

Point-of-care echocardiography

PERFORMING ECHOCARDIOGRAPHY IN CARDIAC ARREST

Point-of-care echo can help guide care in both medical and traumatic cardiac arrest.

Medical cardiac arrest

Consider using echo at a pulse check, but be sure to minimize the time without compressions. Have an experienced operator obtain subxiphoid or apical views as quickly as possible. Do not delay restarting compressions. Basic echo findings during arrest include no activity, fibrillation, and organized contraction.

No activity supports the decision to terminate resuscitation if the care team otherwise thinks further effort is futile. Be aware that you may observe swirling blood or agonal twitching of the myocardium or valve, as a result of the low flow state. You can still terminate resuscitation, even though you may not observe complete cardiac standstill.

Ventricular fibrillation supports an attempt at defibrillating the patient.

Organized contraction indicates return of

spontaneous circulation, or if there is no pulse palpable, pulseless electrical activity (PEA).

Echo findings in PEA can be integrated with data from the monitor or electrocardiogram, to help narrow down a cause and ultimately a potential course of treatment. A narrow complex rhythm on the monitor with a hyperdynamic left ventricle may be associated with a mechanical cause (pneumothorax, tamponade, pulmonary embolus) while a hypokinetic heart or wide complex rhythm may suggest an underlying mechanical cause of the PEA.

Traumatic cardiac arrest

The presence of a pericardial effusion or organized cardiac activity supports the decision to proceed with resuscitative thoracotomy. While all decisions should be individualized to the patient, the absence of a pericardial effusion or organized activity indicates that risk of thoracotomy may exceed the potential benefit. Hemopericardium in a patient with trauma may appear echogenic and complex. Note the example, here, of a complex effusion in a traumatic arrest.

