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This edition was produced after reviewing the most recent evidence at the time of development. Every healthcare provider is responsible to make appropriate clinical judgement in consideration of each patient's condition at presentation based on treatment options available locally.

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PREFACE

Health professionals have identified people living with mental disorder as among their most challenging patients to manage. Appropriate use of medicines is the main key to effective pharmacotherapy management of the disease.

Given the high potential for medication-related problems among people with mental disorders, it is crucial for pharmacists to take on a vital role. This includes reviewing medication, assessing medication side effects, counselling to improve adherence to medications, identifying drug interactions and providing medication information.

As part of the multidisciplinary healthcare team, pharmacists involved in the care of patients with mental disorder should strive to ensure that drug therapy is rational, safe, cost-effective, and acceptable to patients.

This protocol is designed for pharmacists within the Ministry of Health (MOH) to offer their expertise in Psychiatric Pharmacy Services. The protocol ensures the standardisation of practice and enables pharmacists to make full contributions as part of the healthcare team across MOH facilities.

In this latest edition, we have included the scope of services beyond the Psychiatric Medication Therapy Adherence Clinic (MTAC) by incorporating Ward Pharmacy Services and Home Medication Review (HMR) Services. These enhancements reflect our continuous commitment in improving the quality of psychiatric pharmacy services and addressing the evolving needs of patients.

I extend my congratulations to all contributors for their valuable and constructive efforts in developing this protocol.

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1. INTRODUCTION

According to the International Classification of Diseases 11th Revision (ICD-11), mental disorder is a syndrome characterised by clinically significant disturbance in an individual's cognition, emotional regulation, or behaviour that reflects a dysfunction in the psychological, biological, or developmental processes that underlie mental and behavioral functioning. These disturbances are usually associated with distress or impairment in personal, family, social, educational, occupational, or other important areas of functioning.

It is estimated that in 2019, almost 970 million people in the world were living with a mental disorder (WHO World Mental Health Report 2022). Malaysian local statistics from the National Health and Morbidity Survey 2023 indicate that 4.6% of adults have depression, while 1 in 6 children experience mental health problems. (Institute for Public Health, 2024)

Mental illness is often a persistent, debilitating, and costly disorder requiring diverse healthcare resources to manage the illness. Although adherence with psychiatric medications is critical for reducing the risk of relapse and enhancing long-term functional outcomes, non-adherence is typically found to be as high as 40%–50% of patients, especially among those suffering from serious mental disorders like schizophrenia and bipolar mood disorders (Lacro et al., 2002; Sajatovic et al., 2006).

In psychiatry, non-adherence to medication continues to be a significant challenge for patients as well as the healthcare system, whereby it can lead to relapses, frequent hospital readmissions, difficulty returning to previous functionality, and

higher healthcare costs (Chapman et al., 2013). The average risk of relapse is 3.7 times greater in patients who were not adhering to the treatment as compared with those who adhered (Fenton et al., 1997). Recent research suggests that adherence is not an "all or none" but a multifactorial phenomenon (Fenton et al., 1997; Gudeta et al., 2023).

Firstly, inadequate clinical information on medications received by the patients and caregivers could lead to poor adherence. Secondly, those with lower levels of education are prone to seek information from unreliable sources, resulting in inappropriate treatment and non-adherence to medications (Hussainy et al., 2011). Furthermore, patients with a psychiatric disorder have a lower quality of life because of the marginalisation and discrimination from the community, as well as disabilities due to the disease (Xiang et al., 2007).

Various health agencies, including the World Health Organisation and the European Council, have been advocating pharmacist involvement as an important part of the multidisciplinary healthcare team. Moreover, a local study has reported pharmacist intervention improves overall outcome among psychiatric patients. Involvement of pharmacists in a structured program had a significant improvement on medication adherence as shown by the mean medication adherence rating scale scores (baseline: 8.42 ± 1.40 vs. sixth month: 9.47 ± 1.02; $p < 0.001$) and mean pill count percentage (baseline: 56.68% ± 39.43% vs. sixth month: 90.37% ± 15.19%; $p < 0.001$). Patients' mean knowledge score on medication improved significantly with pharmacist intervention (baseline: 5.56 ± 1.51 vs. sixth month: 7.65 ± 0.60; $p < 0.001$). Patient's quality of life, especially related to the "social" and the "family" components

of the Sheehan disability scale, demonstrated significant improvement ($p < 0.001$). (Tan et al., 2019)

In Malaysia, Psychiatric Pharmacy Services provided by the Ministry of Health include the Psychiatric Medication Therapy Adherence Clinic (PMTAC), Psychiatric Ward Pharmacy, and Psychiatric Home Medication Review (HMR). PMTAC, in collaboration with the Psychiatric Clinic, involves pharmacists in conducting medication reconciliation and reviews for outpatient care. Meanwhile, the Psychiatric Ward Pharmacy performs pharmacotherapy reviews for hospitalised psychiatric patients, supporting the clinical team in decision-making. Additionally, Psychiatric HMR provides services at patients' homes, ensuring seamless continuity of care.

1.1 GENERAL OBJECTIVES

Psychiatric Pharmacy Services focus on collaboration with the healthcare team, patients, and caregivers to develop a holistic treatment plan that ensures safe and effective care.

1. **Optimise Pharmacotherapy Plan**

   To develop personalised care plans tailored to psychiatric patients' needs (based on their response to medications, comorbidity, medication side effects, etc.), recommend and implement evidence-based regimens as well as monitor therapeutic outcomes.

2. **Promote Patient and Caregiver Understanding**

   To educate patients and caregivers on medications, their indications, and potential side effects, with the goal of improving medication adherence and enhancing the quality of life for both patients and caregivers.

3. **Minimise Potentially Inappropriate Medications (PIMs)**

   To review and reduce PIMs to prevent adverse effects and improve patient safety.

4. **Ensure Continuity of Care**

   To incorporate pharmacy services into psychiatric patient care from hospitalisation, discharge, follow ups both at Outpatient clinic or at patient's home, ensuring a holistic and seamless continuity of care.

5. **Collaborate with the Multidisciplinary Team (MDT)**

   To participate in MDT meetings to address medication-related issues and ensure a holistic approach.

1.2 SCOPE OF SERVICE

Psychiatric Pharmacy Services comprise of Psychiatric Medication Therapy Adherence Clinic (PMTAC), Psychiatric Ward Pharmacy, and Psychiatric Home Medication Review (HMR)

PSYCHIATRIC MEDICATION THERAPY ADHERENCE CLINIC

2. PSYCHIATRIC MEDICATION THERAPY ADHERENCE CLINIC

PMTAC is established to provide an effective platform for extending pharmaceutical care services for psychiatric patients, and enhancing the quality of patient care. Building collaborative relationships with healthcare team members, as well as fostering strong connections with patients and caregivers, are essential to achieving these goals. Challenges such as adverse effects of medications, drug interactions, and non-adherence towards medication can lead to suboptimal treatment or undesired outcome. Therefore, a trained workforce capable of delivering patient-centered care and performing critical medication reviews is necessary to achieve the desired therapeutic outcomes.

2.1 OBJECTIVES

1. To improve patients' and caregivers' knowledge of medications and diseases.
2. To educate patients and caregivers about mental disorders, medications usage, short term & long term plan for drug treatment, identify early warning signs and relapse symptoms.
3. To improve patients' adherence towards medications.
4. To detect and reduce adverse effects and complications resulting from multiple drug regimen.
5. To monitor patients' pharmacotherapy, particularly responses to therapy in between doctor's visits.
6. To identify pharmaceutical care issues and recommend interventions for medication related problems.

7. To help reduce emergency care visits and improve patient's quality of life.

2.2 SCOPE OF SERVICES

1. The PMTAC service shall be carried out in a designated MTAC room or counselling room in the pharmacy/clinic area.

2. The PMTAC pharmacist will perform duties such as assessing patients for pharmaceutical care issues, providing appropriate education to patients documenting actions and plans and completing follow-ups.

3. Activities at the PMTAC will be carried out according to the suggested workflow (Refer to **Appendix 1**).

2.3 MANPOWER REQUIREMENT

At least two pharmacists should be assigned to each PMTAC session, particularly for sessions involving medication dispensing.

2.4 APPOINTMENT

All appointments will be scheduled by PMTAC pharmacists.

The subsequent visit to the PMTAC will be determined by the pharmacist based on criteria such as patients who are non-adherent (or) on multiple drug regimen (or), experiencing severe adverse effects. Otherwise, the appointment with the pharmacist is made based on the psychiatrist's appointment.

Note:

- Appointment date to see pharmacist shall fall on the MTAC day, so that pharmacist in charge of the MTAC on that day will review and dispense medications to the patient accordingly.
- Scheduled appointment is individualised depending on patient factors.
- Subsequent follow up for MTAC should be based on patient's clinical status.
- If patient fails to turn up for follow up, rescheduling should be done.

2.5 OUTCOME MEASUREMENTS

All facilities providing PMTAC services shall monitor the following indicators as outcome measurements for the service:

a) Medication adherence assessment **(Appendix 9)**.

b) Medication knowledge i.e. DFIT score.

c) Side effect checklists **(Appendices 10, 11, 12, 13, 14, 15, 16, 17 & 18)**

d) Other relevant monitoring parameters e.g. Clozapine monitoring chart, therapeutic drug monitoring (TDM), laboratory parameters, etc.

2.6 PROCEDURES

The procedures for PMTAC workflow and documentation are shown in **Appendix 1.**

2.6.1 SELECTION OF PATIENTS

The criteria which may be used to determine the need of patient's recruitment to PMTAC are as follows:

a) Patients who are newly diagnosed with mental disorders and started on medications.
b) Patients who experience difficulties with medication adherence.
c) Patients who undergo cross-switching or cross-tapering regimen.
d) Patients with medication-related problems and suspected adverse drug reactions.
e) Referred by healthcare providers (Specialists, Medical Officers, and Pharmacists).

2.6.2 SCOPE OF FUNCTION AND RESPONSIBILITIES OF PHARMACISTS DURING CLINIC VISITS

1. During the initial visit, the pharmacist will perform an initial assessment of the patient. The initial evaluation will involve:
    a) Review of patient's medical and medication history.
    b) Conducting a baseline assessment of:
        i. Past medical/medication history
        ii. Social/family history
        iii. Occupational history (e.g. shift work, office work, student.)
        iv. Patient's knowledge on diseases and medications
        v. Lifestyle (diet, physical activities, smoking and alcohol status)
        vi. History of allergies (drug, food, etc.)
    c) Review of vital signs and laboratory parameters.
    d) Assessment of adherence, medication-related problems and issues.
    e) Patient (and/or caregiver) interview.
2. During the initial interview, the following will be discussed with the patient:
    a) Objectives of PMTAC.
    b) Anticipated benefits for patients and/or caregivers.
    c) Treatment goals (improve adherence, reduction of symptoms, ability to return to functionality), short term and long term drug treatment plan.
    d) Patient's medication-related needs.
    e) Patient's rights and responsibilities in the program

3. Patient’s appointment book or prescription may be tagged as identification.
4. The pharmacist will then proceed with the use of Psychoeducation Modules **(Appendix 2)**. The modules will be delivered at a pace based on the patient's understanding and knowledge assessment at every visit.

2.6.3 SUBSEQUENT VISITS

1. The subsequent visits shall be scheduled every 1-3 months, based on the patient's need, his/her current health status, other clinic visits, and medication refill appointments.

   ***Longer visit intervals (more than 3 months) may be considered with PMTAC pharmacist's discretion.**

2. All subsequent visits are preferably carried out at the clinic/pharmacy (for patients attending PMTAC physically). If virtual sessions are considered, they should:
   a) Be conducted every 1-3 months
   b) Include activities specified under subsections 3-6
   c) Be documented
   d) Have physical session with PMTAC pharmacists when patients come for their scheduled clinic appointment with doctors
3. The pharmacist's review at every visit includes:
   a) Medication adherence assessment
   b) Review on the medication side effects
   c) Review of relevant monitoring parameters
   d) Discussion on clinical progress
   e) Medication knowledge assessment
   f) Lifestyle assessment
4. Educate patients using Psychoeducation Module **(Appendix 2).**

5. Conduct medication counselling (refer flip chart-*Modul 1 & 2 Kaunseling Pesakit Psikiatri*).
6. Counsel on medication adherence (e.g. using pillbox or other innovative ways to help patients understand and adhere to the drug regime).
7. Make referral to other healthcare providers (if necessary).
8. Continue appointments until patient fulfills any one of the discharge criteria.

2.6.4 PMTAC PATIENT REGISTRY

A registry of PMTAC patients must be maintained with name, PMTAC registration number, date of recruitment, and current PMTAC status.

2.6.5 MISSED APPOINTMENT

Patients who missed PMTAC visit will be contacted by telephone to reschedule a new appointment date **(Appendix 19).**

2.6.6 PHARMACEUTICAL REVIEW

1. Pharmaceutical care issue identification

   Assess the patient and obtain all the information required to identify any medication-related problem.

2. Pharmaceutical care issue recommendation

   a) Provide the most appropriate recommendation for the identified medication-related problem.

b) Discuss and formulate an individualised action plan with the patient, including identifying specific therapeutic outcomes.

c) Provide appropriate pharmacological and non-pharmacological recommendations to achieve the therapeutic outcomes.

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

3. Pharmaceutical care plan evaluation

   a) Monitor patient's adherence to the pharmaceutical care plan.

   b) Follow up on the patient's progress to ensure the achievement of desired outcomes, making modifications to the existing plan if necessary.

2.6.7 MEDICATION DISPENSING AND COUNSELLING

1. PMTAC pharmacist shall countercheck & dispense the medications to the patient (whenever feasible).
2. PMTAC pharmacist shall provide medication counselling (flip chart-*Modul 1 & 2 Kaunseling Pesakit Psikiatri* can be used as a guide).

2.6.8 DOCUMENTATION

1. All the assessments and recommendations during PMTAC sessions should be documented in PMTAC notes electronically or manually.
2. All relevant data should be recorded using the designated forms and kept in the patient's profile. The documentation includes the following parts:

a) Referral Form **(Appendices 3 & 4)**

b) Patient's Demographic and Medication History **(Appendix 5)**

c) Pharmacist Assessment and Follow up Form **(Appendix 6)**

d) Laboratory Values **(Appendix 7)**

e) Clozapine Blood Monitoring Chart (if necessary) **(Appendix 8)**

f) Medication Adherence Rating Scale, MARS **(Appendix 9)**

g) Side Effect Checklists **(Appendices 10 - 18)**

i. Glasgow Antipsychotic Side Effect (GASS) **(Appendix 10)**

ii. Toronto Side Effects Scale (TSES)- Antidepressant Side Effects Scale **(Appendix 11)**

iii. Lithium Side Effects Rating Scale (LiSERS) **(Appendix 12)**

iv. Valproate Side Effect Rating Scale (VSERS) **(Appendix 13)**

v. Anticholinergic Side Effect Checklist **(Appendix 14)**

vi. Mood Stabilizers Side Effect Checklist **(Appendix 15)**

vii. Anti-Dementia Side Effect Checklist **(Appendix 16)**

viii. CADDRA Patient ADHD Medication Form **(Appendix 17)**

ix. Recommended Side Effect Checklist and Monitoring Parameters **(Appendix 18)**

h) List of Activities for PMTAC Visit **(Appendix 20)**

3. Patient's progress and issues are required to be keyed into the Pharmacy Information System (PhIS) reporting Module upon each visit. This report shall include the patient's current status, identify medication-related problems and

monitoring results, updating the medication list as needed, allergies, adverse drug reactions, medication adherence. All interventions and plans for each pharmaceutical care issue should be addressed. Facilities without an electronic medical record system can opt to maintain manual records as an alternative.

2.7 DISCHARGE CRITERIA

PMTAC pharmacist can discharge patients who fulfill any one of the following criteria:

a) Patients who have completed the psychoeducation modules, adhere to medication, stable and without active issues.
b) Patients who are not keen and not cooperative to continue with PMTAC.
c) Patients who defaulted three (3) consecutive appointments by PMTAC pharmacist or defaulted clinic appointment for more than one year.
d) Patients who have been transferred out to another facility/deceased.

PSYCHIATRIC WARD PHARMACY SERVICE

3. PSYCHIATRIC WARD PHARMACY SERVICES

Psychiatric ward pharmacists are responsible for the provision of safe, effective, and prompt medication therapy during hospitalisation.

The goal of ward pharmacy activities is to optimise the patient's pharmacotherapy and achieve positive clinical outcomes within realistic economic expenditures. During ward rounds, the major services provided are input pertaining to appropriateness of therapy, medication review, medication reconciliation, medication counselling for psychiatric patients or caregivers, and the monitoring of unwanted side effects. Other services include therapeutic drug monitoring and dispensing medications to discharged patients. These inputs shall be documented to support verbal recommendations and to provide continuity of care among health professionals.

3.1 SCOPE OF FUNCTION AND RESPONSIBILITIES OF PSYCHIATRIC WARD PHARMACIST

1. To conduct medication review and reconciliation for psychiatric patients.
2. To identify potential pharmaceutical care issues and conduct pharmaceutical care interventions to optimise the effectiveness and safety of pharmacotherapy.
3. To collaborate actively with prescribers and other healthcare professionals on pharmacotherapy management.
4. To develop and deliver pharmaceutical care plans to psychiatric patients.
5. To provide medication counselling and education for psychiatric patients.
6. To perform adverse drug reaction and medication error reporting.

7. To document all clinically relevant data such as patient's condition, pharmaceutical care issues and interventions in the designated format of Medication History Assessment Form (CP1), Pharmacotherapy Review (CP2), Clinical Pharmacy Report Form (CP3) and Patient Referral Notes (CP4).

   (As an alternative to CP1, Pharmacotherapy Review Form may be utilised to collect a comprehensive history of the patient's medication use.) - **Appendix 21**
8. To do a thorough medication or treatment chronology for psychiatric patients by using the Pharmacotherapy Review Form. This form is usually applicable when:
   a) Deciding the next course of treatment for patients with poor response to the current treatment or patients who are highly sensitive to side effects of medication.
   b) Deciding if a patient's diagnosis is to be revised to treatment resistant Schizophrenia and Clozapine is indicated.
   c) Tracing any life-threatening side effects experienced by the patient due to psychiatric medication (usually before deciding to restart Clozapine).
   d) Checking on previous drug combinations and/or augmentation that has been tried on the patient.
   e) To assist in obtaining access to medications that are not listed in the Ministry of Health Medicines Formulary (MOHMF), used outside the indications of the National Pharmaceutical Regulatory Agency (NPRA) and/or MOHMF, as well as medications that are not registered with NPRA in Malaysia.
9. To provide medication-related information as part of a multidisciplinary healthcare unit especially during grand ward rounds.

10. To provide continuous education in psychopharmacotherapy to health care providers.

3.2 SCOPE OF SERVICES

Psychiatric ward pharmacy services aim to improve patient's overall health and contribute significantly to safe and responsible use of medications.

These objectives are designed to help doctors to prescribe and oversee the patient's pharmacotherapy more effectively. Refer to **GUIDELINE ON WARD PHARMACY ACTIVITIES** latest edition.

PSYCHIATRIC HOME MEDICATION REVIEW SERVICE

4. PSYCHIATRIC HOME MEDICATION REVIEW SERVICE

People with complex mental health needs often disengage from services, leading to frequent relapses and hospital readmissions. To address this issue, the Assertive Community Treatment (ACT) model was developed, resulting in the establishment of Community Psychiatric Services in Malaysia (Stanley et al., 2021). Community Psychiatric Services offers a comprehensive range of mental health treatments and psychosocial interventions through a multidisciplinary team (Medical Development Division, 2011). Since its introduction in the 1970s, ACT has proven to be an effective, evidence-based practice and has been successfully implemented in the United States, Canada, Australia, and the United Kingdom (Gable et al., 2013).

According to the Management of Schizophrenia (2nd Edition), ACT is recommended for patients with schizophrenia and bipolar disorder who have difficulty engaging with mental health services, as part of an integrated care approach (MaHTAS, 2014 & MaHTAS, 2021). With a focus on deinstitutionalisation, Malaysia is transitioning towards community-based care, which involves discharging patients from hospitals and providing support in their own homes with family involvement. This shift aims to enhance patients' quality of life within their familiar environment (Ministry of Health Malaysia, 2020).

In the HMR, which is part of the Community Psychiatric Services programme, pharmacists play a crucial role in ensuring safe and effective medication use. They assess and monitor the effectiveness and safety of medication regimens, making adjustments to improve efficacy and minimize side effects. Pharmacists provide patient education to ensure understanding and adherence to prescribed treatments.

Additionally, they identify and manage adverse drug effects and interactions, offering recommendations for alternative treatments or adjustments when needed. The HMR service is delivered by a multidisciplinary team consisting of physicians, staff nurses, and pharmacists, who work collaboratively to ensure comprehensive and patient-centered care. Through these responsibilities, pharmacists significantly enhance patient outcomes and the safe use of medications in community-based care settings (Pharmaceutical Services Programme, 2023).

4.1 OBJECTIVES

The general objective of the HMR is to improve health outcomes and enhance the quality of life for patients by ensuring the appropriate use of medications in home or residential settings. Pharmacists collaborate closely with patients, caregivers, doctors, and other healthcare professionals to manage active psychiatric symptoms through diligent medication monitoring. This comprehensive approach ensures that medications are used safely and effectively, supporting better overall health and well-being for patients (Pharmaceutical Services Programme, 2023).

Specific objectives are (Pharmaceutical Services Programme, 2023):

1. **Medication Reconciliation**

   To avoid unnecessary and/or potentially inappropriate medications that may lead to potential risk of patients' health.

2. **Medication Evaluation and Monitoring**

   To assess and track the effectiveness of medications and their safety.

3. **Optimisation of Medication Regimens**

   To adjust treatments to improve effectiveness and reduce side effects.

4. **Recommendations for Management**

   To suggest alternative treatments or adjustments as needed.

5. **Identification of Drug-Induced Issues**

   To detect and manage adverse effects and drug interactions related to prescribed medications, Over-The-Counter (OTC) medications, traditional medications and health supplements.

6. **Patient Education**

   To provide information about illnesses and help patients and caregivers understand and adhere to medication plans, while also identifying factors that hinder medication adherence.

7. **Analysis of Laboratory Tests**

   To guide necessary medication adjustments using laboratory tests.

8. **Medication Supply** (if required)

   To provide and distribute medications to patients ensuring they have access to the medications they need.

9. **Medication Delivery**

   May at times deliver medications to individuals in the community.

4.2 PATIENT SELECTION

Enrollment may occur based on selection by the HMR pharmacist or the multidisciplinary team. Additionally, patients and caregivers can also request enrollment in these services (Pharmaceutical Services Programme, 2023).

Patients who are eligible for Psychiatric HMR Services include:

1. Patients suffering from chronic illness (schizophrenia, mood disorders, dementias) and taking five (5) or more medications for long term therapy (including other co-morbidities).
2. Patients suspected of non-adherence or not managing well with medication.
3. Patients who are managing their own medication but are at risk due to language difficulties, impaired insight, confusion, dementia, cognitive difficulties, or reliance on a caregiver who lacks the capacity, knowledge, or competency to manage medications effectively.
4. Patients who are recently discharged from hospital with significant change in medication regimen.
5. Patients who have defaulted treatment or fail to refill their medication especially for chronic illness.
6. Patients who experience frequent readmissions, prolonged psychotic episodes, and comorbid substance use.
7. Patients who are taking medications that require close monitoring or with narrow therapeutic index (example: lithium, carbamazepine and others).
8. Patients who are experiencing adverse drug reactions.
9. Patients who are susceptible to medical errors due to mental or physical disabilities.
10. Patients who fail to follow up on treatment.
11. Patients who are at risk of unsafe medication use.

Patients with high-risk behaviors such as suicidality and homicidality are not suitable for HMR Services.

4.3 SCOPE OF SERVICE

Psychiatry HMR Services is to be extended to patients at home or residential care facilities who are currently seeking treatment at Ministry of Health facilities (Pharmaceutical Services Programme, 2023).

Refer to **Protokol Perkhidmatan Farmasi Penilaian Ubat-ubatan Di Rumah (HMR)** latest edition.

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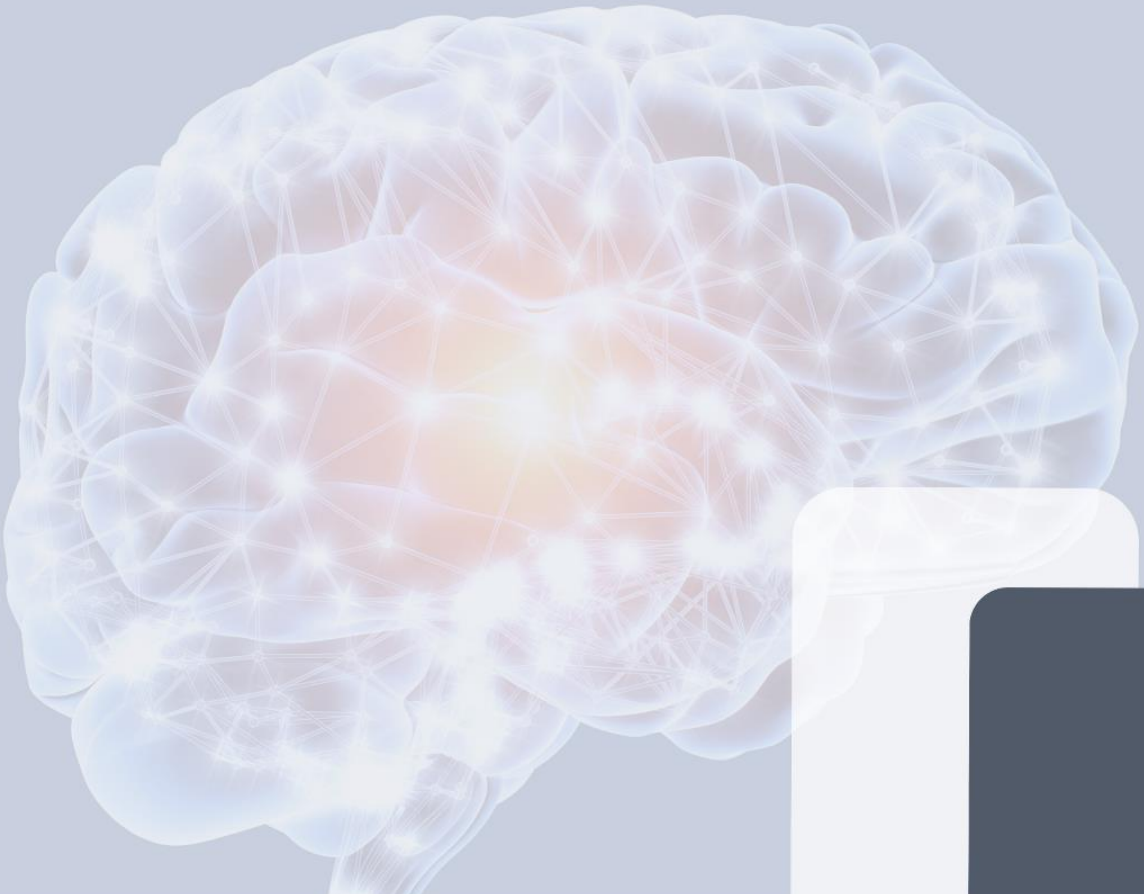
Xiang, Y. T., Weng, Y. Z., Leung, C. M., Tang, W. K., & Ungvari, G. S. (2007). Quality of life of Chinese schizophrenia outpatients in Hong Kong: relationship to sociodemographic factors and symptomatology. *The Australian and New Zealand journal of psychiatry*, *41*(5), 442–449. https://doi.org/10.1080/00048670701261228

APPENDICES



6. APPENDICES

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Appendix 3 : Counselling Referral / PMTAC Referral Form

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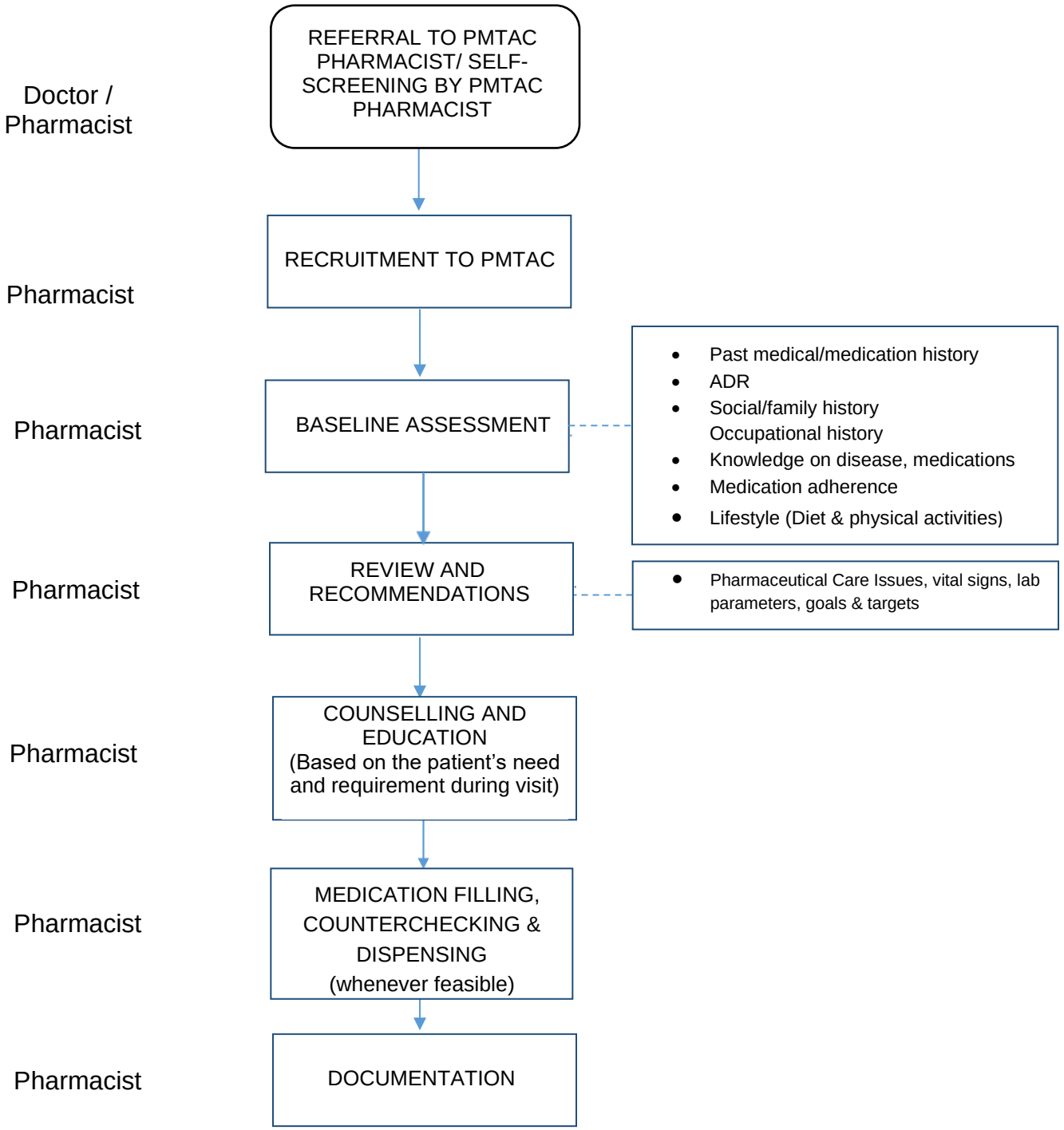
Appendix 1

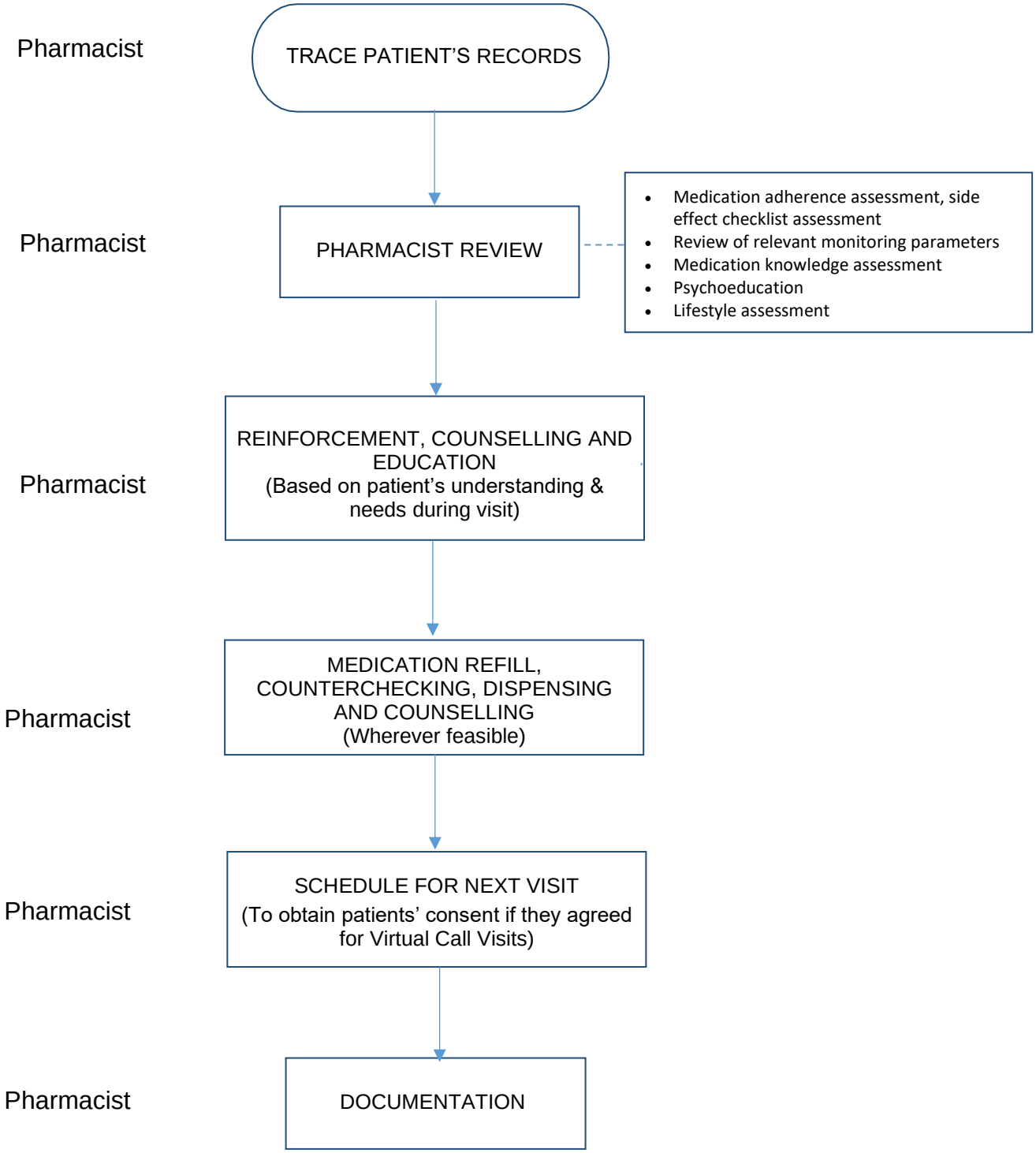
Psychiatric Medication Therapy Adherence Clinic (PMTAC) Workflow

FIRST PMTAC VISIT



Appendix 1

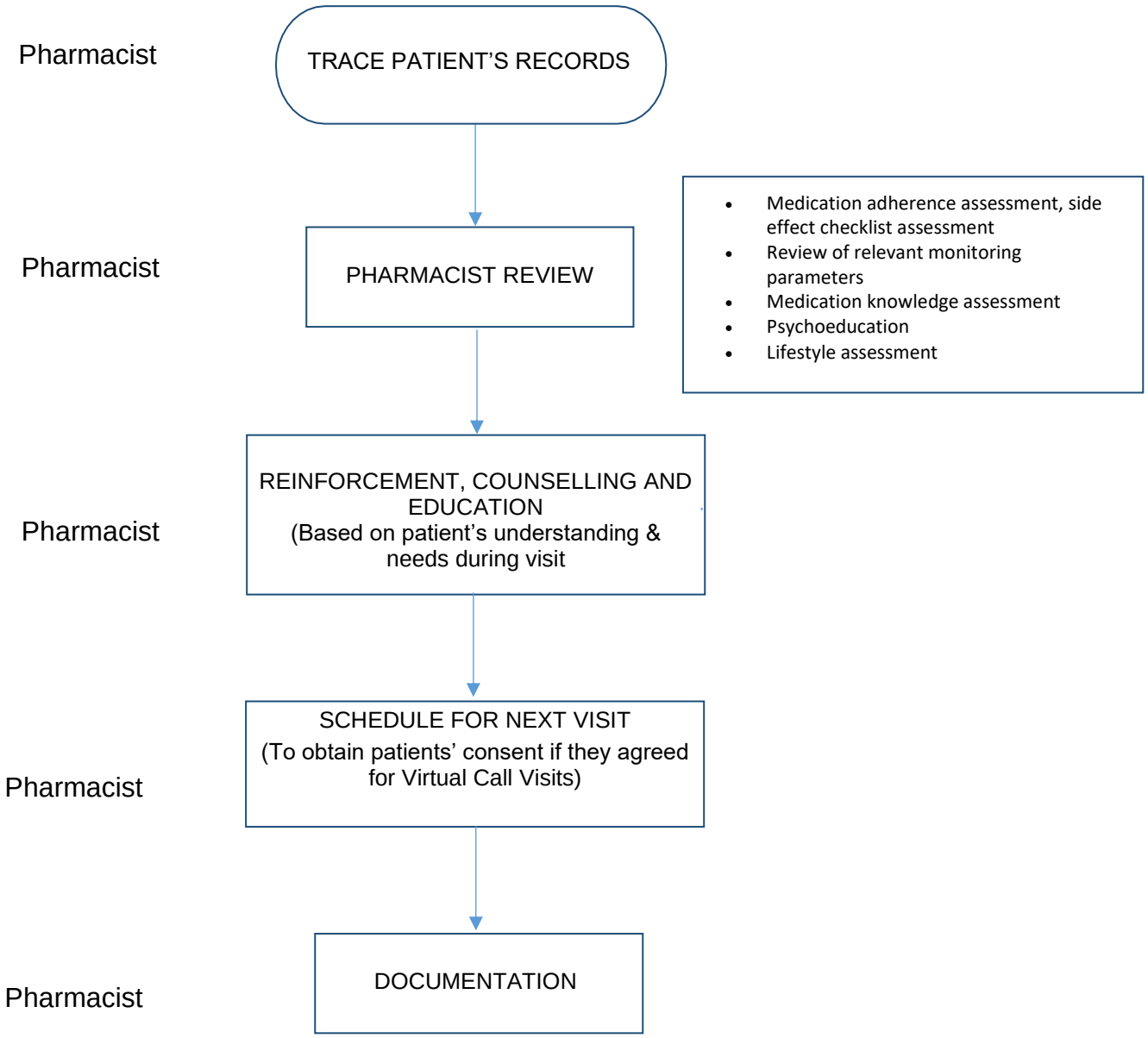
SUBSEQUENT VISITS (1-3 MONTHS)



Appendix 1

VIRTUAL CALL VISITS (1-3 MONTHS)
LOCATION: PMTAC CLINIC

SUBSEQUENT VISITS (1-3 MONTHS)



Appendix 2

PSYCHOEDUCATION MODULES FOR PATIENTS

First Module: Understanding the Disease

❑Overview of the disease

❑Causes and contributing factors

❑Signs and symptoms of the disease

❑Basic introduction to treatment plan and other effective treatment modalities

❑Other general information required or patient's issues / concerns

Second Module: Understanding the treatment

❑Introduction and importance of medication adherence

❑Understanding and handling the side effects of medication

❑Medication administration plan

❑Important reminder during treatment

Third Module: Understanding and prevention of relapse

❑Identifying signs of relapse

❑Reasons for relapse

❑Identifying steps for relapse prevention

❑Knowing your Early Warning Signs (EWS)

❑Overcoming EWS

Appendix 2

Fourth Module: Handling of Crisis

❑Identifying risk factor

❑Stages of crisis

❑Developing skills to avoid crisis

❑Identifying steps for crisis prevention

Fifth Module: Healthy Lifestyle

❑ Introduction to a balanced diet

❑ Identifying a suitable exercise plan

Appendix 3

Doctor's Referral Form

COUNSELLING REFERRAL FORM
PHARMACY DEPARTMENT _____
PSYCHIATRIC MEDICATION THERAPY ADHERENCE CLINIC

Dear Pharmacist,

The following patient is referred to *Psychiatric Medication Therapy Adherence Clinic* (PMTAC)

Patient's Name : _____

IC No : _____

Age : _____

Diagnosis : _____

Current Medication :

Please see this patient on the following:

- ☐ Newly diagnosed
- ☐ Non-adherence
- ☐ Cross-switching or cross-tapering regimen
- ☐ Drug related problem

Doctor's Signature and Stamp:

_____

For Pharmacist's Use

Received by : Date:

Notes :

Pharmacist's Referral Form

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)*

Pin. 1/24

Appendix 5

PATIENT DEMOGRAPHIC FORM

PHARMACY DEPARTMENT
HOSPITAL / HEALTH CLINIC _____
PSYCHIATRIC MEDICATION THERAPY ADHERENCE CLINIC

Ref No:
Allergy:

<table>
<tr><td colspan="2">Name:</td><td>I/C No:</td><td>Race:
M / C / I / Others ___</td></tr>
<tr><td>Age:</td><td>Gender:
Male / Female</td><td rowspan="2">Contact No:
Next of kin contact no:
(Relationship)</td><td rowspan="2">Occupation:</td></tr>
<tr><td colspan="2">Marital Status:
Single/Married/Divorced</td></tr>
<tr><td colspan="2">Medical History:</td><td colspan="2">Surgical History:</td></tr>
<tr><td colspan="4">Diagnosis:</td></tr>
<tr><td colspan="4">Notes (if any):</td></tr>
</table>

Appendix 6

PHARMACIST ASSESSMENT AND FOLLOW-UP FORM

Date:	

Visit	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Others:**

SOCIAL HISTORY

Smoking		**Pregnancy**		**Alcohol Drinking**		**Drug Abuse**	
Yes	( )Sticks/day	Yes	( ) Trimester	Yes	( )	Yes	( )
No	( )	No	( )	No	( )	No	( )
Ex-smoker	( )	Planning to get pregnant	( )	Ex- alcoholic	( )		

PAST MEDICATION HISTORY	**DFIT SCORE**				
	Dosage	**Frequency**	**Indication**	**Admini-stration**	**Score (%)**

***Yes=1 No=0**
Score (%) = (No. of 'Yes' / No. of Questions) x 100%

CURRENT MEDICATION	**SUPPLEMENTS /TRADITIONAL MEDICNE**

PHARMACIST'S NOTES

Appendix 6

PHARMACIST ASSESSMENT AND FOLLOW-UP FORM

ACTIVITIES CARRIED OUT

PHARMACEUTICAL CARE ISSUES

PHARMACIST'S PLAN

MTAC STATUS	Need Follow up	( )	Discharged	( )

Name & Signature:

_____

Appendix 7

LABORATORY INVESTIGATIONS

Laboratory Investigations		Normal Range	No of Visit									
Date												
FULL BLOOD COUNT	TWBC	4-11 x10⁹/L										
	ANC	2-7 x10⁹/L										
	Hb	Male: 13.5-17.5 g/100mL Female: 12 - 16 g/100mL										
	Platelet	150-400x10⁹/L										
Date												
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										
Date												
LIVER FUNCTION TESTS	Albumin	35 – 50 g/L										
	T.Protein	66 – 87 g/L										
	ALP	53 - 141 u/L										
	ALT	<32 u/L										
	T.Bilirubin	<20 umol/L										
Date												
LIPID & GLYCEMIC	FBS	< 7 mmol/L										
	RBS	< 11 mmol/L										
	TChol	< 5.7 mmol/L										
	TG	< 1.7 mmol/L										
	HDL	> 1.7 mmol/L										
	LDL	< 3.9 mmol/L										

Appendix 7

LABORATORY INVESTIGATIONS

Laboratory Investigations		Normal Range	No of Visit									
Date												
TFT	TSH	0.5 - 4.7 mU/L										
	FT4	11.5 - 22.7 pmol/L										
	Drug	**Date/ Therapeutic range**										
TDM	VPA	50 - 125 mcg/mL										
	Lithium	0.6 – 1 mmol/L										
Date												
OTHERS	Prolactin	102 - 496 mIU/L										

(Disclaimer: Normal ranges provided are intended for informational purposes and may differ between laboratories).

Appendix 8

CLOZAPINE MONITORING CHART

Patient's Name: **I/C:**

CLINICAL REVIEW			Base-line prior to cloza-pine	Date									
Baseline, then weekly for first 18 weeks	Dosage (mg)	AM											
		PM											
	Lying	BP											
		Heart rate											
	Stand-ing	BP											
		Heart rate											
	Weight (kg)												
	WBC and Differen-tials	WBC											
		ANC											
CLINICAL REVIEW			Date										
Baseline, then weekly for first 18 weeks	Dosage (mg)	AM											
		PM											
	Lying	BP											
		Heart rate											
	Stand-ing	BP											
		Heart rate											
	Weight (kg)												
	WBC and Differen-tials	WBC											
		ANC											
CLINICAL REVIEW			Date										
Baseline, then weekly for first 18 weeks	Dosage (mg)	AM											
		PM											
	Lying	BP											
		Heart rate											
	Stand-ing	BP											
		Heart rate											
	Weight (kg)												
	WBC and Differen-tials	WBC											
		ANC											

Appendix 8

Blood monitoring during the first 18 weeks of Clozapine therapy

Green	WBC > 3.5 x 10^9/L & ANC > 2.0 x 10^9/L	Clozapine treatment can be initiated/continued.
Amber	WBC 3.0-3.5 x 10^9/L and/or ANC 1.5-2.0 x 10^9/L	Clozapine treatment can continue, but twice weekly blood sampling is required until count returns to 'green'
Red	WBC < 3.0 x 10^9/L and/or ANC < 1.5 x 10^9/L	Clozapine treatment must stop immediately

Blood monitoring after 18 weeks of Clozapine therapy

Green	WBC > 3.0 x 10^9/L & ANC > 1.5 x 10^9/L	Clozapine treatment can be initiated/continued.
Amber	WBC 2.5-3.0 x 10^9/L and/or ANC 1.0-1.5 x 10^9/L	Clozapine treatment can continue, but twice weekly blood sampling is required until count returns to 'green'
Red	WBC < 2.5 x 10^9/L and/or ANC < 1.0 x 10^9/L	Clozapine treatment must stop immediately

Postural Hypotension

A systolic drop of >20 mmHg after one minute of standing is considered a significant postural drop

Reference List:

CPMS. (2019, June 8). Clozaril website. Retrieved June 8, 2019, from https://www.clozaril.co.uk/

Quinn, R. R., Hemmelgarn, B. R., Padwal, R. S., et al. (2010). The 2010 Canadian Hypertension Education Program recommendations for the management of hypertension: Part I - Blood pressure measurement, diagnosis, and assessment of risk. *Canadian Journal of Cardiology*, 26(5), 241–248.

Medication Adherence Rating Scale (MARS)

This scale is based on two already existing self-report measures of compliance. The first is the Drug Attitude Inventory (DAI) (Hogan, Awad and Eastwood, 1983), and the second is the Medication Adherence Questionnaire (MAQ) (Morisky, Green and Levine, 1986). These compliance measures have been combined to produce a compliance scale.

The MARS consists of 10 items which require yes/no responses. The first 4 items are based on the MAQ, and are scored, no = 1 and yes = 0. The remaining items are from the DAI and are coded as follows: Q5, Q6, Q9, Q10, no = 1 and yes = 0; Q7, Q8, no = 0 and yes = 1. A total score will then reflect a greater degree of compliance if it is high, and non-compliance if it is low. However one must always keep in mind that any measure of self-reported compliance will overestimate compliance by approximately 30%.

Hogan, T P, Awad, A G, and Eastwood, R (1983) A self-report scale predictive of drug compliance in schizophrenics: reliability and discriminative validity, Psychological Medicine, 13, 177-183.

Morisky, D E, Green, L W, and Levine, D M (1986) Concurrent and predictive validity of a self-reported measure of medication adherence. Medical Care, 24(1), 67-74.

The Monash Alfred Psychiatry research centre (MAPrc)
Level 4, 607 St Kilda Road, Melbourne 3004 Australia
Phone: +61 9076 6564, Email: maprc@monash.edu Web: www.maprc.org.au

Appendix 9

Medication Adherence Rating Scale

Please respond to the following statements by circling the response which best describes your behaviour or the attitude you have held toward your medication in the past week.

1. Do you ever forget to take your medication?	Yes / No
2. Are you careless at times about taking your medicine?	Yes / No
3. When you feel better, do you sometimes stop taking your medicine?	Yes / No
4. Sometimes if you feel worse when you take the medicine, do you stop taking it?	Yes / No
5. I take my medication only when I am sick	Yes / No
6. It is unnatural for my mind and body to be controlled by medication	Yes / No
7. My thoughts are clearer on medication	Yes / No
8. By staying on medication I can prevent getting sick	Yes / No
9. I feel weird, like a “zombie”, on medication	Yes / No
10. Medication makes me feel tired and sluggish	Yes / No

The Monash Alfred Psychiatry research centre (MAPrc)
Level 4, 607 St Kilda Road, Melbourne 3004 Australia
Phone: +61 9076 6564, Email: maprc@monash.edu Web: www.maprc.org.au

Reference List:

Thompson, K., Kulkarni, J., & Sergejew, A. A. (2000). Reliability and validity of a new Medication Adherence Rating Scale (MARS) for the psychoses. *Schizophrenia Research, 42*(3), 241–247. https://doi.org/10.1016/S0920-9964(99)00130-9

Appendix 10

Glasgow Antipsychotic Side-effect Scale (GASS)

Name:	**Age:**	**Sex: M / F**

Please list current medication and total daily doses below:

This questionnaire is about how you have been recently. It is being used to determine if you are suffering from excessive side effects from your antipsychotic medication.
Please place a tick in the column which best indicates the degree to which you have experienced the following side effects. Also tick the **end** box if you found that the side effect was distressing for you.

*Over the **past week**:*	*Never*	*Once*	*A few times*	*Every day*	*Tick this box if distressing*
1. I felt sleepy during the day					
2. I felt drugged or like a zombie					
3. I felt dizzy when I stood up and/or have fainted					
4. I have felt my heart beating irregularly or unusually fast					
5. My muscles have been tense or jerky					
6. My hands or arms have been shaky					
7. My legs have felt restless and/or I couldn't sit still					
8. I have been drooling					
9. My movements or walking have been slower than usual					
10. I have had, or people have noticed uncontrollable movements of my face or body					
11. My vision has been blurry					
12. My mouth has been dry					
13. I have had difficulty passing urine					
14. I have felt like I am going to be sick or have vomited					
15. I have wet the bed					
16. I have been very thirsty and/or passing urine frequently					
17. The areas around my nipples have been sore and swollen					
18. I have noticed fluid coming from my nipples					
19. I have had problems enjoying sex					
20. Men only: I have had problems getting an erection					

Tick yes or no** for the **last three months	*No*	*Yes*	*Tick this box if distressing*
21. Women only: I have noticed a change in my periods			
22. Men and women: I have been gaining weight			

Appendix 10

Staff Information

1. Allow the patient to fill in the questionnaire themselves. Questions 1-20 relate to the previous week and questions 21-22 to the last three months.

2. Scoring

   For questions 1-20

0 Points	"Never"
1 point	"Once"
2 points	"A few times"
3 points	"Everyday"

   For questions 21 and 22 award 3 points for a "yes" answer and 0 points for a "no".

   Total for all questions =____

3. For male and female patients a score of:

0-21	absent/mild side-effects
22-42	moderate side-effects
43 and over	severe side-effects

4. Side effects covered include:

1-2	sedation and CNS side effects
3-4	cardiovascular side effects
5-10	extra-pyramidal side effects
11-13	anticholinergic side effects
14	gastro-intestinal side effects
15	genitourinary side effects
16	screening question for diabetes mellitus
17-21	prolactinaemic side effects
22	weight gain

The column relating to the distress experienced with a particular side effect is not scored, but is intended to inform the clinician of the service user's views and condition.

Reference list:

Waddell, L., & Taylor, M. (2008). A new self-rating scale for detecting atypical or second-generation antipsychotic side effects. *Journal of Psychopharmacology*, 22(3), 238–243. https://doi.org/10.1177/0269881107087976

Toronto Side Effects Scale (TSES)- Antidepressant Side Effects Scale

Within the last 2 weeks, have you experienced any of the following symptoms? How much trouble did this side effect cause you? (physician: rate frequency and severity of the symptoms)

		Frequency					Severity				
No	Side-effect	Never	Some times	About half the time	Often	Every day	No trouble	Some trouble	Moderate trouble	More trouble	Extreme trouble
1	Nervousness	1	2	3	4	5	1	2	3	4	5
2	Agitation	1	2	3	4	5	1	2	3	4	5
3	Tremor	1	2	3	4	5	1	2	3	4	5
4	Twitching/myoclonus (muscle contraction)	1	2	3	4	5	1	2	3	4	5
5	Abdominal pain	1	2	3	4	5	1	2	3	4	5
6	Dyspepsia (upset stomach)	1	2	3	4	5	1	2	3	4	5
7	Nausea	1	2	3	4	5	1	2	3	4	5
8	Diarrhea	1	2	3	4	5	1	2	3	4	5
9	Constipation	1	2	3	4	5	1	2	3	4	5
10	Decreased appetite	1	2	3	4	5	1	2	3	4	5
11	Increased appetite	1	2	3	4	5	1	2	3	4	5
12	Weakness or fatigue	1	2	3	4	5	1	2	3	4	5
13	Dizziness	1	2	3	4	5	1	2	3	4	5
14	Postural hypotension (dizzy when getting up)	1	2	3	4	5	1	2	3	4	5
15	Drowsiness/Daytime somnolence	1	2	3	4	5	1	2	3	4	5
16	Increased Sleep	1	2	3	4	5	1	2	3	4	5
17	Decreased Sleep	1	2	3	4	5	1	2	3	4	5
18	Sweating	1	2	3	4	5	1	2	3	4	5
19	Flushing	1	2	3	4	5	1	2	3	4	5
20	Edema (fluid retention)	1	2	3	4	5	1	2	3	4	5
21	Headache	1	2	3	4	5	1	2	3	4	5
22	Blurred vision	1	2	3	4	5	1	2	3	4	5
23	Dry mouth	1	2	3	4	5	1	2	3	4	5
24	Anorgasmia/no orgasm	1	2	3	4	5	1	2	3	4	5
25	Increased libido	1	2	3	4	5	1	2	3	4	5
26	Decreased libido	1	2	3	4	5	1	2	3	4	5
27	**(men only; items 27-29)** premature ejaculation	1	2	3	4	5	1	2	3	4	5
28	Delayed ejaculation	1	2	3	4	5	1	2	3	4	5
29	Erectile dysfunction	1	2	3	4	5	1	2	3	4	5
30	Other, specify										
		None	≤2lbs	≤4lbs	≤6lbs	≤7lbs	No trouble				Extreme trouble
31	Weight gain	1	2	3	4	5	1	2	3	4	5
32	Weight loss	1	2	3	4	5	1	2	3	4	5

Reference list:

Vanderkooy, J. D., Kennedy, S. H., & Bagby, R. M. (2002). Antidepressant side effects in depression patients treated in a naturalistic setting: A study of bupropion, moclobemide, paroxetine, sertraline, and venlafaxine. *The Canadian Journal of Psychiatry*, 47(2), 174–180. https://doi.org/10.1177/070674370204700208

Lithium Side Effects Rating Scale (LiSERS)

Patient name …… MRN Number……

Staff Name …… Date of Assessment …….....

		No		Yes		
				Mild	Moderate	Severe
1	Increased appetite					
2	Increased thirst					
3	Increased output of urine					
4	Weight gain					
5	Thyroid problems (check fatigue, dry skin, constipation)					
6	Metallic Taste					
7	Feeling restless					
8	Dry Mouth					
9	Nausea and feeling sick					
10	Dizziness					
11	Mild tremor (fine tremor)					
12	Muscle pains and tension					
13	Difficulties in memory					
14	Difficulties with concentration					
15	Feeling slowed down in my thinking and creativity					
16	Sleep problems					
17	Ankle oedema					
18	Headaches					
19	Excessive sweating					
20	Psoriasis					
21*	Blurred vision					
22*	Palpitations or feeling my heart pounding					
23*	Feeling drowsy and lethargic during the day					
24*	Diarrhoea / vomiting					
25 *	Severe tremor (coarse tremor)					
26 *	Confusion					
27*	Muscle weakness/ twitching					
28*	Lack of Coordination/ unsteady on feet					
29*	Slurred speech					
30	Other _____					

*** indicates possibility of a toxic lithium level: consider urgent serum lithium level if any of these symptoms reported**

Northumberland, Tyne and Wear NHS Foundation Trust
Appendix 1 – Lithium Side Effects Rating Scale (LiSERS) – V03 – Issue 1 – Issued Nov 15
Part of PPT-PGN-19 – Safer Lithium Therapy NTW(C)38 - Pharmacological Therapy Policy)

Reference List:

Cumbria, Northumberland, Tyne and Wear NHS Foundation Trust. (2015). *Lithium side effects checklist (PPT–PGN–19, Appendix 1, V03, Issue 1).* Retrieved from https://www.cntw.nhs.uk/wp-content/uploads/2016/11/PPT-PGN-19-App-1-Lithium-Side-effects-V03-Issue1-Oct15.pdf

Cumbria, Northumberland, Tyne and Wear NHS Foundation Trust

Valproate Side Effect Rating Scale (VSERS)

Patient name	
MRN number	
Date of assessment	

	Side Effect	None	Yes		
			Mild	Moderate	Severe
1	Abnormal weakness				
2	Malaise				
3	Loss of appetite				
4	Lack of energy				
5	Oedema				
6	Drowsiness				
7	Nausea				
8	Recurrent seizures				
9	Jaundice				
10	Weight gain				
11	Confusion				
12	Tremor(intention/postural)				
13	Parkinson's tremor				
14	Cognitive decline				
15	Hair loss				
16	Peripheral oedema				
17	Unexplained bruising				
18	Unexplained bleeding				
19	Excessive hair growth				
20	Unexplained changes to menses				
21	Porphyria				
22	Repeated vomiting				
23	Abdominal pain				
24	Suicidal ideation/behaviour				
25	Diarrhoea				
26	Abnormal behaviour				
27	Rash				
28	Deafness				
29	Gait disturbances				
30	Other…..				

Cumbria, Northumberland, Tyne and Wear NHS Foundation Trust
PPT–PGN–25- Safe Prescribing of Valproate V04-Iss2-Feb 2022
Part of CNTW(C)38 Pharmacological Therapy Policy

Reference list:

Cumbria, Northumberland, Tyne and Wear NHS Foundation Trust. (2022). *Safe prescribing of valproate (PPT–PGN–25, V04-Iss2-Feb 2022)*. Part of CNTW(C)38 Pharmacological Therapy Policy.

Appendix 14

Anticholinergic Side Effects Checklist

Name of Medication	Common Side Effects	If happen, please tick (√)	Comment (if any)
Trihexyphenidyl (Benzhexol)	Dry mouth		
	Blurred vision		
	Constipation		
	Nausea		
	Dizziness		
	Euphoria		
	Photophobia		
	Tachycardia		
Procyclidine	Dry mouth		
	Constipation		
	Blurred vision		
	Urinary retention		
	Gingivitis		
	Nausea		
	Rash		
	Dizziness		
	Memory impairment		
	Impaired cognition		
	Anxiety		
	Agitation		
	Confusion		
	Disorientation		

Reference list:

Stahl, S. M. (2006). *Essential psychopharmacology: The prescriber's guide: Antipsychotics and mood stabilizers* (7th ed.). Cambridge University Press.

Wolters Kluwer. (2019). *Lexicomp: Evidence-based drug referential content.*

Durán, C. E., Azermai, M., & Vander Stichele, R. H. (2013). Systematic review of anticholinergic risk scales in older adults. *European Journal of Clinical Pharmacology, 69*(8), 1485–1496. https://doi.org/10.1007/s00228-013-1499-3

Salahudeen, M. S., Hilmer, S. N., & Nishtala, P. S. (2015). Comparison of anticholinergic risk scales and associations with adverse health outcomes in older people. *Journal of the American Geriatrics Society, 63*(1), 85–90. https://doi.org/10.1111/jgs.13206

Appendix 15

Mood Stabilizer Side Effects Checklist

Name of Medication	Common Side Effects	If happen, please tick (√)	Comment (if any)
Carbamazepine	Hypotension		
	Skin rash		
	GI upset		
	Dizziness		
	Drowsiness		
	Fatigue		
	Agranulocytosis		
	Ataxia		
	Steven Johnson's Syndrome		
Lamotrigine	Skin rash		
	Headache		
	Insomnia		
	GI upset		
	Diplopia		
	Blurred vision		
	Drowsy		
	Dizziness		
	Angioedema		
	Steven Johnson's Syndrome		

Reference list:

Ministry of Health. (2014). *Clinical practice guidelines: Management of bipolar disorder in adults.*

Young, A. H., Taylor, D. M., & Barnes, T. R. E. (2021). *The Maudsley prescribing guidelines in psychiatry* (14th ed.). John Wiley & Sons.

Stahl, S. M. (2006). *Essential psychopharmacology: The prescriber's guide: Antipsychotics and mood stabilizers* (7th ed.). Cambridge University Press.

Himmerich, H., & Hamilton, A. (2020). Mood stabilizers: Side effects, contraindications, and interactions. In *NeuroPsychopharmacotherapy*. Springer Nature Switzerland AG.

Appendix 16

Anti-Dementia Side Effects Checklist

Name of Medication	Common Side Effects	If happen, please tick (√)	Comment (if any)
Donepezil	Nausea		
	Diarrhea		
	Vomiting		
	Appetite loss		
	Weight loss		
	Insomnia		
	Dizziness		
	Fatigue		
	Headache		
	Bradycardia		
Rivastigmine (oral & transdermal patch)	Nausea		
	Diarrhea		
	Vomiting		
	Abdominal pain		
	Appetite loss		
	Weight loss		
	Agitation		
	Dizziness		
	Headache		
	Application site irritation (transdermal patch)		
	Bradycardia		
Memantine	Dizziness		
	Headache		
	Confusion		
	Constipation		
	Cough		
	Elevated liver function test		

Reference list:

Young, A. H., Taylor, D. M., & Barnes, T. R. E. (2021). *The Maudsley prescribing guidelines in psychiatry* (14th ed.). John Wiley & Sons.

Dunn, N. R., Pearce, G. L., & Shakir, S. A. (2000). Adverse effects associated with the use of donepezil in general practice in England. *Journal of Psychopharmacology*, 14(4), 406–408. https://doi.org/10.1177/026988110001400410

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MIMS. (n.d.). *Rivastigmine – Drug information, dosage, and side effects*. Retrieved January 7, 2025, from https://www.mims.com/indonesia/drug/info/rivastigmine?mtype=generic

MIMS. (n.d.). *Memantine – Drug information, dosage, and side effects*. Retrieved January 7, 2025, from https://www.mims.com/malaysia/drug/info/memantine?mtype=generic

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CADDRA Patient ADHD Medication Form

https://www.caddra.ca/wp-content/uploads/CADDRA-Patient-ADHD-Medication-Form.pdf

Reference list:
CADDRA. (n.d.). CADDRA patient ADHD medication form. *Canadian ADHD Resource Alliance*. https://www.caddra.ca/wp-content/uploads/CADDRA-Patient-ADHD-Medication-Form.pdf

Appendix 18

Recommended Side Effect Checklist and Monitoring Parameters

Parameter/Test	Suggested frequency	Action if results outside reference range	Drug with special precautions	Drugs with do not require monitoring
Blood Pressure	Baseline, frequently during dose titration and dose changes to detect antipsychotics (induced changes and generally for physical health check	If severe hypotension or hypertension (with clozapine) observed, slower the rate of titration Consider switching to another AP if symptomatic postural hypotension Treat hypertension in line with Malaysia CPG on Management of Hypertension (5th Edition)	Clozapine, chlorpromazine and quetiapine are most likely to be associated with postural hypotension	Amisulpride, aripiprazole, sulpiride
Weight (include waist size and BMI, if possible)	Baseline, frequently for three months then yearly to detect AP-induced changes and generally for physical health check	Offer lifestyle advice Consider changing AP and/or dietary/pharmacological intervention	Clozapine, olanzapine -frequently for three months, then 3-monthly for first year, then yearly	Aripiprazole, ziprasidone are not clearly associated with weight gain but monitoring is required nonetheless – prevalence of obesity is high in this patient group
Full blood count	Baseline and yearly as part of a routine physical health check and to detect chronic bone marrow suppression (small risk associated with some APs)	Stop suspected medication if neutrophils <1.5x109/L Refer to specialist medical care if neutrophils <0.5x109/L Note high frequency of benign ethnic neutropenia in certain ethnic groups	Clozapine - FBC weekly for 18 weeks, then monthly	None

Reference list:

Academy of Medicine of Malaysia. (2022). *Management of schizophrenia (Second edition)*. Retrieved from https://www.acadmed.org.my/CPGdl/CPG%20Management%20of%20Schizophrenia%20(Second%20Edition)%20v20221219.pdf

Appendix 18

Recommended Side Effect Checklist and Monitoring Parameters

Parameter/Test	Suggested frequency	Action if results outside reference range	Drug with special precautions	Drugs with do not require monitoring
Plasma glucose - fasting sample if possible	Baseline, at 4 - 6 months, then yearly to detect AP-induced changes and generally for physical health check	Offer lifestyle advice Obtain fasting sample or non-fasting HbA1c Refer to medical specialist/family physician care	Clozapine, olanzapine, chlorpromazine - test at baseline, one month, then 4 - 6 monthly	Some APs are not clearly associated with impaired fasting glycemia, but as its prevalence is high in this patient group, so all patients should be monitored
Urea and electrolytes including creatinine or estimated glomerular filtration rate (eGFR)	Baseline and yearly as part of a routine physical health check	Investigate all abnormalities detected	Amisulpride and sulpiride are renally excreted - consider reducing dose if eGFR reduced	None
Blood lipids (cholesterol, triglycerides) - fasting sample if possible	Baseline, three months, then yearly to detect AP-induced changes and generally for physical health check	Offer lifestyle advice Consider changing AP and/or initiating statin therapy	Clozapine, olanzapine - 3-monthly for first year, then yearly	Some APs (e.g. aripiprazole) not clearly associated with dyslipidaemia, but as prevalence of dyslipidaemia is high in this patient group, so all patients should be monitored
Liver function test (LFT)	Baseline, then yearly as part of a routine physical health check and to detect chronic AP-induced changes (rare)	Stop suspected medication if LFT indicates hepatitis (transaminases x3 normal) or functional damage (prothrombin time/albumin change)	Clozapine and chlorproma- zine are associated with hepatic failure	Amisulpride, sulpiride
Prolactin	Baseline, then at six months, then yearly to detect AP-induced changes	Switch drugs if hyperprolactinaemia confirmed and symptomatic Consider tests of bone mineral density for those with chronically raised prolactin	Amisulpride, sulpiride, risperidone and paliperidone are particularly associated with hyperprolactinaemia	Asenapine, aripiprazole, clozapine, quetiapine, olanzapine (<20 mg) and ziprasidone usually do not elevate prolactin, but worth measuring if symptoms arise

Reference list:
Academy of Medicine of Malaysia. (2022). *Management of schizophrenia (Second edition)*. Retrieved from https://www.acadmed.org.my/CPGdl/CPG%20Management%20of%20Schizophrenia%20(Second%20Edition)%20v20221219.pdf

Appendix 18

Recommended Side Effect Checklist and Monitoring Parameters

Parameter/Test	Suggested frequency	Action if results outside reference range	Drug with special precautions	Drugs with do not require monitoring
Lithium Therapeutic Drug Monitoring	Patient with high risk of toxicity: repeat lithium serum concentration every 2-3 days Dose adjustment/ addition of drug with interaction: measure within 1-2 weeks after changes Acute mania patient: re-measure once the manic episode is over and clearance returns to normal Once the desired steady-state lithium serum concentration has been achieved, rechecked every 1-2 weeks for approximately 2 months or until concentrations have stabilised. During maintenance therapy, lithium serum concentration should be repeated every 3-6 months and may be altered to every 6-12 months for patients whose mood is stable.	Discuss with/refer to medical specialist/family physician care for dose adjustment. Management of toxicity: Hydration, Gastrointestinal decontamination, Haemodialysis	Lithium	None

Reference list:
Ministry of Health Malaysia. (2019). *Clinical pharmacokinetics pharmacy handbook second edition.* Pharmaceutical Services Programme, Ministry of Health Malaysia. Retrieved from https://pharmacy.moh.gov.my/sites/default/files/document-upload/clinical-pharmacokinetics-pharmacy-handbook-ccph-2nd-edition-rev-2.0_0.pdf

Appendix 18

Recommended Side Effect Checklist and Monitoring Parameters

Parameter/Test	Suggested frequency	Action if results outside reference range	Drug with special precautions	Drugs with do not require monitoring
Valproic Acid Therapeutic Drug Monitoring	Initiation of therapy Change in dosing regimen Addition of other antiepileptic drugs to the patient's regimen Change in patient's clinical course (decrease in seizure control or laboratory/physical finding consistent with valproic acid toxicity) Any claims/complains of valproic acid side effects	Discuss with/refer to medical specialist/family physician care for dose adjustment. Management of Overdosage/Toxicology: Activated charcoal, Antidote: L-carnitine	Valproic Acid	None

Reference list:
Ministry of Health Malaysia. (2019). *Clinical pharmacokinetics pharmacy handbook second edition.* Pharmaceutical Services Programme, Ministry of Health Malaysia. Retrieved from https://pharmacy.moh.gov.my/sites/default/files/document-upload/clinical-pharmacokinetics-pharmacy-handbook-ccph-2nd-edition-rev-2.0_0.pdf

Appendix 19

MTAC MISSED APPOINTMENT FORM
PHARMACY DEPARTMENT
HOSPITAL/HEALTH CLINIC_____

Name of Patient: _____ IC/RN: _____
Filled by Pharmacist: _____ Date of Appointment: _____

ACTION TO BE TAKEN:

_____

Record Reviewed by:

_____

( ) No Action Required.
Reason(s)

_____

( ) Call Patient to Reschedule Appointment

ACTION TAKEN:
( ) Called Patient Tel No: _____
( ) Left Message

_____
_____
_____

( ) Spoke to Patient /*Caregiver*
Outcome _____
_____
_____
_____

( ) Patient Rescheduled for - Date:
( ) Patient Will Call to Reschedule at a Later Date
( ) Patient Does Not Want to Return to Clinic
( ) Patient Requests to Speak to Physician
( ) Phone Disconnected
( ) Wrong Number
( ) Others: _____

LIST OF ACTIVITIES FOR PMTAC VISIT
PHARMACY DEPARTMENT _____
PSYCHIATRIC MEDICATION THERAPY ADHERENCE CLINIC

Name: _____ IC/RN No: _____

Visit	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Date										
Introduction of PMTAC										
Patient's Demographic and Medication History Form										
Patient Monitoring Chart										
Medication Understanding Chart										
Assessment of Patient's Adherence (Eg. Medication Adherence Scale/Pill Counting)										
Side Effects Checklist										
Sheehan Disability Scale										
Communicate with doctor (If there is any intervention)										
Medication Dispensing										
Module 1: Understanding the disease										
Evaluation of Module 1										
Module 2: Understanding the treatment										
Evaluation of Module 2										
Module 3: Understanding and prevention of relapse										
Evaluation of Module 3										
Module 4: Handling of crisis										
Evaluation of Module 4										
Module 5: Healthy Lifestyle										
Evaluation of Module 5										
Next TCA date for PMTAC given on										
Pharmacist's Initial										

Appendix 21

PSYCHIATRIC PHARMACOTHERAPY REVIEW FORM

PHARMACY DEPARTMENT, HOSPITAL _____

A. PATIENT BIODATA	Allergy and Adverse Drug Reaction
Full Name: _____ Gender: M / F Age: _____ RN/IC: _____ Ward: Psychiatry M ( ) / F ( ) / Others ( ) Diagnosis: _____ Past Medical History: _____	

MEDICATION HISTORY

DATE	REMARKS (CLINICAL RESPONSE, SIDE EFFECT, ANY RELEVANT DATA AND ETC)	MEDICATION / TREATMENT	COMMENT (ADHERENCE, ETC)

DATE	REMARKS (CLINICAL RESPONSE, SIDE EFFECT, ANY RELEVANT DATA AND ETC)	MEDICATION / TREATMENT	COMMENT (ADHERENCE, ETC)

Pharmacist's Name & Signature:

Date:

Appendix 22

Glossary

Akathisia	Agitated or restless movement, usually affecting the legs and accompanied by a sense of discomfort.
Akinesia	The loss of ability to move; freezing in place.
Bipolar Mood Disorder (BMD)	A mood disorder that causes radical emotional changes and mood swings, from manic highs to depressive lows. The majority of bipolar individuals experience alternating episodes of mania and depression.
Depression	A common mental disorder that presents with depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy and poor concentration.
Dystonia	A movement disorder characterised by sustained muscle contractions that result in writhing or twisting movements and unusual body postures.
Extrapyramidal Side Effects (EPS)	Side effects that mimic extrapyramidal disease and are caused by drugs that block dopamine receptor sites in the extrapyramidal system tract.
Major Depressive Disorder (MDD)	Major depressive disorder (MDD) is a significant mental health problem that disrupts a person's mood and adversely affects his psychosocial and occupational functioning.
Parkinsonism	A group of neurological disorders marked by hypokinesia, tremor and muscular rigidity.
Schizophrenia	A psychotic disorder (or a group of disorders) marked by severely impaired thinking, emotions and behaviours.
Tardive Dyskinesia	A mostly irreversible neurological disorder of involuntary movements caused by long-term use of antipsychotics or neuroleptic drugs.

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3. **Dr. John D. Vanderkooy, Dr. Sidney H. Kennedy** and **Dr. R. Michael Bagby** - for granting permission to use the **Toronto Side Effects Scale (TSES)- Antidepressant Side Effects Scale**

4. **Northumberland, Tyne and Wear NHS Foundation Trust** - for granting permission to use the **Lithium Side Effects Rating Scale (LiSERS)**

5. **Cumbria, Northumberland, Tyne and Wear NHS Foundation Trust** - for granting permission to use the **Valproate Side Effect Rating Scale (VSERS)**

6. **Canadian ADHD Resource Alliance** - for granting permission to use the **CADDRA Patient ADHD Medication Form**

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PSYCHIATRIC PHARMACY PROTOCOL
SECOND EDITION

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