Medicines Safety Matters

Health and Social Care Board

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Sharing Learning Across Community Pharmacy In Northern Ireland

Pharmacist Clinical Check

Why is it important?

Community pharmacists have a key role in patient safety by ensuring that medicines are prescribed and administered safely. The clinical check of prescribed medicines prior to dispensing is a crucial 'safety net' in preventing patient harm.

Research has suggested that approximately 7.5% of prescriptions issued in general practice contain an error (although probably less than 1 per cent contain errors that are likely to result in patient harm).[1] If we consider that 21.4 million prescriptions were written in NI in 2012/13, this equates to a total of 214,000 that could potentially cause patient harm.

Clinical checks involve the identification of pharmacotherapeutic problems through evaluation of all relevant information including patient characteristics, disease states, medication regimen, and where possible, laboratory results.[2]

The Pharmaceutical Society of Northern Ireland's 'Professional Standards for Sale and Supply of Medicines' set out our professional responsibilities for clinically checking and dispensing medicines.[3] It states that:

- **A clinical assessment of every prescription** is undertaken, by a pharmacist, to determine the suitability of the medication, the appropriateness of the quantity and its dose frequency for the patient
- The patient receives sufficient information and advice to enable the safe and effective use of the prescribed medicine
- Appropriate records of clinical interventions are maintained.

The purpose of a clinical check by a pharmacist is to ensure that the medicine supplied is both safe and effective for use by a particular patient in relation to the risk and benefit to the patient.[2]

CDAP Dispensing Steps[4]

Step 1: **C**linical check ☑

- Right patient
- Right medication
- Right dose
- New medication or dose
- Record any actions taken

Step 2: **D**ispensing ☑

Prepare medication and label for issue

Step 3: **A**ccuracy check ☑

- Make a final check for clinical appropriateness & accuracy.
- Record any actions taken on the PMR

Step 4: **P**atient Counselling ☑

Issue medication to the patient with clear instruction & advice

Where can I find the information to allow me to clinically check a prescription?

The actual resources that will be available will depend on the pharmacy setting and it may not be possible to obtain all of the information needed. Options include:

Prescription	**Patient medication record**
Patient/carer	**Methotrexate monitoring booklet**
BNF for children	**Lithium monitoring booklet**
GP	**Insulin passport**
SPC	**Oral Anticoagulant booklet (warfarin)**
BNF	**Other healthcare professionals**

N.I. Medicines Information Service

Poisoning: All enquiries on poisons/poisoning should be referred to the National Poisons Information Service (NPIS): 0844 892 0111.
The UK Regional Medicines Information & Poisons Information Services contact details can also be found inside the front cover of the BNF/BNFC

Useful Medicines Information Websites:

Northern Ireland Medicines Formulary
http://niformulary.hscni.net
Medicines Information National Website
http://www.ukmi.nhs.uk
Electronic Medicines Compendia (SPC/ PIL)
https://www.medicines.org.uk

The Northern Ireland Medicines Information Service (NIMIS) is a network provided across all NI Trusts:

Regional Centre (Belfast Trust):
(028) 9504 0558
Altnagelvin Hospital, Western Trust:
(028) 7161 1462
Antrim Area Hospital, Northern Trust:
(028) 9442 4278
Craigavon Area Hospital, Southern Trust:
(028) 3861 2709
Ulster Hospital, South Eastern Trust:
(028) 9056 1445

What do I need to check? In summary, the clinical check consists of reviewing:

☑ Patient:

- Patient characteristics e.g. children, elderly, pregnant or breastfeeding women, male or female, ethnic background
- Co-morbidities e.g. renal or hepatic impairment can affect or exclude the use of certain medicines (community pharmacists do not routinely have access to this information)
- Patient preferences e.g. religious beliefs, previous experiences
- Allergies

☑ Medicine:

- Indication e.g. is this a new indication? Is it what the patient was expecting? Is it a new medicine for an existing indication - has another medicine been discontinued?
- Dose, frequency & strength - check if these are appropriate and safe for the individual patient. If the pharmacist is calculating a paediatric dose, ideally this should be checked by a second pharmacist or another member of staff
- Dosing of the formulation - check the prescribed dosing is appropriate for the formulation e.g. topical patches
- Interactions - is the patient on other medicines that may be affected or contraindicated?
- Route - check issues relating to route e.g. medicines given via nasogastric tube
- Administration aids - check the need for adherence aids e.g. oral syringe in an appropriate size, spacers, eye drop devices, verbal information

The following examples are local incidents where the pharmacist clinical check did not prevent medication errors.

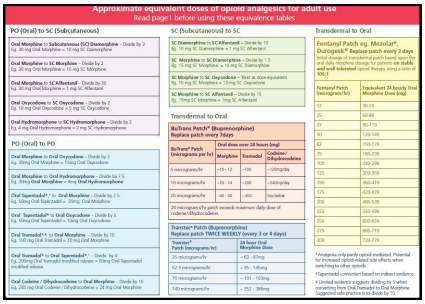
Problem: Patient received close to a 9 times increase in their opioid dose.

What happened? A patient receiving oral morphine 20mg daily, had their opioid dose increased and then switched to SC diamorphine, 90mg was prescribed, dispensed and administered.

Why? The GP inadvertently prescribed diamorphine 90mg instead of the 30mg dose intended.

What Clinical checks?

Confirm previous opioid dose e.g. check PMR
Check opioid increases are safe e.g. oral morphine, doses should not normally exceed 50% higher than the previous dose
Check opioid equivalences e.g. 30mg oral morphine is equivalent to 10mg SC diamorphine.



Useful resources:
N.I. Guidelines on Converting Opioid Analgesics 2014
www.medicinesgovernance.hscni.net

Problem: Overdose

What happened?

- Liraglutide (Victoza®) 6mg/ml prefilled pens labelled 'inject 6mg subcutaneously once a day'
- Pregabalin 300mg TDS prescribed & dispensed over a 5 year period
- Rivaroxaban 15mg BD continued for longer than 3 weeks in the treatment of DVT
- Paracetamol products prescribed & dispensed in quantities greater than the maximum dose e.g. co-codamol 30/500 x 200 tablets dispensed every 13 days

Why?
Prescribing errors
Patients re-ordering medicines too frequently

What clinical checks?
Check dose
Check that quantities dispensed and intervals between prescriptions do not present a risk for potential overdose

Problem: Under-dose

What happened? An adult patient received Advagraf® 500micrograms instead of 5mg which was taken for several weeks leading to the failure of a transplanted organ.

Why? The brand of the patient's tacrolimus treatment was changed from Prograf® 5mg to Advagraf® 5mg by his consultant. Advagraf® 500micrograms was selected in error from the GP computer drug list.

What clinical checks?

Check changes to regular medicines
Check dose - is it appropriate for the indication e.g. too high, too low
Extra check - unfamiliar and/or high risk medicines e.g. Immunosuppressants

Problem: Co-prescription of medicines with therapeutic effect leading to an exaggerated response or side effects.

What happened?
Inadvertent combinations of spironolactone with eplerenone & ramipril with perindopril

Why?
Mid cycle changes to repeat prescriptions where dispensing of the discontinued medicine is continued
Patient is incorrectly prescribed a medicine intended for another person.

What clinical checks?
Check changes to regular medication.
Check indication - medicines from the same therapeutic class or having the same effect.

Problem: Unfamiliar medicines

What happened?

- Hydrochlorthiazide 200mg was prescribed in error instead of hydroxychloroquine 200mg. Hydrochlorothiazide is no longer listed in the BNF and is rarely used as a single agent thiazide diuretic. Hydrochlorothiazide was ordered as a 'special' and dispensed to the patient.
- Anagrelide (a red list medicine[5] used to treat thrombocythaemia) was prescribed and dispensed to the patient by both the hospital and the GP & community pharmacist

Why?
Prescribing errors
The pharmacist was unfamiliar with the medicines

What clinical checks?
Check changes to regular medication
Check indication - medicines that are rarely used - if they are not listed in the BNF/SPC, check the internet or with N.I. Medicines Information Service
Check if unfamiliar medicines are red listed e.g. supplied by hospital only (for further information see www.ipnsm.hscni.net)
Check dose in elderly

Problem: Medicines that are not recommended for use in children

What happened? A child was prescribed, dispensed and administered oxynorm 5mg/5ml liquid for 8 months instead of oxybutynin liquid.

Why? The GP practice accidentally changed the repeat prescription from oxybutynin to oxynorm.

What clinical checks?
Check changes to regular medication.
Check indication - medicines that are rarely used in children
Check dose in children
Check formulation and that the medicine can be administered accurately

[1] Shah SNH et al. A survey of prescription errors in general practice. Pharm J. 2001;267:860–2.
[2] Royal Pharmaceutical Society of Great Britain. Clinical Check - A Quick reference Guide May 2011.
[3] The Pharmaceutical Society of Northern Ireland Professional Standards for Sale and Supply of Medicines
[4] Adapted from Supervision in Community Pharmacy. Dr Fay Bradley 2013 www.pharmacyresearchuk.org
[5] N.I. Red Amber List. http://www.ipnsm.hscni.net