The NHSGGC Wound Management Formulary is regularly reviewed and updated to meet the ever-changing evidence base, Drug Tariff product availability, national procurement and, most importantly, the needs of patients. A limited list such as a Formulary provides a framework to support the appropriate use of wound management products and specialist therapies.

Systems are being put in place to monitor Formulary use and provide a process to include new products on the Formulary to meet changing health care needs and product development. The second edition has recently been published (see www.ggcformulary.scot.nhs.uk/Wound%20formulary%20April%202010.pdf or under ‘Clinical Info’ on www.staffnet.ggc.scot.nhs.uk). It will continue to promote best practice and reduce variations in practice to provide cost-effective use of products, regardless of the health care setting. This is important as dressings account for £4.7million of primary care prescribing expenditure.

One new development for this edition is the inclusion of compression bandages. This is a high cost area and the forthcoming financial year will see work undertaken to audit usage and relative effectiveness.

There are many factors to consider when choosing the best way to manage a wound, eg:

<table>
<thead>
<tr>
<th>Patient related factors</th>
<th>Wound related factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>diabetes</td>
<td>duration of wound</td>
</tr>
<tr>
<td>immobility</td>
<td>infection</td>
</tr>
<tr>
<td>circulatory impairment</td>
<td>ischaemia</td>
</tr>
<tr>
<td>general health</td>
<td>exudate level</td>
</tr>
<tr>
<td>compliance with treatment</td>
<td>size/site of wound</td>
</tr>
</tbody>
</table>

The Formulary supports clinical guidelines for wound management. Clinicians must make their own clinical judgement about wound status and decide which factors to modulate in an attempt to promote healing. The Formulary is laid out in sections to enable the clinician to find an appropriate first and second core product choice for different wound management situations. For example, a highly exudative wound needs a different dressing from a dry necrotic or sloughy wound. The most appropriate dressing should be chosen from the Formulary after a full assessment.

A Formulary can help to reduce expenditure on high cost items where there are other less expensive but equally effective products. Two high spend areas in the Wound Formulary are foams (for absorbing exudate) and silver containing dressings (for topical antimicrobial action). The Formulary-recommended foam products are the Allevyn® non-adhesive range. Highlighting the manufacturer’s instruction that foams can be left between changes for up to five days can reduce costs significantly.

In primary care, for a chronic wound that the clinician thinks may be colonised, the Formulary recommends iodine-based primary dressings in the absence of known iodine intolerance. Recently there has been a vogue for costly silver agents for...
PostScript, November 2010

Wound Management Formulary  contd from page 1

this purpose and the Formulary recommends only a two week trial of these agents rather than long term use. Prescribing costs had been steadily increasing, but now appear to be stabilising. Improving adherence to the Wound Formulary will help achieve good value from the expenditure on these products. The aim is to achieve 70% Wound Formulary compliance across NHSGGC. Compliance figures at present demonstrate a wide variation between GP practices with an average across primary care of 66%.

An article with more specific detail on wound management, primary care prescribing patterns and the Formulary can be found on our website.

Latest ADTC decisions

For full details of all ADTC decisions and links to SMC recommendations go to: www.ggcformulary.scot.nhs.uk/Latest%20news/formulary%20update%20bulletin.pdf

Major changes to the Formulary

• Indacaterol (Onbrez Breezhaler®) Added to the Total Formulary for maintenance bronchodilator treatment of airflow obstruction in adult patients with COPD. Another long-acting beta2 agonist is available at lower cost.
• Abatacept (Orencia®) Added to Total Formulary for treatment of moderate to severe active rheumatoid arthritis following NICE MTA195. Restricted to initiation by a consultant rheumatologist following failure/intolerance/contraindication to rituximab.

Added with minor changes to the Formulary

• A variety of oral contraceptives which are currently the brands with lowest acquisition cost:
  Ethinylestradiol/desogestrel (Gedarel®) Preferred List. Equivalent to Mercilon®, Marvelon®.
  Ethinylestradiol/levonorgestrel (Rigevidon®) Preferred List. Equivalent to Microgynon 30®, Ovranette®.
  Ethinylestradiol/gestodene (Millinette®) Total Formulary. Equivalent to Femodette®, Femodene®.
  Ethinylestradiol/levonorgestrel (TriRegol®) Total Formulary. Equivalent to Logynon®.

Non-Formulary

• Agomelatine (Valdoxan®) For major depressive episodes in adults.
• Bivalirudin (Angiox®) An anticoagulant for adult patients undergoing percutaneous coronary intervention.
• Esomeprazole oral solution (Nexium®) Treatment of GORD in children aged 1-11 years old.
• Lanthanum carbonate (Fosrenol®) Control of hyperphosphataemia.

Formulary section review: BNF Chapter 11: Eye

A review of the medicines included in the Eye chapter of the Formulary has been undertaken to consider whether the medicines included remained fit for purpose. Some of the major changes are listed below:

Additions to the Formulary

Brinzolamide/timolol eye drops (Azarga®) Added to Total Formulary for decrease in intra-ocular pressure in adults with open angle glaucoma or ocular hypertension.

Changes to existing Formulary advice

• Sodium cromoglicate 2% eye drops Preferred List. First line anti-inflammatory.
• Timolol maleate Total Formulary. First line. Restricted to specialist initiation for reduction of intra-ocular pressure and glaucoma. Long acting preparations to be reserved for patients with compliance issues.
• Hypermellose 0.3% eye drops Preferred List. First line for tear deficiencies and dry eyes.

Non-Formulary

• Pemetrexed (Alimta®) For maintenance treatment of locally advanced or metastatic non-small cell lung cancer.
• Roflumilast (Daxas®) For maintenance treatment of COPD.
• Trabectedin (Yondelis®) For relapsed platinum-sensitive ovarian cancer.

Special Prices

• specialist use only  $$
• specialist initiation only  $$
Nitrofurantoin and pulmonary adverse effects

A Renfrewshire GP reports the following significant adverse event in a patient relating to long term nitrofurantoin treatment.

One afternoon I received a phone call from our local respiratory physician informing me that one of my patients was extremely unwell with ‘nitrofurantoin lung’. The patient is a 73-year-old woman who is a non smoker. Medical diagnoses include essential hypertension and osteoarthritis.

### 8 weeks pre-admission
Patient presented complaining of constant tiredness and some chest pain on exertion (eg housework). Trial of GTN was helpful, prescribed isosorbide mononitrate. FBC, TFT, U&E, LFT all normal. ECG demonstrated normal sinus rhythm with neither acute nor ischaemic changes. Chest X-ray (CXR) noted opacification of unknown origin; suggestion this may be chronic and to repeat in 4-6 weeks.

### 5 weeks pre-admission
Patient complained of headache with nitrate (but had helped dyspnoea), this was altered to amiodipine. Amoxicillin prescribed for presumed infection. Referral made to Rapid Access Chest Pain Clinic (RACP).

### 3 weeks pre-admission
Patient attended RACP for echo, exercise tolerance test (ETT) and CXR, but could not complete ETT. RACP to make referral to respiratory clinic as there had been deterioration in CXR.

### 2 weeks pre-admission
Patient attended RACP for echo, exercise tolerance test (ETT) and CXR, but could not complete ETT. RACP to make referral to respiratory clinic as there had been deterioration in CXR.

### 5 days pre-admission
Patient attended GP with dyspnoea. Noted to have lost weight, steroid and beta agonist inhaler prescribed.

### Admission
Patient attended A&E. Admitted. Diagnosis of ‘nitrofurantoin lung’.

The patient had been started on low dose prophylactic nitrofurantoin (50mg at night) 18 months previously for recurrent UTIs in line with the GGC antibiotic guidelines. The guideline alternative is trimethoprim 100mg at night. This treatment had been very successful.

Prior to the revised GGC guidelines, nitrofurantoin had been infrequently prescribed in primary care in recent years. It appears that this potential problem is not well recognised among primary care prescribers. I have asked colleagues extensively but have yet to speak to a GP (of any age) who was aware of this potential problem. The BNF lists pulmonary side effects and cautions about monitoring on long-term therapy, especially in the elderly.

Fortunately, the patient seems to have made a complete recovery after cessation of therapy.

### View from the Antimicrobial Management Team
Pulmonary toxicity to nitrofurantoin can be acute, sub acute or chronic. Acute reactions can occur in 1 in 5,000 patients, but chronic pulmonary toxicity is rare with an estimated incidence of 1 in 100,000.

<table>
<thead>
<tr>
<th>Toxicity type</th>
<th>Symptoms</th>
<th>Time to onset</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute</td>
<td>Fever, cough, rapid dyspnoea.</td>
<td>Within first week</td>
<td>Often resolves rapidly after discontinuing nitrofurantoin. Not dose related; hypersensitivity type reaction.</td>
</tr>
<tr>
<td>Sub acute</td>
<td>Less specific, eg dyspnoea, orthopnoea and cough.</td>
<td>1 to 4 weeks</td>
<td>May take several months if toxicity symptoms go unrecognised and nitrofurantoin is not discontinued early.</td>
</tr>
<tr>
<td>Chronic</td>
<td>Malaise, dyspnoea on exertion, cough, altered lung function. Interstitial pneumonitis or pulmonary fibrosis in severe cases.</td>
<td>Insidious</td>
<td>Appears to be related to the duration of therapy after the first clinical signs appear. May spontaneously resolve after discontinuing antibiotic treatment if recognised early.</td>
</tr>
</tbody>
</table>

Chronic nitrofurantoin toxicity is more commonly seen in the elderly and in women. Pulmonary toxicity should be considered when treatment is extended for 6 months or more, especially in the elderly. Patients should be made aware of the possibility, and advised to report dyspnoea or persistent cough. If pulmonary reactions occur, nitrofurantoin should be stopped immediately. Although cessation of nitrofurantoin may be followed by regression of symptoms, the resolution of pulmonary injury may be incomplete. Patients who have experienced pulmonary toxicity with nitrofurantoin should not be re-exposed to this medicine.

Nitrofurantoin should also be used with caution in patients with renal impairment (CrCl 20-50ml/min) and is contraindicated in patients with CrCl <20ml/min since antibacterial concentrations in the urine may not be attained and toxic concentrations in the plasma can occur.

Nitrofurantoin remains an appropriate choice for prophylaxis of recurrent UTIs, but should be used with care in the elderly, who may be at increased risk of toxicity. As with all prescribing, health care professionals must remain vigilant for adverse reactions, especially when they are relatively unfamiliar with the drug being prescribed.
Diabetes update: Withdrawal of rosiglitazone and mixtard 30

The European Medicines Evaluation Agency has recommended the withdrawal of rosiglitazone across the European Union. This decision has been taken after a review of the evidence of increased cardiovascular events in patients on rosiglitazone compared to pioglitazone, insulin and other oral hypoglycaemic agents. The risks of adverse effects appear greater when rosiglitazone is used in combination with insulin. The Agency states that there appears to be no way to select patients in whom the benefits of prescribing rosiglitazone will outweigh the potential risk. Prescribers are required to stop prescribing rosiglitazone-containing medications (Avandia® and Avandamet®). They should identify and review all patients on rosiglitazone and consider changing to an alternative on an individual basis.

The GGC Diabetes MCN suggests the assessment and treatment options shown on the right.

Remember to consider renal function; impaired renal function may have been the reason for choosing treatment with rosiglitazone over other options. Pioglitazone can be used in the context of impaired renal function, while DPP-IV inhibitors (‘gliptins’) and GLP-1 agonists (exenatide and liraglutide) are not presently licensed for use in patients with significantly impaired kidney function. Check the individual guidance for these agents.

Further advice can be sought through the usual primary care/secondary care links; the mechanisms vary locally but are in place across the NHSGGC Board area.

Mixtard 30 withdrawal reminder

In December 2010, Human Mixtard® 30 10ml, Innolet® and Penfill® will be withdrawn. All affected patients will need to change their insulin. The MCN recommends that the first line choice for patients well controlled on Human Mixtard 30, would be Humulin M3® which is a like-for-like swap and a significant input and assessment by a specialist diabetes diabetologist. Patients who use an Innolet device may, in many cases, be able to manage a pen. Patients who rely on the Innolet device for their independence will require further advice can be sought through the usual primary care/secondary care links; the mechanisms vary locally but are in place across the NHSGGC Board area.

Assessment and treatment options

- Assess patient’s HbA1c and weight records before and after rosiglitazone.
- Direct switch to pioglitazone once daily can be considered for patients - who do not have a history of heart failure AND - show no evidence of significant weight gain or ankle oedema on rosiglitazone AND - in whom there is evidence that rosiglitazone therapy has been of benefit to them.
- As a guide:
  - for a dose of 4mg rosiglitazone switch to 15mg pioglitazone;
  - for a dose of 8mg rosiglitazone switch to 30mg pioglitazone;
  - assess according to existing glycaemic control guideline with a view to dose titration to 45mg.

Where a prescriber wishes to switch to another insulin, such considerations should be discussed with the link consultant diabetologist. Patients who use an Innolet device may, in many cases, be able to manage a pen. Patients who rely on the Innolet device for their independence will require significant input and assessment by a specialist diabetes service within primary or secondary care because there is no alternative insulin for this device.

New lipid lowering guidelines: Additional guidance for GPs following the removal of ezetimibe from the Formulary

An article in PostScript 58, July 2010, reported that ezetimibe has been removed from the Formulary following a review of the NHSGGC ‘Guidelines for the Use of Cholesterol Lowering Medication’.

As ezetimibe is no longer routinely recommended for use in NHSGGC, guidance has been produced for GPs on the management of existing patients. This guidance covers primary and secondary prevention, and scenarios with and without co-prescription of a statin, including statin intolerance.

The full guidance is available on the website.