

Worksheet 1. IMPLEMENTATION STRATEGY
Guideline: Management of Ischemic Heart Disease

Overall Implementation Strategy/Focus:

| <p align="center">Key Guideline Element Core Module</p> | <p align="center">Gaps in Current Practices (Planning Step 1)</p> | <p align="center">Action Strategy (Planning Step 3)</p> |
|--|--|--|
| <p>INITIAL EVALUATION</p> <ul style="list-style-type: none"> o Triage patients with possible acute myocardial infarction (MI) or unstable angina for evaluation and treatment o Initiate O2, intravenous access and continuous electrocardiogram (ECG) monitoring o Obtain 12-lead ECG o Institute advanced cardiac life support, if indicated o Perform expedited history & physical to: <ul style="list-style-type: none"> 1. R/O alternative catastrophic diagnoses (pericarditis, pericardial tamponade, thoracic aortic dissection, pneumothorax, pancreatitis, & pulmonary embolus) 2. Elicit characteristics of MI 3. Determine contraindications to reperfusion therapy o Administer the following: <ul style="list-style-type: none"> - Non-coated aspirin (160 to 325 mg) - Nitroglycerin (spray or tablet, followed by IV , if symptoms persist) - Beta-blockers in the absence of contraindications o Determine if patient meets criteria for emergent reperfusion therapy: <ul style="list-style-type: none"> - History of discomfort consistent with ischemia or infarction <p>AND</p> <ul style="list-style-type: none"> - ECG finding of ongoing ST-segment elevation in 2 or more leads or left bundle branch block <ul style="list-style-type: none"> o Ensure adequate analgesia (morphine, if needed) o Obtain serum cardiac markers (troponin or CK-MB) o Identify and treat other conditions that may exacerbate symptoms | | |

| Key Guideline Element Core Module | Gaps in Current Practices (Planning Step 1) | Action Strategy (Planning Step 3) |
|---|--|--------------------------------------|
| <p>RISK STRATIFICATION: NON-INVASIVE EVALUATION (CARDIAC STRESS TEST)</p> <p>Indications for Non-Invasive Evaluation:</p> <ul style="list-style-type: none"> o Establish or confirm a diagnosis of ischemic heart disease o Estimate prognosis in patients with known or suspected IHD o Assess the effects of therapy <p><i>Patients with contraindications to exercise testing should undergo pharmacologic stress testing with an imaging modality</i></p> <p>Establishing diagnoses:</p> <ul style="list-style-type: none"> o Is most useful if the pre-test probability of coronary artery disease (CAD) is intermediate (10% to 90%) o Should generally not be done in patients with very high or very low probabilities of CAD <p>Variables useful in estimating prognosis include:</p> <ul style="list-style-type: none"> o Maximum workload achieved o Heart rate and blood pressure responses to exercise o Occurrence, and degree of ST-segment deviation o Occurrence and duration of ischemic symptoms o Size and number of stress-induced myocardial perfusion or wall motion abnormalities | | |

| <p align="center">Key Guideline Element Module A</p> | <p align="center">Gaps in Current Practices (Planning Step 1)</p> | <p align="center">Action Strategy (Planning Step 3)</p> |
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| <p>ACUTE MYOCARDIAL INFARCTION (ST-SEGMENT ELEVATION MI) For patients who meet criteria for emergent reperfusion therapy</p> <ul style="list-style-type: none"> • Admit to an intensive care unit or transfer to facility with interventional cardiology for emergent reperfusion as indicated • Initiate heparin, low-molecular weight heparin, or coumadin, if indicated • Initiate IV beta-blocker followed by oral • Initiate ACE inhibitor therapy in the absence of contraindications <p><i>If less than 12 hours from onset of symptoms:</i></p> <ul style="list-style-type: none"> ◊ Refer to PCI if intervention can be performed within 90 minutes of presentation ◊ Initiate thrombolytic therapy if not contraindicated and not referred for direct PCI ◊ Refer to PCI if thrombolytic therapy is contraindicated or response to thrombolysis is unsatisfactory <ul style="list-style-type: none"> • Consider non-invasive evaluation (cardiac stress test) • Refer to cardiology if at high-risk for death or recurrent MI and/or LV dysfunction • Ensure pharmacological therapy for ischemia, angina, and CHF • Discharge patient to home with appropriate follow-up | | |

| <p align="center">Key Guideline Element Module B</p> | <p align="center">Gaps in Current Practices (Planning Step 1)</p> | <p align="center">Action Strategy (Planning Step 3)</p> |
|---|--|--|
| <p>Definite/Probable Non-ST-Segment Elevation Acute Coronary Syndrome (ACS) (Unstable Angina/Non-ST-Segment Elevation MI [NSTEMI])</p> <p>Patients with ACS (UA/NSTEMI) are at high risk for MI or death and are candidates for further aggressive diagnostic and therapeutic interventions that should include:</p> <ul style="list-style-type: none"> • Ensure emergency intervention • Admission to an intensive- or intermediate-care unit • Immediate cardiac rhythm monitoring • Therapy directed at stabilizing ischemia (beta-blocker, NTG) • Risk-stratification to determine prognosis and guide treatment. Assessment for risk of death or MI based on symptoms, level of biomarker (troponin, CK) and ECG • Antithrombotic therapy tailored to individual risk that should include: <ul style="list-style-type: none"> -ASA -Heparin (UFH) or low molecular weight heparin (LMWH) -Clopidogrel if intervention is not planned <p>* UA/NSTEMI patients should <i>not</i> receive reperfusion fibrinolytic therapy</p> | | |

| <p align="center">Key Guideline Element Module B</p> | <p align="center">Gaps in Current Practices (Planning Step 1)</p> | <p align="center">Action Strategy (Planning Step 3)</p> |
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| <p>High-risk patients are candidates for further aggressive diagnostic and therapeutic interventions including:</p> <ul style="list-style-type: none"> • Early (i.e., <48 hour) coronary angiography with subsequent revascularization if indicated • GP IIb/IIIa antagonist in addition to aspirin, heparin and clopidogrel in patients with continuing ischemia or with other high-risk features • GP IIb/IIIa antagonist may also be used in patients in whom an early invasive strategy is planned. GP IIb/IIIa can be administered just prior to PCI. <p>In patients not undergoing angiography: Perform non-invasive evaluation (cardiac stress test and left ventricular [LV] function), and: If LV function is compromised: -Ensure pharmacologic therapy for ischemia, angina, and congestive heart failure -Initiate ACE inhibitor therapy -Consider referral to cardiology</p> <p>All patients with suspected, but unproven, unstable angina should have further diagnostic testing to determine the accuracy of the diagnosis. Discharge patient to home with appropriate follow-up.</p> | | |

| <p align="center">Key Guideline Element Module G</p> | <p align="center">Gaps in Current Practices (Planning Step 1)</p> | <p align="center">Action Strategy (Planning Step 3)</p> |
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| <p>MANAGEMENT OF MEDICAL FOLLOW-UP</p> <ul style="list-style-type: none"> • Identify and triage IHD patients with a possible acute coronary syndrome (i.e., ST-elevation MI [STEMI], non-ST-elevation MI [NSTEMI], or unstable angina) • Assess if stable symptoms are due to noncardiac conditions • Identify and treat other medical conditions that may exacerbate IHD symptoms • Ensure all patients receive aspirin (or other antiplatelet therapy, as appropriate) • Titrate pharmacological therapy for ischemia, angina, and congestive heart failure (CHF) to physiologic endpoints, therapeutic doses, or patient tolerance • Administer a cardiac stress test to assess the risk of future cardiac events, if not previously performed, or if there has been worsening of ischemic symptoms • Initiate angiotension-converting-enzyme (ACE) inhibitor therapy for patients with significant DM and/or left ventricular (LV) dysfunction (ejection fraction [EF] <0.40) <p>Consider in patients without LV dysfunction</p> <ul style="list-style-type: none"> • Identify and provide therapy for patients with heart failure • Identify patients at high risk for sudden cardiac death or complications for whom cardiology referral is appropriate | | |

| <p align="center">Key Guideline Element Module G</p> | <p align="center">Gaps in Current Practices (Planning Step 1)</p> | <p align="center">Action Strategy (Planning Step 3)</p> |
|--|--|--|
| <p>SECONDARY PREVENTION</p> <ul style="list-style-type: none"> • Assure appropriate treatment with beta-adrenergic blocking agents (beta-blockers) in patients with prior MI • Identify and treat patients with high low-density-lipoprotein cholesterol (LDL-C) • Assess and treat high blood pressure • Reduce cardiac risk with smoking cessation • Promote cardiac rehabilitation as secondary prevention • Achieve tight glycemic control in diabetics • Screen for depression and initiate therapy or refer • Arrange follow-up | | |

Worksheet 2A. ACTION PLAN FOR GUIDELINE INTRODUCTION AND STAFF EDUCATION
Guideline: Management of Ischemic Heart Disease

| Identify actions for guideline introduction and education. (IN) | Designate someone to serve as lead for the action and other staff to be involved. | | Identify the tools and resources for the action. | Specify the action timeline. |
|---|---|--------------|--|------------------------------|
| Action #IN.__ | Lead: | Other Staff: | | Start Complete |
| Action #IN.__ | Lead: | Other Staff: | | Start Complete |
| Action #IN.__ | Lead: | Other Staff: | | Start Complete |
| Action #IN.__ | Lead: | Other Staff: | | Start Complete |

Worksheet 2B. PLANNING WORKSHEET FOR PRACTICE CHANGE IMPLEMENTATION

Guideline: Management of Ischemic Heart Disease

Key Guideline Element: _____

| Identify actions in the strategy for this guideline element. | Designate someone to serve as lead for the action and other staff to be involved. | | Identify the tools and resources for the action. | Specify the action timeline. |
|--|---|---------------------|--|------------------------------|
| Action # __ | Lead: | Other Staff: | | Start Complete |
| Action # __ | Lead: | Other Staff: | | Start Complete |
| Action # __ | Lead: | Other Staff: | | Start Complete |
| Action # __ | Lead: | Other Staff: | | Start Complete |
| Action # __ | Lead: | Other Staff: | | Start Complete |

Worksheet 3. GANTT CHART OF TIMELINE FOR GUIDELINE IMPLEMENTATION
Guideline: Management of Ischemic Heart Disease

| Actions | MONTH OF WORK | | | | | | | | | | | |
|---|---------------|---|---|---|---|---|---|---|---|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| <i>Introduction & Education</i> #IN. __ #IN. __ #IN. __ #IN. __ | | | | | | | | | | | | |
| <i>Practice Changes</i> # __ # __ # __ # __ # __ # __ # __ # __ | | | | | | | | | | | | |

Worksheet 4. METRICS AND MONITORING
Guideline: Management of Ischemic Heart Disease

| Key Guideline Element | Metric | Data Sources | Monitoring Schedule |
|--|--------|--------------|---------------------|
| <p>INITIAL EVALUATION : Core Module</p> <ul style="list-style-type: none"> o Triage patients with possible acute myocardial infarction (MI) or unstable angina for evaluation and treatment o Initiate O2, intravenous access and continuous electrocardiogram (ECG) monitoring o Obtain 12-lead ECG o Institute advanced cardiac life support, if indicated o Perform expedited history & physical to: <ol style="list-style-type: none"> 1. R/O alternative catastrophic diagnoses (pericarditis, pericardial tamponade, thoracic aortic dissection, pneumothorax, pancreatitis, & pulmonary embolus) 2. Elicit characteristics of MI 3. Determine contraindications to reperfusion therapy o Administer the following: <ul style="list-style-type: none"> - Non-coated aspirin (160 to 325 mg) - Nitroglycerin (spray or tablet, followed by IV , if symptoms persist) - Beta-blockers in the absence of contraindications o Determine if patient meets criteria for emergent reperfusion therapy: <ul style="list-style-type: none"> - History of discomfort consistent with ischemia or infarction <p>AND</p> <ul style="list-style-type: none"> - ECG finding of ongoing ST-segment elevation in 2 or more leads or left bundle branch block <ul style="list-style-type: none"> o Ensure adequate analgesia (morphine, if needed) o Obtain serum cardiac markers (troponin or CK-MB) o Identify and treat other conditions that may exacerbate symptoms | | | |

Guideline: Management of Ischemic Heart Disease

| Key Guideline Element :Core Module cont. | Metric | Data Sources | Monitoring Schedule |
|---|--------|--------------|---------------------|
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| Key Guideline Element : Module A | Metric | Data Sources | Monitoring Schedule |
|--|--------|--------------|---------------------|
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Guideline: Management of Ischemic Heart Disease

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|--|---------------|---------------------|----------------------------|
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| Key Guideline Element : Module B cont. | Metric | Data Sources | Monitoring Schedule |
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