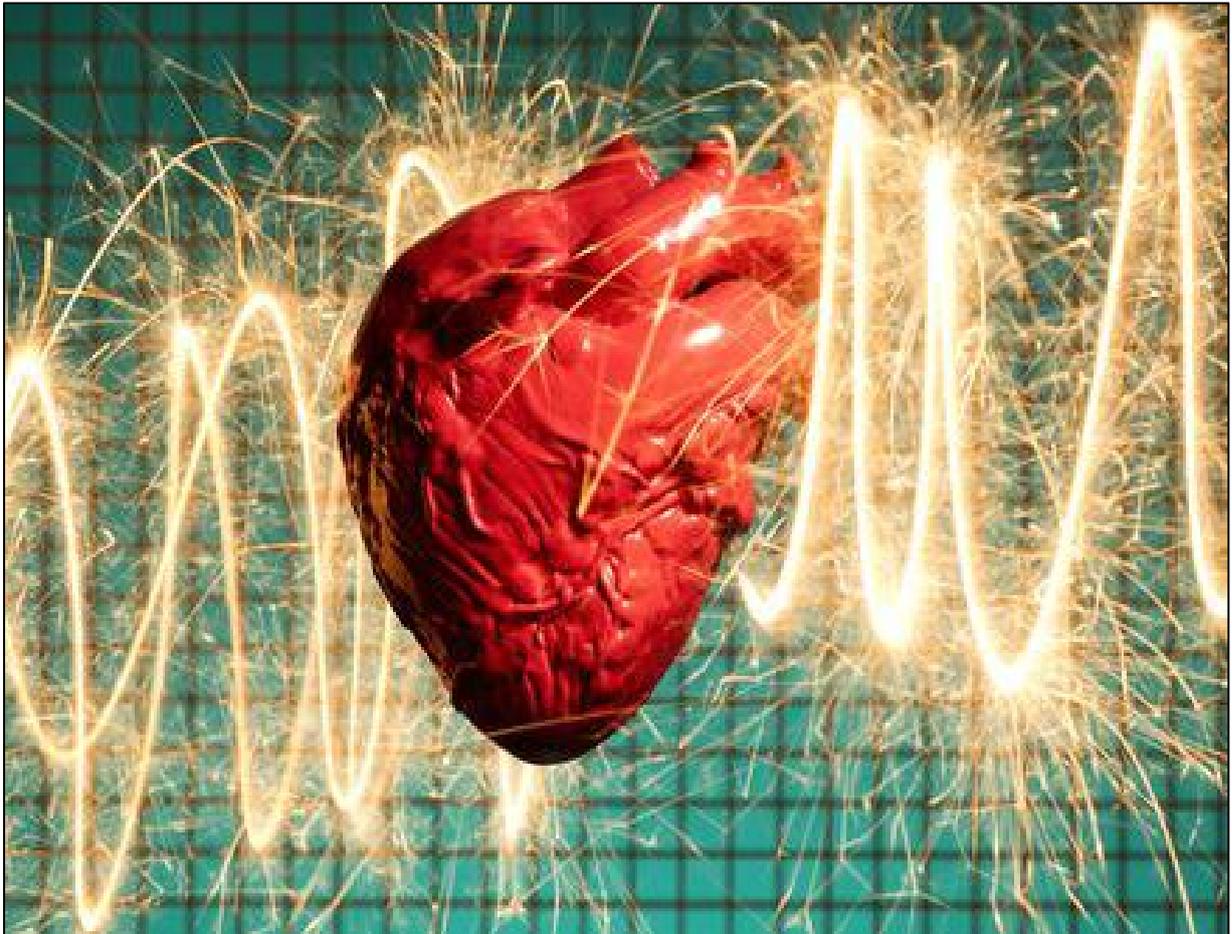




PROTOCOL MEDICATION THERAPY ADHERENCE CLINIC - CARDIAC REHABILITATION (CR-MTAC)

1ST Edition (Year 2020)



**PHARMACEUTICAL SERVICES PROGRAM
MINISTRY OF HEALTH**

NOVEMBER 2020

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FOREWORD



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Cardiovascular diseases (CVDs) take an estimated 17.9 million lives each year globally where 85% of these deaths are due to heart attacks and strokes. Individuals who have had cardiac episodes will receive treatment and care at health facilities and then discharged from hospital care. These patients are eligible to attend cardiac rehabilitation and secondary prevention programs offered by health facilities.

Most cardiovascular diseases can be prevented by addressing behavioral risk factors such as tobacco use, unhealthy diet and obesity, physical inactivity and harmful use of alcohol. Combination of proper management, counseling and optimal pharmacotherapy care can help to improve and optimize patients' health outcomes.

Therefore, by initiating CR-MTAC where pharmacists can provide pharmaceutical care interventions to patients' medication plan, educating on current dose regimens and continuous monitoring by follow-up visits at regular periods are important and beneficial to patients during their recovery.

I would like to complement the Clinical Pharmacy Working Committee (Cardiology Subspecialty) for their collective effort in preparing this 1st edition of Cardiac Rehabilitation MTAC (CR-MTAC) Protocol where it can be used as a comprehensive guide to assist pharmacists in the Ministry of Health facilities in setting up and conducting activities of cardiac rehabilitation to improve patient clinical outcomes.

Thank you.

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INTRODUCTION

Cardiovascular diseases (CVDs) remain the number one cause of death, both globally and in Malaysia. An estimated 17.7 million people died from CVDs in 2015, representing 31% of all global deaths. Of these deaths, an estimated 7.4 million were due to coronary heart disease (CHD) and 6.7 million were due to stroke¹. According to the health statistics published in October 2017, CHD deaths accounts for 13.2% of total deaths in Malaysia for the year 2016². However, while age-adjusted certified deaths from CHD are falling, increasing numbers of patients are being discharged alive from hospitals after acute cardiac events and interventions. These patients constitute the major pool of those eligible to attend cardiac rehabilitation and secondary prevention programs³.

Cardiac Rehabilitation (CR) is a structured set of an multidisciplinary team approach. The WHO Expert Committee on Rehabilitation recommends the teamwork between healthcare personnel from different backgrounds and training from diversified areas of expertise, such as cardiologist, general practitioner, psychiatrist, psychologist, pharmacist, physiotherapist, occupational therapist, dietitian, nurse, and social worker⁵. This program enables people with CHD to have the best possible assistance to preserve or resume their optimal functioning in society^{4,5}. As well as facilitating recovery, it also functions as a launching pad for secondary prevention of CVDs.

In Malaysia health facility settings, patients who have had a cardiac event (such as heart attack, angioplasty or a bypass surgery) will be enrolled into Cardiac Rehabilitation Program. This program is currently managed by a team of cardiologist, physician, medical officer, pharmacist, physiotherapist, occupational therapist, dietitian and nurse.

As education, counselling and behavioral interventions to promote lifestyle change and modify risk factors have become an increasingly important part of cardiac rehabilitation programs, all patients and caregivers will be provided with counseling on medication prior to discharge from hospital. Stabilized patients will then be discharged and continued to be cared for at the ambulatory settings.

A local study conducted at the biggest tertiary healthcare centre concluded that pharmacists managed clinic has showed statistically significant better control of lipid profile and improved medication adherence among post-myocardial patients compared to those under standard care⁷. Hence, Cardiac Rehabilitation Medication Therapy Adherence Clinic (CR-MTAC) is started as one of the initiatives provided by the pharmacists.

The main objective of this service is to collaborate with doctors in the management of cardiac rehabilitation patients on secondary prevention pharmacotherapy and optimise health outcomes of patients enrolled into the program. The pharmacist focuses on providing pharmaceutical care to the patient regarding pharmacotherapy and encouraging adherence to medications⁴. These patient-oriented activities involve taking medication histories, recommending optimal pharmacotherapy⁴, educating on current dose regimen, monitoring health outcomes and

providing pharmaceutical information⁶.

The CR-MTAC protocol is drafted to assist pharmacists in initiating and conducting the activities of cardiac rehabilitation in a standardized manner across all Ministry of Health's (MOH) hospitals/clinics. It contains workflow of standard operating procedures and documentations that are needed to conduct CR-MTAC. It should serve as a reference and its use at any facility shall be further discussed & endorsed with relevant heads of departments/Hospital Director.

OBJECTIVES OF SERVICE

- a) To collaborate with doctors in the management of cardiac rehabilitation patient prescribed with secondary prevention pharmacotherapy (antiplatelet agents, beta blockers, angiotensin converting enzyme inhibitors/ angiotensin receptor blockers and statin);
- b) To provide continuity and enhance patient care through education, monitoring, and close follow-up to these patients;
- c) To maximize the benefits of secondary prevention pharmacotherapy and minimize the adverse effect and complications resulting from this therapy;
- d) To provide consultative and educational services to doctors, dentists, and other healthcare providers on secondary prevention pharmacotherapy management and related issues;
- e) To conduct research regarding secondary prevention pharmacotherapy for cardiac rehabilitation and related areas.

SCOPE OF SERVICE

- a) This service is a teamwork approach involving doctors, pharmacists, and other relevant health care providers.
- b) CR-MTAC shall provide services such as
 - i) Pharmaceutical reviews including history taking of drugs, over the counter (OTC) medicine, traditional & complimentary medicine, and supplements; laboratory results monitoring, patient progress monitoring, adverse drug reactions reporting, therapy adjustment during elective procedures.
 - ii) Medication adherence and disease knowledge assessment.
 - iii) In-depth education of medication and disease state management.
 - iv) Prescription screening.
 - v) Medication dispensing if applicable.
 - vi) Close follow-up monitoring on planned schedule based on patient's individual need.

- c) Activities at the clinic will be carried out according to standard operating procedure (refer section Standard Operating Procedure).

PROVIDER QUALIFICATION

- a) A pharmacist shall be trained under cardiac rehabilitation MTAC training program approved by Pharmaceutical Services Program, MoH Malaysia.
- b) However, pharmacist who has not undergone training shall work directly under the supervision of a trained pharmacist or any experienced pharmacist from the related field.
- c) All CR-MTAC pharmacist must be able to:
 - i) Identify intervention and develop pharmaceutical care plan.
 - ii) Adjust medication regimen after discussion with the prescriber to achieve good clinical therapeutic outcomes.
 - iii) Provide medication counseling and identify methods to improve medication adherence.

MAN POWER REQUIREMENT

- a) A minimum of one (1) pharmacist shall be on duty during CR-MTAC session. However, the number of pharmacists on duty shall be based on the number of patients scheduled per day.
- b) Pharmacist spends an average of 15 to 20 minutes per case and longer time might be needed for newly referred cases (approximately 30 minutes).

APPOINTMENT

- a) New patients are recruited via walk-in or referral by doctors.
- b) All follow-up patients shall be reviewed by CR-MTAC pharmacists based on appointment basis. Follow-up appointments will be scheduled by the pharmacists and can be adjusted accordingly with patient's other appointment dates.

OUTCOMES MEASUREMENT

The quality of service shall be assessed continuously to ensure that patients are receiving optimal care. All facilities providing CR-MTAC services shall monitor the following indicators as outcome measurements for the service:

- a) Adherence of patients towards secondary cardiovascular disease prevention medications.
- b) Medication knowledge e.g. DFIT (**D**ose, **F**requency, **I**ndication and **T**ime) score.
- c) Therapeutic outcomes:
 - i) Lipid profile (e.g. Total cholesterol, HDL-c, LDL-c, TG).
 - ii) Body weight, Body Mass Index (BMI), and waist circumference.
 - iii) Ejection Fraction (optional).
 - iv) Other clinical parameters (e.g. blood pressure, heart rate, glycaemic control).

STANDARD OPERATING PROCEDURES

These are the subtopics that will be discussed under this section.

- a) Selection of Patient
- b) Patient Registration
- c) Initial Assessment During First Visit
- d) Subsequent Visit
- e) Clinic Operation
- f) Patient Education
- g) Pharmaceutical Review
- h) Monitoring and Evaluation
- i) Immediate Referral to Prescriber
- j) Dispensing
- k) Missed Appointment
- l) Defaulters
- m) Discharge Criteria
- n) Documentation

Please refer to **Appendix 4** (Medication Therapy Adherence Clinic (Cardiac Rehabilitation) Workflow -First CR-MTAC Visit) and **Appendix 5** (Medication Therapy Adherence Clinic (Cardiac Rehabilitation) Workflow –Follow Up CR-MTAC Visit) for detailed workflow of CR-MTAC.

The elaboration of each standard operation procedures are as below:

a) Selection of Patient

All cardiac patients currently managed in the hospital or health clinic under Ministry of Health Malaysia are eligible to join CR-MTAC. Patients who fulfilled any of the criteria as below shall be enrolled into CR-MTAC:

- i) Post cardiac event (e.g. coronary bypass surgery, percutaneous coronary angioplasty, chronic stable angina, heart transplantation, post-acute cardiac event).
- ii) Acute coronary syndrome.
- iii) Uncontrolled cardiovascular risk factors despite optimum medications prescribed.
- iv) Poor adherence to medications.
- v) Co-morbidities related to cardiovascular disease or multiple medications.

b) Registration of Patient

Registry of patients attending CR-MTAC shall be kept and updated at all time.

c) Initial Assessment During First Visit

When patient first enrolled into CR-MTAC, the pharmacist shall perform an initial assessment of patient using these forms:

- CR-MTAC First Visit Pharmacotherapy Review Form (**CR-MTAC/F1–Appendix 1**).
- CR-MTAC Follow-up Visit Pharmacotherapy Review (**CR-MTAC/F2–Appendix 2**).
- Pharmacist Review and Counselling Checklist (**Appendix 3**).

The initial visit shall include:

- i) Review and/or assess the following:
 - Personal information
 - History (e.g. past medical history, social history, allergies, thrombolysis)
 - Diagnosis
 - Medication list
 - ECHO and ejection fraction reading at discharge and 6th month after
 - Stress test results
 - Percutaneous Coronary Intervention (PCI) status
 - Baseline medication understanding (DFIT)
 - Baseline vital signs and laboratory parameters
 - Information regarding latest ward admission

- ii) Reconcile medications.
- iii) Identify possible drug related problems such as adverse drug reactions and side effects.
- iv) Review Anti-Thrombolytic Card (if patient has not received, issue new card).
- v) Counsel on medications.
- vi) Educate on related topics (e.g. disease, lifestyle changes and diet).

Pharmacist will also discuss the following with the patients:

- i) CR-MTAC objectives and role of pharmacist.
- ii) Anticipated benefits to the patients or care-givers.
- iii) Therapeutic goals for patients (e.g. blood pressure, pulse rate, fasting blood sugar, and LDL levels).
- iv) Specific drug therapy related needs (if any).

d) Subsequent CR-MTAC Visit

- i) Schedule subsequent visits based on patient's need, current health status, other clinic appointments and medication refill appointments.
- ii) Contact (if required) scheduled patient as reminder to appointment.
- iii) Review previous case notes for better understanding of treatment plan.
- iv) Perform the following activities:
 - Review CRP notes and previous CR-MTAC notes.
 - Review laboratory results and parameter outcomes.
 - Update medication list and laboratory results.
 - Reassess patient medication adherence.
 - Reassess disease and medication understanding.
 - Review and discuss pharmaceutical care plan.
 - Identify possible drug related problems such as adverse drug reactions and side effects.
 - Review Anti-Thrombolytic Card (if patient has not received, issue new card).
- v) Counsel on medications.
- vi) Educate on related topics based on patient understanding and needs.
- vii) Discuss changes of medication regimen (e.g. addition of new drugs and changes of dose or frequency).
- viii) Explain therapeutic goals (e.g. blood pressure, pulse rate and fasting blood sugar).
- ix) Explore and address patient specific drug therapy related needs (if any).
- x) Discuss with prescriber regarding patient condition and treatment.
- xi) Document in
 - CR-MTAC Follow Up Visit Pharmacotherapy Review (**CR-MTAC/F2 – Appendix 2**).
 - Pharmacist Review and Counselling Checklist (**Appendix 3**).

e) CR-MTAC Operation

- i) Conduct CR-MTAC in the respective departments based on agreed clinic days.
- ii) Designate an area with minimal interruptions (to ensure patient privacy and confidentiality).
- iii) Allocate storage area for relevant documents and necessary items.

f) Patient Education

Education of the patient is an important process of ensuring safe and effective use of cardiac related therapy. Please refer to Pharmacist Review and Counselling Checklist (**Appendix 3**).

CR-MTAC pharmacist shall:

- i) Educate patient based on level of understanding.
- ii) Educate patient on secondary prevention pharmacotherapy.
- iii) Emphasize the importance of Anti-Thrombolytic Card.
- iv) Provide relevant information and/or compliance aids.
- v) Educate patient on the following:
 - Drug name, strength, and description of tablet.
 - Daily dosage and administration time.
 - Handling missed doses.
 - Indication and mechanism of action of the drug.
 - Medications/supplements/dietary interactions.
 - Recognition of symptoms of adverse drug reactions and the appropriate procedures to follow.
 - Importance of compliance with drug regimen and all clinic appointments.
 - Importance of follow-up and documentation.

g) Pharmaceutical Review

CR-MTAC pharmacists shall carry out the following pharmaceutical review activities:

- i) Medication Reconciliation
 - Interview patients or caregivers to get up-to-date medication list.
 - Create the most complete and accurate list of current medications taken by the patients.
 - Compare list of medications against prescribed medications.
- ii) Medication Review
 - Evaluate patient's medications to optimize drug therapy.
 - Monitor patient adherence to medication regimen.
 - Follow up and review patient progress to ensure the achievement of desired treatment outcome.
 - Modify (if necessary) existing pharmaceutical care plan.

- iii) Identify drug related problem
 - Assess patient condition (e.g. signs, symptoms and complaints).
 - Review patient case notes.
 - Recognise adverse drug reactions, side effects, inappropriate or insufficient doses and medications/supplements/dietary interactions.

- iv) Develop holistic pharmaceutical care plan by suggesting:
 - Intervention or recommendation.
 - Therapeutic alternatives.
 - Non-pharmacological therapy.
 - Referral (if required) to other healthcare professionals.

- vi) Document all recommendations
All recommendations must be discussed with prescriber and document in patient records.

h) Monitoring and Evaluation

- i) Monitor patient vital signs and laboratory parameters.
- ii) Interview patient or caregivers.
- iii) Evaluate all relevant information.

i) Immediate Referral to Doctor

- i) Refer patient to doctor in the following situations:
 - Actual or suspected signs and symptoms of adverse drug reactions.
 - Deranged laboratory results requiring intervention.
 - Patient consistently missed appointments.
 - Patient remained non-compliant to therapy.
 - Patient required re-initiation of therapy after defaulted appointment.

j) Dispensing

- i) Dispense medications (if feasible) at CR-MTAC.
- ii) During dispensing, pharmacist must ensure the following:
 - The right patient
 - The right medications
 - The right dose
 - The right route of administration
 - The right time of administration
- iii) Emphasize the importance of adherence to medications.
- iv) Highlight possible side effects.
- v) Provide summary of important information.
- vi) Reassess patient understanding and expectations.

k) Missed appointment

- i) Contact patient as soon as possible and reschedule a new appointment.
- ii) Document reasons of missed appointment in CR-MTAC/F2 form.
- iii) Allow patient to walk-in during the next clinic day.
- iv) Refer to prescriber if patient requires re-initiation of medication.

l) Defaulters

- i) Patients who missed two consecutive visits are defaulters.
- ii) Pharmacist shall:
 - Contact patient as soon as possible and reschedule a new appointment.
 - Refer to prescriber if patient requires re-initiation of medications.

m) CR-MTAC Discharge Criteria

- i) Patients can be discharged from CR-MTAC if one of the following is fulfilled:
 - Achieved therapeutic outcomes for at least two (2) consecutive readings.
 - Good medication knowledge score (DFIT).
 - Good adherence to medications.
 - No further intervention is required.
 - Patient requests to be discharged from CR-MTAC.
 - Patient discharged or transferred to other facilities.
- ii) Discharge of patients from this service shall be based on pharmacist justification. However, all discharges shall be discussed with prescribers.

n) Documentation

- i) All interventions and pharmaceutical care recommendations must be documented in patient records.
- ii) Maintain the following documents:
 - CR-MTAC First Visit Pharmacotherapy Review Form (CR-MTAC/F1) – **Appendix 1**
 - CR-MTAC Follow-up Visit Pharmacotherapy Review Form (CR-MTAC/F2) – **Appendix 2**
 - Pharmacist Review & Counselling Checklist – **Appendix 3**

APPENDICES

The list of appendices are:

Appendix 1 - CR-MTAC First Visit Pharmacotherapy Review Form (CR-MTAC/F1)

Appendix 2 - CR-MTAC Follow-up Visit Pharmacotherapy Review Form (CR-MTAC/F2)

Appendix 3 - Pharmacist Review & Counselling Checklist

Appendix 4 - CR-MTAC First Visit Workflow

Appendix 5 - CR-MTAC Follow-up Visit Workflow

Appendix 6 - Example of Anti-Thrombolytic Card

Appendix 7 - Counseling Points for Pharmacotherapies (*Bahasa Malaysia*)

**CARDIAC REHABILITATION MEDICATION THERAPY ADHERENCE CLINIC
FOLLOW UP VISIT PHARMACOTHERAPY REVIEW
(CR-MTAC/F2)**

Review of Patient Understanding (Medication)																	
Medication	Visit Date	1				2				3				4			
		D	F	I	T	D	F	I	T	D	F	I	T	D	F	I	T
ANTI-PLATELET AGENT																	
<input type="checkbox"/> T. Acetylsalicylic acid (ASA) 150mg OD	<input type="checkbox"/> T. ASA + Glycine 100/45 mg OD																
<input type="checkbox"/> T. Clopidogrel (Date start:)																	
<input type="checkbox"/> T. Ticagrelor (Date start:)																	
ANTI-HYPERTENSIVE AGENTS																	
ACE inhibitor	<input type="checkbox"/> T. Perindopril ____mg OD																
	<input type="checkbox"/> T. Others: _____																
ARB	<input type="checkbox"/> T. Losartan ____mg OD																
	<input type="checkbox"/> T. Valsartan ____mg BD																
	<input type="checkbox"/> Others: _____																
Beta blockers	<input type="checkbox"/> T. Bisoprolol ____mg OD																
	<input type="checkbox"/> T. Metoprolol ____mg BD																
	<input type="checkbox"/> T. Carvedilol ____mg BD																
Others:																	
ANTI-HYPERLIPIDEMIC AGENTS																	
Statins	<input type="checkbox"/> T. Simvastatin ____mg ON																
	<input type="checkbox"/> T. Atorvastatin ____mg ON																
	<input type="checkbox"/> T. Rosuvastatin ____mg ON																
<input type="checkbox"/> T. Ezetimibe 10mg OD																	
<input type="checkbox"/> T. Ezetimibe + Simvastatin 10/20mg ON																	
<input type="checkbox"/> T. Gemfibrozil 600mg BD																	
<input type="checkbox"/> T. Fenofibrate 145mg OD																	
ANTI-ANGINAL AGENTS																	
<input type="checkbox"/> T. Isosorbide Mononitrate CR ____mg OD / BD																	
<input type="checkbox"/> T. Isosorbide Dinitrate 10mg TDS																	
<input type="checkbox"/> T. Trimetazidine 20mg TDS																	
<input type="checkbox"/> T. Trimetazidine MR 35mg BD																	
<input type="checkbox"/> S/L GTN 0.5mg PRN																	
OTHERS																	
<input type="checkbox"/> T. Ranitidine 150mg OD / BD																	
<input type="checkbox"/> T. Omeprazole/Pantoprazole/Esomeprazole																	
<input type="checkbox"/> ____mg OD / BD																	
<input type="checkbox"/> T. Metformin IR / XR ____mg BD / OD																	
<input type="checkbox"/> SC Regular Insulin ____ IU TDS																	
<input type="checkbox"/> SC NPH Insulin ____ IU ON																	
<input type="checkbox"/> SC Regular/NPH 30/70 ____ IU BD																	
SCORE (%)																	
MEDICATION ADHERENCE																	
INITIAL AND STAMP																	

D= Dose F= Frequency I = Indication T = Time of Administration

LABORATORY VALUES								
Date	Normal Value	Baseline	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Weight (kg)								
BMI								
BP (mmHg)	< 130/80							
Pulse (bpm)	<80							
FBS (mmol/L)	4.4-6.0							
HbA1c (%)	<6.3							
RENAL PROFILE								
SrCr (mmol/L)	57-130							
ClCr (ml/min)	80-130							
K (mmol/L)	3.5-5.0							
LIPID PROFILE								
T. C (mmol/L)	3.5 -5.7							
TGL (mmol/L)	0.6 – 1.6							
LDL (mmol/L)	< 2.5							
HDL (mmol/L)	> 1.5							
LIVER FUNCTION TEST								
Albumin								
ALT (IU/L)	34-104							
WARD ADMISSION								
Date of admission								
Hospital								
Reason for admission								
Remarks								
* if patient defaults, please write in the respective column								

PHARMACIST REVIEW AND COUNSELLING CHECKLIST

CRP Clinic Visit No. _____

CR-MTAC Visit No. 1

(Date: __/__/____)

- Clarify patient's contact number and address
- Issue Anti-Thrombolytic card and emphasize the need to carry it at all time (if applicable)
- Drug allergies
- Brief overview of myocardial infarction
- CVDs risk factors
- Therapeutic goals (BP, PR, SL, FBS)
- Importance of compliance
- Use of sublingual GTN during chest pain
- Current smoking status

- Referral to Quit Smoking Clinic
- Weight management
- Specific drug therapy module counselled:
- 1 / 2 / 3 / 4 / 5 / 6
- Supplements / traditional medicine use
- Other medical follow up and drugs
- Changes of drug regimen, if any
- Patient's concerns, if any:

Pharmaceutical care issues and outcomes:

Module	Therapy
1	Anti-platelet therapy
2	Beta blocker/CCB
3	ACEi/ARB
4	Anti-hyperlipidemic agent
5	Nitrates and Anti-anginal
6	Diuretics / Potassium supplementation

Pharmacist's Sign & Stamp

* Pharmacist may choose to educate patient on the points above based on their needs

CRP Clinic Visit No. _____

CR-MTAC Visit No. _____

(Date: __/__/____)

- Drug Allergies / Intolerance
- CVDs risk factors
- Therapeutic goals (BP, PR, SL, FBS)
- Importance of compliance
- Use of sublingual GTN during chest pain
- Current smoking status
- Referral to Quit Smoking Clinic
- Weight management

- Specific drug therapy module counselled:
- 1 / 2 / 3 / 4 / 5 / 6
- Reassessment of previously counselled specific drug therapy module:
- 1 / 2 / 3 / 4 / 5 / 6
- Supplements / traditional medicine use
- Other medical follow up and drugs
- Changes of drug regimen, if any
- Patient's concerns, if any:

Pharmaceutical care issues and outcomes:

Module	Therapy
1	Anti-platelet therapy
2	Beta blocker/CCB
3	ACEi/ARB
4	Anti-hyperlipidemic agent
5	Nitrates and Anti-anginal
6	Diuretics / Potassium supplementation

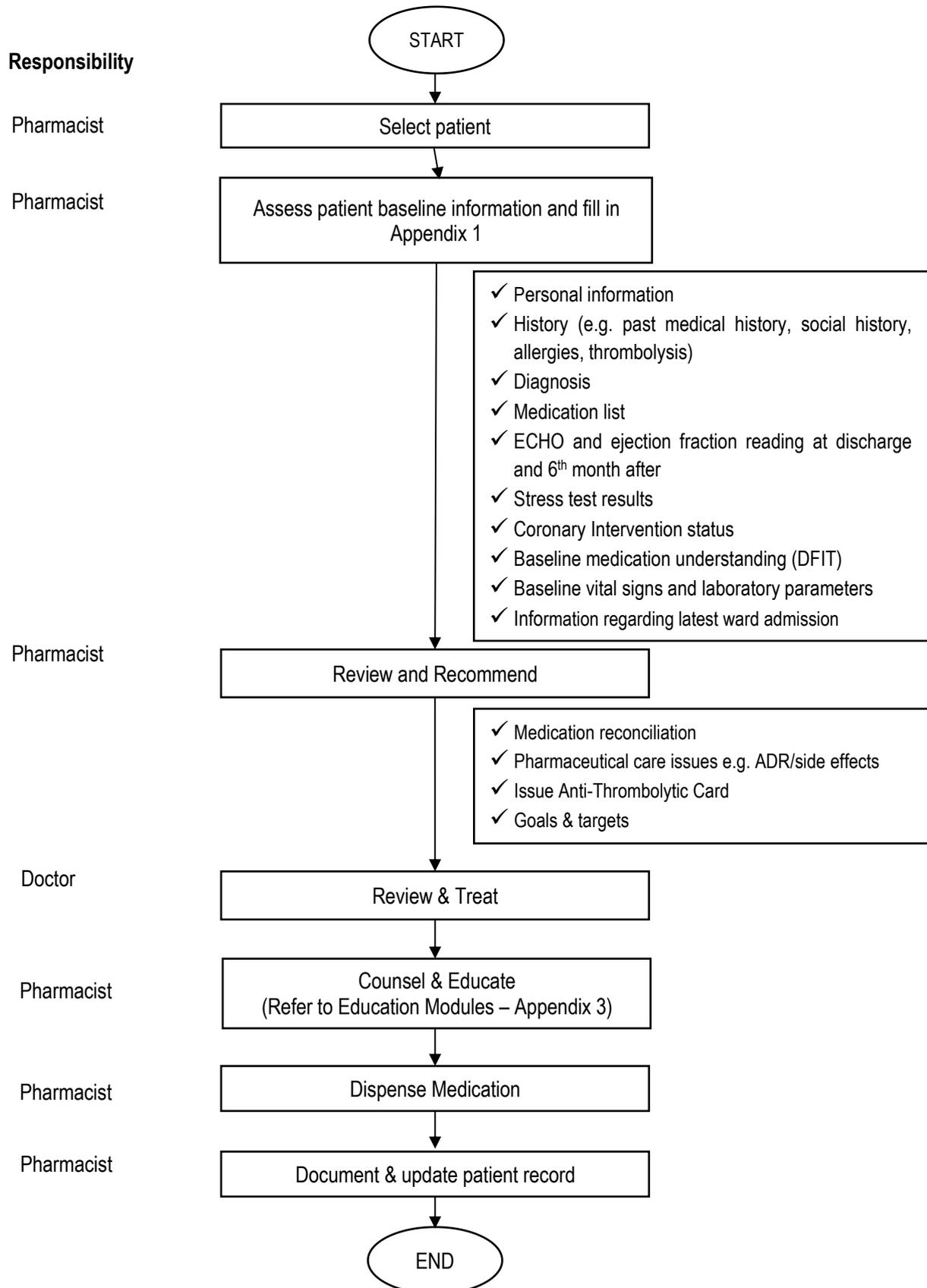
Pharmacist's Sign & Stamp

* Pharmacist may choose to educate patient on the points above based on their needs

MEDICATION THERAPY ADHERENCE CLINIC (CARDIAC REHABILITATION) WORKFLOW

FIRST CR-MTAC VISIT

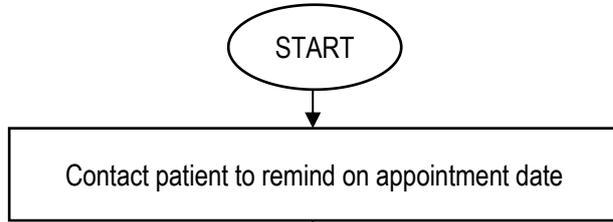
Location: Cardiac Clinic/ Pharmacy



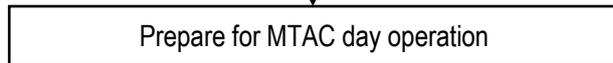
**MEDICATION THERAPY ADHERENCE CLINIC (CARDIAC REHABILITATION) WORKFLOW
 FOLLOW UP CR-MTAC VISIT
 Location: Cardiac Clinic/ Pharmacy**

RESPONSIBILITY

PRE CLINIC DAY
 Pharmacist

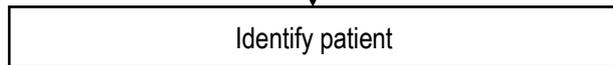


Pharmacist

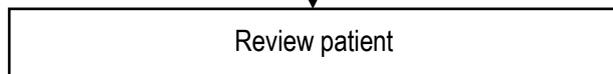


- ✓ Review previous notes and latest laboratory results.
- ✓ Prepare Anti-Thrombolytic Card for patients who were given an anti-thrombolytic (if have not received card).

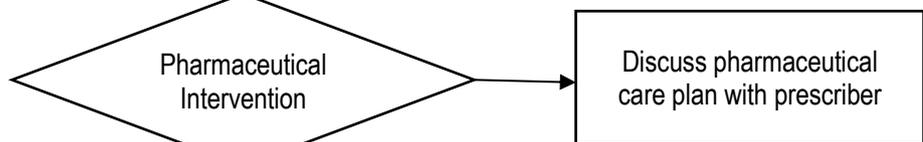
CLINIC DAY
 Pharmacist



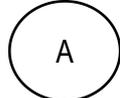
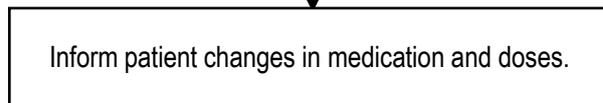
Pharmacist

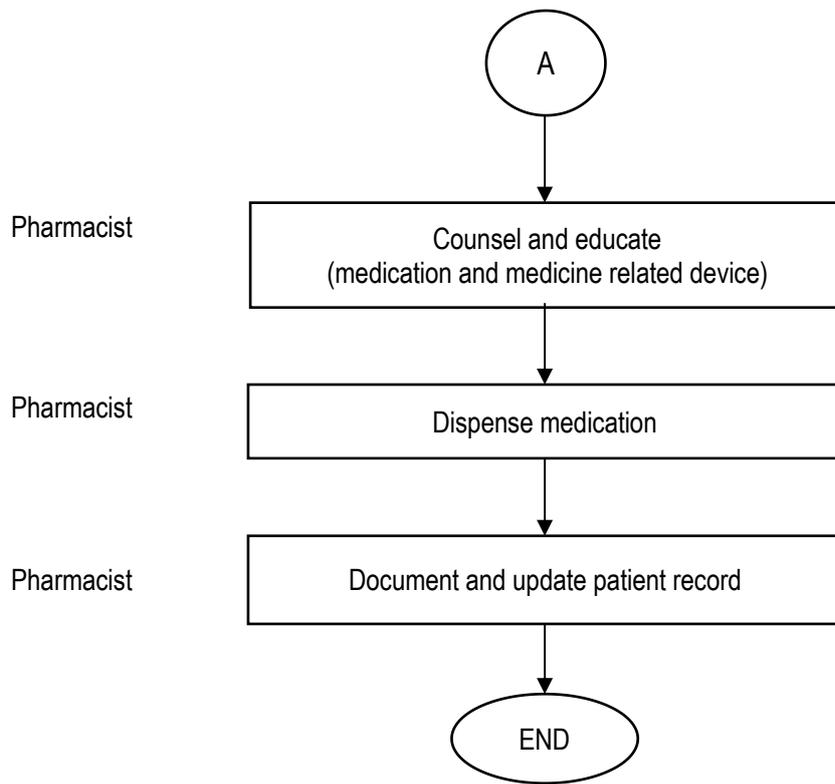


- ✓ Update medication list / laboratory results
- ✓ Reassess medication adherence
- ✓ Reassess disease & medication understanding
- ✓ Identify possible drug related problems e.g. adverse reaction / side effects
- ✓ Review pharmaceutical care plan
- ✓ Issue Anti-Thrombolytic Card

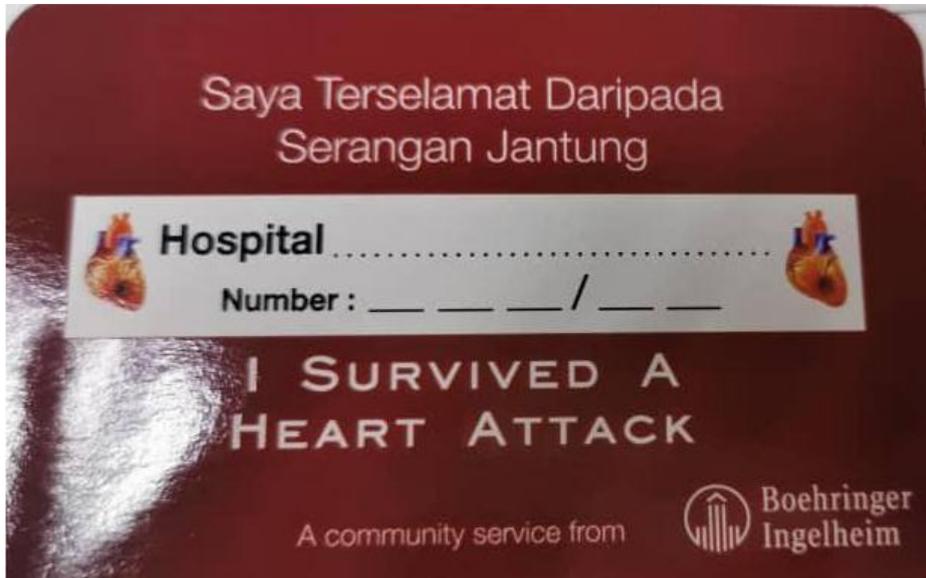


Pharmacist





EXAMPLE OF ANTI-THROMBOLYTIC CARD



Name:

No. K.P:

TYPE:

<input type="checkbox"/> Anterior	<input type="checkbox"/> Posterior
<input type="checkbox"/> Inferior	<input type="checkbox"/> Lateral
<input type="checkbox"/> Right Sided	<input type="checkbox"/> Others: _____

THROMBOLYTIC AGENT GIVEN: Streptokinase
 Metalyse (TNK-tPA)
 r-TPA

Date Given: ____ / ____ / ____

Counseling Points for Pharmacotherapies (*Bahasa Malaysia*)

Nama ubat	Kegunaan	Peringatan / Perhatian
<ul style="list-style-type: none"> • Aspirin 300mg • Cardiprin 100mg • Clopidogrel 75mg • Ticagrelor 90mg • Ticlopidine 250mg • Prasugrel 10mg 	Menghalang pembekuan darah dalam rawatan sakit jantung	a) Ambil selepas makan untuk mengelakkan gangguan perut b) Jangan ambil bersama alkohol c) Beritahu doktor atau doktor gigi yang anda sedang dirawat dengan ubat ini
<ul style="list-style-type: none"> • Captopril 25mg • Perindopril 4mg • Enalapril 5/10/20mg • Ramipril 2.5mg/5mg 	Merehatkan saluran darah. Oleh itu, meningkatkan bekalan darah dan oksigen ke jantung	a) Ambil ubat ini dengan perut kosong 1 jam sebelum makan b) Ubat ini boleh menyebabkan pening atau batuk c) Ambil perhatian jika anda bersenam dan berada bawah keadaan cuaca yang panas kerana anda mungkin akan berasa pening dan pengsan
<ul style="list-style-type: none"> • Valsartan 80mg • Losartan 100mg 	Merehatkan saluran darah. Oleh itu, meningkatkan bekalan darah dan oksigen ke jantung	a) Ambil selepas makan b) Ubat ini boleh menyebabkan pening c) Ambil perhatian jika anda bersenam dan berada bawah keadaan cuaca yang panas kerana anda mungkin akan berasa pening dan pengsan
<ul style="list-style-type: none"> • Isosorbide dinitrate 10mg • Isosorbide mononitrate 50mg / 60mg 	Mengurangkan bilangan serangan jantung dengan memperbaiki bekalan darah dan oksigen ke jantung	a) Ambil ubat ½ jam sebelum makan b) Bangun secara perlahan-lahan dari posisi baring untuk elak pita dan pening c) Jangan berhenti makan ubat ini dengan tiba-tiba d) Berhenti secara mengejutkan mungkin menyebabkan serangan sakit jantung d) makan ikut masa. Contoh: 7am/12pm/5pm atau 8am/1pm/6pm
<ul style="list-style-type: none"> • Metoprolol 100mg • Bisoprolol 2.5mg / 5mg • Atenolol 100mg • Propanolol 40mg • Carvedilol 6.25mg/ 25mg 	Mengurangkan beban kerja jantung	a) Berhati-hati sewaktu memandu / mengendalikan mesin b) Berjaga-jaga semasa bersenam, berada bawah bawah keadaan cuaca panas atau berdiri untuk jangka masa lam

<ul style="list-style-type: none"> • Felodipine 5mg/10mg • Amlodipine 5mg/10mg • Diltiazem 30mg • Verampil 40mg 	<p>Merehatkan saluran darah. Oleh itu, meningkatkan bekalan darah ke jantung dan mengurangkan beban kerja jantung</p>	<p>a) Bangun secara perlahan-lahan dari posisi baring untuk elak pitam dan pening</p>
<ul style="list-style-type: none"> • Glyceryl trinitrate (GTN) 	<p>Merehatkan saluran darah. Oleh itu, meningkatkan bekalan darah dan oksigen ke jantung. Ini akan mengurangkan beban kerja jantung</p>	<p>a) Letakkan tablet di bawah lidah dan biarkan di dalam mulut bila rasa pedih/sakit di dada. Jika tidak lega selepas 5 minit, ulang dengan sebiji lagi GTN. Jika masih tidak lega, ulang sekali lagi selepas 5 minit. Jika masih tiada perubahan, sila jumpa doctor dengan segera.</p> <p>b) Elakkan menelan banyak air liur sehinggalah semua tablet telah larut dengan sempurna</p> <p>b) Buangkan GTN selepas 8 minggu bekasnya dibuka dan dapatkan bekalan baru</p> <p>c) Sekiranya tidak memberikan rasa pedas / rasa terbakar, dapatkan bekalan yang baru</p> <p>d) Bawa ubat ini ke mana-man</p>
<ul style="list-style-type: none"> • Simvastatin 20/40mg • Pravastatin 20mg • Atorvastatin 20/40mg • Rosuvastatin 10mg 	<p>Mengurangkan pembentukan kolesterol oleh hati. Dengan ini, menghalang penyumbatan saluran darah oleh lemak dan kolesterol</p>	<p>a) Ambil dos tunggal pada waktu malam</p> <p>b) Beritahu doctor sekiranya anda pernah dijangkiti penyakit hati</p> <p>c) Beritahu doktor jika berasa sakit otot, lemah dan letih</p>
<ul style="list-style-type: none"> • Ezetimibe 	<p>Mengurangkan pembentukan kolesterol oleh hati. Dengan ini, menghalang penyumbatan saluran darah oleh lemak dan kolesterol</p>	<p>a) Ambil selepas makan</p> <p>b) Beritahu doktor jika berasa sakit sendi , cirit-birit atau sentiasa berasa lemah</p>
<ul style="list-style-type: none"> • Fibrates 	<p>Mengurangkan triglycerides dan meningkatkan kolesterol bagus (HDL-C).</p>	<p>a) Ambil selepas makan</p> <p>b) Beritahu doktor jika berasa sakit kepala, sakit badan.</p>
<ul style="list-style-type: none"> • Trimetazidine 20mg • Trimetazidine MR 35mg 	<p>Mencegah peningkatan tekanan darah secara tiba-tiba dan mengurangkan bilangan serangan jantung</p>	<p>a) Ambil selepas makan</p>

<ul style="list-style-type: none"> • Frusemide 40mg • Spironolactone 25mg 	<p>Mengurangkan beban kerja jantung dengan mengurangkan kandungan air di dalam badan</p>	<ul style="list-style-type: none"> a) Ambil dos tunggal selepas sarapan pagi dan dos seterusnya sebelum pukul 6 petang b) Bangun secara perlahan-lahan dari posisi baring untuk elak rasa pening c) Elak dari terdedah kepada cahaya matahari jika peka terhadap cahaya matahari
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Nota Penting:

- ✓ Pengambilan ubat hendaklah di atas nasihat doctor.
- ✓ Elakkan minuman yang mengandungi alkohol.
- ✓ Simpan ubat di tempat yang terlindung dari cahaya matahari dan kanak-kanak.
- ✓ Beritahu doktor jika berlaku kesan sampingan yang mengganggu kegiatan harian anda.

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