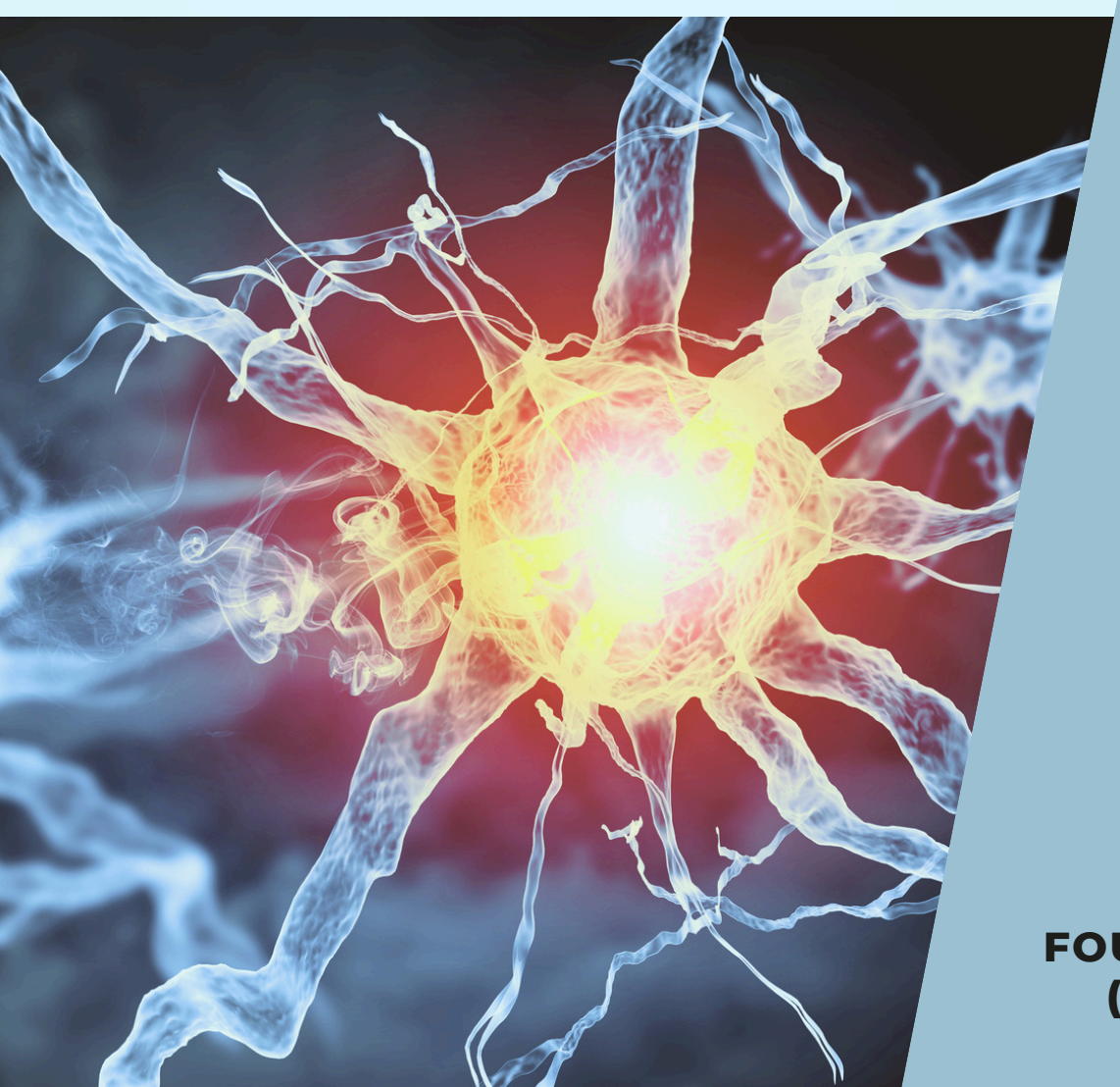
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Ministry of Health Malaysia
Pharmaceutical Services Programme

PAIN PHARMACOTHERAPY SERVICES: GUIDELINE FOR PHARMACY



FOURTH EDITION
(YEAR 2026)

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PREFACE

Madam Zuhaini binti Mukrim
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Pain pharmacotherapy services are specialised healthcare services focused on using medications safely and effectively across a wide spectrum of pain conditions.

Pharmacists, as integral members of the multidisciplinary healthcare team, play a vital role in optimising pain management and thereby enhancing patients' quality of life. They contribute through a wide range of responsibilities, including the provision of clinical recommendations, the promotion of quality improvement initiatives and support for other relevant technical activities aimed at improving pain management practices.

This guideline provides comprehensive guidance on the various pain pharmacotherapy services that pharmacists can deliver to achieve optimal patient outcomes. I extend my sincere appreciation to all who have contributed to the revision of this guideline and I trust that the profession will continue to strive towards delivering the highest standard of pain pharmacotherapy services nationwide.

Thank you.

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CHAPTER 1: INTRODUCTION

1.1 OVERVIEW OF PAIN

The definition of pain has been revised by the International Association for the Study of Pain (IASP) in year 2020 as “An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage”. Pain is subjective and patient’s self-reporting is essential for appropriate management. Undertreatment of pain is a substandard medical practice and could lead to negative impact on social aspects including depression and loss of job.[1]

A basic approach to pain management should include the ability to RECOGNISE pain, ASSESS the type of pain and to provide appropriate TREATMENT.[3] Treatment approaches to pain include pharmacological and non-pharmacological approaches including interventional procedures, physical therapy and psychological measures.

The World Health Organization (WHO) has estimated that approximately 80 percent of the world population has either insufficient or no access to treatment for moderate to severe pain. Every year, ten millions of people around the world suffer from such pain without treatment. Despite the medications to treat pain being cheap, safe, effective and generally straightforward to administer, there are many reasons that discourage adequate pain management including cultural, medical and religious impediments as well as entrenched political and legal barriers.

In year 2001, the Joint Commission Accreditation Standards for Health Care Organization had adopted pain management standards stating that every patient has a right to have pain assessed and treated.[5] A multidisciplinary healthcare team approach is the best to achieve optimum outcome in the management of pain. A retrospective review at Saint John’s Health Centre, California from August 2006 to July 2007 showed that Pain Management Pharmacist’s discharge facilitation had saved approximately $97,200 for the 12-month period.[5]



CHAPTER 1: INTRODUCTION

In terms of pain medication safety, National Pharmaceutical Regulatory Agency (NPRA), Malaysia had stated 6121 Adverse Drug Reaction (ADR) cases were reported from June 2024 to June 2025 involving 13 types of NSAIDs (Non-Steroidal Anti-inflammatory Drugs) with the incidence of ADR by categories as shown below:

Table 1: Incidence of NSAIDs-related ADR by categories

Categories of ADR Reported for NSAIDs Use	Incidence
Skin and subcutaneous disorders	34%
Eye disorders	29.5%
General disorders and administration site condition	11.8%
Respiratory, thoracic and mediastinal disorders	11.6%
Gastrointestinal disorders	10.8%

In terms of patient outcome, a systematic review evaluating the effectiveness of pharmacist in pain management has shown significant positive impacts in patient outcomes.[6] Participation by pharmacist in multidisciplinary pain management team leads to mark reduction of pain intensity, improved physical functioning as well as improved patient satisfaction to the treatment.

Therefore, pharmacists play an essential role in ensuring safety and safeguarding the cost effectiveness of pain medications to achieve best overall patient outcome.



CHAPTER 1: INTRODUCTION

1.2 PAIN FREE PROGRAMME (PFP) AND PAIN AS THE 5TH VITAL SIGN (P5VS)

With the growing concern of undermanagement of pain, the idea of evaluating pain as a vital sign was adopted and implemented as a nationwide policy in year 2008. The Ministry of Health (MOH) Malaysia, through a circular from the Director General of Health has recognised pain as the 5th vital sign (P5VS) as a core strategy to improve pain management in MOH facilities since 2008. It is one of requirements for accreditation as Pain Free Hospital / Health Clinic.[3]

Pain Free Programme (PFP) is a concept adopted in order to improve pain management in hospital using a multidisciplinary team approach and incorporating various methods for the relief of pain.

The initiative was launched by the former Minister of Health, Datuk Seri Liow Tiong Lai on 5th December 2011 whereby the minister had introduced 'pain-free' services in three government hospitals in a pilot project, namely Hospital Putrajaya, Hospital Selayang and Hospital Raja Permaisuri Bainun, Ipoh.

Consequently, many hospitals have joined the initiatives leading to the establishment of the National PFP Committee in 2013 consisting of healthcare professionals from various disciplines.[6]

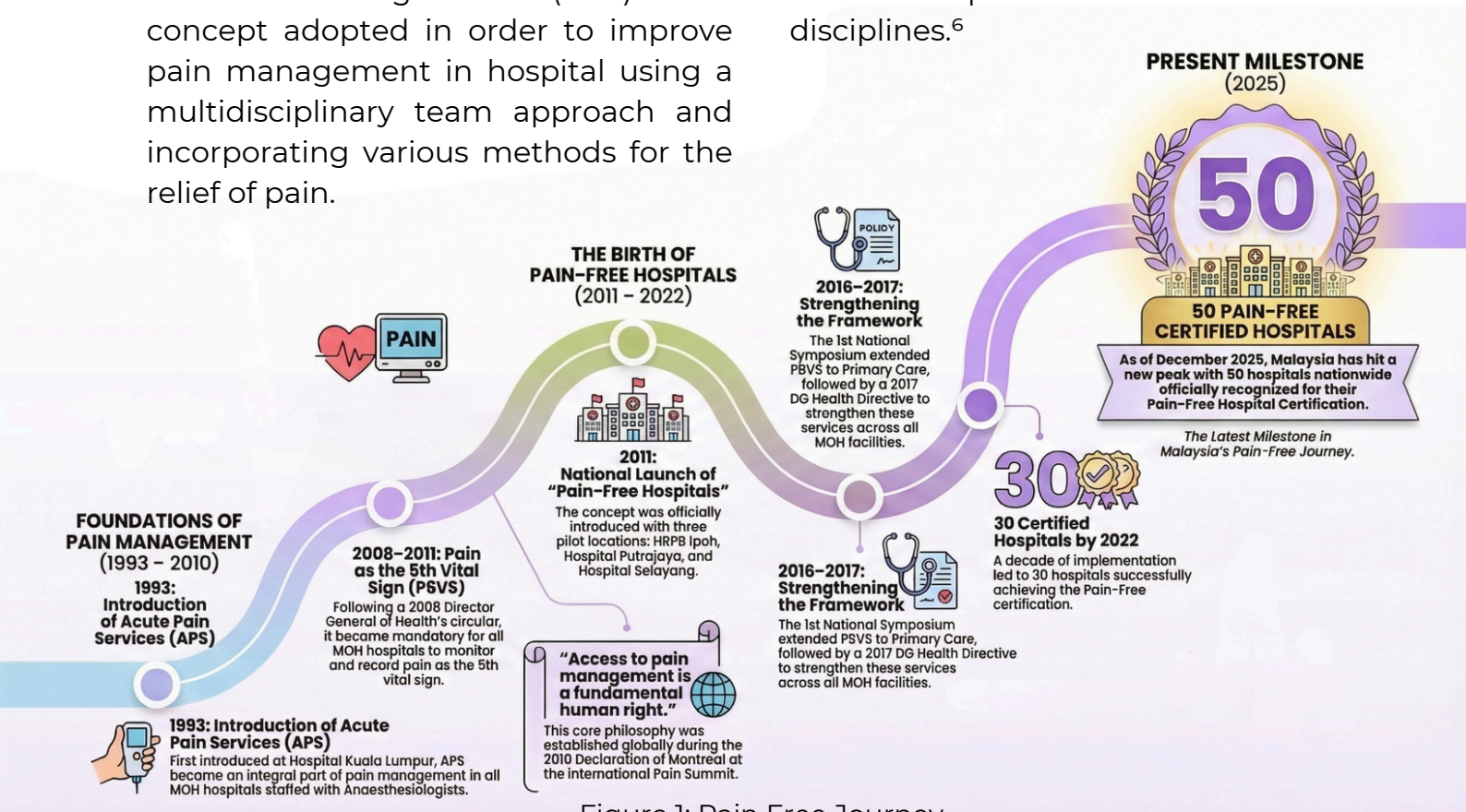


Figure 1: Pain Free Journey



CHAPTER 1: INTRODUCTION

The objectives of PFP are pain free surgery, pain free labour, pain free procedures, pain free rehabilitation and pain free discharge. The main components of PFP are rational use of anaesthesia and analgesia, minimally invasive surgery (MIS) and day care surgery (DCS) as well as the incorporation of non-pharmacological techniques including traditional and complementary medicines (Figure 2).[4]

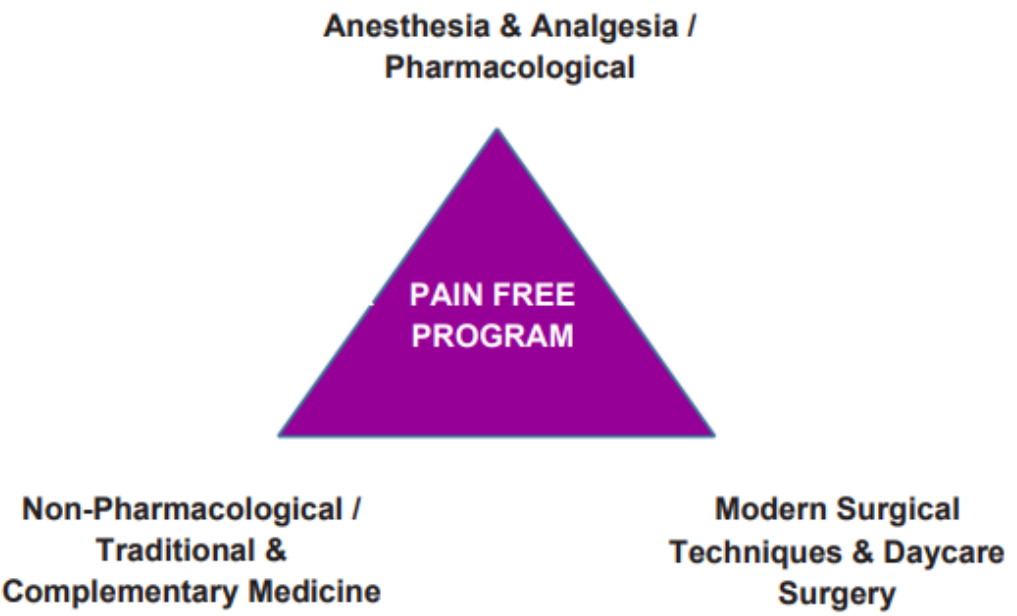


Figure 2: The main components of PFP



1.3 CLASSIFICATION OF PAIN

Table 2: Types of pain

Basis of Classification	Types of pain	Description
Duration	Acute	Pain of recent/ sudden onset (e.g. pain after surgery)
	Chronic	Last more than 3 months Pain persists even after wound is healed
Cause	Cancer	Progressive, many different causes May be a mixture of acute and chronic
	Non-cancer	Acute or chronic pain (e.g. surgery, injury, degenerative) The cause may or may not be obvious
Mechanism	Nociceptive 'Physiological Pain'	Obvious tissue injury or illness Somatic: bones and tissues (well localized) Visceral: abdomen, thoracic cavity (sharp, throbbing, aching)
	Neuropathic 'Pathological Pain'	Nervous system damaged or abnormality May not see tissue injury, not well localized Burning, tingling, pins and needles, shooting



Table 3: Duration; Differences between acute and chronic pain

Aspect	Acute Pain	Chronic Pain
General	A symptom of underlying damage or disease. No central nervous system involvement.	A chronic disease of nervous system. Central nervous system may be dysfunctional.
Onset	Begins suddenly, usually due to an injury.	Might have originated with an initial trauma/injury or infection, or there might be an ongoing cause of pain. However, onset may be insidious and many people may suffer from chronic pain in the absence of any past injury or evidence of body damage.
Duration	Less than 3 months, resolves when the injury heals and/ or when the underlying cause of pain has been treated.	Usually more than 3 months. Chronic pain persists despite the fact that the injury has healed.
Characteristics of Pain	Severity correlates with amount of damage.	Severity will not correlate with the amount of damage. The nature of the disease is that the pain level in patients fluctuates, varying between 'bad days' and 'good days'.



(con't) Table 3: Duration; Differences between acute and chronic pain

Aspect	Acute Pain	Chronic Pain
Psychological Effects	Less but unrelieved pain can cause anxiety and sleep deprivation (which improve after pain is relieved).	Often. May cause depression/ anxiety, anger, fear, sleep disturbances and social withdrawal.
Presence of Signal	Acute pain serves as a warning sign of damage such as injury, disease or threat to the body.	Chronic pain does not signal damage.
Common Causes	Surgery, fracture, burns or cuts, labour and childbirth, myocardial infarction and inflammation such as abscess and appendicitis.	Headache, low back pain, cancer pain, arthritis pain, chronic pancreatitis, chronic abdominal pain from 'adhesion colic'. Neuropathic pain such as post herpetic neuralgia (PHN), diabetic peripheral neuropathy, post spinal cord injury pain and central post stroke pain.



Table 4: Mechanism; Differences between somatic, visceral and neuropathic pain

Type of Pain	Somatic	Visceral	Neuropathic
Patho-physiology	Damage to skin and connective tissues by cancer or other injury leading to inflammation	Internal organs stretching or distension from cancer infiltration or obstruction	Damage to sensory nerves due to injury or infiltration from cancer leading to abnormal signalling
Clinical Description	• Sharp, stabbing, aching, throbbing • Well localised • Worse on movement	• Dull aching, colicky, gnawing, cramping • Poorly localised • May be referred to other somatic site	• Numb, burning, electric shock, pins and needles, shooting, prickling • Dermatomal distribution
Examples	• Musculoskeletal pain • Inflammatory diseases • Trauma/ fractures • Surgical wounds • Malignant ulcers	• Ureteric colic • Dysmenorrhea • Bowel obstruction • Liver metastasis	• Trigeminal neuralgia • Painful DM neuropathy • Brachial plexopathy • Sciatica
Treatment approach	• NSAIDs / COX-2 inhibitor if mild to moderate • Opioid if severe	• Good response to opioids	• Partial response to opioid • Need adjuvant analgesics



1.4 PAIN ASSESSMENT TOOLS

Pain assessment tools are very important to evaluate efficacy of pain regimen before and after treatment. The severity of pain will be assessed using pain assessment tools by giving pain score. This pain score is individualised and need to consider minimum, maximum and average score to evaluate the pain intensity.

Examples of pain assessment tools are elaborated below:[9]

1. The Numeric Rating Scale (NRS) Ministry of Health Malaysia pain scale which is used in adult and children more than 7 years old (Figure 3).



Figure 3: NRS MOH Scale

2. Visual Analog Scale (VAS) Ministry of Health Malaysia pain scale which is used in children age 4 to 7 years (Figure 4)



Figure 4: VRS MOH Scale



3. FLACC scale is applicable for children age 1 month to 4 years old and adult patient unable to communicate verbally (Figure 5).

CATEGORIES	SCORING		
	0	1	2
Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant quivering chin, clenched jaw
Legs	Normal position or relaxed	Uneasy, restless, tense	Kicking or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squiring, shifting back and forth, tense	Arched, rigid or jerking
Cry	No cry (awake or asleep)	Moans or whimpers; occasional complaint	Crying steadily, screams or sobs, frequent complaints
Consolability	Content, relaxed	Reassured by occasional touching, hugging or being talked to, distractable	Difficult to console

Each of the five categories (F) face, (L) legs, (A) activity, (C) cry and (C) consolability is scored from 0-2, resulting in total range of 0-10

Figure 5: FLACC Scale



4. The Critical Care Pain Observation Tool (CPOT) (Figure 6) and Behavioural Pain Scale in intubated (BPS) and non-intubated (BPS-NI) patients (Figure 7) demonstrate the greatest validity and reliability for monitoring pain in patient unable to self-report in critical care.

Facial expression	Relaxed	Tense	Grimacing
	0	1	2
Body movement	Absence of movement or normal position	Protection	Agitation
	0	1	2
Muscle tension	Relaxed	Tense, rigid	Very tense/ rigid
	0	1	2
Compliance with ventilator (intubated)	Tolerating ventilator or movement	Coughing but tolerating	Fighting ventilator
	0	1	2
Vocalization (extubated)	Normal or silent	Sighing or moaning	Crying out or sobbing
	0	1	2

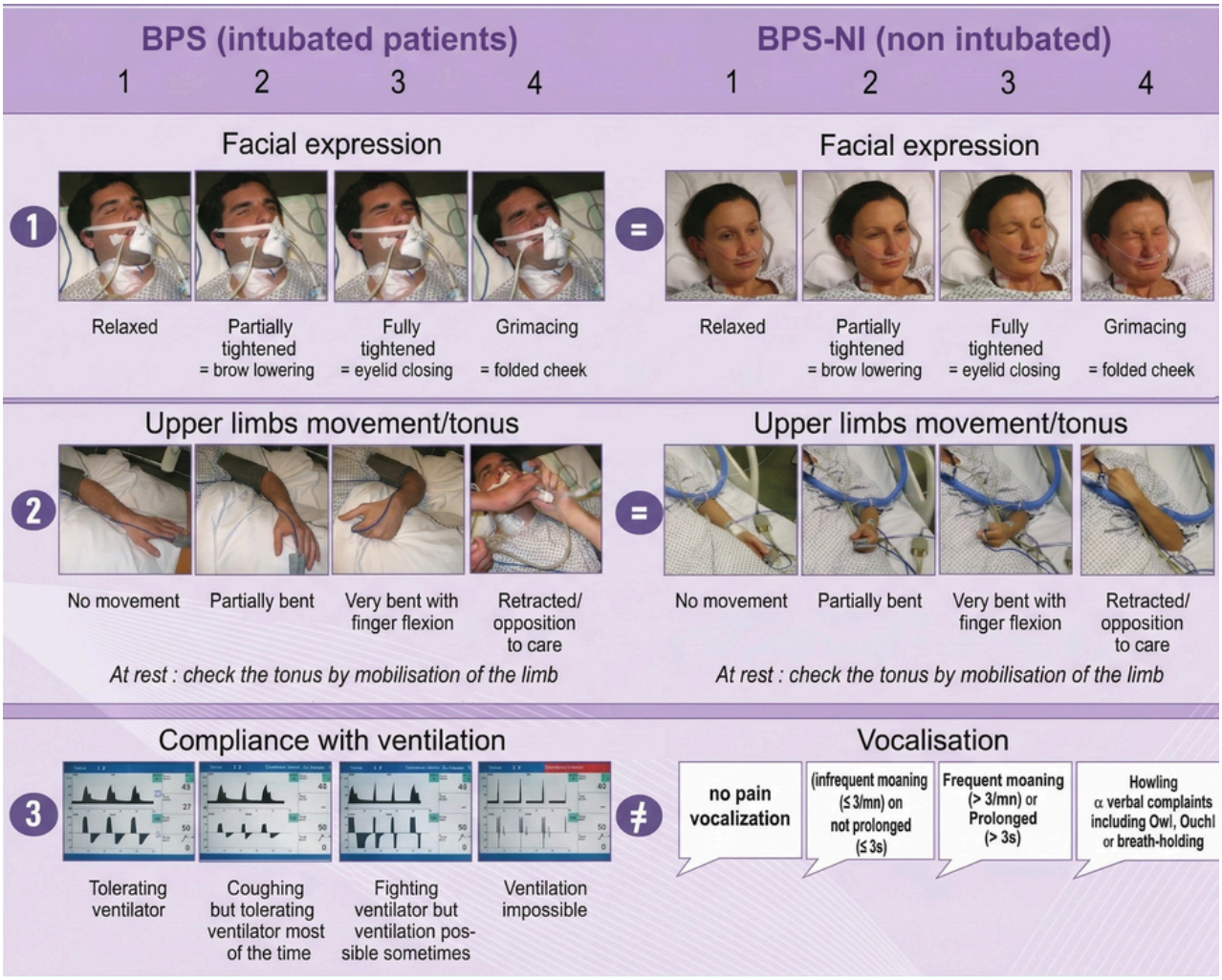
Directive to use:

- Rating: the highest score observed.
- Assess the muscle tension the last when patient is at rest.
- A score of >2 indicates the occurrence of pain (Max score = 8)
- Does not measure severity of pain.
- Validated in English, French, Mandarin, Korean, Spanish, Swedish

Figure 6: Critical Care Pain Observation Tool (CPOT)



CHAPTER 1: INTRODUCTION



Directive to use:

- Total score varies from 3 to 12
- Score ⩽ 3 no pain
- Scores 4-5 mild pain
- Score 6-11 an unacceptable amount of pain
- Score ⩾ 12 maximum pain
- Target score < 5

Figure 7: Behavioural Pain Scale in intubated (BPS) and non-intubated (BPS-NI) (Source: Payen et al. 2001; Chanques et al. 2009)



CHAPTER 2: ROLES AND RESPONSIBILITIES OF PHARMACIST IN PAIN MANAGEMENT

2.1 BACKGROUND

Across the continuum of healthcare, pharmacists play a multitude of roles essential to the provision of good pain management. These roles can be broadly divided into clinical services, quality initiatives as well as technical support. It is recommended that any facility offering Pain Pharmacotherapy Management Services should consider these general roles and activities for pharmacists, as further elaborated below. However, services provided by a pharmacist in pain management should of course be adaptive and designed to best meet the needs of the healthcare practice setting.

Pharmacist led Pain Medication Therapy Clinics have been around since as early as 2009, even before the Pain Free Hospital concept was initiated. The first few hospitals that offered these services were Hospital Selayang, Hospital Tengku Ampuan Rahimah, Klang and Hospital Kuala Lumpur.

The Pain Free Hospital concept, formally introduced in 2011, advocates a multidisciplinary team to manage pain, which comprises doctors, nurses, pharmacists, occupational therapists, physiotherapists, clinical psychologists and other allied health personnel. With the propagation of the Pain Free Hospital concept, pharmacist led Pain Pharmacotherapy Services grew and expanded to other major hospitals. To date, there are 19 hospitals with pharmacist led Pain Medication Therapy Adherence Clinics.



CHAPTER 2: ROLES AND RESPONSIBILITIES OF PHARMACIST IN PAIN MANAGEMENT

2.2 CLINICAL SERVICES

Pharmacists who work in Pain Pharmacotherapy Services are part of a multidisciplinary team providing holistic, patient-centred care. They are well positioned to work with patients to develop individualised plans and optimise the safe use of their pain medications. They also conduct pain education and collaborate with other healthcare providers to improve patient outcomes.[15,16,17]

Ideally pharmacists play an essential clinical role in both the ambulatory as well as inpatient settings. Ambulatory settings include the Pain Medication Therapy Adherence Clinic (MTAC) as well as the Pre-Anaesthetic Medication Therapy Management Clinic, while the Inpatient setting would typically include Acute Pain Service (APS)/ multidisciplinary pain management rounds. Pain medication counselling by pharmacists is also available at both outpatient and inpatient settings.



CHAPTER 2: ROLES AND RESPONSIBILITIES OF PHARMACIST IN PAIN MANAGEMENT

Pharmacists can screen, monitor, make treatment recommendations as well as counsel and educate patients in all of these settings:

1. Assessing patient's medical status and medication history
   - Understanding patient's pain history
   - Gathering a best possible history of all prescription and non-prescription medications especially with regards to pain medications, including any vitamins, dietary supplements, herbal products or traditional medications used.
   - Where possible, also include medications previously tried and discontinued as well as drug allergies

2. Managing patients' medication therapy
   - Ensuring individualised and optimal therapy based on type of pain, drug interactions and patient preference where possible, guided by evidence as well as available clinical guidelines, to improve the safety and efficacy of pain medications
   - Continuous medication review that includes prompt identification of potential drug-related problems and risk mitigation.



CHAPTER 2: ROLES AND RESPONSIBILITIES OF PHARMACIST IN PAIN MANAGEMENT

3. Monitoring patients' progress and outcomes
   - Utilising standardised tools such as the MOH Pain Scale to track patients' response to medications
   - Assessing patients' adherence to medications, side effects encountered and changes in pattern of consumption, or need for different routes of administration
   - Recommending treatment changes or the discontinuation of medications where applicable.

4. Providing information about medication and other health-related issues
   - Conducting medication reconciliation and medication education for patients and caregivers to enable self-management and safer analgesic use
   - Serving as a resource person for other healthcare professionals regarding medication use and its policies in pain management



CHAPTER 2: ROLES AND RESPONSIBILITIES OF PHARMACIST IN PAIN MANAGEMENT

2.3 QUALITY INITIATIVES

In addition, pharmacists may participate in continuous education and other quality initiatives such as quality assurance, research and development as well as innovation projects in pain pharmacotherapy. Pharmacists also play an essential role in medication safety activities that address medication errors and adverse drug reactions.

The following initiatives can increase the use of evidence-based multimodal pain management strategy and facilitate the development of patient-centered care:





CHAPTER 2: ROLES AND RESPONSIBILITIES OF PHARMACIST IN PAIN MANAGEMENT

2.4 TECHNICAL SUPPORT

In a more technical capacity, pharmacists have the opportunity to develop and provide oversight for an institutional medication formulary, as well as policies and procedures regarding medication use.[18–19] This helps ensure pain pharmacotherapy practices are consistent, evidence-based and cost-effective.

Pharmacists working in distributive or compounding services also support the provision of pain management by ensuring medication formulations are prepared and distributed meticulously and to standard, while the dispensing pharmacist ensures patients and caregivers receive the necessary education on the role, and safety precautions of their medications.[20–22]

1. <u>Performing drug utilisation reviews</u>

- Unregistered medications which require an import permit under the Control of Drug and Cosmetic Regulations 15(6) 1984
- Medications listed in the Ministry of Health Drug Formulary, which comprise various prescriber categories (A*, A, A/KK) as well as psychotropic substances
- Medications which require special approval from the Director General of Health / Senior Director of Pharmaceutical Services, e.g. medications that are not listed in the MOH formulary, or listed for different indications, or requiring import permits



CHAPTER 2: ROLES AND RESPONSIBILITIES OF PHARMACIST IN PAIN MANAGEMENT

2. Procuring pain medication & helping to manage supply

- Coordinate with other relevant units to monitor usage patterns, drug quota, import permit items and slow moving medications
- Ensure sufficient stock availability and help establish and implement contingency plans in the event of stock disruptions
- Mobilise stock between units or facilities to ensure optimal levels and minimise wastage
- Develop workflows and procedures together with relevant units, for the preparation of IV admixture pain medications (PCA and epidural cocktails) and extemporaneous preparations (syrup morphine) in accordance with the Ministry of Health Formulary and relevant references
- Ensure documentation is done in a complete and standardised manner
- Assure the handling and distribution of medications do not compromise reliability and safety of medicine
- Ensure access to pain medications and develop mechanisms to ensure adequate supplies of medications for patients

3. Managing psychotropic substances

- Ensuring access to psychotropic substances where necessary, especially for treating severe pain
- Developing and implementing proper handling and dispensing procedures to minimise the risk of diversion and abuse
- Monitoring that the procurement, storage and handling of these medications ensure drug viability and comply with all regulatory and accreditation needs



CHAPTER 2: ROLES AND RESPONSIBILITIES OF PHARMACIST IN PAIN MANAGEMENT

4. Reviewing and monitoring applications for medications which require special approval

- Ensure the medications requiring special approval from the Director General of Health/ Senior Director of Pharmaceutical Services are in accordance with the criteria and procedure set in Garis Panduan Permohonan Ubat Kelulusan Khas (UKK) Fasiliti-Fasiliti KKM.



CHAPTER 3: PAIN PHARMACOTHERAPY SERVICES PROVIDED BY PHARMACY

Pharmacy department in MOH facilities that implement P5VS can provide Pain Pharmacotherapy Services as shown in Figure 8:

AMBULATORY SETTING

- Pain Medication Therapy Adherence Clinic (Pain MTAC)
- Pre – Anaesthetic Medication Therapy Management Clinic
- Pain Medication Counselling

INPATIENT SETTING

- Acute Pain Service (APS) / Multidisciplinary Pain Team Round
- Pain Medication Counselling
- IV Admixture Service

COMMUNITY

- Pain Medication Counselling

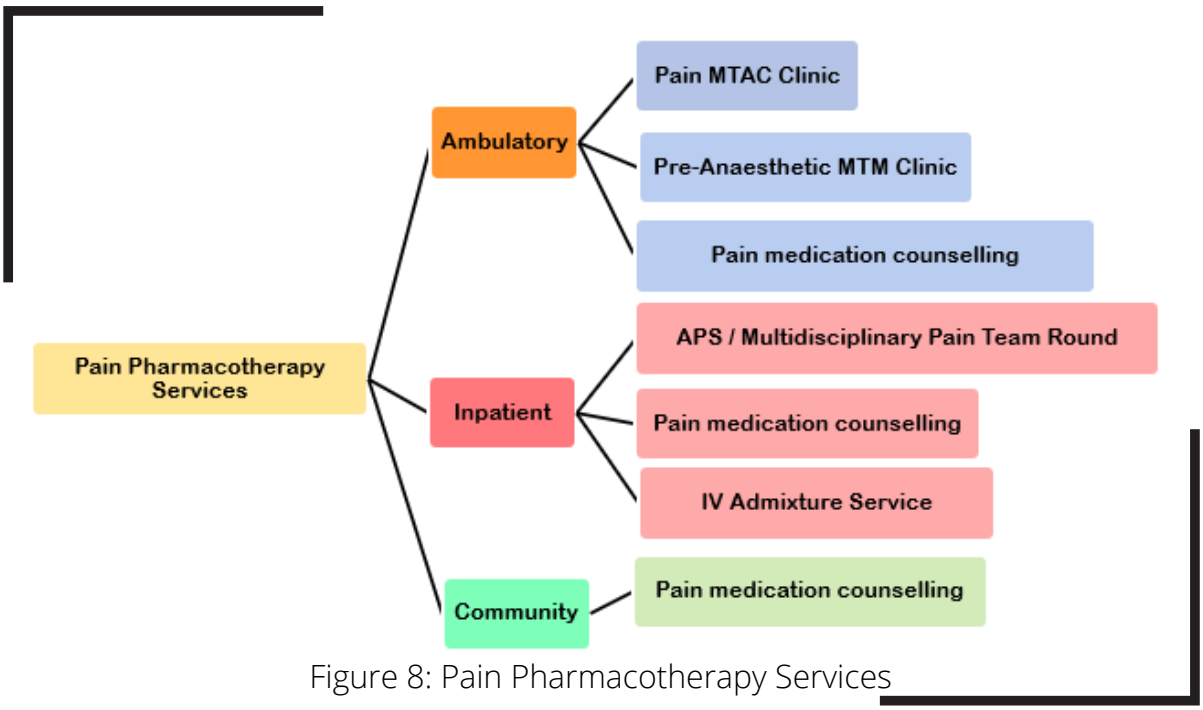


Figure 8: Pain Pharmacotherapy Services





CHAPTER 3: PAIN PHARMACOTHERAPY SERVICES PROVIDED BY PHARMACY

3.1 OBJECTIVES OF PAIN PHARMACOTHERAPY SERVICES

- To optimise pain therapy (to control/reduce pain) by recommending an individualised pain regimen.
- To minimise adverse events and medication errors by reviewing patients' past and current medication
- To counsel patients on appropriate use of pain medications and to increase patients' understanding on their medications.
- To engage in effective communication with multidisciplinary team in the optimisation of pain management.

3.2 AMBULATORY SERVICES

In ambulatory setting, two specialised pain pharmacotherapy services can be offered namely Pain MTAC and Pre-Anaesthetic Medication Therapy Management Clinic while general pain pharmacotherapy service which is Pain Medication Counselling can be given to patients upon their pain medications collection at ambulatory pharmacy (hospital)/ outpatient pharmacy (health clinic).

3.2.1. Pain Medication Therapy Adherence Clinic (Pain MTAC)

Pain MTAC is conducted by pharmacists in collaboration with other healthcare providers. Pharmacists will educate and guide patients in managing and controlling their pain through pharmacotherapy approach.

Patient assessment and treatment should involve a multidisciplinary team, to ensure optimal management of all aspects of pain. The goals of treatment are to improve and/ or manage pain; and improve patients' physical, psychological, work and social role functioning.



CHAPTER 3: PAIN PHARMACOTHERAPY SERVICES PROVIDED BY PHARMACY

A. Scope of Service

Patients recruited in this clinic are patients who are referred by pain specialist/ Family Medicine Specialist (FMS), being identified and selected by pharmacist at the clinic.

B. Location of service

Preferably but not limited to pain clinic area during clinic days.

C. Manpower Requirement

At least one trained pharmacist shall be on duty during clinic operating hours.

D. Appointment

1. Initial Visit:

Initial assessment will be done during patients' initial visit and documented in Pain MTAC: Pharmacist Assessment Form (Appendix 1).

2. Subsequent Visits:

After the initial assessment, patient follow-up will be done for subsequent visits (minimum of 3 visits) on clinic days. Number of follow-ups conducted by pharmacist will be based on patient's need and condition. Pain evaluation and medication review will be conducted and documented in Pain MTAC: Pain Evaluation & Medication Review List Form (Appendix 2).

3. Missed Visits:

Defaulted patient will be contacted for follow-up session via telephone interview.



CHAPTER 3: PAIN PHARMACOTHERAPY SERVICES PROVIDED BY PHARMACY

E. Patient Selection

- Patients who are newly started on analgesics and adjuvants (first time seen by pain specialist/ FMS).
- Patients whose therapeutic goals have not been achieved with current pain medication regimen.
- Patient with chronic pain requiring long-term use of pain medication and regular monitoring.
- Patients who are referred to Pain MTAC with specific criteria as below will be included, but not limited to:

  -Changes in pain medication regimen.
  -Experiencing side effects or complications due to their pain medications.
  -On strong opioids therapy.
  -Poor understanding on pain medication regimen.

F. Initial Assessment

Initial assessment consists of the following:

- History of underlying co-morbidities.
- Pain history and assessment

  -Identify location of pain and mark the pain site(s) on the body chart.
  -Identify pain aggravating and relieving factors.
  -Evaluate pain intensity using the pain assessment tools.
- Past medication history

  -Any previous analgesics and adjuvants given and their efficacy.
  -Any OTC medications/ traditional or complementary medications.
  -Prescribed medications for chronic illness.
- Patients' allergy status
- Relevant laboratory values (if applicable).
- Medication review (specific to pain regimen)

  -Review current pain regimen started by the pain clinician.
  -Communicate with the clinician if any interventions required.

All this information will be documented in the Pain MTAC: Pharmacy Assessment Form (Appendix 1).



CHAPTER 3: PAIN PHARMACOTHERAPY SERVICES PROVIDED BY PHARMACY

G. Follow Up Assessment

Follow up assessment should be done during next scheduled appointments and this includes;

- Pain assessment
- Pharmaceutical review
  -Pharmaceutical care issues (PCI)
  -Interventions and outcomes
  -Medication knowledge assessment by using DFIT
- Medication review (pain regimen) plan and recommendations
- Communicate with the clinician if any interventions required

All this information will be documented in the Pain MTAC: Pain Evaluation & Medication Review List Form (Appendix 2).

H. Medication Education and Counselling

A thorough explanation on the individualised pain regimen will be conducted by the pharmacist (Refer Appendix 3).

Pharmacists are responsible to elaborate and reinforce on these details:

- Treatment goals and medication adherence.
- Detail of medication: Name, indication, dosage, frequency and duration of each medication.
- Common side effects/ adverse drug reactions related to each medication and how to manage them.
- Precautions and contraindications.
- Proper storage of the medications.
- The importance of around the clock vs. breakthrough dosage administration timing.
- Action to be taken for a missed dose or when pain is not controlled.



CHAPTER 3: PAIN PHARMACOTHERAPY SERVICES PROVIDED BY PHARMACY

I. Pharmacotherapy review

- Pharmacists should identify any pharmaceutical care issues (PCI) at the earliest opportunity for every patient.
- Pharmacists should carefully assess the patient and obtain all information required to ascertain if any intervention or recommendation is needed.
- Drug related problem:

-Identify available therapeutic alternatives; and weigh the risks and benefits of each alternative to achieve best therapy outcome.

-Formulate an agreed individualised action plan with the patient and other healthcare providers including identification of specific pain therapy goals and other means (drug or non-drug) to achieve them.

-Address safety concerns regarding opioid use.

-Emphasise on the non-pharmacological therapy options that may help in managing pain and drug related problems.

-Take a holistic approach to patient care (e.g. consider the patient's medical, social, and financial needs) in establishing action plans.

J. Pharmacist's recommendations

- Recommendation should be done based on:

-Pain score, pain aggravating and relieving factors

-Achievement of desired outcome including patients' quality of life.

-Drugs related problems such as side effect, sub-therapeutic, interaction with other drugs or food.

-Access and availability of pain medicine and related policy at facility.

- Pharmacists should actively collaborate with other healthcare providers to form an individualised pain care plan, including non-pharmacological approach.
- All interventions should be discussed with the clinician for further action to achieve the desired outcome.





CHAPTER 3: PAIN PHARMACOTHERAPY SERVICES PROVIDED BY PHARMACY

K. Discharge criteria

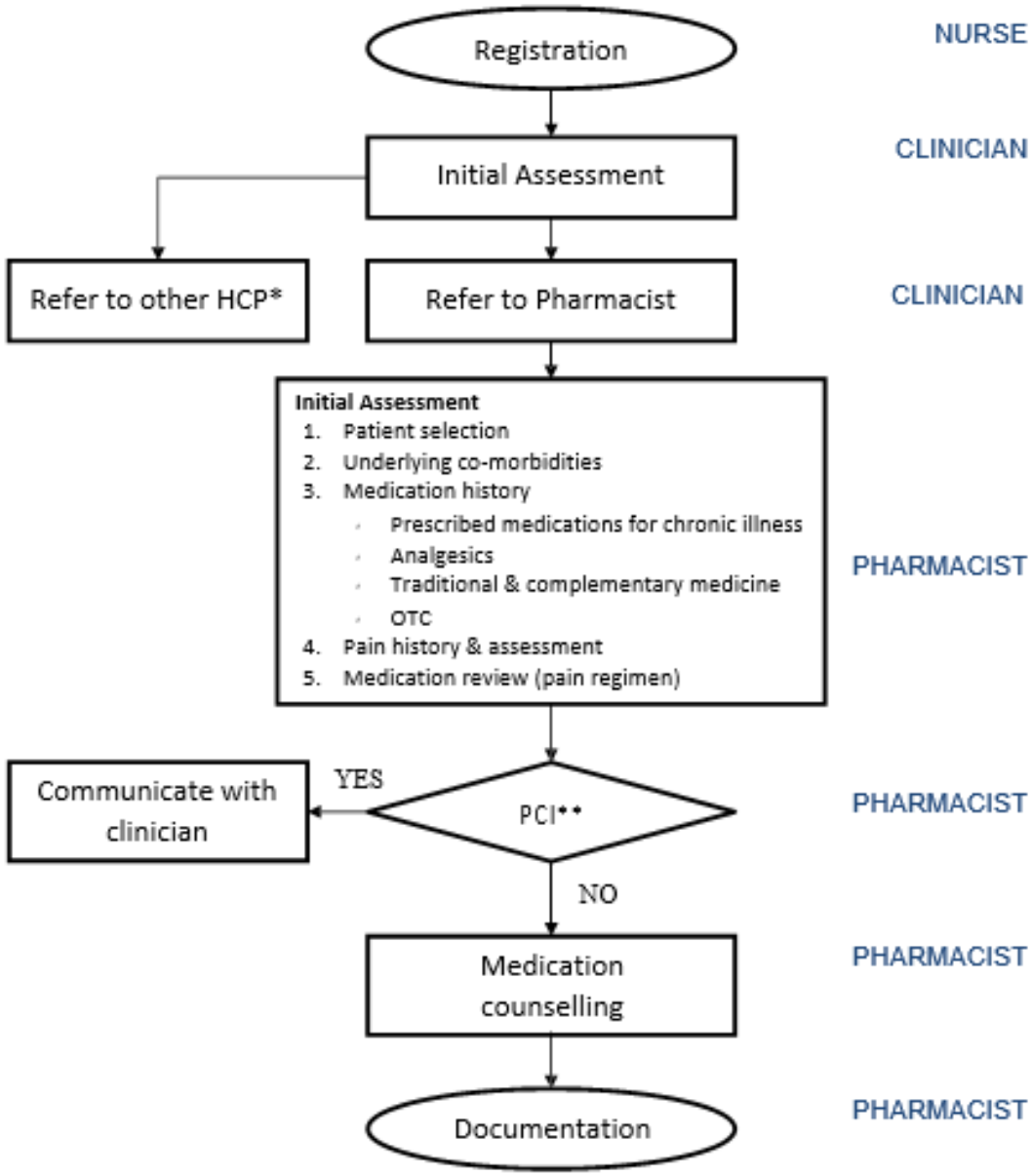
Pharmacists can discharge patients who fulfil any one of these criteria from Pain MTAC:

- Patients who are discharged from pain clinic or transferred to other facility.
- Patients who are able to wean off from pain medication and may continue with non- pharmacological therapy only.
- Patients whose treatment goal have been achieved and no further PCI identified to be followed up at subsequent visits.
- Patients who request to be discharged from the service (prescriber shall be informed and documented).
- Patients who have defaulted follow up for 1 year.



CHAPTER 3: PAIN PHARMACOTHERAPY SERVICES PROVIDED BY PHARMACY

Pain MTAC Clinic Workflow: Initial Visit

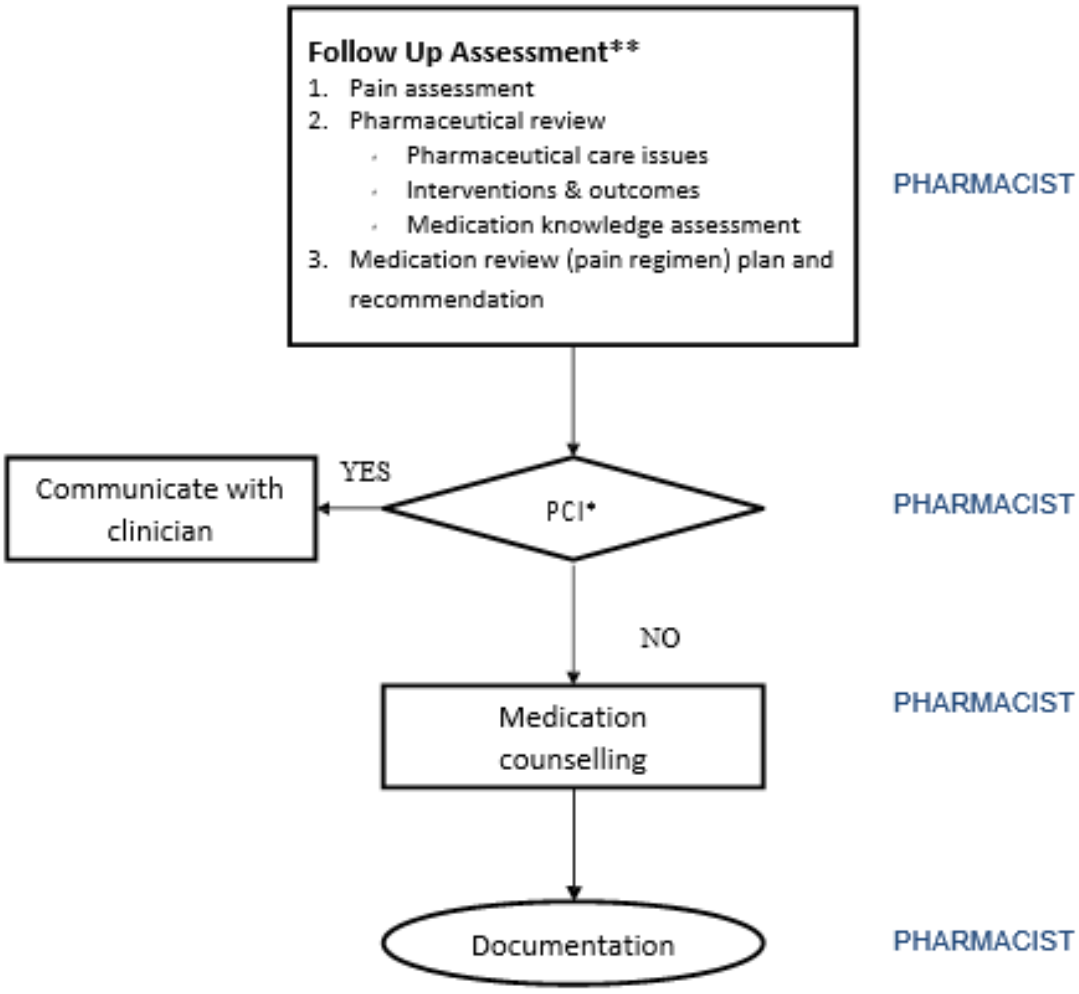


** HCP – Healthcare Provider*
***PCI – Pharmaceutical Care Issue*



CHAPTER 3: PAIN PHARMACOTHERAPY SERVICES PROVIDED BY PHARMACY

Pain MTAC Clinic Workflow: Subsequent Visits



**PCI – Pharmaceutical Care Issue*



CHAPTER 3: PAIN PHARMACOTHERAPY SERVICES PROVIDED BY PHARMACY

3.2.2. Pre-Anaesthetic Medication Therapy Management Clinic

Pre-Anaesthetic clinic is an outpatient clinic that carries out pre-operative assessment of patients scheduled for elective surgery either inpatient (including day of surgery admission) or day care surgery. It serves to prepare and educate patient about expectation of pain following surgery, identify associated medical illness and anaesthetic risks. Some patients for day care surgery may need admission to ward for post-surgery close monitoring.

Pharmacist plays an important role in reviewing patients' current medication and providing education on post-operation pain regimen.

A. Scope of Service

Pharmacist will conduct medication history taking and medication review, patient counselling and education about the use of medicines pre and post-surgery.

B. Location of service

Preferably but not limited to Pre-Anaesthesic Clinic area during clinic day.

C. Manpower Requirement

At least one trained pharmacist needed to provide this service in the Pre-Anaesthetic Clinic.

D. Procedures

- Patient selection:
  -Patients who are referred to pharmacist for medication assessment.
- Assessment by the pharmacist including history of underlying co-morbidities and related medications.
- Assessment on medication history:
  -Any previous medications given.
  -Any traditional or complementary medications.
  -Any over the counter (OTC) products.



CHAPTER 3: PAIN PHARMACOTHERAPY SERVICES PROVIDED BY PHARMACY

D. Procedures (con't)

- Patients' allergy status
- Relevant laboratory values (if applicable).
- Medication review (pre-surgery)
- Medication review and patient counselling include:

-Medication to be withheld prior to surgical procedure. Refer Pre-Operative Medication Management for Elective Surgery (Appendix 4).
-Treatment goals of pain medication regimen.
-Name of pain medication will be initiated after surgery.
-Indication, dosage, frequency and duration of each medication.
-Self-adjustment of pain medication regimen by patient.
-Common side effects of each medication and how to manage them.
-Precautions and contraindications.
-Emphasise on the importance of around the clock vs. breakthrough dosage administration timing.
-Action to be taken for a missed dose, or when pain is not controlled.
-Communicate with the clinician if any intervention is required.

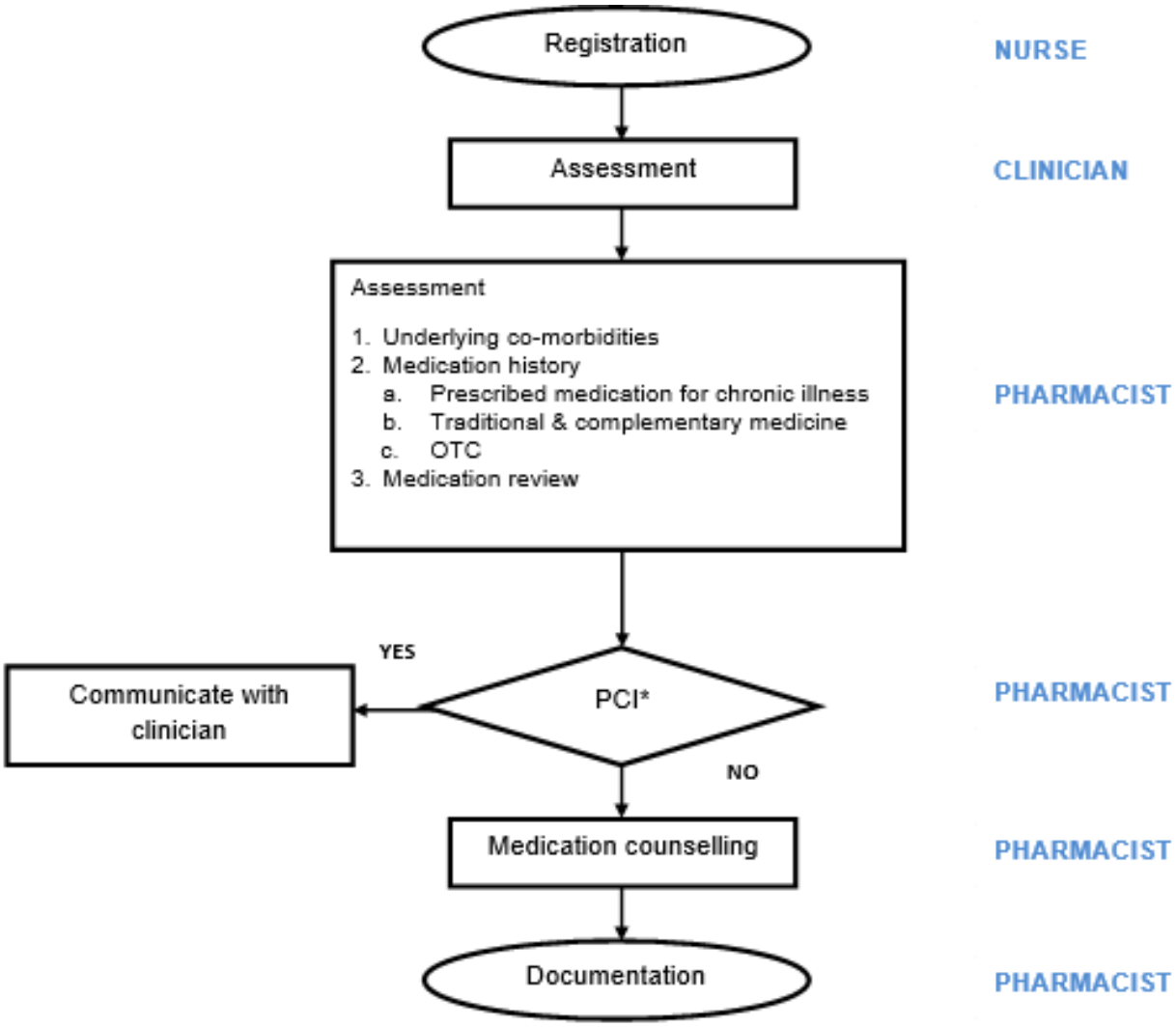
Patient will also be educated on the pain assessment tools to enable assessment of their pain status.

All information of pre-anaesthetic counselling should be documented in the Counselling Form and Pre- Anaesthetic Counselling (Patient's Copy): Medication Instruction for Patient Form (Appendix 5).



CHAPTER 3: PAIN PHARMACOTHERAPY SERVICES PROVIDED BY PHARMACY

Pre-Anaesthetic Medication Therapy Management Clinic Workflow



**PCI – Pharmaceutical Care Issue*





CHAPTER 3: PAIN PHARMACOTHERAPY SERVICES PROVIDED BY PHARMACY

3.3 INPATIENT SERVICES

3.3.1. Acute Pain Service (APS)/ Multidisciplinary Pain Team Round

For inpatient pain service, pharmacist needs to review patients' medication during Acute Pain Service (APS) or Multidisciplinary Pain Team Round. All activities and documentation of this service shall be referred to Pharmacotherapy Services activities. Inpatient Pain Medication Counselling can be done by any pharmacist during bedside or discharge counselling.

A. Scope of Service

- The service shall be provided to patients who will be reviewed during APS/ Multidisciplinary Pain Team Round on working days.
- Pharmacist activities during APS /Multidisciplinary Pain Team Round should be structured according to the suggested workflow as in this guideline

B. Manpower Requirement

- At least one pharmacist (preferably but not limited to pharmacist who are trained in pain pharmacotherapy services).
- Ward pharmacist are advisable to be part of the team.



C. Procedures

The following activities will be done during ward round:

- Medication history taking by using Medication History Assessment Form (Appendix 6).
- Case clerking by using Pharmacotherapy Review Form (Appendix 7).
- Active participation during ward rounds by identifying PCI and perform appropriate intervention.
- These activities should be documented in Clinical Pharmacy Report Form (Appendix 8).
- Providing medication counselling (Refer Garis Panduan Kaunseling Ubat- ubatan Edisi Keempat, 2025).
- Referring discharged patients who require follow up counselling by using Patient Referral Note (Appendix 9).

All related documents should be passed over to ward pharmacist if applicable.

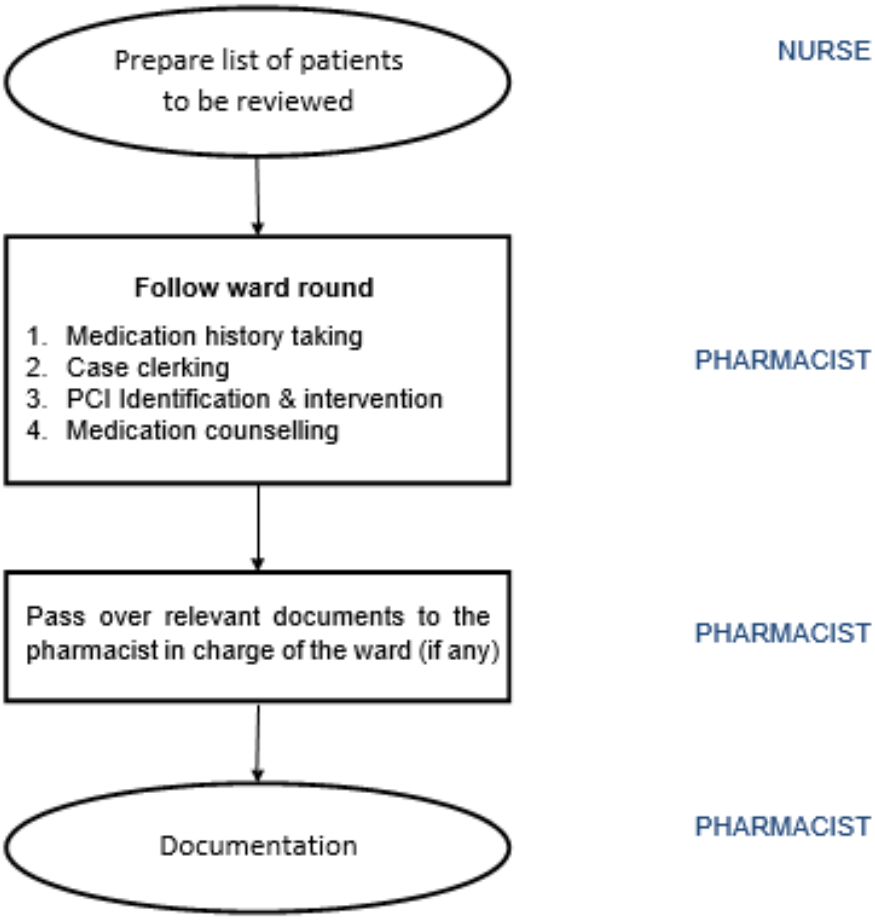
3.3.2. IV Admixture Service

In hospital with clean room facility, sterile pharmacy manufacturing unit provides IV Admixture service to prepare common injectables for pain management such as Patient-Controlled Analgesia (PCA) Morphine 1mg/ml as well as some Epidural cocktails such as a combination of ropivacaine and fentanyl. The preparation of these injectables is supported by valid stability data to ensure the safety and efficacy of the products.



CHAPTER 3: PAIN PHARMACOTHERAPY SERVICES PROVIDED BY PHARMACY

Acute Pain Services (APS)/ Multidisciplinary Pain Team Round Workflow





CHAPTER 3: PAIN PHARMACOTHERAPY SERVICES PROVIDED BY PHARMACY

3.4 PAIN MEDICATION COUNSELLING

3.4.1 Ambulatory, Inpatient and Community

This service is applicable to ambulatory, inpatient and community settings.

Patients will be selected based on any of the criteria listed below:

- Patients who are newly started with analgesic and are referred by prescribers.
- Patients on long term analgesics.
- Patients with complex analgesic regimen or who require special instruction (e.g. SNRI, anticonvulsants, opioids, etc.).
- Patients with multiple comorbidities requiring close monitoring.
- Patients from special population (e.g.: geriatric, paediatric, obstetric)
- Patients with poor understanding on the treatment.
- Patients with poor compliance towards pain medications
- Patients referred from other healthcare facilities through Patient Referral Note (Appendix 9).

For documentation, workflow and medication counselling checklist, please refer to Garis Panduan Kaunseling Ubat-Ubatan Edisi Keempat (2025) published by Pharmaceutical Services Programme, MOH.





CHAPTER 3: PAIN PHARMACOTHERAPY SERVICES PROVIDED BY PHARMACY

3.4.2 Palliative Care

Pharmacists play an important role in pain management in the palliative setting. Pharmacist involvement in multidisciplinary palliative care team contributed to the reduction of inappropriate use of analgesics and improved pain control.

Pharmacist may refer to Handbook of Palliative Medicine in Malaysia (2023) for further information.

APPENDICES

Appendix 1-a

Ref No: _____
Date : _____

PAIN MTAC:
PHARMACY ASSESSMENT FORM

(Initial Visit)

DEMOGRAPHY

Name : **MRN/ID No:**
Age : **Gender:** *Female/Male* **Race :** *Malay/Chinese/Indian/_____*
Address : **Contact No :**
Allergy :

Diagnosis:

Medical History:

Social/ Family History:

PAST MEDICATION HISTORY

Medication History:

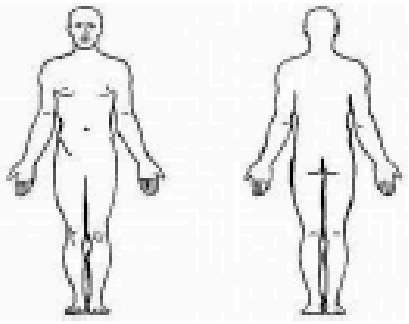
History of Analgesic Given:
Just analgesia

PAIN HISTORY

OTHERS

Traditional complementary medicines:
Including acupuncture, Chinese medicines etc.

Location of Pain: *Circle the areas where the pain exists*



Appendix 1-b

LABORATORY VALUES						
	Normal Value	DATE	DATE	DATE	DATE	DATE
Blood Pressure (mmHg)	<130/80					
RENAL PROFILE						
Na (mmol/L)	135-145					
K (mmol/L)	3.5-5.0					
SrCreatinine (µmol/L)	57-130					
GFR (ml/min)						
LIVER FUNCTION						
T Protein (g/L)	66-87					
Albumin (g/L)	35-52					
Globulin (g/L)	20-36					
T.Bilirubin (µmol/L)	0-24					
ALT (IU/L)	0-42					
ALP (IU/L) (>15yrs) (3-15yrs)	 34-104 98-369					
OTHERS						

PAIN EVALUATION		
Pain Score	Max	
	Ave	
	Min	
Pain Aggravating Factors		
Pain Relieving Factors		

CURRENT MEDICATION

PHARMACISTS' RECOMMENDATIONS / PLAN

Pharmacist's Name/Signature:

APPENDICES

Appendix 2

PAIN MTAC: PAIN EVALUATION & MEDICATION REVIEW LIST

(Subsequent Visit)

Date:	Visit No.:	Date:	Visit No.:
Chief Complain:		Chief Complain:	
Pain Score: Max		Pain Score: Max	
Ave		Ave	
Min		Min	
Pain Aggravating Factors		Pain Aggravating Factors	
Pain Relieving Factors		Pain Relieving Factors	

Medications	D	F	I	T	Medications	D	F	I	T
Total %					Total %				
Pharmaceutical Care Issues:					Pharmaceutical Care Issues:				
Pharmacist Intervention:					Pharmacist Intervention:				
Outcome/Plan:					Outcome/Plan:				
Pharmacist's Name/ Signature:					Pharmacist's Name/ Signature:				

How to calculate the score:

Score (%) = $\frac{\text{No of column with yes x 100\%}}{\text{Total no of column}}$

Key: D = Dose F = Frequency I = Indication T = Method of Administration

Appendix 4-a

PRE-OPERATIVE MEDICATION MANAGEMENT FOR ELECTIVE SURGERY

Medication	Perioperative Management	Reason	Comments
Cardiovascular Drug			
B-Blocker			
Atenolol Metoprolol Propranolol Labetalol Carvedilol	CONTINUE up to and including the day of surgery [2,4,5]	Blood pressure and heart rate control	EXCEPTION- DISCONTINUE on day of surgery for patients going for Stage 1 Deep Brain Stimulation
Calcium Channel Blocker			
Diltiazem Verapamil Felodipine Amlodipine Nifedipine	CONTINUE up to and including the day of surgery [2,4]	Blood pressure and heart rate control	
ACE Inhibitor/ Angiotensin Receptor Blockers (ARB)			
Perindopril Losartan Valsartan Telmisartan	DISCONTINUE prior to surgery (24 hours) / at least 10 hours prior to surgery [2,4,5]	May have Intraoperative hypotension when continued	
Alpha 2 receptor agonist			
Methyldopa	CONTINUE up to and including the day of surgery [2,4]	Blood pressure and heart rate control	
Alpha 1 antagonist			
Prazosin	CONTINUE up to and including the day of surgery [2,4]	Less postoperative urinary retention Blood pressure control	
Cholesterol Lowering Agent			
Non Statin			
Gemfibrozil Ezetimibe	CONTINUE [2]	Potential increase in serum triglycerides/ increased absorption of dietary cholesterol if omitted	
Statin			
Simvastatin Atorvastatin	CONTINUE up to and including the day of surgery [2,4]	Lower risk of thrombotic stroke and myocardial infarction	

Appendix 4-b

PRE-OPERATIVE MEDICATION MANAGEMENT FOR ELECTIVE SURGERY

Medication	Perioperative Management	Reason	Comments
Anticoagulant/ Antiplatelet			
Direct Oral Anticoagulant (DOAC) Dabigatran Rivaroxaban Apixaban	DISCONTINUE 2 days before surgery[6]		DISCONTINUE 3 days before surgery in renal/ liver impairment
Aspirin	CONTINUE [2,4] -Low dose (≤150mg)	Increased risk of thrombosis with discontinuation[4]	
Warfarin	DISCONTINUE 5 days before surgery, [4,6]	Risk of bleeding and/or complications of bleeding if continued.	Depending on indication for anticoagulation and risk of bleeding with the procedure the holding time may vary and bridging may be required.
Clopidogrel	DISCONTINUE 5-7 days before major surgery[4,6]		
Ticagrelor	DISCONTINUE 3-5 days before major surgery[2,6]		5 days if neuraxial anaesthesia planned
Diuretics			
Amiloride/HCTZ (Moduretic) Frusemide Hydrochlorothiazide Spironolactone	DISCONTINUE the day of surgery [4,5]	Increases risk of hypokalemia (potassium sparing diuretic), hyperkalemia and hypovolemia[4]	Tissue damage and reduced kidney perfusion immediately post-operatively may contribute to the development of hyperkalaemia which may be additive with concurrent potassium-sparing diuretics
Diabetes Medications			
Oral antidiabetic			
Glimepiride Glibenclamide Acarbose	DISCONTINUE the day of surgery [2,3]	Increased risk of hypoglycemia	

Appendix 4-c

PRE-OPERATIVE MEDICATION MANAGEMENT FOR ELECTIVE SURGERY

Medication	Perioperative Management	Reason	Comments
Metformin (AND eGFR >60 ml/min/1.73m2 OR procedure not requiring use of contrast media**)	CONTINUE [2,3]	Increased risk of post-operative infection and delayed wound healing due to poor glycaemic control if omitted	If taken three times per day, omit lunchtime dose
DPP4 inhibitor (e.g. sitagliptin, vildagliptin, saxagliptin, alogliptin, linagliptin)	CONTINUE [2,3]	Increased risk of post-operative infection and delayed wound healing due to poor glycaemic control if omitted	
SGLT-2 inhibitors (e.g. dapagliflozin, canagliflozin, empagliflozin, ertugliflozin)	DISCONTINUE the day before and on the day of surgery [2,3]		
Insulin			
Short-acting insulin	No dose changes[3]	Increased risk of post-operative infection and delayed wound healing due to poor glycaemic control if omitted. Hypoglycaemia if continued during nil by mouth period.	Omit dose if no meal eaten
Pre-mixed insulin	No dose changes[3]		Halve usual morning dose for am surgery
Long-acting insulin (e.g. Lantus)	No dose changes[3]		Give 80% of dose and blood glucose to be checked on admission.
Anti Convulsant			
Phenobarbitone Phenytoin Carbamazepine Clonazepam Valproic acid Gabapentin Levetiracetam Topiramate	CONTINUE up to and including the day of surgery[2]	precipitation of rebound seizures or status epilepticus if omitted loss of pain management if omitted.	

APPENDICES

Appendix 4-d

PRE-OPERATIVE MEDICATION MANAGEMENT FOR ELECTIVE SURGERY

Medication	Perioperative Management	Reason	Comments
Asthma/Lung Medications			
Aminophylline Theophylline Salbutamol Terbutaline Ipratropium Montelukast Beclomethasone Fluticasone Budesonide Albuterol/ipratropium(Combivent)	CONTINUE up to and including the day of surgery [2]	May precipitate bronchospasm if withheld	
Psychotherapeutic Medications			
Antidepressants			
Amitriptyline	CONTINUE up to and including the day of surgery[2,4]	Need to be continued to prevent relapse of the treated condition or to avoid the effects of withdrawal	
Selective Serotonin Re-uptake Inhibitors			
Fluoxetine Duloxetine Sertraline Venlafaxine Olanzapine Escitalopram Topiramate	CONTINUE up to and including the day of surgery [2,4]	Need to be continued to prevent withdrawal	
Anti-anxiety Medications			
Alprazolam Diazepam Lorazepam	CONTINUE up to and including the day of surgery[2]	Withdrawal symptoms can occur if stopped abruptly[2]	
Lithium	CONTINUE [4]	Avoid withdrawal syndrome [4]	

Appendix 4-e

PRE-OPERATIVE MEDICATION MANAGEMENT FOR ELECTIVE SURGERY

Medication	Perioperative Management	Reason	Comments
Oral Contraceptives			
Combine oral contraceptive Progesterone only pill	CONTINUE unless surgery has high thrombotic risk e.g major joint surgery/prev VTE[4]		Advise the patient to use other forms of birth control if oral contraceptives are held For specific very high DVT risk patients/ procedures it may be appropriate to discontinue their estrogen containing medications 4 – 6 weeks prior to the procedure [4].
Analgesic			
NSAIDS			
Ibuprofen Indomethacin Naproxen Diclofenac	CONTINUE. If the decision is made to stop DISCONTINUE 1 day before surgery[2]		
Cox 2 inhibitor			
Celecoxib Etoricoxib	CONTINUE up to and including the day of surgery[2]		
Opioid			
Morphine Oxycodone Fentanyl	CONTINUE up to and including the day of surgery [2]		
Immunosuppressants and Rheumatology Medications			
Miscellaneous Arthritis Medications			
Sulfasalazine	CONTINUE up to and including the day of surgery[6]	Avoid disease flares	
Methotrexate*	CONTINUE up to and including the day of surgery[4]	Avoid disease flares	*If normal renal function, continue in perioperative period[4]
Hydroxychloroquine	CONTINUE up to and including the day of surgery[4]	Avoid disease flares	
Azathioprine	CONTINUE up to and including the day of surgery[4]	Avoid disease flares	

Appendix 4-f

PRE-OPERATIVE MEDICATION MANAGEMENT FOR ELECTIVE SURGERY

Medication	Perioperative Management	Reason	Comments
Leflunomide	DISCONTINUE 2 weeks prior to procedures, resume when wound fully healed [4]	Avoid disease flares	
Muscle Relaxants			
Baclofen	CONTINUE up to and including the day of surgery[2]		
Steroids			
Hydrocortisone Prednisone Dexamethasone Methylprednisolone	CONTINUE up to and including the day of surgery [4,5]	Increased risk of Addisonian crisis if stopped	
Gout Medications			
Allopurinal Colchicine	CONTINUE up to and including the day of surgery[4,5]		
Osteoperosis/ Hormonal Therapy Medications			
Biphosphonate			
Alendronate	DISCONTINUE the day of surgery[5]		
Hormone replacement therapy			
Conjugated estrogens	CONTINUE [4] For major surgery consider stopping 4-6 weeks before major elective surgery where prolonged immobilisation is likely[2] or For specific very high DVT risk patients/ procedures[4]	Increased risk of VTE[6]	
Selective estrogen receptor modulator			
Raloxifene Tamoxifen *	can usually be continued may be stopped 2 – 3 weeks pre-operatively (minimum 7 days)[2] Stop 4 weeks prior to procedures for patients at moderate/high risk of VTE [4]	Increased risk of VTE if continue[2]	If continuing, ensure adequate thromboprophylaxis

Appendix 4-g

PRE-OPERATIVE MEDICATION MANAGEMENT FOR ELECTIVE SURGERY

Medication	Perioperative Management	Reason	Comments
Hormonal medication			
Anastrozole Letrozole Exemestane (Aromasin®)	CONTINUE [4]	Increased risk of VTE [4]	For specific very high DVT risk patients/ procedures it may be appropriate to discontinue their estrogen containing medications 4 – 6 weeks prior to the procedure
Combined oral contraceptives			
Microgynon Marvelon Minulet	CONTINUE up to and including the day of surgery4,5	Increased risk of VTE[4]	For specific very high DVT risk patients/procedures it may be appropriate to discontinue their estrogen containing medications 4 – 6 weeks prior to the procedureIncreased risk of VTE7women on HRT may have additional risk factors for thromboembolism which in themselves necessitate use of peri-operative thromboprophylaxis. Withdrawing HRT also may precipitate the recurrence of menopausal symptoms at an already stressful time 6Increased risk of VTE7 DISCONTINUE the day of surgery [4,6]
Progestogen only pills			
Neogest Noriday Depo Provera	CONTINUE up to and including the day of surgery[4,5]		
Thyroid Medications			
Levothyroxine Carbimazole Propylthiouracil	CONTINUE up to and including the day of surgery [2,5]		Usual dose on morning of surgery with sip of water [2]
Anti Reflux Medications			
H2 blocker			
Ranitidine	CONTINUE up to and including the day of surgery [5]		
Proton Pump Inhibitor			
Omeprazole Pantoprazole Esomeprazole	CONTINUE up to and including the day of surgery [5]		Encourage patients taking PPI on a prn basis to take them regularly for 7 days before surgery to minimise their risks of problems with acid reflux during surgery

Appendix 4-h

PRE-OPERATIVE MEDICATION MANAGEMENT FOR ELECTIVE SURGERY

Medication	Perioperative Management	Reason	Comments
Antacid			
MMT	DISCONTINUE the day of surgery[4]	Additional matter in the stomach[4]	May substitute H 2 blocker or PPI
Prostate Medications			
Finasteride Terazosin	CONTINUE up to and including the day of surgery[2]	Risk of acute urinary retention if omitted.	
Antiparkinson Medications			
Levodopa/carbidopa Levodopa	CONTINUE up to and including the day of surgery[5]		EXCEPTION- DISCONTINUE on day of surgery in patients going for Stage 1 DBS [5] Emphasize on compliance --> any missed doses can reduce their mobility and impede their recovery
Supplements			
Ferrous	Continue [2]		stop iron supplements in colonoscopy patients (because it forms black slicks on the walls of the colon thus preventing a clear view)
TNF alpha inhibitors			
Adalimumab (Humira®) Etanercept Golimumab infliximab rituximab tocilizumab	DISCONTINUE 2 weeks prior to procedures [4]	Myelo/immunosuppression [4]	Resume when the wound is fully healed [6] Balance the potential benefit of preventing post-operative infection by stopping adalimumab against the risk of developing severe or unstable disease [2]
Genitourinary Medications			
Alfuzosin Doxazosin Dutasteride Finasteride Tamsulosin Terazosin	CONTINUE [4]	Less postoperative urinary retention [4]	Monitor BP as medications can cause hypotension

Appendix 4-i

PRE-OPERATIVE MEDICATION MANAGEMENT FOR ELECTIVE SURGERY

Medication	Perioperative Management	Reason	Comments
Substance abuse			
Smoking Cessation			
Varenicline Nicotine replacement products	CONTINUE [4]		
All Herbal/Vitamin Supplements[5]			
Ginkgo	DISCONTINUE at least 36 hours before surgery.	Increased risk of bleeding secondary to anti-platelet effect.	Stop the following agents 7 days prior to procedures because of the potential increased risk of bleeding [4]: Aloe, Burdock root, Chamomile, Chondroitin, Dong quai, Evening primrose, Flaxseed, Fish oil, Garlic, Ginger, Ginkgo, Ginseng, Glucosamine, Green tea, Hu zhang, Melatonin, Saw palmetto, Turmeric, Vitamin A and E
Garlic tablets	DISCONTINUE at least 7 days prior to surgery	Increased risk of bleeding secondary to anti-platelet effect	
Ginseng	DISCONTINUE at least 7 days prior to surgery	May increase risk of hypoglycaemia, and bleeding.	
St John's Wort	DISCONTINUE at least 4 days prior to surgery	Inhibits neurotransmitter uptake	
Echinacea	DISCONTINUE as far in advance as possible before surgery.	Increases risk of allergic reactions, may increase risk of infection.	
Fish oil (> 3 grams/day)	DISCONTINUE for 7 days prior to procedure[4]	Increased risk of bleeding	

References:
1. Medical Development Division. (2012). Anaesthetic clinic protocols. Ministry of Health Malaysia
2. UK Clinical Pharmacy Association. (2024). The handbook of perioperative medicines. https://periop-handbook.ukclinicalpharmacy.org/
3. Centre for Perioperative Care. (2021). Guideline for perioperative care for people with diabetes mellitus undergoing elective and emergency surgery Undergoing Elective and Emergency Surgery
4. The Ohio State University Wexner Medical Center. (2017). Preoperative testing and medication management (2nd ed.)
5. Medical College of Wisconsin, Department of Anesthesiology. (2014). FMLH preoperative medication management guidelines. Froedtert & Medical College of Wisconsin
6. Pharmaceutical Services Programme. (2023). Anticoagulant quick guide (1st ed.). Ministry of Health Malaysia

Disclaimer: These guidelines are designed to provide general guidance and are not intended to replace professional expertise. The following principles must be applied when using these protocols; clinical judgment, case by case management, risk benefit analysis

Appendix 4-j

Pre-operative Management of Anticoagulants[25]

DAYS	VKA	DOAC	Antiplatelets
-7			
-6			
-5	STOP		STOP Clopidogrel
-4			
-3	Consider bridging in specific cases	STOP with impaired kidney/liver function	STOP Ticagrelor
-2		STOP*	
-1		No bridging	
SURGERY			
+1	START UFH or LMWH RESTART VKA with low bleeding risk	RESTART DOAC with low bleeding risk	RESTART $P2Y_{12}$ inhibitors
+2	RESTART VKA with high bleeding risk	RESTART DOAC with high bleeding risk	

DOAC:direct oral anticoagulant; LMWH:low molecular weight heparin; UFH:unfractionated heparin; VKA:vitamin K antagonist

*May be continued in patients undergoing AF ablation

Reference: Anticoagulant Quick Guide 1st Edition, Pharmaceutical Services Programme MOH 2023

APPENDICES

Appendix 5 (English version)

PRE-ANAESTHETIC COUNSELLING
MEDICATION INSTRUCTION FOR PATIENT

Hospital :
Department :
Name of Patient : _____
Date of Procedure / Surgery : _____

Medication Name	Continue	When to Withhold

APPENDICES

Appendix 5 (Malay version)

KAUNSELING PRE-ANAESTHETIC
ARAHAN UBATAN UNTUK PESAKIT

Hospital :
Jabatan :
Nama Pesakit : _____
Tarikh Prosedur / Pembedahan : _____

Nama Ubat	Teruskan	Tarikh Berhenti

Appendix 6-a

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 : _____

RNIC : _____

Admission Date/Time : _____

Ward/Bed : _____

PMHx : _____

Last Discharge / Review Date : _____

B: REASON FOR ADMISSION

C: ALLERGY & ADVERSE DRUG REACTION

- ☐ NKDA
- ☐ NKFA
- ☐ Allergic to:
  Symptoms:

D: DRUG HISTORY

Patient's own drugs checked?

☐ Yes ☐ No

Source of medication list:

☐ Prescription ☐ PhS ☐ Others: _____

MEDICATION *(Specify strength)*	DOSE	FREQUENCY	RECONCILIATION NOTE *C: Continue; DC: Discontinue; WH: Withold*	BALANCE FROM PREVIOUS SUPPLY	COMMENTS

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

E: PHARMACIST NOTES

Medication adherence evaluation:	
Follow up information:	

Pharmacist Sign & Stamp : _____ Time / Date : _____

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

Pin. 1/24

Appendix 6-b

COMPLIANCE ASSESSMENT

A. **Pill/ Tablet counts:**

Compliance score is calculated according to the formula:

$$\text{Compliance score} = \frac{\text{No. of tablets dispensed} - \text{No. of tablets not taken}}{\text{Correct no. of tablets should be taken}} \times 100\%$$

$$\text{Compliance score} = \frac{(\quad) - (\quad)}{(\quad)} \times 100\% = _____$$

***Compliant to medication when score is ≥ 85%**

B. **Others:**

1. Malaysia Medication Adherence Assessment Tool (MyMAAT)
   - Good adherence: ≥ 54
   - Moderate and poor adherence: < 54

2. Medication possession ratio (MPR) and any other validated medication adherence tools (whichever are relevant)

APPENDICES

Appendix 7-a

PHARMACOTHERAPY REVIEW (CP2) Pin.2/24

Pharmacy Department, Hospital _____

Ward: _____ Bed: _____

STORMAP: _____

Allergy:

☐ NKDA Allergy to:.....

☐ NKFA Symptom(s):.....

A. DEMOGRAPHIC DATA

Name :	MRN/IC :	Age :	Gender : M / F Race : M / C / I / Others	Ht/Wt : BMI/BSA:	DOA : DOD :

Chief Complaint:	Past Medical/Medication History/Adherence evaluation:	Review of System:			
		BP		RR	
		PR		T	
		BBS		SPo2	
		PS			

History of Present Illness:	Social/Family History:	
	Smoking	
	Alcohol	
	Drug Abuse	
	Pregnant	

Diagnosis/Surgical Procedure:

B. LABORATORY INVESTIGATION

		Date	1	2	3	4	5	6	7	8	9	10
		Normal range										
FBC	TWBC	4-10 x 10^9/L										
	Hb	12-16 g/dL										
	Platelet	150-400 x 10^9/L										
RAE/FBS/NAL PROFILE	Urea	2.5-8.2 mmol/L										
	Na^+	132-146 mmol/L										
	K^+	3.5-5.0 mmol/L										
	SCr	46 - 87.2 umol/L										
	CrCl	75-125 ml/min										
	Ca^{2+}	2.10-2.55 mmol/L										
	Mg^{2+}	0.66-1.07 mmol/L										
	PO4	0.79-1.45 mmol/L										
LFT	Albumin	35 - 50 g/L										
	T. Bilirubin	0-21 mmol/L										
	T. Protein	57-82 g/L										
	ALP	46-116 U/L										
	ALT	10-49 U/L										
COAG	PT	11.7-13.3 secs										
	APTT	31.5-48.7 secs										
	INR	~1.0										
CE	CK	40-150 U/L										
	LDH	120-246 U/L										
	AST	<36 U/L										
VITAL SIGNS	BP											
	HR											
	Temp											
	RR											
	Pain score											
IO	Input											
	Output											
	Balance											
OTHERS	KBS											
	PBS											
	HbA1c											
	CRP											

Ref: Laboratory Information System (LIS), American Society of Clinical Pharmacy (ASCP), BNF manuals. (Disclaimer: Normal ranges provided are intended for informational purposes and may differ between laboratories)

C. MICROBIOLOGY/RADIOLOGY FINDINGS

Date (Sampling)	Date (Result)	Source/Sample	Microorganism	Sensitivity	Resistance

Date	Investigations	Findings

Appendix 7-b

D. WARD MEDICATION

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

E. PHARMACEUTICAL CARE PLAN

Date	Pharmaceutical Care Issues	Pharmacist's Recommendations/Plan	Outcome

Pharmacist's notes/review

Pharmacist's Sign & Stamp: Reviewed by:

APPENDICES

Appendix 8-a

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 (CP2)	
		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 Dose/Administration		
	1.4	Frequency			Side effects		
	1.5	Duration			Drug Indication		
	1.6	Dr's Stamp & Sign			Drug Interaction		
(2) Inappropriate Regimen	2.1	Drug			Contraindication		
	2.2	Dose			Pharmacokinetics		
	2.3	Frequency			TPN		
	2.4	Duration			Pharmaceutical Availability		
	2.5	Polypharmacy			Pharmaceutical Compatibility		
	2.6	Contraindication			Pharmaceutical Identification		
	2.7	Drug Interaction			General Product Information		
	2.8	Incompatibility			Others (please state)		
(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		

Appendix 8-b

C: INTERVENTIONS ENCOUNTERED

PATIENT NAME	RN	INTERVENTION NO.	DESCRIPTIONS

D: REQUEST/ INFORMATION PROVIDED

QUESTIONS	ANSWERS WITH REFERENCES

E: FOLLOW-UP REQUIRED

NO.	FOLLOW-UP	CHECKLIST	SIGN

.....

Pharmacist's Sign & Stamp

Date:

Pin. 2/24

APPENDICES

Appendix 9

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**

1. **TUJUAN:** Rujukan Kaunseling/Pemantauan Farmakokinetik/Pemantauan Alahan/ADR/AEFI/Senarai terkini ubat-ubatan atau rawatan/Lain-lain (sila nyatakan):
_____

Pesakit ini **TELAH/BELUM DIBERI KAUNSELING UBAT-UBATAN**. Diharap pihak tuan/puan dapat memberi kaunseling dan penilaian susulan yang diperlukan untuk meningkatkan keberkesanan rawatan.

2. **DIAGNOSIS:** _____

3. **SENARAI UBAT TERKINI:** *(Sila nyatakan atau tandakan jika ada perubahan pada senarai ubat terkini)*

NAMA UBAT/DOS DAN FREKUENSI/JANGKAMASA RAWATAN

4. **PENILAIAN KEFAHAMAN & KEPATUHAN TERHADAP TERAPI UBAT** *(Sila tanda (√) di kotak yang disediakan dan tidak berkenaan jika pesakit belum dikaunsel)*

a.	Tahap kefahaman pesakit kepada kaunseling ubat/alat bantuan pengubatan yang telah dijalankan	Memuaskan ☐	Tidak memuaskan ☐
b.	Tahap kepatuhan terhadap ubat-ubatan	Memuaskan ☐	Tidak memuaskan ☐

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)* _____
- ☐ Lain-lain: *(sila nyatakan)* _____

ULASAN PEGAWAI FARMASI: *(jika ada)*

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

***(Salinan asal**: untuk pesakit dan/atau diserahkan kepada inter-/intra-fasiliti yang dirujuk)*
***(Salinan pendua**: untuk simpanan Jabatan Farmasi)*

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