Clinical Pharmacy Manual
CWM Hospital Pharmacy Department

This document outlines the Basic Procedures for the provision of ward-based clinical pharmacy services at CWM Hospital.

This manual should be continually updated, adapted and added to reflect current practice. It is only intended to act as a guide for the provision of clinical pharmacy services.

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“Pharmacists should move from behind the counter and start serving the public by providing care instead of pills only. There is no future in the mere act of dispensing. That activity can and will be taken over by the internet, machines, and/or hardly trained technicians. The fact that pharmacists have an academic training and act as health care professionals puts a burden upon them to better serve the community than they currently do.”

(From: Pharmaceutical care, European developments in concepts, implementation, and research: a review) 

Clinical pharmacy services aim to enhance patient pharmaceutical care. The International Pharmaceutical Federation (FIP) provides the following definition:

“Pharmaceutical care is the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve or maintain a patient’s quality of life”.

Pharmaceutical care is a “prospective patient-centered practice with a focus on identifying, resolving and preventing drug therapy problems”. This is achieved through the process of clinical review. The steps involved in clinical pharmacy review are outlined in Diagram 1 below:

**Diagram 1: Overview of the Clinical Review Process**

1. Gather and interpret information e.g. medication history taking, reconciliation, lab results
2. Assess current medication management and goals of therapy - clinical review
3. Identify and prioritise any potential or actual medication related problems
4. Make appropriate individualised recommendations for each problem identified
5. Identify and provide counselling / education
6. Document and communicate problems and recommendations effectively
7. Arrange follow-up and monitor outcomes

This document provides guidance on the practical aspects of delivering ward-based clinical pharmacy services.
Ward pharmacy services involve the practice of pharmacy as part of the healthcare team aimed at achieving the Quality Use of Medicines. Ward services not only improve patient safety and medication management, but they show other health professionals (e.g. doctors and nurses) what services pharmacists can provide.

Starting a ward-based pharmacy service may seem overwhelming at first, but it really is very achievable. If you have the following resources, you have the potential to start a ward pharmacy service at your hospital:

- A motivated pharmacist
- A daily time slot to visit the ward (ideally at least 1-2 hours)
- Support from the Principal Pharmacist, Medical Superintendent and Nurse Unit Manager

**The Pharmacist**

- You don’t need to “know all of the answers” to provide a clinical pharmacy service, you simply need to be willing to ask questions and know how to find the information you need.
- Good communication is an essential skill. This is important when interacting both with patients and other health professionals.
- You must be committed to your ongoing continuing professional development (CPD) to improve pharmaceutical knowledge and skills relevant to the ward.

**A daily time slot**

- Consistency is essential when providing ward based pharmacy service. The ward should ideally be visited on a daily basis by the pharmacist.
- A regular pharmacy service has many benefits:
  - Helps build relationships with ward staff as they become used to your presence on the ward
  - Pharmacist confidence on the ward increases with familiarity
  - Ward inpatients receive regular medication reviews
  - New patients are seen by a pharmacist and any medication issues are resolved early in the admission.

**Support**

- Support from senior pharmacy staff, doctors and nurses are essential to starting a ward pharmacy service.
- Arrange a meeting to explain the benefits of clinical pharmacy and what a ward service will involve.
- Agree on a time for clinical pharmacy ward rounds that suits all key staff.
The Ward Folder:

Each ward-based pharmacy service should have a pharmacy “ward folder”. This folder should accompany the pharmacist each time they go to the ward. The ward folder contains ward-specific information to assist in the delivery of ward-based clinical pharmacy services. Contents of a ward folder should include:

- Ward information sheet
- Ward imprest list
- Current inpatient profiles
- Useful drug information / ward protocols
- Blank patient profiles
- Blank medication incident report forms

Prioritisation:

As there is only a limited time period on the ward, good time management is essential. Ideally every patient on the ward should be reviewed on a daily basis; however time restrictions often mean that this is not possible and patients must be prioritised to be seen by a pharmacist.

Patients that should receive highest priority for clinical pharmacy review include:

- New admissions
- Paediatrics and geriatrics
- Patients on multiple drugs (polypharmacy)
- Patients with a drug-related admission
- Patients on “high risk” medications

Prioritisation should be your very first step when arriving on the ward. Use the ward bed list to assist you.
Clinical pharmacy review describes the clinical activities performed by the ward-pharmacist to provide pharmaceutical care. This process is shown in Diagram 2 below.

**Diagram 2: Overview of the Clinical Pharmacy Review Process**

As shown in the above diagram, provision of medicines information should not be seen as a “single step”. Rather, this should be included in all aspects of clinical pharmacy review.

The patient profile is a tool to assist you in gathering relevant patient data and structure your thoughts to perform clinical pharmacy reviews for your patients.
The emphasis of the patient profile is to record key data relevant to clinical pharmacy. It also acts as a communication tool for ward pharmacists involved in the patient’s care.

The patient profile is not intended to simply replicate information that is readily available in the patient’s medical record.

Allergies and Adverse Drug Reactions (ADR’s)

- **Rationale:**
  Pharmacists act as a “safety check”, therefore the patient should be asked directly for details of allergies and ADR’s at every new admission. This information should NOT be copied directly from the medical notes or the chart without first attempting to confirm the information with the patient.

- **Instructions:**
  - Ask the patient if they have ever experienced a drug allergy. Also check for any history of adverse drug reactions. Document the drug, reaction details and date that the reaction occurred. (Give an approximate timeframe if appropriate. E.g. 20 years ago). Sign and date the entry.
  - If the patient is unaware of any previous allergies or ADR’s, attempt to confirm this information with a second source (e.g. Patient folder, Patis profile). If there is no record of any allergies or ADR’s tick the Nil Known box. Sign and date the entry.

**NOTE:** - Check if the allergy box has been completed on the patient’s yellow drug chart. If blank, complete the details of the patient’s allergies or write “nil known drug allergies” or “NKDA” if appropriate. Initial under the box.

**Patient Details**

- **Rationale:**
  Enables quick identification of the patient, their location in the hospital and the medical team responsible for their care.

- **Instructions:**
  Complete the sections beside National health number (NHN), Name, Date of birth (DOB), Gender, Admission date, Team, Ward and Bed.

**NOTE:** - Ensure that this information has been completed on the patient’s yellow drug chart.

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**Description:**
The patient profile documents medication issues and pharmaceutical care related to the individual patient. The patient profile is a tool to facilitate clinical pharmacy review.

Documentation should be limited to factors that are essential for consideration in therapy planning that are not readily available elsewhere.

**Target Audience:**
Clinical Pharmacy Staff

**Related Documents:**
SHPA Clinical Pharmacy Guidelines

**Exceptions:**
None

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In collaboration with Waisea Kelo and Asaeli Raikabakaba, Principal Pharmacists

**Created:** July 2010
**Reason for Admission**

- **Rationale:**
The diagnosis and history of presenting complaint (where relevant) help orientate the pharmacist to the patient’s main complaint. This information can direct clinical interventions and patient counselling.

- **Instructions:**
Document the main reason/s for admission (*i.e.* the diagnosis). This information is usually found in the Medical admission notes under “Assessment”. If appropriate, a brief history of the presenting complaint may also be documented. (*E.g.* for a COPD exacerbation, “patient’s inhalers ran out 1/52 ago” would be relevant to the pharmacist).

**Past Medical History**

- **Rationale:**
The medical history enables reconciliation of the patient’s past and current medical and surgical problems with their current medications.

- **Instructions:**
Document the patient’s past medical history in the box. This information is usually found in the medical admission notes under “PMH” or “PMHx”.

**Age, Weight, Height, Cr, CrCl**

- **Rationale:**
This information may be relevant to drug choice and dosing. The age, weight, height and creatinine (Cr) level are also used to calculate the patient’s creatinine clearance (CrCl).

- **Instructions:**
Complete the sections beside Age, Weight, Height, and Cr.

<table>
<thead>
<tr>
<th>Age: 65</th>
<th>Weight: 60kg</th>
<th>Height: 173cm</th>
<th>Cr: 130</th>
<th>CrCl: 36 ml/min</th>
</tr>
</thead>
</table>

**NOTE:** Ensure that the age, weight and height has also been completed on the front of the patient’s yellow drug chart.

**FORMULAE**

\[
CrCl (\text{mL/min}) = \frac{(140-\text{age}) \times (\text{weight in kg})}{0.815 \times (\text{Cr in micromol/L})} \]

For females, multiply by 0.85

**Weight is either the ideal body weight (IBW) or actual weight, whichever is lower:**

- IBW Female: 45.5kg + 0.9kg/cm for each cm >152cm
- IBW Males: 50kg + 0.9kg/cm for each cm >152cm
- Add 10% for a heavy frame; subtract 10% for a light frame.
• **Rationale:**
  By confirming the medication history with the patient and reconciling this history with the inpatient medication chart soon after admission some medication errors and omissions can be detected.

• **Instructions:**
  Complete the medication history and medication reconciliation according to the instructions outlined in the following sections. Complete the medication history line on the patient profile.

### Inpatient Medications
- This section is designed to help you monitor and review the patient’s drug therapy while in hospital.
- For pharmacists new to clinical pharmacy, it may be useful to record all of the patient’s current inpatient medications on the profile. As clinical experience develops you may choose to be more selective about the details you record (for the sake of saving time and prioritising patient needs).
- Document details of inpatient drug therapy, including:
  - Drug name
  - Drug dose
  - Route
  - Frequency
  - Indication for use (as documented in the medical notes)
  - Date the drug was charted
- In the “Change” column write the appropriate code (see “codes” below) to indicate the Dr’s plan.

### Codes
- **Increased dose** = Increased dose
- **TDM** = Therapeutic drug monitoring required
- **NEW** = New medication
- **Decreased Dose** = Decreased Dose
- **W/H** = Withhold
- **✓** = Patient’s pre-admission medication continued unchanged
- **✓ ** = New medication

### Medications

<table>
<thead>
<tr>
<th>Change (New/✓)</th>
<th>Date</th>
<th>Drug</th>
<th>Dose</th>
<th>Route</th>
<th>Frequency</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td>28/06</td>
<td>Metformin</td>
<td>1g</td>
<td>PO</td>
<td>TDS</td>
<td>T2DM</td>
</tr>
<tr>
<td>✓</td>
<td>28/06</td>
<td>Glibenclamide</td>
<td>5mg</td>
<td>PO</td>
<td>BD</td>
<td>T2DM</td>
</tr>
<tr>
<td>✓</td>
<td>28/06</td>
<td>Atorvastatin</td>
<td>25mg</td>
<td>PO</td>
<td>BD</td>
<td>Ish</td>
</tr>
<tr>
<td>NEW</td>
<td>28/06</td>
<td>Cloxacillin</td>
<td>1g</td>
<td>IV</td>
<td>QID</td>
<td>Cellulitis</td>
</tr>
<tr>
<td><strong>NEW??</strong></td>
<td>28/06</td>
<td>Carbamazepine</td>
<td>5mg</td>
<td>PO</td>
<td>BD</td>
<td>?</td>
</tr>
<tr>
<td>✓</td>
<td>28/06</td>
<td>Glyceryl Trinitrate</td>
<td>600mcg (1 tab)</td>
<td>S/Ling</td>
<td>PRN</td>
<td>Angina</td>
</tr>
</tbody>
</table>
**Medication Issue Checklist**

This table provides a prompt for pharmacists to consider medication issues

- **Untreated indication:** Does the patient have a medical condition for which they should be receiving medication? (E.g. Hypothyroidism listed in PMH, but no thyroxine charted)

- **Improper drug selection:** Is the patient receiving an incorrect drug for a medical condition, or would a different medication be more appropriate? (E.g. Hydrochlorothiazide commenced for hypertension in a patient with gout)

- **Sub therapeutic dose:** Is the dose too low to have the required effect?

- **Over dosage:** Is the dose higher than is usually recommended? Consider if dose reductions are necessary in renal and/or hepatic impairment.

- **Failure to receive drugs / regular medicines not charted:** Are all of the doses being signed for? (If not, why?). Or has a regular medication been omitted from the drug chart?

- **Drug use without indication:** Is the patient charted for a medication without a documented reason? (E.g. Patient charted for carbimazole, with no mention of hyperthyroidism).

- **Adverse drug reaction / side effects:** Is the patient experiencing a drug related side effect? (E.g., bradycardia with a Beta Blocker).

- **Drug interactions:** This may include a drug-drug interaction (e.g., verapamil and atenolol) A drug-disease interaction (e.g. beta blocker and asthma), or a drug-food interaction (e.g. alcoholic for discharge on metronidazole).

- **Compliance:** It is important to establish whether or not a patient is taking their regular medicines as prescribed. Explore reasons for non-compliance with the patient (e.g. forgetfulness, cannot afford medication, dose regimen too complicated, does not understand the need to take the medicine regularly and counsel accordingly).

<table>
<thead>
<tr>
<th>Medication Issue Checklist</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Untreated indication</td>
<td>✔</td>
</tr>
<tr>
<td>Improper drug selection</td>
<td></td>
</tr>
<tr>
<td>Subtherapeutic dose</td>
<td></td>
</tr>
<tr>
<td>Overdose</td>
<td></td>
</tr>
<tr>
<td>Failure to receive drugs / Regular meds not charted</td>
<td>✔</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>✔</td>
</tr>
</tbody>
</table>

Medication Action Plan

- **Rational**
  Medication issues identified using the checklist should be recorded for action and follow up.

- **Instructions:**
  To document a medication issues, complete the following:
  - **DATE:** The date the issue was identified
  - **PROBLEM:** A description of the issue
  - **ACTION:** The action that is required/recommended
  - **OUTCOME:** The result/outcome of the intervention (this may be completed at a different time to the identification of the issue)
NOTE: Details of interventions should be recorded in the patient’s Patis profile under “clinical intervention”.

### Lab Results

**Rationale**
Enables recording of lab results to inform clinical pharmacy recommendations.

**Instructions**
Lab reports are generally found stapled in the patient’s medical notes towards the back of the current admission. Document lab results related to the current admission.

NOTE: These boxes are left blank to allow recording of other lab values applicable to the patient.

### Discharge planning notes

**Rationale / Instructions**
Discharge planning should start on the first day of admission to ensure the patient is fully equipped to manage their medications on discharge.
Planning may involve activities such as counselling on medications changes, identifying patient medication education requirements and the need for a discharge medication list.

### MEDICATION ACTION PLAN

**ASSESS PROBLEMS/POTENTIAL PROBLEMS FOR ALL PATIENTS IDENTIFIED AS ‘AT-RISK’**

**AT RISK CRITERIA**
- Over 65 yrs old
- 4 or more regular medications
- Suspected poor level of adherence/compliance
- Multiple changes to drug therapy
- Medication requiring monitoring/high level risk management

<table>
<thead>
<tr>
<th>Date</th>
<th>Problem</th>
<th>Action</th>
<th>Outcome</th>
<th>Date Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>28/06</td>
<td>Enalapril not charted - carbimazole charted by mistake</td>
<td>Phone Dr - Requested review of drug orders</td>
<td>Enalapril charted, carbimazole ceased</td>
<td>28/06</td>
</tr>
<tr>
<td>28/06</td>
<td>Metformin - dose reduction needed in renal impairment</td>
<td>Phone Dr - Recommend dose to 500mg BD and monitor BSL’s</td>
<td>Dose reduced, 500mg BD</td>
<td>28/06</td>
</tr>
<tr>
<td>28/06</td>
<td>Thromboprophylaxis indicated (HTN, INH, T2D, infection)</td>
<td>Phone Dr - Recommend low dose aspirin. But consider heparin as last given cellulitis</td>
<td>Aspirin 100mg daily commenced</td>
<td>29/06</td>
</tr>
</tbody>
</table>
**Medication History**: “A structured interview conducted at admission with the consumer/carer by an appropriately trained health professional to obtain and document the consumer’s medication history, including previous ADR’s and allergies, and any recently ceased or changed medicines. Assessment of the consumer’s medication taking behaviour including self management and adherence to therapy is also included.”

A medication history interview should be conducted with the patient or their carer as soon as possible following admission.

**STEP 1**
*Review* the patient’s current *admission details* in the medical notes (including HOPC, PMHx, Assessment and Plan).

**STEP 2**
At the start of the interaction:
- *Introduce yourself* by name and occupation
- Confirm the patient’s identity
- Explain the purpose of your visit
- Check if it is a convenient time to talk to the patient

**STEP 3**
*Check*:
- Who manages the patient’s medications?
- Where do they get their medications from?
- Do they have their medications with them in hospital?

**STEP 4**
*Gather information* including:
- Allergy/ADR History
- Current medications (prescription / OTC / CAM)
- Compliance

Throughout the interview assess the patient’s understanding of medication and attempt to address patient questions and concerns about their drug therapy.
STEP 5
*Confirm the medication history* with other sources if possible. This may involve checking the patient’s verbal history against other sources such as:

- The patient’s own medications
- Patis dispensings
- Any paper prescriptions the patient may have
- Recent discharge summaries

STEP 6
*Document the medication history* on the allocated space at the bottom of the front page of the medication chart.

The following details should be included:

- Date
- Where the information was obtained from
- The medication (by generic name, list brand name in brackets if necessary), dose, frequency and duration if appropriate
- Where the patient’s medication use differs from that prescribed (e.g. on the label or in Patis), this can be indicated in brackets.
- Brief statement about compliance
- Your signature
- Print your name and occupation

An example is shown below:

```
Example: Medication History
PRE-ADMISSION MEDICATION HISTORY
28/06/10
Information per patient (confirmed with own medications)          Compliance
- Metformin tabs, 1g T D S                                       Patient misses 1-2 doses per week
- Glibenclamide tabs, 5mg BD
- Enalapril tabs, 5mg mane (Actually prescribed 10mg BD)
- Atenolol tabs, 50mg BD (Actually prescribed 50mg mane)
- GTN tabs, 600mcg (1 tab) S/Ling prn (Uses approx 1-2 times per week)

Kobi Haworth
Kobi Haworth - Ward Pharmacist
```

STEP 7
*Document the allergy/adverse drug reaction history (ADR)* on the front of the medication chart as shown in the examples below.

```
Example: NKDA

KNOW ALLERGY OR DRUG SENSITIVITY
Year | Drug | Details of ADR
--- | --- | ---
NM known Drug Reactions | | |
(kH 13/09/10)

Example: ADR

KNOW ALLERGY OR DRUG SENSITIVITY
Year | Drug | Details of ADR
--- | --- | ---
2009 | Morphine | Ech
(kH 13/09/10)
```
Admission Medication Reconciliation involves checking that the confirmed medication history matches the medicines prescribed on admission by the doctor, while taking into account the admission plan. The pharmacist should resolve any discrepancies by checking with the doctor if they are intentional or unintentional. Any changes should be documented in the notes.

Admission medication reconciliation avoids unintentional drug omissions or unintentional changes, improves medication safety and reduces errors.

Follow a consistent and logical process:
- Start with the medication history and check this against the inpatient drug chart.
- Start at the top of the medication history list and one-by-one match the drug to the chart (checking drug, dose, route and frequency)
- Take into account the documented plan in the medical notes while reconciling the medications
- Ensure that there is a clear indication or documented plan for any medications prescribed on the inpatient drug chart that were not listed in the medication history
- Check any discrepancies with the doctor
- Document any subsequent changes
Review of the medication order is an integral part of the pharmacist’s activities; however a single medication order should never be viewed in isolation. Medication chart review aims to improve the medication regime and outcome for the patient. A full medication review can be carried out by reviewing all the medications a patient is on and their medical history.

Medication chart review is most effective when it follows a systematic process:

1. Gather information
2. Identify potential problems
3. Contact prescriber when necessary
4. Annotate medication charts/orders
5. Document activities (covered in a later section)

1. Gather Information

Gather all available information about the patient, their medicines and their medical history. This may include:

- Age, weight and sex of patient
- Patient’s signs, symptoms and diagnosis
- Patient’s past medical history
- Patient’s medication history (and compliance)
- History of previous adverse drug reactions
- Results of relevant tests and/or investigations
- Relevant social and family history

Information sources for obtaining this information include:

- Medication chart/s (including stat, PRN and fluid charts etc)
- Observations chart
- Medical notes (i.e. patient’s folder)
- Pharmacy/ hospital records (e.g. PATIS recent dispensings)
- Medical and nursing staff
- Patient
- Relative/carer
- Laboratory
2. Identify Potential Problems

[NOTE: A brief checklist/ prompt for potential problems is on profile and problems can be recorded on back of the patient profile to assist clinical review]

When reviewing the chart, consider the following issues:

- **Legalities**
  All medication charts/orders must:
  - have patient’s name and NHN number
  - include the drug name, dose, route, frequency, date and doctor’s signature
  - be legible and unambiguous

- **Indication**
  - What indication is being treated & is this treatment appropriate?
  - Are there any medications with no indication?
  - Are there any untreated indications?
  - Are there any unnecessary medications?
    i. Multiple medications where a single agent would suffice?
    ii. Treatment of adverse reaction of another medication?
    iii. Duplication of therapy?

- **Inappropriate Medications**
  - Are any ineffective medications being used?
    i. Indication refractory to therapy?
    ii. Resistance issues?
    iii. No evidence?
  - Any contraindications to medicines charted?
    i. Concomitant diseases?
  - Any known allergies to the medicines charted?
  - Any unsafe medications being used?
    i. Pregnancy?
    ii. Children?

- **Dosing**
  - Are any doses above or below those recommended for the specific patient type?
    i. Renal impairment?
    ii. Age group?
  - Any inappropriate overuse?
  - Any inappropriate timing-dosing intervals?
  - Any courses too short or too long?
  - Is the route appropriate?
  - Is the administration time appropriate?

- **Other Potential Problems**
  - Any drug interactions?
  - Are the medications affected by food/feeds?
  - Is monitoring required?
  - Any adverse reactions to new medications?
  - Is the drug available?
- Cost?
- Cultural beliefs?
- Will compliance/adherence be an issue after discharge?

3. Contacting Prescribers
As a pharmacist it is your role to investigate any unusual or ambiguous orders. If you are doubt about any drug order, your job is to double check with the prescriber. Issues for investigation may include:
- Ambiguous, illegible or unclear medication orders
- Unclear why a first line treatment was not used
- Unusual dose, route etc
- Drug used despite a contraindication/precaution (e.g. allergy, renal impairment, pregnancy, children, interaction)

When contacting a prescriber to query an order always have recommendations or alternatives ready to provide to the doctor. These should be based on reliable references or hospital protocols. If the recommendation is not accepted by doctor and you still feel strongly that it could cause harm or you are not confident with their source of information, check with another member of the medical team (e.g. the registrar or consultant).

Some problems will require action straight away. In this instance page/find the doctor and inform the nurse to withhold the order until you have resolved the issues. Be sure to document any instructions to this effect in the medical notes. Other issues may not require immediate attention, but may become problems later on. In this case, documenting recommendations in the notes and following up with the doctor later may suffice.

All interventions (successful or not) should be documented in the patient’s medical notes and entered into PATIS interventions.

4. Annotating Chart Orders
In addition to ensuring that the medications ordered are legal, safe and appropriate it is also the responsibility of the pharmacist to ensure that nursing staff know what drug to give and how to give it.

Orders should be clear for nurses of all experience levels. Clarifying the order enables nurses to safely administer the medication in a timely manner (reduces confusion, phone calls to pharmacy and administration delays). Pharmacists clarify drug orders by annotating (writing on) the chart either in the pharmacy section, or near the prescribed drug in purple pen.

Annotations made my pharmacists on the drug chart include:
- Initialling the pharmacy box beside the drug order in purple. This indicates that the drug order has been reviewed by pharmacist.
- Fill in any missing patient information on front and inside of the chart. This may include: patient’s name, NHN, weight, DOB/age, ward, allergies/ADRs and medication history.
- If a brand name used (e.g. “Aldomet”) annotate with generic name to avoid confusion (i.e. “methyldopa”)
- If abbreviations are used (eg HCT, u) annotate with the full drug name to avoid confusion (i.e. “hydrochlorothiazide” and “units”)
- If a medication name is spelt incorrectly, annotate with correct spelling
- If any part of the medication order is unclear, annotate the order to clarify the meaning after speaking with prescriber if necessary
- Write dose calculation if used e.g. in paediatrics (mg/kg, mL & mg)
- If a modified release drug is prescribed write: ‘SR - do not crush’
- For cytotoxic medications write: ‘cytotoxic’
- Write administration advice such as ‘with food’ (Note: times may need to be changed. This should be discussed with the nursing staff)
- IV administration directions (e.g. reconstitution, rate, concentration) for non-impress drugs, uncommon drugs etc.
- Storage advice (e.g. ‘Fridge’)
- Write supply issues such as “out of stock” or “Non-EMF: use patient’s own”
- Circle missed doses (as well as looking into issues such as supply if necessary)
- For dangerous drugs write ‘DD’

**Ongoing Medication Chart Review**

- New patients (patient’s not yet reviewed by a pharmacist) are usually prioritised when the pharmacist visits the ward each day
- After new patients are reviewed, follow up other patients
  i. Check that any interventions have been implemented and review their effectiveness and tolerability
  ii. Check if any new medications prescribed or if other changes have been made
  iii. Chart rewrites (i.e. new charts) should always be reconciled to old chart to ensure no medications are forgotten

Note: It is important to communicate with stores &/or FPBS if any patients are on usual medications or unusually large amounts of a medication

**Summary**

- Medication review aims to improve the medication regime and outcome for the patient
  - Review
    i. choice of medication
    ii. dose, frequency, route and duration
    iii. adverse reactions
    iv. contraindications
    v. potential interactions
    vi. adherence/ other patient factors
- Contact prescribers if unsure about an order and its safety for a particular patient
- Annotating medication charts provides clarity and reduces errors
Discharge medication reconciliation involves checking on discharge that the medicines ordered match the medicines administered at the point of discharge and the discharge plan, reviewing the medication history to check that any medicines withheld on admission have been included where appropriate and that any changes have been noted. Ensure that the reconciled medicines are accurately listed in the discharge summary with the reasons for any changes between admission and discharge.

The discharge medication prescription must be checked against the patient’s current inpatient medication chart/s

- All drugs, doses and frequencies need to be reconciled
- When differences are identified assess if they are intentional or not (e.g. post-op meds like morphine are usually left off intentionally)
- When discrepancies cannot be resolved contact the doctor to clarify
- The discharge medication prescription must also be checked against admission history and/or the patients own medicines
- Ensure that any changes made to the patient’s pre-admission medications are identified and relayed to the patient/ carer
- Assess patients own medications and ensure that the label matches the discharge directions
- Ensure all ongoing medication is documented (e.g. medication list)

Like admission medication reconciliation, discharge medication reconciliation should follow a consistent and logical process:

- Start with the medication chart and check this against the discharge prescription.
- Start at the top of the drug chart and one-by-one match the current drug orders to the discharge prescription (checking drug, dose, route and frequency)
- Take into account the documented plan in the medical notes while reconciling the medications
- Check any discrepancies with the doctor and document any changes
Discharge Medication Information

**Description:**
A discharge medication record (DMR) should ideally be issued to all high risk patients. It is essential to ensure the information provided is 100% accurate.

**Target Audience:**
Clinical Pharmacy Staff

**Related Documents:**
SHPA Clinical Pharmacy Guidelines

**Exceptions:**
None

Providing patients with an accurate discharge medication list helps ensure that patients are informed about medication changes made during their hospital admission and are aware of how to take their medications when they are discharged home.

Ideally the medication list should be accompanied by discharge medication counselling from a pharmacist. This should involve:

- Asking the patient to describe how they are going to take the medication
- Using the medicine list as a guide as the patient to show which meds will be taken with breakfast etc
- Asking the patient to demonstrate use of any devices (eg inhaler) or repeat back any complicated directions (eg GTN sublingual tablets)

If a medication list and/or discharge medication counselling are provided to a patient, this information should be documented in the patient’s folder.
Discharge Medication List Instructions

Where possible, pharmacists should provide discharge medication counselling and a medication list to patients. Discharge counselling and the provision of a discharge medication list encourages the safe and appropriate use of medicines, facilitates compliance and thereby enhances therapeutic outcomes.

The discharge medication list should be individualised to the patient’s needs.

Patient Details (Top of Template)

- **Rationale:** Provides key identifying information related to the patient
- **Instructions:** Write the patient’s full name, NHN and discharge date at the top of the template in the spaces provided.

  In the “allergies” space write the drug and the reaction. *(E.g. Amoxycillin – Rash)*. Details of adverse drug reactions or contraindications should also be included here. *(E.g. ACE Inhibitors – Cough)*. If the patient has no allergies, write “nil known”. This section should not be left blank.

| NAME: Jane Doe | NHN: 123456789 | ALLERGIES : Nil Known | DISCHARGE DATE: 8/08/10 |

Other Details (Bottom of Template)

- **Rationale:** The person completing the list should be identified in case of questions related to the discharge medications. The page number details should be completed in case the list is separated and pages are lost
- **Instructions:** Write the pharmacist’s name and complete the page number details in the spaces provided.

| PHARMACIST: Kobi | LAUTOKA HOSPITAL DISCHARGE MEDICINE LIST |

---

**Description:**
A discharge medication list is an important source of medication information for patients and their healthcare providers.

**Target Audience:**
Clinical Pharmacy Staff

**Related Documents:**
SHPA Clinical Pharmacy Guidelines

**Exceptions:**
None

**Developed by:**
Kobi Haworth and Meg Donaldson
AYAD Pharmacists

**Created:** July 2010

**Review Date:** July 2011
Regular Medication Details (Page 1)

- **Rationale:** All of the medications should be listed neatly and clearly to provide an easy to follow medication list.

- **Instructions:** For each medicine complete:
  - *The medicine name and strength:* In some cases the brand of the medication should be listed for clarity. *E.g. warfarin (Marevan) 5mg Tablets*
  - *Used For:* In simple to understand language, briefly list the medication indication. If unsure, check the indication with the Doctor or in the patient’s medical notes. Where necessary, multiple indications may be listed.
  - *Directions:* Write how the medicine is to be taken. Check that these directions match the directions on the medicine label.
  - *Dosing Timetable:* Some patients may only have basic English reading skills and/or a complicated medication regimen. The dosing timetable is designed to make it easier for patients to know when to take their medicines.

    Depending on the patient you may choose to write a number in the box, or draw pictures of the number of tablets. *E.g. For enalapril 2 tablets every morning you could write “2” or draw “ ○ ○ “*
  - *Changes:* This column tells the patient how their discharge medications have changed compared to what they were taking prior to admission

<table>
<thead>
<tr>
<th>MEDICINE NAME &amp; STRENGTH</th>
<th>USED FOR</th>
<th>DIRECTIONS</th>
<th>MORNING</th>
<th>MIDDAY</th>
<th>EVENING</th>
<th>NIGHT</th>
<th>CHANGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>aspirin 100mg tabs</td>
<td>Prevent heart attacks and stroke</td>
<td>Take HALF (1/2) a tablet every morning with food</td>
<td>1/2</td>
<td></td>
<td></td>
<td></td>
<td>New</td>
</tr>
<tr>
<td>enalapril 5mg tabs</td>
<td>Treat high blood pressure/ protect kidney function</td>
<td>Take TWO (2) tablets every morning</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>New</td>
</tr>
<tr>
<td>metformin 500mg tabs</td>
<td>Treat diabetes</td>
<td>Take ONE (1) tablet TWICE a day with food</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>Decreased dose</td>
</tr>
</tbody>
</table>
As Required Medications (Page 2)

- **Rational:** PRN medications should be listed separately to regular medications to reinforce the difference between dosing frequencies.

- **Instructions:** For each medicine complete:
  
  o *Medicine name and strength:* In some cases the brand should also be included for clarity. *(E.g. Glyceryl Trinitrate (Anginine) 600mcg Tabs)*
  
  o *Used for:* In simple to understand language, briefly list the medication indication.
  
  o *Directions:* Write how the medicine is to be taken. Check that these directions match the directions on the medicine label.
  
  o *Changes:* This column tells the patient how their medications have changed compared to what they were taking prior to admission

<table>
<thead>
<tr>
<th>AS REQUIRED MEDICINES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MEDICINE NAME &amp; STRENGTH</strong></td>
</tr>
<tr>
<td>Salbutamol (ventolin) 100mcg Inhaler</td>
</tr>
</tbody>
</table>

Stopped Medicines (Page 2)

- **Rational:** The patient must be clearly informed about which medicines were ceased in hospital to avoid medication errors on discharge.

- **Instructions:** List all of the medications that the patient was taking prior to admission that were ceased in hospital. If possible, write *WHY* the medicine was ceased in the reason box. This helps the patient understand why they are no longer taking the medicine, and also provides important information for other healthcare providers involved in the patient’s care.

<table>
<thead>
<tr>
<th>STOPPED MEDICINES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MEDICINE NAME &amp; STRENGTH</strong></td>
</tr>
<tr>
<td>Glipentiamide Smg Tablets</td>
</tr>
</tbody>
</table>
Documentation is often as important as the clinical activities performed by a pharmacist. It is a written means of communicating with other members of the healthcare team and provides written evidence of the contributions made by pharmacists to patients’ pharmaceutical care.

Pharmacists document their activities and recommendations in many areas. These may include:

- On the inpatient medication chart
  - Pre-admission medications
  - Allergies / ADR’s
  - Annotations
- In the patient folder
- In Patis
  - Clinical notes
  - Interventions
- UOR / Medication incident reports

When writing in patients’ medical folders, black or blue pen is preferred. Purple pen is the designated clinical pharmacist colour and is used for annotating the inpatient medication chart.

The pharmacist is accountable for all of the notes that they write. ALL documentation, ranging from entries in the patient’s folder to short notes sent to the ward on drug charts should include the following information:

- Name and initials/signature
- Date
- Time where appropriate
Documentation should always be professional, succinct and factual.

**Medication History**

- Use **purple ink** when documenting the medication history on the front of the inpatient medication chart.
- Documented information should include:
  - Date
  - Information source/s (eg. per patient/per husband etc)
  - Generic drug name (brand in brackets if appropriate), dose, route, frequency and duration if appropriate
  - A statement on compliance if relevant
  - Signature
  - Printed name
  - Designation (eg. Ward pharmacist, Pharmacy Intern)

**An example of a medication history documented on the front of a medication chart is shown below.**

<table>
<thead>
<tr>
<th>PRE-ADMISSION MEDICATION HISTORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>28/06/10</td>
</tr>
<tr>
<td>Information per patient (confirmed with own medications)</td>
</tr>
<tr>
<td>Compliance</td>
</tr>
<tr>
<td>- Metformin tabs, 1g T DS</td>
</tr>
<tr>
<td>Patient</td>
</tr>
<tr>
<td>misses 1-2 doses</td>
</tr>
<tr>
<td>- Glibenclamide tabs, 5mg BD</td>
</tr>
<tr>
<td>per</td>
</tr>
</tbody>
</table>

**Allergies and ADR’s**

- **Purple ink** may be used to document complete the Allergy and ADR’s box on the front of the medication chart.
- This box should be filled out on **every medication chart**. Documenting that the patient has no allergies as equally important as documenting that they do. It demonstrates that the patient has be asked about their allergy and ADR history, ensuring that this essential information is not overlooked.
  - If there are multiple medication charts, ensure the box is completed on each chart
  - An exception to this are neonates. These babies are generally not old enough to have an allergy or ADR history.
- It is best practice for the pharmacist to verbally ask the patient or their carer about allergies and ADR’s. If this is not possible, the information may be gathered from the medical notes or nursing staff. However this information should be double checked with the patient at the earliest possible opportunity.
If there are no allergies:
- Write NKDA or Nil known drug allergies in the box
- Initial
- Date

If the patient has an allergy or drug sensitivity
- Write the date of the reaction, the drug name, and give details of the reaction in the box
- Initial
- Date

**Example: No allergies**

<table>
<thead>
<tr>
<th>Year</th>
<th>Drug</th>
<th>Details of ADR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil known drug allergies</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Example: Morphine ADR**

<table>
<thead>
<tr>
<th>Year</th>
<th>Drug</th>
<th>Details of ADR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>Morphine</td>
<td>Itch</td>
</tr>
</tbody>
</table>

---

**Patient Folder**

- Some hospitals specify that black or blue pen are to be used when writing in the patient’s medical notes. Check with your hospital for local guidelines.
- Before making an entry in the patient folder check that you:
  - Have the correct patient’s folder
  - Have the correct admission
  - Are following on from the most recent entry.
- The following details should be included in the entry
  - The date
  - The time (*in 24 hour time*)
  - Your profession (*i.e. Pharmacy*)
  - Your name: printed ± signed
  - Your role (*e.g. Pharmacist, Pharmacy Intern*)
- Entries should be brief and factual.
  - Avoid writing a story
  - Dot points are acceptable (and often preferred)
- Writing should be neat and legible. Clear and concise notes are more likely to be read!
- There is no official “format” for writing pharmacy entries. When writing entries, keep them brief and include details of:
  - What you did (*e.g. medication history confirmed with patient, clinical pharmacy review of medication chart, indications and use of diabetes medications discussed with the patient etc...*)
  - What issues you detected (*e.g. “Patient has a history of asthma and is now prescribed atenolol. Beta-blockers are contraindicated in reversible airways disease”*)
- What you recommend (e.g. “consideration may be given to an alternative drug such as digoxin – 250mcg daily”)
- What action you’ve taken (e.g. “Dr Helpful notified. He has advised to withhold potassium until tomorrow morning’s ward round. Nursing staff informed and chart annotated with W/H”)

**Example 1**

<table>
<thead>
<tr>
<th>Date</th>
<th>Pharmacy – Administration times</th>
</tr>
</thead>
<tbody>
<tr>
<td>25/09/10</td>
<td>HAWORTH</td>
</tr>
<tr>
<td>11:30</td>
<td>- Patient prescribed both ciprofloxacin and calcium carbonate</td>
</tr>
<tr>
<td></td>
<td>- Calcium binds to ciprofloxacin in GIT, reducing ciprofloxacin absorption.</td>
</tr>
<tr>
<td></td>
<td>- Recommend separating doses by at least 2 hours.</td>
</tr>
<tr>
<td></td>
<td>- Administration times changes on drug chart. Nurse on duty informed.</td>
</tr>
</tbody>
</table>

Kobi Haworth

Kobi Haworth, Clinical Pharmacist

**Example 2**

<table>
<thead>
<tr>
<th>Date</th>
<th>Pharmacy – Clinical Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>23/06/10</td>
<td>HAWORTH</td>
</tr>
<tr>
<td>14:30</td>
<td>- Medication history confirmed with patient.</td>
</tr>
<tr>
<td></td>
<td>- Counselling on non-pharmacological management of hypertension provided.</td>
</tr>
<tr>
<td></td>
<td>- The following medication issues were identified during clinical review.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Thromboprophylaxis:</strong> Patient has several risk factors (IHD, HTN, T2D). Consideration may be given to commencing low dose aspirin. (Recommend 150mg daily).</td>
</tr>
<tr>
<td></td>
<td>• <strong>Hypertension:</strong> Patient currently on enalapril 10mg bd (states compliant with medication at home), but BP remains elevated. Consideration may be given to commencing a second antihypertensive. (Recommend nifedipine MR 20mg daily)</td>
</tr>
<tr>
<td></td>
<td>- Discussed by phone with Dr Cure. He advised that the medical team will review the above recommendations tomorrow during the ward round.</td>
</tr>
</tbody>
</table>

Kobi Haworth

Kobi Haworth, Clinical Pharmacist

**Patis Entries**

- An intervention is any query, recommendation or non-routine action made in relation to the patient’s pharmaceutical care. Interventions include actions where the outcome is “no change”.
All pharmacy interventions should be documented in Patis. A report giving details of pharmacy interventions can be run at the end of each month to provide evidence of the activities and value of clinical pharmacy services.

Entries should be brief, state the facts and should include:
- Ward/clinic of the patient
- A description of the problem, the action and the outcome
- Pharmacist’s name or initials

**Medication Incident Reports and Unusual Occurrence Reports**

**If we don’t know it’s broken, how will we fix it?**
Medication incident reports are one of the most important and effective ways of identifying issues and system flaws that impair medication safety. Hospital staff are human, and it is inevitable that mistakes will occur. However it is important to blame the system that resulted in the error, not the individual. If one person managed to make the mistake, it means that others could potentially make the same mistake in the future. It is important to document these incidents so that we are aware of the system flaws and can design safer medication systems to prevent them from recurring.

**Reporting near misses is just as important as documenting actual incidents**
Sometimes a mistake will occur in the medication use cycle, but will be detected before any harm is caused to a patient.

For example: A 1mg warfarin dose might be prescribed as “1.0mg”. The dispensing pharmacist read and dispensed the order as “10mg”. The ward nurse detected the error before administration to the patient.

Even though this is a near miss, no harm was caused and no one is at “fault” this incident should be reported. It might become apparent that many doctors are unaware that it is unsafe to put “.0” on the end of drug doses, and they can be educated to change there practice so that future errors like this will be avoided.

**Blame the system, not the person**
Medication errors are not deliberate, but they do occur. No one intends to harm patients, but often the situation or circumstances the person is working in will lead to an error (e.g. busy ward, inexperienced staff without supervision, unclear order misinterpreted etc.) Medication incident reports are an opportunity to highlight unsafe environments, work practices or high risk drugs that require attention. Medication reports should not be written to “punish mistakes”, but with the intention of promoting safety. If you have suggestions on how the error or near miss could have been avoided, you should write this on the form too!
References

