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MINISTRY OF HEALTH MALAYSIA
PHARMACEUTICAL SERVICES PROGRAM

GUIDELINE ON

WARD PHARMACY ACTIVITIES

"Quick reference guide for ward pharmacists in management and documentation of ward pharmacy activities"

First Edition | 2023

Pharmaceutical Services Programme
Ministry of Health, Malaysia.

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PREFACE

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Ward Pharmacy Service has been expanding in recent years in order to provide optimum pharmaceutical care to the patients. A standard procedure in ward pharmacy service is important to ensure all patients receive standard optimum pharmaceutical care. Therefore, this guideline is published to provide the ward pharmacists with proper guidance in conducting their daily ward pharmacy activities.

This is the first publication by the pharmacist group to focus on management and documentation of ward pharmacy activities. It is hoped that this guideline will facilitate the ward pharmacists in understanding proper management and documentation of ward pharmacy activities.

I would like to express my utmost gratitude and appreciation to the Clinical Pharmacy Working Committee (Ward Pharmacy Specialty) for their outstanding effort in making this guideline possible. Also, a special thanks to all parties that contributed during all stages of development and publication of this guideline.

Thank you

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We would like to acknowledge the efforts and to express our gratitude to all pharmacists who are directly and indirectly involved in publication of this guideline, especially the pharmacist team from Sabah for their effort in writing the initial draft.

ABBREVIATION AND ACRONYMS

ADR - Adverse Drug Reaction

ALT - Alanine transaminase

AOR - At own risk

BSA - Body surface area

CCU - Cardiac Critical Unit

CP1 - Medication History Assessment Form

CP2 - Pharmacotherapy Review

CP3 - Clinical Pharmacy Report Form

CP4 - Patient Referral Note

D5 - Dextrose 5%

DRP - Drug Related Problem

ENT - Otorhinolaryngology

ESRF - End stage renal failure

GICU - General Intensive Care Unit

GP - General practitioner

HDW - High Dependency Ward

HIS - Hospital Information System

IC - Identity card

ICS - Inhaled corticosteroid

INR - International normalized ratio

IV - Intravenous

LABA - Long-acting beta agonist

Mixt. - Mixture

MOH - Ministry Of Health

MSSA - Methicillin-susceptible staphylococcus aureus

MTAC - Medication Therapy Adherence Clinic

MyMAAT - Malaysia Medication Adherence Assessment Tool

NICU - Neonatal Intensive Care Unit

NSTEMI - Non-ST segment elevation myocardial infarction

OTC - Over-the-counter

PCI - Pharmaceutical Care Issues

PhIS - Pharmacy Information System

PICU - Pediatric Intensive Care Unit

POM - Patient's own medicine

RN - Registered number

TDM - Therapeutic Drug Monitoring

TPN - Total Parenteral Nutrition

W/V % - Weight / Volume %

1. WARD PHARMACY ACTIVITIES

Recognition of pharmacy profession and establishment of pharmaceutical services in Malaysia was prompted with enactment of Registration of Pharmacist Act 1951, Poison Act 1952 and Dangerous Act 1952. Limited number of pharmacists in early years of establishment have restricted expansion of pharmaceutical services. There were only 23 licensed pharmacists working with the Ministry of Health back in 1957 providing mainly logistic support (procurement, storage & distribution of pharmaceuticals). Following an amendment to the Registration of Pharmacists Act 1951 in 2003, new pharmacy graduates were required to apply for pre-licensure public service. This significantly increased the pharmacy workforce, allowing pharmacists to engage in more clinical pharmacy activities and orienting practice model towards patient-centered care in the years following the amendment.

Clinical pharmacy practice in Malaysia dates back to the 1990's, pioneered by pharmacists who led the Therapeutic Drug Monitoring and Parenteral Nutrition services at selected institutions and has since expanded to all major hospitals in Malaysia. The introduction of "Pharmaceutical Care" concept by Hepler and Strand in 1990s, marked a turning point within the Pharmacy Services Programme. It had a huge influence on the pharmacy profession, shifting the focus of pharmacy activities from service-oriented to patient-oriented.

Clinical pharmacy services in Malaysia offer monitoring services for warded patients. The services include therapeutic drug monitoring, medication counseling and dispensing medications to discharged patients. Ward pharmacy activities encompass issues on all aspects of pharmacotherapy. The goal of ward pharmacy activities is to optimize the patient's pharmacotherapy and achieve positive clinical outcomes within realistic economic expenditures. During ward rounds, input pertaining to appropriateness of therapy, counselling of patients on medication therapy and the monitoring of unwanted side effects are the major services provided. Often time, the input given is not documented. Thus, a mechanism to document these activities is crucial and urgently required.

In the early years of clinical pharmacy services, documentation in clinical pharmacy activities were not widely being established yet. There were no standard forms available and thus Pharmaceutical Services Programme took the initiative in designing and standardizing all forms used to carry out these clinical pharmacy activities in order for ward pharmacist to document the care provided to patient. Such documentation is vital to a patient's continuity of care and demonstrates both the accountability of the pharmacist and the value of the pharmacist's services (Hammond et al, 2003).

In early 2010's, advancement of clinical documentation to electronic documentation has made its way when systems such as HIS and PhIS were introduced in selected hospitals and gradually expanded its implementation to the whole country.

Four types of forms designed to document ward pharmacy activities are:-

i. Medication History Assessment Form (CP1)
ii. Pharmacotherapy Review (CP2)
iii. Clinical Pharmacy Report Form (CP3)
iv. Patient Referral Note (CP4)

1.1 OBJECTIVES

The goal of ward pharmacy activities:

1. To optimize patient's pharmacotherapy.

2. To achieve positive clinical outcomes within realistic economic expenditures.

Participation of ward pharmacists is essential for the provision of pharmaceutical care in the drug therapy management of the patients which relies on the knowledge and clinical skills of the pharmacist providing that care.

1.2 CATEGORIZATION OF DISCIPLINE AND PHARMACIST

Discipline

DISCIPLINE	SUB-DISCIPLINE
Medical	**General Medicine**
	Cardiology (General)
	Cardiac Critical Unit (CCU)
	Cardiac Rehabilitation Ward (CRW)
	Respiratory
	Endocrine
	Nephrology
	Neurology
	Geriatric
	Hematology
	Gastroenterology
	Infectious Disease
	Rheumatology
	Others
Anesthesiology & Intensive Care	**General Intensive Care Units (GICU)**
	High Dependency Ward (HDW) (≥8 beds)
Pediatric	**General**
	Neonatal Intensive Care Unit (NICU)
	Pediatric Intensive Care Unit (PICU)
	Special Care Neonates
Emergency	**Red Zone**
	Yellow Zone
	Amber Zone
	Green Zone
	Observation Ward (≥1 day)

DISCIPLINE	SUB-DISCIPLINE
Surgical	General
	Cardiology Intensive Care Unit
	Cardiothoracic Ward
	Neurosurgery
	Urology
	Orthopedic
	Ophthalmology
	Otorhinolaryngology (ENT)
	Oral and Maxillofacial Surgery
	Plastic & Reconstructive
	Others
Obstetrics & Gynaecology	-
Oncology	-
Psychiatry & Mental Health	-
Multidiscipline	-

Note: Sub-disciplines in bold font are priority for placement of pharmacist.

Pharmacist

a) **Full time**: Pharmacist who is responsible to work in a particular ward all the time.

b) **Part time**: Pharmacist who carry out ward pharmacy activities for at least 10 hours per week.

1.3 ROLES AND RESPONSIBILITIES

1.3.1 HEAD OF UNIT (UF48 / UF52 / UF54 / SME)

1. Accountable to the Head of Department

2. Responsibilities

a) Professional / Technical

i. To become a source of information to consultant / specialist / medical officer for cases with therapeutic related problems such as drug regimen-the dosage, the schedule, and the duration of treatment, adverse drug reactions (ADR), drug-drug or drug-food interactions, and pharmacokinetics and pharmacodynamics of the drug.

ii. To give recommendations and make interventions in order to optimize pharmacotherapy regime based on patient's clinical conditions, signs and symptoms, organ functions, co-morbidities and other clinical factors.

iii. To ensure complete medication history and reconciliation for newly admitted or transferred-in patients is executed.

iv. To participate in daily ward rounds with consultant / specialist / medical officer / nurse and other healthcare providers in the wards.

v. To plan and execute pharmacist grand round periodically.

vi. To monitor patient's drug usage including any ADR and coordinate patient's pharmaceutical care upon discharge home or transferring out to other facility.

vii. To refer respective patients to Medication Therapy Adherence Clinic (MTAC) services.

viii. To coordinate clinical research (Phase II or III) regarding new drug in respective disciplines in collaboration with specialists to compare effectiveness of new drugs compared to existing drugs and thus releasing new guidelines on usage of medicine (when applicable).

ix. To participate as a member of the Hospital Drug and Therapeutic Committee when needed.

x. To review and analyze current issues to improve clinical pharmacy services according to evidence-based pharmaceutical care practice.

b) Administration

i. Accountable to the Head of Department for all ward pharmacy activities in accordance with the respective guidelines.

ii. To supervise the respective tasks of staff in the unit.

iii. To ensure appropriate training and continuous pharmacy education for all staff in the unit.

iv. To plan and ensure training provided to all pharmacists and trainees (Provisionally Registered Pharmacists and Pharmacist Assistant Trainees) in a given task.

v. To ensure all respective quality assurance reports are collected accordingly.

vi. To maintain proper safety measures and adequate facilities for all staff.

vii. To ensure adequate medicine supply in accordance with *"Tatacara Pengurusan Stor"*.

viii. Other activities required by the department.

1.3.2 PHARMACIST (UF41/ UF44 / UF48 / UF52/ UF54)

1. Accountable to the Head of Department and to the Head of Unit.

2. Responsibilities

a) Professional / Technical

i. Accountable directly to the Head of Unit on all activities related to clinical ward pharmacy services and indirectly to the Head of Department.

ii. To receive referrals for cases with therapeutic related problems such as drug regimen - the dosage, the schedule, and the duration of treatment, ADR and its management, drug-drug or drug-food interactions, pharmacokinetics and pharmacodynamics of the drug, as well as other referrals.

iii. To take complete medication history for newly admitted or transferred-in patients by interviewing patients or their family in order to identify pharmaceutical care issues.

iv. To perform case clerking and case reviewing to identify pharmaceutical care issues and develop a care plan for the patient.

v. To perform medication reconciliation and/ or Patient's Own Medicines (POMs) activities during patients' hospital admission until patients' discharge (if applicable).

vi. To perform routine screening of patient's drug record during patients' hospital stay to ensure medication safety.

vii. To actively participate in daily ward rounds with consultant / specialist / medical officer / nurse and other healthcare providers in order to:
- Identify drug related issues.
- Review pharmacotherapy of drugs to ensure patients get the best possible treatment.
- Make recommendations on selection of appropriate drugs, when necessary.

viii. To counsel patients and/ patients' family in order to improve patients' knowledge and understanding on drug therapy.

ix. To perform bedside/ discharge dispensing.

x. To identify and report ADR and drug-drug interactions.

xi. To involve in MTAC services depending on availability of the MTAC service provided by the facility.

xii. Identify and monitor patients who require therapeutic drug monitoring and parenteral nutrition and other drugs which require close monitoring.

xiii. To participate in discussion and clinical case presentations among pharmacists to strengthen clinical knowledge.

xiv. To conduct research pertaining to patient medication management, pharmacotherapy, ADR etc.

xv. To provide training to Provisionally Registered Pharmacist and Pharmacist Assistant Trainees based on logbook requirements.

xvi. To provide drug information to other healthcare professionals.

xvii. Other activities required by the department.

1.4 WORKING NORM

The ratio of ward pharmacist to patient is recommended as below:

1. Medical ward and other disciplines (e.g. surgical, orthopedic etc.):
   - 1 Pharmacist to 20 patients

2. Critical care ward (e.g. GICU / HDW / NICU / PICU):
   - 1 Pharmacist to 10 patients

2. MEDICATION HISTORY TAKING AND MEDICATION RECONCILIATION

Medication history taking by pharmacists is essential for retrieving missing information with regard to prescription medications which the patient is currently on, information on past drug history as well as self-medication. This additional information can be an invaluable aid for pharmacists and other healthcare providers in assessing and determining the best treatment option towards optimizing patient care.

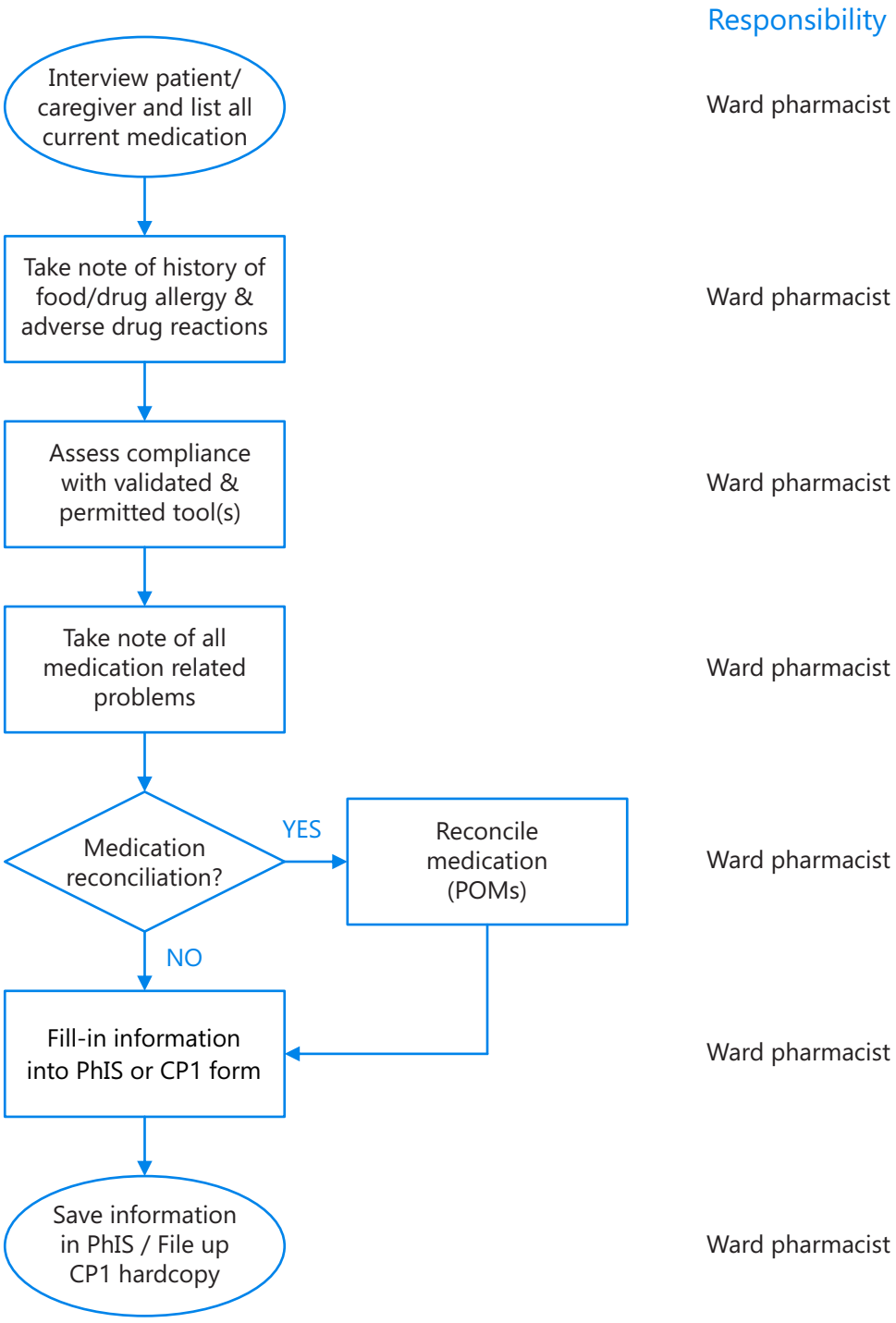
Medication reconciliation is a systematic process where all medications are correctly and consciously continued, discontinued or modified in a timely manner at each point in which the patient moves through the various levels of the healthcare continuum.

2.1 OBJECTIVES

1. To gauge patient's understanding towards their medications.
2. To ensure continuity of medication treatment.
3. To assess compliance towards drug treatment.
4. To guide medication management including supplements, over-the-counter (OTC) medicines and herbal preparations.
5. To ensure that the most accurate patient medication list is available to all care providers, especially at the point of transition of care (admission, transfer and discharge).
6. To reduce medication-related errors at each transfer of care.
7. To optimize use of POMs in ward and reduce wastage.

2.2 WORK PROCEDURE

Work procedures for medication history taking are as follow:



Note: The usage of the clinical module in PhIS is required for facilities that are using PhIS and as defined by their own facilities.

2.3 CRITERIA TO PERFORM MEDICATION HISTORY ASSESSMENT

All medication histories shall be documented in the CP1 form. Patients who fulfil (but not limited) to the following criteria shall be given the PRIORITY to perform medication history assessment:

1. On medications for chronic illnesses (e.g. diabetes, hypertension, etc.)
2. Have relevant information on allergy & adverse drug reaction.
3. On any non-prescription medication (e.g. herbal, vitamin, supplement etc.)
4. Bring their own medications (POMs).
5. Bring previous prescription(s) or have traceable medication records.
6. Admitted for elective surgery/ procedure.
7. Have no language barrier.
8. In a conscious state (or assisted by a caregiver if the patient is unconscious).

2.4 WORKING NORM

1. **Full time pharmacists:** 3 to 5 medication history assessments per day
   Part time pharmacists: 1 to 3 medication history assessments per day.
2. Medication history assessment is encouraged to be done within 24 hours of admission.
3. Original copy of CP1 shall be kept in the patient's medication chart whereas the carbon copy is kept by the pharmacist (if manual). CP1 shall be recorded in computerized system e.g. PhIS and can be printed out to be kept in the patient's medication chart.
4. Medication history assessment may be completed on the following working day for patients admitted during after working hours, weekend or public holidays.

2.5 DOCUMENTATION

The following table describes the information required in the different parts of the CP1 Form.

	PART	DESCRIPTION
A	**Patient Biodata**	▪ Full Name ▪ Gender ▪ Identification Number (RN/IC) ▪ Address ▪ Admission Date/ Time ▪ Ward/ Bed ▪ Patient's Medical History ▪ Last Discharge or Review Date
B	**Reason for Admission**	Chief complaint of patients made or diagnosis upon admission.
C	**Allergy & Adverse Drug Reaction**	History of allergy to drugs, food, chemicals and past adverse drug reactions. ▪ Name of medication ▪ Allergy reaction ▪ Date/Month/Year ▪ Allergy cards and place where the card was issued
D	**Medication History**	1. Patient's own medications (POMs) 2. Sources of medication list: ▪ Interview patient and/or caregivers. ▪ Balance of medication from previous supply or state the duration of previous supply. ▪ Review out-patient card/ GP card or PhIS/ HIS/ recent discharge summary/ CP4/ other sources.

	PART	DESCRIPTION
		3. Medication List: ▪ Include all prescription drugs, OTC drugs, complementary medicines, eye drops, inhalers, patches and topical treatments. ▪ Record **NAME, DOSE REGIMEN, BALANCE** from previous supply, **REASON** for taking. ▪ Note down any medical device used. 4. Decision to continue / discontinue / withhold medicines: ▪ Based on doctor's clinical evaluation of the patient. ▪ To compare list of pre-admission medications and medications resume on admission. 5. Additional Comments: ▪ Information to include: place(s) of follow-up, next visit date.
E	**Pharmacist's Notes**	1. Assessment note(s) by pharmacist. 2. Suggestions / recommendations. 3. Compliance assessment can be done using Malaysia Medication Adherence Assessment Tool (MyMAAT). Record the score and adherence status for eligible patients. State the reason if compliance assessment cannot be carried out.

3. CASE CLERKING AND REVIEWING

Case clerking and medication review are often done concurrently. Most pharmaceutical care issues (PCI) are identified during these two activities. Pharmacists should play an active role in recognizing these issues and documenting them into the case notes. If the PCI is significant to the patient's current medication plan, the issue should be highlighted to other healthcare providers during ward rounds or wherever necessary.

3.1 OBJECTIVES

1. To assist in the understanding of patient's clinical progress and treatment options.

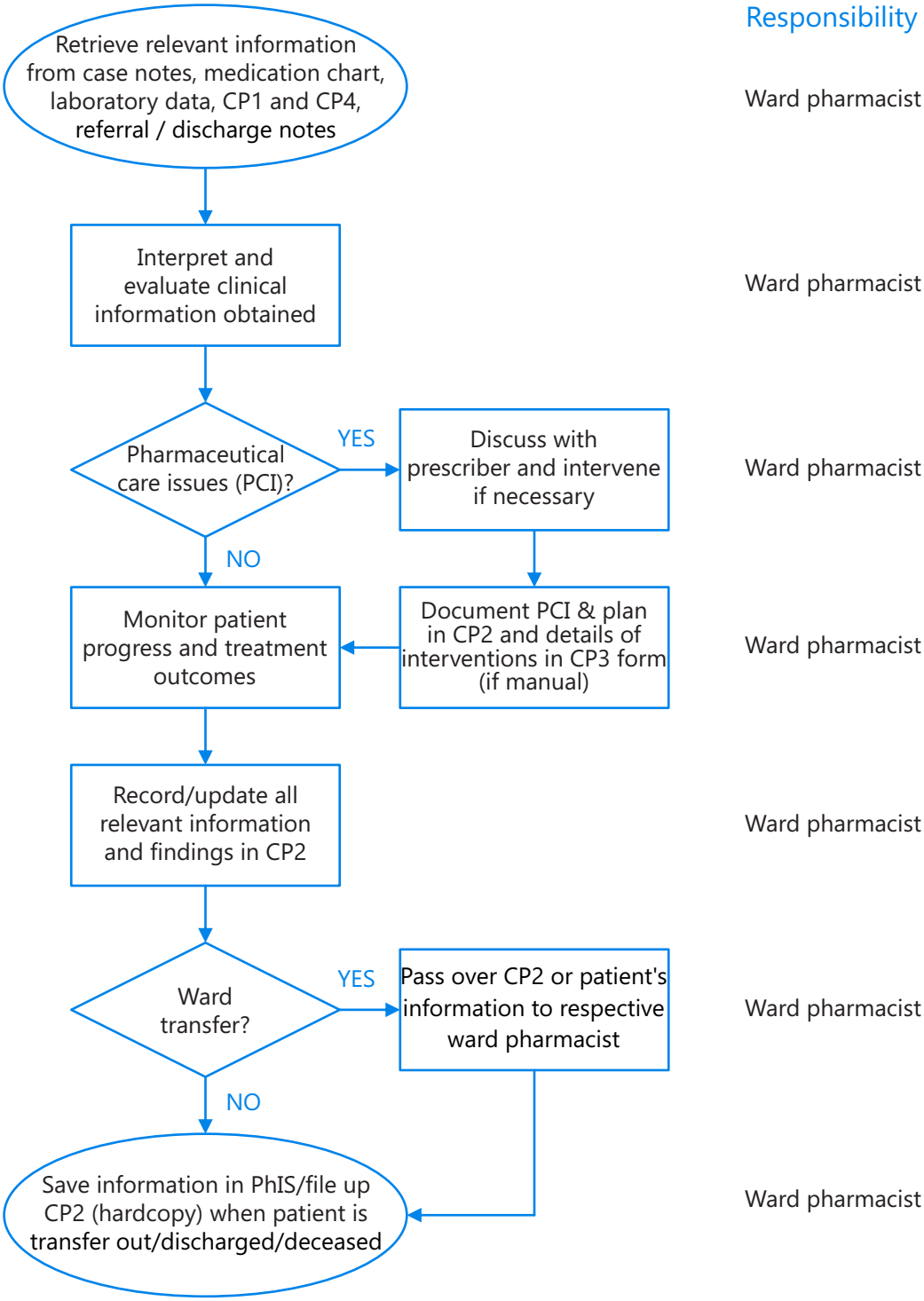
2. To monitor patient's progression and evaluate response to medical therapy.

3. To identify actual or potential PCI and develop a care plan to manage the issue.

4. To keep pharmacist focused on the active pharmaceutical care plan and interventions.

3.2 WORK PROCEDURE

Work procedures for case clerking and medication review are as follow:



Note: The usage of the clinical module in PhIS is required for facilities that are using PhIS and as defined by their own facilities.

3.3 REQUIREMENT FOR CASE CLERKING AND REVIEWING

1. Case clerking shall be done for all admissions as far as possible.

2. Cases clerked shall be reviewed and updated on a daily basis until the patient is transfer out / discharged / deceased.

3. Skills required for efficient case clerking and review:

   - Able to retrieve and gather relevant information from medication charts, case notes, laboratory data, CP1 and patient interviews.
   - Possess adequate knowledge on pathophysiology, diagnostic and therapeutic.
   - Able to interpret and evaluate patient-specific clinical information in order to identify actual or potential drug related problems.
   - Able to differentiate PCIs from physician's clinical management plan.
   - Able to formulate a pharmaceutical care plan, monitor and optimize patient's outcome based on specific PCIs.
   - Able to communicate efficiently with patients, caregivers and other healthcare professionals.

4. All findings, PCIs, recommendations and therapeutic outcomes shall be documented in CP2.

3.4 WORKING NORM

1. **Full time pharmacists:** 3 to 5 cases clerking per day,
   Part time pharmacists: 1 to 3 cases clerking per day.

2. Case clerking may be EXEMPTED in the following situations:

   - Postoperative cases without complication or any pharmaceutical care issues (e.g. thyroidectomy, clean procedure).
   - Day care patients.
   - Cases to be transferred to other ward/hospital/institution and patients requesting for at own risk (AOR) discharge.
   - Cases that do not need pharmacotherapy monitoring (e.g. dengue without complication, blood transfusion, neonatal jaundice).
   - Elective cases (e.g. Tenckoff insertion, angiogram).

3. Pharmacotherapy review may be completed the following working day for patients admitted during after working hours, weekends or public holidays.

4. Passing over CP2 shall be done to the pharmacist in charge of the respective ward for continuity of care (if manual) in case of ward transfer. For CP2 documented in the computerized system, pharmacist at the referred ward shall access the information in the system as a source of reference.

5. Pharmacotherapy review shall have the final status of the patient such as discharged, deceased or transferred out to other wards/ hospitals. Patients' final status shall be updated in the system if all documentations are computerized.

3.5 DOCUMENTATION

The following table describes the information required in the different parts of the Pharmacotherapy Review (CP2):

	PART	DESCRIPTION
A	**Demographic Data**	▪ Patients demographic data (e.g. name, registration number, age, gender, race, height, weight & date of admission). ▪ Patient's allergy status for drugs, food or chemicals. ▪ Chief complaint: The reason patient is seeking medical care - documented in patient's own words. ▪ History of presenting illness: Description on progression of patient's current problem. ▪ Past medical history: Description on patient's pre-existing illness. ▪ Review of system (blood pressure, respiratory rate, pulse rate, temperature, random blood sugar, oxygen saturation) at the point of presentation. ▪ Past medication history & compliance evaluation: Findings from interview with patient, past prescription and non-prescription medications (refer CP1). ▪ Social / Family history: Marital status, occupation, high-risk behavior, socio-economic status, family history. ▪ Diagnosis / Surgical procedure during this admission.
B	**Laboratory Investigation**	Relevant investigations based on patient's problem.

	PART	DESCRIPTION
C	**Ward Medication**	Current medications (including dose & frequency) which the patient has been prescribed with during current admission including following information: ▪ Date medication initiated and discontinued ▪ Indication / reason for change ▪ Medication reconciliation notes (drug withheld, stopped or continued upon discharge)
D	**Pharmaceutical Care Plan**	Identified PCI shall be described based on the Clinical Pharmacy Report Form (CP3) in the following format: ▪ PCI: Description of PCI which clearly reflect pharmacotherapy suggestion to be made. ▪ Pharmacist's Recommendations / Plan: Suggestion made to the doctor. ▪ Outcome: Patient oriented outcome following intervention. If outcome is unable to be observed on the same day, may write a monitoring plan. Example: **PCI:** 2.1 Inadequate drug. BP persistently high (158/70mmHg) since admission. **Pharmacist Recommendation:** To restart T. Amlodipine 5mg OD (Target BP <140mm/80mmHg) **Outcome:** If outcome is available: T. Amlodipine initiated. BP controlled at 138/60mmHg. If outcome is unable to be observed: Monitor BP daily. Target BP <140mm/80mmHg.

4. MEDICAL/ CASE NOTE ENTRY

Medical / case note entries are legal documentation of all contributions made by healthcare providers in a patient's care. It facilitates effective communication among healthcare providers by enabling the sharing of concise, informative and auditable records. Therefore, it is essential for a pharmacist to make proper medical / case note entries (if applicable).

4.1 OBJECTIVES

1. To convey information for use in patient care and serves as a tool for communication among health care providers.

2. Written documentation can be used to support verbal recommendations and to provide continuity of care among health care professionals.

4.2 DOCUMENTATION

- Clinical note entries shall be non-judgmental, provide accurate information and practical recommendations regarding patient care and be politely written.

- Notes shall be limited to information related to the assessment or recommended plan only.

- Entry by pharmacist into the clinical case note may follow the format of **Subjective-Objective-Assessment-Plan** (SOAP). Start each SOAP note by writing the date and time on the top, left-hand corner of the note (for paper or non-form notes).

- Write a header that indicates the note is from the pharmacy.

- At the start of a note, identify patient's age and gender, the reason for interaction with the patient and the condition(s) for which the patient is seeking or receiving therapy.

- At the end of the note, there shall be signature, name and designation of pharmacist.
- Example of pharmaceutical care & interventions which can be documented in medical/case note by pharmacists include:
  - Clarification of a medication history
  - Details of patient education provided or medication counseling reporting
  - TDM, TPN information and recommendations
  - Medicines-related issues that warrant close monitoring
  - Answers to queries raised by the doctors or other healthcare professionals
  - Information or advice given to patients or clinician
  - To alert clinicians when a medicines review and monitoring is required

SUBJECTIVE
Information based on patient's complaint / symptoms / condition.

OBJECTIVE
Data directly measured (laboratory tests, vital signs, peak flow meter etc.) or other information obtained from drug charts or pharmacy database.

ASSESSMENT
▪ Notes written shall explain why the identified drug-related problem (DRP) needs to be corrected. ▪ Provide brief discussion of therapeutic alternatives including relevant considerations (e.g. efficacy, precautions, drug interactions, side effects, cost and convenience) to address the problem if necessary. ▪ Evidence from literature/ drug references shall be quoted (if possible) when recommending a particular treatment.

PLAN
Recommendation and therapeutic plan to resolve the patient's DRP which may include: ▪ Drug, dose, route, frequency, and duration (when applicable). ▪ Action taken by pharmacist (e.g. patient education, discussion with physician) or needs to be taken by physician or patient. ▪ Plan for monitoring (e.g. efficacy, side effects). ▪ Follow up that need to be taken by pharmacist or another health care provider (e.g. what, when and who will be responsible). ▪ Counseling points if the purpose is to document patient medication counseling reporting. ▪ The alternatives to treatment if efficacy is not achieved or if toxicity occurs.

Examples of clinical case note entry are as follow:

EXAMPLE 1

31/10/2020 S/B Pharmacist
@ 9.30am
63 / Malay lady

Known case of type 2 DM, hypertension and dyslipidemia.
Admitted for ischemic stroke with underlying non-valvular atrial fibrillation.
Currently day 5 of stroke, on Ryle's tube feeding.
No bleeding tendencies.

Lab Ix :
CrCl 55 ml/min, INR 1.1, Hb 11.5. LFT normal.

$CHA_2DS_2VAS_c$:
5. Planned to start direct oral anticoagulant (DOAC) on day 7 of stroke.

Assessment:
Patient is on Ryle's tube feeding. Available DOAC are Cap. Dabigatran, Tab. Apixaban and Tab. Rivaroxaban. Cap. Dabigatran is not recommended to be administered via nasogastric tube as it will lead to increased drug absorption and bleeding risk.

Administration via RT:
Both Apixaban and Rivaroxaban tablets can be crushed. The crushed tablet of Apixaban may be suspended in 60mL of water and administered within 4 hours of preparation. For Rivaroxaban, enteral feeding shall follow immediately after administration of Rivaroxaban.

Plan:
1. Suggest to start either Tab. Apixaban 5mg BD or Tab. Rivaroxaban 20mg OD, on day 7 of stroke if no bleeding tendencies.
2. Monitor for any signs of bleeding. Renal function shall be monitored routinely as exposure to oral anticoagulant increases with renal impairment.

Siti
Pharmacist

EXAMPLE 2

1/11/2020 S/B Pharmacist
@ 2.30pm
40 / Malay lady

Referred for insulin injection technique counselling.
Newly diagnosed type 2 DM and admitted for DKA. Planned to discharge with basal bolus insulin.

Current medications:
S/C Insugen R 8iu TDS, S/C Insugen N 24iu ON, Tab. Metformin 1g BD.

Counseled patient with presence of husband on the following:
1. Brief explanation on type 2 DM
2. Insulin therapy including indication, dose and administration time
3. Injection technique and site of administration
4. Supply, storage and disposal
5. Importance of adherence
6. SMBG
7. Hypoglycemia and its management

Assessment:
Patient's understanding of medication and compliance is good.
Understanding of injection technique is moderate- patient forget to mix and prime insulin before use.

Plan:
1. To refer to Diabetes MTAC upon discharge.
2. To assess patient's adherence and insulin injection technique during MTAC TCA on 29/11/2020.

Wan
Pharmacist

5. CLINICAL PHARMACY REPORT

All clinical activities and pharmaceutical interventions done by pharmacists during ward rounds are documented in Clinical Pharmacy Report Form (CP3). These data collections are critical towards justifying for the future expansion of clinical pharmacy services and professional development and recognition in this country.

5.1 OBJECTIVES

1. To document ward pharmacists' clinical activities and pharmaceutical interventions

2. To capture workload of ward pharmacists.

3. To archive types of interventions performed and drug information provided.

4. To ensure continuity of pharmaceutical care in situations where passing over of information is required when the primary pharmacist is away temporarily or off duty.

5.2 DOCUMENTATION

Clinical Pharmacy Report Form CP3 is divided into 4 sections.

A. Ward Pharmacy Activity

- Routine rounds: Daily ward round conducted by the ward pharmacists together with the medical officers. The specialist/ consultant in charge may or may not attend.

- Grand rounds: Scheduled departmental round in which the ward pharmacists participate with the consultants, specialists, medical officers and nursing staff.

- Pharmacist rounds: Pharmacotherapy ward round involving ward pharmacist with other fellow pharmacists.

- Number of cases clerked: Number of patients being clerked during new admissions.

- Number of patients in ward: Total numbers of patients in the ward on a particular day.

B. Interventions / Requests Encountered

Pharmaceutical interventions are actions that produce effects or alteration in optimizing patient's pharmacotherapy. Pharmaceutical interventions are divided into 3 types which are:

1. Incomplete Prescription
2. Inappropriate Regimen
3. Miscellaneous.

Definition of each types of pharmaceutical interventions under category inappropriate regimen

**Examples given are intended to give pharmacists a general view of vast PCIs that may be encountered daily.*

NO	MAIN CATEGORIES OF PCIs	SUB-CATEGORIES OF PCIs		EXAMPLE*
(1) INCOMPLETE PRESCRIPTION				
1	**Patient Data** Manual prescription was given without complete information of patient.	1	Incomplete name of patient.	No patient's name written/ patient's name is written as abbreviation/ only first name stated on the prescription. *May cause medication error in which the medication may be dispensed to another patient with similar/ same name.*
		2	Incomplete sociodemographic data of patient.	Age, IC Number/RN, and/ or gender and/or other relevant data e.g. weight/ height not stated on the prescription. *Prescription for pediatric patient or drug based on body surface area (BSA) may need to include patient's weight and height.*
		3	Incomplete medical data of patient.	No diagnosis and related medical conditions stated on the prescription.

NO	MAIN CATEGORIES OF PCIs	SUB-CATEGORIES OF PCIs		EXAMPLE*
2	**Drug** Drug's name is missing / written in an incomplete form in the prescription.	4	Drug is written in abbreviated form not approved by facility, and not in full.	Tablet Metformin written as T. MTF or MFM. *This may lead to confusion and medication error as it can be interpreted as Mycophenolate.*
		5	Drug name is missing.	Gutt Normal Saline 2 drops TDS but written in prescription as Gutt 2 drops TDS
		6	Dosage form is not stated on prescription.	Phenytoin 100mg TDS is prescribed. *It is unknown if IV or capsule phenytoin is intended.*
		7	Strength of a drug is not stated on prescription.	IV Human Albumin 100ml STAT. *It is unknown which concentration (5% or 20% w/v) is intended*.
3	**Dose** Prescription with name of drug, frequency and duration but without prescribed dose.	8	Intended dose is not stated on prescription.	T. Enalapril BD x 1/12.

NO	MAIN CATEGORIES OF PCIs	SUB-CATEGORIES OF PCIs		EXAMPLE*
4	**Frequency** Prescription with name of drug, dose and duration but without intended frequency.	9	Intended frequency is not stated on prescription.	T. Chlorpheniramine 4mg x 1/52. *It is unknown if the prescriber intends to prescribe ON, TDS or PRN.*
5	**Duration** Prescription with name of drug, dose and frequency but without intended duration.	10	Intended duration is not stated on prescription.	T. Simvastatin 20mg ON.
6	**Doctor's Stamp & Sign** Prescription with complete information on patient's data and drug, but without prescriber's stamp and signature.	11	No prescriber's name.	Prescription without prescriber's name.
		12	No prescriber's stamp.	Prescription without prescriber's stamp.
		13	No prescriber's signature.	Prescription without prescriber's signature.

NO	MAIN CATEGORIES OF PCIs	SUB-CATEGORIES OF PCIs		EXAMPLE*
(2) INAPPROPRIATE REGIMEN				
1	**Drug** Patient takes a drug that has been incorrectly prescribed (prescribing error) or incorrectly dispensed (dispensing error).	1	Inappropriate choice of drug.	IV Vancomycin was prescribed for treatment of MSSA.
		2	Inadequate therapy- including when drug previously not prescribed in the ward.	1) Tab. Aspirin® was not prescribed to patient with NSTEMI without contraindication. *(Recommended as secondary prevention in coronary heart disease).* 2) Patient's own medication was not continued in ward when it is indicated. *(Note: 5 medications would be considered as five interventions)* 3) Patient in pain was not given analgesia.
		3	Inappropriate dosage form/ formulation.	1) Tab. Valproic acid was prescribed and administered through Ryle's tube 2) When recommending conversion from IV to oral or vice versa.

NO	MAIN CATEGORIES OF PCIs	SUB-CATEGORIES OF PCIs		EXAMPLE*
		4	Inappropriate indication.	Patient has normalized potassium level but is still on Potassium supplement.
		5	Potentially inappropriate medication in special populations e.g. geriatric patients.	Information can be gathered from Beer's criteria.
2	**Dose** Total daily dose of a drug prescribed is above or below than recommended/ usual dosage regimen, including situations where the dose prescribed is too high by unintentional error. Inappropriate dose because of a particular parameter such as renal function, weight, age etc.	6	Wrong dose in normal patient.	1) Tab. Pantoprazole 50mg OD was prescribed, instead of 40mg OD. 2) Syr. Paracetamol 450mg TDS was prescribed to a pediatric patient with weight of 20kg, instead of 300mg TDS (usual dose 15mg/kg/dose).
		7	Dosing adjustments for renal dose.	IV Fluconazole 400mg OD was prescribed for a patient with CrCl=15 ml/min, instead of 200mg OD
		8	Dosing adjustments for liver impairment.	Tab. Methotrexate 7.5mg once weekly for rheumatoid arthritis patient with ALT enzyme level > 3x upper limit, instead of reducing dose to 5mg once weekly.

NO	MAIN CATEGORIES OF PCIs	SUB-CATEGORIES OF PCIs		EXAMPLE*
		9	Dosing adjustments for geriatric population.	Initial dose of Tab. Ivabradine 5mg BD was prescribed in patient >75 y/o with stable angina, instead of 2.5mg BD.
		10	Dosing adjustments for underweight/ overweight.	S/C Enoxaparin 60mg BD was prescribed in a patient with weight of 39kg, instead of 40mg BD.
		11	Dosing adjustments for pediatric patients.	A 38 kg pediatric patient was prescribed with Tab. Cefuroxime 570mg BD (15mg/kg). *Max. 500mg/ dose.*
		12	Inappropriate preparation for administration e.g. infusion concentration in fluid restricted patient.	IV N-acetylcysteine in paracetamol poisoning. 100mg/kg in 1L instead of 500ml D5 for fluid overload patient.
3	**Frequency** Total dose of a medicine is correctly prescribed, but frequency is inappropriate.	13	Wrong frequency in normal patient.	Tab. Ampicillin + Sulbactam 375mg TDS was prescribed, instead of 375mg BD.
		14	Frequency adjustments for renal dose.	IV Tramadol 50mg TDS was prescribed for patient with CrCl≈20ml/min, instead of 50mg BD.
		15	Frequency adjustments for liver impairment.	Tab. Voriconazole 200mg BD was prescribed in patient with liver impairment.

NO	MAIN CATEGORIES OF PCIs	SUB-CATEGORIES OF PCIs		EXAMPLE*
4	**Duration** Duration of prescribed drug is inappropriate.	16	Inappropriate duration for a therapy with precise indication.	Duration of Tab. Augmentin® for eradication phase in melioidosis was prescribed for less than 3 months.
5	**Polypharmacy** Multiple drugs from same therapeutic class were prescribed together and which may result in adverse drug interactions. Inappropriately taking two brands of same generic drug. **Not considered polypharmacy if intended by doctor e.g. if patient is taking inhaler ICS/LABA, ICS dose may be increased by adding a separate ICS inhaler.*	17	Co-prescribe same drug class/ same drug.	1) Patient was prescribed with Tab. Mefenamic acid and Tab. Diclofenac. 2) Tab. Felodipine was prescribed with Tab. Exforge® (Amlodipine/ Valsartan). 3) Two different brands of Acetylsalicylic acid tablet were taken by patient at the same time. 4) Patient is prescribed Aspirin® 150mg OD and 75mg OD at the same time.

NO	MAIN CATEGORIES OF PCIs	SUB-CATEGORIES OF PCIs		EXAMPLE*
6	**Contraindication** A drug or drug group is prescribed for patient who previously had adverse reaction. Drug prescribed to patients who are contraindicated due to their medical conditions.	18	Contraindication against patient with history of allergy.	Augmentin® was prescribed in a known case of Penicillin allergy.
		19	Contraindication against patient with history of adverse reaction.	Oculogyric crisis due to Metoclopramide.
		20	Contraindication in pregnancy (Category X).	Tab. Warfarin was prescribed for a first trimester pregnant patient in non-mechanical heart valve conditions.
		21	Contraindication in special population.	Fondaparinux was prescribed in end stage renal failure (ESRF) patient.
7	**Drug Interaction** Pharmacological result either desirable or undesirable, of drugs interacting with other drugs or non-prescription drugs, food or disease states.	22	Potential/ actual drug-drug interactions.	1) Amlodipine 10mg-Simvastatin 40mg *(Simvastatin dose should not exceed 20mg/day).* 2) Levothyroxine and oral calcium supplements are prescribed together. *Separate the doses of Levothyroxine and oral calcium supplement by at least 4 hours apart.*

NO	MAIN CATEGORIES OF PCIs	SUB-CATEGORIES OF PCIs		EXAMPLE*
		23	Potential/ actual drug-disease interactions.	Amiodarone was prescribed in hypothyroid/ hyperthyroid patient.
		24	Potential/ actual drug-food interactions.	Warfarin was taken together with garlic supplements.
8	**Incompatibility** Undesirable reaction that occurs between drug and solution, container or another drug.	25	Inappropriate diluent used.	Amphotericin B diluted in normal saline. *Note: A standard dilution protocol adhered in the institution should be specified.*
		26	Incompatible drugs when mixed together.	V Pantoprazole and IV Amiodarone mixed together through Y-site infusion.
(3) MISCELLANEOUS				
1	**Wrong Patient** Drug prescribed for wrong patient.	1	Wrong patient for the drug.	Drug intended for patient A was wrongly prescribed for patient B.
2	**Drug Not in Formulary** Drug prescribed is not in the formulary, either in Ministry of Health (MOH) Formulary or Hospital Formulary.	2	Drug prescribed not in MOH Medicines Formulary.	Sterimar® Nasal Spray 1 spray PRN.
		3	Drug prescribed available in MOH Formulary but not in Hospital Formulary.	Tab. Mycophenolate Mofetil started in hospital without nephrology specialist.

NO	MAIN CATEGORIES OF PCIs	SUB-CATEGORIES OF PCIs		EXAMPLE*
3	**Drug Administration Error**	4	Wrong patient.	Drug prescribed for patient A, but wrongly given to patient B.
		5	Wrong medication.	IV Augmentin® administered to patient instead of medication prescribed, IV Cloxacillin.
		6	Wrong time (e.g. wrong serving time or incorrect administration).	1) Tab. Warfarin 2mg OD given at 8am instead of 6pm. 2) IV Vancomycin 500mg given bolus instead of intravenous infusion over 1 hour.
		7	Wrong dose.	1) Syr. Morphine prescribed 5mg 4Hourly, but given to the patient 10mg 4Hourly. 2) Wrong infusion rate e.g. IV Morphine ordered at 1ml/hour but run at 2ml/hour.
		8	Wrong frequency.	Syr. Morphine prescribed 5mg 4hourly but given 5mg 6hourly.

NO	MAIN CATEGORIES OF PCIs	SUB-CATEGORIES OF PCIs		EXAMPLE*
		9	Wrong duration.	Mixt. Potassium Chloride prescribed 15ml TDS x 3/7 but the drug was continued to be administered after 3 days.
		10	Wrong route.	1) Syr. Chloral Hydrate administered to patient via IV route. 2) IV Potassium Chloride diluted in > 60mmol/L but run via peripheral line.
		11	Drug not served.	Simvastatin 20mg ON was prescribed but not served without any appropriate reason.
4	**Unclear Handwriting** Unclear/ illegible writing – unable to decipher prescription, and prone to medication error.	12	Unclear handwriting.	-
5	**Authenticity of Prescription/ Prescriber**	13	Drug prescribed by unauthorized prescriber. *Doctor's name is not in updated prescriber list.*	Drug prescribed by a doctor who has been transferred to another hospital.

NO	MAIN CATEGORIES OF PCIs	SUB-CATEGORIES OF PCIs		EXAMPLE*
6	**Suggest for Vital Signs Monitoring/ Laboratory Investigation**	14	Suggestion for vital signs monitoring.	Patient in pain, suggested for pain score monitoring.
		15	Suggestion for laboratory investigation.	Patient on oral warfarin suggested for INR monitoring.
7	**TDM**	16	Recommendation for sampling time, dose/ dosing interval changes or re-sampling.	Newly started IV Vancomycin 500mg QID, sampling time for TDM suggested on fourth dose.
		17	Others.	Any other suggestions related to TDM. e.g. suggest for appropriate tube to be used for TDM.
8	**TPN**	18	Adjustment of calories.	Suggest for amino acid delivery up to maximum 4g/kg/day to optimize calories and weight gain.
		19	Adjustment of electrolytes, macronutrients/ micronutrients.	Suggest to add high potassium in TPN bag for persistent hypokalemia patient or to reduce /omit potassium in TPN bag in view of hyperkalemia.
		20	Others.	Any other suggestions related to TPN.

C. Description of Requests / Intervention Encountered

Interventions done and information provided in section B need to be documented in section C (if manual). The description of interventions/ drug information shall be made in simple and concise manner. It is recommended to document the interventions made using numbering system (e.g. inappropriate frequency is 2.3). Identification of patient shall be written in the description of intervention for traceability purpose.

D. Follow Up Required

Intervention which requires further follow up/ monitoring shall be documented in the follow-up column. It is an important means of communication to ensure continuity of pharmaceutical care plan.

Example is shown as below:

C: DESCRIPTION OF REQUESTS / INTERVENTIONS ENCOUNTERED

2.3 Lara RN:123 corrected Ertapenem 1g BD to 1g OD

D: FOLLOW-UP REQUIRED

NO.	FOLLOW-UP	CHECKLIST	SIGN
	Lara RN: 123 check latest renal function		
	& to adjust Ertapenem dose accordingly		

.....
Pharmacist's Sign & Stamp
Date:

6. PATIENT REFERRAL

Ensuring continuity of care when patients are transferred from one hospital to another institution requires effective cooperation between fellow pharmacists and doctors to whom responsibilities are transferred. The Patient Referral Note (CP4) should serve as a pharmacy discharge summary to be given to the referred facility such as primary care, pharmacist or doctor. This form also can be given to patient for provision of further counseling and be informed that he/ she is required to see the pharmacist in the follow-up facility.

6.1 OBJECTIVES

1. Documentation of pharmacist notes pertaining to unresolved pharmaceutical care issues or care issues that require further follow-up/attention after discharge.

2. A communication tool between the ward pharmacists and other healthcare providers in ensuring continuity of patient care.

6.2 WORKING NORM

1. Patients who require continuity of care in other health care settings shall be referred by pharmacist using CP4 form.

2. Referral by pharmacist can be classified either as inter-facility referral (other hospital or health clinic) or intra-facility referral (other units / departments within the same healthcare facility).

3. The form shall be given to patient to bring during the next follow up appointment at the referred facility. Carbonized or second copy of the form shall be kept by referring facility (if manual).

6.3 DOCUMENTATION

Patient Referral Note (CP4) consist of six parts. The following describes the information required in the different parts of the form:

NO	PART	DESCRIPTION
1	Referring & Referred Facility, Patient Particular	• Name of referring pharmacy department • Name of referred facility. • Patient's name, medical registration number & identification number.
2	Diagnosis	Current diagnosis of the patient.
3	List of Current Drug	Latest prescribed regimen, including the name of the drug, dose, frequency & expected duration of the treatment.
4	Assessment of Understanding & Compliance to Medicine Therapy	Assessment on patients understanding & compliance to the medications (not applicable if patient has not been counselled): • Choose whether patient has or hasn't been counseled on the medication/ device. • Assess the level of patient's adherence to the prescribed therapy. • Select the type of adherence tool (if relevant).
5	Intervention/ Requests Encountered	Type of follow up required by patient. Tick in the relevant column or describe the follow up plan required in the '*Others'* column.
6	Signature & Stamp of Referring Pharmacist	Name & contact number of the referring pharmacist for further enquiries.

7. MEDICATION COUNSELING

Non-adherence to medication can be due to numerous reasons. Some of the reasons are lack of understanding, inappropriate/ inadequate directions, complicated regimens or failure to fill a prescription. Ward pharmacists ought to conduct a patient-oriented interview, review medications, make appropriate suggestions to prescribers and/ or patients themselves, and monitor patient outcome. Pharmacist can take this opportunity to increase patients' knowledge on their pharmacotherapy and improve compliance to medications by giving professional advice, correct instructions and provision of aids wherever necessary during counseling session.

7.1 OBJECTIVES

1. To enhance patient's knowledge on their pharmacotherapy.

2. To improve patient's compliance/ adherence to medications by professional advice, proper instructions and provision of aids where necessary.

7.2 SCOPE OF SERVICE

Types of medication counseling in ward include:

a. Individual counseling (bedside and discharge)

b. Group counseling

c. Virtual counseling

For documentation and workflow, please refer to *"Garis Panduan Kaunseling Ubat-Ubatan Edisi Ke-3"* and *"Garis Panduan Pelaksanaan Kaunseling Ubat-Ubatan Secara Maya/Virtual" (2021).*

APPENDICES

Appendix 1	MyMAAT Form
Appendix 2	Medication History Assessment Form (CP1)
Appendix 3	Pharmacotherapy Review (CP2): Hospital without IT System
Appendix 4	Pharmacotherapy Review (CP2): Hospital with IT System
Appendix 5	Clinical Pharmacy Report Form (CP3)
Appendix 6	Patient Referral Note (CP4)

APPENDIX 1: MYMAAT FORM

Program Perkhidmatan Farmasi
Kementerian Kesihatan Malaysia

Universiti Kebangsaan Malaysia
The National University of Malaysia

ALAT PENGUKURAN TAHAP KEPATUHAN PESAKIT TERHADAP PENGAMBILAN UBAT DI MALAYSIA
MALAYSIA MEDICATION ADHERENCE ASSESSMENT TOOL (MyMAAT)

Hospital/ *Hospital*			
Nama Pesakit/ *Patient's Name*		**No. Pendaftaran/** *Reg. No.*	
		Tarikh/ *Date*	
No. KP/ *IC No.*		**Lokasi/** *Location*	

Bahagian I : Persepsi Tahap Kepatuhan Pesakit Terhadap Pengambilan Ubat-Ubatan
Part I : Perception on Patient's Adherence Towards Medication

Soal selidik ini dijalankan untuk mendapatkan maklumat mengenai amalan pengambilan ubat oleh pesakit dan sebaik-baiknya diisi oleh pesakit/ penjaga.
***Sila tandakan (√) pada kotak yang berkenaan.**

This survey will ask about your current practice related to medication taking and preferably to be filled by patient/ care taker.
** Please tick (√) in the appropriate boxes.*

Bil./ *No.*	**Perkara/** *Item*	**Skor/***Score*				
		Sangat Tidak Setuju/ *Strongly Disagree*	**Tidak Setuju/** *Disagree*	**Neutral/** *Neutral*	**Setuju/** *Agree*	**Sangat Setuju/** *Strongly Agree*
		5	**4**	**3**	**2**	**1**
1.	**Dalam sebulan yang lepas, saya kerap tidak mengambil ubat seperti yang diarahkan oleh doktor.** *In the past one month, I frequently failed to take my medication in accordance with the doctor's instruction.*					
2.	**Dalam sebulan yang lepas, saya mengurangkan pengambilan ubat apabila berasa sihat.** *In the past one month, I reduced my medication intake when I felt better.*					
3.	**Dalam sebulan yang lepas, saya mengambil ubat secara berselang-seli.** *In the past one month, I took my medication alternately.*					
4.	**Saya sering terlewat/terlepas untuk temujanji pengambilan ubat susulan di kaunter farmasi.** *I was often late on / missed the appointment date to get the supplies of my follow-up medication at the pharmacy counter.*					

Bil./ *No.*	**Perkara/** *Item*	**Skor/***Score*				
		Sangat Tidak Setuju/ *Strongly Disagree*	**Tidak Setuju/** *Disagree*	**Neutral/** *Neutral*	**Setuju/** *Agree*	**Sangat Setuju/** *Strongly Agree*
		5	**4**	**3**	**2**	**1**
5.	**Daripada bekalan ubat yang diterima, saya mempunyai banyak lebihan ubat di rumah.** *I have excess supply of the prescribed medication at home.*					
6.	**Saya hanya mengambil sebahagian sahaja daripada ubat yang diberikan kerana merasakan ianya tidak perlu/tidak penting.** *I did not fully comply with the prescriptions because I felt it was unnecessary/insignificant.*					
7.	**Dalam sebulan yang lepas, saya sering terlupa untuk mengambil ubat saya.** *In the past one month, I frequently failed to remember to take my medication.*					
8.	**Saya sering mengurangkan pengambilan ubat kerana bimbang akan kesan sampingnya terhadap badan.** *I regularly take less medication than prescribed for fear of the side effects to my body.*					
9.	**Saya tidak mengambil ubat apabila tiada sesiapa mengingatkan saya.** *I will miss/not take my medication if no one reminds me to do so.*					
10.	**Saya tidak begitu pasti tentang dos ubat yang perlu diambil setiap hari.** *I am uncertain about my daily medication doses.*					
11.	**Saya tidak boleh menguruskan pengambilan ubat saya dengan baik.** *I am unable to manage my medication intake properly.*					
12.	**Ketiadaan sokongan atau pertolongan dari orang tersayang menyebabkan saya tidak bermotivasi untuk mengambil ubat yang diberikan oleh doktor.** *Without support or help from the loved ones, I lack motivation to take my medication as prescribed by the doctor.*					
	JUMLAH/ *TOTAL* **Skor minimum = 12; Skor maksimum = 60** *Minimum score = 12; Maximum score = 60*					

SOAL SELIDIK TAMAT/ *END OF SURVEY*

TERIMA KASIH/ *THANK YOU*

Program Perkhidmatan Farmasi
Kementerian Kesihatan Malaysia

Universiti Kebangsaan Malaysia
The National University of Malaysia

ALAT PENGUKURAN TAHAP KEPATUHAN PESAKIT TERHADAP PENGAMBILAN UBAT DI MALAYSIA
MALAYSIA MEDICATION ADHERENCE ASSESSMENT TOOL (MyMAAT)

Bahagian II : Kategori Kepatuhan Pesakit Terhadap Pengambilan Ubat-Ubatan
Part II : Category of Patient's Adherence Towards Medication

Kategori kepatuhan mengikut jumlah skor adalah seperti berikut:
Patient's adherence category based on total score as stated below:

Kategori/ *Category*	**Jumlah Skor/** *Total Score*
Kepatuhan baik/ *Good adherence*	≥ 54
Kepatuhan sederhana dan lemah/ *Moderate and poor adherence*	< 54

Bahagian III : Rumusan Tahap Kepatuhan Pesakit Terhadap Pengambilan Ubat-Ubatan
Part III : Summary on Patient's Adherence Towards Medication

Untuk diisi oleh pegawai farmasi/ *To be filled by pharmacist*.

Jumlah Skor/ *Total Score*	
Kategori Kepatuhan/ *Adherence Category*	☐ **Kepatuhan baik/** *Good adherence* ☐ **Kepatuhan sederhana dan lemah/** *Moderate and poor adherence*
Nota Pegawai Farmasi/ *Pharmacist's Note*	

Tandatangan & Cop Pegawai Farmasi/ : *Pharmacist's Signature & Stamp*

Tarikh/ : *Date*

APPENDIX 2:
MEDICATION HISTORY ASSESSMENT FORM (CP1)

MEDICATION HISTORY ASSESSMENT FORM

CP 1

PHARMACY DEPARTMENT, HOSPITAL.....

FORM TO BE FILLED BY THE PHARMACIST UPON PATIENT ADMISSION

A: PATIENT BIODATA

Full Name : _____

Gender : M / F Age : _____

RN/IC : _____

Address : _____

_____ Phone No : _____

Admission Date/Time : _____

Ward/Bed : _____

PMHx : _____

Last Discharge / Review Date : _____

B: REASON FOR ADMISSION

C: ALLERGY & ADVERSE DRUG REACTION

D: DRUG HISTORY

Patient's own drugs checked?

☐ Yes ☐ No

Source of medication list :

MEDICATION *(Specify strength)*	DOSE	FREQUENCY	BALANCE FROM PREVIOUS SUPPLY	WRITE *C* FOR CONTINUE, *DC* FOR DISCONTINUE, *WH* FOR WITHOLD	COMMENTS

NON-PRESCRIPTION MEDICATION *(Includes Herbal/Vitamin/Other Supplements)*	REASON FOR TAKING	BALANCE/COMMENTS

E: PHARMACIST NOTES

Pharmacist Sign & Stamp : _____ **Time / Date :** _____

Original : To be kept in patient's folder
Duplicate : To be kept by Pharmacy

Pin. 1/10

APPENDIX 3: PHARMACOTHERAPY REVIEW (CP2) - HOSPITAL WITHOUT I.T. SYSTEM

PHARMACOTHERAPY REVIEW (CP2)
Pharmacy Department, Hospital _____
Ward: _____ Bed: _____

Pin.1/13

ALLERGY:

A. DEMOGRAPHIC DATA

Name : **MRN :** **Age :** **Gender : M / F** **Race : M / C / I / Others** **Ht/Wt :** **DOA :**

Chief Complaint:	**History of Present Illness:**	**Past Medical History:**
Review of System:	**Past Medication History:**	**Social/ Family History:**

BP:	RR:
PR:	T:
RBS:	SpO2:

Compliance Evaluation:

Smoking	
Alcohol	
Drug Abuse	
Pregnant	

Diagnosis/Surgical Procedure:

B. LABORATORY INVESTIGATION

		Date / Normal Range	1	2	3	4	5	6	7	8	9	10
FBC	TWBC	4–11 x10/L										
	Hb	11.5-16.5 g/100mL										
	Platelet	150-400 x10/L										
BUSE / Renal Profile	Urea	1.7-8.3 mmol/L										
	Na^+	135-145 mmol/L										
	K^+	3.5-5.0 mmol/L										
	Cl^-	96-106 mmol/L										
	SCr	64-122 umol/L										
	CrCl	105-150 ml/min										
	Ca^{2+}	2.1-2.6 mmol/L										
	Mg^{2+}	0.7-1.3 mmol/L										
	$PO4^-$	0.8-1.45 mmol/L										
LFT	Albumin	35 – 50 g/L										
	T.Bilirubin	<20 umol/L										
	T.Protein	66 – 87 g/L										
	ALP	53 – 141 u/L										
	ALT	<32 u/L										
Coag.	PT	10-13.5 sec										
	APTT	26 – 42 sec										
	INR	<1.5										
CE	CK	24 – 195 u/l										
	LDH	0 – 248 u/l										
	AST	<37 u/l										
ABG	pH	7.35-7.45										
	pCO2	35-45mmHg										
	pO2	72-100mmHg										
	HCO3	22-29mmol/L										
	O2 sat	90-95%										
Others	RBS	< 11 mmol/L										
I/O	Input											
	Output											
	Balance											

C&S	Date (Sampling)	Date (Result)	Source/Sample	Microorganism	Sensitivity	Resistance

C. WARD MEDICATION

	Drug/Regimen	Start Date	Stop Date	Indication/ Reason for Change	**Reconciliation Note** **S**-Stopped / **W**-Withold/ **D**-Continue on Discharge (+Duration)
ANTIBIOTICS					
OTHER MEDICATIONS					

D. PHARMACEUTICAL CARE PLAN

Date	Pharmaceutical Care Issues	Pharmacist's Recommendations / Plan	Outcome

Pharmacist's Sign & Stamp: **Reviewed by:**

APPENDIX 4: PHARMACOTHERAPY REVIEW (CP2) - HOSPITAL WITH I.T. SYSTEM

Pin.1/13

PHARMACOTHERAPY REVIEW Pharmacy Department, Hospital _____ CP2

DRUG ALLERGY

A. DEMOGRAPHIC DATA

Name : **MRN :** **Age :** **Gender : M / F**

Race : M / C / I / Others **Ht/Wt :** **DOA :** **Ward/Bed :**

Chief Complaint:

Diagnosis/Impression:

B. MEDICATION

ANTIBIOTIC REGIMEN	DATE START	DATE STOP	INDICATION/ REASON	RECONCILIATION NOTE S-STOP W-WITHOLD D-CONTINUE ON DISCHARGE (+ DURATION)

Date	Source	M/organism	Sensitivity	Resistance
Sampling: Result:				
Sampling: Result:				
Sampling: Result:				

OTHER DRUG REGIMEN	DATE START	DATE STOP	INDICATION/ REASON	RECONCILIATION NOTE S-STOP W-WITHOLD D-CONTINUE ON DISCHARGE (+ DURATION)

C. DRUG-RELATED ISSUES

- **REGIMEN ISSUES (Drug/Dose/Duration/Frequency/Polypharmacy/Contraindication/Significant Drug interaction/Incompatibility)**
- **MISCELLANEOUS (Drug administration error/Suggestion on investigation/TDM/TPN)**

Date	Issues	Modification/Monitoring required/Interaction	Reason	Status of Intervention

D. INFORMATION PROVIDED (ADR/Drug toxicity/Drug dosage/Therapeutic efficacy/Drug indication/Drug interaction/Pharmacokinetic/TPN/General product information/Pharmaceutical availability/Pharmaceutical compatibility/Pharmaceutical identification)

E. PHARMACIST'S NOTES

Pharmacist's Sign & Stamp: Reviewed by:

APPENDIX 5: CLINICAL PHARMACY REPORT FORM (CP3)

CP3

CLINICAL PHARMACY REPORT FORM

Pharmacy Department, Hospital ……..

A: WARD PHARMACY ACTIVITY

Date	:	**Routine Rounds**	
Ward	:	**Grand Rounds**	
Task	: Full Time / Part Time	**Pharmacist Rounds**	
Physician(s)	:	**Number of Cases Clerked**	
		Number of Cases Reviewed	
		Number of Patients in Ward	
		Number of Medication History (CP1) Taken	

B: INTERVENTIONS / REQUESTS ENCOUNTERED

Interventions	No.	Description	Number of Interventions	Number of Interventions Accepted	Request / Information Provided	Number	Total
(1) Incomplete Prescription	1.1	Patient data			**Adverse Drug Reaction**		
	1.2	Drug			**Drug Toxicity**		
	1.3	Dose			**Drug Dosage**		
	1.4	Frequency			**Therapeutic Efficacy**		
	1.5	Duration			**Drug Indication**		
	1.6	Dr's Stamp & Sign			**Drug Interaction**		
(2) Inappropriate Regimen	2.1	Drug			**Pharmacokinetics**		
	2.2	Dose			**TPN**		
	2.3	Frequency			**General Product Information**		
	2.4	Duration			**Pharmaceutical Availability**		
	2.5	Polypharmacy			**Pharmaceutical Compatibility**		
	2.6	Contraindication			**Pharmaceutical Identification**		
	2.7	Drug Interaction					
	2.8	Incompatibility					
(3) Miscellaneous	3.1	Wrong Patient					
	3.2	Drug Not in Formulary					
	3.3	Drug Administration Error			**TOTAL INFORMATION PROVIDED**		
	3.4	Unclear Handwriting					
	3.5	Authenticity of Prescription/ Prescriber					
	3.6	Suggest For Vital Signs Monitoring/ Laboratory Investigation					
	3.7	TDM					
	3.8	TPN					
TOTAL INTERVENTIONS							

COUNSELLING	Number of Sessions	Total Number of Patients
Bedside Counselling		
Discharge Counselling		
Group Counselling		
GRAND TOTAL		

C: DESCRIPTION OF REQUESTS / INTERVENTIONS ENCOUNTERED

D: FOLLOW-UP REQUIRED

NO.	FOLLOW-UP	CHECKLIST	SIGN

……..
Pharmacist's Sign & Stamp
Date:

Pin. 1/13

APPENDIX 6: PATIENT REFERRAL NOTE (CP4)

CP4

NOTA RUJUKAN PESAKIT
Jabatan Farmasi, Hospital/ Klinik Kesihatan _____

Kepada: Pegawai Perubatan/ Pegawai Farmasi/ Penolong Pegawai Perubatan/ Jururawat
Hospital/Klinik Kesihatan _____

PER: PESAKIT: _____ _____ _____
NAMA **MRN** **NO. K/P**

Pesakit ini **TELAH/BELUM DIBERI KAUNSELING UBAT-UBATAN** untuk dinilai tahap kefahaman/kepatuhan terhadap terapi ubat yang dipreskripsikan. Diharap pihak tuan/puan dapat memberi kaunseling dan penilaian susulan yang diperlukan untuk meningkatkan keberkesanan rawatan.

2. DIAGNOSIS: _____

3. SENARAI UBAT TERKINI:

NAMA UBAT/DOS DAN FREKUENSI/JANGKAMASA RAWATAN

4. PENILAIAN KEFAHAMAN & KEPATUHAN TERHADAP TERAPI UBAT (tidak berkenaan jika pesakit belum dikaunsel)
   a. Pesakit telah dikaunsel dan faham tentang ubat/alat bantuan pengubatan yang dipreskripsikan — Ya ☐ Tidak ☐
   b. Tahap kepatuhan terhadap ubat-ubatan — Memuaskan ☐ Tidak memuaskan ☐
   c. Alat bantuan kepatuhan — *Pill box* ☐ Risalah ubat ☐ Lain-lain ☐ Tiada ☐

5. TINDAKAN SUSULAN YANG DIPERLUKAN *(Sila tanda (√) di kotak yang disediakan)*

☐ Kaunseling ubat-ubatan dan alat bantuan pengubatan yang dipreskripsikan
☐ Menilai kepatuhan dan kefahaman terhadap terapi ubat yang dipreskripsikan
☐ Pemonitoran terapeutik : (sila nyatakan) _____
☐ Isu penyimpanan ubat-ubatan
☐ Lain-lain: (sila nyatakan) _____

Sekian, terima kasih.

_____
Tandatangan dan Cop Pegawai Farmasi
No. Tel. :
Tarikh:

(Salinan asal: untuk dihantar kepada fasiliti yang dirujuk)
(Salinan pendua: untuk simpanan Jabatan Farmasi)

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NOTES

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