

# Acute Chest Pain Care Guide

October 2022



CALIFORNIA CORRECTIONAL  
HEALTH CARE SERVICES

*Information contained in the Care Guide is not a substitute for a health care professional's clinical judgment. Evaluation and treatment should be tailored to the individual patient and the clinical circumstances. Furthermore, using this information will not guarantee a specific outcome for each patient.*

*Refer to "Disclaimer Regarding Care Guides" for further clarification.*

<https://cchcs.ca.gov/clinical-resources/>

## SUMMARY

### GOALS

- ✓ Determine clinical stability; assess need for transfer to emergency department (ED) for timely intervention.
- ✓ Identify patients with acute coronary syndrome (ACS) and other life-threatening emergencies.
- ✓ Identify and manage stable patients with non cardiac chest pain (CP) precipitants. (“Atypical” is a misleading descriptor of CP, and its use is discouraged.)
- ✓ Coordinate with cardiologist to appropriately evaluate, and manage patients diagnosed with coronary artery disease (CAD), especially those who repeatedly present to Triage and Treatment Area (TTA) with CP.

### ALERTS

- Women with CP are at risk for under-diagnosis, history should emphasize **accompanying symptoms**. See Appendix 1
- Transfer clinically unstable patients directly to ED by EMS (i.e., do not delay transfer for ECG or other evaluation).
- Emergent transfer for reperfusion therapy if evidence of ST- segment elevation myocardial infarction (STEMI).
- Patient with ACS symptoms, stable VS, and no evidence of STEMI should be transferred to ED for monitoring/serial cardiac troponin to evaluate for non- STEMI diagnosis.
- O2 saturation by pulse oximetry can be falsely HIGHER by 1-2% in patients of color.

**THIS CARE GUIDE IS BASED ON AMERICAN HEART ASSOCIATION (AHA)/AMERICAN COLLEGE OF CARDIOLOGY (ACC) GUIDELINE FOR THE EVALUATION AND DIAGNOSIS OF CP, 2021. THIS AND OTHER GUIDELINES RELY ON ASSESSMENT OF HIGH SENSITIVITY TROPONIN TO DEFINITELY EXCLUDE ACS. ACUTE TROPONIN TESTING (TYPICALLY DONE IN ED) CANNOT BE DONE IN OUR SETTING SO ADAPTION OF FULL AHA/ACC GUIDELINES IS NOT POSSIBLE.**

### DIAGNOSTIC CRITERIA/EVALUATION

**Acute CP** can be caused by many life-threatening conditions, most commonly ACS due to CAD. Timely intervention is associated with better outcomes. Acute CP is also a symptom of multiple noncardiac causes and the diagnosis cannot always be made based on initial presentation (AHA/ACS 2021)<sup>1</sup>.

**Terminology:** Per AHA/ACC, “Atypical” is a misleading descriptor of CP. Instead, CP should be described as cardiac, possibly cardiac, or non cardiac because these terms are more specific to the potential underlying diagnosis.

**Diagnosis of ACS** is suspected based on patient’s CP history (characteristics) cardiac risk factors, focused physical exam, and ECG findings. This evaluation can help differentiate ACS from other life threatening and non cardiac causes of acute CP, but the presence or absence of ACS can only be **confirmed by cardiac troponin results (not available in CCHCS for acute CP)**.<sup>2</sup>

### ASSESSMENT

- ▶ **Assess VS and level of consciousness:** If patient unstable, or altered level of consciousness– initiate EMS transfer.
- ▶ **Obtain ECG:** Obtain ECG. Target initial medical decision making within 10 minutes of obtaining ECG and interpretation (machine automatic interpretation ECG +/- provider review) in a clinically stable patient. If ECG shows ST elevation or new Left Bundle Branch, assume ACS/STEMI and initiate EMS transfer – let EMS know STEMI.
  - Normal ECG markedly reduces probability that CP is due to MI, but it does not exclude a serious cardiac etiology.
  - If symptoms continue or clinical suspicion is high repeat ECG at 15-30 minute intervals.
- ▶ **Cardiac risk factors<sup>1</sup>:** Identify both traditional risk factors (male, age > 45 years, diabetes mellitus (DM), hyperlipidemia, hypertension (HTN), smoking, family history of CAD, prior cardiac history/CAD) and nontraditional risk factors. (See page 3) NOTE: In our setting stimulant use has been common and patients younger than expected can present with acute coronary syndrome.
- ▶ **CP history/descriptors<sup>1</sup>:** Obtain details on 1) nature of pain; 2) onset and duration; 3) location and radiation; 4) precipitating factors; 5) relieving factors; and 6) associated symptoms can help better identify potential cardiac causes. (See page 4) NOTE: Some special populations of patients may present with less classic symptoms. (See page 4)

- ▶ **Focused Physical Exam:** Helps in the diagnosis of ACS or other potentially serious causes of CP (e.g., aortic dissection, pulmonary embolism (PE), or esophageal rupture) and to identify complications. (See page 5)
- ▶ **Chest X-ray:** In patients presenting with acute CP, a chest radiograph is useful to evaluate for other potential cardiac, pulmonary, and thoracic causes of symptoms. Do not delay transfer to higher level of care/ ED to obtain chest X-ray.

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### TREATMENT INITIATION OF THERAPY FOR ACS DURING EVALUATION PROCESS

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- 1) Place cardiac and oxygen saturation monitors.
- 2) Provide supplemental O<sub>2</sub> at 1-6 L/minute via nasal cannula or 4-10 L/minute via mask to maintain oxygen saturation ≥ 92%.
- 3) Establish IV access and infuse Sodium Chloride Intravenous Solution (0.9%) at 30 ccs/hour.
- 4) Chew 1 tab nonenteric-coated Aspirin 325mg unless the patient is allergic to aspirin or actively bleeding.
- 5) Nitroglycerin tabs (0.4 mg) sublingually every 5 minutes for 3 doses.
- 6) While awaiting EMS, print out emergency transfer report completed by nursing (chest pain history, vital signs, physical exam, and treatment given), recent ECG, and previous ECG (if available) to send with patient.
- 7) If symptoms continue or clinical suspicion is high repeat ECG at 15 to 30 minute intervals.

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### REFERENCES

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<sup>1</sup> 2021 AHA/ACC/ASE/CHEST/SAEM/SCCT/SCMR Guideline for the Evaluation and Diagnosis of Chest Pain: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines.

<sup>2</sup> Overview of approach to patients with suspected acute myocardial infarction in the emergency department: Literature review current through: Jan 2022. | This topic last updated: Aug 11, 2021.