H's and T's of ACLS

H	Hypovolemia	Hypoxia	Hydrogen Ion (acidosis)	Hypo/Hyper-kalemia	Hypothermia
	Loss of fluid volume in the circulatory system. Look for obvious blood loss. Most important intervention is to obtain IV access and administer IV fluids. Use a fluid challenge to determine if the arrest is related to hypovolemia	Deprivation of an adequate oxygen supply can be a significant contributing cause of cardiac arrest. Ensure that the airway is open. Ensure adequate ventilation, and bilateral breath sounds. Ensure oxygen supply is connected properly.	Obtain an arterial blood gas to determine respiratory acidosis. Provide adequate ventilations. Use sodium bicarbonate to prevent metabolic acidosis if necessary.	Both a high and low K+ can cause cardiac arrest. Signs of high K+ include taller, peaked T-waves, and widening of the QRS complex. Signs of low K+ include flattened T-waves, prominent U-waves and possibly widened QRS complex. Never give undiluted intravenous potassium.	If a patient has been exposed to the cold, warming measures should be taken. Core temp. should be raised above 86 F and 30 C as soon as possible. The patient may not respond to drug or electrical therapy while hypothermic.

T	Toxins	Tamponade	Tension Pneumothorax	Thrombosis (heart: acute, massive MI)	Thrombosis (lungs: massive PE)
	Accidental overdose : Some of the most common include: tricyclics, digoxin, betablockers, and calcium channel blockers). Cocaine is the most common street drug that increases incidence of pulseless arrest. Physical signs include bradycardia, pupil symptoms, and other neurological changes. Poison control can be utilized to obtain information about toxins and reversing agents.	Fluid build-up in the pericardium results in ineffective pumping of the blood which can lead to pulseless arrest. ECG symptoms: Narrow QRS complex and **rapid heart rate.** Physical signs: jugular vein distention (JVD), no pulse or difficulty palpating a pulse, and muffled heart sounds. Perform: pericardiocentesis to reverse.	Tension pneumothorax shifts in the intrathroacic structure and can rapidly lead to cardiovascular collapse and death. ECG signs: Narrow QRS complexes and **slow heart rate**. Physical signs: JVD, tracheal deviation, unequal breath sounds, difficulty with ventilation, and no pulse felt with CPR. Treatment: Needle decompression.	Causes acute myocardial infarction. ECG signs: 12 lead ECG with ST-segment changes, T-wave inversions, and/or Q waves. Physical signs: elevated cardiac markers on lab tests, and chest pain/pressure. Treatments: use of fibrinolytic therapy, PCI (percutaneous coronary intervention). The most common PCI procedure is coronary angioplasty with or without stent placement.	Can rapidly lead to respiratory collapse and sudden death. ECG signs of PE: Narrow QRS Complex and rapid heart rate. Physical signs: No pulse felt with CPR. distended neck veins, positive d-dimer test, prior positive test for DVT or PE. Treatment: surgical intervention (pulmonary thrombectomy) and fibrinolytic therapy.