Top tips for MURs

- Establish which respiratory disease the patient has been diagnosed with in order to undertake the correct MUR
- Ensure that theophylline preparations, CFC-free beclometasone inhalers and dry powder devices with different administration instructions are prescribed by proprietary name (UKM\(\text{Q&A}\) 247.3 Brand prescribing in primary care, recommends inhalers as brand to ensure continuity of device)
- Counsel patients on asthma and Chronic Obstructive Pulmonary Disease (COPD) triggers and how they can manage these
- Asthma patients, check number of issues for reliever and preventer in last 12 months to highlight reliever overuse / preventer under use (NRAD – asthma patients using 12 or more relievers per year should be called for urgent review)
- Counsel patient on the differences between preventer and reliever therapy & how to use the different inhalers. Check whether their asthma / COPD is well controlled - ask patient to complete an asthma control test (ACT) or COPD assessment test (CAT)
- Check that asthmatic patients are only using a long acting beta 2 agonist in combination with a regular inhaled corticosteroid (consider referring patients prescribed individual ICS and LABA inhalers back to prescriber for a single combination inhaler to prevent use of LABA alone. Single combination inhalers supported by NRAD )
- Check whether the patient has a self-management plan
- Check the patients inhaler technique – refer to specialist nurse / GP if alternative inhalers required
- Check that patients prescribed high dose inhaled corticosteroids at daily dose ≥800 micrograms beclometasone dipropionate or equivalent have been issued with a steroid card
- Check patients prescribed inhaled corticosteroids in a pMDI device who have been prescribed a spacer have a replacement at least every 12 months. Also advise on correct spacer maintenance i.e. washing and drying
- Check that patient has a review of treatment and condition at least every 12 months (Asthmatic patients on high dose ICS should have attempt to step-down every 3 months if asthma under control)
- Check that patient has had an annual influenza vaccination, if they have COPD or asthma that requires continuous or repeated use of inhaled or systemic steroids or with previous exacerbations requiring hospital admission
- Check that patient has had a pneumococcal vaccination, if they have COPD or asthma that is so severe that it requires continuous or repeated use of systemic steroids (at a dose equivalent to prednisolone 20mg or more daily for more than one month)
- Counsel patients on common side effects (see overleaf) and signs and symptoms of complications that need referral (see red flags below)
- Report any relevant adverse drug reactions to the Yellow Card Scheme

Pathophysiology of Respiratory disease

Asthma is a hyperactivity inflammatory response which results in patients experiencing breathlessness. This is caused by airway wall inflammation and constriction of the smooth muscle, due to release of inflammatory mediators. Blood vessels in the airways become engorged resulting in plasma leakage through the respiratory capillaries, causing increased fluid in the airways and damage to the epithelial lining. Mucus secreting goblet cells increase in size, adding to the increased thickness of mucus and generation of mucus plugs, which together with the airway inflammation and smooth muscle constriction result in airflow obstruction².

COPD is a term used to describe a collection of chronic progressive lung conditions which cause irreversible lung damage which is characterised by airflow obstruction. This airflow obstruction is caused by a combination of airway narrowing, smooth muscle hypertrophy, fibrosis of respiratory bronchioles, mucus hypersecretion and a loss of lung elasticity due to the breakdown of alveolar walls. The number of mucus producing goblet cells in the lining of the lungs increases, resulting in excess mucus production that can not be cleared due to the reduced elasticity of the lungs. Therefore increasing the patients’ susceptibility to infection.

Lifestyle Issues

Advise patient who smoke of the benefits of stopping smoking, taking regular exercise and adequate dietary calcium to counteract osteoporosis (refer to Stop Smoking Wales or pharmacy stop smoking services if happy to give up smoking)
- Counsel patient on reducing alcohol intake to within safe limits (women 2-3 units per day & men 3-4 units per day, with two alcohol free days per week)
- Advise patients to avoid royal jelly products which can trigger an asthma attack
- Advise patient to eat more fruit and vegetables to help build up immune system and to try relaxation techniques to avoid stress

Red flags that need referral

- Any symptoms of uncontrolled asthma (difficulty sleeping because of your asthma symptoms (includes coughing, wheeze, tight chest) or breathlessness during the day or if asthma is interfering with usual activities)
- Any symptoms suggestive of liver dysfunction (anorexia, nausea, vomiting, right upper quadrant pain, fatigue, lethargy, itching, jaundice or flu-like symptoms)
- Any signs of theophylline toxicity (vomiting, agitation, restlessness, pupil dilatation, sinus tachycardia and hyperglycaemia)
- Any symptoms of adrenal crisis (anorexia, abdominal pain, weight loss, tiredness, headache, nausea, vomiting, decreased level of consciousness, hypoglycaemia and seizures)
- Any symptoms of hypokalaemia (muscular weakness, myalgia and muscle cramps)
- Paradoxical bronchospasm if taking corticosteroids
- Frequent courses of antibiotics and/or oral corticosteroids
How do respiratory medications work?

<table>
<thead>
<tr>
<th>Drug</th>
<th>Common side effects</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adrenoreceptor agonists</td>
<td>Tremor (particularly of the hand)</td>
<td>Inhaler technique assessment /counselling and then refer to prescriber for dose reduction.</td>
</tr>
<tr>
<td></td>
<td>Tension, headache, muscle cramps, palpitations, angioedema</td>
<td>Refer to prescriber.</td>
</tr>
<tr>
<td></td>
<td>Hypokalemia in high doses</td>
<td>Refer to prescriber for potassium supplements.</td>
</tr>
<tr>
<td>Antimuscarinic bronchodilators</td>
<td>Dryness of mouth, cough, nausea, constipation and headache, dizziness</td>
<td>Advise patient to drink plenty of fluids and refer to prescriber if troublesome.</td>
</tr>
<tr>
<td>Theophylline</td>
<td>Nausea, vomiting, tremor, palpitations and arrhythmias</td>
<td>Refer to prescriber for blood tests.</td>
</tr>
<tr>
<td>Corticosteroids</td>
<td>Oral candidiasis &amp; sore mouth</td>
<td>Inhaler technique assessment /counselling.</td>
</tr>
<tr>
<td></td>
<td>Dysphonia &amp; hoarseness</td>
<td>Advise patient to rinse mouth with water immediately after use and refer to prescriber for addition of spacer device if needed.</td>
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<tr>
<td></td>
<td>Adrenal suppression, water retention, hypertension, diabetes, cataracts, muscle weakness, osteoporosis (long term use)</td>
<td>Ensure patient is taking oral steroids in morning as single dose and has a steroid warning card. Refer to prescriber if troublesome.</td>
</tr>
<tr>
<td>Cromoglicate and related therapy</td>
<td>Coughing upon inhalation, headache and sore throat</td>
<td>Inhaler technique assessment /counselling and then refer to prescriber if troublesome.</td>
</tr>
<tr>
<td></td>
<td>Bronchospasm</td>
<td>Refer to prescriber for symptom control.</td>
</tr>
<tr>
<td>Leukotriene receptor antagonists</td>
<td>Abdominal pain, thirst, headache, insomnia</td>
<td>Refer to prescriber if troublesome.</td>
</tr>
<tr>
<td></td>
<td>Eosinophilia (wheezing and breathlessness), vasculitic rash, worsening pulmonary symptoms or peripheral neuropathy</td>
<td>Advise to stop taking medication and refer to prescriber urgently.</td>
</tr>
<tr>
<td>Phosphodiesterase type 4 inhibitors</td>
<td>Diarrhoea, nausea, abdominal pain, weight loss, decreased appetite, headache, insomnia</td>
<td>Refer to prescriber.</td>
</tr>
</tbody>
</table>

What are the common side effects to look out for?

Potential serious drug interactions?

Respiratory medication interacts with many other medications such as: NSAIDS, antihypertensives, antiarrythmics, anti-bacterial, antidepressants, antihistamines, antipsychotics, sympathomimetics, diuretics, antiepileptics, ciclosporin, antifungals, interferons, digoxin, ulcer healing drugs, cytotoxics, antivirals and lipid lowering drugs - See BNF Appendix 1 for more details.

Where can you find more information?
- Respiratory system – BNF sub-section 3.1 to 3.3
- Chronic respiratory disorders distance learning pack that can be found on WCPPE website (www.wcppe.org.uk)
- British Thoracic Society (BTS) and Scottish Intercollegiate Guidelines Network (SIGN) guidance – British guideline on the management of asthma can be found on BTS website (www.brit-thoracic.org.uk)
- NICE guidance: COPD – management of Chronic Obstructive Pulmonary Disease in adults in primary and secondary care, 2010 can be found on NICE website (www.nice.org.uk)
- Clinical Knowledge Summary (Prodigy) Asthma & COPD can be found on CKS website (www.cks.nice.org.uk)

References
1 Chronic Obstructive Pulmonary Disease, CPPE Focal Point, Book 1, September 2009
2 Asthma, CPPE Focal Point Book 1,