Chest pain may extend outside the chest, often needs to be checked by a professional

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Chest discomfort associated with a heart attack or heart event may often be felt beyond the chest, with many people reporting pain in their shoulders, arms, jaw, neck, back and upper abdomen. A new approach to

evaluate the source and symptoms of chest pain can help clinicians improve patient outcomes and reduce health care costs, according to a new joint guideline from the American Heart Association and the American College of Cardiology. The guideline publishes today in the American Heart Association's flagship journal *Circulation* and simultaneously in the *Journal of the American College of Cardiology*.

Frequently, people have chest discomfort that is caused by a heart issue, and chest pain is the primary symptom reported for a heart attack or heart event. However, there are times when chest pain episodes are not related to a heart event. Experts from the American Heart Association and the American College of Cardiology urge people to seek immediate medical care for chest pain to determine if urgent care or further cardiac testing is needed.

The new guideline recommends medical professionals use standardized risk assessments, clinical pathways and tools to evaluate and communicate with people experiencing chest pain. While evaluation of chest pain has been covered in previous guidelines, this is the first comprehensive guideline from the Association and the College focused solely on the evaluation and diagnosis of chest pain.

"Everyone should know the symptoms that can indicate a heart attack and that calling 911 is the most important thing to do to save their life or that of their loved one experiencing chest pain," said chair of the guideline writing group Martha Gulati, M.D., M.S., FACC, FAHA, a professor of cardiology and former academic division chief of the division of cardiology at the University of Arizona in Phoenix. "This standard approach provides clinicians with the guidance to better evaluate patients with chest pain, identify patients who may be having a cardiac emergency and then select the right test or treatment for the right patient."

Among all adults who come to the emergency department with chest pain, only around 5% will have acute coronary syndrome (ACS is a term to describe when blood supply to the heart muscle is severely reduced or suddenly blocked). More than half will ultimately be diagnosed with a non-cardiac reason for the chest-pain symptoms, including respiratory, musculoskeletal, gastrointestinal, psychological and other causes. Evaluating the severity and the cause of chest pain is crucial. The new guideline advises clinicians to use standard risk assessments to determine if a patient is at low, intermediate or high risk for having a cardiac event. The guideline also highlights that women are unique when presenting with ACS symptoms. Chest pain is the dominant and most frequent symptom for both men and women, however, women may be more likely to also exhibit accompanying symptoms such as nausea and shortness of breath.

For emergency department professionals evaluating people with chest pain, the initial goals should be to identify if there are life-threatening causes and to determine if there is a need for hospitalization or testing. Thorough screening may also determine who is at high risk vs. intermediate or low risk for a cardiac event. An individual at low risk for a cardiac event may be referred for additional evaluation in an outpatient setting rather than being admitted to the hospital. The guideline authors emphasize there are opportunities to reduce unnecessary or inappropriate testing for some adults with chest pain, especially in the emergency department and for those patients screened as low risk for a cardiac event.

"When some people arrive in the emergency department with chest pain, they often won't need additional or immediate testing, and the health care team should explain to the patient and their family the various initial tests and risk assessment and their risk level," said Gulati. "Often, patients have additional concerns because they fear a heart attack or other severe cardiac event, which is understandable. However, we have

advanced tools that help us determine whether a cardiac emergency or severe heart event is likely or not."

Clinicians can reduce patient fear and concerns and reduce extra testing through shared decision-making. As outlined in all scientific statements and guidelines from the American Heart Association/American College of Cardiology, the patient-centered process in which clinicians share information and steps with patients as partners to reach a consensus about preferred tests and treatments is essential. Research has shown that shared decision-making allows people at low risk of serious health issues to participate actively in their care. The approach has also found fewer additional tests are performed as a result of shared decision-making, with no differences in outcomes among low-risk patients.

"While there is no one 'best test' for every patient, the guideline emphasizes the tests that may be most appropriate, depending on the individual situation, and which ones won't provide additional information; therefore, these tests should not be done just for the sake of doing them," added Gulati. "Appropriate testing is also dependent upon the technology and screening devices that are available at the hospital or health care center where the patient is receiving care. All imaging modalities highlighted in the guideline have an important role in the assessment of chest pain to help determine the underlying cause, with the goal of preventing a serious cardiac event."

The American Heart Association and the American College of Cardiology have partnered for over 40 years to translate scientific evidence into clinical practice guidelines with recommendations to improve cardiovascular health.

The guideline was prepared on behalf of and approved by the American College of Cardiology and American Heart Association Joint Committee on Clinical Practice Guidelines. Five other partnering organizations

participated in and approved the guideline: the American Society of Echocardiography, the American College of Chest Physicians, the Society for Academic Emergency Medicine, the Society of Cardiovascular Computed Tomography and the Society for Cardiovascular Magnetic Resonance. The writing group included representatives from each of the partnering organizations and experts in the field—cardiac intensivists, cardiac interventionalists, cardiac surgeons, cardiologists, emergency physicians and epidemiologists—and a lay/patient representative.

More information: 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, *Journalof the American College of Cardiology* (2021). DOI: 10.1016/j.jacc.2021.07.053

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