

You are called for a 40 year old female patient who is in cardiac arrest. Upon arrival, you are told that the patient is 32 weeks gestation and collapsed without an obvious cause. While you perform high-quality CPR, apply the pads, insert an OPA and provide ventilations with a BVM, what clinical consideration would you have now? If you said, manually displace the uterus to the left and early transport after the first analysis (and defibrillation if indicated), you are correct!

In this edition of the digest, we will discuss and expand on the “Clinical Considerations” listed below for early transport of cardiac arrest patients under the ALS PCS V4.3 (implementation date of July 17, 2017). As you review the circumstances below the common theme is that each circumstance is potentially reversible with early in-hospital management.

## **Clinical Considerations**

*“Consider very early transport after the 1st analysis (and defibrillation if indicated) in the following settings: **pregnancy presumed to be  $\geq 20$  weeks gestation** (fundus above umbilicus, ensure manual displacement of uterus to left), **hypothermia, airway obstruction, suspected pulmonary embolus, medication overdose/toxicology, or other known reversible cause of arrest not addressed.**”*

*Similarly, plan for extrication and transport for patients with refractory ventricular fibrillation and pediatric cardiac arrest (after 3 analyses), ensure quality CPR can be continued.*

*In cardiac arrest associated with opioid overdose, continue standard medical cardiac arrest directive. There is no clear role for routine administration of naloxone in confirmed cardiac arrest.*

*Follow the Deceased Patient Standard once TOR has been implemented.*

*The IV and IO routes of medication administration are preferred over the ETT route. However, ETT administration may be used if the IV/IO routes are delayed (e.g.  $\geq 5$  min).*

*If hyperkalemia is suspected as the causative event of the cardiac arrest, consider patching early for calcium gluconate.”* (ALS PCS V4.3, PCP Core Medical Directives, page 28 and ACP Core Medical Directives, page 81).

- Pregnancy:** There are two patients to consider (mother and fetus) - best practice is to focus on resuscitation of the pregnant patient as fetal survival is dependent on successful maternal survival. Treatment should include high-quality CPR and ventilation, first rhythm analysis on scene (and defibrillation if indicated), rapid transport, left lateral positioning with manual left uterine displacement with additional ALS interventions during transport.

- ❏ **Hypothermia:** After cardiac arrest is confirmed, follow the Hypothermia Cardiac Arrest Medical Directive including high-quality CPR and ventilation, a maximum of one rhythm analysis (and defibrillation if indicated), early transport (gently handle the patient) and withhold medications while continuing resuscitation during transport.
- ❏ **Foreign body airway obstruction (FBAO):** The Foreign Body Airway Obstruction Medical Directive remains unchanged. In the [May 2017](#) digest, we discussed FBAO out-of-hospital cardiac arrest (OHCA) management. Often in cases of FBAO, incident history of eating and choking prior to collapse are apparent upon arrival. If this is the case and resources are available paramedics may attempt to apply all three best practices in FBAO cardiac arrest: high-quality CPR and ventilation, pads on for early defibrillation and airway management assessment/intervention. Early transport is indicated after one rhythm analysis if you are unable to remove the FBAO within the first few minutes of assessment and intervention. Consider continuing efforts to remove the FBAO during transport to hospital but definitive care involves in-hospital advanced airway procedures. If you can remove the obstruction bear in mind the likely cause of arrest is hypoxia; special attention to airway management and oxygenation/ventilation is crucial.
- ❏ **Pulmonary Embolism (PE):** In the [April 2017](#) digest, we discussed PE including OHCA considerations. Where PE is suspected deliver high-quality CPR and ventilation, first rhythm analysis (and defibrillation if indicated) and early transport with additional ALS intervention during transport. In-hospital thrombolysis may be life-saving in rare cases of massive PE thrombus.
- ❏ **Toxicology:** Follow the Medical Cardiac Arrest Medical Directive including high-quality CPR and ventilation, first rhythm analysis (and defibrillation if indicated) and early transport with additional ALS intervention during transport. ACPs should consider a patch to the Base Hospital Physician (BHP) for potential antidotes based on the clinical situation (eg. Sodium bicarbonate for tricyclic antidepressant toxicity). Please see Dr. Pardhan's presentation, "One Pill Can Kill" from the 2017 DOC CME available through eMedic for a great review of treatment options and management of toxicological emergencies.
- ❏ **Anaphylaxis:** Follow the Medical Cardiac Arrest Medical Directive including high-quality CPR and ventilation, first rhythm analysis (and defibrillation if indicated), and epinephrine administration prior to early transport (see ALS PCS V4.3, PCP Core Medical Directives, page 21 and ACP Core Medical Directives, page 71-72 for route, concentration and dosing considerations).