YOLO COUNTY EMS AGENCY

Policy and Protocol Update

Issue 2 January 2019

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High Performance CPR (HP-CPR)

The HP-CPR model is built on a foundation of quality BLS that is supported by ALS. Survival depends on early compressions and defibrillation as part of a well organized team response.

The Medical Cardiac Arrest Protocol released last year was the first step in improving cardiac arrest care in Yolo County. Our next step is to release a HP-CPR guide. This guide breaks down the roles and responsibilities of each responder and gives step by step directions. In order to create an environment of sustained HP-CPR, everyone must be on board. BLS first on scene must take responsibility and own the CPR portion of the resuscitation. When Paramedics arrive, they will perform the ALS support measures of the resuscitation in coordination with ongoing CPR. The goal is for ALS to compliment BLS. When all providers perform HP-CPR in the same way, survival increases.

One of the most important elements of HP-CPR is training. YEMSA will be providing hands on training opportunities to help build a solid foundation of quality team oriented HP-CPR.

Currently there is an online case review all about HP-CPR. It can be found on the YEMSA website under “Online Training Opportunities”.

The final step in building a HP-CPR system will be the development of a HP-CPR tool kit. This kit will be created with participation from all agencies providing care in Yolo County and will be a guide for all stakeholders in the CPR Chain of Survival.

Principals of High Performance CPR
Minimize interruptions in compressions at all times
Ensure proper compression rate (100 - 120/min)
Ensure proper depth (2 - 2.4 inches)
Ensure full chest recoil (decompression)
Shock on a 2-minute cycle
Hover hands over chest during shock
Minimize peri-shock pause to < 5-seconds
Rotate compressors during shock pause or every 2-minutes
Provide proper volume of air (300 - 400 mL)
Asynchronous ventilations every 10th compression on the upstroke of the compression
Place IV/IO with ongoing CPR
Teamwork between EMTs and Paramedics

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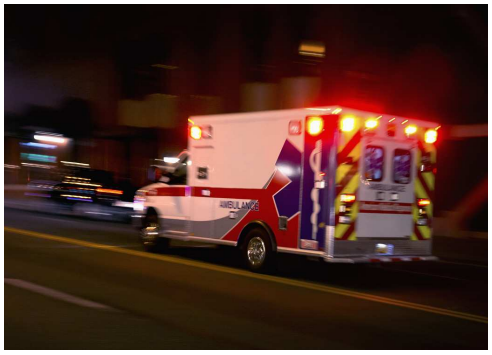
Code 3 Transports

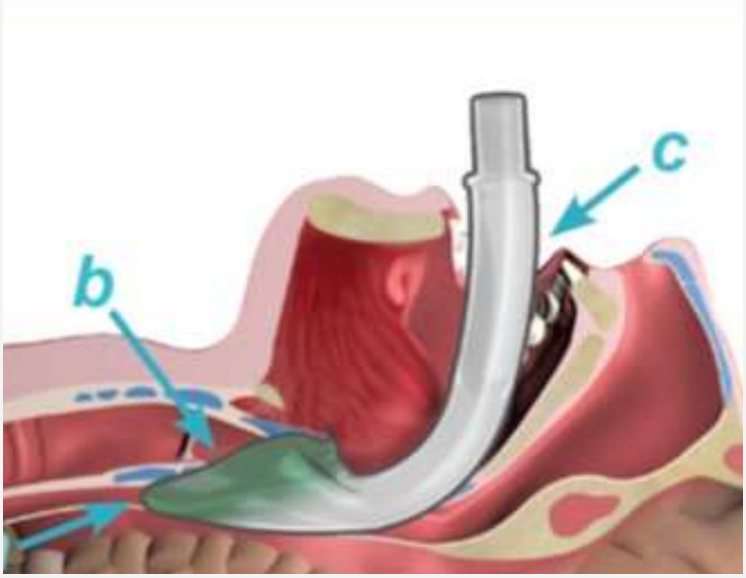
Historically Code 3 transport has been a significant part of patient care in EMS. As the EMS profession grows, the opportunity for increased research allows for evidence based modifications to the standard of care. The evolution of spinal motion restriction and the use of backboards is a great example of this. Recent research has shown that transporting patients to the hospital using lights and sirens does not reduce mortality and greatly risks the safety of both the patient and EMS crew. The potential negative impact due to stress and increased safety risks far out weigh any benefit of a 2 - 3 minute decrease in transport time and greatly increases the risk to the EMS providers and the patient.

It has been standard practice that when a patient meets a certain criteria, such as STEMI, Stroke, or Trauma, they are automatically transported Code 3. This was partially based on the belief that the receiving center required this information to determine patient acuity. It is not necessary to report the transport code during the radio report. It is, however, very important that radio reports be clear and concise and include patient chief complaint, vital signs, and treatment. This is especially true with patients meeting criteria. The goal with patients meeting criteria is early recognition, notification, stabilization, and safe transport to an appropriate receiving center.

It is YEMSA's recommendation that Code 3 transport only be considered for truly unstable patients or when traffic greatly increases transport time. Once clear of the traffic, it would be appropriate to reduce to Code 2 and continue transport. Code of transport should be based on a solid clinical assessment and paramedic judgement.



i-gel Supraglottic Airway (SGA)



SGA devices have emerged as valuable tools for airway management in the prehospital setting. With the i-gel, ventilation is delivered through a port positioned above the glottic opening. It naturally positions itself over the laryngeal framework, providing a reliable perilaryngeal seal. The non-inflatable cuff is made from a soft gel-like material allowing ease of insertion and reduced trauma. The i-gel incorporates a gastric channel that provides an early warning of regurgitation, allows for the passing of a nasogastric tube to empty the stomach contents and facilitates venting.

The i-gel SGA will transition to replace the King Tube SGA in Yolo County. Paramedics will be able to use the i-gel for both adult and pediatric airway management. BLS providers may apply for Local Optional Scope to utilize the i-gel SGA for adult patients.

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Pain Management

The new Pain Management Protocol will give guidelines on treating pain with both pharmacological and non-pharmacological methods and will incorporate non-opioid medications for mild, moderate, and severe pain. The goal is for EMS providers to assess a patient's individual pain management needs and treat accordingly.

EMS providers routinely treat patients for pain; it's the most common reason patients seek medical attention in the ED. Providers who understand the physiologic mechanism that causes pain, the physiologic response to pain, and the methods with which to control it, are best equipped to care for these patients.

Pain has a biologically important protective function. The sensation of pain is a normal response to injury or disease and is a result of normal physiological processes within the nociceptive system. Clinical responses to pain vary widely. Classically, the sympathetic nervous system releases epinephrine. This will often produce an increased heart rate, increased blood pressure, increased respiratory rate, and diaphoresis.

A pain source may be obvious, such as an acute injury, or it may be more subtle for cases of pain from illness or chronic pain. Patient assessment should include chief complaint, pain scale, OPQRST, vital signs, associated symptoms, and pertinent negatives.

If you want others to be happy, practice compassion.
If you want to be happy, practice compassion.
The Dali Lama

When considering pain management, the first thing many healthcare providers think of is medication, but that's only part of the picture. The basic techniques; splinting, traction, compression, ice, and comfort often provide the most significant pain relief. Communication and compassion are also under-utilized components of pain management and may be one of the most important aspects. A first responder who treats a patient confidently, with a professional demeanor and compassion, will help break the pain anxiety cycle. How a patient perceives the people caring for them dramatically influences the patient's suffering. This is especially true with children.

Providers must be familiar with the medications in their tool box and know the specific indications for each medication to properly treat a patient in pain.

- Ketorolac is an non-steroidal anti-inflammatory (NSAID) medication that functions by reducing inflammation through inhibition of various proteins associated with pain.
- Acetaminophen is an analgesic that blocks pain perception.
- Ketamine is a dissociative anesthetic that can provide pain relief by blocking pain perception, memory and emotion.
- Fentanyl is a synthetic opioid analgesic that blocks pain perception.

Ketamine will be the primary medication for severe pain in adults and Fentanyl will be the primary medication for severe pain in pediatrics. Most severe pain is acute and traumatic in nature but some medical conditions such as kidney stones or appendicitis may benefit from Ketamine or Fentanyl. Ketorolac and Acetaminophen may be used for moderate pain or in addition to Ketamine or Fentanyl for severe pain.

Remember that splinting, comfort, and ice can go a long way in managing both moderate and severe pain. Providers should base pain management decisions on the underlying cause of the pain, the amount of pain, and available resources. The goal of initial pain management isn't to extinguish pain, but to reduce the pain perceived by the patient to a tolerable level without causing serious side effects.

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Pediatric Patients

Starting January 1, 2019 pediatric patients in Yolo County will be defined as less than (<) 15 years old. This change aligns with the State standard for many new medications and devices. This will apply to all policies, protocols and procedures unless stated otherwise.

Recognizing that children have unique anatomic, physiologic, developmental, and medical need is one of the most important elements in caring for pediatric patients. It is also important to remember that not all children are created equal. Children of the same age can dramatically range in size and development. Length based pediatric resuscitation tapes are a great tool in determining weight for medication doses. Pediatric dosing apps and charts can also be great resources when caring for pediatric patients. The biggest challenge when caring for children is determining if they are big sick or little sick. They present with much more subtle signs and can de-compensate quickly. Early assessment utilizing the pediatric assessment triangle can significantly help guide your assessment and treatment plan.

Future System Goals

We are proud of our EMS system and all the amazing clinicians that care for patients everyday. One of the ways YEMSA can support the system is by staying up to date on current research and implementing it into our polices and protocols. Continuing education is key in all medical fields and is the mechanism in which clinicians stay current within the ever evolving science of medicine. Some goals for the future are:

- Offer additional training opportunities
- Create a CPR tool Kit that supports HP-CPR
- Provide additional clinical feedback
- Provide Bystander CPR training to the community
- Offer additional county wide functional drills

Thank you for your dedication to Yolo County EMS!

Yolo County EMS Symposium

We are excited to be hosting our second annual EMS Symposium on April 8th, 2019. The theme will be **When Time Matters - Vascular Emergencies**. We have some incredible speakers from our local specialty hospitals who will be presenting on topics such as The Science of CPR, Stroke, Acute Coronary Syndrome, Blood Pressure Emergencies, and more. We also have a speaker who will be sharing tales of being an MD at the South Pole. The goal is to bring together EMS professionals to share ideas and learn new and innovative medicine that will enhance their clinical care in the communities they serve. The event is designed for EMTs, Paramedics and RNs. Due to the incredible response last year, we will hold a priority registration for the providers in Yolo County 2 weeks before regular registration opens. There will also be 5 Yolo County sponsorship tickets. Be sure to save the date! The registration site will be up soon. We really hope to see you all there.

" Education is our passport to the future; for tomorrow belongs to those who prepare for it today"