AURORA SOUTH WI EMS NEWSLETTER

AUGUST 2023

Quote of the Month

"If I only had an hour to chop down a tree, I would spend the first 45 minutes sharpening my axe."

- Abrahm Lincoln

As an EMS provider, there is nothing more valuable than being prepared. Keep a learning mindset to increase your knowledge and skills. Failure is not a roadblock; it's a whetstone to sharpen your axe for a bigger tree!

Q3 AUGUST TRAINING DATES

Our Q3 trainings for 2023 are underway. If you missed the scheduled Q3 training for your service, sign up to attend any of the following:

- 8/9 - 7:00-9:00 pm Lauderdale/LaGrange FD
- 8/14 - 7:00-9:00 pm Raymond FD
- 8/21 -7:00-9:00 pm Wheatland FD
- 8/22 - 9:30-11:30 am South Shore Station 9
- 8/23 - 9:30-11:30 am South Shore Station 9
- 8/24 - 9:30-11:30 am South Shore Station 9
- 8/29 - 9:00 am-11:00 am Elkhorn (LAO)

LOOKING FOR ADDITIONAL CEU TO MEET YOUR REFRESHER REQUIREMENTS?

Just a reminder that every month our EMS team of medical directors and educators are out providing additional monthly EMS education. If you're looking for additional training, feel free to join us this month for:

Surgical Cric/Needle Decompression & Pericardiocentesis:

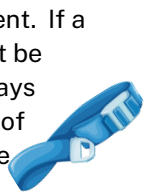
- 8/16 - 6:00-8:00 pm Whitewater FD

Scan the QR code to access our CME site to view & sign up to attend trainings !

SCAN ME

TIGHTEN IT UP: TIPS FOR TOURNIQUET APPLICATION

When practicing tourniquet application on live participants, providers most often do NOT tighten the tourniquet completely to avoid discomfort to their training partner. This muscle memory of inadequate tightening can cause a problem when the application of a tourniquet is required during an incident. If a tourniquet is applied too loosely, the bleeding may not be controlled. If you notice a tourniquet is too loose, always start by loosening the Velcro and pulling the free end of the tourniquet to make it as tight as possible. Then the windlass should be twisted until the bleeding stops.



KUDOS TO OUR NEWEST PARAMEDIC LEVEL SERVICES

Join us in congratulating the following services on their recent transition to the paramedic level.

- ***Whitewater FD***
- ***Lyons FD (flexible staffing)***

We are proud of the hard work our services have done to improve the quality of care they provide to their communities. Take time this month to personally congratulate members of these services on their recent accomplishment! Thanks to all of our services for the amazing work you do every day. The work *YOU* do makes a difference, because EMS is truly where emergency care begins!

NUMEROUS MEDICATIONS STILL IN SHORT SUPPLY

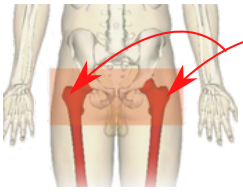
While many of the drugs that were in short supply have now been resolved, there are a number of medications commonly used by EMS that still remain in short supply.

The FDA website currently lists the following medications as currently in shortage:

- Epinephrine (1:10,000)
- Etomidate
- Fentanyl
- Hydromorphone
- Ketamine
- Ketorolac
- Lidocaine
- Lorazepam
- Midazolam
- Morphine
- Sodium bicarbonate

LOCATION, LOCATION, LOCATION

It's all about location when it comes to proper application and the effectiveness of the pelvic binder. **S**top-**T**hink-**A**ct-**R**eview



When applying the SAM Pelvic Sling start by identifying the *greater trochanter*. If not possible, locate the area just proximal to the patient's genitals/inseam. Once found, place your knee in line with your landmark. Pass the buckle under the knees. Lift and slide. Do not shimmy the device. Confirm proper placement. Buckle the device and pull traction while your partner applies counter traction. Missing the "mark" can have serious consequences.

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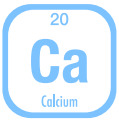
From the Desk of Dr. Andrews: Calcium chloride in cardiac arrest-STOP USING IT!

Calcium is a mineral and participates in muscle contraction, blood vessel constriction and dilation, nerve signaling, and hormone secretion. Nearly all the calcium in the body (~99%) is stored in the bones and teeth, while the remaining 1% is in the blood and other body tissues.

Calcium chloride has been noted to increase myocardial contractility, prolong systole, and enhance ventricular excitability, and because of this was recommended as a cardiac arrest treatment by the very first ACLS publication in 1974 for electromechanical dissociation (now called pulseless electrical activity=PEA) and "may be useful" …"in instances of asystole and may enhance electrical defibrillation"[i]. In Milwaukee County, in the early 1980's, two randomized double-blinded controlled studies were done comparing calcium chloride to placebo in asystole and in PEA. The asystole study[ii] showed no improvement in survival with calcium chloride. The PEA study[iii] also showed no improvement in survival but suggested there might be a subgroup of patients that might benefit from calcium chloride. After those studies, ACLS no longer recommended the routine use of calcium in cardiac arrest. ACLS left it as probably helpful (Class IIb) for hyperkalemia, hypocalcemia, and calcium channel blocker toxicity. "Otherwise, calcium should not be used (Class III)"[iv].

In 2016, a retrospective review on in-hospital cardiac arrest patients with hyperkalemia[v] looked at the effect of sodium bicarbonate and calcium chloride on outcomes and showed the "highest survival probabilities were observed in patients who received neither medication and lowest probabilities were observed in patients who received both calcium and SB" (sodium bicarbonate). In 2021 "Calcium for Out-of-Hospital Cardiac Arrest: A Randomized, Double-Blind, Placebo-Controlled Trial (COCA)"[vi] was published, which looked at calcium vs placebo in all types of out of hospital cardiac arrest and showed no improvement in survival with calcium and was stopped early because patients who were getting calcium were having worse outcomes. Calcium treated patients did worse in all subgroups- whether it was a shockable rhythm, PEA, or asystole. The chance of ROSC was 19% in patients receiving calcium and 27% with placebo. The 90-day survival was 5.2% in the calcium group and 9.1% with placebo. Favorable neurologic outcome at 90 days was 3.6% in the calcium group and 9.1% in the placebo group. So, the bottom line is this: Don't use calcium in cardiac arrest anymore!



[i] Standards for Cardiopulmonary Resuscitation (CPR) and Emergency Cardiac Care (ECC). JAMA. 1974 Feb 18;227(7):833-868. doi: 10.1001/jama.227.7.833. PMID: 28834958.
[ii] Stueven HA, Thompson B, Aprahamian C, Tonsfeldt DJ, Kastenson EH. Lack of effectiveness of calcium chloride in refractory asystole. Ann Emerg Med. 1985 Jul;14(7):630-2. doi: 10.1016/s0196-0644(85)80875-1. PMID: 3893238.
[iii] Stueven HA, Thompson B, Aprahamian C, Tonsfeldt DJ, Kastenson EH. The effectiveness of calcium chloride in refractory electromechanical dissociation. Ann Emerg Med. 1985 Jul;14(7):626-9. doi: 10.1016/s0196-0644(85)80874-x. PMID: 4014808.
[iv] Part 6: Advanced Cardiovascular Life Support; Section 6: Pharmacology II: Agents to Optimize Cardiac Output and Blood Pressure, 22 Aug 2000https://doi.org/10.1161/circ.102.suppl_1.I-129Circulation. 2000;102:I-129–I-135
[v] Wang CH, Huang CH, Chang WT, Tsai MS, Yu PH, Wu YW, Hung KY, Chen WJ. The effects of calcium and sodium bicarbonate on severe hyperkalaemia during cardiopulmonary resuscitation: A retrospective cohort study of adult in-hospital cardiac arrest. Resuscitation. 2016 Jan;98:105-11. doi: 10.1016/j.resuscitation.2015.09.384. Epub 2015 Sep 26. PMID: 26410570.
[vi] Vallentin MF, Granfeldt A, Meilandt C, et al. Effect of Intravenous or Intraosseous Calcium vs Saline on Return of Spontaneous Circulation in Adults With Out-of-Hospital Cardiac Arrest: A Randomized Clinical Trial. JAMA. 2021;326(22):2268–2276. doi:10.1001/jama.2021.20929

HIGH RELIABILITY TOOLS & TACTICS FOR AUGUST:
STAR *(STOP-THINK-ACT-REVIEW)*

The Aurora South WI EMS Office of Medical Direction embraces the principle that High Reliability Organizations demonstrate behaviors that ensure accountability. This month, we want to focus on a tactic known as STAR.

When you Stop-Think-Act-Review (STAR) you internally focus your attention on the task at hand. STAR is recognized as the BEST tool for avoiding skill-based errors and can be very useful in EMS. In STAR, you pause for 1-2 seconds, consider the action you're about to take, concentrate and carry out the task, and check to make sure that the task was done correctly and you have the correct result. Before responding to your next situation, think STAR! This will help you make a more positive choice about what you do next!

Self-Check Using STAR

Stop	*Pause for 1-2 seconds to focus your attention on the task at hand*
Think	*Consider the action you are about to take*
Act	*Concentrate on the task and carry it out*
Review	*Check to make sure the task was done correctly & you got the correct results*

STOP is the most important part of STAR, to give your brain a chance to catch up with your hands. Sometimes people say or think that when you are in an emergency situation, this is when you bypass the "rules". ***This is the time when use of these tools are the MOST critical.***

Have a question? Email any of our docs:
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