Health Sciences Centre
Acute Myocardial Infarction Care Map
Standards Document
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PREFACE

The provision of evidence-informed quality care is important to health care providers as well as to the families and patients who are the recipients of care. Care Maps are evidence-informed tools that assist with the provision of efficient, high quality care. Benefits of Care Maps may include a decrease in one year mortality, hospital length of stay, a higher adherence to quality indicators, compliance with interventions, patient/staff satisfaction, and staff and client empowerment. It is important to remember that Care Maps are tools to assist with the provision of care and clinical judgment and individual patient preferences remain important in maintaining individualized quality care.

The WRHA Cardiac Sciences website (www.cardiacsciences.mb.ca) under evidence based practice tools is a list of order sets and algorithms authored by the WRHA Cardiac Sciences Program.

LENGTH OF STAY

The proposed length of stay for the Acute Myocardial Infarction (AMI) Care Map is four days. It is recognized that patients may deviate from the proposed length of stay for a variety of reasons.

INCLUSION AND EXCLUSION CRITERIA

The intent is that all STEMI and Non-STEMI patients will be placed on the Care Map. If a patient is not placed on the AMI Care Map, a discussion should take place with team members as to why the patient is not appropriate to be Care Mapped and documented in the patient’s health record.

Inclusion Criteria:

Patients admitted to the Coronary Care Unit or GB3 with an admission diagnosis of Non-STEMI or STÉMI should be placed on the AMI Care Map. If a patient is unstable and not suitable to be care mapped then:

- Place the AMI Care Map in front of the patient’s chart and start the Care Map when clinically appropriate. In essence the AMI Care map is on HOLD until the patient is stabilized

Patients with a delayed presentation with an AMI should be placed on the Care Map as per discretion of the clinician and the decision should be individualized for each patient.

Exclusion Criteria:

The AMI Care Map is not intended for:

- Patients with unstable angina or with a diagnosis of acute coronary syndrome with or without micro-infarction (e.g. troponin positive, CK negative). For patients with a diagnosis of ACS, clarify with the attending physician if patient has an AMI in rounds;
- Postoperative AMI.
INITIATION

Any member of the team may place a patient who has been diagnosed with a STEMI or Non-STEMI on the AMI Care Map; a physician order is not required. The physician may discontinue the AMI Care Map if in consultation with the team, it is deemed inappropriate. Before initiating the AMI Care Map, ensure the patient is informed of his/her diagnosis prior to initiating the AMI Care Map (this is a physician responsibility).

ACUTE MI DISCHARGE CRITERIA

The following discharge criteria are to be met prior to patient discharge:

- The patient is hemodynamically stable
- The patient does not have ischemic pain
- The patient has completed activity progression
- The patient has received a discharge prescription for: nitroglycerin, antiplatelet agent(s), beta-blocker, ACE inhibitor (or angiotensin receptor blocker (ARB), and lipid lowering agent (statin), if no contraindications or allergy and according to guidelines
- Arrangements have been made for appropriate risk stratification or investigations if needed
- The patient is aware of cardiac rehabilitation and the referral has been faxed
- The patient has received teaching standards as outlined in the Care Map (or arrangement have been made for this to occur in the community or the patient is aware of community resources to obtain the information)

MEDICAL STANDARDS

AMI Care Map Admission Guidelines

Note: The following are suggested admission guidelines for patients with an Acute Myocardial Infarction. The criteria are guidelines and do not replace sound clinical judgment and individualized patient assessment.

AMI patients will be admitted to an ICU/CCU patient care area on admission. Exception: low risk AMI* patients may be considered for admissions to a telemetry unit that:

- Is a designated ward/area of HSC, which is specially staffed and equipped to provide observation, assessment, care and treatment to patients with cardiac related health issues;
- Staff has the knowledge and skills directly related to cardiac patients;
- Immediate accessibility to ACLS trained staff and emergency equipment (e.g. defibrillator and crash cart).

* Definition of low risk AMI patient:
- Small, limited non-ST elevation AMI
- A fibrinolytic agent has not been administered
- No evidence of congestive heart failure or clinical evidence of LV dysfunction
- No evidence of complex ventricular arrhythmia
- No evidence of significant conduction disturbance, either new or unknown duration
- Does not require or has not had an emergent cardiac intervention

**Laboratory/Diagnostic Standards**

1. Weight on admission
2. HbA1C on admission
3. CK q8h x 24 hours (i.e. 3 sets are done)
4. High sensitivity troponin (if not completed in emergency department)
5. CK day 3
6. 12 lead ECG on day 2 and 3
7. 12 lead ECG if chest pain unrelieved by 2 nitroglycerin sprays
8. CBC, platelets on days 2, 3 and 4
9. ALT and AST on day 1 (from emergency department blood work)
10. Lipid profile with admission sample from the Emergency Department: HDL, LDL, total cholesterol, triglycerides, TC-HDL ratio. Note: May consider a repeat fasting lipid profile if the triglycerides are elevated
11. Chest x-ray in a.m. if not done in the Emergency Department
12. Electrolytes, urea, creatinine, glucose on day 2 and 4
13. INR and aPTT on day one then aPTT every day and per ACS Heparin Nomogram if applicable;
14. aPTT 6 hrs post start of unfractionated intravenous heparin and per ACS Heparin Nomogram if applicable, then daily aPTT if therapeutic and receiving intravenous unfractionated heparin
15. Risk stratification

**Consults**

1. Cardiology
2. Clinical Dietitian consult if elevated lipid profile, diabetes, or unable to attend outpatient class
3. Physiotherapy;
4. Clinical Pharmacy as indicated according to patient condition.

**Drug Therapies/Supporting Literature**

*Standard physician order form*

A black box indicates an order is automatically activated unless it is crossed out and initialed by the physician:

1. Intravenous of normal saline TKO (follow facility specific guideline re TKO rate)
2. Saline lock
3. Oxygen prn to maintain SpO₂ greater than or equal to 90%
4. Beta blocker (see guidelines below)
5. Nitroglycerin spray 0.4 mg sublingual prn for chest pain
6. Acetaminophen q4h prn for mild to moderate pain (maximum dose 4 grams/24 hours)
7. Morphine 1-5 mg q 5minutes prn for chest pain
8. Dimenhydrinate PO/IM/IV q4h prn for nausea and/or vomiting
9. Metoclopramide 10 mg IV q6h prn for nausea and/or vomiting
10. Antacid prn by mouth for GI upset
11. Laxative of choice
12. Lipid lowering agent (consider high dose statin if not contraindicated)
13. For fibrinolytic patients: 12 lead ECG at 1 and 8 hours post bolus. Neurological assessment at baseline, q1hx2, and then q4hx24 hours
14. Additional orders for anticoagulant/antiplatelet per diagnosis (complete the Non-STEMI & STEMI with No fibrinolytics or STEMI post fibrinolytic order set). Follow post PCI order set for PCI patients

A white box indicates the ordering physician must place a check in the white box to activate the order and complete specific prescribing information.

1. Lorazepam PO/sublingual HS prn for anxiety/insomnia
2. ACE Inhibitor or Angiotensin Receptor Blockers (see guidelines below)
3. Nitroglycerin patch
4. For patients at a high risk of bleeding:
   Ranitidine and/or proton pump inhibitor
5. Order set for monitoring and treatment for hyperglycemia
6. Type of antiplatelet therapy
7. Type of anticoagulant


Definition of classes

Class I  Benefit >>> Risk. Procedure/treatment SHOULD be performed/administered
Class IIa Benefit >> Risk. Additional studies with focused objectives needed. IT IS REASONABLE to perform procedure/administer treatment
Class IIb Benefit ≥ Risk. Additional studies with broad objectives needed; additional registry data would be helpful. Procedure/treatment MAY BE CONSIDERED
Class III Risk ≥ Benefit. No benefit or harm. No additional studies needed. Procedure/treatment should NOT be performed/administered SINCE IT IS NOT HELPFUL AND MAY BE HARMFUL
Antiplatelets: ASA/Aspirin, P2Y12 Receptor Antagonists

Class I

Aspirin (162- to 325-mg loading dose) and clopidogrel (300-mg loading dose for patients ≤75 years of age, 75-mg dose for patients >75 years of age) should be administered to patients with STEMI who receive fibrinolytic therapy (Level of Evidence: A). Aspirin should be continued indefinitely (Level of Evidence: A) and clopidogrel (75 mg daily) should be continued for at least 14 days (Level of Evidence: A) and up to 1 year (Level of Evidence: C) in patients with STEMI who receive fibrinolytic therapy.

Non–enteric-coated, chewable aspirin (160 mg to 325 mg) should be given to all patients with NSTE-ACS without contraindications as soon as possible after presentation, and a maintenance dose of aspirin (81 mg/d to 325 mg/d) should be continued indefinitely (Level of Evidence: A). Aspirin 160 to 325 mg should be given before PCI (Level of Evidence: B) and aspirin 81-325 mg should be continued indefinitely thereafter (Level of Evidence: A).

A loading dose of a P2Y12 receptor inhibitor should be given as early as possible or at time of primary PCI to patients with STEMI. Formulary availability permitting, options include:

a. Clopidogrel 600 mg (Level of Evidence: B); or
b. Prasugrel 60 mg (Level of Evidence: B); or

c. Ticagrelor 180 mg (Level of Evidence: B)

P2Y12 inhibitor therapy should be given for 1 year to patients with STEMI or NSTE ACS who receive a stent (BMS or DES) during PCI. Formulary availability permitting, options for agents (and maintenance doses) include:

a. Clopidogrel 75 mg daily (Level of Evidence: B); or
b. Prasugrel 10 mg daily (Level of Evidence: B) (note: prasugrel 5 mg daily may be considered for patients 75 years of age and older or with a body weight of 60 kg or less); or

c. Ticagrelor 90 mg twice a day (Level of Evidence: B) (note: maintenance dose of ASA in combination with ticagrelor must be less than 100 mg daily)

A P2Y12 inhibitor (either clopidogrel or ticagrelor) in addition to aspirin should be administered for up to 12 months to all patients with NSTE-ACS without contraindications who are treated with medical management (i.e. no PCI or CABG). Formulary availability permitting, options include:

a. Clopidogrel: 300-mg or 600-mg loading dose, then 75 mg daily (Level of Evidence: B)
b. Ticagrelor: 180-mg loading dose, then 90 mg twice daily (Level of Evidence: B) (Note: maintenance dose of ASA in combination with ticagrelor must be less than 100 mg daily)

Class III (Harm)

Prasugrel should not be administered to patients with a history of prior stroke or transient ischemic attack (Level of Evidence: B)
Beta Blockers

Class I

Oral beta blockers should be initiated in the first 24 hours in patients with STEMI or NSTE ACS who do not have any of the following: signs of HF, evidence of a low output state, increased risk for cardiogenic shock, or other contraindications to use of oral beta blockers (PR interval more than 0.24 seconds, second- or third-degree heart block, active asthma, or reactive airway disease) (Level of Evidence: B).

In patients with concomitant NSTE ACS, stabilized HF, and reduced systolic function, it is recommended to continue beta-blocker therapy with 1 of the 3 drugs proven to reduce mortality in patients with HF: sustained-release metoprolol succinate, carvedilol, or bisoprolol (Level of Evidence: C).

Patients with initial contraindications to the use of beta blockers in the first 24 hours after STEMI or NSTE ACS should be reevaluated to determine their subsequent eligibility (Level of Evidence: C).

Class IIa

It is reasonable to administer intravenous beta blockers at the time of presentation to patients with STEMI and no contraindications to their use, who are hypertensive or have ongoing ischemia (Level of Evidence: B).

Class III (Harm)

Administration of intravenous beta blockers is potentially harmful in patients with ACS who have risk factors for shock (Level of Evidence: B).

ACE Inhibitors, Angiotensin Receptor Blockers

Class I

An angiotensin-converting enzyme (ACE) inhibitor should be administered within the first 24 hours to all patients with STEMI with anterior location, HF, or ejection fraction (EF) less than or equal to 0.40, unless contraindicated (Level of Evidence: A). ACE inhibitors should be started and continued indefinitely in all patients with left ventricular ejection fraction (LVEF) less than 0.40 and in those with hypertension, diabetes mellitus, or stable chronic kidney disease (CKD), unless contraindicated (Level of Evidence: A).

Angiotensin receptor blockers are recommended in patients with HF or MI with LVEF less than 0.40 who are ACE inhibitor intolerant (Level of Evidence: A). An angiotensin receptor blocker (ARB) should be given to patients with STEMI or NSTE ACS who have indications for but are intolerant of ACE inhibitors (Level of Evidence: B).
**Class IIa**

ACE inhibitors are reasonable for all patients with STEMI and no contraindications to their use (*Level of Evidence: A*).

Angiotensin receptor blockers are reasonable in other patients with cardiac or other vascular disease who are ACE inhibitor intolerant (*Level of Evidence: B*).

**Class IIb**

ACE inhibitors may be reasonable in all other patients with cardiac or other vascular disease (*Level of Evidence: B*).

**Aldosterone Antagonists**

**Class I**

An aldosterone antagonist should be given to patients with STEMI and no contraindications who are already receiving an ACE inhibitor and beta blocker and who have an EF less than or equal to 0.40 and either symptomatic HF or diabetes mellitus (*Level of Evidence: B*).

Aldosterone blockade is recommended in post–MI patients who are without significant renal dysfunction (creatinine >221 µmol/L in men or >176 µmol/L in women) or hyperkalemia (K+ >5.0 mmol/L) who are receiving therapeutic doses of ACE inhibitor and beta blocker and have a LVEF 0.40 or less, diabetes mellitus, or HF (*Level of Evidence: A*).

**Statins**

**Class I**

High-intensity statin therapy should be initiated or continued in all patients with STEMI or NSTE ACS and no contraindications to its use (*Level of Evidence: B*).

**Anticoagulants**

1. Intravenous Unfractionated Heparin

For all ACS patients prescribed unfractionated heparin, except those receiving Primary PCI, follow the ACS Heparin nomogram. Titrate aPPT to 1.5 to 2.0 times control or follow physician order for first 48 hours of care.
Initial Dosing Guidelines for Intravenous Heparin Anticoagulation for Patients with Acute Coronary Syndromes (Acute MI with or without thrombolytic therapy and Unstable Angina)

Baseline laboratory tests: aPTT, CBC
Initial Loading Dose: 60 units/kg (maximum dose is 4,000 units)
Initial Maintenance Infusion: 12 units/kg/hour (maximum 1,000 units/hour)

<table>
<thead>
<tr>
<th>Body Weight (kg)</th>
<th>Initial Loading Dose* (units)</th>
<th>Initial Infusion** (units/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>2400</td>
<td>500</td>
</tr>
<tr>
<td>50</td>
<td>3000</td>
<td>600</td>
</tr>
<tr>
<td>55</td>
<td>3300</td>
<td>650</td>
</tr>
<tr>
<td>60</td>
<td>3600</td>
<td>700</td>
</tr>
<tr>
<td>65</td>
<td>3900</td>
<td>800</td>
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<td>70</td>
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<td>75</td>
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<td>900</td>
</tr>
<tr>
<td>80</td>
<td>4000</td>
<td>950</td>
</tr>
<tr>
<td>≥ 85</td>
<td>4000</td>
<td>1000</td>
</tr>
</tbody>
</table>

* Loading dose based on 60 units/kg
** Infusion based on 12 units/kg/hr, rounded to nearest 50

Intravenous Heparin Dose Adjustments According to aPTT Results for Patients with Acute Coronary Syndromes (Acute MI with or without thrombolytic therapy and Unstable Angina)

For aPTT results obtained ≥ 6 hours following bolus dose or rate change

(Mean normal aPTT = 32.1 seconds)

<table>
<thead>
<tr>
<th>aPTT (seconds)</th>
<th>Heparin Dose Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;38</td>
<td>↑ infusion by 200 units/hr</td>
</tr>
<tr>
<td>38 - 48</td>
<td>↑ infusion by 100 units/hr</td>
</tr>
<tr>
<td>49 - 65</td>
<td>Continue current infusion</td>
</tr>
<tr>
<td>66 - 82</td>
<td>↓ infusion by 100 units/hr</td>
</tr>
<tr>
<td>83 - 105</td>
<td>Hold for 30 minutes, then ↓ infusion by 200 units/hr</td>
</tr>
<tr>
<td>&gt;105</td>
<td>Hold for 60 minutes, then ↓ infusion by 300 units/hr</td>
</tr>
</tbody>
</table>

NOTE: A different intravenous heparin dosing guideline (bolus 80 units/kg; initial infusion 18 units/kg/hr) is recommended for anticoagulation of patients with venous thromboembolism.
For Fibrinolytic Therapy:

- 12 lead ECG at 1 and 8 hours post bolus
- Neurological assessment: Baseline, q1h x 2, and then q4h x 24 hours and document on the neuro record

Primary PCI:

Please refer to www.cardiacsciences.mb.ca. Post revascularization, re-evaluate the need for continuing or discontinuing anticoagulation. Refer to post coronary angioplasty/stent MD order sheets.

2. Low Molecular Weight Heparin: Enoxaparin

Enoxaparin is approved for STEMI and Non-STEMI patients – however there are some important differences:

2.1 STEMI and Fibrinolics

2.1.1 For patients LESS THAN 75 years of age and no renal failure (see below)

- IV bolus 30 mg x 1 dose to be given immediately prior to IV tenecteplase (TNK).
- Subcutaneous dose to be administered as soon as possible (within 15 minutes). For the first 24 hours of subcut dosing, administer 1 mg/kg q12h to a max of 100 mg/dose. After the first 24 hours the maximum single dose is 140 mg q12 h. The usual total duration of subcutaneous dosing is 3 – 8 days.

2.1.2 For patients GREATER THAN OR EQUAL TO 75 years of age and no renal failure (see below)

- No IV Enoxaparin bolus.
- Subcutaneous dose to be administered as soon as possible (within 15 minutes). For the first 24 hours of subcut dosing, administer 0.75 mg/kg q12 h to a max of 80 mg/dose. After the first 24 hours the maximum single dose is 100 mg. Usual total duration of subcutaneous dosing is 3 – 8 days.

2.1.3 Use in renal failure: Do not use enoxaparin in patients with known renal dysfunction (CrCl LESS THAN 30 mL/min), use IV heparin. If however enoxaparin is started on an individual who is discovered to be in renal failure after the enoxaparin has been given there are a number of approaches

The CrCl(male)= (140-age) x 88.4/Scr (umoles/L) (x 0.85 for female)

The following table helps to determine a patient’s CrCl without needing to use a formula
- Use table to determine if creatinine clearance less than 30 mL/min. Select patient age (round to closest age) and read serum creatinine (SCr) cut off point under appropriate gender. If patient SCr is greater than this number then creatinine clearance is less than 30 mL/min

<table>
<thead>
<tr>
<th>Male SCr Cut Off Point</th>
<th>Age</th>
<th>Female SCr Cut Off Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>40</td>
<td>255</td>
</tr>
<tr>
<td>285</td>
<td>45</td>
<td>242</td>
</tr>
<tr>
<td>270</td>
<td>50</td>
<td>230</td>
</tr>
<tr>
<td>255</td>
<td>55</td>
<td>216</td>
</tr>
<tr>
<td>240</td>
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<tr>
<td>225</td>
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<td>210</td>
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<td>180</td>
<td>80</td>
<td>153</td>
</tr>
<tr>
<td>165</td>
<td>85</td>
<td>140</td>
</tr>
<tr>
<td>150</td>
<td>90</td>
<td>128</td>
</tr>
</tbody>
</table>
Overview of Enoxaparin and Fibrinolysis in STEMI

STEMI

(NTG, O₂, morphine, ASA + clopidogrel/ticagrelor/prasugrel [if no CABG planned])

1° PCI

Unfractionated Heparin

Fibrinolysis

CrCl ≥ 30 mL/min and wt <150 kg (otherwise, use UFH)

Symptoms for > 12 hrs

< 75 years old

Enoxaparin 30 mg IV x 1

(Do NOT GIVE if: IV UFH ≥ 4000 units given within the previous 3 hours; or 1 mg/kg subcut enoxaparin dose given 2 to 8 hours prior [onset of effect of subcut dose approx. 2 hours, duration of effect 8 to 12 hours]; presence of indwelling spinal/epidural catheter)

< 75 years old

≥ 75 years old

NO enoxaparin IV

Tenecteplase

Enoxaparin 0.75 mg/kg subcut q12h
(max 80 mg per dose in first 24 hrs, then up to 100 mg per dose thereafter)

Enoxaparin 1 mg/kg subcut q12h within 15 min of tenecteplase (max 100 mg per dose in first 24 hrs, then up to 140 mg per dose thereafter)
2.2 Non-STEMI

2.2.1 Enoxaparin - for patients of any age:
- Dose is 1 mg/kg subcutaneous q12 hours, up to a maximum of 140 mg/dose. In patients greater than 150 kg, use unfractionated heparin
- Usual total duration is 2 – 8 days.
- Use in renal failure: Avoid if CrCl less than 30 mL/min (use unfractionated heparin above). See SCr cutoffs by age in above chart for STEMI.

2.3 Fondaparinux – for patients with NSTEMI or unstable angina in whom a conservative initial treatment strategy (medical management; i.e. no PCI or CABG) is chosen. Fondaparinux is favoured over enoxaparin in these cases due to equal efficacy and lower bleeding risk compared to enoxaparin.
- Dose is 2.5 mg subcutaneous once daily
- Usual total duration is 2 – 8 days
- Avoid if CrCl less than 30 mL/min (contraindicated: use unfractionated heparin)
- Avoid in those weighing more than 120 kg (if 120-150 kg, use enoxaparin or unfractionated heparin; if greater than 150 kg, use unfractionated heparin)
- Avoid in patients requiring urgent PCI or CABG, and in those with mechanical heart valves
- Patients receiving fondaparinux for NSTEMI or unstable angina undergoing coronary catheterization/PCI should receive an additional anticoagulant agent at the time of PCI, at the discretion of the angiographer (usually a bolus dose of unfractionated heparin)

Note:
- Enoxaparin and fondaparinux should be injected subcut in abdominal site only;
- If possible avoid NSAIDs (excluding ASA); evaluate for signs and symptoms of bleeding daily.

Risk Stratification

1. Patients should be risk stratified appropriately according to patient’s condition and standards of care. It is at the individual physician discretion if a patient may be discharged and scheduled for testing on an outpatient basis
2. The most common forms of risk stratification are coronary angiogram, treadmill EKG (both sub maximal and maximal), pharmacologic nuclear (usually with dipyridamole), exercise nuclear (sub maximal or maximal) and pharmacologic echo (usually with dobutamine)
3. If evidence of CHF, left ventricular assessment should be done prior to patient discharge.
4. All post discharge symptom limited stress tests to be arranged by the physician responsible for discharging the patient from the hospital

<table>
<thead>
<tr>
<th>Stressor</th>
<th>Imager</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking on treadmill (Sub maximal)</td>
<td>Signs, symptoms, ECG, BP</td>
</tr>
<tr>
<td>Walking on treadmill (Sub maximal)</td>
<td>Nuclear Imaging (MIBI, Thallium, Cardiolyte) or echo</td>
</tr>
<tr>
<td>Bicycle (Sub maximal)</td>
<td>Nuclear Imaging or Echo</td>
</tr>
<tr>
<td>Pharmacologic:</td>
<td></td>
</tr>
<tr>
<td>- Adenosine (Maximal)</td>
<td>Nuclear Imaging or Echo</td>
</tr>
<tr>
<td>- Dipyridamole (Maximal)</td>
<td></td>
</tr>
<tr>
<td>- Dobutamine (Sub maximal)</td>
<td></td>
</tr>
</tbody>
</table>

**NUSING ASSESSMENT STANDARDS**

The following defines the assessment parameters and frequency for the initial and ongoing assessments of STEMI and Non-STEMI patients.

<table>
<thead>
<tr>
<th>Standard</th>
<th>ICU/CCU</th>
<th>Medical Ward</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST Monitoring</td>
<td>From admission and until the physician orders the monitor to be discontinued</td>
<td>For those clinical units where ST monitoring is available continue to monitor ST segments until the physician orders the monitor to be discontinued</td>
</tr>
<tr>
<td>Ideal recommendations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Monitor Lead III, V3 and V5 for three lead systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Monitor in lead III and V3 for two lead systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Unless a patients prior 12 lead ECG recorded during an ischemic event indicates that another lead is more sensitive (ST fingerprint lead)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Default for ST segment measurement is J + 60 ms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead and duration of ST monitoring may need to be individualized to:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Each patients unique presentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Clinical condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Capabilities of current monitoring systems and software</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Existing polices and procedures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous cardiac monitoring</td>
<td>From admission and until the physician orders the monitor to be discontinued</td>
<td>For those clinical units where cardiac monitoring is ordered continue to monitor until the physician orders the monitor to be discontinued</td>
</tr>
<tr>
<td>Admission Vital Signs</td>
<td>Blood Pressure both arms,</td>
<td>Blood Pressure, temperature, pulse,</td>
</tr>
<tr>
<td>Standard</td>
<td>ICU/CCU</td>
<td>Medical Ward</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Ongoing Vital Signs</td>
<td>First 24 hours: Screen and radial pulse q1h x 24 hours. Blood Pressure, screen rate and radial pulse, respiratory rate, SpO2, ST level at least every hour until stable then q4h x 24 hours. Day 2: q6h Day 3: BID Day 4: BID Temperature: BID day 1-4</td>
<td>First 24 hours: Blood Pressure, pulse, SpO2 and respiratory rate, at least every hour until stable then q4h x 24 hours. Day 2: q6h Day 3: BID Day 4: BID Temperature: BID day 1-4</td>
</tr>
<tr>
<td>Rhythm Strip</td>
<td>Mounted and analyzed on: Admission, every shift, and prn with arrhythmia, rhythm change and/or chest pain</td>
<td>Mounted and analyzed on: Admission, every shift, and prn with arrhythmia, rhythm change and/or chest pain (if monitored)</td>
</tr>
<tr>
<td>Pain Scale</td>
<td>0-10</td>
<td>0-10</td>
</tr>
<tr>
<td>Physical Assessment</td>
<td>Assessment q4h x 24 hours: Head to toe assessment on admission and at the beginning of each shift, then a focal assessment thereafter as follows: Day 2: q6h Day 3: BID Day 4: BID</td>
<td>Assessment q4h x 24 hours: Head to toe assessment on admission and at the beginning of each shift, then a focal assessment thereafter as follows: Day 2: q6h Day 3: BID Day 4: BID</td>
</tr>
<tr>
<td>Oxygenation Therapy</td>
<td>Oxygen therapy prn for saturation less than or equal to 90%</td>
<td>If the AMI is admitted directly to the telemetry unit: Oxygen therapy prn for saturation less than or equal to 90%</td>
</tr>
<tr>
<td></td>
<td>Day 1 Oxygen saturation q4h x 24 hours</td>
<td>Day 1 Oxygen saturation q4h x 24 hours</td>
</tr>
<tr>
<td></td>
<td>Day 2 q6h</td>
<td>Day 2 q6h</td>
</tr>
<tr>
<td>Intravenous</td>
<td>Normal Saline at TKO x 48 hours</td>
<td>If the AMI is admitted directly to the telemetry unit: Normal Saline at TKO x 48 hours (or as ordered by the physician)</td>
</tr>
<tr>
<td></td>
<td>Day 3 and beyond: - If being transferred to a telemetry unit at minimum a saline lock is required - If being transferred to a medical unit no IV is required (but may be indicated as per clinical)</td>
<td>Day 3 and beyond: - If being transferred to a medical unit no IV is required (but may be indicated as per clinical)</td>
</tr>
<tr>
<td>Standard</td>
<td>ICU/CCU</td>
<td>Medical Ward</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Monitor the site condition and rate every hour</td>
<td>Monitor the site condition every shift.</td>
</tr>
<tr>
<td>Height and Weight</td>
<td>Height and weight on admission. Weigh every day if on a diuretic.</td>
<td>Height and weight on admission. Weigh every day if on a diuretic.</td>
</tr>
<tr>
<td>Intake and output</td>
<td>Urine output with IV in situ. Shift balance every 8 hours, cumulative balance every 24 hours.</td>
<td>Every shift with IV in situ. Shift balance every 8 hours, cumulative balance every 24 hours.</td>
</tr>
</tbody>
</table>

**PHYSIOTHERAPY STANDARDS**

The following defines the symptom-limited assessment and teaching standards provided by the Physiotherapist.

**Step 2**

**Activity Program:**
- Ambulate the patient within the room. Document resting and exercise heart rates, estimated number of feet walked if ambulated in the room.
  - **Outcome:** Patient tolerates Step 2 activity

**Education:**
Introduce the patient to the Cardiac Education Program.
- Angina
- Heart attack.
- Differences between angina and heart attack.
- Action plan (Nitro use and when and how to get to the hospital)
  - **Outcome:** Patient understands:
    - Signs and symptoms of cardiac ischemia
    - Difference between angina and heart attack
    - Knows action plan

**Step 3**

**Activity Program:**
- Ambulate patient in the hall. Indicate if patient can ambulate independently or requires assistance. Document the resting and exercise heart rates.
• Activity may be progressed as per physiotherapy discretion if early discharge anticipated.
  o **Outcome:** Patient tolerates Step 3 activity

**Education:**
• Normal and abnormal response to activities
• Appropriate level and progression of activities
• Importance of cardiac rehabilitation
  o **Outcome:** Patient understands:
    • Normal and abnormal responses to activity
    • Appropriate level and progression of activity
    • Importance of cardiac rehabilitation

**Step 4**

**Activity Program:**
• Walks up and down 10-12 steps OR modified stairs OR increase ambulation in hall if stairs not possible. Document the resting and exercise heart rates.
  o **Outcome:** Patient tolerates Step 4 activity

**Education:**
• Review the Home Exercise Program in Heart Attack and Back Book
  o **Outcome:** Patient understands:
    • Home exercise program

**Community Teaching Options and benefits of cardiac rehabilitation:**
• Review cardiac community teaching options with the patient. Ask the patient which cardiac rehabilitation program site (Wellness Institute or Reh-Fit Centre) she/he would like the referral form faxed to.
  o **Outcome:** The patient is:
    • Aware of community resources available for cardiac rehabilitation and its benefits
    • Cardiac rehabilitation referral faxed
C**ardiac Activity Step Program**

The following table outlines the activity level for the AMI patient. Outlined activities are incorporated into the Care Map and Patient/Family Care Guide.

<table>
<thead>
<tr>
<th>Day</th>
<th>Activity</th>
<th>Self care</th>
<th>Exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bedrest</td>
<td>Self care in bed, have assistance with washing back and legs</td>
<td>Lying: - Deep breathing - Foot and ankle exercises</td>
</tr>
<tr>
<td></td>
<td>Stand to void</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Commode</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Dangle, sit in chair, walk to the bathroom</td>
<td>Self care: seated at the sink/bedside Walk to bathroom as tolerated</td>
<td>Ambulation in room assessment</td>
</tr>
<tr>
<td>3</td>
<td>Walk in hall</td>
<td>Self care: seated or standing at the sink/bedside</td>
<td>Ambulation in hall assessment</td>
</tr>
<tr>
<td>4</td>
<td>Walk in hall</td>
<td>Self care: standing at the sink/bedside</td>
<td>With Physiotherapy: - 10 –12 stairs up and down OR -Modified stairs OR -Increased ambulation in hall</td>
</tr>
</tbody>
</table>

**TEACHING STANDARDS**

The table outlines the teaching standards that are to be met prior to discharge. The Heart Attack and Back book is the primary source of information for the disciplines. Each of the teaching standards are located on the AMI Care Map.
<table>
<thead>
<tr>
<th>Teaching Standard</th>
<th>Step</th>
<th>Lead for teaching standards</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review patient family care guide</td>
<td>1</td>
<td>Nursing</td>
<td>Patient understands the plan and sequencing of care</td>
</tr>
<tr>
<td>Establish smoking status and assess for signs and symptoms of withdrawal. Discuss smoking as a risk factor for heart disease</td>
<td>1</td>
<td>Nursing</td>
<td>Patient is aware that efforts will be made to manage withdrawal symptoms; Patient has been offered the Smokers’ Helpline fax referral and booklet for smokers who want/don’t want to quit and has received the smokers’ Helpline telephone card</td>
</tr>
<tr>
<td>Review diagnosis, length of stay, procedures, initial explanation of medications, importance of reporting chest pain, Nitroglycerin use, importance of not straining and deep breathing and leg/foot exercises</td>
<td>1</td>
<td>Nursing Step 1 and Step 2 reinforced by PT (Nitro use)</td>
<td>Patient has an initial awareness and understanding of the teaching standards</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete risk factor profile found in the Heart Attack and Back Book</td>
<td>2</td>
<td>Nursing</td>
<td>Patient has an initial understanding of their cardiac risk factors</td>
</tr>
<tr>
<td>Review angina, heart attack, action plan and differences between angina and heart attack</td>
<td>2</td>
<td>Physiotherapist</td>
<td>Patient has an understanding of angina, heart attack, action plan and the differences between angina and heart attack</td>
</tr>
<tr>
<td>Complete Coping with a heat Attack, How Are You Doing Checklist? with patient</td>
<td>3</td>
<td>Nursing</td>
<td>In-patient and out-patient referrals made if patient meeting psychological referral criteria</td>
</tr>
<tr>
<td>Show video After Your Heart Attack How Are you Doing?</td>
<td>3</td>
<td>Nursing</td>
<td>Patient has reviewed the video and has had an opportunity to ask questions</td>
</tr>
<tr>
<td>Review nutritional guidelines related to hyperlipidemia and/or diabetes if unable to attend heart health nutrition class</td>
<td>3</td>
<td>Clinical Dietitian</td>
<td>Patient has attended a nutrition class for heart healthy diet or is registered prior to discharge</td>
</tr>
<tr>
<td>Review normal and abnormal responses to activity, home exercise program, appropriate level and progression of activities and importance of cardiac rehabilitation</td>
<td>3</td>
<td>Physiotherapist</td>
<td>Patient has an initial understanding of the normal and abnormal responses to activity, home exercise program, appropriate level and progression of activities and importance of cardiac</td>
</tr>
<tr>
<td>Teaching Standard</td>
<td>Step</td>
<td>Lead for teaching standards</td>
<td>Outcome</td>
</tr>
<tr>
<td>-------------------</td>
<td>------</td>
<td>-----------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Review patient and family care guide</td>
<td>4</td>
<td>Nursing</td>
<td>Patient understands the plan and sequencing of care</td>
</tr>
<tr>
<td>Review discharge medications</td>
<td>4</td>
<td>Nursing/CCU Pharmacist/Clinical Pharmacist</td>
<td>Patient has an initial understanding of their medication regimen; patient understands the importance of not stopping antiplatelet medications</td>
</tr>
<tr>
<td>Review home exercise program, review the process for cardiac rehabilitation and the Next Steps Heart Fair</td>
<td>4</td>
<td>Physiotherapist</td>
<td>Patient has an understanding of the importance of attending cardiac rehabilitation; Next Steps heart Fair and participation in the home exercise program. Referral faxed where appropriate/applicable</td>
</tr>
</tbody>
</table>
CARDIAC REHABILITATION REFERRAL PROCESS

WRHA Sites

The WRHA Cardiac Rehabilitation Program is delivered at 2 sites including the Wellness Institute at Seven Oaks General Hospital and the Reh-Fit Centre. The program is 16 weeks in length and is a comprehensive, multidisciplinary approach to the prevention, stabilization and possible reversal of cardiovascular disease. The benefits of Cardiac Rehabilitation are well established. These include a reduction in mortality of 25-40%, reduction in tobacco use, improvement in psychological well being, reduction in symptoms, reduction in recidivism, improvement in lipid profiles and improved exercise tolerance.

There are few contraindications to Cardiac Rehabilitation. Essentially all patients will obtain some benefit including CHF patients and the frail elderly. These benefits range from improving the ability to perform ADL to social benefits. All AMI Care Map patients should be given the opportunity to participate in these programs.

The cost to the patient at the WRHA sites is $240+GST. Many insurance companies will cover this cost or a subsidy is available based on individual need.

The gold standard is that all cardiac patients will receive cardiac rehabilitation. In the event that patients are unable to attend cardiac rehabilitation, the staff at the cardiac rehabilitation program will attempt to link the patient with appropriate cardiac resources or programs within his/her community. With this in mind, it is necessary to send referrals on all the rural patients, as the sites will follow them when they are discharged.

For further information on the Cardiac Rehabilitation programs in Winnipeg please call 204-632-3907 at the Wellness Institute or 204 488-8023 at the Reh-Fit Centre.

Brandon, Thunder Bay and The Pas:

Patients from the Brandon or Prairie Mountain Health Region are referred to the cardiac rehabilitation program in Brandon. For further information contact the cardiac rehab nurse at 1-204-578-4204 or 1-204-578-4225.

Patients who are residents in North Western Ontario are referred to the cardiac rehabilitation healthy lifestyle program in Thunder Bay. For further information contact the cardiac rehab nurse at 1-807-684-6780.

Patients from The Pas are referred back to the Northern Heart Health Program. The following list of communities that the Northern Heart Health Program at The Pas Wellness Centre will provide community follow-up includes: The Pas, Flin Flon, Grand Rapids, Easterville, Opaskwayak Cree nation, Cranberry Portage, Sherridon, Snow Lake, Pukatawagan, Moose Lake and Cormorant.

For further information contact: the public health/chronic disease nurse at 1-204-627-6418.
Process for Referral: The site Physiotherapist

1. Reviews the benefits of cardiac rehabilitation with the patient while in hospital and prior to discharge from hospital or on Day 4 of the AMI Care Map*
2. Informs the patient that a staff member from the cardiac rehabilitation site of choice will contact him/her by telephone and/or letter with the available Cardiac Rehabilitation options, approximately one – two weeks post discharge
3. Completes the referral form
4. Faxes the form and retains the original

*The site physiotherapist will talk with the patient about the Next Steps Heart Fair during the conversation. If agreeable to attend, the physiotherapist will provide the patient with the date, time and location of the Next Steps Heart Fair to the patient. The patient will also be told that there name and contact information is part of the cardiac rehabilitation referral and if they are agreeable a copy of this referral form will be faxed to the WRHA Cardiac Sciences Program. The Next Steps Heart Fair is considered as part of the continuum of outpatient care for cardiac patients.

Cardiac Rehabilitation Contact Process

The patient will be contacted either by phone and/or letter within 2 weeks of discharge.

1. He/she will be given information on the Cardiac Rehabilitation programs. Information discussed includes the commitment required from the patient, times available for classes, benefits of cardiac rehab, cost and subsidy information, insurance information, and may assist in any other identified issues.

For patients who are unable to attend the Cardiac Rehabilitation program please advise them to contact their local health care provider for information on resources in their community.

CLINICAL PSYCHOLOGY REFERRAL PROCESS

Background

Studies have indicated significant psychological comorbidity in cardiac patients, which has had a detrimental impact on recovery and longer term functioning. That is, up to 25% of cardiac patients may experience depression after their AMI and a significant number have sub-clinical levels of depression that progress to a major depressive episode. Similarly, up to one third of AMI patients experience severe anxiety even at six months post-event. One quarter of CAD patients can suffer from Panic Disorder. Up to 50% of AMI patients complain of increased irritability even one year after their event. Moreover, these negative mood states have been shown to compromise physical as well as psychosocial recovery, and interfere with cardiac rehabilitation. Locally, psychological screening of cardiac patients at the Wellness Institute at Seven Oaks General Hospital and the Reh-Fit Centre has found that approximately 29% of the patients were suffering from clinically significant levels of psychological distress.
The goal of the inpatient psychological screening tool is to help identify individuals who may be at risk for poor adjustment post AMI. Systematic use of the tool will help to identify those patients who require or may benefit from psychological care following hospital discharge. The referral process is not meant to replace in-hospital assessment for acute psychological emergencies/symptoms (example suicidal ideation). Staff is to refer such patients for a psychiatric consultation prior to hospital discharge as indicated and ordered by the attending physician. [Note: The Clinical Health Psychology (CHP) Program provides an elective service for non-acutely ill post MI patients; psychiatrists from the Mental Health Program are the clinicians consulted for acute inpatient psychiatric presentations.]

Process

Professional staff in the hospital will review the screening tool with the patient on the third day of the AMI Care Map. The professional staff member will discuss with the patient the results of the screening tool. Patients identified as being at risk will be asked for their verbal consent to initiate a referral to the Cardiac Psychology Service of the CHP Program. The patient will be contacted within a month of CHP receiving the referral. At the time of contact, the patient will be provided with self-management information that includes a self-assessment checklist related to current coping and adaptation, as well as a description of psychological treatment options and procedures for accessing them.

Psychological services will primarily be available through the two cardiac rehabilitation sites. The cardiac rehabilitation program offers patients a comprehensive program to facilitate behavioral modification and lifestyle changes, and is part of an automatic referral process post-discharge for AMI Care Map patients, so patients referred to the Cardiac Psychology Service will be explicitly encouraged to attend and can most readily access psychological care through the CR program. Psychological services are offered in a stepped care model. Patients are directed to attend the large group interventions as a first step. They are subsequently directed to contact the Cardiac Psychology Service for evaluation with a potential for further brief individual treatment if they still identify concerns following these large group sessions. These services are covered by Manitoba Health through the CHP program, so there is not a cost to the patient. For patients unable to attend cardiac rehabilitation, psychological services will be arranged directly through the Cardiac Psychology Service at St. Boniface Hospital (phone:204-237-2979). Other treatment options for broader health issues are described in the self-management brochure and include various clinics offered by the WRHA’s CHP Program as well as community-based resources. Patients in need of pharmacological treatment will be referred to their family physician or psychiatrist (if involved with the case).

To ensure continuity of patient care, the Cardiac Psychology Service of the CHP will inform the patient’s primary care provider of the psychological services provided to the patient, for those patients who have proceeded with the referral.
**CHARTING GUIDELINES**

**Key Definitions**

*Interventions* are patient care activities, which need to be undertaken in order to assist patients to achieve outcomes in a timely manner. Interventions are listed on the Care Map in the appropriate categories of care. The categories of care are defined as: Assessment/Consults, Tests, Treatments, Meds/IV, Nutrition, Safety/Activity, Teaching, Psychosocial and Discharge Planning.

*Patient Outcomes* are goals to be achieved by the patient. They are to be measurable and can be defined as either intermediate or discharge outcomes. These are the shaded sections on the Care Map.

**Implementation Guidelines**

1. The AMI Care Map System will reside in CCU and GB3
2. Upon confirmation of an AMI diagnosis the Attending/Emergency Physician/Resident will complete the Standard Physician Orders for the AMI Care Map
3. The admitting unit staff will start the Care Map
   - Transcribe the orders onto the Care Map, kardex, and medication record
   - Individualize the Care Map
   - Give the patient “The Patient/Family Care Guide” and “The Heart Attack and Back Book”
4. If the patient is admitted in the early or late evening, follow these guidelines:

   12-Hour Shift: complete the day column on Step 1 of the Care Map. At 1900, a same day Care Map will be required, as most of the "critical" expected outcomes will not have been met.

   Process for repeating a same day Care Map:
   - The day nurse places a second copy of the Step 1 Care Map on the patient’s chart
   - Indicate on the Care Map that a same day map is being used, by circling “yes”
   - Write in current status of orders, tests, and treatments
   - Document the reason on the documentation section of the map

   Example: May 6, 2015 19:00 Patient admitted in the late evening and the length of stay too short to the majority of day 1 outcomes. Day 1 map repeated. Lorraine Avery, RN.

   - 8-Hour Shift: complete the evening column on Step 1 of the Care Map. At 2300, a same day Care Map will be required, as most of the "critical" expected outcomes will not have been met.
**Process:**

- The evening nurse places a second copy of the Step 1 Care Map on the patient’s chart
- Indicate on Care Map that a same day Care Map/Step is being used, by circling “yes”
- Write in current status of orders, tests, and treatments on the map
- Document the reason on the documentation section of the map

**Orders on the Care Map**

1. Standard orders are identified with a solid black box (■). These are initiated on all patients placed on the Care Map and are pre-printed on the Care Map. If an order is not appropriate the physician shall cross off and initial.
2. Individualized orders are identified with a blank box (□). These require a Physician’s order to activate them. To activate the order, place a " ✓ " inside a box.
3. Additional orders are to be written on the Care Map in the appropriate category of care.

**Allied Health Care Professionals (working Monday-Friday)**

On Step 1 of the Care Map, all allied health personnel are notified of the admission of the AMI patient. Based on workload, the service may teach their section earlier or later if a weekend falls within the patient’s stay.

**Process:**

- Star (*) the Care Map in the appropriate column
- Document reason on the Care Map tool

**Documentation Guidelines**

- Indicate the date and time of admission to the unit on Step1 of the AMI Care Map.
- Assessment/Consults Section

1. **Assessments**
   Complete facilities Admission and Nursing Data Base form
   Nursing assessments / assessment outcomes
   Nursing assessments are completed as per Nursing Assessment Protocol (Appendix A). Assessments reflect a charting by exception concept in which only abnormal assessments are identified by placing a star (*) and your initial on the Care Map under the appropriate column. Document the abnormal assessment parameter, with an action plan, on the note section of the Care Map.
Thrombolytic Therapy Assessment Standards:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vital Signs for Thrombolytic Therapy</td>
<td>Q15 minutes x1 hour and prn</td>
</tr>
<tr>
<td>Neurological Checks:</td>
<td></td>
</tr>
<tr>
<td>- Glasgow coma scale</td>
<td>Baseline in the ED, q1hx2</td>
</tr>
<tr>
<td>- Pupil assessment</td>
<td>q4h x24 hours</td>
</tr>
<tr>
<td>- Limb assessment</td>
<td></td>
</tr>
<tr>
<td>Use Neurological Assessment Record.</td>
<td></td>
</tr>
</tbody>
</table>

2. **Consults**
   Follow HSC’s process to initiate multidisciplinary consults

3. **Test Section**
   There is space provided to transcribe tests not generic to the Care Map.

4. **Treatment Section**
   Vital signs are usually documented on the Care Map. An exception is when more frequent monitoring of vital signs is clinically warranted (during this period use the Addendum or the Resuscitation Record until the vitals sign form until the vitals sign frequency has decreased to the standard.

5. **Medication/Intravenous Section**
   Document medications on the medication administration record
   Orders written by an Emergency Physician will be countersigned or re-written within 18 hours of admission by the admitting physician.

6. **Nutrition Section**
   Cardiac diet is defined as modified fat, 100 mmol sodium or alternative

7. **Safety /Activity Section**
   Activity guidelines as defined in the cardiac step program as outlined in the standards document and in the Heart Attack and Back Book

8. **Teaching Section**
   Each professional discipline is responsible for particular teaching standards as outlined in this document. Other disciplines may be asked to complete certain teaching standards if the individual has the appropriate competencies to do so.

9. **Psychosocial Section**
   Consult Spiritual Care as per patient or family request according to referral guidelines.
   On Step 3 the health care professional in collaboration with the patient completes the Coping with a heart attack: how are you doing? checklist. If the referral criteria are met, an outpatient referral is sent to the WRHA Clinical Psychology Program. The patient must verbally agree to the referral. If the patient refuses the referral, document reasons on
the AMI Care Map tool. The Mental Health Liaison Nurse may also be consulted as deemed appropriate by the professional staff.

**Note:** If the patient is exhibiting acute mental distress (e.g., significant anxiety or depressive symptoms and/or suicidal ideation), medical staff to be informed in order to initiate an inpatient psychiatric consultation.

10. **Discharge Planning Section**
On admission assess for discharge concerns and refer to appropriate health care provider. If a patient is known to Home Care send an automatic referral. Assess for high-risk social issues and send Social Service consult if appropriate.

Typically, patients will receive a prescription for the following medications, (unless contraindicated and/or allergy):

- Nitroglycerin (rapid-acting spray or tablets)
- Antiplatelet agents
- Beta blocker
- ACE inhibitor or ARB
- Lipid -lowering agent (statin)

If the patient does not receive the above prescriptions, document reasons on the AMI Care Map Tool. Example:

May 6/2015 18:10 Beta Blockers not ordered due to third degree heart block. Lorraine Avery RN

Prior to discharge the Registered Nurse or Pharmacist is required to review the corresponding drug information with the patient and provide a copy of the medication teaching sheets to the patient along with their discharge information

**The Family Doctor Finder:** helps to connect Manitobans to a family doctor, nurse practitioner or pediatrician.

If your patient does not have a primary health care provider you can call the line to register your patient with the program. When you call you will be asked for basic information, including where they live and preferences for the type of provider (ex. gender, location, spoken language).

The health region will then work to find a provider or clinic that is accepting new patients in a location that works for your patient.

This service is available in both English and French.

For more information, contact:

Family Doctor Finder
Phone: 204-786-7111
11. **Plan Reviewed Section**
The Registered Nurse responsible for the patient shall review the entire plan of care for his/her shift to ensure that all interventions and outcomes have been addressed.

**Seven Basic Documentation Rules**

*Basic rule: Do not leave any section blank*

1. **Intervention done or Outcomes met**
   - Each intervention or outcome in a category of care may be initialled individually OR bracketed and initialled to indicate completion
   - The bracket indicates that ALL interventions or outcomes have been addressed. If one intervention or outcome is NOT met a bracket will not be used

2. **Item not appropriate for your shift**
   Indicate N/A if “not applicable” on your shift. This will indicate that the item has been addressed. N/A examples include: walking in the hallway on the night shift, standard diet on the night shift

3. **Item not appropriate to patient**
   - Draw a line through the item followed by care provider’s initials
   - A note on the AMI Care Map Tool is required to explain the reason

4. **Item ordered then discontinued**
   - Draw a line through the item, write d/c, time, date and initial the item

5. **Item activated by a physician order**
   - Place a check mark in the box
   - Ensure that the order has a check mark through the entire Care Map where it appears

6. **Intervention ordered in addition to the pre-printed Standard Physician Orders**
   - Write it on the Care Map in the appropriate care category and time frame

7. **Intervention not done or Outcome not met**
   - Place an * and initials in the appropriate column across from the intervention or outcome not achieved or met
   - Write a note on the AMI Care Map Tool and describe corrective action plan.
   - If appropriate, write the action plan on the appropriate step it is to be assessed
Deviations from the Care Map

1. Same Day Care Map (repeat step again) – Not Progressing on Care Map

When an interdisciplinary team member determines that most of the "critical" (to the length of stay) expected outcomes are not met for that day (i.e. that the patient has not progressed to the next day's time frame), a same day Care Map/Step will be repeated/used.

Process:

- The team determines if a same day Care Map/step is required
- The evening or night nurse places the appropriate step on the patient’s chart
- Place the appropriate same day Care Map/Step on the chart
- Indicate on Care Map that circling “yes” if using a same day Care Map/Step Write in current status of orders, tests, and treatments on the map
- Document the reason on the AMI Care Map Tool
- Keep using the same day Care Map/Step until the patients’ condition allows the progression of the AMI Care Map. A maximum of three (3) same day Care Map/Steps are to be used. A note on the AMI Care Map Tool is required for each time a same day step is used.

2. Taking the Patient off the Care Map System

Situations which may require taking the patient off the Care Map System are:

- The patient is unstable at admission or during hospital stay. Place the AMI Care Map on hold and re-instate when stabilized
- The patient has significantly “deviated” from the AMI Care Map and it is not expected that the patient would be able to meet the identified outcomes in a reasonable time frame
- A maximum of 3 extension maps have been used for one day/step
- Awaiting cardiac surgery.

Process:

- Discuss taking the patient off the Care Map with the attending physician
- Document the reason on the AMI Care Map Tool. Note: “Doctor’s Order” is not sufficient; a clinical reason shall be documented
- Resume site specific charting

3. Awaiting tests/procedures and an increased length of stay (LOS) is expected

There are situations where an increased length of stay may be anticipated related to a test or procedure. The intent is not to discontinue the AMI Care Map documentation system but to accommodate the situation. If goals or standards of care are met, long LOS, alternative diagnoses then each site needs to decide if the AMI Care Map is to be
continued or staff should to the site specific regular charting system. Leave the patient on the care map if awaiting cardiac investigations.

**Process:**
- Obtain order from the physician regarding the step the patient is to remain on while awaiting cardiac investigations
- Leave the patient on this designated day until the test/procedure is completed. If appropriate, complete all teaching

4. **Chronological Documentation with the Care Map**
   Chronological documentation is only done if further explanation is required to clarify an issue. If the information is documented clearly enough on the AMI Care Map Tool do not double document on the integrated progress notes/Nurses Notes. If the staff member feels further explanation and documentation is required, state "see IPN/Nurses Notes" in the column. Follow facility documentation standards.
Reference List

American Heart Association/American College of Cardiology Foundation (2011).

ACCF/AHA guideline for the management of ST-elevation myocardial infarction: Executive summary.
Retrieved February 26, 2015 from:
http://circ.ahajournals.org/content/127/4/529.full.pdf+html

http://circ.ahajournals.org/content/130/25/2354.full.pdf+html


Heart and Stroke Foundation of Manitoba (2009). Heart attack and back: A guide to healthy living. Winnipeg, MB.

**Appendix A - Nursing Assessment Parameters**

**IMPORTANT NOTE**: The noted normal parameters are to be used as a guideline only. Slight variations from the norm may be noted; yet may still be considered within the norm for that particular patient. Sound clinical judgment and a well-documented health history may assist the nurse to discern between the patient’s normal and abnormal findings.

**Head to Toe Assessment**

<table>
<thead>
<tr>
<th>Assessment System</th>
<th>ICU</th>
<th>Ward</th>
<th>Normal Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CNS</strong></td>
<td></td>
<td></td>
<td><strong>Orientation</strong>:&lt;br&gt; - Oriented to person, place and time.&lt;br&gt;- General conversation is appropriate.&lt;br&gt;- Speech is clear and distinct.&lt;br&gt;- Anxiety controlled.&lt;br&gt;- Confusion Assessment Method - negative for confusion</td>
</tr>
<tr>
<td><strong>Delirium assessment</strong></td>
<td>*</td>
<td>*</td>
<td>Moving all limbs equally. No loss of sensation.&lt;br&gt;Obeys commands.</td>
</tr>
<tr>
<td><strong>Motor/Sensory</strong></td>
<td>*</td>
<td>*</td>
<td>States pain is “0” on the 0-10 pain scale.</td>
</tr>
<tr>
<td><strong>Cardiovascular</strong></td>
<td></td>
<td></td>
<td><strong>Precordium</strong>:&lt;br&gt;- Apical pulsation may be visible, no lifts or heaves noted.</td>
</tr>
<tr>
<td><strong>Peripheral vascular system</strong></td>
<td>*</td>
<td>*</td>
<td>Color variable dependent on ethnic origin: no pallor, cyanosis, and redness.&lt;br&gt;- No edema noted (peripheral or dependent).&lt;br&gt;- No leg ulcerations noted.&lt;br&gt;- Capillary refill less than 3 seconds.&lt;br&gt;- Warm to touch.&lt;br&gt;- Dry to touch, normal elastic turgor.&lt;br&gt;- Peripheral pulses +2 all sites (radial and pedal pulses).</td>
</tr>
<tr>
<td><strong>Vital Signs</strong></td>
<td>*</td>
<td>*</td>
<td>Pulse 60-100.&lt;br&gt;Blood pressure refer to CHEP 2015 Guidelines&lt;br&gt;Standing/sitting change: Systolic decrease less than 15mmHg, Diastolic increase less than 5 mmHg&lt;br&gt;Temperature: Oral range 36.4-37.5 degrees Celsius.</td>
</tr>
<tr>
<td>Assessment System</td>
<td>ICU</td>
<td>Ward</td>
<td>Normal Parameters</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----</td>
<td>------</td>
<td>-------------------</td>
</tr>
<tr>
<td><strong>Rhythm Analysis</strong></td>
<td>*</td>
<td></td>
<td>Regular with rate 60-100 beats/minute (unless on medications that decreases heart rate, i.e. Beta Blockers). PR 0.12 - 0.20 seconds QRS ≤ 0.12 seconds AV conduction 1:1 No ectopy</td>
</tr>
<tr>
<td><strong>Respiratory System</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Inspection</strong></td>
<td>*</td>
<td>*</td>
<td>Rate 12-24 /minute. Rhythm regular. No use of accessory muscles, no intercostal use or retractions. O₂ saturation greater than or equal to 90% on room air.</td>
</tr>
<tr>
<td><strong>Auscultation</strong></td>
<td>*</td>
<td>*</td>
<td>Able to speak in complete sentences without SOB. Breath sounds normal and equal bilaterally: - Vesicular over peripheral lung fields. - Bronchovesicular over 1ˢᵗ and 2ⁿᵈ ICS at sternal boarders anterior and at T4 medial to scapulae posterior. - Bronchial over trachea. No adventitious sounds (crackles, wheezes, rubs) audible.</td>
</tr>
<tr>
<td><strong>Gastrointestinal</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Inspection</strong></td>
<td>*</td>
<td>*</td>
<td>Skin color consistent with remainder of body. Abdomen is symmetrical in contour and appearance. Normal abdominal profiles may be flat, rounded or concave, no distension noted.</td>
</tr>
<tr>
<td><strong>Auscultation</strong></td>
<td>*</td>
<td>*</td>
<td>Bowel sounds occurring every 5-15 seconds in all quadrants.</td>
</tr>
<tr>
<td><strong>Palpation</strong></td>
<td>*</td>
<td>*</td>
<td>Abdomen not tender and soft.</td>
</tr>
<tr>
<td><strong>Bowel movements</strong></td>
<td>*</td>
<td>*</td>
<td>Not constipated, no obvious blood in stool. Colour, and bowel evacuation patterns vary with each individual, should be consistent with normal bowel habits for the individual.</td>
</tr>
<tr>
<td><strong>Smoking assessment</strong></td>
<td>*</td>
<td>*</td>
<td>Smoking history is obtained for all smokers. Smoking cessation counseling is provided to all</td>
</tr>
</tbody>
</table>
### Assessment System

<table>
<thead>
<tr>
<th>Assessment System</th>
<th>ICU</th>
<th>Ward</th>
<th>Normal Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor for nicotine withdrawal</td>
<td>*</td>
<td>*</td>
<td>AMI patients. Note: resources includes: the smokers help line card, smoking cessation resource card published by the Winnipeg Regional Health Authority, and booklets published by the Canadian Cancer Society including “For Smokers Who Don’t Want to Quit” or optionally “For Smokers Who Want to Quit”. Appropriate nicotine replacement therapy will be initiated for smokers</td>
</tr>
<tr>
<td>Genitourinary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspection</td>
<td>*</td>
<td>*</td>
<td>Fluid intake and urine output should approximate greater than 30cc/hour. Urine characteristics: no obvious blood or sediment in urine, no foul odor. No pain/burning with start of stream. No purulent discharge form urinary meatus or vaginal opening.</td>
</tr>
<tr>
<td>Integumentary System</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspection</td>
<td>*</td>
<td>*</td>
<td>Color consistent with abdominal area, will vary with ethnic origin (no hyper or hypopigmentation). No pallor, cyanosis, erythema, jaundice. Slight bruising may appear at venipuncture sites, no hematoma formation. No rashes, lesions.</td>
</tr>
<tr>
<td>Braden Scale</td>
<td>*</td>
<td>*</td>
<td>Risk assessment for patients at risk of developing pressure sores while hospitalized.</td>
</tr>
</tbody>
</table>

#### Definitions

<table>
<thead>
<tr>
<th>Assessment for pitting edema</th>
<th>Grade</th>
<th>Assessment of Pulses</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 mm</td>
<td>+1</td>
<td>Doppler only</td>
</tr>
<tr>
<td>4 mm</td>
<td>+2</td>
<td>Absent</td>
</tr>
<tr>
<td>6 mm</td>
<td>+3</td>
<td>Weak</td>
</tr>
<tr>
<td>8 mm</td>
<td>+4</td>
<td>Normal</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doppler only</td>
<td>D</td>
</tr>
<tr>
<td>Absent</td>
<td>0</td>
</tr>
<tr>
<td>Weak</td>
<td>1+</td>
</tr>
<tr>
<td>Normal</td>
<td>2+</td>
</tr>
<tr>
<td>Bounding</td>
<td>3+</td>
</tr>
</tbody>
</table>
### Focal Assessment

<table>
<thead>
<tr>
<th>Assessment Parameter</th>
<th>Normal Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Consciousness</td>
<td>Oriented to person, place and time. General conversation is appropriate. Speech is clear and distinct. Obey commands. Confusion Assessment Method – negative for delirium</td>
</tr>
<tr>
<td>Pain</td>
<td>States pain is “0” on the 0-10 pain scale.</td>
</tr>
<tr>
<td>Peripheral circulation</td>
<td>Color variable dependent on ethnic origin: no pallor, cyanosis, or redness. No edema noted (peripheral or dependent). Warm to touch. Dry to touch, elastic turgor. Peripheral pulses at + 2 (radial and pedal).</td>
</tr>
<tr>
<td>Vital signs</td>
<td>• Pulse 60-100. • Blood pressure refer to CHEP 2015 Guidelines Standing/sitting change: Systolic decrease less than 15mmHg, Diastolic increase less than 5 mmHg • Temperature: Oral ranges 36.4-37.5 degrees Celsius.</td>
</tr>
<tr>
<td>Respiratory</td>
<td>Rate 12-24 /minute. Rhythm regular and rhythmic. No use of accessory muscles. Able to speak in complete sentences without SOB. O₂ saturation greater than or equal to 90% on room air if assessed. Breath sounds normal and equal bilaterally: • Vesicular over peripheral lung fields. • Bronchovesicular over 1st and 2nd ICS at sternal boarders anterior and at T4 medial to scapulae posterior • Bronchial over trachea. No adventitious sounds (crackles, wheezes, rubs) audible.</td>
</tr>
<tr>
<td>Gastrointestinal</td>
<td>Passing flatus or stool.</td>
</tr>
<tr>
<td>Genitourinary</td>
<td>Patient states adequate urine output, denies pain or burning with voiding. If output monitored greater than or equal to 240 mls/8 hours</td>
</tr>
</tbody>
</table>
Appendix B
List of Videos

Videos

"After Your Heart Attack How Are You Doing?" Video: Watch It Now!
"Your Heart Your Health: A Patient's Guide to Heart Surgery" Video: Watch It Now!
"Keeping the Beat with Physiotherapy" Video: Watch It Now!

Videos are located online at: www.cardiacsciences.mb.ca (under for the public)
Appendix C  
Medication Counseling Cards

| BLOOD THINNERS  
(Antiplatelets) |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ENTERIC COATED ASA 81 or 325 mg</td>
</tr>
<tr>
<td>(Aspirin®)</td>
</tr>
</tbody>
</table>

Blood thinners (antiplatelets) lower the risk of having another heart attack. They work by preventing the formation of clots in your heart arteries. This is especially important if you have stents placed in one or more of your heart arteries. You will need to take both ASA (Aspirin®) and clopidogrel (Plavix®) after having stents placed. It is important that you take these medications exactly as prescribed. **MAKE SURE THAT YOU FILL YOUR PRESCRIPTIONS FOR ASA (Aspirin®) AND CLOPIDOGREL (Plavix®) as soon as you leave hospital. NEVER stop taking these drugs without talking to your heart doctor, even if told to do so by another healthcare provider.**

1. These medications are taken **ONCE** daily. Take them at the same time, best suited to you, every day. If you miss a dose, take it as soon as you remember unless it is almost time for the next dose. **DO NOT** take extra medication to make up the missed dose.

2. These medications do not need to be taken with food, but some people may find ASA (Aspirin®) better tolerated with food since it can irritate the stomach.

3. ASA (Aspirin®) and clopidogrel (Plavix®) can increase your risk of bleeding. If you get a cut or nosebleed, apply pressure for several minutes until the bleeding stops. Call your healthcare provider right away if you have any of these side effects:
   - Bad stomach pain
   - Bloody vomit or vomit that looks like coffee grounds
   - Blood in your stools or urine, black tarry stools
   - Unusual or excessive bleeding or bruising

   Less severe side effects are upset stomach, easy bruising, and heartburn (acid reflux). Tell your pharmacist or other healthcare provider if these are a problem for you.

4. People who take clopidogrel (Plavix®) have a small risk of developing a rash. Usually the rash can be treated without stopping the medication. Contact your healthcare provider if you develop a rash. **DO NOT** stop taking clopidogrel (Plavix®) unless you are told to do so.

5. Some medications, including over-the-counter and herbal medications, contain things that can thin your blood or interact with ASA (Aspirin®) or clopidogrel (Plavix®). It is important not to take any extra blood thinners other than the ones prescribed to you by your healthcare provider as this will increase your risk of bleeding. Check with your pharmacist or other healthcare provider before starting any new medication. If you need to take an over-the-counter medication for aches and pains, acetaminophen (Tylenol®) is the safest thing to take.

6. Make sure any doctor(s), dentist(s), or other healthcare providers you see know that you are taking these medications. You may need to stop taking them before some kinds of surgery or dental procedures. **But check with your heart doctor first before stopping these medications.**

**NOTE:** This information is not intended to cover all possible uses, precautions, interactions, or adverse effects for these medications. Talk to your hospital or community pharmacist for more information or if you have any questions.
BLOOD THINNERS
(ANTIPLATELETS)

ENTERIC COATED ASA 81 mg
(Aspirin®)

TICAGRELOR 90 mg
(Brilinta®)

Blood thinners (antiplatelets) lower the risk of having another heart attack. They work by preventing the formation of clots in your heart arteries. This is especially important if you have stents placed in one or more of your heart arteries. You will need to take both ASA (Aspirin®) and ticagrelor (Brilinta®) after having stents placed. It is important that you take these medications exactly as prescribed. **MAKE SURE THAT YOU FILL YOUR PRESCRIPTIONS FOR ASA (Aspirin®) AND TICAGRELOR (Brilinta®) as soon as you leave hospital. NEVER stop taking these drugs without talking to your heart doctor, even if told to do so by another healthcare provider.**

1. ASA (Aspirin®) is taken ONCE daily, and ticagrelor (Brilinta®) is taken TWICE daily. Take them at the same times, best suited to you, every day. It is very important not to miss any doses, especially if you have had one or more stents placed. Missed doses can increase the risk of forming clots in your stent(s). This may lead to another heart attack. If you miss a dose, take it as soon as you remember unless it is almost time for the next dose. DO NOT take extra medication to make up the missed dose. While you are taking ticagrelor (Brilinta®), do not take more ASA (Aspirin®) than you are prescribed.

2. These medications do not need to be taken with food, but some people may find ASA (Aspirin®) better tolerated with food since it can irritate the stomach.

3. ASA (Aspirin®) and ticagrelor (Brilinta®) can increase your risk of bleeding. If you get a cut or nosebleed, apply pressure for several minutes until the bleeding stops. Call your healthcare provider right away if you have any of these side effects:
   - Bad stomach pain
   - Bloody vomit or vomit that looks like coffee grounds
   - Blood in your stools or urine, black tarry stools
   - Unusual or excessive bleeding or bruising

Less severe side effects are upset stomach, easy bruising, and heartburn (acid reflux). Tell your pharmacist or other healthcare provider if these are a problem for you.

4. Some people who take ticagrelor (Brilinta®) may feel short of breath sometimes. As long as this feeling is not very bad and goes away after a few minutes, it is normal. Tell your pharmacist or other healthcare provider if this side effect is a problem for you.

5. Some medications, including over-the-counter and herbal medications, contain things that can thin your blood or interact with ASA (Aspirin®) or ticagrelor (Brilinta®). It is important not to take any extra blood thinners other than the ones prescribed to you by your healthcare provider as this will increase your risk of bleeding. Check with your pharmacist or other healthcare provider before starting any new medication. If you need to take an over-the-counter medication for aches and pains, acetaminophen (Tylenol®) is the safest thing to take.

6. Make sure any doctor(s), dentist(s), or other healthcare providers you see know that you are taking these medications. You may need to stop taking them before some kinds of surgery or dental procedures. **But check with your heart doctor first before stopping these medications.**

**NOTE:** This information is not intended to cover all possible uses, precautions, interactions, or adverse effects for these medications. Talk to your hospital or community pharmacist for more information or if you have any questions.

V2.0, April 2015
**BETA-BLOCKERS**

<table>
<thead>
<tr>
<th>ATENOLOL</th>
<th>BISOPROLOL</th>
<th>NADOLOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>METOPROLOL</td>
<td>CARVEDILOL</td>
<td>PROPRANOLOL</td>
</tr>
</tbody>
</table>

Beta-blockers work by blocking the effect of stress hormones on your heart, which lowers your heart rate (pulse) and blood pressure. These medications protect against angina and heart rhythm problems and can prevent heart attacks. Beta-blockers can also help the heart muscle recover after it has been damaged by a heart attack. If you have a weak heart muscle (heart failure), these drugs will preserve your heart function and help your heart get stronger.

1. Take this medication as directed, spaced out evenly throughout the day. Try and take it at the same time(s), best suited to you, each day. If you miss a dose, take it as soon as you remember unless it is almost time for your next dose. DO NOT take extra doses to make up for the missed dose. Continue taking this medication even when you feel well. DO NOT stop taking this medication without your healthcare provider’s advice.

2. This medication may lower your blood pressure. If you feel dizzy or light-headed and feel like you might pass out, sit or lie down right away. To lower your risk of feeling dizzy or falling:
   - Walk slowly up and down stairs
   - Change your body position slowly, especially when standing up or getting out of bed
   - Dangle your feet over the edge of the bed before getting out of bed

   *Tell your healthcare provider if dizziness is a problem for you and have your blood pressure checked. Avoid driving until you know how this medication affects you.*

3. This medication will lower your heart rate (pulse). If it falls below 50 beats per minute, contact your healthcare provider. It is a good idea to check your pulse often, especially when the drug is new or when your dose has changed.

4. If you have diabetes, this medication may cause your blood sugars to increase by a small amount. It may also make it harder to notice some signs of low blood sugar such as trembling or a faster heart rate (pulse). Dizziness & sweating will not be affected by the beta-blocker and can still be used as a sign of low blood sugar. Watch your blood sugars closely if you have diabetes and take a beta-blocker.

5. Side effects that should be reported to your healthcare provider:
   - Cold hands & feet (may make you more sensitive to the cold)
   - Wheezing or difficulty breathing
   - Unusual swelling of feet and ankles
   - Depression, nightmares, headaches

   *Other side effects (if bothersome, contact your healthcare provider):*
   - Dizziness, drowsiness, lightheadedness
   - Unusual tiredness or weakness
   - Decreased sexual ability

**NOTE:** This information is not intended to cover all possible uses, precautions, interactions, or adverse effects for these medications. Talk to your hospital or community pharmacist for more information or if you have any questions.
ANGIOTENSIN-CONVERTING ENZYME (ACE) INHIBITORS

<table>
<thead>
<tr>
<th>CAPTOPRIL</th>
<th>ENALAPRIL</th>
<th>FOSINOPRIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>LISRINOPRIL</td>
<td>PERINDOPRIL</td>
<td>RAMIPRIL</td>
</tr>
</tbody>
</table>

ACE inhibitors reduce the risk of having a heart attack. They also make it easier for the heart to do its job by opening up the arteries and reducing the amount of fluid that you retain in your body. This helps the heart muscle recover after a heart attack and protects the heart muscle if it has been weakened. These medications have added benefits for people who have diabetes or high blood pressure.

1. Take this medication as directed. Try and take it at the same time(s), best suited to you, each day. If you miss a dose, take it as soon as you remember unless it is almost time for your next dose. DO NOT take extra medication to make up for the missed dose. Continue to take this medication even if you feel well. DO NOT stop taking this medication without your healthcare provider’s advice.

2. These medications can be taken with or without food, with the exception of captopril, which should be taken on an empty stomach, 1 hour before meals.

3. This medication will lower your blood pressure. If you feel dizzy or light-headed and feel like you might pass out, sit or lie down right away. To lower your risk of feeling dizzy or falling:
   - Walk slowly up and down stairs
   - Change your body position slowly, especially when standing up
   - Dangle your feet over the edge of the bed before getting out of bed

   Tell your healthcare provider if dizziness is a problem for you and have your blood pressure checked. Avoid driving until you know how this medication affects you.

4. This medication may increase the amount of potassium in your body. Avoid salt substitutes or potassium supplements unless prescribed by your healthcare provider. Signs of too much potassium are:
   - Confusion
   - Irregular heart rate (pulse)
   - Nervousness
   - Numbness or tingling of hands or feet
   - Weak/heavy legs

5. Side effects that should be immediately reported to your healthcare provider:
   - Swelling, especially of the face, mouth, or neck
   - Reduced amount of urine passed

   Other side effects (if bothersome, contact your healthcare provider)
   - Dry cough or tickle in the throat that does not go away

6. Do not take this medication if you are pregnant or plan on becoming pregnant.

7. Many medications, including over-the-counter and herbal medications, may interact with ACE-inhibitors. Check with your pharmacist or other healthcare provider before starting or stopping any medication.

NOTE: This information is not intended to cover all possible uses, precautions, interactions, or adverse effects for these medications. Contact your hospital or community pharmacist for more information or if you have any questions.

v2.8, June 2014
Angiotensin receptor blockers reduce the risk of having another heart attack. They also make it easier for the heart to do its job by opening up the arteries and reducing the amount of fluid that you retain in your body. This helps the heart muscle recover after a heart attack and protects the heart muscle if it has been weakened. These medications have added benefits for people who have diabetes or high blood pressure.

1. Take this medication as directed. Try and take it at the same time(s), best suited to you, each day. If you miss a dose, take it as soon as you remember unless it is almost time for your next dose. DO NOT take extra medication to make up for the missed dose. Continue to take this medication even if you feel well. DO NOT stop taking this medication without your healthcare provider’s advice.

2. This medication can be taken with or without food.

3. This medication will lower your blood pressure. If you feel dizzy or light-headed and feel like you might pass out, sit or lie down right away. To lower your risk of feeling dizzy or falling:
   - Walk slowly up and down stairs
   - Change your body position slowly, especially when standing up
   - Dangle your feet over the edge of the bed before getting out of bed

Tell your healthcare provider if dizziness is a problem for you and have your blood pressure checked. Avoid driving until you know how this medication affects you.

4. This medication may increase the amount of potassium in your body. Avoid salt substitutes or potassium supplements unless prescribed by your healthcare provider. Signs of too much potassium are:
   - Confusion
   - Irregular heart rate (pulse)
   - Nervousness
   - Numbness or tingling of hands or feet
   - Weak/heavy legs

5. Side effects that should be immediately reported to your healthcare provider:
   - Swelling, especially of the of face, mouth, or neck
   - Reduced amount of urine passed

6. Do not take this medication if you are pregnant or plan on becoming pregnant.

7. Many medications, including over-the-counter and herbal medications, may interact with angiotensin receptor blockers. Check with your pharmacist or other healthcare provider before starting or stopping any medication.

NOTE: This information is not intended to cover all possible uses, precautions, interactions, or adverse effects for these medications. Contact your hospital or community pharmacist for more information or if you have any questions.
**CHOLESTEROL LOWERING DRUGS (“STATINS”)**

<table>
<thead>
<tr>
<th>ATORVASTATIN</th>
<th>LOVASTATIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROsvastatin</td>
<td>SIMVASTATIN</td>
</tr>
<tr>
<td>PRAVASTATIN</td>
<td>FLUVASTATIN</td>
</tr>
</tbody>
</table>

Cholesterol-lowering medications (“statins”) lower the long-term risk of having a heart attack. They work (along with diet and exercise) by reducing the amount of cholesterol in your blood and preventing build-up of plaques in your arteries. This anti-plaque effect goes away if you stop taking the drug, so these medications are usually taken life-long.

1. These medications are taken once a day. Atorvastatin and rosuvastatin can be taken at any time of day best suited to you. The other “statin” cholesterol lowering medications should be taken at suppertime or bedtime. If you miss a dose, take it as soon as you remember. DO NOT take extra doses to make up for the missed dose. Continue to take this medication even if you feel well. DO NOT stop taking this medication without your healthcare provider’s advice.

2. This medication does not need to be taken with food, but some people may find it better tolerated with food.

3. Your healthcare provider may follow your cholesterol levels to see how well your “statin” medication is working. You may also have blood tests to check your liver.
   - Because of the effect “statin” medications have on plaque formation, most people with plaques in their arteries should continue to take a “statin” even if their cholesterol levels are “normal” or even “low”

4. Side effects that should be reported to your healthcare provider:
   - New muscle soreness, muscle cramping, or muscle weakness that does not go away
   - Dark (“tea-coloured”) urine
Other side effects (if bothersome, contact your healthcare provider)
   - Constipation, upset stomach, indigestion, gas, heartburn (acid reflux)

5. Some medications, including over the counter and herbal medications, may interact with cholesterol lowering medications. Check with your pharmacist or other healthcare provider before starting any new medication.

6. Grapefruit interacts with most cholesterol lowering medications. Eating grapefruit or drinking grapefruit juice may increase the risk of side effects with these medications. Most people should not eat grapefruit or drink grapefruit juice while on these medications. Pravastatin and rosuvastatin are less likely to interact with grapefruit.

7. Limit your alcohol use to 2 drinks per day or less for men and 1 drink per day or less for women. Drinking too much alcohol may increase your risk for liver problems with cholesterol lowering medications.

**NOTE:** This information is not intended to cover all possible uses, precautions, interactions, or adverse effects for these medications. Talk to your hospital or community pharmacist for more information or if you have any questions.
NITROGLYCERIN (Tablets or Spray)

Nitroglycerin is used to relieve chest pain (angina) that you may experience as a result of blockages in your heart arteries.

How & when to take nitroglycerin

1. If you have chest pain or discomfort that you think is due to your heart, STOP whatever you are doing and sit or lie down.
2. Place one tablet or give 1 spray ONTO or UNDER the tongue, and leave it there. DO NOT chew or swallow the tablet, or inhale or swallow the spray. If the pain or discomfort is NOT relieved after 5 minutes, repeat the dose. If the pain or discomfort continues after 2 doses (10 minutes), use a third dose and IMMEDIATELY call your local emergency number to take you to the nearest hospital (DO NOT drive yourself and DO NOT delay).
3. Carry a supply of nitroglycerin with you AT ALL TIMES. Make sure a family member knows where the nitroglycerin is stored. If you forget or lose your nitroglycerin, it can be purchased at any pharmacy without a prescription.
4. If you are going to do an activity that you think may cause chest pain (such as climbing stairs), you may use your nitroglycerin 5-10 minutes before you do the activity.
5. You may experience a headache or dizziness after taking your nitroglycerin. This is a common side effect and will only last for a short time.
6. Do not store nitroglycerin in your car or in another place that may get very hot or very cold. Nitroglycerin will not work if it has gotten too hot or too cold.
7. SPECIAL instructions for nitroglycerin TABLET
   - Keep the tablets in the original small brown glass bottle & keep the lid closed tightly. When you first get a new bottle, remove the seal and cotton so the tablets will be ready to use
   - Store the tablets in a cool dry place, NOT in the bathroom medicine cabinet or on top of the refrigerator
   - When away from home, carry a small number of tablets in a brown glass bottle in your pocket or purse (only use bottles made for carrying nitroglycerin tablets)
   - When you use a nitroglycerin tablet, place the tablet under your tongue. DO NOT swallow the tablet, or it will not work
   - If you have moved some tablets to a different container, replace these tablets after 3 months. A tingling or burning sensation does NOT mean that the tablet is working
8. SPECIAL instructions for nitroglycerin SPRAY
   - Make sure you ‘prime’ the spray by spraying into the air as directed when you purchase it or when it has not been used for several days or more
   - Do not shake the canister before using or you may not get a full dose
   - DO NOT inhale or swallow the spray, or it will not work
   - Nitroglycerin spray may be more expensive than the tablets, but some people find it easier to use
9. DO NOT take sildenafil (Viagra® or Revatio®), vardenafil (Levitra®), or tadalafil (Cialis® or Adcirca®) without talking to your healthcare provider first. DO NOT use nitroglycerin (tablet, spray or patch) for 24 hours after taking sildenafil or vardenafil and do not use nitroglycerin for 48 hours after taking tadalafil. Talk to your pharmacist or other healthcare provider for more information.

NOTE: This information is not intended to cover all possible uses, precautions, interactions, or adverse effects for this medication. Talk to your hospital or community pharmacist for more information or if you have any questions.
SUPPLEMENTARY DRUG INFORMATION

The following medication card & information sheets will provide you with important information about the medications your doctor has prescribed for you. Please read through this information carefully and feel free to invite a family member or a care-provider to review it as well. If you have any questions, be sure to ask your doctor or your pharmacist for more information.

You may have been prescribed some of the following medications:

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enteric-coated AS.A</td>
<td>- a blood thinner to prevent clots forming in the arteries of the heart</td>
</tr>
<tr>
<td>Beta-blocker</td>
<td>- protects your heart, prevents chest pain</td>
</tr>
<tr>
<td>Nitroglycerine</td>
<td>- relieves chest pain</td>
</tr>
<tr>
<td>ACE inhibitors</td>
<td>- improves heart function &amp; prevents further heart complications</td>
</tr>
<tr>
<td>Cholesterol lowering drug</td>
<td>- lowers cholesterol and decreases risk of further heart problems</td>
</tr>
</tbody>
</table>

PATIENT MEDICATION CARD FOR __________________________________________

DOCTOR____________________________________

<table>
<thead>
<tr>
<th>Drug Name &amp; Strength times</th>
<th>Directions</th>
<th>Suggested dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ASA or other anti-platelet)</td>
<td>(Blood thinner)</td>
<td></td>
</tr>
<tr>
<td>(Beta-blocker)</td>
<td>(Protects heart, reduces chest pain)</td>
<td></td>
</tr>
<tr>
<td>(ACE inhibitor)</td>
<td>(Improves heart function)</td>
<td></td>
</tr>
<tr>
<td>(Cholesterol lowering drug)</td>
<td>(Lowers cholesterol)</td>
<td></td>
</tr>
<tr>
<td>Nitroglycerin tablets/spray</td>
<td>- use when needed for chest pain</td>
<td></td>
</tr>
</tbody>
</table>
Appendix D: Clinical Psychology Letter

Clinical Health Psychology
M4-, McEwen Building
Telephone: 237-2979    Fax: 237-9243

Cardiac Psychology Service

Date:

Mr. XXX

Dear:
The Cardiac Psychology Service of the Winnipeg Regional Health Authority specializes in helping people adjust emotionally to the stress of their heart disease. It was noted in your recent cardiac hospital stay, that you were experiencing some distress, and medical staff indicated to us that you might benefit from the treatments provided by our service.

Many people find heart disease emotionally distressing. Symptoms of emotional distress often lessen after the person has been home for awhile. However, this is not always the case. If you are continuing to experience distress related to your heart disease, the Cardiac Psychology Service offers treatment through the Cardiac Rehabilitation Program, based at the Wellness and Rehfit Centres in Winnipeg. We have enclosed an information pamphlet about psychological adjustment following cardiac events, warning signs to be aware of, and services that are available.

The Cardiac Rehabilitation Program is available to all individuals who have been hospitalized for heart disease, and is effective in helping people recover both physically and emotionally. To access psychology treatments for stress, contact the Reh-Fit Centre at 204-488-8023 or the Wellness Institute at 204-632-3907. If you have urgent emotional needs due to your heart condition, contact the Cardiac Psychology Service directly at 204-237-2979.

If you do not require assistance, please call our office (204-237-2979) so that we can close your file. We will assume you do not require this service if we have not heard from you within two months of this letter.

Sincerely,

XXX
Program Secretary
Clinical Health Psychology
Mental Health Program

cc: Medical Records
Appendix E: Management of Hyperglycemia

Coronary heart disease is the highest cause of mortality among diabetic patients. Studies have indicated that those who have diabetes are at same level of risk for a cardiovascular event as those who have had a previous myocardial infarction (MI). Having the combination of diabetes and a history of MI places an individual at a very high level of cardiovascular risk. The relationship between diabetes and future coronary risk holds true whether a post-MI patient has previously known diabetes or is newly diagnosed during their MI admission.

There is a clear relationship between diabetes and cardiovascular disease. It is a rational step to begin to screen for patients with impaired glucose control in acute MI patients. As well it is an opportune time to assess the appropriateness of the diabetes regimen for those already known to have diabetes on admission for acute MI. This is the rationale for the development of the glycemic control protocols incorporated into the AMI Care Map.

The following is a description of the components of the AMI Care Map

1) Admitted patients with acute myocardial infarction with diabetes physician order sheet. The back of this order set includes an algorithm to guide patient management.
2) Admitted patients with acute myocardial infarction without diabetes physician order sheet. The back of this order set includes an algorithm to guide patient management.
3) Follow up with your family doctor for diabetes care letter. The intent is the letter will be given to the patient to follow up with their primary care provider post hospital discharge. This letter does not replace, but supplements, the information documented by the attending physician/delegate on the hospital discharge summary.

Community Resources

The WRHA has a diabetes service directory that provides information related to diabetes management in the community at:

http://www.wrha.mb.ca/healthinfo/a-z/diabetes/index.php