

# IMPROVING PRESCRIBING OF ANTIBIOTICS

The importance of improving the prescribing of antimicrobial medicines in primary care has been raised recently both nationally and locally. The 2008 Scottish Management of Antimicrobial Resistance Action Plan (ScotMARAP) outlines the national programme in tackling antimicrobial resistance and prudent prescribing over a five year period in both primary and secondary care. The Vale of Leven *Clostridium difficile* (c diff) independent report highlighted locally the need for implementing and monitoring best practice guidelines in primary care. The NHSGGC guidelines are available on Staffnet under Clinical Info.

The Scottish Government has recently tightened the HEAT (Health improvement Efficiency Access Treatment) target to reduce c diff disease in the over 65s by at least 50% from the April 2007 baseline by 31 March 2011. The original target was a 30% reduction.

Within NHSGGC the incidence of c diff infection has reduced significantly in line with the introduction of infection management guidelines and in conjunction with improved infection control measures.

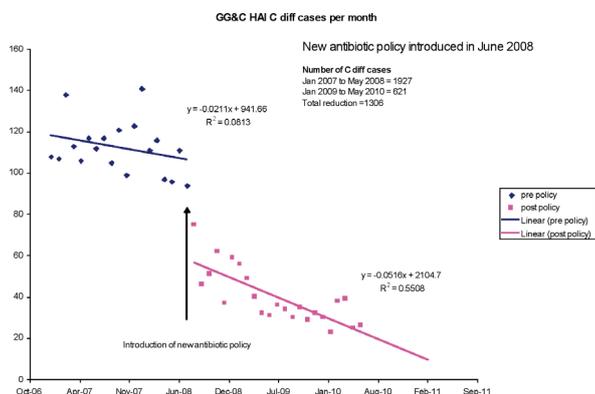


Figure 1: Cases of hospital acquired c diff infection in NHSGGC hospitals per month

In NHSGGC, prescribing guidelines in both primary and secondary care have been revised to reduce prescribing of antibiotics associated with c diff as well as other health care associated infections. There is a particular focus to limit the use of the '4C' antibiotics (cephalosporins, clindamycin, co-amoxiclav and quinolones) which are known to be associated with a higher incidence of c diff infection (see Figure 2).

To support and sustain these improvements and to underpin the HEAT target, the Scottish Government has issued three antimicrobial prescribing targets:

**1 Hospital based antimicrobial prescribing** - Antibiotic prescriptions are compliant with the local antimicrobial policy and the rationale for treatment is recorded in the clinical case notes in ≥95% of sampled cases.

**2 Surgical antibiotic prophylaxis** - Duration of antibiotic prophylaxis is <24 hours and compliant with local antimicrobial prescribing policy in ≥95% of sampled cases.

## PostScript

from the  
NHSGGC Area Drug & Therapeutics Committee  
Issue 59 September 2010

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### Website

<http://www.ggcformulary.scot.nhs.uk>

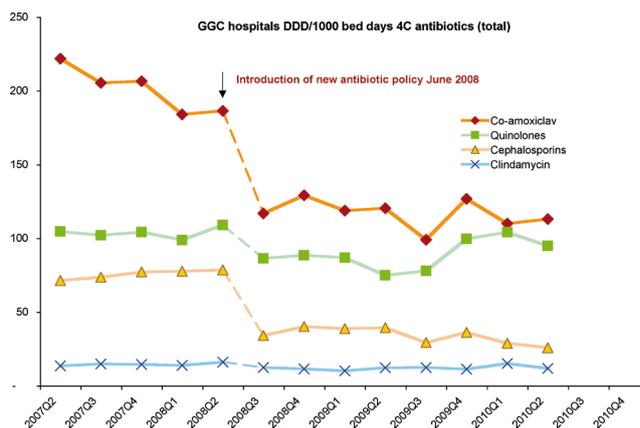


Figure 2: Use of 4C antibiotics in NHSGGC hospitals

**3 Primary Care empirical prescribing** - Seasonal variation in quinolone use (summer months v winter months) is ≤5%.

### Work ongoing in the acute sector

Currently, about half the units are meeting the target for recording the indication for the antibiotic but the target for compliance with guidelines is not met in most units.

Common reasons for non compliance with antimicrobial prescribing policy have been identified:

- **Exacerbations of Chronic Obstructive Pulmonary Disease (COPD)** - Dual therapy is not recommended but is commonly used. Monotherapy with amoxicillin, doxycycline or clarithromycin for 5 days is adequate and appropriate if these patients have purulent sputum but no evidence of pneumonia. Doxycycline has the best *in vitro* activity against common causative bacteria but is underused in many hospital sites.
- **Empirical treatment of urinary tract infections** - Antibiotic treatment should be based on the presence of urinary symptoms; for lower urinary tract infection: dysuria (burning pain on passing urine), frequency of micturition. For

contd on page 3

## 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](http://www.ggcformulary.scot.nhs.uk/Latest%20news/formulary%20update%20bulletin.pdf)

### Major changes to the *Formulary*

Ⓢ **Betaine anhydrous (Cystadane®)** Added to Total *Formulary* for the adjunctive treatment of homocystinuria. Restricted to patients who are not responsive to vitamin B6 treatment.

Ⓢ **Eltrombopag (Revolade®)** Added to Total *Formulary* for adult chronic immune (idiopathic) thrombocytopenic purpura splenectomised patients who are refractory to other treatments. Restricted to use in accordance with local protocol.

• **Pivmecillinam (Selexid®)** Added to Total *Formulary* for urinary tract infections. Restricted to use only on the advice of microbiology.

### Added with minor changes to the *Formulary*

Ⓢ **Aripiprazole (Abilify®)** Added to Total *Formulary* for treatment of schizophrenia in adolescents 15 years and older. Restricted to initiation and management under the supervision of a child/adolescent psychiatrist.

Ⓢ **Filgrastim (TevaGrastim®)** Added to Total *Formulary* for reduction in the duration of neutropenia and the incidence of febrile neutropenia and the mobilisation of peripheral blood progenitor cells.

Ⓢ **Sitagliptin (Januvia®)** Added to Total *Formulary* as monotherapy. Restricted to patients for whom both metformin and sulphonylureas are inappropriate.

Ⓢ **Sitagliptin/Metformin (Janumet®)** Added to Total *Formulary* in combination with a sulphonylurea as an adjunct to diet and exercise in patients inadequately controlled on their maximal tolerated dose of metformin and a sulphonylurea.

Ⓢ specialist use only      Ⓢ specialist initiation only

### Non-*Formulary* although accepted by SMC

• **Dutasteride/tamsulosin (Combodart®)** Finasteride is the preferred 5 $\alpha$ -reductase inhibitor; generic finasteride plus tamsulosin is a less expensive option. Dutasteride is on the Total *Formulary* restricted to specialist initiation.

• **Epoetin Theta (Eporatio®)** Darbepoetin remains the preferred *Formulary* agent.

• **Ketoprofen/omeprazole (Axorid®)** Other NSAIDs can be co-prescribed with PPIs at lower cost. Ketoprofen is non-*Formulary* in NHS GGC.

### Non-*Formulary* as not recommended by SMC

• **Betamethasone valerate plaster (Betesil®)** for treatment of inflammatory skin disorders.

• **Corifollitropin alfa (Elonva®)** for treatment of controlled ovarian stimulation in women participating in assisted reproductive technology.

• **Lapatinib (Tyverb®)** for combination treatment with capecitabine for advanced or metastatic breast cancer.

• **Mifamurtide (Mepact®)** for high-grade resectable non-metastatic osteosarcoma in children, adolescents and young adults.

• **Miglustat (Zavesca®)** for progressive neurological manifestations in patients with Niemann-Pick type C disease.

• **Ofatumumab (Arzerra®)** for chronic lymphoblastic leukaemia in patients refractory to fludarabine and alemtuzumab.

• **Olanzapine long-acting injection (ZypAdhera®)** for treatment of schizophrenia in adults.

• **Trastuzumab (Herceptin®)** for combination treatment of HER2 positive metastatic adenocarcinoma of the stomach or gastro-oesophageal junction.

## Updated acute medicine prescription form ('Kardex')

Following multidisciplinary review and consultation, changes were agreed to the acute in-patient medicine prescription form (Kardex). The changes are designed to support improvements in clinical practice and reduce the potential for medication incidents and patient harm. These changes will only make an impact if the form is completed properly, so guidance notes have been produced to encourage accurate completion.

The main changes are:

- The patient's name, CHI number and drug allergy/sensitivity details are recorded once along the bottom of the form. This is visible regardless of which page of the form is open and facilitates checking the patient's identity and allergy/sensitivity status before each medicine is prescribed or administered.
- The authorised prescriber is prompted to sign and print their name. There are ongoing problems identifying prescribers from signature alone.
- The Board is committed to improved medicines reconciliation, ie the process of obtaining and maintaining an accurate list of patient's medicines from admission to discharge. On admission, the patient's current medication

should be documented with a clear indication of whether each medicine should be continued, stopped, withheld or changed. A standard pro-forma is being introduced into admission documents to facilitate this. There is a box in the new medicine prescription form to record whether or not this has been completed.

- Each prescription entry now has a section on the left hand side to record if a medicine was being taken prior to admission, is a new dose of a previously taken medicine or a new medicine. This information is of particular help in completing the discharge prescription where there is a need to highlight new medicines and changes to the patient's GP.
- A new thromboprophylaxis assessment box has been added to the top of the parenteral drugs section. This prompts regular assessment and documentation of a patient's risk and their requirement for drug thromboprophylaxis and antiembolism stockings.

The new medicine prescription form will be supplied once stock of the current form is exhausted (expected end of September into October). The changes do not currently apply to the critical care and day care medicine prescription forms, which will be updated in due course.

## Improving prescribing of antibiotics *contd from page 1*

upper urinary tract infection additional symptoms of loin pain, flank pain and sepsis should be present. Trimethoprim or nitrofurantoin should be used for the empirical treatment of lower urinary tract infection (without sepsis) in both women (for 3 days) and in men (for longer duration). Co-trimoxazole incurs a low risk of *c diff* and may be used for non-pregnant women and in men empirically with upper UTI without sepsis.

• **Treatment of cellulitis** - Flucloxacillin monotherapy should be given in a high dose (1g orally 6 hourly for 7 days) for the treatment of mild cellulitis. In lower limb cellulitis, IV flucloxacillin monotherapy is as effective as IV flucloxacillin plus benzyl penicillin. For severe cellulitis (with erythema, heat, induration or sepsis) use IV flucloxacillin with optional additional short term gentamicin if Gram negative organisms are suspected. In life threatening and rapidly progressive cellulitis, clindamycin should be added and surgical intervention may be life saving.

### Work ongoing in primary care

To support the HEAT target indicator, prescribing indicators are included in the Rational Prescribing Scheme and GMS prescribing actions. These indicators promote prudent prescribing of all antibiotics by encouraging a review of prescribing, a reduction in overall antibiotic use and adherence to the guidance.

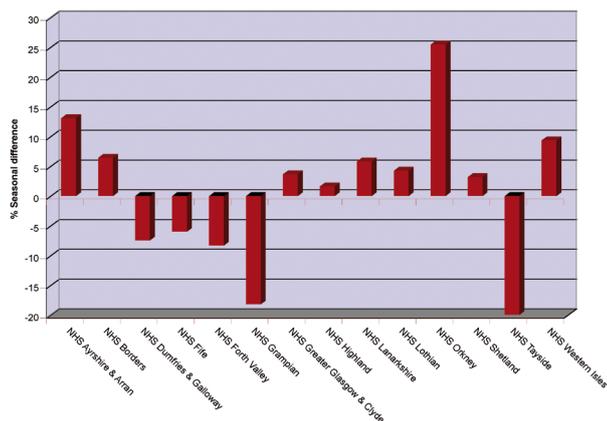


Figure 3: Quinolone prescribing – difference in DDDs: summer (April-Sept 09) vs winter (Oct 09-March 10)

The above time period partially pre-dates the launch of the local guidance and it is anticipated that the seasonal variation will continue to reduce.

An initiative has been launched in primary care to support a decision not to prescribe an antibiotic for self-limiting upper respiratory tract infections. This employs a tear-off pad of 'non-prescriptions' to issue to the patient instead of an antibiotic prescription. The 'non-prescriptions' contain information for the patient on the reasons why antibiotics are not necessary or desirable and the patient's diagnosis. This initiative was based on a similar Department of Health pad and will be evaluated locally at the end of the year.

*For more detailed information on antibiotic prescribing, HEAT targets, non-prescriptions and details of the work in primary and acute care, please see our website.*



### Sativex®: New preparation in multiple sclerosis

Prescribers may be aware of a new cannabinoid oromucosal spray (Sativex®), licensed for spasticity in patients with multiple sclerosis (MS). There

has been considerable media and patient interest in this development which replaces an unlicensed formulation. ADTC notes that, as for all medicines 'pre-SMC', this product is non-Formulary and will remain so until the SMC assessment and local processes are complete. Until then, where exceptionality can be demonstrated, MS specialists should apply for use through the non-Formulary process. GPs should not prescribe, or be asked to prescribe, at this stage.

### Review of drugs for urinary frequency, enuresis and incontinence; BNF 7.4.2

A multi-disciplinary Formulary review of this section was undertaken in June 2010. Additions and deletions were discussed in detail. The main decisions are highlighted below.

Status	Drug	Notes
	Oxybutynin standard release	Oxybutynin should be used with caution in older patients following evidence of potential cognitive impairment.
	Solifenacin	Most patients will respond adequately to the lower 5mg dose which should be trialled for 6-8 weeks before considering a dose increase.
	Tolterodine	
<b>Total Formulary</b>	Oxybutynin MR Oxybutynin patch	Oxybutynin should be used with caution in older patients following evidence of potential cognitive impairment.
	Fesoterodine	
	Duloxetine	Specialist initiation; pelvic floor exercises are first line.
<b>Now non-Formulary</b>	Darifenacin	Low use; superseded by other agents.
	Trospium	

## Have you seen?

The fourth edition of the *NHSGGC Formulary* and the third edition of *Therapeutics: a Handbook for Prescribers* have now been published and copies of the *Handbook* have been circulated in the acute division. The *Formulary* is available in electronic format only.

### Human Mixtard® 30 discontinuation

*In December 2010, Human Mixtard 30 (10ml), Human Mixtard 30 Innolet® and Human Mixtard 30 Penfill® will be withdrawn by Novo Nordisk.*

A short-life working group of the Diabetes Managed Clinical Network (MCN) was set up to develop a plan to manage this change. Humulin M3® is the equivalent of Mixtard 30. The group agreed the majority of patients can be safely switched to this insulin using the same number of dosage units. The Diabetes MCN will co-ordinate the changes but the support of all healthcare professionals is requested. Community pharmacists will be supplied with information leaflets advising patients how to prepare for the withdrawal of their insulin.

**What does this mean for patients?** Patients receiving Human Mixtard 30, Human Mixtard 30 Innolet and Human Mixtard 30 Penfill need to have their insulin therapy reviewed.

**Who will perform the review?** The community Diabetes Specialist Nurses (DSNs) will review patients who do not attend a hospital diabetes clinic. Patients attending a hospital diabetes clinic before 31 December 2010 will be reviewed at their next appointment. Hospital patients whose next appointment is later than that should contact their hospital diabetes team to arrange a review.

**What do GP practices need to do?** Practices are asked to write to patients currently receiving all variations of Human Mixtard 30. A letter template prepared by the MCN has been provided. The letter explains the reason for the change and invites the patient to make an appointment with a DSN. Practices should forward a complete list of patient names and addresses to their local DSN.

**Will patients require a change in insulin?** All affected patients will need to change their insulin. The MCN recommends that patients on Human Mixtard 30 are switched to the equivalent insulin Humulin M3. Patients who use a pen device can continue to do so but will need to be shown how to use the Humapen Luxura® with Humulin M3. Cartridges plus refillable pens are the first line choice as there is a significant cost benefit over the disposable pens which should only be used if they offer a clinical advantage.

Patients who use an Innolet device may, in many cases, be able to manage a pen. Patients who rely on Innolet for their independence will require significant input and assessment by a specialist diabetes service within primary or secondary care because there is no equivalent alternative insulin for this device.

A switch from Mixtard 30 to analogue insulin will rarely be appropriate and must be discussed with a consultant diabetologist.

The first issue of the newest member of the *PostScript* family, *PostScript Acute*, has also just been published. It will provide important information on medicines specifically for healthcare professionals working in the acute division of NHSGGC. It will be produced quarterly and the current edition includes information on changes to prescribing practice in primary care - implications for acute care; antimicrobial prescribing tips; IV paracetamol - risk of hepatic damage; guideline news.

For copies of all of these, see our website or look under **Clinical Info on Staffnet** [www.staffnet.ggc.scot.nhs.uk/Clinical%20Info](http://www.staffnet.ggc.scot.nhs.uk/Clinical%20Info)

### “If I could change one thing . . .”

*A Glasgow GP highlights his concerns with the reporting of clinical trials and how he applies the results to the care of his patients.*

One important area is the misuse of statistics - virtually no clinical article relating to therapeutic interventions is devoid of the benefits in terms of relative risk for active groups against placebo. However, virtually no clinical article reports absolute risk reductions because the figures are invariably low. They are, however, the important figures for prescribers treating individual patients.

We need to get genuine clarity and the application of real scientific principles in the reporting of clinical trials. Focusing on relative risks has the potential to mislead, perhaps deliberately, and can drive inappropriate changes to practice where absolute benefits are marginal. Just because statistical significance has been demonstrated does not mean the results are clinically significant.

#### Editor's note

For some useful examples of how to demonstrate absolute risk reductions, see the NPC website section on patient decision aids at [www.npci.org.uk/therapeutics/mastery/mast4/patient\\_decision\\_aids/patient\\_decision\\_aid1.php](http://www.npci.org.uk/therapeutics/mastery/mast4/patient_decision_aids/patient_decision_aid1.php) Here you will find pictorial representations which can be used with patients to demonstrate the real life benefit of interventions.



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