Symptoms suggestive of ischemia or infarction

EMS assessment and care and hospital preparation
- Monitor, support ABCs. Be prepared to provide CPR and defibrillation
- Administer aspirin and consider oxygen, nitroglycerin, and morphine if needed
- Obtain 12-lead ECG; if ST elevation:
  - Notify receiving hospital with transmission or interpretation; note time of onset and first medical contact
  - Notified hospital should mobilize hospital resources to respond to STEMI
- If considering prehospital fibrinolysis, use fibrinolytic checklist

Concurrent ED assessment (<10 minutes)
- Check vital signs; evaluate oxygen saturation
- Establish IV access
- Perform brief, targeted history, physical exam
- Review/completed fibrinolytic checklist, check contraindications
- Obtain initial cardiac marker levels, initial electrolyte and coagulation studies
- Obtain portable chest x-ray (<30 min)

Immediate ED general treatment
- If O₂ sat <94%, start oxygen at 4 L/min, titrate
- Aspirin 160 to 325 mg (if not given by EMS)
- Nitroglycerin sublingual or spray
- Morphine IV if discomfort not relieved by nitroglycerin

ECG interpretation

ST elevation or new or presumably new LBBB; strongly suspicious for injury ST-elevation MI (STEMI)
- Start adjunctive therapies as indicated
- Do not delay reperfusion

Time from onset of symptoms ≤12 hours?

>12 hours

≤12 hours

ST depression or dynamic T-wave inversion; strongly suspicious for ischemia
High-risk unstable angina/
non-ST-elevation MI (UA/NSTEMI)

Troponin elevated or high-risk patient
Consider early invasive strategy if:
- Refractory ischemic chest discomfort
- Recurrent/persistent ST deviation
- Ventricular tachycardia
- Hemodynamic instability
- Signs of heart failure

Start adjunctive treatments as indicated
- Nitroglycerin
- Heparin (UFH or LMWH)
- Consider: PO beta-blockers
- Consider: Clopidogrel
- Consider: Glycoprotein IIb/IIIa inhibitor

Admit to monitored bed
Assess risk status
Continue ASA, heparin, and other therapies as indicated
- ACE inhibitor/ARB
- HMG CoA reductase inhibitor (statin therapy)
Not at high risk: cardiology to risk stratify

Reperfusion goals:
Therapy defined by patient and center criteria
- Door-to-balloon inflation (PCI) goal of 90 minutes
- Door-to-needle (fibrinolysis) goal of 30 minutes

Consider admission to ED chest pain unit or to appropriate bed and follow:
- Serial cardiac markers (including troponin)
- Repeat ECG/continuous ST-segment monitoring
- Consider noninvasive diagnostic test

Develops 1 or more:
- Clinical high-risk features
- Dynamic ECG changes consistent with ischemia
- Troponin elevated

No

Abnormal diagnostic noninvasive imaging or physiologic testing?

Yes

If no evidence of ischemia or infarction by testing, can discharge with follow-up

No