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Information included is specific to the use of medicines in the **adult** setting.

Pharmacy Prioritisation and Referral

Background

Clinical pharmacists cannot review all patients in NHSGGC every day. In order to allocate clinical pharmacist resource where it is most needed, patients' pharmaceutical care needs must be assessed and prioritised accordingly.

Current model of clinical pharmacist service delivery

Until now the approach adopted has been to prioritise clinical areas for pharmacist input based on the perceived pharmaceutical risk. In practice, this means that some wards are visited by a clinical pharmacist Monday to Friday while other clinical areas receive no visit at all.

It is known that in the "lower priority" areas not receiving a visit there will be some patients with a clear need for pharmaceutical care. Equally, some patients with little need for pharmacist input will be reviewed unnecessarily.

Alternative models

(Based on prioritisation of patient need rather than clinical setting)

- Early GGC pilots of medical/nursing staff referring patients for pharmacy review were unsuccessful. Referral rates were low and potentially appropriate patients were not referred.
- A report from Tayside described an approach of assessing medical patients on admission and targeting resources to those at high risk requiring greater follow up.

New model for Pharmaceutical Care Service delivery

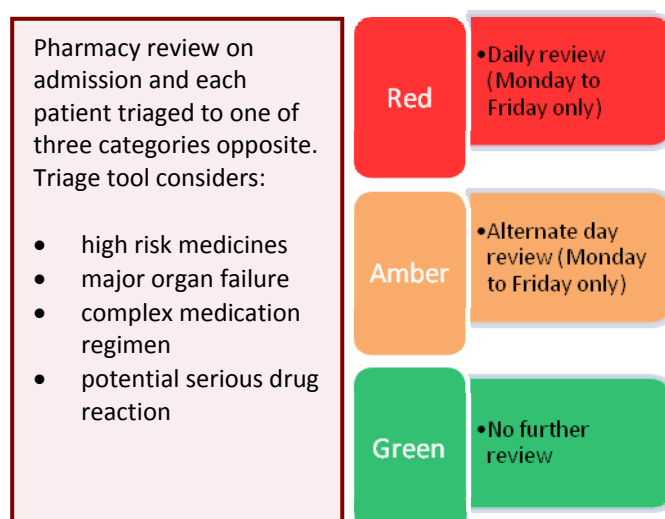
The planned approach for NHSGGC is a combination of the above strategies known as "Triage and Referral". A triage assessment tool has been developed (Diagram 1).

Initial work showed the application of the simple tool by pharmacists was as sensitive in identifying patients with ongoing care issues as the opinion of an experienced pharmacist.

Further studies in NHSGGC have validated this approach in patients in the medical and rehabilitation directorates. The tool was highly sensitive in identifying patients with pharmaceutical care issues as the majority of care issues occurred in patients in the high risk (red) category.

As predicted, these studies also demonstrated that less clinical pharmacist time was spent monitoring low risk patients. Adopting the revised service model will allow staff resource to be refocused on higher risk patients who are likely to need more time dedicated to their pharmaceutical care. This includes patients who would not previously have been seen at all because their ward did not have a clinical pharmacist.

Diagram 1: The Patient Journey



Please note: Discharge prescriptions will be reviewed by a pharmacist before being authorised for dispensing. This is not a full clinical check and the pharmacist completing the check may not have all of the patient's clinical information available to them. Further detail is available [here](#).

Early implementer sites (Surgical Directorate, Western

Infirmery and ECMS Directorate, Victoria Infirmery) report positive outcomes from the new model including:

- Increased medicines reconciliations completed
- Increased accuracy of discharge prescriptions
- Positive feedback from medical/nursing staff.
- Increased satisfaction of pharmacy staff

Referral

There are concerns that issues will be missed if a patient's condition deteriorates or medication changes. Therefore, there will be a simultaneous referral system for medical and nursing staff to refer a patient back to the pharmacy team if a patient's status changes. Additionally, each clinical area will have a named contact from the pharmacy technical team who will refer issues to the clinical pharmacy team as appropriate. The processes and criteria for referral will be communicated in due course.

KEY MESSAGES

- The current model for delivery of clinical pharmacy services is changing.
- In future, staff resource will be allocated based on prioritisation of individual patients rather than of clinical areas.
- Patients will be reviewed on admission and their pharmaceutical needs assessed.
- Many patients will not be clinically reviewed again after admission.
- The wider multidisciplinary team will be able to refer patients to pharmacy if necessary.
- Medical and nursing staff should be alert to changes in patient status (including new medicines) and refer back to pharmacy if necessary.

Next steps

One key issue is keeping track of patients in this system, as at present it involves a great deal of paperwork and organisation. In development is a pharmacy view for electronic whiteboards which is being designed to highlight triage category and discharge status. This is likely to help considerably with organisation of work and improve workflow. Timescales for wider rollout of the triage and referral system across NHSGGC are largely dependent on this development.

Novel Oral Anticoagulants (NOACs) in Atrial Fibrillation: update

NOACs (dabigatran, rivaroxaban, apixaban) are currently included on the NHSGGC Formulary for existing patients with non-valvular atrial fibrillation (AF) who are intolerant of, or poorly controlled on, warfarin. The Heart Managed Clinical Network (MCN) is undertaking a review of the NHSGGC AF guideline. This will include an option to prescribe a NOAC as a *first-line anticoagulant in patients newly diagnosed* with non-valvular AF. **Please note:** Patients who are well controlled on warfarin should remain on warfarin; a switch to NOAC in these patients is discouraged and remains non-Formulary.

More detail can be found [here](#) and the updated guideline will be communicated in future bulletins.

Tumour necrosis factor alpha inhibitors: risk of tuberculosis (TB)

Tumour necrosis factor alpha (TNF-alpha) inhibitors (adalimumab, certolizumab, etanercept, golimumab, and infliximab) may increase the risk of TB/reactivation of latent TB. In patients on TNF-alpha inhibitors TB can be life threatening. Prescribers are reminded that these medicines are contraindicated in TB or other severe infections. Screening for TB should be undertaken before treatment commences and patients should also be monitored for severe infections during and after treatment. More detail can be found [here](#).

Guideline News

SIGN Clinical Guidelines

[SIGN 104 Antibiotic prophylaxis in surgery](#)

[SIGN 139 Care of deteriorating patients](#)

NICE Clinical Guidelines*

[CG 179 Pressure ulcers](#)

GGC Guidelines

Coming soon:

[Atrial Fibrillation](#)

[Oral non-steroidal anti-inflammatory drugs](#)

**NICE Guidelines are developed for prescribers in NHS England and Wales and as such may not always follow NHS Scotland prescribing policy e.g. SMC advice. They should always be used in conjunction with relevant NHSGGC Formulary and Clinical Guidelines.*

Learning from incidents: Warfarin follow-up post-discharge

In the last quarter, approximately 8% of all medication incidents reported in NHSGGC involved an anticoagulant medication. In nearly 40% of these, new or existing patients were **not** appropriately referred to the Glasgow & Clyde Anticoagulant Service (GCAS) for follow up. In general, this happens on average several times a week and has resulted in a number of serious incidents and patient harm.

The case example below is used to demonstrate the clinical consequences of inappropriate follow-up to GCAS and the associated key learning points.

Case example

A patient on long term warfarin therapy was prescribed clarithromycin during a hospital admission and was discharged without a follow up GCAS appointment.

(Clarithromycin can significantly enhance the anticoagulant effect of warfarin and the combination requires regular monitoring, both during the antibiotic treatment and for some time afterwards.)

One week after discharge, a pharmacist in the community identified the lack of follow-up for this patient and arranged a GCAS appointment. However, before the appointment date, the patient was readmitted to hospital with signs of bleeding and a reported INR of 15.

On review of the case, the Immediate Discharge Letter (IDL) stated that an appointment had been made but this had in fact been overlooked.

Key learning points

Ward staff MUST refer ALL patients on warfarin to GCAS prior to discharge

- Referral should **not** be left to the GP or the patient themselves.
- Do **not** rely on GCAS appointments booked pre-admission without checking with GCAS; existing GCAS appointments are cancelled when a patient is admitted to hospital.
- Patients should normally be seen within 7 days of discharge (even if the patient is considered stable), but some may need to be seen sooner depending on factors such as drug interactions, stability of INR. Highlight any

patient who may require an early appointment or who may have difficulty attending the clinic.

- Information on the referral process is available in the Therapeutics Handbook and on the GCAS Prescribing, Monitoring and Referral Form.

Document the following information on the GCAS referral form, the IDL and the patient's yellow anticoagulant book:

- The last 3 warfarin doses (as a minimum)
- The last 3 INRs (as a minimum)
- The advised dose on discharge
- Details of their next clinic appointment
- Factors potentially affecting warfarin requirements such as a change in diet or interacting medicines. This is important, regardless of whether the patient is *still taking* the medicine(s), as the effect on warfarin metabolism may be prolonged.

Ensure that the date of the patient's GCAS appointment is documented in both the patient's yellow book and the IDL.

Inform the patient of the date of their GCAS appointment and the warfarin dose to take until that time.

- Often the dose on discharge cannot be advised until late afternoon on the *day* of discharge. As such information cannot be documented on the IDL until *after* a warfarin supply is issued from pharmacy, a *specific* dose cannot be written on the label of the dispensed warfarin.
- Staff must therefore ensure that the patient understands how to take their warfarin tablets *before* they leave hospital.

Ensure the IDL is completed BEFORE the patient leaves the ward.

- This helps to ensure that appropriate information (see above) is communicated promptly to the GP.
- Patients not requiring a supply of medicines from pharmacy should still have a completed IDL *before* they leave the ward.

Adult Gentamicin Prescription Chart: updated version

An updated version of the NHSGGC Adult Gentamicin Prescription, Administration and Monitoring chart will now be supplied against any new ward orders (please use up existing supplies before ordering the updated chart).

Slight amendments to the current chart were agreed by the Antimicrobial Utilisation Committee. The main change is the introduction of space to record creatinine concentrations – see screen shot below.

TOXICITY		Gentamicin Prescription Record			
Before prescribing each dose check:		Complete each time a dose is to be given (ensuring gentamicin is prescribed 'as per chart' on the kardex)			
Renal & Oto-vestibular function		Date to be given	Time to be given 24 h clock	Gentamicin Dose (mg)	Prescriber's signature, PRINTED name and STATUS
Cr =	micromol /L				
Cr =	micromol /L				
*Discuss with an infection specialist or microbiologist Risks of prolonged treatment must be considered					
Cr =	micromol /L				
Cr =	micromol /L				
*Discuss with an infection specialist					

All healthcare professionals involved in the treatment of patients with gentamicin are reminded of the need to monitor renal function. The patient's creatinine should be monitored daily and recorded on the gentamicin chart.

Reminder: How to safely prescribe WEEKLY oral alendronic acid

The most common dose of alendronic acid for the treatment of osteoporosis is 70mg WEEKLY. To prevent inadvertent daily administration, follow the advice below:

1. Write the word 'WEEKLY' in the 'comments' box.
2. Write the DAY of the week in the 'comments' box
3. Cross out the days of the week that the dose should not be given

Oral and Other Drugs: Regular Prescription				DATE	5	6															
				MONTH	5	5															
BEFORE ADMISSION	<input checked="" type="checkbox"/>	H	DRUG	<i>Alendronic acid</i>																	
DOSE	<input type="checkbox"/>	70mg	ROUTE	DATE	Other time																
PRESCRIBER (PRINT & SIGN)	<input type="checkbox"/>	<i>A Nother (A.Nother, FY1)</i>			STOPPED DATE:	(7/10-09/09)															
ADDITIONAL INSTRUCTIONS / COMMENTS / PHARMACY	<input type="checkbox"/>	WEEKLY on Wednesdays			INITIALS:	X	X	<input type="checkbox"/>	X	X	X	X	X	X	<input type="checkbox"/>	X	X	X	X	X	X
NEW DOSE	<input type="checkbox"/>																				
NEW MEDICATION	<input type="checkbox"/>																				
				1200-1400																	
				1600-1800																	
				2200-2400																	
				Other time																	

Please note: Oral methotrexate and topical buprenorphine are other examples of medicines which have WEEKLY dosing schedules.