your usual daily activities?"
3	Focus on change. **A clear story of deterioration** is more important than whether the patient currently feels short of breath. Ask questions like "Is your breathing faster, slower or the same as normal?" "What could you do yesterday that you can't do today?" "What makes you breathless now that didn't make you breathless yesterday?"
4	Interpret the breathlessness in the **context of the wider history and physical signs**. For example, a new, audible wheeze and a verbal report of blueness of the lips in a breathless patient are concerning

on recent changing in breathing in the context of the patients wider clinical picture (Table 6).[14]

Who should we refer?

Patients should be referred for specialist opinion when:[4]

- the underlying cause cannot be established definitively and referral is indicated for further investigation
- symptoms are disproportionate to the apparent severity of the disease
- symptoms do not respond to therapy in order to confirm the diagnosis or alter therapy in order to alleviate symptoms.

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Further reading:
The IMPRESS Breathlessness Algorithm, developed by the PCRS in collaboration with the British Thoracic Society, provides additional guidance on managing the patient presenting with breathlessness. https://www.respiratoryfutures.org.uk/resources/im-press-documents/impress-breathlessness-algorithm/

Date of Preparation: September 2020 (update) Version 1

The original version of this article, written by Dr Basil Penney and Dr Ahmet Fuat, Darlington, and edited by Hilary Pinnock, University of Edinburgh has been updated by Dr Noel Baxter, Edinburgh, and edited by Dr Tracey Lonergan, PCRS, in line with current guidance correct at the time of publication (September 2020)

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Peak flow monitoring and microspirometry as aids to respiratory diagnosis in primary care: more important than ever in times of COVID

Duncan Keeley *Executive Committee Member PCRS*

Introduction

Peak flow charting and microspirometry are undervalued in guidelines and were underused in primary care even before the COVID pandemic, but have enhanced importance now given the difficulties with access to more formal respiratory function testing. We should always seek objective physiological confirmation of our diagnosis where possible.

The common chronic respiratory disorders diagnosed in primary care – asthma and COPD (chronic obstructive pulmonary disease) are both characterised by airways obstruction. In asthma this varies markedly with time and treatment while in COPD the airways obstruction is typically fixed and permanent. Some people have fixed obstruction with some degree of reversibility – the so-called asthma COPD overlap syndrome.

Diagnosis involves careful history taking and examination before moving on to physiological testing – being careful to keep in mind other respiratory and non-respiratory diagnoses that may cause breathlessness or cough. The pattern of symptoms over time and their response to treatment is also important, and earlier diagnoses should be re-interrogated if necessary. Always review an initial diagnosis – and consider referral to a specialist – if response to treatment is poor or there are atypical features. Chronic sputum production, for example, is highly unusual in asthma and even in COPD should prompt consideration of bronchiectasis. Get a chest X ray at the time of any new diagnosis of COPD, and if apparent asthma has definite atypical features.

Peak flow measurement and microspirometry are themselves both potentially aerosol generating procedures so we need to develop methods for remote teaching of technique and assessment of results – both made eminently possible by the rapid advances in both the availability and the use of digital technologies which have resulted from the pandemic. Video tutorials in using peakflow meters and microspirometers can easily be found online and patients can be directed to these – or better still make you own to add that personal touch. If you do this make sure you check that you have got it right!

This article will cover the use of peak flow monitoring and microspirometry in primary care as aids to the objective demonstration of airways obstruction – reversible or otherwise.

PCRS have published guidance on respiratory diagnosis during the pandemic.[1]

Peak Flow Monitoring

The great advantages of peak flow measurement in asthma diagnosis are the low cost and ready availability of the equipment, and the ease with which peak flow measurement – and periods of peak flow monitoring – can be repeated. Measurements can – and should – start at once if a patient presents with acute symptoms.

Repeated measurement and charting of peak expiratory flow has long been used for the diagnosis of asthma. Like many long established and simple aids to diagnosis the published evidence base for its use is surprisingly sparse: a recent assessment for the NICE guideline on asthma diagnosis[2] cites a generally low and variable sensitivity but a specificity of up to 0.99 in adults and 0.80 in children for peak flow monitoring in the diagnosis of asthma. This high specificity ("negativity in health") does mean however that clear evidence of peak flow variability is very good for ruling asthma in as a diagnosis, while sensitivity ("positivity in disease") improves if the monitoring is repeated – particularly across a period of exacerbation and remission of symptoms.

Who should do this?

Setting up peak flow monitoring with a patient suspected of having asthma requires the health professional to have the skills and the time to do it. Just like correct use of an inhaler, teaching correct use of a peak flow meter is not like falling off a log and a surprising number of health professionals don't know how to do it. Learn! It is not rocket science either. Explaining and teaching effective peak flow monitoring does take a bit of time – but attention to correct diagnosis at the outset saves a great deal of time down the line. If there is not time to do the job at the first consultation arrange for review as soon as possible to go over it more thoroughly – but always get at least one peak flow and give them a meter and a chart before starting any treatment.

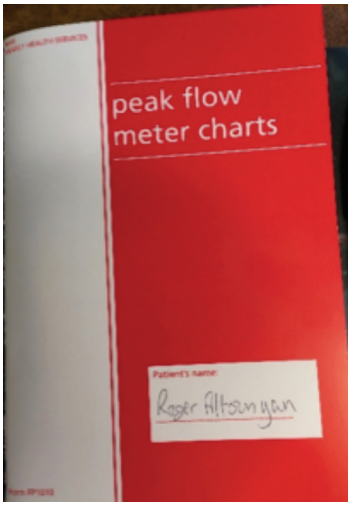
How to do it

Effective peak flow monitoring for diagnosis depends on:

1. Explaining to the patient or parent how valuable a period of peak flow monitoring is in helping to make a correct diagnosis. "This is a bit of a fuss but it will really help us to get the right diagnosis and get you onto the right treatment and make you better."
2. Correct teaching of how to use the peak flow meter. Best of three hard fast blows and record the highest reading.
3. Having the patient or parent show you that they can perform peak flow measurements, correctly read the meter and correctly plot that number on a chart. They must be able to do all three to make a meaningful peak flow chart.
4. Taking measurements twice daily, or more – for a sufficient period – usually at least 2-4 weeks – at a time when symptoms are present. Peak flow charting when introducing a trial of treatment is particularly worthwhile. Encourage measurement when symptoms are marked and when they are better. Pre and post exercise readings are also useful.
5. Knowing how to identify abnormal variability in peak flow.
6. Repeating the testing period at a later date if symptoms persist but initial testing is inconclusive or the diagnosis remains in doubt.

Peak expiratory flow (PEF) should be recorded as the best of three forced expiratory blows from total lung capacity with a maximum pause of two seconds before blowing. The patient can be standing or sitting. Further blows should be done if the largest two PEF are not within 40 l/min.

Charts are provided with peak flow meters but these are limited in duration. Drug companies provide peak flow diaries, or you can use the excellent charts in the booklet FP1010 often still available from primary care organisations. Charting the readings on



The brilliant Form FP1010 - contains 32 weeks' worth of PEFR charts, instruction for use and care of the peak flow meter and has space at the back for a written personal action plan

a graph is much preferable to recording numbers only since it allows better pattern recognition and easier identification of maximum and minimum readings. Electronic meters with memory recording exist but are little used outside of research settings. Mobile phone attachment PEFR meters with accompanying apps to record and chart results are becoming available.

The age at which children become able to do reliable peak flow measurements cannot be easily defined – Most children aged 7 years and over will be able to perform meaningful peak flow measurements. Children should be given a low range peak flow meter.

For a patient with acute wheezing that you are planning to treat with high dose bronchodilators and/or oral corticosteroids, always measure peak flow before and after treatment; this is good practice in any case as part of the assessment of severity of the attack and may afterwards provide strong supportive evidence for an asthma diagnosis.

"Poor compliance"

It is often said that compliance with peak flow charting is poor. In my experience, this is not true if the method, purpose and value of the charting is clearly explained and it is made clear that charting does not need to continue once the diagnosis is made. Discussions of peak flow monitoring also sometimes refer to falsification of peak flow records – usually to conceal the fact that the measurements have not actually been done. What is needed is a patient and trusting relationship between health professional and parent or patient. This allows effective explanation of the importance of doing what has been asked – and of being honest if it has not been possible to do this for whatever reason. With experience it is often easy to tell that a record has been made up – and gently share this possibility with the patient. A miniscule number of patients may deliberately falsify a record to make it appear that they have asthma when they do not. This can be hard to detect but is vanishingly rare.

What is abnormal peak flow variability?

There are a variety of numerical definitions. Like blood pressure and blood glucose, peak flow variability is a continuous physiological variable and cut off points are arbitrary. One commonly used definition (cited in the BTS/SIGN guideline)[3] is the difference between maximum and minimum expressed as a percentage of the mean peak flow, with more than 20% being considered abnormal. If the max-min difference is greater than 20% of the maximum reading (easier to find than the mean) then this is clearly abnormal.

As helpful as the numbers is the appearance pattern of the graph. The most typical picture is of low readings with obvious saw tooth variability flattening out and rising as symptoms respond with time or treatment.

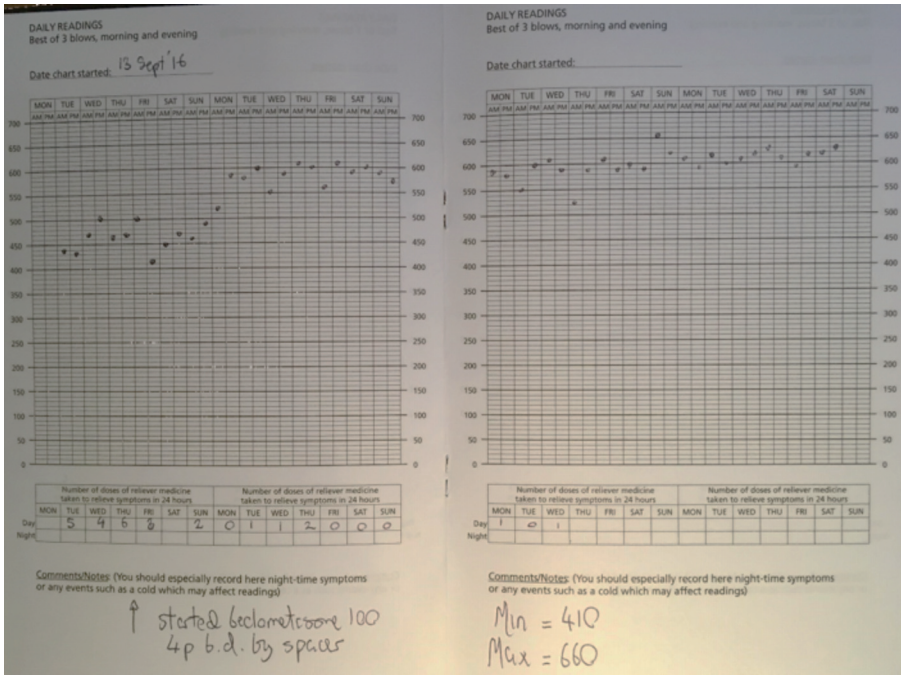
The illustration below shows the peak flow chart of a 55 year old never smoker with a one year history of recurrent worsening cough and shortness of breath. His chest X-ray was normal. His symptoms had greatly improved with a one week course of prednisolone but recurred when the steroids were stopped. The chart was done as he started on twice daily inhaled corticosteroids by spacer. It provides convincing objective evidence of significant peak flow variability – coinciding with resolution of his symptoms. This is strongly supportive of an asthma diagnosis.

Remember occupational asthma

The possibility of occupational asthma should be born in mind whenever you make a new asthma diagnosis in an adult. In addition to careful history taking around occupation and symptoms a period of peak flow charting indicating when the patient is at work is vital. Patients in whom occupational asthma is suspected should be referred for specialist assessment but should chart their peak flow until seen.

Does peak flow monitoring have any place in the diagnosis of COPD?

Peak flow measurement is not adequate for definitive COPD diagnosis. This requires quality-assured diagnostic spirometry in addition to a full clinical assessment. But in the pandemic – with limited access to full spirometry – serial PEF measurement can be utilised to help support a provisional diagnosis of COPD.



Two-week peak flow tracing consistent with a diagnosis of asthma: a picture is worth a thousand words

One small study suggested that reduced PEF below 80% predicted was found in 90% of all spirometry confirmed COPD and 100% of severe and very severe COPD.[4] Lack of variability in 2-3 weeks of PEF readings suggests fixed airways obstruction.

Remember that asthma can develop at any age, and if late onset asthma (or COPD with a substantial reversible component) is suspected then peak flow charting is valuable.

Any COPD diagnosis made without full diagnostic spirometry should be flagged in the records as provisional.

Do patients with asthma need to continue to monitor their peak flow?

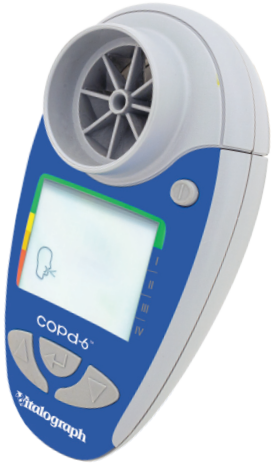
Usually not. But it is worth keeping their peak flow meter and knowing their best and lowest readings. Restarting peak flow measurements may be useful for some people as part of a personal asthma action plan. Most patients can effectively self-manage based on symptoms alone – but some are slow to recognise significant deteriorations ("poor symptom perceivers") and they may find regular peak flow checking helpful.

Microspirometry

Simple inexpensive hand held spirometers, programmed at each use with the patient's age height and gender can give good accurate readings of FEV_1 (forced expiratory volume in 1 second), and express this as percent predicted. The simplest and cheapest devices measure FEV_1 only but hand held meters are now available for less than £150 that provide FEV_1, FVC and FEV_1/ FVC ratio, together with apps which provide instructions, assess quality and reproducibility of efforts and keep records of results which can be stored and transmitted.

The necessary expiratory manoeuvre and the correct use of the instrument are more demanding than measurement of peak flow, but it is possible both to teach their use and to supervise their performance by video link.

These instruments are not – in an ideal world – a substitute for full diagnostic spirometry in COPD. But until timely access to full diagnostic spirometry is possible it is much better to obtain results from microspirometry than to rely solely on clinical features for a diagnosis of COPD. It would be possible for practices to organise a system of loan and return of micospirometers – with appropriate sterilisation of the equipment between patients.



The simplest microspirometers are useful for screening adults – especially symptomatic older smokers – for possible COPD. An FEV_1 of 80% predicted or less should prompt consideration of full diagnostic spirometry. Note that if COPD is being considered as a diagnosis then screening or diagnostic spirometry should be done at least 4-6 weeks after the resolution of acute symptoms. If asthma is suspected then what you need is a microspirometry at the time the patient is symptomatic, with measurement of FEV_1 before and after treatment.

In the assessment of asthma, a rise in FEV_1 of 12% and at least 200ml with time or treatment is suggestive of asthma. An increase of 400ml or more in FEV_1 is strongly suggestive of asthma.[2] Here the key difference is that measurements both before and after treatment or resolution of acute symptoms provide the best information.

Conclusion

Asthma diagnosis is difficult, and a matter of controversy. There are concerns about over-diagnosis – although delayed diagnosis is also still a problem. The well established BTS/SIGN guideline, updated in 2019, contains a comprehensive discussion of the approach to diagnosis and recommends spirometry as the preferred test of airways obstruction.[3] The much criticised NICE guideline on diagnosis and monitoring of asthma[2] suggests a different approach involving measurement of FeNO in addition to spirometry for (nearly) all. This was impracticable even before the pandemic. Both guidelines retain a place for peak flow measurements but relegate these to a subsidiary role. However, spirometry is very often normal in suspected asthma in primary care. The quality of full diagnostic spirometry in primary care is variable and there is a substantial training need if it is to be easily available to all – a highly desirable aim. Issues of training and of the availability of quality assured spirometry have prompted the development of community diagnostic hubs for the provision of this and other diagnostic services, but this is work in progress and such hubs are not yet available in many areas, while waiting times for secondary care services are long.

Peak flow monitoring – cheap, (relatively) simple and easily repeatable – and microspirometry – should both play an important role in respiratory diagnosis. Their importance is increased in the circumstances of the ongoing pandemic of COVID-19. All primary health care professionals involved in respiratory care should know how to teach their use and interpret their results.

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Date of Preparation: March 2017 V1; Revised September 2020 V2

Spirometry and lung function testing in primary care: Your Questions Answered

Carol Stonham *MBE, PCRS Executive Chair, Queens Nurse*

The COVID-19 pandemic saw a virtual halt on respiratory function testing in primary care, including spirometry, given the concerns around the potential for transmission of infections, including COVID-19. As services are resumed, even against a background of increasing community viral transmission of COVID-19 and the usual winter viruses, Carol Stonham answers your questions on the appropriate delivery of respiratory diagnostics and suggests ways in which you can mitigate any potential risk to yourselves or your patients. This document will be updated as the situation evolves and new guidance emerges.

What is the current guidance on the use of spirometry in primary care?

In primary care most respiratory function testing involved spirometry and FeNO, mainly in adults. Spirometry can be important in ensuring patients receive the correct diagnosis without unnecessary delay so that they can start appropriate treatment. In August 2020, the Association for Respiratory Technology & Physiology (ARTP) issued revised guidance on recommencing physiological services. including spirometry and other respiratory tests. While these guidelines encompass secondary care services they do include important guidance for those performing respiratory function tests in the primary care setting. ARTP recommends that respiratory function tests should only be carried out when they will definitively inform or change a patients management. While spirometry should be considered a moderate risk respiratory function test, other tests requiring only low exhalatory flow such as FeNO should be considered as lower risk. Both spirometry and FeNO can be conducted in the primary care setting where available and while adhering to local infection control guidance and when due consideration has been given to the risk concerning the individual patient, the tests being performed and the environment (plant).

What steps should I take to protect myself and my patients when assessing spirometry?

ARTP recommends that all patients should be pre-screened before attending for respiratory function tests. This could take the form of a phone call or a questionnaire to check for recent exposure to anyone with a positive COVID-19 diagnosis or if the patient has any COVID-19 symptoms. Temperature checking before patients enter the healthcare building should continue to be mandatory and routine. If and when possible pre-test COVID-19 swab should be offered. Local infection protection and control standard operating procedures should be stringently followed. Tests must be performed using anti-bacterial, anti-viral filters instead of one way valved mouth pieces.

A room should be designated for respiratory function testing and attention should be paid to air circulation. While the ARTP guidance recommends that rooms used for respiratory function testing should have 6 air changes per hour in the secondary care setting, this is unlikely to be possible or measurable in primary care facilities. As a minimum, the door should remain closed to the rest of the building at all times, the room should be fully cleaned between patients and it should be left empty for a period of time between patients although there is no evidence to suggest for how long. Fans should not be used in rooms where respiratory function tests are conducted. Appropriate personal protective equipment for performing respiratory function tests in primary care include appropriate clothing (eg scrubs) along with apron, gloves and face coverings (at least a water-resistant mask but ideally also a visor) in line with local policies. Consider separation of the operator from the patient with an appropriately placed Perspex screen for added protection.

What other respiratory test can I deliver at the moment?

ARTP guidance on low effort procedures including FeNO is that they can be considered as low risk for viral transmission and so can be carried out in the primary care setting with adherence to local infection protection and control procedures. They can be performed in a room with normal ventilation, with surgical face mask, gloves, apron and visor. There is no need to leave the room fallow but equipment and surfaces should be wiped between patients.

What about peak flow monitoring?

Given the potential to induce cough, where possible peak flow measurement should be conducted remotely by the patient in their own home. Charting and reporting their score is acceptable if the patient is sufficiently competent. Video consultation is helpful if additional support is needed to ensure an accurate test. Peak flow measurement can also be carried out as part of a face to face consultation but should be conducted in an outdoor setting and not in the clinical room. The patient should use their own peak flow meter.

Date of Preparation: September 2020 Version 1

Primary Care Respiratory Society
Get Winter Wrapped

Influenza

Ren Lawlor *Advanced Nurse Practitioner and Senior Lecturer in Nursing and Paramedic Science at the University of Greenwich*

Influenza (flu) is an acute viral infection of the respiratory tract. It is a highly infectious illness which spreads rapidly transmitted by droplets, aerosol, or through direct contact with the respiratory secretions of someone with the infection. Even people with mild or no symptoms can infect others. For healthy individuals, flu is an unpleasant but normally self-limiting disease with recovery usually within two to seven days. However, for some people infection with flu can cause serious illness and in worse cases death.

The risk of most serious illness is highest in children under 6 months, pregnant women, older people and those with underlying health conditions. These groups are at greater risk of complications such as bronchitis or pneumonia. Flu during pregnancy may be associated with perinatal mortality, prematurity, smaller neonatal size and lower birth weight.

Why do we vaccinate every year?

There are 3 main types of influenza virus that infect humans – A, B and C. A viruses cause outbreaks most years and are the usual cause of epidemics and pandemics. A viruses live and multiply in many different animals and may spread between them. Birds, particularly wildfowl, are the main animal reservoir. B viruses tend to cause less severe disease and smaller outbreaks, they are predominantly found in humans and the burden of disease is mostly seen in children. Types A and B cause most of the disease seen in the UK, with epidemics usually related to Type A flu.

The flu virus has two surface antigens:

Haemagglutinin (H)
The role of the H antigen is to bind to the cells of the infected person. There are 18 different types of H.

Neuraminidase (N)
The role of the N antigen is to release the virus from the cell surface. There are 11 different types of N.

The different types of H and N are identified by numbers, e.g. H1N1, H3N2.

Changes in the surface antigens (H & N) result in the flu virus constantly changing, these genetic changes occur in two ways:

- antigenic drift: minor changes (natural mutations) in the genes of flu viruses that occur gradually over time
- antigenic shift: when two or more different strains combine. This abrupt major change results in a new subtype. Immunity from previous flu infections/vaccinations may not protect against the new subtype, potentially leading to a widespread epidemic or pandemic

The World Health Organisation monitors flu virus epidemiology throughout the world and makes recommendations about the strains of influenza A and B which are predicted to circulate. Vaccines are developed off the back of these predictions. There are two main types of influenza vaccine available – inactivated and live. All but one of the flu vaccines available in the UK are inactivated and do not contain live viruses.

One vaccine (Fluenz Tetra®) contains live viruses that have been attenuated (weakened) and adapted to cold so that they cannot replicate efficiently at body temperature to cause flu but can stimulate the immune system to produce an antibody response.

The inactivated vaccines are administered by intramuscular injection. The live attenuated vaccine (Fluenz Tetra®) is given by nasal spray.

For the 2020/21 flu season (northern hemisphere winter), it is recommended that the quadrivalent flu vaccines contain the following:

Egg-based vaccines:
- A/Guangdong-Maonan/SWL1536/2019 (H1N1)pdm09-like virus
- A/Hong Kong/2671/2019 (H3N2)-like virus
- B/Washington/02/2019 (B/Victoria lineage)-like virus
- B/Phuket/3073/2013 (B/Yamagata lineage)-like virus

Cell or recombinant-based vaccines:
- A/Hawaii/70/2019 (H1N1)pdm09-like virus
- A/Hong Kong/45/2019 (H3N2)-like virus
- B/Washington/02/2019 (B/Victoria lineage)-like virus
- B/Phuket/3073/2013 (B/Yamagata lineage)-like virus

This vaccine composition differs from the 2019/20 vaccine composition as both influenza A virus strains and one of the B virus strains have been replaced. The influenza B component in the 2020/21 trivalent vaccines (aTIV and TIV-HD) will be the B/Washington/02/2019 (B/Victoria lineage)-like virus.

Who is eligible?

In light of the Covid-19 pandemic this year's national flu vaccination programme has been extended to include:
- household contacts of those on the NHS Shielded Patient List. Specifically, individuals who expect to share living accommodation with a shielded person on most days over the winter and therefore for whom continuing close contact is unavoidable
- children of school Year 7 age in secondary schools (those aged 11 on 31 August 2020)
- health and social care workers employed through Direct Payment (personal budgets) and/or Personal Health Budgets, such as Personal Assistants, to deliver domiciliary care to patients and service users

This is in addition to the eligible groups listed in table on page 3:
- all those aged two to eleven (but not twelve years or older) on 31 August 2020
- people aged six months to under 65 years in clinical risk groups
- all pregnant women (including those who become pregnant during flu season)
- people aged 65 years and over (including those becoming 65 years by 31 March 2021)
- people living in long-stay residential care homes or other long-stay care facilities
- carers
- household contacts of those on the NHS shielded patient list and immunocompromised individuals
- all frontline health and social care workers
- individuals between 50 and 64 years may be offered flu vaccine under the NHS flu vaccination programme following prioritisation of other eligible groups and subject to vaccine supply

Which vaccine should I use?

There are multiple options from various manufacturers but Public Health England provide guidelines, in summary these are:
- for those aged 65 and over—the adjuvanted trivalent influenza vaccine (aTIV) (with the cell-based quadrivalent influenza vaccine (QIVc) offered if aTIV is unavailable)
- for under-65s at risk, including pregnant women, offer QIVc or, as an alternative, the egg-grown quadrivalent influenza vaccine (QIVe)

Can the flu vaccine give you the flu?

If you receive inactivated flu vaccine (all adults and the majority of children) then the answer is "NO!" It is important to emphasize to patients that there are other viruses about during the flu vaccination season and these may give rise to similar symptoms but are not full 'flu'.

For those receiving live attenuated vaccines then a mild illness (often termed "mini-flu") can occur during the week following vaccination. In addition, people who are vaccinated can also suffer local reactions sore/red arm etc).

Who cannot have the vaccine?

The two principle contraindications to flu vaccination are, a previous severe allergic/anaphylactic reaction to a flu vaccine, and live attenuated vaccines should not be administered to people with severe immunodeficiency. The advice is to refer to the Summary of Product Characteristics (SPC) if unsure.

It is usual to avoid vaccination in those patients with an intercurrent illness, although the BNF rates this as a "caution" as opposed to a "contraindication."

Clinical risk category	**Examples** (this list is not exhaustive and decisions should be based on clinical judgement)
Chronic respiratory disease	Asthma that requires continuous or repeated use of inhaled or systemic steroids or with previous exacerbations requiring hospital admission. Chronic obstructive pulmonary disease (COPD) including chronic bronchitis and emphysema; bronchiectasis, cystic fibrosis, interstitial lung fibrosis, pneumoconiosis, and bronchopulmonary dysplasia (BPD). Children who have previously been admitted to hospital for lower respiratory tract disease. **See the precautions section of the full guideline on live attenuated influenza vaccine**
Chronic heart disease	Congenital heart disease, hypertension with cardiac complications, chronic heart failure, individuals requiring regular medication and/or follow-up for ischaemic heart disease.
Chronic kidney disease	Chronic kidney disease at stage 3, 4, or 5, chronic kidney failure, nephrotic syndrome, kidney transplantation.
Chronic liver disease	Cirrhosis, biliary atresia, and chronic hepatitis.
Chronic neurological disease (included in the DES directions for Wales)	Stroke, transient ischaemic attack (TIA). Conditions in which respiratory function may be compromised due to neurological disease (e.g. polio syndrome sufferers). Clinicians should offer immunisation, based on individual assessment, to clinically vulnerable individuals including those with cerebral palsy, learning disabilities, multiple sclerosis and related, or similar conditions; or hereditary and degenerative disease of the nervous system or muscles; or severe neurological disability
Diabetes	Type 1 diabetes, type 2 diabetes requiring insulin or oral hypoglycaemic drugs, diet controlled diabetes.
Immunosuppression **(see contra-indications and precautions section of the full guidance on live attenuated influenza vaccine)**	Immunosuppression due to disease or treatment, including patients undergoing chemotherapy leading to immunosuppression, bone marrow transplant, HIV infection at all stages, multiple myeloma or genetic disorders affecting the immune system (e.g. IRAK-4, NEMO, complement disorder). Individuals treated with or likely to be treated with systemic steroids for more than a month at a dose equivalent to prednisolone at 20 mg or more per day (any age), or for children under 20 kg, a dose of 1 mg or more per kg per day. It is difficult to define at what level of immunosuppression a patient could be considered to be at a greater risk of the serious consequences of influenza and should be offered influenza vaccination. This decision is best made on an individual basis and left to the patient's clinician. Some immunocompromised patients may have a suboptimal immunological response to the vaccine.
Asplenia or dysfunction of the spleen	This also includes conditions such as homozygous sickle cell disease and coeliac syndrome that may lead to splenic dysfunction.
Pregnant women	Pregnant women at any stage of pregnancy (first, second, or third trimesters). **See the precautions section of the full guideline on live attenuated influenza vaccine**
Morbid obesity (class III obesity)[A]	Adults with a body mass index ≥40 kg/m^2

[A] Many of this patient group will already be eligible due to complications of obesity that place them in another risk category

https://www.guidelines.co.uk/immunisation-and-vaccination/phe-influenza-immunisation-2020/21-guideline/454313.article

a) But what about neurological patients?
There are no cautions or contraindications to patients with stable neurological conditions but those with evolving neurological conditions, particularly poorly controlled/unstable epilepsy are advised to receive specialist referral prior to vaccination.
Nearly all practices have a standard leaflet given to parents of all children having flu vaccination warning about febrile convulsions and advising use of paracetamol.

b) Severe allergic asthma?
There is no specific contraindication to flu vaccination for patients with severe allergic asthma but every attempt should be made to undertake vaccination during a relatively "stable" phase.

c) But what about egg allergy?
Egg-free flu vaccines are available or alternatively it is safe to administer a flu vaccine in which the ovalbumin concentration is less than 120 nanograms/ml. Our advice would be to consult with or refer to your "local" immunology service.

How can we engage with the non-converted?

Dexter and colleagues interviewed GP practices with high flu vaccination uptakes in 2012 and identified 7 key strategies to improve uptake.

Since that time PHE has mounted annual national publicity campaigns and each local area, usually led in England by CCGs, has adapted the national message with specific local guidance. Perhaps a more up to date guidance box would look something like the one here on tips for increasing vaccination uptake.

7 key strategies to improve uptake

1. Having a lead staff member for planning the flu campaign
2. Producing a written report of the uptake annually (PHE now do this)
3. Sending a personal invitation to all eligible patients
4. Only stopping vaccination programmes when outcomes had been achieved
5. Identifying a lead staff member to identify eligible patients from practice register
6. Utilisation of a modified manufacturers search programme to identify eligible patients
7. Utilisation of an in-house search programme to identify eligible patients – now part of GP software

Tips for increasing vaccination uptake

1 Plan early and designate a "flu" champion	• Identify your 'at risk' groups. • Organise and plan of in-house flu vaccination to include whole team meeting prior to flu clinic days. • Ensure early identification and planning of meeting needs of more complex patients, for example house bound, nursing homes, learning disabilities. • Plan for patients who require alternative vaccines. • Ensure all members of the team are fully aware of the vaccination program so that consistent messages are given to patients. • Ensure adequate planning for emergency resuscitation. • Plan for follow up clinics. • Make sure you have appropriate personal protective equipment to run your campaign and a strategy for managing patient throughput
2 Publicity	• Posters – make them colourful. • Send reminders to those who are eligible (written, texts, repeat prescriptions etc) • Advertise your clinics on your Practice website or information screens in the waiting room, your local Village Newsletter or possibly Local Radio). • Consider clinics at times to encourage patients to attend; open clinics (no need to book), early/late appointments, Saturdays? • Wear T-shirts to increase awareness of the vaccines (often available from vaccine providers).
3 Know the facts!	• Address patient misconceptions. • Give a personal recommendation that they receive the vaccination. • Don't just mention during the flu season – could also discuss at an annual review for example. • Remind patients about the serious complications of getting flu. • Follow your local guidance for COVID-19 protection at the surgery and remind patients of their responsibilities and ask that they need to wear masks when they attend for vaccination
4 Flexibility and opportunism	• Make it easy for staff and patients to be vaccinated
5 Lead by example	• Get yourself done early

Conclusions

Flu vaccines are safe and effective. Start by vaccinating yourself if you are in front line health and social care and then move on to everyone else eligible!

Despite the change in eligibility for flu vaccinations over recent years flu vaccines are still considered worldwide as a safe, effective an essential vaccination program, which should be promoted in every health care setting. Not only should we ensure that we have robust strategies to maximize all eligible patient vaccinations, but also that we every health care professional carefully considers there responsibility to be vaccinated themselves. The annual flu vaccination campaign is a challenge for practices – administering vaccinations at scale across different age and risk groups heading into the winter season has always stretched capacity. As we move into the flu vaccination season in 2020 we face new challenges. The vaccination cohort is bigger than before with more people to vaccinate and we have to plan our clinics considering social distancing, protection for patients and staff, one way routes and the potential of an increase in Covid cases and demands on services. This year more than ever planning, resourcefulness and flexibility will be key in delivering a successful flu vaccination programme.

Date of Preparation: September 2020 Version 1

This document, originally produced in 2018 and written by Gail Miles, Rotherham, has been updated by Ren Lawlor, in line with current guidance correct at the time of publication (September 2020)

Primary Care Respiratory Society
Get Winter Wrapped

Tobacco dependency is a long-term relapsing condition that usually starts in childhood

Knowing how to use Very Brief Advice to instigate a quit attempt and supporting smokers who are ready to quit is the business of every healthcare professional

Treating tobacco dependency systematically and effectively will have a significant impact on the triple aim of: (1) improved individual health outcomes and quality of life; (2) equitable socioeconomic and geographical distribution of healthcare resources; and (3) improved long-term population health outcomes including reducing health inequalities. A range of evidence-based pharmacological treatments exist to support smokers facing the difficulty of behaviour change and breaking nicotine addiction. Stop smoking support, across the board, has been shown to be a clinically and highly cost-effective long-term intervention for people with smoking-related long-term disease.

30 seconds to save a life

Tobacco VBA is a basic healthcare competency that has to be learned – it is not a chat – it is an evidence-based intervention. You can find more information and resources on how to deliver VBA, and how not to deliver it, on the last page of this article.

Patients expect to be asked about their smoking by a GP. 72% of smokers consider quitting and 30% try, but only a tiny fraction (5–8%) of smokers use an evidence-based intervention each year.

Make sure you have accessible information backed up by trained reception staff or counter assistance staff in pharmacies who facilitate access to the right stop smoking interventions and healthcare professionals who are trained and confident to help those ready to quit.

Very Brief Advice

ASK

and record smoking status

Is the patient a smoker, ex-smoker or non-smoker?

ADVISE

on the best way of quitting

The best way of stopping smoking is with a combination of medication and specialist support

ACT

on the patient's response

Build confidence, give information, refer, prescribe
Patients are up to four times more likely to quit successfully with NHS support

Are you prepared for supporting your patients to quit?

Be ready with Very Brief Advice, a simple and powerful approach designed to be used opportunistically in less than 30 seconds in almost any consultation with a smoker.

ASK-ADVISE-ACT

Have the tools you need on your desk and in your room:

- Examples of stop smoking medicines – demonstrate their use and consider them as treatments
- A health and wealth wheel
- Details of online resources and local stop smoking services where available. The SMOKEFREE campaign website is a good place to start: https://www.todayistheday.co.uk/

Treatments available

Smoking cessation treatment options, both pharmacological and advisory, are inexpensive and judged by NICE to be highly cost-effective in terms of life years gained.[1] Behavioural support alongside a stop smoking drug and nicotine replacement therapy (NRT) and is the most effective approach for most people wishing to quit. When using NRT, ensure you are prescribing enough to manage the nicotine withdrawal symptoms. The best way to do this is often by giving more than one delivery system – ideally a long-acting combined with a short-acting form – so patients can fit it in to their daily life. Like inhaler devices coaching on technique is important and ideally should be done face to face if and when it is safe to do so or via a video consultation. NICE recommends that combination NRT should be considered as a viable option for smokers wanting to quit.[2]

Nicotine replacement therapy (NRT)

- NRT is available in dermal patch, gum, lozenge, sublingual tablet, inhalator, mouth spray and nasal spray. The most recent addition to the NRT family is the nicotine-aerolised inhaler – VOKE (www.voke.com), although its important to note that this device contains a propellant – HFA-134a).
- Discuss patient preference, highlighting the benefits and disadvantages of each option. The patch is easy to use and available in different strengths but does not offer replacement activity for smoking whereas the gum, inhalator, lozenge, microtabs and nasal spray can all be titrated to nicotine needs and offer a replacement activity for smoking. The microtabs can taste unpleasant and the nasal spray is more difficult to use and may cause watery eyes and sneezing.
- The degree of nicotine addiction and therefore the required dosage of NRT is best decided by asking how long after waking the first cigarette is smoked, the so called "Time To First Cigarette" (TTFC). If the TTFC is less than 30 minutes, the maximum dose should be used.
- Localised reactions can occur depending on the form taken (e.g. skin irritation with patches).
- NRT can be prescribed in pregnancy, breastfeeding and in children from the age of 12 years.
- Swallowed nicotine may exacerbate symptoms in patients suffering from oesophagitis, gastritis or peptic ulcers and oral NRT preparations should be used with caution in these conditions.[3]

Bupropion (Zyban®)

- Bupropion works as a dopamine re-uptake inhibitor, reducing the need for the next cigarette because of the fall in dopamine levels.
- Side effects include insomnia, headache, dry mouth and nausea. It is reported to cause seizures in one per 1,000 people.[3]
- Some patients express a preference for bupropion if they have used it before or if it has been recommended by a friend.

Varenicline tartrate (Champix®)

- Varenicline tartrate is the most effective of the smoking cessation drugs.
- It has long-term quit rates of 22.5% compared with 15.7% for bupropion and 9.4% for placebo.[4]
- Varenicline tartrate has no known clinically meaningful drug interactions(for full details please see summary of product characteristics at http://emc.medicines.org.uk). The main side effect is nausea which affects about a third of patients, so warning of this before prescribing is a good idea. It often occurs as the dose goes up on days 4 and 8, usually lasts for about an hour after taking the tablet for the first two or three weeks, and is mild to moderate with 97% of patients tolerating it. Taking treatment with drink or food can help, and if it becomes difficult to tolerate then anti-emetics such as prochlorperazine can be used for a short period or the dosage may be reduced from 1 mg b.d. to 0.5 mg b.d.
- Varenicline tartrate is contraindicated in the under 18s, people who have had a hypersensitivity reaction to the drug, pregnant or lactating women and those with end-stage renal disease.
- Varenicline can be used in people with mild, moderate and severe mental illness.[5] It has very few if any clinically significant drug interactions.[6]
- The act of stopping smoking itself may alter the liver metabolism of insulin and warfarin, for example. Psychoactive medication requirements may change for the same reason, so extra monitoring is usually required in those with more serious mental health problems and with certain drugs.

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5. Anthenelli RM, Benowitz NL, West R, *et al.* Neuropsychiatric safety and efficacy of varenicline, bupropion, and nicotine patch in smokers with and without psychiatric disorders(EAGLES): a double-blind, randomised, placebo-controlled clinical trial. *Lancet* 2016;**387**:2507–20.
6. https://www.drugs.com/monograph/varenicline-tartrate.html

Manufacturers have had the opportunity to comment on the factual accuracy of the information about their product or equipment

Electronic nicotine delivery systems

- Based on the current evidence PCRS supports electronic nicotine delivery systems, including e-cigarettes, as a positive option available to support people to quit tobacco smoking.
- According to NICE, e-cigarettes are far less harmful than smoking, but are not risk free. The hazard to health arising from vapour inhalation from e-cigarettes when used to support a quit attempt is considered to be substantially less harmful that smoking tobacco.
- The available evidence to date indicates that e-cigarettes are being used almost exclusively as safer alternatives to smoked tobacco, by confirmed smokers who are trying to reduce harm to themselves or others from smoking, or to quit smoking completely.
- Supported by Public Health England, RCP and RCGP.

References

PCRS Position Statement on E-Cigarettes, February 2020. https://www.pcrs-uk.org/resource/e-cigarettes-pcrs-position

RCGP Position Statement on the use of non-combustible inhaled tobacco products, November 2016 http://www.rcgp.org.uk/policy/rcgp-policy-areas/e-cigarettes-non-combustible-inhaled-tobacco-products.aspx

Public Health England E Cigarettes Evidence Review https://www.gov.uk/government/news/phe-publishes-independent-expert-e-cigarettes-evidence-review

Very Brief Advice

VBA can be delivered by any professional. Each VBA delivered correctly can trigger a quit attempt, although it is highly unlikely that every delivery of VBA will result in a quit attempt the key to success is repeated, routine delivery of VBA to all patients. Every VBA should include **ASK : ADVISE : ACT** even if the act is to simply record your VBA and the outcomes in the medical record so that it is immediately available to the next healthcare professional who encounters the patient. This may make it more likely the next heath care professional, not only uses the VBA approach, but also builds on the previous conversation. The next encounter at which VBA is undertaken may be the one that triggers a quit attempt. It can be delivered by both prescribers and non-prescribers.

For more information on how to deliver effective VBA visit the NCSCT website:
http://elearning.ncsct.co.uk/vba-stage_1.

You can also access online training materials via the Medthority learning portal:
https://www.medthority.com/very-brief-advice-for-tobacco-dependency-learning-zone/ipcrg-meet-the-faculty/.

ASK and record smoking status

What it is...

- Are you still smoking?
- Do you smoke at all?
- How's the stopping smoking going?

What it is not...

- Do you want to stop smoking?
- How much do you smoke?
- Why are you still smoking?
- What do you smoke?

It is important not just to ASK but to record smoking status so that if someone says they are smoking they can be given VBA when they are seen again.

ADVISE on how best to stop

What it is...

- Did you know the most effective way to stop smoking is with a combination of support and medication? Both are available on the NHS, and this combination makes you much more likely to succeed in quitting

What it is not...

- You need/have to stop smoking
- If you don't stop it will kill you!

The ADVISE part does not involve advising smokers to stop. Instead it is simply advising HOW best to stop i.e. with behavioural support and medical treatment.

ACT to signpost best available support and treatment

Your patient does not want to take action...

- OK that's fine. If you do change your mind at any time don't forget we are always ready to help you quit

Your patient does want to take action...

- That's great news! All you need to do is book an appointment with my colleague who can give you all the treatment and support you need to help you quit

The ACT part is to direct the smoker to the best available support and treatment to help them quit. Ideally this would be from a stop smoking service or trained stop smoking advisor. If this is not available locally you can recommend that they make a dedicated appointment with yourself or an appropriate member of the practice team. You or they can then go through treatment options provide prescriptions and help support them with a few appointments while they quit.

Useful Stop Smoking Resources

- Visit the PCRS Tobacco Dependency resource page to access our pragmatic guide and a range of resources to help you support patients who wish to quit: https://www.pcrs-uk.org/resource/tobacco-dependency-pragmatic-guide
- Visit the Public Health England Resources page and search for 'smoking' to access a range of downloadable materials including the 'Health and Wealth Wheels': https://campaignresources.phe.gov.uk/resources/

Date of Preparation: September 2020 Version 1

PCRS National Respiratory Conference 2021

23rd-25th September 2021

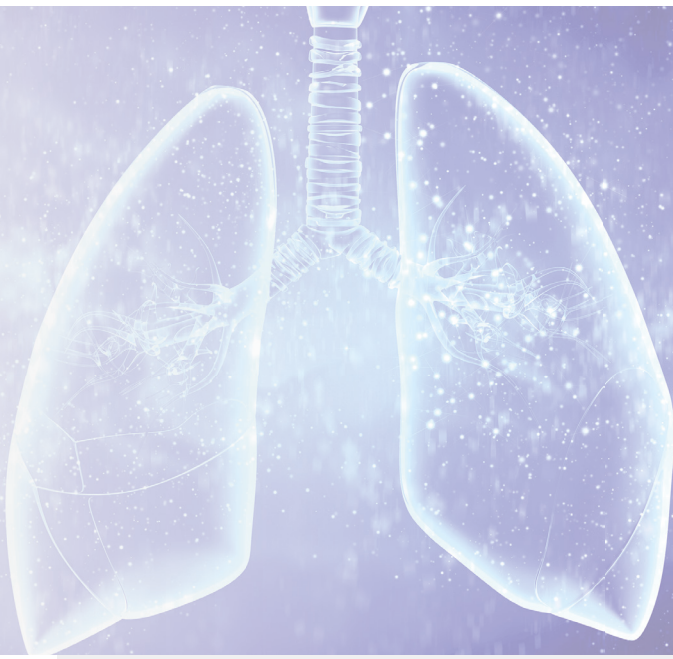
The must-attend event for all healthcare professionals interested in developing best-practice and integrated respiratory care

- Holistic
- Supporting
- Integrated
- Greener

SAVETHEDATE

npj | primary care respiratory medicine

Call for Papers



npj Primary Care Respiratory Medicine is an open access, online-only, multidisciplinary journal dedicated to publishing high-quality research in all areas of the primary care management of respiratory and respiratory-related allergic diseases. Papers published by the journal represent important advances of significance to specialists within the fields of primary care and respiratory medicine. We are particularly interested in receiving papers in relation to the following aspects of respiratory medicine, respiratory-related allergic diseases and tobacco control:

- Epidemiology
- Prevention
- Clinical care
- Service delivery and organisation of healthcare (including implementation science)
- Global health

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Primary Care Respiratory Society
Get Winter Wrapped

Top tips for communicating the benefits of pulmonary rehabilitation to patients

Clare Cook *Physiotherapist, Clinical Lead of a community respiratory team in Bristol, member of PCRS Executive Committee and Chair of the PCRS Respiratory Leadership Group* and **Siobhan Hollier** *Clinical Specialist Physiotherapist (West Norfolk PR Service) and senior team lead for the East of England with BOC Healthcare and member of PCRS Education Committee and Respiratory Leaders Programme board* in conversation with **Fran Robinson**

Pulmonary rehabilitation (PR) has been included as a key intervention in the NHS Long Term Plan. However the PR audit[1] showed that only 62% of people referred go on to complete the course. Moreover, the greatest attrition in the referral process occurs between referral to first contact with PR. So how can referrers and practitioners who run courses communicate the benefits of PR to patients?

Starting the conversation: What key messages do you need to convey to the patient when talking about PR?

- Stress that PR is a holistic treatment and that it is not just about exercise. Explain that the course will improve the patient's understanding of their condition and help them to better self-manage in the future.
- If the patient is concerned because they don't participate in regular activity or feel empowered to manage their condition, reassure them that PR should still benefit them. Not all patients are the same and not all patients will enjoy PR though we hope most will do so. It is important to reassure patients that they will share many of the same concerns as others participating in the programme and will be able to share experiences, concerns and even have fun together learning about their condition, how to manage it and getting to grips with the exercises, even if they have never exercised before.
- Target everyone who might benefit and tailor your approach to each patient – even the individual who considers themselves to be the expert patient will still learn something new from the programme.
- Talk about the respiratory goals that people can achieve. Says Siobhan, "The evidence is so strong that we don't have to prove that it works anymore." There are a number of leaflets available for patients which highlight the value of pulmonary rehabilitation and what can be achieved.[2] Examples include those highlighted on the BLF web page which you can show to patients – https://www.blf.org.uk/support-for-you/keep-active/pulmonary-rehabilitation
- Explain to the patient that they will undergo an assessment at the start of the programme which will explore what is important to them, both physically and emotionally. PR will be an opportunity to spend some time with health-

care professionals and to ask questions. Highlight that this is not the sort of luxury that is available in the GP surgery where healthcare professionals are restricted to 10 minute appointments. "Patients often say to me on a PR programme that they have learned something that hasn't been mentioned before – this is because during PR healthcare professionals have the time to pick up on all the little things that individuals might be struggling with", reports Siobhan.

- Take a holistic approach. "One of my biggest successes recently was helping a lady overcome a barrier to her attending PR, of having to care for her husband. During the course of her treatment she recognised what her needs were as a carer, and we were able to help her go through the process of registering as a carer. This meant she was able to get a sitting service which then freed her up to attend for PR. It had a big impact on her emotional well-being" reported Clare.
- Think carefully how the patient will benefit from PR. For example, a person with idiopathic pulmonary fibrosis (IPF) might be wary of attending PR when the majority of the other patients have COPD. Clare reports, "You can explain that they can ask specific questions about their health as well. Practitioners running courses will have done their pre-planning work about what diseases each patient has and will have put individualised care planning in place."
  "It's important to know who you have got in that room and to make sure that you are providing something for everybody. Although places on the programme are predominantly filled by patients with COPD we are seeing growing numbers of patients with bronchiectasis, IPF and other interstitial lung diseases (ILD) because we are getting better at diagnosing respiratory disease and the emerging evidence of benefit of PR for these conditions" noted Siobhan.

Key selling points

Clare: "It is important to communicate to the patient that there is robust evidence under-pinning PR and that the therapeutic impact of undergoing the programme can be life changing. It is likely the patient will experience clinically significant improvements in both physical health symptoms and mental well-being."

Siobhan: "Another selling point is to explain to patients that during PR they will be doing functional exercise with goals such as being able to get out of a chair more easily. For the more severe patients we can target achieving improvements in daily activities such as washing and dressing. Stress that the exercise goals will be tailored to the individual.

"I had a patient recently whose goals was simply to get into the shower. We did some cognitive behavioural therapy, worked through what the barriers were and worked out a step-wise approach for that patient to achieve their goals. So there are lots of approaches within PR that referrers need to understand."

Benefits of pulmonary rehabilitation in COPD from GOLD[3]

This table summarises the strong evidence base that underpins the many health benefits that PR delivers for the COPD population.[3]

Impact of pulmonary rehabilition	Strength of evidence
Improves exercise capacity	A
Reduces perceived intensity of breathlessness	A
Improves health-related quality of life	A
Reduces hospitalisations and hospital days	A
Reduces anxiety and depression in COPD	A
Strength and endurance training of the upper limps improves arm function	B
Benefits extend well beyond the immediate period of training	B
Improves survival	B
Improves recovery after a hospitalisation for an exacerbation	B
Enhances the effect of long acting bronchodilators	B
Respiratory muscle training can be beneficial, especially when combined with general exercise training	C

How do you have a meaningful conversation?

Although healthcare professionals are severely time limited in primary care it is important to make sure that your conversation with the patient is not just about ticking the QOF box but results in a meaningful referral that has meaningful outcomes.

- Think about giving patients the right information to enable them to make an informed choice. "It's really important during the initial conversation that we have a personalised conversation and find out what is important to the patient," reports Clare.
- Use motivational interviewing strategies with patient-centred goal setting and focus on helping patients to overcome any barriers that might prevent them from doing PR.
- The first thing is to ask the patient is if they have any concerns about PR and then you can address these concerns and explain how the treatment will be able to help them. For example, if a patient is concerned about the time commitment, acknowledge that and identify what the patient will get back from their investment of time in the course.

How do you avoid closing the conversation when the patient says no?

- Don't judge the patient's decision if they don't want to be referred for PR.
- It's important to explore and challenge any incorrect health beliefs or patient resistance. So you could ask – what is it about PR that doesn't interest you? You could also offer some evidence based information such as – going to PR could reduce your risk of being admitted to hospital and improve your physical performance.[3] Common barriers are: The patient says they don't think they are fit enough, they think they are too old, they think they know everything about their condition or they don't have enough time to attend a programme.

How to help the patient overcome their barriers

Clare comments, "If someone says to me I'm too old for PR, I reply that most people who do PR are aged between 60 and 70 and quite often the age range is from people in their 40s right up to their mid-90s. Despite people's ages they're all in different stages of health and it's normal to be part of the group. I say to them 'you are just the sort of person I'd expect to meet on a PR course.' None of us want to be unique and special in our health status and we don't want to stand out or break any records.

How to help the patient overcome their barriers

If the patient says they haven't got time to attend PR Siobhan suggests, "Gently probe to find out why – is it because they care for somebody else, have they got other commitments, is this a genuine issue or just an excuse? Work with the patient to see how they could free up some time. Explain that PR will help them in the long run. Sometimes I compare PR to a course of antibiotics that you would take for an infection – suggesting that this is the single most important thing they can be doing to help their condition". Clare agreed noting, "You can explain that the time the patient invests in the programme they will reap back because it will improve their current symptoms of breathlessness that are limiting their ability to do everyday activities such as cutting the hedge, walking to the Post Office or carrying shopping back from the supermarket. I had one patient who measured the impact of his respiratory condition on his ability to cut the hedge and it took him seven sessions to cut the hedge but following a course of PR it only took him two or three goes."

If the patient declines a referral, how do you leave the door open?

- If the patient declines a referral it is important to let them know that the door is always open so they can take the time to reflect on their decision and change their mind at a later date.
- Find out whether patients can self-refer to the services in their area and if they can make sure they have the information about how to do this.
- You could refer the patient to a Breathe Easy Group or a buddy scheme where they can talk to other patients who have undergone PR.
- Record in the patient's notes that PR is probably their best treatment option and that you have already had a conversation about it, have listened to the patient and understood what their experience of their condition is. This will enable the next practitioner to continue the conversation and leaves the door open for a future positive conversation about PR.

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ASTHMA RIGHT CARE

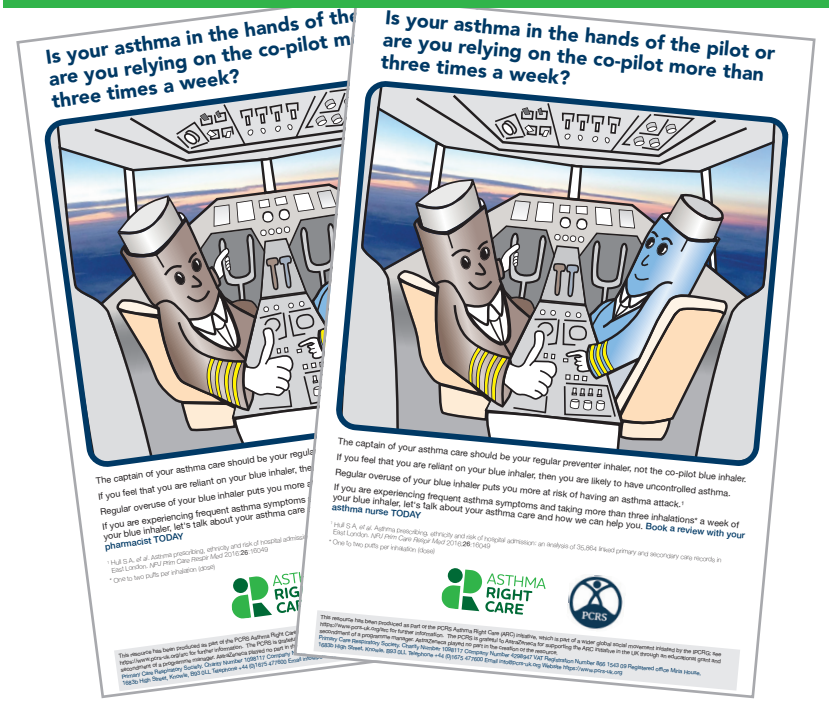
Asthma Right Care (ARC) is a global initiative that was developed by the International Primary Care Respiratory Group (IPCRG) to explore how to use social movement approaches to create a sense of discomfort and dissatisfaction with the status quo in the management of asthma in a manner that's positive and creates a sense of hope.

In 2019 PCRS launched Asthma Right Care (ARC) in the UK.

Webinars

Case Studies

Practice and Pharmacy Posters



Slide Rule

Asthma Slide Rule

1. Questions for prescriber to ask themselves and a person with asthma

Using this slide rule, how much short-acting beta$_2$ agonist (SABA) also known as reliever/rescue/ salbutamol/'blue' inhaler would you think was acceptable for a person with asthma to take in a year, week or day before you thought a review was necessary? What made you choose that?

	Increasing SABA use											
Number of SABA inhalers Rx per year	1	2	3	4	5	6	7	8	9	10	11	12
*Puffs of SABA used per year**	200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400
Puffs of SABA used per week	4	8	12	15	19	23	27	31	35	39	42	46
Puffs of SABA used per day	< 1	1	2	2	3	>3	4	>4	5	6	>6	7
	Symptoms											

**Some devices do not contain 200 puffs. Check the number in the devices you prescribe/dispense or use, and modify these messages accordingly*

Suggestion: Try asking a person with asthma the following question before asking question 1 :
'In the past 4 weeks, how often have you used your reliever / blue inhaler each day?'

Asthma Right Care Guidance Notes available at www.pcrs-uk.org/asthmarightcare

GB-13611 Date or Pref - Aug 2018

Take action now by utilising the tools and resources
#SABAGuardians
@AsthmaRightCare.

Visit https://www.pcrs-uk.org/resource/arc now to access the resources

Primary Care Respiratory Society
Get Winter Wrapped

Tips for encouraging activity as a gateway to good respiratory health

Clare Cook *Physiotherapist, Clinical Lead of a community respiratory team in Bristol, member of PCRS Executive Committee and Chair of the PCRS Respiratory Leadership Group* in conversation with **Dr Elaine Bevan-Smith** *Associate COPD Specialist South West of England Academic Health Science Network and founder of the Breathe happy groups*

Physical activity improves COPD outcomes and reduces hospital admissions. While pulmonary rehabilitation (PR) is the gold standard treatment for COPD many patients miss out on its benefits. The BTS guidelines recommend that all patients functionally limited by breathlessness with COPD should be routinely referred if appropriate and it should be considered for those with asthma and bronchiectasis. PR was added as a new COPD QOF indicator for England in 2019 and should be offered for all COPD MRC 3-4 patients. However, audit data suggests that there is significant under-referral for PR and only 62% of those referred go on to complete the programme.[1] Of those offered PR not all accept the referral.

So how can healthcare practitioners encourage patients to increase their baseline activity, especially those who are not participating in a pulmonary rehabilitation programme?

The challenges around activity

Many patients with respiratory conditions feel that achieving the UK Chief Medical Officers' guidelines of 150 minutes of moderate aerobic activity a week would be too much for them, let alone completing a course of pulmonary rehabilitation.[2]

A number, especially those with additional responsibilities for caring for grandchildren, parent or partner are not able to commit to a course of PR. Many say they don't feel it is worthwhile taking up physical activity at this stage in their lives.

Elaine reports, "Many patients I talk to have been told nothing at diagnosis about activity because a referral to pulmonary rehabilitation is only triggered when they become functionally disabled. Research shows that people with COPD have already become less active than the rest of the population before diagnosis - so it is important that as soon as somebody is diagnosed, we should be straight in there with advice about the benefits of exercise. We should be giving them this guidance along with their prescription for their first inhaler."

Clare agrees, "If we could introduce the culture of being active and maintaining fitness earlier in a patient's journey, especially in conversations about routine care, I think this would really support people to think about activity as part of the optimisation of their condition. Then pulmonary rehabilitation as a treatment option wouldn't be such a huge alien concept but a treatment idea that feels familiar."

At the point of referral, it is useful to give a meaningful message to the outcomes people can

expect from participating in pulmonary rehabilitation. We talk about this in our earlier article (https://www.pcrs-uk.org/resource/top-tips-communicating-benefits-pulmonary-rehabilitation).

How can we motivate patients to become more active?

Elaine highlights, "Physical activity is not just about doing more but sitting less. I explain to patients that sitting is really bad for their health. A small study looking at 100 people concluded that 'sedentary behaviour was an independent predictor of mortality in subjects with COPD'. It is really important that we share the significance of sitting time with people.[3] These finding have been replicated in people with obstructive disease such as asthma as well as COPD.

"I ask them to think about the amount of time they spend actually sitting. Activity can be graded as a brisk walk but can also include going into the kitchen and cooking a meal. Any activity is better than sitting and the more vigorous the activity the better the effects will be and the quicker the patient's health will improve.[4]

"For some people reducing sitting time might be their starting goal and for other people with severe advanced disease, agoraphobia or other comorbidities, reducing the sitting time might be their only physical goal. Studies are starting to emerge looking at wearable technology to reduce sitting time in COPD and the early studies show this to be helpful and are accepted by the COPD community.[5]"

"It's the concept of nudging people gradually towards the actions of becoming more physically active. In the August Survey of over 1300 people conducted by DJS Research[6] they identified that 69% of people living with long-term health conditions would like to be more active. So, we need to talk about how patients can increase their baseline activity and what practical steps to take regardless of the starting point," notes Clare.

Elaine reports, "We ran a programme in Worcestershire where newly diagnosed people were educated about what COPD is and what the projection of the disease is. The programme was very heavily geared towards talking about the benefits of physical activity, healthy living and having positive attitude. The evaluation showed that patients went away with a good understanding of what they could do to live longer with their condition, how they could stave off disability, and have every chance of staying healthy."

"It is important to acknowledge that regaining activity when facing the disease burden of a long-term condition can feel very challenging. We need to see at the point of diagnosis that this is an opportunity to give patients the message that everybody benefits from activity but for people with respiratory conditions the benefit is even greater," highlights Clare.

What messages should we give patients?

Elaine states, "It is important to personalise the message about physical activity. Some people see being active as being socially active i.e. going to bingo or the shops, engaging with other people or playing with grandchildren. So I encourage all these things which are important to people and can be big motivators for being active. Grandchildren are a particularly big incentive for this older population. Research shows that this cohort of patients find that being with their grandchildren is stimulating both psychologically and physically as it is a fun thing to do. Also, they want to be active as they don't want their grandchildren to define them as being disabled."

Clare agrees, "Moderate activity will be different for different people, so this might mean a brisk walk for one person but for somebody else it might represent a run. The idea of doing the recommended 150 minutes of activity a week might disengage people, so you need to motivate them by working with them to create a plan for what they can realistically do. Goal setting and motivational interviewing is very much the mainstay of this initial step into this journey of activity.

"It is important to normalise that we are all at different levels of health and that 150 minutes is a goal, not a requirement. Try to encourage people to make increasing activity and not sitting for too long a daily habit – take a bite sized approach."

Elaine notes, "The British Lung Foundation used to say, every day do something that makes you breathless, and that's quite a good message as well because it is giving patients a piece of advice that they can interpret however they want to.

"Possibly even more important than that is to talk about the health benefits of activity and to provide reassurance and improved understanding that being breathlessness is not dangerous. We have to support people to break down that psychological barrier to changing their lifestyle."

The Chartered Society of Physiotherapy (CSP) have provided an advice sheet on exercising with a long-term respiratory condition[7] and this provides some helpful tips which can be helpful to. normalise breathlessness (https://www.csp.org.uk/public-patient/keeping-active-healthy/love-activity-hate-exercise-campaign/being-active-long-term-7).

Patients opportunities for activity can often be compromised by other long-term health conditions such as chronic fatigue syndrome, arthritis, stroke amongst others the CSP has produced a whole series of articles for patients with different long term conditions – see https://www.csp.org.uk/conditions

Clare notes, "Practice nurses and GPs can support goal setting with patients, putting in their notes for example that a patient's goal is to walk five houses down the road and five houses back. It is important to be genuinely interested in the goal and to revisit it and praise them when they achieve it.

"It is important to celebrate success, i.e. to regularly reflect back on what the patient has achieved. It is equally important to explore barriers and to prepare the patient to fail and to empower them to forgive themselves. This is about giving people the skills to value their achievements and to keep going when they face challenges.

"You can explain to a patient who drives to buy their daily paper- it takes 20 minutes to walk to the shop to buy a newspaper, that's 20 minutes of improving their health. If they do that every day this time next year it might take them only 10 minutes. It's the concept of 'Tiny Habits™ (https://www.tinyhabits.com/), breaking things down into a stepwise approach that can be realistically incorporated into the patient's daily life and is personalised to them."

Elaine agrees, "I've often said to people that when their motivation is wavering and they think, I can't do my 20-minute walk today, I say to them just lower your sights and think about just walking up the garden path. Once you go outside to walk up the garden path and achieve that then you might feel that you can do a bit more. I always go on the premise that anything is better than nothing, just do something, just get out there and build up the consistency of the activity so it becomes a habit, embedded into your life.

"Something I feel concerned about is that for many, a referral for pulmonary rehabilitation makes them feel that, as a breathless person, they are disabled. It is important that patients should feel that they will be accepted as they are and that we need to help them to overcome this barrier of low self-confidence. We need to encourage them to think - I need to

A checklist for safe exercising

- Make sure the patient takes any emergency medicine with them including reliever inhaler or anti angina medication.
- Encourage the patient to take a mobile phone (if they have one) with them when out and about.
- Empower the patient to plan ahead and think of solutions especially when increasing activity out of the home or in an unsupervised environment.
- Explain to the patient they need to plan their journey, to pace themselves and not rush
- If there is a risk of falling make sure the patient has been assessed for a walking aid and is aware of tips to avoid falls. Ask the patient if their shoes fit well, do they need a new pair or do they have a problem such as corns and bunions that need treating before they start a programme of exercise?
- Do they experience postural hypotension or other co-morbidity that could be affected by exercising – make sure their associated conditions are correctly optimised.
- Do they have sarcopenia? Explain that exercise will help muscle growth if they start exercising. If they are low in weight they might need to start eating more calories. Managing malnutrition in COPD includes a pathway for the appropriate use of ONS to support community healthcare professionals. The recent publication Managing Malnutrition in COPD[8] is helpful for identifying and supporting those at risk (https://www.malnutritionpathway.co.uk/copd).
- Other safety considerations include starting slowly and building up, wearing loose comfortable clothing, ensuring adequate hydration, advise on when it is best to exercise and when to avoid exercising (e.g. after a heavy meal), awareness of red flags for stopping exercising (e.g. chest pain/ tightness, dizziness, nausea, clamminess, increased wheeze, pain in joints or muscle weakness).

work with what I've got so that I can help myself to be the best version of me."

Says Clare, "I think the 'we are undefeatable campaign' is very inspiring and there are people affected by numerous diseases from many walks of life. I have found sharing this with patients very powerful. A message from a peer can feel much more accessible than one form a health professional- check out the videos" https://weareundefeatable.co.uk/our-stories

"The take home message is, The time to act is now; be the master of your condition. Choose an activity you enjoy and can regularly access; this is the key to making something a sustainable habit. Having conversations with patients about activity might mean that next time pulmonary rehabilitation is offered they might feel it is a more acceptable treatment option which they are more likely to complete".

Summary

Increasing physical activity in those with chronic respiratory disease is key to improving the health and well-being of this patient population. Physical activity is a key component of self-care and it is imperative that we enable patients to see the value in physical activity early in their diagnosis. It is also important that they learn that the diagnosis of a long-term condition is all the more reason to take up regular physical activity. Pulmonary rehabilitation is an intervention which is effective at increasing physical function. Patients need support and guidance on how to weave this new-found physical improvement into their day-to-day lives and maintain the improvements they are likely to have achieved during a PR course. The explosion in PR service innovation since the start of the COVID-19 pandemic will hopefully enable more people to access the service. While patients are waiting for treatment or for those who decline PR it is vital that primary care, pharmacists and specialist services record activity levels, reinforce the importance of reducing sedentary time and promote the value of physical activity during their consultations.

COVID-19

"Without change there is no innovation, creativity, or incentive for improvement. Those who initiate change will have a better opportunity to manage the change that is inevitable."

William Pollard

COVID-19 has forced us all to think creatively about how we can deliver pulmonary rehabilitation services during this pandemic. There are amazing examples of innovation taking place using digital technology from simple telephone consultations to virtual reality headsets.

Many of our members are introducing virtual PR programmes based on telephone or video consultations either one-to-one or using virtual group consultations.

The format and content for programmes varies but assessment may include using CAT score, PHQ9, GAD7 and 1-minute sit-to-stand tests or 6 minuets walk test for initial assessment followed by a series of sessions providing a mix of education and exercise training followed by follow-up, assessment and patient satisfaction questionnaires. Whilst few programmes can match up to a group face-to-face environment where individuals can learn, share experiences, have fun and make new contacts there are, nevertheless, preliminary results demonstrating very good completion rates and satisfaction scores. You can view a presentation by three individuals, Siobhan Hollier – East of England clinical specialist respiratory physiotherapist, Esther Mitchell – Gloucestershire pulmonary rehabilitation service lead, and Sam Hague-Barrett, mental health nurse at Bristol pulmonary rehabilitation service, who describe their experiences of introducing and running innovative PR programmes since lockdown – see https://vimeo.com/475856831/d95418e371

Greener health care

In England just over a quarter of all journeys are made on foot,[9] but these are almost all journeys of less than a mile and account for only 3% of distance travelled. The majority of journeys in 2017 were under 5 miles. This is where there is real opportunity for people to integrate walking or cycling into their weekly routines. This planned activity would have health benefits with the added effect of reducing travelling by car and associated pollution.

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Self-directed learning

Two great free online modules that can help increase practioner knowledge and increase confidence on how to structure the conversation when talking about physical activity.

- E-LfH: Physical Activity and Health: https://www.e-lfh.org.uk/programmes/physical-activity-and-health/
- E-LfH MECC: https://www.e-lfh.org.uk/programmes/making-every-contact-count/

Date of Preparation: September 2020 Version 1

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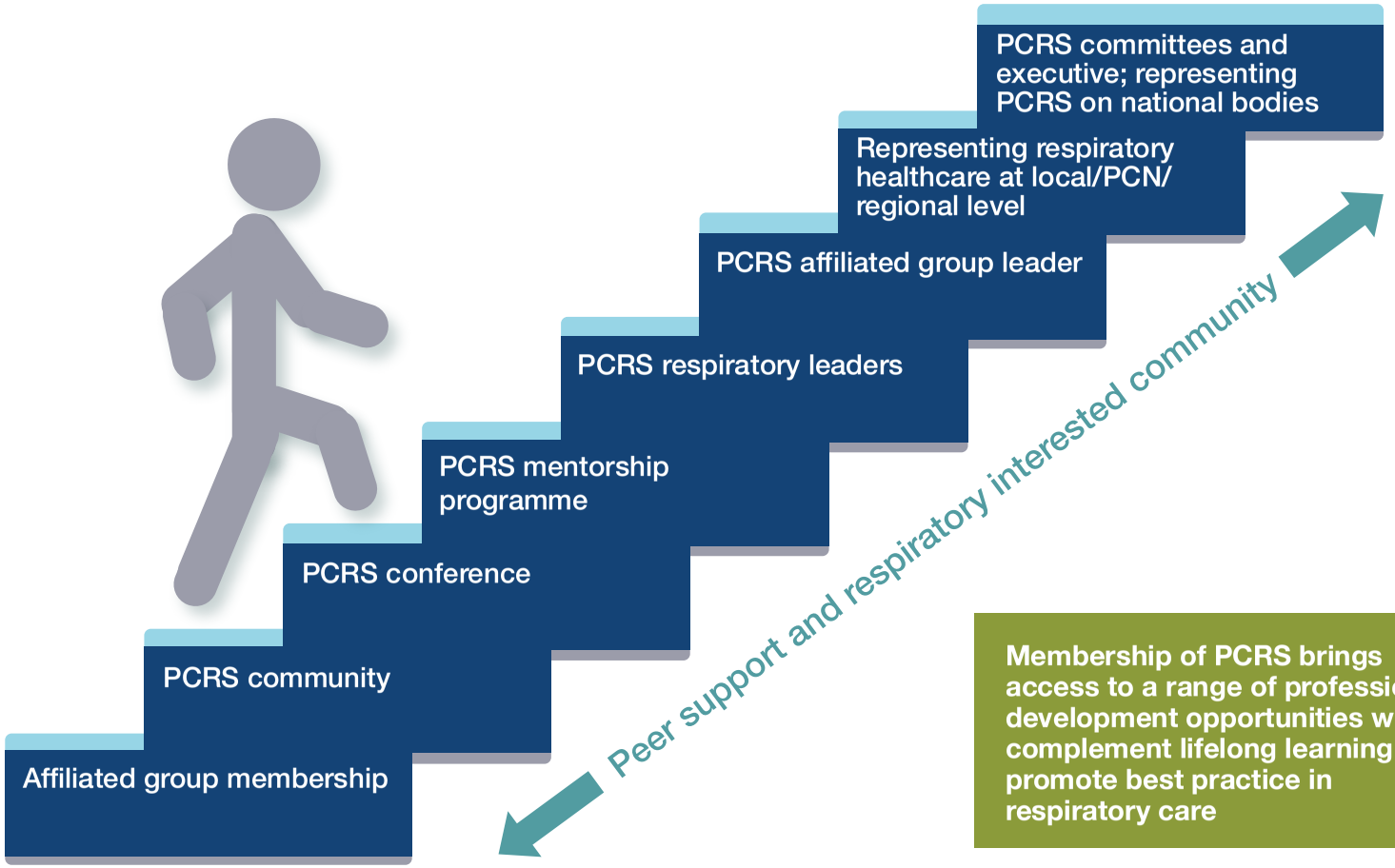

Membership of PCRS brings access to a range of professional development opportunities which complement lifelong learning and promote best practice in respiratory care

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Primary Care Respiratory Society
Get Winter Wrapped

The Appropriate Use of Rescue Packs

An updated version of the discussion **Fran Robinson** had on the use of rescue packs with **Professor John Hurst** *Honorary Consultant at the Royal Free London NHS Foundation Trust and Professor of Respiratory Medicine at University College (UCL) London*

NICE recommends prescribing rescue packs for patients with COPD at risk of having an exacerbation, which has resulted in them becoming widely used.[1,2] But are they always prescribed and used appropriately?

"It is easy to prescribe a patient antibiotics and steroids and say 'go away and take them when you feel an exacerbation is coming on'", says Professor John Hurst, Honorary Consultant at the Royal Free London NHS Foundation Trust and Professor of Respiratory Medicine at University College (UCL) London.

But this is not an effective strategy because it may result in misuse of the medication unless you back the prescription up with education about how and when (and when not) to use the medication. "A rescue pack is more than just a prescription, it needs to be tied in to other aspects of a patient's care," he says.

Professor Hurst, who has clinical and research interests in exacerbations of COPD, says there is insufficient evidence to show that rescue packs in themselves are safe and cost effective at reducing hospital admissions. However, there is Cochrane evidence to show that self-management is associated with outcomes such as a reduction in hospitalisation.[3] But there is a big difference between effective self-management and the simple prescription of a rescue pack.

"The problem is that, when looking at the effectiveness of rescue packs from a research perspective, it is more complicated than just investigating the outcome of prescribing steroids and antibiotics to be taken at home. This is because a rescue pack should be linked with an educational intervention and the impact of that complex intervention, and assessing fidelity to the intervention, is more difficult to assess."

According to Professor Hurst, rescue packs are both over- and under-used. "We certainly see some GPs who feel uncomfortable prescribing them, and that is OK if you can facilitate a patient's urgent access to the practice when they are developing an exacerbation. Indeed, in some ways that might be a better standard of care than giving them a rescue pack to take at home – but this is very difficult to implement for many practices, and increasingly so with the impact of COVID-19."

"Other clinicians are comfortable with giving patients rescue packs on repeat prescription and ensuring that the patient is well educated about when and how to use them. However, if patients do not understand the risks of overusing the medication, they may run the risk of long-term complications. Overuse of steroids is linked with adrenal suppression, osteoporotic fractures, diabetes, pneumonia, psychosis, thinning skin and cataracts, and overuse of antibiotics (or not taking them for the full course) risks antimicrobial resistance both in the individual patient and in our society."

Identifying patients who are suitable for rescue packs

So how do you select the patients who will benefit from a rescue pack? "It is about recognising which patients are willing and able to self-diagnose and start treatment at the start of an exacerbation and seek support in doing so. You are asking a patient to differentiate an exacerbation from the day-to-day ebb and flow of symptoms, and that can be challenging for healthcare professionals, let alone those living with COPD. So this is not just about self-management; it is also about self-diagnosis and patients are not trained diagnosticians. They know more about their own symptoms than anybody else, of course, but some people can misinterpret their day-to-day symptom variations as an exacerbation."

Professor Hurst says it is patients who are susceptible to frequent exacerbations (at least two a year) who are most likely to benefit

from rescue packs. These patients will know what an exacerbation feels like. “There isn’t any point giving a rescue pack to a patient who hasn’t had an exacerbation before because they will not have experienced those symptoms before, and they will be at less risk of future events,” he says.

Before considering prescribing a rescue pack, Professor Hurst says the clinician must first make sure that all the high value interventions for COPD have been employed to reduce the risk and consequences of exacerbations. These include smoking cessation, influenza vaccination, pneumococcal vaccination, pulmonary rehabilitation and optimisation of pharmacotherapy to ensure the patient is using the right combination of inhalers.

Then the clinician must assess whether the patient is willing and able to take the rescue medication as directed and has been well educated on how and when to use it.

Education

Patients need to be taught:

- How to recognise the start of an exacerbation (eg, whether there has been a change in the volume, purulence or colour of the phlegm they produce normally and whether they are experiencing a change in breathlessness or wheeze).
- About the risks and benefits of the treatment
- Alarm symptoms – things to be alert for that are not typically part of an exacerbation or things that might mean something different is going on.
- They must contact their healthcare professional if they have started their treatment to alert them that they have become unwell
- As a safety net, patients should be told that, if their symptoms feel different from their usual exacerbation, then taking the rescue may not be the right thing to do and they must also call for help from their community respiratory team or GP

Is it time to stop prescribing rescue packs in COPD?

This is a question Professor Hurst addressed in a previous presentation to the PCRS conference. “No is the answer, but we can and must do it better,” he says. “We need to do more research into the subject otherwise, if we don’t address this question, we will be having the same discussion in 10 and 20 and 30 years’ time. The studies are not going to be easy and they will be expensive, but they are needed if we want to improve what we are currently doing,” he argues.

One study already in the pipeline is a National Institute for Health Research (NIHR) Heath Technology Assessment (HTA) Programme proposal for research into the use of sputum colour charts which could help patients more accurately detect a change in their sputum symptoms before starting a course of antibiotics.

There is also promising evidence that the prescription of steroids may be better guided by looking at blood eosinophils. Point-of-care meters may in future be used in primary care to assess the blood eosinophil counts of patients. This will help primary care clinicians to more accurately assess whether a patient will benefit from prednisolone at the time of exacerbation.

Learning points

- Patients who are most likely to benefit from a rescue pack are those at risk of frequent exacerbations (at least two a year) and who can recognise when an exacerbation is starting
- Before prescribing a rescue pack:
    - First make sure all the key high-value interventions for COPD have been employed to reduce the risk and consequences of exacerbations and that the patient has a self-management plan
    - Assess whether the patient is willing and able to take the medication as prescribed
    - Make sure the patient has been educated about the risks and benefits of treatment and of overusing the medication
    - Ensure the patient has a safety net: advise them that, if their symptoms feel different from their usual exacerbation, then taking the rescue may not be the right thing to do and they must also call for help from their community respiratory team or GP

NICE recommendations[1,2]

Patients at risk of having an exacerbation of COPD should be given self-management advice that encourages them to respond promptly to the symptoms by following their action plan, which may include:

- Adjusting their short-acting bronchodilator therapy to treat their symptoms
- Taking a short course of oral corticosteroids if their increased breathlessness interferes with activities of daily living
- Adding antibiotics if their sputum changes colour and increases in volume of thickness beyond their normal day-to-day variation
- Telling their healthcare professional – patients should contact a primary healthcare professional if they start treatment with a home supply of medication patients and should be advised to contact a healthcare professional if their symptoms do not improve

What should be in a COPD rescue pack?[1,3]

Patients at risk of having an exacerbation of COPD should be given a course of antibiotic and corticosteroid tablets to keep at home for use as part of a self-management strategy. These may be:[3]

- Prednisolone 30 mg once daily for 7–14 days
- Empiric antibiotic (or based on last sputum result):
  - Amoxicillin 500 mg three times daily for 5 days ***or***
  - Doxycycline 200 mg first day then 100 mg daily for total 5 day course ***or***
  - Clarithromycin 500 mg twice daily for 5 days

For now, Professor Hurst says the best option for patients with COPD is to ensure they have a really good self-management plan, and are empowered to manage their disease through attendance at a pulmonary rehabilitation programme. Those who would benefit from having rescue packs at home should be prescribed them with the necessary educational support and safety netting.

References
1. Chronic obstructive pulmonary disease in over 16s: diagnosis and management. NICE guideline NG115, July 2019. https://www.nice.org.uk/guidance/NG115
2. Clinical Knowledge Summaries: Chronic obstructive pulmonary disease. NICE guideline, Revised November 2019. https://cks.nice.org.uk/chronic-obstructive-pulmonary-disease
3. Chronic obstructive pulmonary disease (acute exacerbation): antimicrobial prescribing. NICE guideline NG114, December 2018

Date of Preparation: March 2018 V1; Revised September 2020 V2

PCRS News - The first six months as CEO of PCRS

LYNN LADBROOK REPORTS ON HER FIRST SIX MONTHS AS CEO OF PRIMARY CARE RESPIRATORY SOCIETY

It has certainly been an interesting and different experience starting out as CEO of PCRS. Despite attending two panel interviews in March, doing a handover with Anne Smith, (former CEO) during April, attending my first executive committee and trustee meeting in May; followed closely by the various sub-committees and forums; and of course attending the excellent PCRS conference in September, I have still not properly met a single person! All introductions, inductions and meetings have, of course, taken place online due to COVID-19 restrictions. Amazingly however, 6 months on, I feel very much part of the PCRS family, in touch with the objectives, rationale and history of the organisation and very excited and proud to be part of it.

During my 6 months in post, I have been nothing but inspired by the knowledge, commitment, hard work and passion of all those that contribute their time to help make PCRS what it is today. It is a privilege and a pleasure to be able to join such an organisation.

So, I have been left wondering really, how on earth can I add value to this already excellent and well-run organisation?

I have spent much of my first few months listening, observing, reading, researching and finding out as much as possible about PCRS. What is clear is that we have huge amounts of expertise, a large store of advice, opinion and guidance, very high standards, an excellent reputation and endless amounts of creativity and enthusiasm. All of this, at the very least, I want to nurture, protect and promote as far as possible.

But I also want more people to know about this amazing resource – to raise awareness and even showcase what PCRS has to offer – I'll be looking at ways in which we can reach new audiences, to influence generalists, integrated care physicians, physiotherapists, practice nurses, school nurses, paramedics, researchers, non-clinical managers and others…. With 1 in 5 people in the UK suffering from a poor lung health, well over £9 billion being spent on respiratory conditions within the NHS and the majority of these conditions being managed in primary care, it seems astonishing to me that not more people are hammering down our door for expert guidance and help.

Another focal area that I'm keen to build on, is the fantastic work that PCRS has done in recent years on campaigns – areas that galvanise opinions, drive debate and progress change. As I write, PCRS has just produced an excellent White Paper on Greener Healthcare. It sets out the symbiotic relationship between a healthy environment, healthy lungs and healthy people, whilst also giving a clear overview of the challenging (if slightly ironic) problem we have of how we can treat patients in a greener, less environmentally damaging way. Crucially though, it offers numerous ways in which practitioners can help to make a difference whilst ensuring the needs of the patient come first. Looking ahead to 2021, I think PCRS can continue to play a key role here by leading debate and bringing key opinion leaders together to help bring about pragmatic but effective change.

Environmental awareness is one area that has, if anything been spotlighted rather than overshadowed by the COVID pandemic - another is our enormous reliance on digital technology. Where it was once thought that many aspects of the digital transformation of the NHS would take years to implement, COVID-19 caused a lot of progress to happen overnight – but whilst the software and tech giants were ready and waiting many clinicians and patients were not. And whilst practitioners all over the country have adapted with awe-inspiring speed and agility, there is still much to learn and much more change to come – smart software, apps, algorithms, big data, artificial intelligence, virtual reality, chat bots, remote therapy and much more is in development. Much of it is very exciting, but do we fully understand it, are we making the most of it, can we do more, what does it mean for the delivery of care, for patients, or for health inequalities? I think PCRS has a real role to play in helping to promote best practice in digital healthcare and to support our members understanding and knowledge of digital technology in healthcare and how it can be a source for good for supporting holistic patient care.

Afterall, supporting our members to deliver optimal care for patients with or at risk of respiratory conditions is what PCRS is all about. We are a membership society – and supporting our members is a key priority for me. Our activities are led and delivered by members for members. And it is through our members and their paid fees that we are able to support policy development, produce and maintain our highly respected pragmatic guides, policy opinions, electronic newsletters and PCRU articles, as well as undertake lobbying and representation at national, regional and local level. I do want to help our members see the value and get the most out of their membership of PCRS – whether this is through ensuring we have the latest guidance and advice, exploring ways in which we can expand the choice of CPD opportunities, providing access to more resources in different formats, offering more discounts or offers through corporate partnerships or collaborations or undertaking more campaigns such as Winter Wrapped and Asthma Right Care. So, if you have any ideas I would love to hear them!

So, these are just some of the ways I hope I can add value to the Society – I do hope I get to meet some people in real life in 2021, but until then, much like all of the amazing healthcare workers that have continued to deliver during COVID-19, I'll just have to keep doing it in the virtual space for now.

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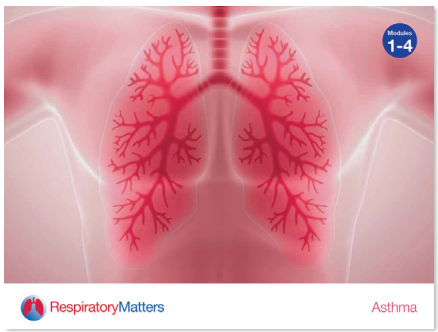

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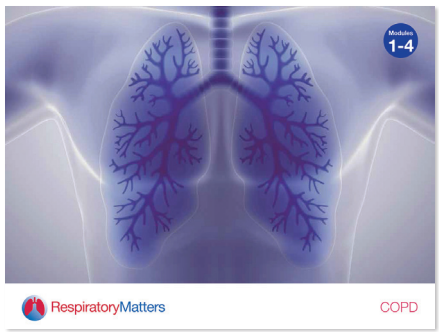

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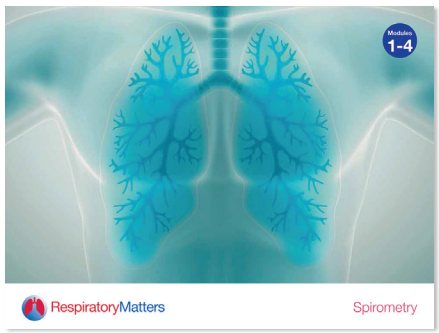

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