Chest discomfort suggestive of ischemia

EMS assessment and care and hospital preparation:
- Monitor, support ABCs. Be prepared to provide CPR and defibrillation
- Administer oxygen, Aspirin, Nitroglycerin, and Morphine if needed
- If available, obtain 12-lead ECG; if ST-elevation:
  - Notify receiving hospital with transmission or interpretation
  - Begin fibrinolytic checklist
- Notified hospital should mobilize hospital resources to respond to STEMI

Immediate ED assessment (<10 min)
- Check vital signs; evaluate oxygen saturation
- Establish IV access
- Obtain/review 12-lead ECG
- Perform brief, targeted history, physical exam
- Review/complete 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
- Start oxygen at 4 L/min; maintain O2 sat >90%
- Aspirin 160 to 325 mg (if not given by EMS)
- Nitroglycerin sublingual, spray, or IV
- Morphine IV if pain not relieved by nitroglycerin

Review initial 12-lead ECG

ST elevation or new or presumably new LBBB; strongly suspicious for injury
ST-Elevation MI (STEMI)

Start adjunctive treatments as indicated (see text for contraindications)
Do not delay reperfusion
- β-Adrenergic receptor blockers
- Clopidogrel
- Heparin (UFH or LMWH)

ST depression or dynamic T-wave inversion; strongly suspicious for ischemia
High-Risk Unstable Angina/Non-ST-Elevation MI (UA/NSTEMI)

Start adjunctive treatments as indicated (see text for contraindications)
- Nitroglycerin
- β-Adrenergic receptor blockers
- Clopidogrel
- Heparin (UFH or LMWH)
- Glycoprotein IIb/IIIa inhibitor

Time from onset of symptoms ≤12 hours

Reperfusion strategy:
Therapy defined by patient and center criteria
- Be aware of reperfusion goals
  - Door-to-balloon inflation (PCI) goal of 90 min
  - Door-to-needle (fibrinolysis) goal of 30 min
- Continue adjunctive therapies and:
  - ACE inhibitors/angiotensin receptor blocker (ARB) within 24 hours of symptom onset
  - HMG CoA reductase inhibitor (statin therapy)

Time from onset of symptoms >12 hours

Admit to monitored bed
Assess risk status

High-risk patient
- Refractory ischemic chest pain
- Recurrent/persistent ST deviation
- Ventricular Tachycardia
- Hemodynamic instability
- Signs of pump failure
- Early invasive strategy, including catheterization and revascularization for shock within 48 hours of an AMI
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

Develops high or intermediate risk criteria
OR
Troponin-positive?

No

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

Consider admission to ED chest pain unit or to monitored bed in ED
Follow:
- Serial cardiac markers (including Troponin)
- Repeat ECG/continuous ST segment monitoring
- Consider stress test

Develops high or intermediate risk criteria
OR
Troponin-positive?

Yes

Normal or nondiagnostic changes in ST segment or T wave
Intermediate/Low Risk UA