

Electrocardiogram The electrocardiogram (ECG) is an essential part of the evaluation of the patient with shock. There may be a bradycardia or tachycardic arrhythmia causing a reduction in CO. ST segment elevation myocardial infarction may be identified. The presence of the S1 Q3 T3 pattern would raise concerns for pulmonary embolism. Reduced voltage in the presence of electrical alternans raises the possibility of pericardial tamponade.

Chest X-Ray The chest x-ray (CXR) can demonstrate a new focal alveolar or interstitial infiltrate suggesting an infectious process (and possible distributive septic shock). Bilateral cephalization of the pulmonary vasculature, peribronchial cuffing, septal thickening, and intralobular thickening are typical of pulmonary edema and a cardiogenic process. A widened mediastinum raises the possibility of a pericardial effusion. The CXR can be used to confirm or exclude the presence of a pneumothorax. CXR findings are neither sensitive nor specific for pulmonary embolism. In select cases there may be the finding of a peripheral wedge-shaped opacity indicating pulmonary infarction, an enlarged pulmonary artery, or regional vascular oliguria. A chest computed tomography (CT) angiogram may be needed to exclude the diagnosis of PE.

Point-of-Care Ultrasound Point-of-care ultrasound (POCUS) has an increasing role in the evaluation and treatment of shock. Benefits of POCUS include its low cost, rapidity with which it can be obtained, and noninvasive nature. It has diagnostic value in patients who present with undifferentiated shock. In patients with mixed shock, it can give insight into the relative contribution of the individual shock types. Several structured protocols exist for evaluation of undifferentiated shock including the Rapid Ultrasound for Shock and Hypotension (RUSH), the Abdominal and Cardiothoracic Evaluation with Sonography in Shock (ACES), and Sequential Echographic Scanning Assessing Mechanism Or Origin of Shock of Indistinct Cause (SESAME). These protocols share common components to assess cardiac function, evaluate intravascular volume status, and identify fluid collections. In a rapid and protocolized manner, views are obtained of the heart, lungs, pleural space, inferior vena cava,