HOSPITAL PHARMACY ORIENTATION GUIDELINE

INTRODUCTION

The aim of this guide is to give you a brief introduction to the practice of hospital pharmacy.

This guide will be issued to you via your supervising hospital pharmacist prior to or at the commencement of your placement as part of an Orientation Package.

Pharmacy students may have limited knowledge of what working in a hospital setting really entails. There are specific tasks and pre-reading contained in this guide that may be completed prior to or during your placement, to fully prepare you for your time at the hospital and enable you to have a basic understanding of hospital clinical pharmacy practice.

It is hoped that this guide will help enable you to make the most of your time in the hospital environment, by appreciating the roles and responsibilities of hospital pharmacy staff and other health care professionals involved in patient care.

There is an online module available on the HETI website called “Foundations in Hospital Practice: Pharmacist” that you may be able to access at the beginning of your placement. This also gives an overview of the roles and responsibilities of a hospital pharmacist and may help consolidate the information found in this guideline.

Introduction To Hospital Pharmacy

Pharmacists who practice in hospital often have very different roles to pharmacists who work in the community. Hospital pharmacy departments may vary greatly in the different services they provide dependant on their size. A large metropolitan hospital may employ many pharmacists and pharmacy support staff and deliver a broad range of services e.g sterile manufacturing and cytotoxic reconstitution. In comparison, a small rural hospital pharmacy department may only have one or two pharmacists on site.

Hospital pharmacy departments usually supply medication to both inpatients and outpatients. Due to the demand for acute care in the home environment to ease pressure on hospital beds, pharmacy departments sometimes supply medications for patients treated at home rather than in hospital e.g Intravenous antibiotics and low molecular weight heparin following high risk surgery. In addition to the supply of medications, hospital pharmacists have important clinical roles in the dispensary, on the wards and sometimes in some outpatient or peri-operative clinics. These clinical roles will be explained in more detail in the relevant section of the guide, but include medication history taking and reconciliation, medication counselling, quality use of medicines and medication safety. In hospitals with specialised aseptic manufacturing units, pharmacists are actively involved in the preparation of cytotoxics, sterile products and Parenteral Nutrition.

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In NSW, as a general rule, public hospitals do not supply medications to outpatients that are available via the Pharmaceutical Benefits Scheme, except for medications classed as section 100 (Highly Specialised Drugs).

Patients are now staying for a shorter time in hospital and there is a need for hospital pharmacists to be actively involved in discharge planning and ensuring that the patient receives adequate information regarding medications in the post discharge setting.

Before you begin your placement in hospital pharmacy, it would be useful if you could think about the following questions and write down your answers for discussion with your hospital placement supervisor.

**What do you think are the main roles of a pharmacist who works in the hospital setting?**
How do these differ from a community pharmacist? Which of these roles are common to both hospital and community practice?

**What do you believe to be the essential services that a hospital pharmacy department provides?**

**Hospital pharmacists often work as part of a multidisciplinary team focused on patient centred care. There are many different health professionals who will have input into a patients care whilst in hospital. Name FOUR health professionals, apart from the pharmacist, who may be involved in looking after a patient during their stay. Give a brief summary of what you think their role might be.**
Pharmacy Department Structure and Roles

Each hospital pharmacy department is different but all have one common aim – to ensure that all patients who come into their institution receive the best possible pharmaceutical care and ensure the quality use of medicines (QUM). How each pharmacist does this is reliant upon the policies and procedures that are in place within their hospital and to some degree, the number of staff their department employs.

During your hospital placement you will potentially meet many members of the pharmacy staff. The roles of these pharmacy personnel and the employment structure of each department varies from hospital to hospital. Pharmacy support staff, such as pharmacy assistants and technicians have very important roles in distribution and dispensing. There is now a focus on expanding the roles of pharmacy technicians to provide increased clinical support for pharmacists.

The hospital pharmacy may contain different sections that perform specific functions e.g the dispensary, medicines information or there may be “satellite” pharmacies linked to the department.

✍ How many staff does the pharmacy department you are at have? What is the management structure and hierarchy within the department? List all the different types of staff that exist in the department and what their usual role is?

✍ Identify all the individual sections of the department and describe the major functions of each section. How many staff members work in each section? What are the roles of the relevant staff members who work there? For example, in the dispensary setting, what are the roles of the pharmacists compared to any technicians or assistants?

✍ How do you think the roles and responsibilities of a pharmacy technician working in the hospital compares to one who works in the community setting? What differences might there be?

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Procurement of Medications, Budgeting and Stock Control

Public hospitals often buy medication in very large quantities, particularly medications which are used frequently on the wards and in theatres. This means that most hospital pharmacy departments have large stores where most of the stock is kept, rather than in the dispensary. Some hospitals however are moving to Vendor Managed Inventory, where a local wholesaler is responsible for managing the stock on the wards and to some degree within the pharmacy itself which helps to maximise available space in the store. This is more common for intravenous fluids.

Most of the medications purchased are “on contract” with NSW Health. There is a committee that determines the brands of medications that hospitals in NSW buy and unlike community pharmacies, hospital pharmacy departments tend to usually keep only that one brand of medication in stock. Exceptions exist if brands are not bio-equivalent. This means that the public hospitals can often negotiate good deals with the pharmaceutical companies and wholesalers. Patients are often given an alternative brand of their usual medication during their hospital stay and may be supplied with this on discharge. This can sometimes create problems with patient confusion if care is not taken to ensure that the patients are aware of the changes. As a general rule, patients own medications are not currently used whilst they are in hospital unless there are extenuating circumstances. This may include continuation of patient own eye drops and inhalers, medications that may be difficult to acquire such Special Access Scheme or clinical trial medications, herbal products or where substitution to an alternative therapeutic equivalent kept by the hospital is inappropriate.

Each hospital usually has a formulary of medications that may be used. The formulary is a list of medications that may be prescribed whilst a patient is in hospital. Only items listed on the formulary may be initiated by a doctor during the patient’s stay in hospital subject to individual restrictions on each drug. For example, some medications may only be prescribed by particular physicians or for patients on certain wards. A good example of this would be some of the newer, expensive antibiotics. These drugs are often restricted to doctors who are specialists in infectious diseases and microbiology. Many hospitals have now implemented an antimicrobial stewardship program and there is a large amount of information regarding this available on both the National Prescribing Service and Clinical Excellence Commission websites. If a patient comes into hospital on medication that is not on their formulary, the pharmacy department will usually order it on a case by case basis from the wholesaler. This depends on each hospitals individual policy.

If prescribers wish to initiate drugs for patients that are not on the formulary, or are for “off label use” they should provide evidence as to why this is the case. Each hospital has its own procedure as to how this is done and who can approve this.

Each hospital has an allocated drug budget for the year that is linked into the funding that the hospital receives from the state government. This is determined by many factors and depending on the size and nature of the hospital, can run into millions of dollars. Lots of very expensive drugs are used in hospital and so quality use of medicines is very important in minimising costs and maximising patient safety. The pharmacy has an essential role to play in this.

Some medications are funded by the Federal Government. These high cost drugs are called Section 100 medications and if supplied to outpatients, the costs will be reimbursed by the federal government.
government. Examples of these drugs include cyclosporin, clozapine and erythropoietin. There are very strict criteria surrounding the prescribing of these drugs and in order for the costs to be reimbursed, patients need to fit the criteria specified. If they do not, the hospital has to bear the cost of the medication from its own budget.

Some medications used in the hospital are classed as Special Access Scheme (SAS) Drugs. These are medications that are not licensed by the Therapeutic Goods Administration (TGA) in Australia and are only available for use if special permission has been sought from the TGA in Canberra. Some medications are only available from manufacturers overseas and need to be sourced via specialised wholesalers who organise their importation.

Look at how the stock is procured in the hospital? What is the system for ordering stock and who is responsible? How do they know what needs to be ordered?

How is the drug budget managed in the hospital you are based in? What happens if they go “over budget”?

What does the term “off label use” mean?

How does the pharmacy department manage the prescribing and funding of Section 100 HSD medications?
Briefly describe the system for the supply of drugs under the SAS scheme. Name FOUR drugs commonly used in your hospital that are included in this scheme and indicate why they may have been prescribed? How does the pharmacy access drugs from overseas?

Drug Distribution

Public hospitals organise the distribution of medications to both inpatients and outpatients. Some hospitals have a separate dispensary area or pharmacy for outpatients, whilst some hospitals dispense all medications for inpatients and outpatients from the same location.

Supply of Medications to Hospital Inpatients

Most hospitals utilise a dual system of dispensing for patients on the wards – ward stock and individual patient dispensing. Medications that are classed as Schedule 4D and Schedule 8 are ordered via a different process which will be discussed later.

Each ward may have a selection of medications that it will keep as “ward stock” – this is often known as their “Imprest” list and is negotiated with the Nurse Unit Manager and the pharmacist based on their patient casemix and commonly used items on the ward. Nursing staff are usually responsible for maintenance of the stock levels and for ordering from this list, although in some hospitals this role has been delegated to a pharmacy technician on particular wards or sometimes this may be outsourced to one of the pharmaceutical wholesalers. The order list is usually sent to the pharmacy on specific allocated days and the order is put together in the pharmacy department, either by pharmacy assistants, technicians or pharmacy store aides and then returned to the wards. Each ward cost centre is charged for the stock they receive. The stock issued is usually either whole boxes of medications or pre-packs that have been previously checked by a pharmacist. Nursing staff will use this ward stock to administer medications to their patients.

For those medications that are not issued via ward stock, each item must be dispensed to an individual patient from the National Inpatient Medication Chart (NIMC). The NIMC is the inpatient prescription that is used in every hospital in Australia. Every medication that the patient receives should be prescribed on the NIMC. There are a few exceptions to this which may include intravenous fluids and medications, heparin, cytotoxic medications, patient controlled analgesia and depot injections. Some hospitals have special prescription forms for these types of medications. Recently a subcutaneous insulin chart has been introduced into NSW Health facilities.

If you have not already done so, it is worthwhile completing the NPS module on the NIMC. This can be found at:

Recently, some hospitals in NSW have rolled out eMeds. This is an electronic prescribing system that has replaced the paper NIMC and is part of the electronic Medical Record (EMR).

The ward pharmacist is usually responsible for maintaining the supply of these non-stock (or non-imprest) medications on the wards during their clinical rounds, though sometimes the nursing staff will bring the medication chart to the pharmacy. These medications are dispensed individually for each patient, usually a few days supply at a time.

Patients in hospital are often prescribed Schedule 4D and S8 medications such as benzodiazepines and morphine. These medications are not usually supplied to the wards using the NIMC, but are usually ordered via a special requisition book or form by nursing staff from each ward. There are very strict controls on these medications and each hospital will have its own policy and procedures surrounding ordering, supply and storage of these drugs, although each hospital must adhere to the overarching NSW Health policy.

There are many medications used in hospitals that are not usually dispensed by community pharmacists. Can you think of FOUR medications that are commonly used in the hospital setting. For each medication, give an indication of their possible use.

Discharge Medications

When patients are discharged from hospital, there is usually a system in place that will ensure the ongoing supply of medication for patients when they go home. Each hospital has its own policy surrounding the supply of medications on discharge. Some hospitals will give a few days supply of all the patient’s current medications, whilst others will only supply new items. The major aim when completing a discharge prescription for a patient is to ensure they have an adequate understanding of the medication regimen they are currently taking, and that the medications they have been prescribed are reconciled against the medication history on admission, taking into consideration any changes that have occurred whilst in hospital. It is very important that all these changes are relayed to the appropriate healthcare practitioner who looks after the patient in the community to ensure a smooth transition of care. Many hospitals now provide “medilists” to patients on discharge which will inform the patient of their new medication regimen and often identify what changes have occurred. Ask your pharmacy department to show you some examples of medilists that have been prepared.
Most hospitals have their own discharge prescription form or procedure that they use. Some of the prescription forms are designed so that they can be dispensed in a community pharmacy, for use when the hospital pharmacy is closed.

Supply of Medications to Outpatients

Most hospitals supply medications to patients who have seen a doctor in the outpatient clinic or sometimes from specialised GP’s. The majority of medications supplied to outpatients via the hospital pharmacy are not usually available on the Pharmaceutical Benefits Scheme. This is often because they do not fit the authority criteria e.g Gabapentin for use in pain patients. Many outpatient medications are classed as section 100 (HSD) and though are on the PBS, are usually available via the hospital pharmacy, however some medications are now available via community pharmacies. Each outpatient is required to pay a co-payment for their medications and as in community pharmacy, each patient is required to produce a medicare card to access these medications at a subsidised price. Some of the S100 (HSD) medications no longer require a co-payment by the patient as they are subsidised by the NSW Government.

What medications are commonly supplied to outpatients at the hospital you are based in for your placement? For your own information, make a note of what these medications are usually used for.

Clinical Pharmacist Roles and Responsibilities

There are increasing expectations that hospital pharmacists will provide an expanded clinical service in line with increasing healthcare demands and the need to minimise medication risks, promote evidence based practice and optimise patient health outcomes.

The Society of Hospital Pharmacists of Australia (SHPA) has produced comprehensive guidelines regarding the roles and responsibilities of a clinical pharmacist in hospital. These practice guidelines are available at:


There are also some SHPA Quick Guides available on the website on medication reconciliation and assessing current medication management, clinical review, Therapeutic Drug Monitoring and Adverse Drug Reactions amongst others. These give a quick overview of the different activities a clinical pharmacist may undertake in the hospital environment. You are able to access a read only copy if you are not a member of SHPA. There are also many fact sheets published by SHPA on topics including clinical pharmacy, medication reconciliation and antimicrobial stewardship.

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Different hospitals may have a different approach as to how the pharmacists provide a patient focused clinical service but all will have one common aim, which is to ensure that the patient journey with respect to their medications, throughout their hospital admission and then back into their community environment, is a safe one. Avoiding medication misadventure and promoting the rational and safe use of medicines is a major part of a clinical pharmacist’s daily activities.

Some hospitals may have a dedicated Medication Safety pharmacist. Whilst medication safety is the responsibility of all health professionals involved in the medication management pathway, these pharmacists play a pivotal role in the prevention and monitoring of medication errors. They are involved in systems and strategies to identify and address areas of risk to ensure that hospitals meet the NSQHS Standard 4 for Medication Safety. To get a better understanding of medication safety issues, there are seven modules that are available on the National Prescribing Service (NPS) Website http://learn.nps.org.au/mod/page/view.php?id=4277

NPS has other online modules that you may find useful including Understanding the Quality Use of Medicines (QUM) http://learn.nps.org.au/mod/page/view.php?id=4279. Pharmacists contribute to the quality use of medicines by involvement in activities such as medication safety, antimicrobial stewardship and drug use evaluation.

Clinical pharmacy services may include the following (adapted from SHPA Overview: Standards of Practice for Clinical Pharmacy Services):

- **Medication reconciliation**
  
  Medication reconciliation is the process of comparing the medication history with prescribed medications to ensure accurate and complete medication information transfer with the aim of improving patient safety.

- **It involves:**
  
  - Compiling a best possible medication history via a structured interview
  - Confirmation of the medication history with at least one other source
  - Reconciliation with admission/discharge medication orders

**Useful resources include:**

- HETI online modules - Continuity in Medication Management
- SESLHD Foundations in Medication Reconciliation Workbook
- Clinical Excellence Commission website – Medication Reconciliation Resources
• **Assessment of current medication management**

It is important that a pharmacist assesses the medication chart to ensure all medications are prescribed clearly and legally with no ambiguity. They also need to think about the following areas:

- Do all medications have an indication for use? Is it off label use?
- Is the prescription appropriate with respect to the five rights of medication administration – right patient, dose, drug, route and time?
- Have all medications been prescribed according to best practice guidelines and local policy guidelines?
- If any dosage form manipulation is needed – have the steps been taken to ensure this is appropriate e.g. crushing medications
- Are there any drug interactions – with other drugs, disease states or food?
- Are there any contraindications to the medications? Allergies?
- Is the dose appropriate? Is it available? – is it on the formulary?


• **Clinical Review**

Pharmacists also take into consideration patient’s clinical parameters, symptoms, pathology results and clinical test results in order to monitor their progress and assess the suitability of and response to the medication they have been prescribed.

• **Therapeutic Drug Monitoring**

Some drugs have a narrow therapeutic window and as such their plasma levels may need to be closely monitored to avoid sub-therapeutic or toxic levels. Pharmacists often advise on sampling times and interpretation of results.

• **Adverse Drug Reaction Management**

Clinical pharmacists are involved in recognising, preventing and advising on management of adverse drug reactions, particularly with certain medications and patient groups who are at greater risk.

• **Providing medicines information**

This may include patient counselling using verbal or written information and also providing information and advice on the use of medications to other health care professionals in the multidisciplinary team.

• **Facilitating continuity of medication management on discharge or transfer**


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• **Taking part in interdisciplinary ward rounds and meetings**

The ward pharmacist is an important member of the multidisciplinary healthcare team and where possible should be involved in team meetings and rounds. This may include ward meetings, whiteboard meetings, ward rounds and case conferences.

Clinical pharmacists may also participate in research, quality improvement activities and provide education and training for other health professionals, students and pharmacy interns.

Hospital pharmacy departments are often only open business hours on Monday to Friday with an emergency on call service the rest of the time. This, along with limited staff resources, means that it is almost impossible for all patients to be seen by a clinical pharmacist and so it is very important that the pharmacist is able to prioritise which patients need their clinical input the most. These are patients who are usually most at risk of medication related problems and may include the following:

- Admitted to hospital with a drug related problem
- Elderly patients over 65 years
- Patients taking multiple medications – either more than 5 medications or 12 doses per day
- Taking a high risk medication (A PINCH) or medication with a narrow therapeutic window
- Lots of changes to medications in the weeks before admission
- Adherence issues
- Treatment failure
- Difficulty managing medications
- Recent discharge from hospital
- Patients with abnormal kidney and liver function

It is very important that pharmacists document their activities and recommendations appropriately using ISBAR clinical handover to ensure that any issues and interventions are effectively communicated to the treating team and any other health professional involved in medication management. This may be done utilising a Medication Management Plan (MMP). A guide to using the MMP can be found at [http://www.safetyandquality.gov.au/wp-content/uploads/2010/01/Medication-Management-Plan-User-Guide.pdf](http://www.safetyandquality.gov.au/wp-content/uploads/2010/01/Medication-Management-Plan-User-Guide.pdf)

What does the term medication reconciliation mean? Why is this important in minimising medication risk and optimising health outcomes?
Name three sources of a best possible medication history. What are the possible limitations of each source you identify?

Some medications are classed as high risk because if a medication incident or error occurs, the consequences may be severe for the patient. What does the acronym A PINCH mean?

A
P
I
N
C
H

One of the roles of a clinical pharmacist is medication chart annotation. Why do you think this is important?

When the pharmacist is assessing a patient’s renal function, they often calculate their creatinine clearance using the Cockcroft Gault equation? Why is this used for calculating drug doses? Identify FIVE drugs that may need dose adjustment if renal function is compromised.
Name FOUR drugs that usually require Therapeutic Drug Monitoring? Why?

Does the hospital have an Antimicrobial Stewardship pharmacist? What role do they play in QUM and why?

What do we mean by the term DUE? What DUE activities has the pharmacy department recently been involved with?

In order to maximise the clinical services that the pharmacy can provide, pharmacists might utilise the pharmacy support staff to help with this. Pharmacy assistants and technicians with appropriate qualifications, training and experience are potentially able to clinically support pharmacists in many ways. This may include communicating with community pharmacists to assist with medication reconciliation or gathering pathology data to assist with clinical review of patients. This technician clinical support role is constantly evolving.

We hope you enjoy your placement in the South East Sydney Local Health District. This guide only gives a brief overview of hospital pharmacy with optional questions to be completed to enhance your understanding. Please see your student preceptor or supervising pharmacist if you have any further questions regarding the information contained in this Orientation Guide.

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