



Ministry of Health Malaysia
Pharmaceutical Services Programme

PSORIASIS MEDICATION THERAPY ADHERENCE CLINIC (MTAC) PROTOCOL

THIRD EDITION

**Psoriasis Medication Therapy Adherence Clinic (MTAC) Protocol
Third Edition, 2026**

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Ministry of Health Malaysia

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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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FOREWORD

Psoriasis is more than just a skin condition, as it can impact various aspects of a person's health and well-being. Over the years, our understanding of psoriasis has evolved, revealing that it is associated with other health challenges, including joint problems, cardiovascular issues, and mental health concerns. Therefore, treating psoriasis is as important as managing any other long-term condition, as it can significantly affect a person's quality of life.

The Psoriasis Medication Therapy Adherence Clinic (PsMTAC) is designed to help improve patient care through pharmacist involvement. In this setting, pharmacists collaborate with healthcare teams to optimise treatment plans, educate patients on their medications, monitor the effectiveness of their therapy, and address any medication-related issues, such as potential side effects or interactions.

This protocol is intended to guide pharmacists who are working in PsMTAC, ensuring standardized practices and optimal medication management. It also serves as a reference for facilities interested in starting PsMTAC services, as well as for maintaining quality care in existing clinics.

Finally, I would like to extend my gratitude to all contributors, reviewers, and the editorial team for their efforts in publishing this third edition of the Psoriasis Medication Therapy Adherence Clinic (MTAC) Protocol. Together, we can make a positive difference in the lives of patients with psoriasis and help improve their treatment outcomes.

Thank you.

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1. INTRODUCTION

Psoriasis is a chronic multisystem, autoimmune and inflammatory dermatological condition. As per the World Health Organization (WHO), the global prevalence of psoriasis is about 0.09%–11.4%.¹ According to the Twelfth Report of the Malaysian Psoriasis Registry 2020-2022, there are a total of 8813 patients registered during the period from January 2020 to December 2022.²

Psoriasis is characterized by a chronic and relapsing nature, exhibiting varying degrees of severity. It significantly affects patients physically, psychosocially, and economically. Given its incurable nature and the necessity for ongoing treatment, patient compliance with medication regimens may be poor, thereby jeopardizing the effective management of the condition.²

Psoriasis Medication Therapy Adherence Clinic (PsMTAC) is an ambulatory care service conducted by pharmacists in collaboration with dermatologists/ physicians with the aim of helping psoriasis patients to improve their medication adherence level towards better disease control. PsMTAC pharmacists will focus on providing counselling and education on disease control, pharmacotherapy, and importance of medication adherence, monitor patient clinical outcome, identify and solve any pharmaceutical related issues. Above all, it is essential for patients to gain the ability to self-manage their health conditions progressively over time.

2. OBJECTIVES

- 2.1 To educate patients towards better understanding of the disease and its management.
- 2.2 To improve patient's adherence towards psoriasis medication regimen.
- 2.3 To minimise adverse effects resulting from multiple medication therapy.
- 2.4 To identify pharmaceutical care issues and recommend interventions to medication related problems.
- 2.5 To collaborate with dermatologist and other healthcare professionals in pharmacotherapy management of psoriasis patients.

3. SCOPE OF SERVICE

- 3.1 The PsMTAC service will be conducted in the clinic or pharmacy area on designated clinic visit days.
- 3.2 The PsMTAC pharmacist will perform a multitude of duties during the session:
 - a. Patient assessment and follow-ups activities,
 - b. Pharmaceutical care issues (PCI) identification, recommendation and intervention,
 - c. Patient's education/counselling on medication therapy
 - d. Documentation
- 3.3 All activities conducted should align with established PsMTAC workflow to ensure consistency and service quality. (Refer Appendix I, II and III).

4. MANPOWER REQUIREMENT

- 4.1 The PsMTAC service should be provided by pharmacist(s) who have completed the training programme approved by the Pharmaceutical Services Programme (PSP), Ministry of Health (MOH), Malaysia.

- 4.2 Pharmacists who have not undergone PsMTAC training may conduct sessions under the supervision of trained pharmacists and undergo training to fulfil service requirements upon meeting the stipulated criteria.
- 4.3 Each pharmacist is required to participate in MTAC sessions at least once a month to ensure sustained competency. The number of pharmacists assigned per session shall be based on the minimum number of patients scheduled for clinic appointments.

5. APPOINTMENT AND MISSED VISIT

5.1 Appointment

- a. PsMTAC appointments should be scheduled using an appropriate tool, such as a calendar, planner, appointment book, or the Pharmacy Information System (PhIS).
- b. Subsequent patient appointments should be scheduled in alignment with the patient's dermatology clinic or medication refill appointments. However, rescheduling may be warranted under the following circumstances:
 - i. Changes in the patient's medication between appointments.
 - ii. Occurrence of serious adverse drug reactions or toxicity.
 - iii. Other reasons deemed appropriate by the pharmacist that necessitate follow-up.

5.2 Missed Visit

- a. The patient shall be contacted by the pharmacist or clinic staff if a scheduled visit is missed.

- b. The reason for the missed visit and the action taken (e.g. rescheduling the appointment) shall be documented accordingly.

6. OUTCOME MEASUREMENTS

6.1 The following parameters shall be assessed, documented, and monitored during each PsMTAC visit.

- a. Medication adherence using validated tools such as Malaysia Medication Adherence Assessment Tool (MyMAAT) (Appendix IV) and/or pill count.
- b. Medication knowledge such as dose, frequency, indication and method of administration (DFIT) (Appendix V).
- c. Disease severity, where applicable such as:
 - i. Dermatology Life Quality Index (DLQI) (Appendix VI)
 - ii. Dermatology Life Quality Index (CDLQI) for children (Appendix VII)
 - iii. Body Surface Area (BSA) (Appendix VIII)
 - iv. Psoriasis Area Severity Index (PASI) (Appendix IX)
- d. Other relevant monitoring parameters such as vital signs, full blood count (FBC), renal profile (RP), liver function test (LFT), fasting lipid profile (FLP) and others.

7. PROCEDURES

7.1 Patient Selection

7.1.1 Patient who meets any of the following criteria(s) can be enrolled into PsMTAC:

- a. Having underlying co-morbidities related or due to psoriasis
- b. Prescribed with multiple medications or complex treatment regimen.
- c. Inadequate understanding of disease and medication.
- d. Poor adherence to treatment regimens.

7.2 Initial Assessment

7.2.1 At the beginning of each PsMTAC session, the pharmacist shall:

- a. Introduce themselves to the patient.
- b. Explain the objectives of PsMTAC
- c. Outline the therapeutic plan and expected goals with emphasis on disease control
- d. Provide education on psoriasis including pathophysiology, clinical types and common aggravating or precipitating factors
- e. Emphasize the importance of medication knowledge and adherence
- f. Explain on patient's rights and responsibilities in PsMTAC.

7.2.2 The pharmacist will document relevant clinical information based on the physician's assessment and patient interview(s) which may include:

- a. Past medical, surgical, medication history, psoriasis history (e.g. disease onset, trigger factors, type of psoriasis, extra-cutaneous involvement, treatment history).
- b. Social and family history.
- c. Allergy (drug/ food/ others).
- d. Any traditional medicine/ supplement use.
- e. Medication adherence using validated tools such as Malaysia Medication Adherence Assessment Tool (MyMAAT) (Appendix IV) and/or pill count.
- f. Medication knowledge such as dose, frequency, indication and method of administration (DFIT) (Appendix V).
- g. Disease severity, where applicable such as:
 - i. Dermatology Life Quality Index (DLQI) (Appendix VI)
 - ii. Dermatology Life Quality Index (CDLQI) for children (Appendix VII)
 - iii. Body Surface Area (BSA) (Appendix VIII)

- iv. Psoriasis Area Severity Index (PASI) (Appendix IX)
 - h. Other relevant monitoring parameters such as vital signs, full blood count (FBC), renal profile (RP), liver function test (LFT), fasting lipid profile (FLP) and others.
- 7.2.3 Any pharmaceutical care issues (PCI) or patient's concerns/ expectations related to the therapy should be documented. PsMTAC Pharmacists should discuss with dermatologist/ physician for any medication-related interventions to ensure appropriate disease management. (Refer to section 7.4 for details)
- 7.2.4 PsMTAC pharmacists shall schedule subsequent follow-up visits based on the patient's clinical needs, current disease status, other clinic appointments and medication refill schedules.

7.3 Subsequent Visits

- 7.3.1 PsMTAC pharmacist will review patient as follows:
- a. Therapeutic goals.
 - b. Medication adherence using validated tools such as Malaysia Medication Adherence Assessment Tool (MyMAAT) (Appendix IV) and/or pill count.
 - c. Medication knowledge such as dose, frequency, indication and method of administration (DFIT) (Appendix V).
 - d. Disease severity, where applicable such as:
 - i. Dermatology Life Quality Index (DLQI) (Appendix VI)
 - ii. Dermatology Life Quality Index (CDLQI) for children (Appendix VII)
 - iii. Body Surface Area (BSA) (Appendix VIII)
 - iv. Psoriasis Area Severity Index (PASI) (Appendix IX)

- e. Other relevant monitoring parameters such as vital signs, full blood count (FBC), renal profile (RP), liver function test (LFT), fasting lipid profile (FLP) and others.
- f. Education on psoriasis disease such as pathophysiology, aggravating & precipitating factors and others.
- g. The importance of adherence to MTAC/Clinic appointments.
- h. Any side effect or adverse drug reaction.

7.3.2 Any pharmaceutical care issues (or patient concerns) related to the therapy should be documented. PsMTAC Pharmacists should discuss with dermatologist/ physician for any medication-related interventions to ensure appropriate disease management. (Refer to section 7.4 for details)

7.3.3 PsMTAC pharmacists shall schedule subsequent follow-up visits based on the patient's clinical needs, current disease status, other clinic appointments and medication refill schedules.

7.4 Pharmaceutical Care Review

The pharmaceutical care review must be done at the earliest opportunity during patient selection or after referral of patient by prescribers.

7.4.1 Identifying Pharmaceutical Care Issues

- a. Assess and obtain all information to identify pharmaceutical care issues, for examples:
 - i. Inappropriate drug regimen (i.e., drug, dose, frequency or duration).
 - ii. Inappropriate prescription (i.e., contraindication, drug-drug interaction or polypharmacy).
 - iii. Side effects, adverse drug reaction and allergy reaction.
 - iv. Inappropriate medication administration.

- v. Inappropriate topical application technique, site and sequence.
- vi. Poor adherence to medication (i.e., drug-related, drug regimen-related or patient-related).

7.4.2 Resolving Pharmaceutical Care Issues

- a. Provide recommendation/ intervention to optimise pharmacotherapy/ non pharmacotherapy based on patient's condition.
- b. Formulate a patient-specific action plan including identifying specific health outcomes and suitability of pharmacological and non-pharmacological approach.
- c. Take a holistic approach to patient care (e.g., consider the patient's medical, social or financial needs) in establishing the action plan.
- d. Provide feedback to the prescriber and discuss the patient's progress according to the action plan.
- e. All recommendations/ interventions must be documented.

7.4.3 Monitoring Pharmaceutical Care Issues

- a. Monitor patient's understanding and adherence.
- b. Follow-up on patient's progress to ensure the achievement of desired outcomes; suggest modifications to the existing plan if necessary (i.e., dose adjustment or drug modification) by referring to dermatologist/ physician.

7.5 Medication Counselling and Dispensing

7.5.1 Pharmacists shall provide counselling and education based on the patient's understanding and need at each PsMTAC visit.

7.5.2 In the event of multiple topical therapies prescribed, the patient should be advised on the application technique, site and sequence to improve the patient's understanding.

7.5.3 Pharmacists shall use designated label (site of application) or coloured sticker and body diagram sheet (refer Appendix XI) or pictogram label (refer Appendix XII) to improve patient's medication understanding and adherence.

7.5.4 Pharmacists shall dispense the medications and counsel the patient at the clinic (when applicable) or pharmacy.

7.6 Documentation

7.6.1 A registry of all PsMTAC patients must be documented and maintained properly (refer Appendix X).

7.6.2 All relevant data must be recorded using PsMTAC Pharmacotherapy Review form (refer Appendix V).

7.6.3 Any recommendations and intervention done should be communicated with the dermatologist/ physician and documented in the patient's case notes (or PhIS) for future reference.

7.6.4 Any referral for continuation of care (either intra facility or inter facility) should be using Patient Referral Note (CP4) (refer Appendix XIII).

7.7 Discharge Criteria

7.7.1 Patient who fulfilled the following criteria can be discharged from PsMTAC service, which include(s):

a. Achieved good disease control and treatment goals³ **AND**

Treatment	Treatment Goal*		Time for assessment
	Disease severity	Quality of life	
• Topical	BSA ≤3%	DLQI ≤5	<u>Induction Phase</u> 12 - 16 weeks after initiation
• Phototherapy • Systemic therapy • Biologics • Oral small molecules	BSA ≤3% or PASI ≤5 or PASI75** response	DLQI ≤5	<u>Maintenance Phase</u> 3 – 6 monthly

*Treatment goal must include both disease severity and quality of life

**PASI 75 = 75% reduction in PASI score after treatment

b. Good understanding of medication [e.g., dose, frequency, indication, method of administration (DFIT) 100%] for **at least TWO (2)** consecutive visits **AND**

c. Good medication adherence [e.g., Malaysia Medication Adherence Assessment Tool (MyMAAT) ≥54] **for at least TWO (2)** consecutive visits.

OR ONE (1) of the following:

d. Defaulted **TWO (2)** consecutive PsMTAC appointments despite attempted contact or outreach efforts.

e. Patient opted to withdraw from PsMTAC service.

f. Discharged or transferred out to other facilities.

7.7.2 Refer Appendix III for discharge workflow.

8. REFERENCES

1. World Health Organization. (2016). *Global report on psoriasis*. World Health Organization. <https://www.who.int/iris/handle/10665/204417>
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4. Hatah, E., Rahim, N., Makmor-Bakry, M., Mohamed Shah, N., Mohamad, N., Ahmad, M., & others. (2020). *Development and validation of Malaysia Medication Adherence Assessment Tool (MyMAAT) for diabetic patients*. PLOS ONE, 15(11), e0241909. <https://doi.org/10.1371/journal.pone.0241909>

9. APPENDIXES

Appendix I- Psoriasis MTAC Workflow (First Visit)

Appendix II- Psoriasis MTAC Workflow (Subsequent Visit)

Appendix III- Discharge Workflow

Appendix IV- Malaysia Medication Adherence Assessment Tool (MyMAAT)

Appendix V- PsMTAC Pharmacotherapy Review Form

Appendix VI- Dermatology Life Quality Index (DLQI)

Appendix VII- Children Dermatology Life Quality Index (CDLQI)

Appendix VIII- Body Surface Area (%)

Appendix IX- Psoriasis Area and Severity Index (PASI)

Appendix X- Registry Psoriasis MTAC Patient

Appendix XI- Body Diagram Sheet

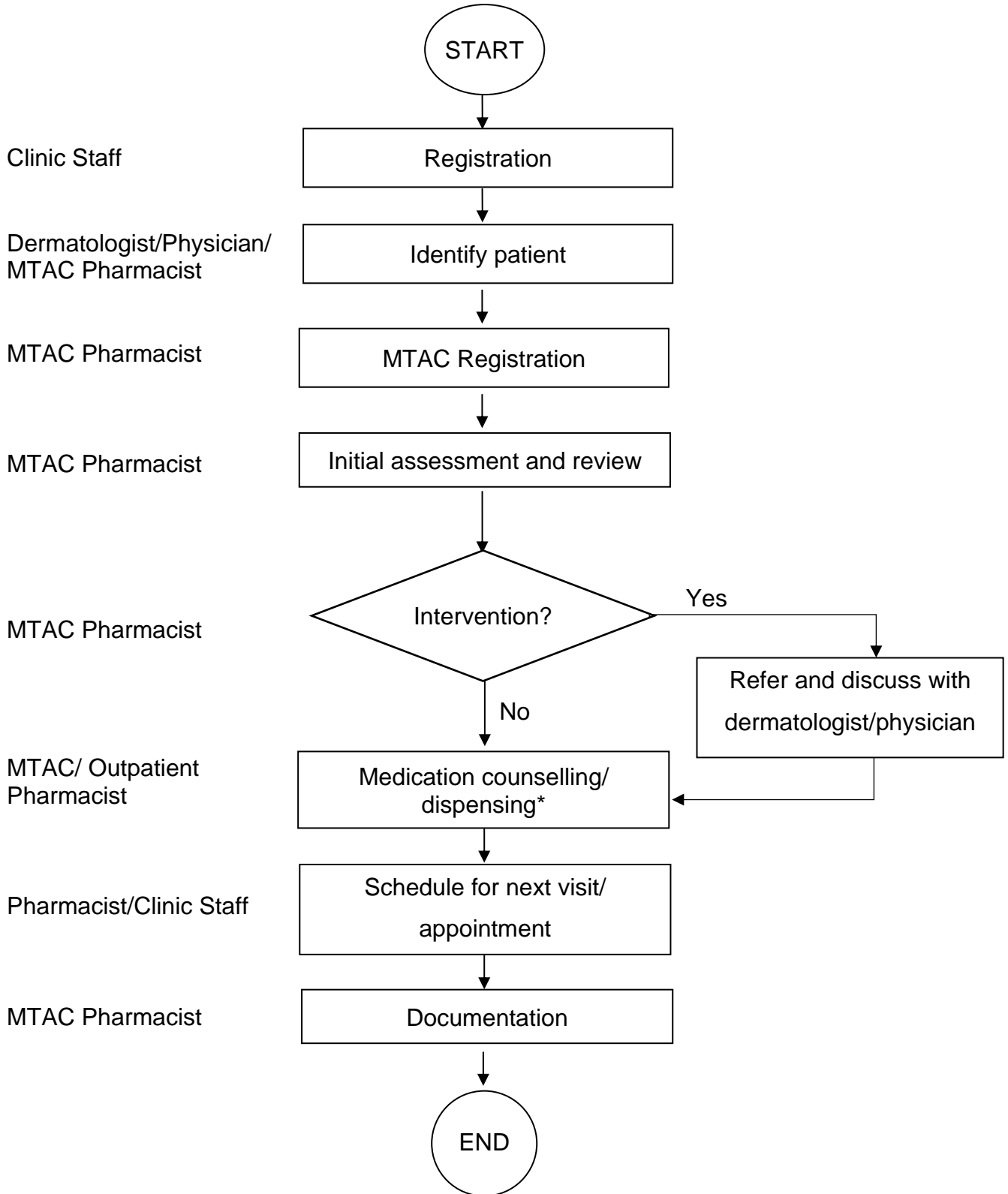
Appendix XII- Pictogram

Appendix XIII- Patient Referral Note

Appendix I- Psoriasis MTAC Workflow (First Visit)

**PSORIASIS MTAC WORKFLOW
(FIRST VISIT)**

Location: Dermatology Clinic/Pharmacy

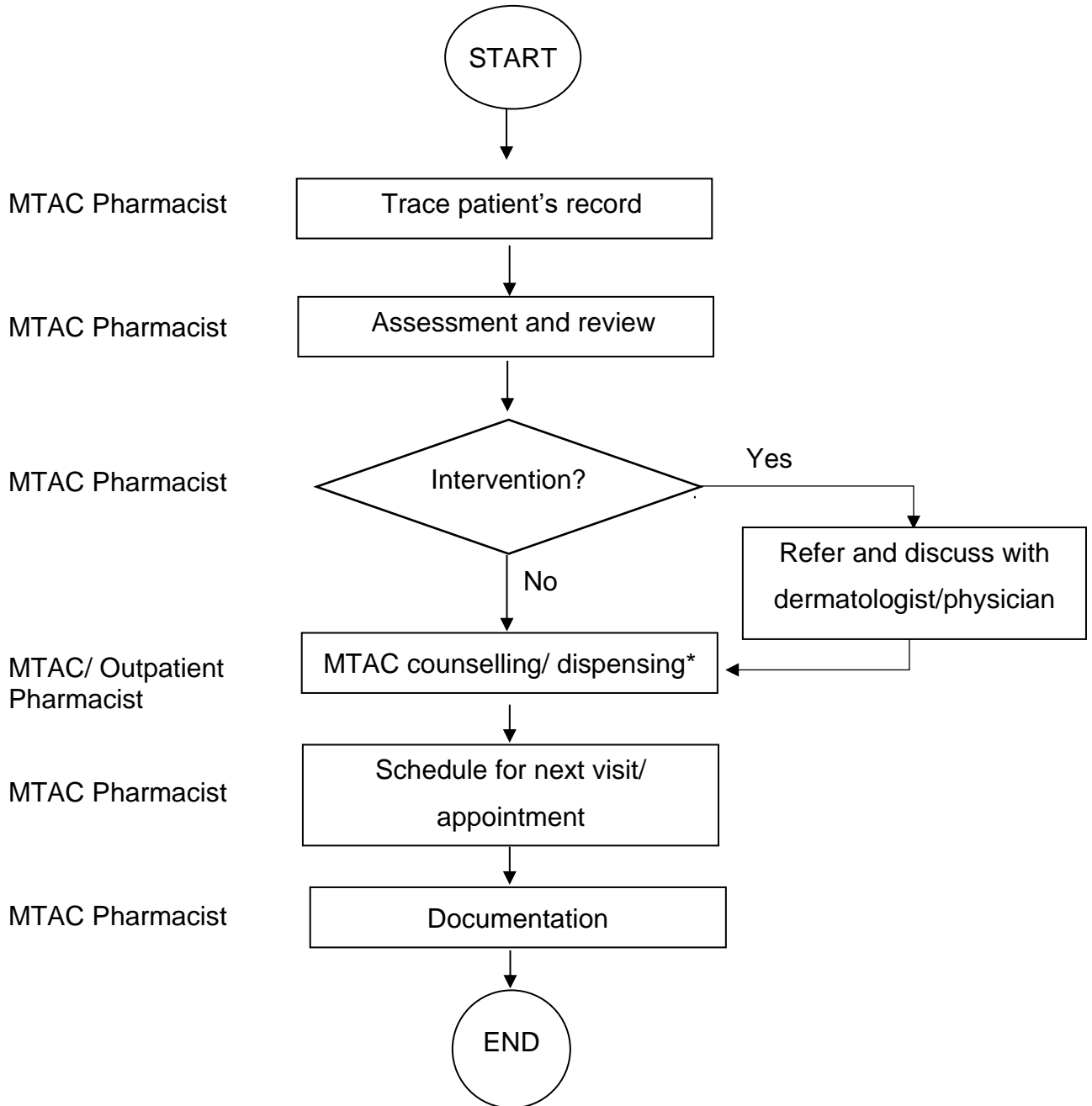


*Medication dispensing may occur during MTAC sessions or at the Outpatient Pharmacy, depending on facility setup.

Appendix II- Psoriasis MTAC Workflow (Subsequent Visit)

**PSORIASIS MTAC WORKFLOW
(SUBSEQUENT VISIT)**

Location: Dermatology Clinic/Pharmacy

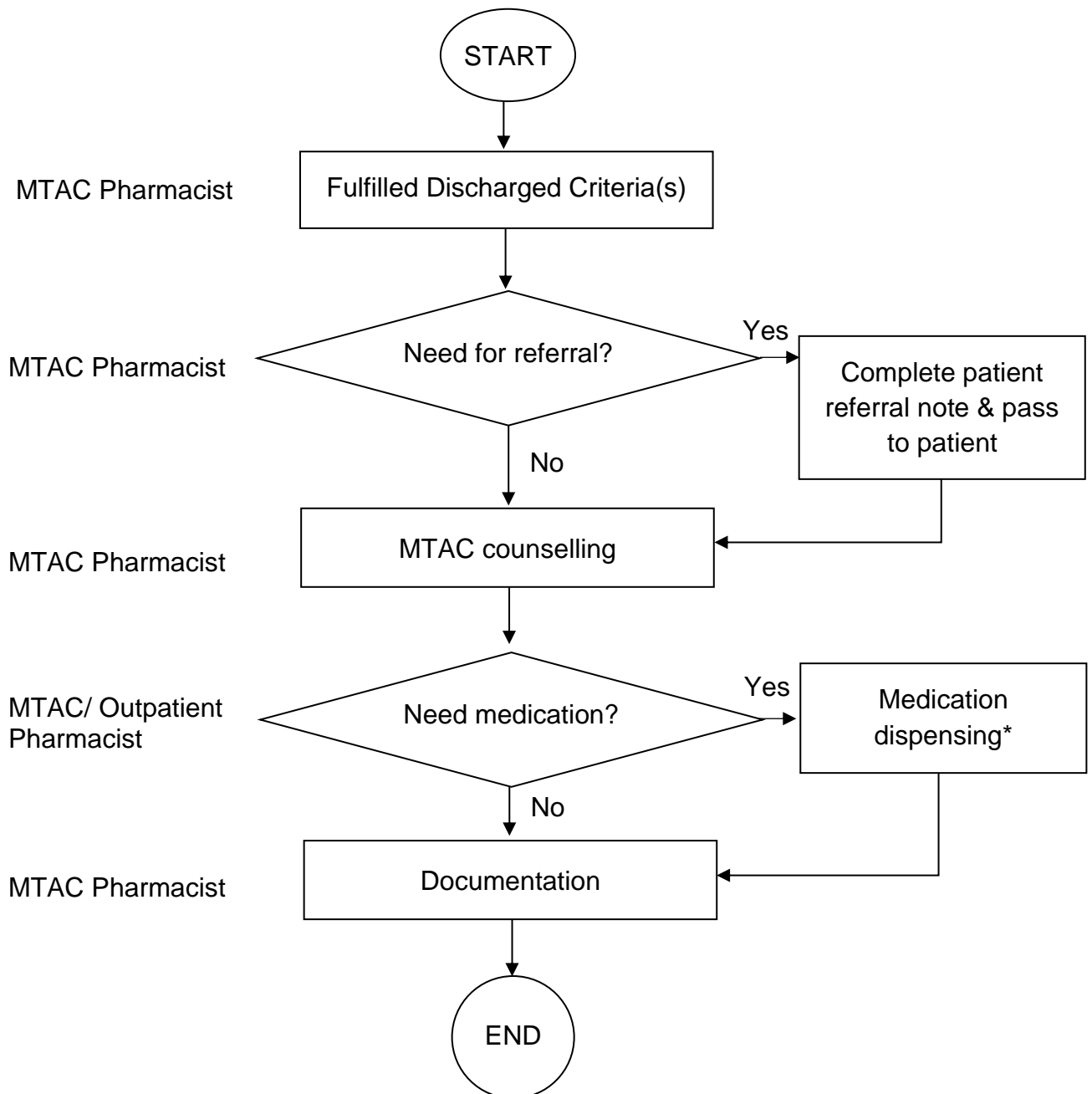


*Medication dispensing may occur during MTAC sessions or at the Outpatient Pharmacy, depending on facility setup.

Appendix III- Discharge Workflow

DISCHARGE WORKFLOW

Location: Dermatology Clinic/Pharmacy



*Medication dispensing may occur during MTAC sessions or at the Outpatient Pharmacy, depending on facility setup.

Appendix IV- Malaysia Medication Adherence Assessment Tool (MyMAAT)



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

Hospital/ <i>Hospital</i>			
Nama Pesakit/ <i>Patient's Name</i>	No. Pendaftaran/ <i>Reg. No.</i>		
	Tarikh/ <i>Date</i>		
No. KPI/ <i>IC No.</i>	Lokasi/ <i>Location</i>		

Bahagian I : Persepsi Tahap Kepatuhan Pesakit Terhadap Pengambilan Ubat-Ubatan

Part I : Perception on Patient's Adherence Towards Medication

Soal selidik ini dijalankan untuk mendapatkan maklumat mengenai amalan pengambilan ubat oleh pesakit dan sebaiknya diisi oleh pesakit/ penjaga.

*Sila tandakan (√) pada kotak yang berkenaan.

This survey will ask about your current practice related to medication taking and preferably to be filled by patient/ care taker.

** Please tick (√) in the appropriate boxes.*

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

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

SOAL SELIDIK TAMAT/ END OF SURVEY

TERIMA KASIH/ THANK YOU

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

Bahagian II : Kategori Kepatuhan Pesakit Terhadap Pengambilan Ubat-Ubatan

Part II : Category of Patient's Adherence Towards Medication

Kategori kepatuhan mengikut jumlah skor adalah seperti berikut:

Patient's adherence category based on total score as stated below:

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

Bahagian III : Rumusan Tahap Kepatuhan Pesakit Terhadap Pengambilan Ubat-Ubatan

Part III : Summary on Patient's Adherence Towards Medication

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

Jumlah Skor/ Total Score	
Kategori Kepatuhan/ Adherence Category	<input type="checkbox"/> Kepatuhan baik/ Good adherence <input type="checkbox"/> Kepatuhan sederhana dan lemah/ Moderate and poor adherence
Nota Pegawai Farmasi/ Pharmacist's Note	

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

Tarikh/ :
Date

Appendix V- PsMTAC Pharmacotherapy Review Form

Allergy (Drug/Food/Others):

**PSORIASIS MEDICATION THERAPY ADHERENCE CLINIC (PsMTAC)
 PHARMACOTHERAPY REVIEW FORM
 PHARMACEUTICAL SERVICES DIVISION
 MINISTRY OF HEALTH, MALAYSIA**

PATIENT DEMOGRAPHIC

Patient's Name	:	PsMTAC No.	:	
MRN/IC	:	Age	:	
Gender	:	Race	:	
Wt/Ht/BMI	:	Contact No.	:	
		Status	:	Active/ Discharge/ Defaulted

1. ASSESSMENT			
SOCIAL HISTORY		FAMILY HISTORY	
Smoking status		Marital Status	
Pregnancy		No of Children	
Education Level		Lives with	
Occupation		Family History of Illness	
Alcohol Drinking			
Substance Abuse			
Others			
MEDICAL/ SURGICAL HISTORY			
		Concurrent Traditional Medicine/ Supplements (Please State Drug/Dose/Frequency):	
PAST MEDICATION HISTORY			

Appendix V- PsMTAC Pharmacotherapy Review Form

2. MONITORING PARAMETERS										
Visit No.										
Date										
DISEASE SEVERITY										
DLQI										
BSA (%)										
PASI										
MEDICATION ADHERENCE SCORE										
MyMAAT										

*DLQI (Dermatology Life Quality Index); BSA (Body Surface Area); PASI (Psoriasis Area Severity Index)

Psoriasis Severity	Definition		
	DLQI	BSA	PASI
Mild	≤10	≤10%	≤10
Moderate to severe	>10	>10%	>10

MyMAAT Category	Total Score
Good Adherence	≥54
Moderate and poor adherence	< 54

Appendix V- PsMTAC Pharmacotherapy Review Form

3. REVIEW OF PATIENT'S UNDERSTANDING OF MEDICATION (DFIT)																						
No.	Drug Regimen	Site Of Application	Visit:				Visit:				Visit:				Visit:							
			Date:				Date:				Date:				Date:							
			D	F	I	T	D	F	I	T	D	F	I	T	D	F	I	T	D	F	I	T
SCORE (%)																						

*D= Dose F=Frequency I=Indication T=Method of Administration Yes=1 No=0

$\text{DFIT Score (\%)} = \frac{\text{No. of 'Yes'}}{\text{No of Questions}} \times 100\%$
--

Appendix V- PsMTAC Pharmacotherapy Review Form

Visit:

Date:

4. PHARMACEUTICAL CARE PLAN

Pharmaceutical Care Issues (Pharmacist Notes)	Pharmacist Recommendation / Intervention (Pharmacist Plan)	Outcome

Pharmacist's Name:

Next Follow-up:

Appendix VI- Dermatology Life Quality Index (DLQI)

DERMATOLOGY LIFE QUALITY INDEX (DLQI) (for adults)

NAME:
NO. IC/RN:

DATE:
DIAGNOSIS:

DLQI SCORE:

The aim of this questionnaire is to measure how much your skin problem has affected your life OVER THE LAST WEEK. Please tick one box for each question.

1.	Over the last week, how itchy, sore, painful or stinging has your skin been?	Very much		
		A lot		
		A little		
		Not at all		
2.	Over the last week, how embarrassed or self-conscious have you been because of your skin?	Very much		
		A lot		
		A little		
		Not at all		
3.	Over the last week, how much has your skin interfered with you going shopping or looking after your home or garden ?	Very much		Not <input type="checkbox"/> relevant
		A lot		
		A little		
		Not at all		
4.	Over the last week, how much has your skin influenced the clothes you wear?	Very much		Not <input type="checkbox"/> relevant
		A lot		
		A little		
		Not at all		
5.	Over the last week, how much has your skin affected any social or leisure activities ?	Very much		Not <input type="checkbox"/> relevant
		A lot		
		A little		
		Not at all		
6.	Over the last week, how much has your skin made it difficult for you to do any sport ?	Very much		Not <input type="checkbox"/> relevant
		A lot		
		A little		
		Not at all		
7.	Over the last week, has your skin prevented you from working or studying ?	Yes		Not <input type="checkbox"/> relevant
		No		
	If "No", over the last week how much has your skin been a problem at work or studying ?	Very much		Not <input type="checkbox"/> relevant
		A lot		
		A little		
		Not at all		
8.	Over the last week, how much has your skin created problems with your partner or any of your close friends or relatives ?	Very much		Not <input type="checkbox"/> relevant
		A lot		
		A little		
		Not at all		
9.	Over the last week, how much has your skin caused any sexual difficulties ?	Very much		Not <input type="checkbox"/> relevant
		A lot		
		A little		
		Not at all		
10.	Over the last week, how much of a problem has the treatment for your skin been, for example by making your home messy or by taking up time?	Very much		Not <input type="checkbox"/> relevant
		A lot		
		A little		
		Not at all		

Please check you have answered EVERY question. Thank you.

Adapted:

Ministry of Health Malaysia. (2024). *Clinical practice guidelines: Management of Psoriasis Second Edition*. Ministry of Health Malaysia.

Appendix VI- Dermatology Life Quality Index (DLQI)

Instructions For Use

The DLQI questionnaire is designed for use in adults i.e. patients over the age of 16. It is self-explanatory and can be simply handed to the patient who is asked to fill it in without the need for detailed explanation. It is usually completed in one to two minutes.

Scoring

The scoring of each question is as follows:

Very much	Scored 3
A lot	Scored 2
A little	Scored 1
Not at all	Scored 0
Not relevant	Scored 0
Question unanswered:	Scored 0
Question 7: "prevented work or studying"	Scored 3

The DLQI is calculated by summing the score of each question resulting in a maximum of 30 and a minimum of 0. The higher the score, the more quality of life is impaired. The DLQI can also be expressed as a percentage of the maximum possible score of 30.

DLQI Scores Interpretation

Score	Interpretation
0 - 1	No effect at all on patient's life
2 - 5	Small effect on patient's life
6 - 10	Moderate effect on patient's life
11 - 20	Very large effect on patient's life
21 - 30	Extremely large effect on patient's life

Detailed Analysis of DLQI

The DLQI can be analysed under six headings as follows:

Section	Question	Score
Symptoms and feelings	Questions 1 and 2	Score maximum 6
Daily activities	Questions 3 and 4	Score maximum 6
Leisure	Questions 5 and 6	Score maximum 6
Work and schooling	Questions 7	Score maximum 3
Personal relationships	Questions 8 and 9	Score maximum 6
Treatment	Questions 10	Score maximum 3

The scores for each of these sections can also be expressed as a percentage of either 6 or 3.

Interpretation of incorrectly completed questionnaires

There is a very high success rate of accurate completion of the DLQI. However, sometimes subjects do make mistakes.

1. If one question is left unanswered, this is scored 0 and the scores are summed and expressed as usual out of a maximum of 30.
2. If two or more questions are left unanswered, the questionnaire is not scored.
3. If question 7 is answered 'yes', this is scored 3. If question 7 is answered 'no' or 'not relevant' but then either 'a lot' or 'a little' is ticked this is then scored 2 or 1.
4. If two or more response options are ticked, the response option with the highest score should be recorded.
5. If there is a response between two tick boxes, the lower of the two score options should be recorded.
6. If one item is missing from a two-item subscale, that subscale should not be scored.

Appendix VII- Children Dermatology Life Quality Index (CDLQI)

CHILDREN DERMATOLOGY LIFE QUALITY INDEX (CDLQI) (for children 4 - 16 years old)

For children DLQI, patients can fill it themselves or with the assistance of their parents or guardians as necessary.

NAME:

DATE:

SCORE:

NO. IC/RN:

DIAGNOSIS:

The aim of this questionnaire is to measure how much your skin problem has affected your life OVER THE LAST WEEK. Please tick one box for each question.

1.	Over the last week, how itchy, " scratchy ", sore or painful has your skin been?	Very Much	
		Quite a lot	
		Only a little	
		Not at all	
2.	Over the last week, how embarrassed or self conscious , upset or sad have you been because of your skin?	Very Much	
		Quite a lot	
		Only a little	
		Not at all	
3.	Over the last week, how much has your skin affected your friendships ?	Very Much	
		Quite a lot	
		Only a little	
		Not at all	
4.	Over the last week, how much have you changed or worn different or special clothes/shoes because of your skin?	Very Much	
		Quite a lot	
		Only a little	
		Not at all	
5.	Over the last week, how much has your skin trouble affected going out , playing , or doing hobbies ?	Very Much	
		Quite a lot	
		Only a little	
		Not at all	
6.	Over the last week, how much have you avoided swimming or other sports because of your skin trouble?	Very Much	
		Quite a lot	
		Only a little	
		Not at all	
7.	Last week, was it school time or not? If school time: Over the last week, how much did your skin problem affect your school work?	Prevented school	
		Very Much	
		Quite a lot	
		Only a little	
	OR was it holiday time? If holiday time: How much over the last week, has your skin problem interfered with your enjoyment of the holiday?	Very Much	
		Quite a lot	
		Only a little	
		Not at all	

8.	Over the last week, how much trouble have you had because of your skin with other people calling you names, teasing, bullying, asking questions or avoiding you ?	Very Much	
		Quite a lot	
		Only a little	
		Not at all	
9.	Over the last week, how much has your sleep been affected by your skin problem?	Very Much	
		Quite a lot	
		Only a little	
		Not at all	
10.	Over the last week, how much of a problem has the treatment for your skin been?	Very Much	
		Quite a lot	
		Only a little	
		Not at all	

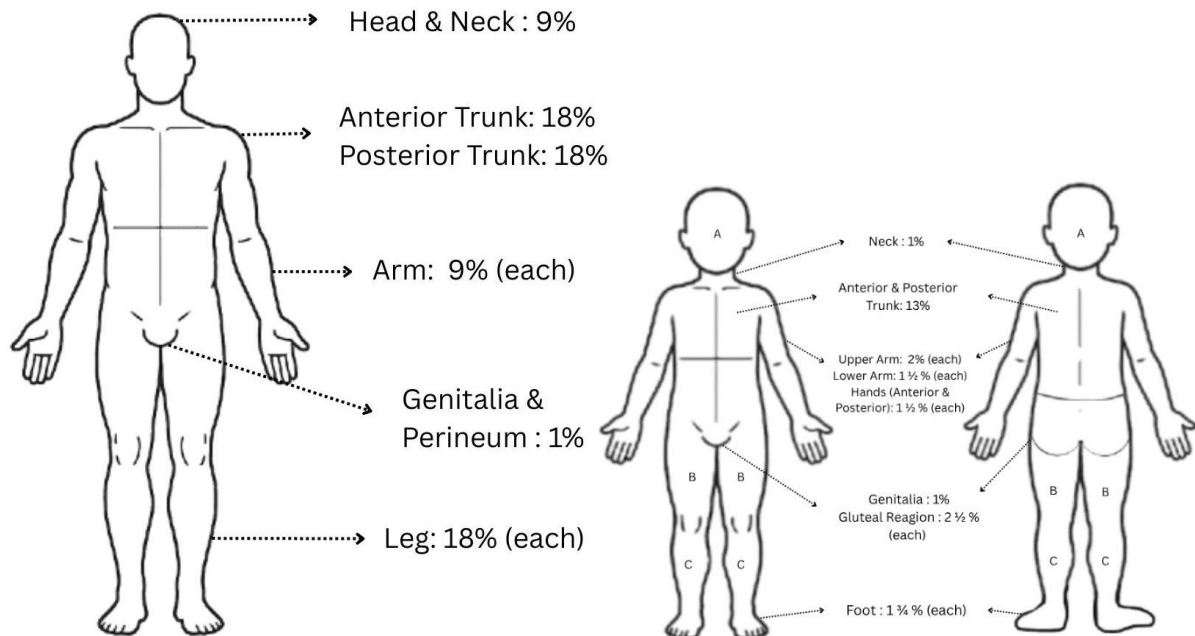
Please check you have answered EVERY question. Thank you.

Adapted:

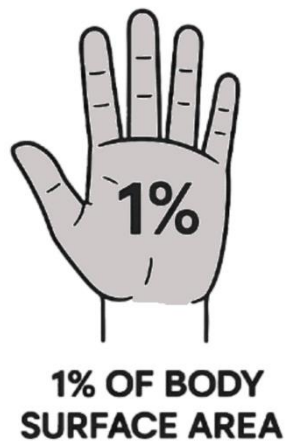
Ministry of Health Malaysia. (2024). *Clinical practice guidelines: Management of Psoriasis Second Edition*. Ministry of Health Malaysia.

Appendix VIII- Body Surface Area (%)

Measures percentage of body surface affected by psoriasis based on “rule of 9” or taking patient’s one palm-size (flat hand with thumb and fingers) as 1%.



(a) Rule of Nine



(b) Rule of Palm

Reference:

1. Lund, C. C., & Browder, N. C. (1944). *The estimation of areas of burns*. *Surgery, Gynecology & Obstetrics*, 79, 352–358.
2. Wallace, A. B. (1951, March 3). *The exposure treatment of burns*. *The Lancet*, 257(6646), 501–503.

Appendix IX- Psoriasis Area and Severity Index (PASI)

Symptom Score

Score	0	1	2	3	4
Erythema	None	Mild	Moderate	Severe	Very Severe
Induration					
Scaling					

Area Score

Score	0	1	2	3	4	5	6
Area	<1%	1% - <10%	10% - <30%	30% - <50%	50% - <70%	70% - <90%	90% - 100%

Area Score

Lesion score	Head (H)	Trunk (T)	Upper limbs (UL)	Lower limbs (LL) including buttock
Erythema (E)				
Induration (I) (thickness)				
Scaling (S)				
Sum=E + I + S				
Percentage of affected area				
Area Score				
SUBTOTAL: Sum x Area Score				
Body Area: Subtotal X amount indicated	X 0.1	X 0.3	X 0.2	X 0.4
TOTALS	H	T	UL	LL

PASI Score: H + T + UL + LL	
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Adapted:

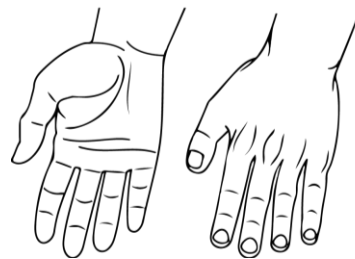
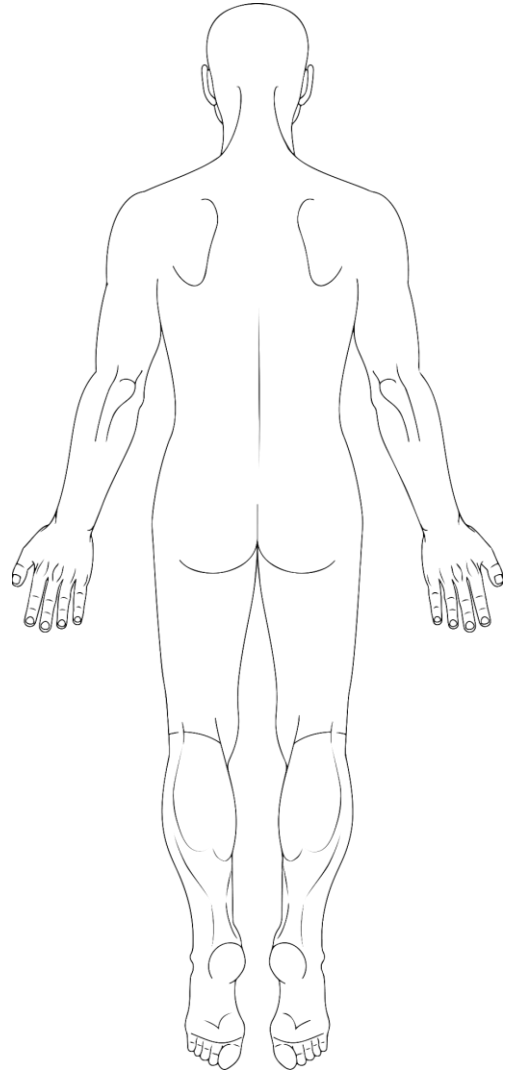
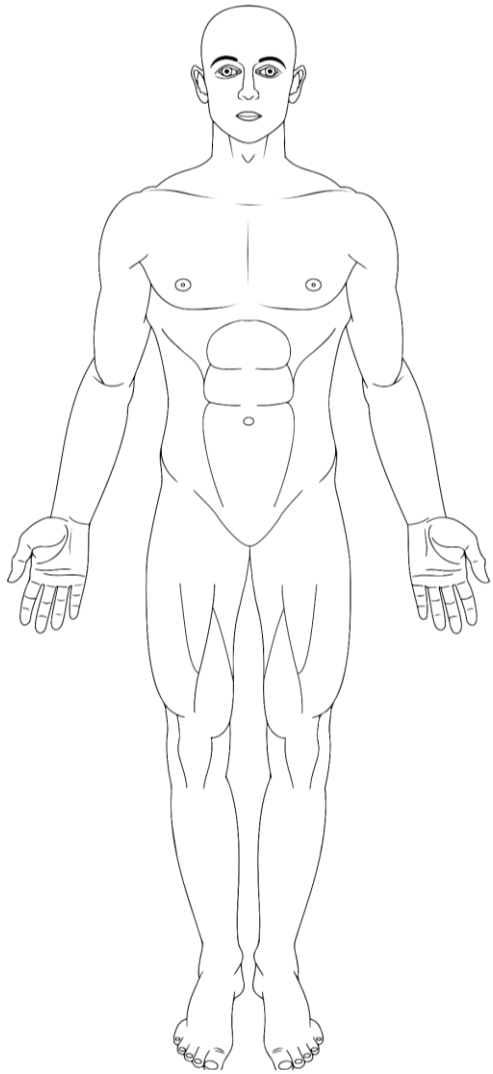
Ministry of Health Malaysia. (2024). *Clinical practice guidelines: Management of Psoriasis Second Edition*. Ministry of Health Malaysia.

Appendix XI- Body Diagram Sheet

NAME:
IC/RN:

DATE:

Please refer to the colour code or name of the medicine to ensure that the medicine is applied to the correct part of the body.

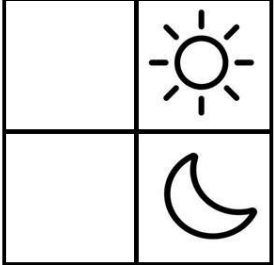


Adapted:

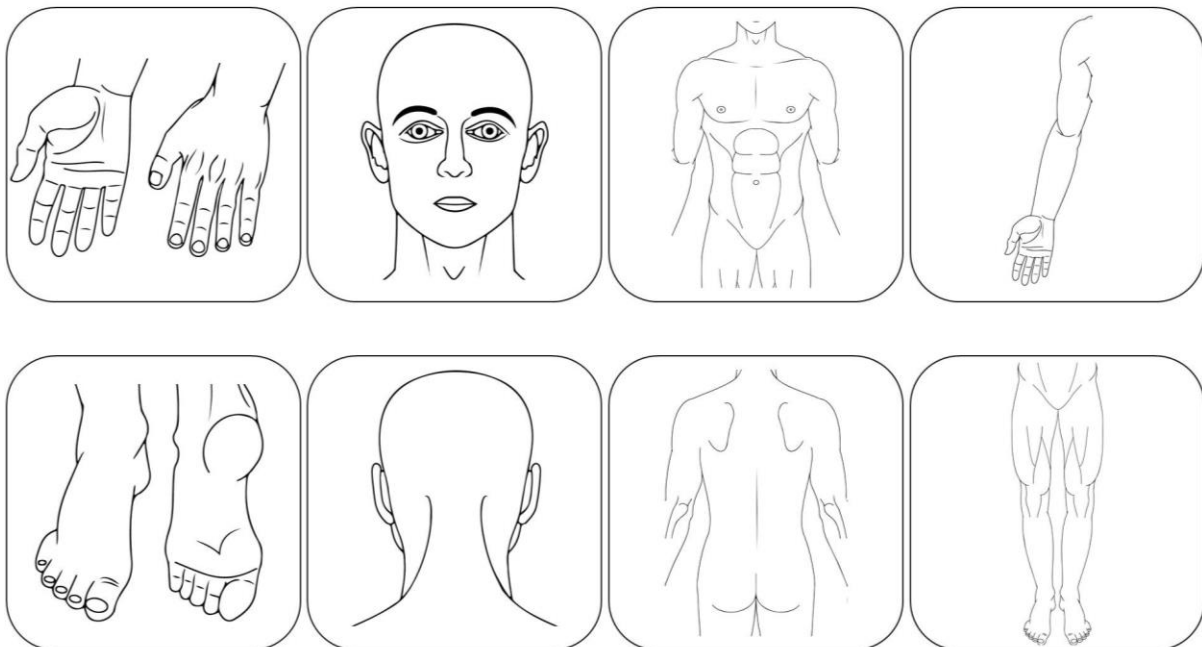
Body diagram [Online image]. (2025). *The British Medical Acupuncture Society*. <https://www.medical-acupuncture.co.uk/Education/UsefulBMASDocuments/BodyDiagrams.aspx>

Appendix XII- Pictogram

LABEL 1

NAMA :		TARIKH :	
ID :		TARIKH :	
NAMA UBAT :			
Sapu _____ kali sehari / seminggu pada tempat yang berkenaan sahaja			Untuk disapu di bahagian:
Kuantiti :			
UBAT TERKAWAL (UNTUK KEGUNAAN LUARAN SAHAJA)			
Indikasi :			
MTAC PSORIASIS	HOSPITAL _____	TEL:	

LABEL 2



Adapted:

Body diagram [Online image]. (2025). *The British Medical Acupuncture Society*. <https://www.medical-acupuncture.co.uk/Education/UsefulBMASDocuments/BodyDiagrams.aspx>



PSORIASIS MEDICATION THERAPY ADHERENCE CLINIC (MTAC) PROTOCOL THIRD EDITION

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