

## Appendix 4A: Inpatient Process Indicators (Pharmacological)

The quality indicators that apply to the inpatient hospital setting for pharmacological therapy are shown. The indicators identify an eligible sample of AMI patients to which the indicator applies and a number of exclusion criteria (e.g., clinical contraindications) that will be abstracted from chart review (CHT).

Those eligible patients that do not have any exclusion criteria are considered “ideal” patients (e.g., without contraindication) for the form of a therapy question. The list of exclusions is not intended to be exhaustive and thus does not include very rare exclusionary criteria. The intention was to include sufficient numbers of appropriate exclusions to define a sample of candidates for the particular form of drug therapy on a population-wide scale.

<b>1.0 ASPIRIN PRESCRIBED WITHIN SIX HOURS OF HOSPITAL ARRIVAL</b>	
<b>ELIGIBLE</b>	1) Confirmed AMI
<b>EXCLUSIONS</b>	1) Active bleeding on admission
	2) History of coagulopathy
	3) First platelet count $<100 \times 10^9$ /L drawn within 24 hours of admission
	4) Allergy or intolerance to aspirin
	5) Documentation of administration of aspirin prior to hospital arrival
	6) Physician documented reason for non-use of aspirin <b>Examples:</b> anemia, bleeding risk, history of peptic ulcer disease, renal insufficiency, and patient refusal
<b>STATISTIC</b>	% of AMI patients who receive aspirin within six hours of hospital arrival.

<b>2.0 ASPIRIN PRESCRIBED AT HOSPITAL DISCHARGE</b>	
<b>ELIGIBLE</b>	1) Confirmed AMI and alive at hospital discharge
<b>EXCLUSIONS</b>	1) Evidence of:
	i) Active bleeding on admission <b>or</b>
	ii) Active bleeding during hospitalization (GI, GU, CNS only)
	2) History of:
	i) Coagulopathy or
	ii) Platelet count $<100 \times 10^9$ /L
	3) Allergy or intolerance to aspirin
	4) Prescribed other antiplatelets at hospital discharge (e.g., clopidogrel, ticlopidine)
	5) Physician documented reason for non-use of aspirin <b>Examples:</b> anemia, bleeding risk, history of peptic ulcer disease, renal insufficiency, and patient refusal
<b>STATISTIC</b>	% of AMI patients who received aspirin at hospital discharge

## Appendix 4A (continued): Inpatient Process Indicators (Pharmacological)

3.0 REPERFUSION WITH THROMBOLYTICS DURING HOSPITALIZATION	
<b>ELIGIBLE</b>	1) AMI as proposed by European/ACC criteria for AMI: i) ST segment elevation on initial ECG* ii) LBBB on initial ECG
<b>EXCLUSIONS</b>	1) Did not have chest pain or other AMI symptoms <12 hours prior to hospital arrival 2) Active (any) bleeding on admission 3) Recent surgery in the past month 4) Recent trauma in the past month 5) Recent cardiopulmonary resuscitation <b>Example:</b> over 10 minutes occurring at six hours prior to or at time of hospital arrival 6) History of coagulopathy 7) History of stroke 8) Physician documented reason for non-use of thrombolytics <b>Examples:</b> cancer, severe uncontrolled hypertension, patient refusal
<b>STATISTIC</b>	% of AMI patients who received thrombolytics

\*For this indicator, the determination of a STEMI should be applied using the following criteria<sup>5</sup>, ST-segment elevation: new or presumed new ST segment elevation at the J-point in two or more contiguous leads with the cut-off points  $\geq 0.2$  mV in leads V1, V2, or V3 or  $\geq 0.1$  mV in other leads or left bundle branch block.

First Electrocardiogram	Date: <input type="checkbox"/> Same as Admission	Time:
<input type="checkbox"/> No ACS ST-T's <input type="checkbox"/> LBBB <input type="checkbox"/> Atrial Fibrillation <input type="checkbox"/> Paced <input type="checkbox"/> Other (specify): _____		
<b>I aVL</b>	<input type="checkbox"/> ST elevation <input type="checkbox"/> ST depression <input type="checkbox"/> T depress. <input type="checkbox"/> Q wave	<b>V<sub>1</sub> – V<sub>4</sub></b> <input type="checkbox"/> ST elevation <input type="checkbox"/> ST depress. <input type="checkbox"/> T depress. <input type="checkbox"/> Q wave
<b>II / III aVF</b>	<input type="checkbox"/> ST elevation <input type="checkbox"/> ST depression <input type="checkbox"/> T depress. <input type="checkbox"/> Q wave	<b>V<sub>5</sub> – V<sub>6</sub></b> <input type="checkbox"/> ST elevation <input type="checkbox"/> ST depression <input type="checkbox"/> T depress. <input type="checkbox"/> Q wave

The panel above recommends that chart abstractors code the ECG using the FASTRAK™ system shown above. FASTRAK™ is an acute coronary syndrome registry supported by Hoffman-LaRoche, Canada<sup>6</sup>.

## Appendix 4A (continued): Inpatient Process Indicators (Pharmacological)

4.0 MEDIAN “DOOR TO NEEDLE” TIME FOR THROMBOLYSIS	
<b>ELIGIBLE</b>	1) received thrombolytics within 12 hours of admission
<b>EXCLUSIONS</b>	1) None
<b>STATISTIC</b>	Median “door to needle” time (minutes)

5.0 BETA-BLOCKERS WITHIN 12 HOURS OF ADMISSION	
<b>ELIGIBLE</b>	1) All AMI patients
<b>EXCLUSIONS</b>	1) Allergy or intolerance to beta-blocker
	2) Bradycardia (HR < 60 bpm) on admission and not on beta-blocker
	3) Symptomatic heart failure on admission <b>Definition:</b> râles > 1/3 lower lungfield or pulmonary edema
	4) Systolic BP < 100mmHg
	5) PR interval >0.24 sec on admission ECG
	6) 2 <sup>nd</sup> or 3 <sup>rd</sup> degree heart block on ECG
	7) Bifascular block on admission ECG
	8) Severe COPD
	9) Asthma
	10) On beta-blocker pre-admission
	11) Physician documented reason for non-use of beta-blocker <b>Examples:</b> symptomatic hypotension, patient refusal
<b>STATISTIC</b>	% of AMI patients who received beta-blockers within 12 hours of admission

6.0 BETA-BLOCKERS PRESCRIBED AT HOSPITAL DISCHARGE	
<b>ELIGIBLE</b>	1) All patients with AMI alive at hospital discharge
<b>EXCLUSIONS</b>	1) CHF and on diuretic (unless measured LVEF >50 %)
	2) Systolic BP <100 mmHg at hospital discharge
	3) Severe COPD (chart documented)
	4) Asthma
	5) Bradycardia <b>Definition:</b> last HR < 60 bpm while not on beta-blocker
	6) Conduction disorder defined as:
	i) 1 <sup>st</sup> degree AV block (PR interval >0.24 sec on last ECG)
	ii) 2 <sup>nd</sup> or 3 <sup>rd</sup> degree heart block on last ECG
	iii) bifascular block on last ECG
	7) Allergy or intolerance to beta-blocker
	8) Physician documented reason at any time for non-use of beta-blocker <b>Examples:</b> severe heart failure, symptomatic hypotension, patient refusal of medication
<b>STATISTIC</b>	% of AMI patients who received a beta-blocker at hospital discharge

## Appendix 4A (continued): Inpatient Process Indicators (Pharmacological)

7.0 ACEI PRESCRIBED AT HOSPITAL DISCHARGE	
<b>ELIGIBLE</b>	1) AMI patients discharged alive
	2) Past or current clinical features of heart failure
	3) Anterior infarction
	4) EF < 40% or LV grade $\geq$ 3/4
<b>EXCLUSIONS</b>	1) CHF and on diuretic (unless measured LVEF >50 %) Definition: mod/severe AS, 3+ or 4+ AS, AVA <1.0 cm <sup>3</sup>
	2) Allergy or intolerance to ACEI Examples: angioedema, hives, severe rash
	3) Severe renal dysfunction Definition: peak or last pre-discharge serum creatinine level > 200 $\mu$ mol/L*
	4) Systolic BP < 100mmHg at hospital discharge while not on ACEI
	5) Bilateral renal artery stenosis (physician documentation)
	6) Hyperkalemia <b>Definition:</b> peak or last pre-discharge K <sup>+</sup> >5.5 mEq/L*
	7) Physician documented reason at any time for not prescribing ACEI <b>Examples:</b> syncope, dizziness, symptomatic hypotension, patient refusal
<b>STATISTIC</b>	% of AMI patients prescribed ACEI at hospital discharge

\*Indicates peak or last pre-discharge value as dictated by regional or institutional access to laboratory data. Peak laboratory value is preferred and last pre-discharge value is acceptable.

8.0 LIPID SAMPLE OBTAINED WITHIN 24 HOURS OF ADMISSION	
<b>ELIGIBLE</b>	1) All AMI patients
<b>EXCLUSIONS</b>	1) Patients already on statin pre-admission
<b>STATISTIC</b>	% of AMI patients who had lipid sample obtained within 24 hours of admission

9.0 STATIN PRESCRIBED AT HOSPITAL DISCHARGE	
<b>ELIGIBLE</b>	1) AMI patients discharged alive
	2) Total serum cholesterol level on admission >5.2 mmol/L or LDL >3.4 mmol/L
<b>EXCLUSIONS</b>	1) Liver disease <b>Definition:</b> last AST or ALT $\geq$ 2 times the upper limit of normal
	2) Patients with cholestasis Definition: last bilirubin $\geq$ 50 $\mu$ mol/L
	3) Patient on fibrate (at risk of rhabdomyolysis)
	4) Physician documented reason at any time for not prescribing statin (e.g., patient refusal)
<b>STATISTIC</b>	% of AMI patients prescribed a statin at hospital discharge