



UTSW/Parkland BioTel EMS ALERT

January 2, 2018

EMS ALERT 18-001

Dosing Interval of IV/IO Epinephrine During Cardiac Arrest

Purpose:

To advise BioTel EMS Providers of updated recommendations about the first-dose timing and longer dosing interval of IV/IO epinephrine during cardiac arrest.

Background:

Robust accumulating science from the EMS and in-hospital literature suggests that survival with good neurologic outcome after cardiac arrest is associated with:

- Early administration of the correct, first dose of IV/IO epinephrine; AND
- Longer interval between subsequent doses.

Multiple large, observational studies suggest that neither the standard “every 3 to 5 minutes” epinephrine dosing interval in place for many years nor routine repeated dosing (more than three doses) results in improved outcomes for either adult or pediatric cardiac arrest.

When published, the results of a recently completed, randomized, double-blind, placebo-controlled trial of epinephrine versus normal saline for out-of-hospital (OOH-CA) cardiac arrest, the [PARAMEDIC2 Trial](#) in the UK, may shed further light on this subject.

Ongoing supply-chain issues with prefilled “cardiac” epinephrine syringes further complicate the issue. Administration of more than three doses of epinephrine – when such extra doses are not beneficial – may needlessly hasten depletion of scarce agency supplies.

Interim Medical Direction Team Recommendations, Effective Immediately:

1. #1 priority for OOH-CA: **high-quality, minimally interrupted CPR & defibrillation** (as needed)
2. EMS Providers should focus on the **early, timely administration of the 1st, correct IV/IO epinephrine dose**, per protocol, for both asystole/PEA and VF/pulselessVTach:
 - a. For pediatric patients, proper age- or weight-based dosing is especially important
3. The IV/IO epinephrine dosing interval for both shockable and non-shockable cardiac arrest should be approximately **every 5-6 minutes**, rather than every 3-5 minutes
4. **Do not administer more than a total of 3 epinephrine doses under standing orders** (contact BioTel to request additional doses)

Summary:

- **Accumulating scientific evidence strongly suggests that “more is not better” and that “more often is not better” when it comes to IV/IO epinephrine for OOH-CA**
- The first epinephrine dose should be given *as soon as possible*, per protocol
- Up to two additional, standing order doses may be given, if needed, approximately every 5-6 minutes
- Contact BioTel if additional doses may be needed (unlikely to be routinely helpful)

- **UTSW/Parkland BioTel EMS Providers may contact BioTel or the [EMS Medical Direction Team](#) at any time with questions or concerns about this EMS Alert**