NASEMSO Model EMS Clinical Guidelines Project

June 13, 2016
1:00 PM EDT

Work Group Meeting

MEETING RECORD

Attending - Carol Cunningham, Rick Alcorta, Ken Williams, Brian Moore (AAP), Mark Gestring (ACS-COT), Joe Nelson, Allen Yee (AAEM), Susan McHenry (NHTSA), Chip Cooper (Data Manager Liasion), Peter Taillac, Alex Isakov (NAEMSP), David Lehrfeld (AAEM), Mary Hedges (NASEMSO Program Manager)

Call to Order, Roll Call – Dr. Cunningham called the meeting to order at 1:05 PM.

Review March 14 Meeting Record – The March 14 meeting record was approved without changes.

New Workgroup Members Appointed to Date

- NAEMSP Rep/Alt – Dr. Alexander Isakov and Dr. John Lyng
- ACS-COT - Mark L. Gestring (EMS Committee Chair)
- ACOEP – Mary Katherine Harper (returning)
- AAP Rep/Alt – Brian Moore and Manish Shah (returning)
- AMPA – Craig Bates (returning)
- AAEM Rep/Alt– Allen Yee (returning) and David Lehrfeld
- ACEP Rep/Alt – We were notified today that ACEP has appointed

Jeff Jarvis, MD, FACEP, EMT-P and Julio Lairet, DO, FACEP

Response to Request for Public Comment – We requested stakeholders to respond to two questions: 1) Comments on the revised cardiac guideline (attached) and 2) Which guidelines may be missing of the proposed new topics? (see attached list of completed guidelines and proposed new guideline titles). All comments are available at https://www.surveymonkey.com/results/SM-2TN3DT9S/

The Emergency Nurses Association (ENA) submitted extensive comments on the revised cardiac arrest guideline, which are shown below. The work group reviewed each and their decision is in red font.

ENA Comments:
Airway Management:
Focus on the concept that airway management should not interrupt compressions is appreciated, as is the discussion of options for airway management. Some greater clarity around airway management is suggested.

Consistency with General BCLS and ACLS Guidelines:
Recommend more clearly identifying how this guideline should be incorporated with general BCLS and ACLS guidelines, and to fully incorporate 2015 updates. The goal of a guideline may be to set more of a standardized practice and decrease practice variation.

Page 1 Exclusion Criteria
Add a fourth item to describe those patients meeting determination of death or obvious signs of death

criteria (rigor, lividity, etc.)
Accept comment and add to document. Mark Gestring said the ASC COT worked on this and it is very important.

Page 1 Patient Management Assessment
"Once pulselessness is discovered, treatment should be initiated
immediately and any further history must be obtained by bystanders while treatment is ongoing."

The intent here seems to be to keep EMS responders focused on resuscitation rather than on history gathering. Should the information be collected from them, rather than by them? Or is the recommendation that bystanders should take on the role of gathering history?
Decline comment and retain current language

Page 1 Treatment and Interventions
Although the document states "initiate" and subsequently "take over, "it may be more clear to include both actions at the beginning of this point

(1(a): Initiate/continue CPR while AED/monitor is being applied.)
Decline comment and retain current language. Comment is wordsmithing and will not alter the content or intent of current statements.

Page 2 Treatment and Interventions
3: Defibrillation should occur at the manufacturer's recommended initial dose or the maximum dose of the defibrillator, with escalating doses on subsequent shocks up to the maximum dose of the defibrillator or 360 joules. Pediatric defibrillation should occur with an initial dose of 2 J/kg., and second and subsequent shocks of 4 J/kg.
Decline comment and retain current language which is more general and can be applied broadly to all cardiac monitors. Check with Brian Moore regarding pediatrics.

Page 1 Treatment and Interventions
1 (b): Should this point indicate the time frame for performing chest compressions? The rate is described, but the length of time is not included in this point.

Chest compressions should be initiated while the AED is being applied. As soon as the AED/monitor is ready, the rhythm should be analyzed and the patient defibrillated. Rhythm analysis should not require greater than a 10 seconds interruption in CPR.
Accept comment and amend language to add chest compressions for 2 minutes

Page 2 Treatment and Interventions
4: Chest compressions should resume immediately after defibrillation attempts with no pauses for pulse checks, and should continue uninterrupted for 2 minutes (until next rhythm check) regardless of rhythm on monitor.

(New monitors have "read-through" technology which allows the underlying rhythm to be seen through the CPR artifact. The AHA specifically states that they do not recommend acting on that rhythm until the 2 minutes of CPR is up. Many ACLS students in class are tripped up when the rhythm changes prior to completion of the 2 minute post-defibrillation CPR, and they want to stop CPR and do a pulse check. Organized electrical activity after defibrillation does not mean adequate contractility and cardiac output,

as it takes time for adequate cardiac output to be achieved, hence the 2 minutes of CPR to support cardiac output until the heart gets back up to speed.)
Will amend current language: Chest compression for a 2 minute cycle should resume regardless of rhythm displayed on cardiac monitor.

Page 2 Treatment and Interventions
6: Epinephrine is only recommended ASAP by the AHA in non-shockable rhythms such as asystole or pulseless electrical activity. In shockable rhythms, epinephrine is recommended after the second shock is delivered.
Decline comment and retain current language.

Page 2 Treatment and Interventions
7(b)(i): Passive ventilation is only recommended for witnessed out of hospital cardiac arrest with a shockable rhythm. In this case, the recommendation is 3 cycles of 200 continuous compressions with passive oxygen insufflation and airway adjuncts (class IIb).

See Kleinman et al Part 5 Adult BLS and CPR as this should align 2015 guidelines. The AHA does not recommend the use of passive ventilation techniques during conventional CPR for adults as there is unknown effectiveness.
Accept comment and make appropriate editions to current language.

7(b) (ii): Everything listed under 7(b) indicates no advanced airway is present. There is no need to coordinate ventilations and compressions once an advanced airway is in place.
Accept comment and make appropriate editions to current language.

7, b(i, ii, ii, and iv) should be revised.
Accept comment and revise current language. Peter Taillac will use a new header, make revisions in the current language, and forward the proposed amendments to Carol and Rich for incorporation into the guideline.

Page 2 Treatment and Interventions
8: "antidysrhythmic" could be "antiarrhythmic" but this could be a style preference.
Accept comment and amend language to “antiarrhythmic”.

8 b: See https://circ.ahajournals.org/content/132/18_suppl_2/S526.full for a discussion of amiodarone vs. lidocaine in pediatrics.
Send to Dr. Moore for further consideration with feedback forwarded to Carol and Rich.

Consider adding in a section for EtCO2 monitoring in intubated patients during CPR.
Accept comment. Carol will draft and add additional language..

Consider adding in the need for maximum feasible oxygen administration during CPR.
Decline comment and retain current language.

Page 3 Treatment and Interventions
9 b: Some of the treatment options might not necessarily be in local
paramedic scope of practice, such as calcium gluconate and calcium chloride for dialysis/known hyperkalemic patients.

A disclaimer or statement that these guidelines are not intended to encourage practice outside of scope of practice could be included. Such language would make these guidelines less likely to be interpreted as standards of care.
Decline comment. This is addressed in the preamble of the Guidelines document.

Page 3 Patient Safety Considerations
As a practical matter, there are times when transport is the best option while chest compressions are in progress (i.e. pregnancy, scene safety for the crew under stress from families or gangs, a very public area, or at EMS discretion). Patients may regain a cardiac rhythm and lose it en route, so CPR during transport is necessary.

This section might be revised to be dictated by geography and regional protocols. Consideration of rural settings should be included.

It may be required to have a plan in place to release the body to law enforcement/coroner on scene. Not all departments have this available.
Add clarification in educational pearls regarding EPCR if available. Allen Yee will send Carol the associated references.

Page 3 Notes/Educational Pearls
1(e): Rotate every 2 minutes.
Accept comment and amend language to 2 minutes for consistency.

1(f)(ii): Does this recommend passive ventilation? This discussion should align with the 2015 guidelines (Kleinman et al.) If no advanced airway, compression: ventilation ratio should be 30:2 for adults.
This language will remain aligned with the similar section in the Treatment and Interventions section.

Page 4 Notes/Educational Pearls
1(f)(iv): add in at the end, "or 1 breath every 6 seconds."
Accept comment and add “1 breath every 6 seconds”.

This section and the previous point 7 present should be aligned with 2015 guidelines.
Accept comment and amend language as deemed necessary.

Page 4 General Cardiac Arrest Process
This flow chart does not depict the recommended process. Regardless of whether there has been bystander CPR, chest compressions should be initiated immediately and continue as the AED/monitor is applied. However as soon as the AED/monitor is applied, the rhythm should be analyzed and shocked appropriately. One should not wait 2 minutes to initially analyze the rhythm in adults under any circumstances. The only time one performs 2 minutes of CPR prior to analyzing the rhythm is in unwitnessed pediatric cardiac arrest, because in pediatrics it is highly likely the cause was respiratory in nature.
Undecided. Need to address

Page 5 Notes/Educational Pearls
3: As previously stated above: Epinephrine is only recommended ASAP by the AHA in non-shockable rhythms such as asystole or pulseless electrical activity. In shockable rhythms, it is recommended after

the second shock is delivered.
Whatever we put in the previous one, we should add here to be consistent.

Page 6 Notes/Educational Pearls
6(iv): Proximal humerus should be the first placement of intraosseous access. If done properly, it does not interfere with compressions or ventilations, it allows for up to 5x faster fluid infusion, and it places medications into central circulation faster. Unless contraindicated, the proximal humerus is recommended as it allows for a 5/L hour flow rate and is well tolerated by patients.

Pediatric patients weighing at least 3 kg. with the correct needle selection can also have a proximal humeral placement. Proximal tibia, distal tibia and distal femur (in pediatrics) are now considered alternate insertion sites.
Brian said this is new to him and he teaches this. They are not teaching this in pediatric resuscitation classes, and he knows of no data to support this. He suggests leaving it open and saying "IO" and leave it up to the service. The workgroup members decided to amend the language to say that the proximal humerus is the preferred site in adults and not to specify a preferred location for pediatric patients.

Page 6 #6
The idea of a "pit crew" does help emphasis the need for clear role management on a scene.

EMS agencies would need to provide the resources in training on a state level and incorporate in the state regulations for this practice to become standardized.

In some states BLS and ALS are simultaneously dispatched. ALS crews may cover multiple areas, so crews may not frequently work together.

Practical questions include:
• If the patient was resuscitated on scene and is being transported but suddenly decompensates, what would be the protocol using the pit crew format?
• If there are only 2 providers in the ambulance, the other 2 are committed to driving the vehicles to the hospital. Does the ambulance pull over and the pit crew perform CPR?

Considerations for local resources should be considered, as location and time for transportation may affect decision-making.
Decline comment as these actions are under state or local medical control.

Page 7 Performance Measures
Recommended additions:
• Time of ROSC
• Hospital DC (mortality, discharge status to skilled nursing facility, home self-care, etc.)
Accept comment and add the appropriate language. In addition, include the EMS Compass Performance Measures for cardiac arrest when finalized.

Page 7 References
Updated references including the 2015 guidelines (aside from the one listed) should be included. Although much of the information remains the same, this would reflect on the document's incorporation of the latest information.

Add:
2015 American Heart Association Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care:
Part 5: Adult Basic Life Support and Cardiopulmonary Resuscitation Quality: 2015 American Heart Association Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care
Monica E. Kleinman, Erin E. Brennan, Zachary D. Goldberger, Robert A. Swor, Mark Terry, Bentley J. Bobrow, Raúl J. Gazmuri, Andrew H. Travers, and Thomas Rea
Circulation. 2015;132:S414-S435, doi:10.1161/CIR.0000000000000259

2015 American Heart Association Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care:
Part 12: Pediatric Advanced Life Support: 2015 American Heart Association Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care
Allan R. de Caen, Marc D. Berg, Leon Chameides, Cheryl K. Gooden, Robert W. Hickey, Halden F. Scott, Robert M. Sutton, Janice A. Tijssen, Alexis Topjian, Élise W. van der Jagt, Stephen M. Schexnayder, and Ricardo A. Samson
Circulation. 2015;132:S526-S542, doi:10.1161/CIR.0000000000000266
Accept comment and amend references accordingly.

Orientation for New Work Group Members – Mary will send a Doodle poll for new members to schedule an orientation.

Adjourn – The meeting adjourned at 2:33 pm.

Next Meeting – July 11

The meeting record was respectfully prepared by NASEMSO Program Manager Mary Hedges.