Collaborative Protocol 2019 Protocol Update Summary

This is a summary of changes, please review each protocol in its entirety and complete all additional training assigned by your region

DRAFT 7/30/19
Additional Comparison added against PDF of 2017 protocols
Updated 9/11/19
• Updated to be consistent with BLS Protocols
• Bullets are used, many processes are not sequential and should be performed as most appropriate for patient care
• Regional protocols and policies may accompany these protocols
• “If equipped and trained” means that you have been regionally approved and trained for said intervention (reminder)
• BLS interventions should be completed before ALS interventions (reminder)
Overview

- Comparison done against Protocol App
  - Categories not included on App
- CFR and all provider levels added- any treatments within the CFR scope of practice were moved to this new level from EMT throughout the protocols.
- AEMT treatments within their scope of practice added
- Order and reference numbers changed throughout
  - A in front of the protocol # indicates Adult
  - P in front of the protocol # indicates Pediatric
  - No A or P in front of the protocol # indicates that it applies to adult and pediatric

**Recommend having a copy of protocols to review while going through slides**

*App update will be forthcoming*
Overview

• No longer need to dilute Amiodarone when giving as a bolus in cardiac arrest

• New Medications (Regional Options)
  – Acetaminophen
  – Ibuprofen

• IN – Changed to intranasal in multiple protocols

• Pediatric definition changed

• AEMT level treatments added within their scope of practice

• Multiple new protocols, many as a result of striving for consistency between ALS and BLS protocols
New Protocols

P2.1.0 Cardiac Arrest: General Approach - Pediatric
A2.2 Foreign Body Obstructed Airway – Adult
P2.2 Foreign Body Obstructed Airway – Pediatric
A2.4 Respiratory Arrest/Failure - Adult
P2.4 Respiratory Arrest/Failure- Pediatric
P3.1 ALTE/BRUE – Pediatric
Applies to pediatric patients under 2 years of age
3.2 Altered Mental Status
P3.4.1 Behavioral Emergencies- Agitated Patient Pediatric
New Protocols

- P3.7 Cardiac Related Problem-Pediatric
- A3.10.0 Dif Breathing: Asthma/COPD/Wheezing-Adult (Combined acute Asthma and COPD)
- 3.12 Fever-Adult
- P3.12 Fever-Pediatric
- P3.29 Technology Assisted Children
- 3.30 Total Artificial Heart
- 4.10 Suspected Spinal Injuries
• Table of contents changed to Index
• Index updated to incorporate changed or new resources and protocols that are new or combined
Acknowledgements

- Changes in paper copy, not in app
- Added acknowledgement for State Emergency Medical Services, State Emergency medical services for children and the BLS protocols advisory and writing group
- Removed editing acknowledgements
Introduction

• Changes in paper copy this is not in app
  – Changed to introduction from Regional Medical Directors to just introduction

• Added
  – These protocols have been updated to be consistent with the Statewide BLS Protocols. Advanced providers are also responsible for, and may implement, the standing orders indicated for BLS care. Protocols are listed for each provider level and STOP lines indicate the end of standing orders.
  – These protocols do not supplant regionally required equipment specifications or the items required under Public Health Law and Regulations.
  – These protocols should not serve as a demonstration of required equipment or training, as regional and agency variations will exist
• Added
  – Each level now indicates standing order for that level and the wording that these are also standing orders for all levels of credentialed above that level
  – Regions will determine the requisite training that providers must review prior to utilizing these protocols
  – Definition for “if equipped and trained”

• Deleted
  – There is a training module available that must be reviewed by very advanced provider prior to utilizing these protocols
• Moved from Key points considerations to top
  – BLS interventions should be completed before ALS interventions. Bullets are used throughout this document. Many processes are not sequential and tasks should be performed as most appropriate for patient care. Regional protocols and policies may accompany these protocols.
Pediatric Definition and Discussion

• General Guideline
  – Use GOOD clinical judgement
  – Pediatric protocols should be considered for patient who have not yet reached their 15th birthday
  – Previous protocols followed AHA guidance on signs of puberty to differentiate adult/pediatric
  – Utilize Medical Control if unsure

• Weight based dosing for medication
  – Per-kilogram basis
  – Adult dose as the pediatric maximum dose
  – Strongly recommended to use length based resuscitation tapes or similar
    • Ideal weight should be used in cases of obesity (reminder)
• Previously Medical Control Agreement in paper copy not in app

• These protocols are intended to guide and direct patient care by EMS. They reflect the current evidence-based practice and consensus of content experts. These protocols are not intended to be absolute treatment documents, rather, as principles and directives which are sufficiently flexible to accommodate the complexity of patient management. No protocol can be written to cover every situation that a provider may encounter, nor are protocols a substitute for good judgment and experience. Providers are expected to utilize their best clinical judgment and deliver care and procedures according to what is reasonable and prudent for specific situations. However, it will be expected that any deviations from protocol shall be documented and reviewed, according to regional procedure.

• **THESE PROTOCOLS ARE NOT A SUBSTITUTE FOR GOOD CLINICAL JUDGEMENT**
Patient Care Responsibility

• Moved to a resource from beginning of paper copy
General Approach to the EMS Call (New)

- Applies to adult and pediatric patients
- Provides standard framework for approaching the scene
- Use good clinical judgement and BE SAFE!
- Mirrors BLS Protocol
General Approach to the Patient (New)

• Applies to adult and pediatric patients
• Provides standard framework for approaching the patient
• Use good clinical judgement and BE SAFE!
• Mirrors BLS Protocol
General Approach to Safety Restraining Devices (New)

- Applies to adult and pediatric patients
- Provides standard framework for patient transport
- **No longer permissible to have parent or caregiver hold a child**
  - Patients should be secured on stretcher and harness straps used
  - Child’s own safety seat can be used when available and intact
    - If ambulance not equipped with one, recommended to purchase approved child safety seat or restraint
- Routinely train on children safety seats/restraints
  - Use in accordance with manufacturers’ recommendations
- Mirrors BLS Protocol
General Approach to Transportation (New)

- Applies to adult and pediatric patients
- Provides standard framework for patient transport
- Scene safety ongoing continual situational awareness
- Consideration for ALS intercept and Air Medical should be done based on patient needs and regional capabilities
- Transport to the closest appropriate receiving hospital even those in extremis
  - May not be the closest geographically
- Ensure ongoing patient assessment
- Carefully consider use of lights and sirens - Risk versus Benefit
- Provide pre-arrival report
- Mirrors BLS protocol
- Utilize Medical Control if needed
• Criteria Removed

• **Moved to Key Points/Considerations** - Artifact from vibrations in a moving ambulance may compromise the effectiveness of the AED

• Compressions in moving ambulances pose a significant danger to providers, are less effective, and should be avoided

• **Moved to Key Points/Considerations** - Consider mechanical CPR adjuncts when available for provider safety in moving ambulances (e.g. AutoPulse®, LUCAS®, LifeStat®, Thumper®, or other FDA approved device) Airway adjuncts changed to naso-and/or oropharyngeal airway
• **New**
  
• Outlines the current guidelines for pediatric CPR

• Intubation is not necessary if oxygenating and ventilating patient well with BLS airway management
• Removed Airway management and appropriate oxygen therapy via BVM as it is included in general cardiac arrest care in both the adult and pediatric protocol
• Amiodarone 300 mg IV (dilute in 20 mL of normal saline).
  – **Removed dilute in 20 mL of normal saline**

• Removed under medical control considerations
  - If equipment is available to do so, consider double sequential defibrillation if ventricular fibrillation persists after completion of 5 shocks
P2.1.2 Ventricular Fibrillation or Pulseless V Tachycardia - Pediatric

- Removed as it is part of General Cardiac Arrest Care
  - AED defibrillation, as indicated (CC/Paramedic may substitute manual defibrillation as indicated below)
  - Airway management and appropriate oxygen therapy via BVM

- Advanced
  - Defibrillate as appropriate added

- Paramedic
  - Dilute amiodarone in 20 mL of normal saline removed

- Key Points/Considerations
  - Intubation is not necessary if oxygenating and ventilating patient well with BLS airway management added
  - The use of a particular mechanical CPR device may be contraindicated in the pediatric patient; refer to manufacturer’s recommendation – Removed as all equipment should be utilized per manufacturers guidelines (Removed)
• New Protocol for patients with complete or partial airway obstruction
• Separate protocols for Adult and Pediatric
• Follows current FBAO guidelines
2.3 Obvious Death (Adult or Pediatric)

- Name changed from “Determination of Obvious Death”
- Removed and included in Advance Directives Protocol under Resources
  - Copies of the MOLST form should be honored
  - A copy of the DNR, MOLST, or eMOLST form should be attached to the PCR and retained by the agency whenever practical
  - If a patient with a DNR (stand-alone DNR form, or as directed by a MOLST or eMOLST form) is a resident of a nursing home and expires during transport, contact the receiving staff to determine if they are willing to accept the patient back to that facility. If not, return the patient to the sending facility. A copy of the DNR, MOLST, or eMOLST must be attached to the PCR and retained by the agency for all transports from a sending facility to a nursing home
  - The eMOLST form may be printed and affixed with electronic signatures. Electronic signatures on the eMOLST form are considered valid signatures
• Mirrors BLS protocol
  – Open the airway using the head-tilt/chin-lift or modified jaw-thrust maneuver
  – Remove any visible airway obstruction by hand
  – Clear the airway of any accumulated secretions or fluids by suctioning
  – Provide positive pressure ventilation using a bag-valve mask
    • If ventilations are not successful, refer immediately to the “Extremis: Foreign Body Obstructed Airway” protocol
  – Level-appropriate airway management with use of airway adjuncts and bag-valve mask device, as indicated, including suction as needed, if available
    • Bag-valve mask should be connected to supplemental oxygen, if available
  – Ventilate every 5-6 seconds (adult patient)
  – Each breath is given over 1 second and should cause visible chest rise

• Additional Key Points/Considerations
Mirrors BLS protocol

- Open the airway using the head-tilt/chin-lift or modified jaw-thrust maneuver
- Remove any visible airway obstruction by hand
- Clear the airway of any accumulated secretions or fluids by suctioning
- Provide positive pressure ventilation using a bag-valve mask
  - If ventilations are not successful, refer immediately to the “Extremis: Foreign Body Obstructed Airway – Pediatric” protocol
- Level-appropriate airway management with use of airway adjuncts and bag mask device, as indicated, including suction as needed, if available
  - Bag-valve mask should be connected to supplemental oxygen, if available
- Ventilate every 3-5 seconds
- Each breath is given over 1 second and should cause visible chest rise
- Attach pulse oximeter if available and have a goal of oxygen saturation ≥ 94%
  - See also, “Resources: Oxygen Administration and Airway Management” protocol

Additional Key Points/Considerations
• **Added under Advanced Level**
  - If needed, administer normal saline to a total of 2 L to maintain MAP > 65 mmHg or SBP > 100 mmHg, provided there is no concern of pulmonary edema
2.6 Termination of Resuscitation

• **Added under Key Points/Considerations**
  – Consider the EtCO2 when discussing termination with medical control
  – Whenever possible, termination of resuscitation should be done when the patient is not in a public place

• **Removed points on advanced directives**
  – see resource “Advanced Directives”
• New Protocol- Mirrors BLS Protocol
  – Apparent Life-Threatening Event (ALTE) / Brief Resolved Unexplained Events (BRUE)
  – ALTE/BRUE is an episode in an infant or child less than 2 years old which is frightening to
  the observer, has now resolved and is characterized by one or more of the following:
    • Apnea (central or obstructive)
    • Skin color change: cyanosis, erythema (redness), pallor, plethora (fluid overload)
    • Marked change in muscle tone
    • Choking or gagging not associated with feeding or a witnessed foreign body aspiration
    • Seizure-like activity
P3.1 ALTE/BRUE – Pediatric (continued)
Applies to pediatric patients under 2 years of age

• **All levels of Care**
  – Airway management and appropriate oxygen therapy
  – Check pupils and, if constricted, consider “General: Opioid (Narcotic) Overdose” protocol
  – Check blood glucose level, if equipped
    • Refer to “General: Altered Mental Status” protocol, if necessary
  – Ongoing assessment of the effectiveness of breathing
    • Refer to “Extremis: Respiratory Arrest / Failure - Pediatric” protocol, if necessary

• **Key Points/Considerations**
  – NOTE: Most patients will appear stable and exhibit a normal physical exam. However, this episode may be a sign of underlying serious illness or injury and further evaluation by medical staff is strongly recommended. See “Resources: Refusal of Medical Attention” protocol if the caregiver wishes to refuse transportation.
3.2 Altered Mental Status - New

• **Mirrors BLS Protocol**
  - For the undifferentiated patient with altered mental status
    - Including, but not limited to, BLS management of hypoglycemia
  - See also the following collaborative protocols, as indicated:
    - General: ALTE/BRUE – Pediatric
    - General: Behavioral Emergencies: Agitated Patient
    - General: Behavioral Emergencies: Excited Delirium
    - General: Hypoglycemia – Adult
    - General: Hypoglycemia – Pediatric
    - General: Opioid (Narcotic) Overdose
    - General: Poisoning / Overdose: Undifferentiated – Adult
    - General: Poisoning / Overdose: Undifferentiated – Pediatric
• All levels
  – Airway management and appropriate oxygen therapy
  – Check pupils and, if constricted, consider “General: Opioid (Narcotic) Overdose” protocol
  – Check blood glucose level, if equipped and safe to do so
    • If blood glucose is known or suspected to be below 60 mg/dL and patient can self-administer and swallow on command:
      – Give one unit dose (15-24 grams) of oral glucose, or another available carbohydrate source (such as fruit juice or non-diet soda)
    • If the patient is unable to swallow on command, or mental status remains altered following administration of oral glucose:
      – Do not delay transport
  – Ongoing assessment of the effectiveness of breathing
    • Refer to “Extremis: Respiratory Arrest/Failure” or “Extremis: Pediatric Respiratory Arrest/Failure,” protocol, if necessary
3.2 Altered Mental Status – New (continued)

- **Advanced, CC, Paramedic**
  - See etiology-specific protocols cross referenced in the “CRITERIA” section above

- **Key Points/Considerations**
  - Assess the scene for safety and, if it is not, retreat to a safe location and obtain police assistance
  - Consider closed head injury and non-accidental trauma, especially in children
  - Consider drug ingestion, meningitis/encephalitis
• Educational information added regarding MOLST, eMOLST, DNR forms
• Reminder to look for approved document, bracelet or necklace
• If presented with Health Care Proxy or Living will, or in-hospital DNR contact medical control if you need direction
• Forms should be attached to PCR
• **Previously Allergic Reaction and Anaphylaxis**

• **Added Criteria**
  – Anaphylaxis is a rapidly progressing, life threatening allergic reaction; not simply a rash or hives (previously this was in Key Points/Considerations)

• **General Information added for all levels**
  – Allow the patient to maintain position of comfort
  – Ongoing assessment of the effectiveness of breathing
    • Refer to the “Extremis: Respiratory Arrest/Failure – Adult” protocol, if necessary
  – Airway management and appropriate oxygen therapy
If SEVERE respiratory distress, facial or oral edema, and/or hypoperfusion:

- Administer the epinephrine autoinjector (e.g. EpiPen®), as available and as trained
  - Adult autoinjector 0.3 mg IM (e.g. EpiPen®) if ≥ 30 kg*

If patient has a history of anaphylaxis and has an exposure to an allergen developing respiratory distress and/or hypoperfusion and/or rash: (no change)

- Administer the epinephrine autoinjector (e.g. EpiPen®), as available and as trained
  - Adult autoinjector 0.3 mg IM (e.g. EpiPen®) if ≥ 30 kg*

If the patient does not improve within 5 minutes, you may repeat epinephrine once
• EMT Level
  – Added
    • The Syringe Epinephrine for EMT may be substituted for an autoinjector
    • If the patient is wheezing, albuterol 2.5 mg in 3 mL (unit dose), via nebulizer; may repeat to a total of three doses

• Advanced Level
  – Epinephrine (1:1,000 / 1mg/mL) 0.3 mg IM, ONLY if patient is hypotensive and/or is developing respiratory distress w/airway swelling, hoarseness, stridor, or wheezing. May repeat every 5 minutes if these symptoms persist
  – Added NS 500ml Bolus if SBP is \(< 100 \text{ (was < 90) mmHg or MAP<65 (was < 60) \) ;May repeat up to a total of 2 L if lung sounds remain clear (Removed recheck lung sounds)\n    • Goal SBP > 100 mmHg and MAP > 65 mmHg
• CC and Paramedic Level
  – Epinephrine moved to advanced level

• Medical Control Considerations
  – Added
    • Additional epinephrine for levels with limited standing orders (as available and as trained)
      – Adult 0.3 mg IM

• Key Points/Considerations
  – Added
    • Though a previous history of anaphylaxis is an important indicator for treatment, providers should be aware that anaphylaxis may develop in patients with no prior history
• **Added Key Points/Considerations (continued)**
  
  – Anaphylaxis may present with shock associated only with GI symptoms. In the setting of a known exposure to an allergen associated with shock, nausea, vomiting, abdominal pain, and/or diarrhea, consider anaphylaxis in consult with medical control.
  
  – *If equipped and trained*
• Changes mirror those with the Adult Anaphylaxis protocol with the following exceptions:

  – Dose:
    • Adult autoinjector 0.3 mg IM (e.g. EpiPen®) if $\geq$ 30 kg*
    • Pediatric autoinjector 0.15 mg IM (e.g. EpiPen Jr®) if $< 30$ kg*

  – Medical Control Considerations
    • Epinephrine (as available and as trained) for indications other than those above
– Key Points/Considerations

• Do not administer IV epinephrine without consulting online medical control

• Though a previous history of anaphylaxis is an important indicator for treatment, providers should be aware that anaphylaxis may develop in patients with no prior history

• Infant auto-injector (0.1 mg IM) may be substituted for pediatric patients < 15 kg, if available.
A3.4.1 Behavioral Emergencies- Agitated Patient Adult

• All Levels
  – Added
    • Verbal de-escalation (utilizing interpersonal communication skills)
    • If verbal de-escalation is not successful or not possible, apply soft restraints, such as towels, triangular bandages, or commercially available soft medical restraints, only if necessary to protect the patient and others from harm
    • See also, “General: Altered Mental Status” protocol as indicated

• Additional Key Points/Considerations added
  – Consider hypoxia, hypoperfusion, hypoglycemia, head injury, intoxication, other drug ingestion, and other medical/traumatic causes of abnormal behavior
  – Consider the possibility of a behavioral/developmental disorder such as autism spectrum disorder or mental health problems
P3.4.1 Behavioral Emergencies- Agitated Patient Pediatric (NEW)

• This protocol is intended to be used with patients who are deemed to pose a danger to themselves or others

• All levels
  – Call for law enforcement
  – Airway management, vital signs, and appropriate oxygen therapy, if tolerated
  – Verbal de-escalation (utilizing interpersonal communication skills)
  – If verbal de-escalation is not successful or not possible, apply soft restraints, such as towels, triangular bandages, or commercially available soft medical restraints, only if necessary to protect the patient and others from harm
• EMT, Advanced, CC, Paramedic Level
  – Check blood glucose level, if equipped, as soon as you are able to safely do so. If abnormal, refer to the “General: Hypoglycemia – Pediatric” protocol, as indicated
  – See also, “General: Altered Mental Status” protocol as indicated

• Medical Control Considerations
  – Midazolam (Versed) 0.1 mg/kg IV or IM
  – Ketamine* 0.5-2 mg/kg IV or IM
• **Key Points/Considerations**
  
  – Assess the scene for safety and, if it is not, retreat to a safe location and obtain police assistance
  
  – *Ketamine may be administered by paramedics only*
  
  – **Patient must NOT be transported in a face-down position**
  
  – Consider hypoxia, hypoperfusion, hypoglycemia, head injury, intoxication, other drug ingestion, and other medical/traumatic causes of abnormal behavior
  
  – Consider the possibility of a behavioral/developmental disorder such as autism spectrum disorder or mental health problems
• **Key Points/Considerations (continued)**
  
  – A team approach should be attempted for the safety of the patient and the providers

  – If the patient is in police custody and/or has handcuffs on, a police officer should accompany the patient in the ambulance to the hospital. The provider must have the ability to immediately remove any mechanical restraints that hinder patient care at all times
A3.4.2 Behavioral Emergencies: Excited Delirium

• Under criteria added the word Adult before patients
  – To define it is for adults only

• All levels of care
  – Airway management, vital signs, and appropriate oxygen therapy, if tolerated (previously worded ABC’s and vital signs as tolerated)
  – Verbal de-escalation (utilizing interpersonal communication skills)
  – If verbal de-escalation is not successful or not possible, apply soft restraints, such as towels, triangular bandages, or commercially available soft medical restraints, only if necessary to protect the patient and others from harm
  – See also, “General: Altered Mental Status” protocol as indicated
3.5 Carbon Monoxide Exposure- Suspected

• CFR and all levels
  – Added
    • Any patient with suspected carbon monoxide poisoning should receive high flow oxygen via non-rebreather mask (NRB)

• EMT, Advanced, CC, Paramedic
  – Added and removed brand name
    • An objective carbon-monoxide evaluation tool may be used to guide therapy, if available
    • Any pregnant (or potentially pregnant) woman should receive high flow oxygen and be transported to the hospital
  – Changed the wording to strongly encourage from consider transport if CO levels are not decreasing under Asymptomatic patients.
3.5 Carbon Monoxide Exposure- Suspected (continued)

– Symptomatic Patients
  • Added
    – *If there is no soot in the airway, consider CPAP* 5-10 cm H2O (if the device delivers 100% oxygen)*
      » For the adult patient
      » For older pediatric patients consider CPAP, as equipment size allows if available and trained

• Key Points/Considerations
  – Wording change from consider direct transport to hyperbaric center to consider contacting medical control to discuss appropriate hospital destination if patient meets listed criteria
  – Removed BiPAP  may be used in place of CPAP, as training and equipment allow
P3.6.1 Bradycardia - Pediatric

- **All Levels**
  - Removed
    - If symptomatic bradycardia persists start CPR

- **Paramedic**
  - Removed
    - Vascular access if needed
      - This is covered under Vascular Access Protocol
• CC, Paramedic
  – UNSTABLE-Added
  • If irregularly irregular, cardioversion may be initiated at 200 Joules
• **Previously Acute Coronary Syndrome – Suspected Cardiac Chest Pain**

• **Criteria**
  – Added
    • For patients presenting with suspected cardiac chest pain; angina or an anginal equivalent
    • For the patient with a confirmed STEMI see, “General: ST Elevation MI (STEMI)” protocol as soon as confirmed

• **CFR and All Levels**
  – Moved to this level
    • Airway management and appropriate oxygen therapy
    • Aspirin 324 mg (4 x 81 mg tabs) chewed, only if able to chew*
• EMT
  – Added
    • For patients with a STEMI, confirmed by medical control, begin transport to a facility capable of primary angioplasty if estimated arrival to that facility is within 90 minutes of patient contact or if directed by medical control or regional procedure
    – Added if patient request before assist patient with Nitroglycerin......
    – Removed additional nitroglycerin doses for the EMT as it is covered under Medical Control Considerations

• Advanced
  – Moved to Advanced Level
    • Nitroglycerin 0.4 mg SL per dose, as needed, 5 minutes apart, provided the patient’s systolic BP is > 120mmHg or MAP > 90 mmHg
• **Medical Control Considerations**
  
  – Added
  
  • Consider medical control consultation, as needed, for determination of most appropriate destination facility

• **Key Points/Considerations**
  
  • *If equipped and trained for CFR level (referring to ASA administration)*
  • **If equipped, trained, and regionally approved (referring to 12-ECG by EMT)**
• Criteria

– Pediatric patients who have known heart disease and/or have been operated on for congenital heart disease have medical emergencies that are different from adults with heart disease. Pediatric patients with congenital heart disease may:
  • have baseline oxygen saturations between 65 and 85% rather than above 94% (ask care provider about patient’s usual oxygen saturation level)
  • develop sudden heart rhythm disturbances
  • be fed by either a nasogastric tube (tube in nose) or by gastrostomy (tube through abdominal wall)
  • not have a pulse or accurate blood pressure in an extremity after heart surgery
  • have a pacemaker
• All Levels

– ABCs and vital signs, including blood pressure
– Keep patient on continuous pulse oximeter monitoring, if available (will monitor both heart rate and SpO₂)
– Ask parents if the patient has a heart condition and/or has been operated on (look for a scar in the middle or side of chest); ask what type of heart condition it is
– Keep the child in a somewhat upright position to enable optimal breathing, or allow child to be in position of comfort
– Ask parents what the child’s usual oxygen saturation is and provide only sufficient oxygen to bring the SpO₂ to his/her usual baseline
– Ask parent if the patient has a pacemaker and/or internal defibrillator
• All Levels (continued)
  – Do not give anything by mouth
  – If patient has a fever, minimize the child’s clothing and keep the ambulance at a comfortable temperature

• EMT, Advanced, CC, Paramedic
  – Assess for signs of poor perfusion (such as prolonged capillary refill > 2 seconds, cool and dusky distal extremities, poor radial and dorsalis pedis pulses, and/or hypotension)
  – If patient has a gastrostomy tube, suggest to parent/caregiver to open the tube to air or aspirate stomach contents to improve the child’s ability to breathe
  – Obtain vital signs including blood pressure every 15 minutes
• EMT, Advanced, CC, Paramedic (continued)
  – If patient has altered mental status, obtain fingerstick blood glucose and refer to the “General: Hypoglycemia – Pediatric” and/or “General: Altered Mental Status” protocol, as indicated
  – Key Points/Considerations
    • Chest pain in children is rarely a sign of a cardiac condition (it is more frequently related to conditions such as costochondritis or pleuritis)
    • Notify the destination hospital ASAP and state that the patient has signs of cardiac failure or decompensation
    • Infants with congenital heart disease may present with symptoms very similar to septic shock (poor perfusion, poor distal pules, tachypnea, or dusky appearance)
    • Pediatric patients with a congenital heart condition often have oxygen saturations in the 65-85% range. Too much oxygen may be detrimental and result in worsening circulation
• **Key Points/Considerations (continued)**
  
  • Pediatric patients with a cardiac condition may have sudden arrhythmias that require treatment, including SVT. Full cardiopulmonary monitoring should be done by ALS
  
  • Transport to hospital should not be delayed in ill pediatric cardiac patients

  \[
  \begin{align*}
  < 1 \text{ mo} & \quad < 1 \text{ yr} & \quad 1 - 10 \text{ yr} \\
  \text{Systolic Hypotension:} & \quad < 60 & \quad < 70 & \quad (< 70 + 2 \times \text{age OR } < 90)
  \end{align*}
  \]
• CFR and all provider Levels added
  – Moved to this Level
    • Airway management and appropriate oxygen therapy
    • Aspirin 324 mg (4 x 81 mg tabs) chewed, only if able to chew*

• Advanced
  – Added as bullet under fluid bolus
    • Goal SBP > 100 mmHg and MAP > 65 mmHg

• Key Points/Considerations
  – Removed key points regarding Aspirin
• **Criteria**
  – Added
    • Childbirth is a natural phenomenon and the type of delivery cannot be regulated by your level of certification – if an CFR is faced with anything but a normal delivery, please feel comfortable calling medical control for assistance

• **CFR and ALL Levels**
  – Added
    • Maintain firm grasp on infant

• **Key Points/Considerations**
  – Added
    • Obtain additional help for multiple births, as needed
• Previously neonatal resuscitation

• Criteria
  – Added
    • For the evaluation and resuscitation of babies just delivered

• CFR and All Provider Levels
  – Changes under bullet – If the respirations remain absent......
    • Removed –Gently insert oral airway
    • Added- with a volume just enough to see chest rise
    • Changed number of seconds before adding O2 to 30-60 seconds from 90 seconds

Clear the infant’s airway by suctioning the mouth and nose gently with a bulb syringe, and then ventilate the infant at a rate of 40–60 breaths/minute with an appropriate BVM as soon as possible, with a volume just enough to see chest rise. Start with room air. If no response after 30–60 seconds of effective ventilation add oxygen.
• **Key Points/Considerations**
  
  **Added**
  - Hypothermia and hypoglycemia may decrease the likelihood of successful resuscitation
  
  **Removed**
  - Place pulse oximeter probe on right wrist/palm
• Combined Asthma and COPD Protocol

• Criteria Added
  – Patients with effective but increased work of breathing with wheezing
    • Excludes traumatic causes of dyspnea
    • Excludes pneumothorax

• CFR and All Levels
  – Assess for foreign body airway obstruction
  – Refer immediately to the “Extremis: Foreign Body Obstructed Airway – Adult” protocol, if indicated
  – Ongoing assessment of the effectiveness of breathing
    • Refer to the “Extremis: Respiratory Arrest / Failure – Adult” protocol, if necessary
• CFR and All Levels (continued)
  – Administer supplemental oxygen; refer to the “Resources: Oxygen Administration and Airway Management” protocol
  – Assist patient with his or her own medications, see “Resources: Prescribed Medication Assistance” protocol
  – Facilitate transportation, ongoing assessment, and supportive care

• EMT
  – If patient is wheezing:
    • Administer albuterol 2.5 mg in 3 mL (unit dose) via nebulizer*
      – Oxygen powered nebulizer devices for use in accordance with manufacturer specifications (typically ~6-8 LPM)
    • May repeat to a total of three doses if symptoms persist
• EMT (continued)
  – Continuous Positive Airway Pressure (CPAP) 5-10 cm H2O, as needed*
  – If the patient is in severe distress, see medical control considerations for use of epinephrine

• Advanced
  – Added
    • Epinephrine (1:1,000 / 1mg/mL) dose 0.3 mg IM for severe distress
      – If severe distress persists, may repeat in 5 minutes
    • Albuterol 2.5 mg in 3 mL (unit dose), via nebulizer or ET tube nebulizer; may repeat to a total of three doses for wheezing
• **Medical Control Considerations**
  – Added racemic epinephrine
    • Epinephrine (1:1,000/1 mg/mL) 3 mg via nebulizer or racemic epinephrine (2.25%) 0.5 mL in 3 mL of normal saline via nebulizer

• **Key Points/Considerations**
  – Added
    • Allow the patient to maintain position of comfort when safe to do so
      – Do not force the patient to lie down
      – Do not agitate the patient
  – Wheezing does not always indicate asthma. Consider allergic reaction, airway obstruction, pulmonary edema
    • Removed COPD as it is incorporated in this protocol
  – Do not delay transport to complete med. administration
• **CFR and all levels**
  – **Added**
    • ABCs and vital signs
    • Sit patient upright, if possible
    • Administer supplemental oxygen; refer to the “Oxygen Administration and Airway Management” protocol
    • Facilitate transportation, ongoing assessment, and supportive care

• **Medical Control Considerations**
  – Nitroglycerin option for Advanced
• **Criteria**
  
  – Added
    
    • Patients with increased work of breathing (retractions, grunting, nasal flaring) and prolonged expiration and/or poor air movement
      
      – Excludes traumatic causes of dyspnea
      
      – Excludes pneumothorax
      
      – Excludes stridor/croup (see “Difficulty Breathing: Stridor – Pediatric” protocol)

• **CFR and all levels**
  
  – Added
    
    • Assess for foreign body airway obstruction
      
      – Refer immediately to the “Extremis: Foreign Body Obstructed Airway – Pediatric” protocol, if indicated
• CFR and all levels (continued)
  – Added
    • Ongoing assessment of the effectiveness of breathing
      – Refer to the “Extremis: Respiratory Arrest/Failure – Pediatric” protocol, if necessary
    • Allow patient to determine position of comfort. If patient cannot do so, have patient sit upright or elevate the head of the stretcher
    • Administer supplemental oxygen; refer to the “Resources: Oxygen Administration and Airway Management” protocol
    • Assist patient with his or her own asthma medications (see “Resources: Prescribed Medication Assistance” protocol), as appropriate
    • Facilitate transportation, ongoing assessment, and supportive care
P3.10.2 Dif Breathing: Asthma/Wheezing – Pediatric continued

• EMT and Advanced
  – Added LPM and guidance for nebulizers
    • Oxygen powered nebulizer devices for use in accordance with manufacturer specifications (typically ~6-8 LPM)
    • For older pediatric patients consider CPAP for EMT, as equipment size allows if available and trained

• Medical Control Considerations
  – For the EMT and Advanced:
    • Additional albuterol
    • Epinephrine for critical asthma attack* (EMT Syringe Epinephrine kits or autoinjector)
  – Added racemic epinephrine
    • Epinephrine (1:1,000/1 mg/mL) 3 mg via nebulizer or racemic epinephrine (2.25%) 0.5 mL in 3 mL of normal saline via nebulizer
• **Key Points/Considerations**
  
  – Added

  • Expiratory wheezing does not always indicate asthma. Consider allergic reaction, airway obstruction, pulmonary edema

  • In children under 2 yrs. old, bronchiolitis is the most common cause of wheezing. Bronchiolitis may not respond to albuterol. Gentle nasal suctioning is the primary treatment along with oxygen, particularly in infants.

  • Allow the patient to maintain position of comfort when safe to do so
    – Do not force the patient to lie down
    – Do not agitate the patient

  • Observe airborne and/or droplet precautions in appropriate patients, such as those with suspected pertussis (whooping cough)

  • Do not delay transport to complete medication administration

  • *If equipped and trained
P3.10.3 Dif Breathing: Stridor– Pediatric

• CFR and All Levels
  – Added
    • Assess for foreign body airway obstruction (*Wording different*)
      – Refer immediately to the “Extremis: Foreign Body Obstructed Airway – Pediatric” protocol, if indicated
    • Assess for anaphylaxis
      – Refer immediately to the “General: Anaphylaxis – Pediatric” protocol, if indicated
    • Ongoing assessment of the effectiveness of breathing
      – Refer to the “Extremis: Respiratory Arrest/Failure – Pediatric” protocol, if necessary
    • Administer supplemental oxygen; refer to the “Resources: Oxygen Administration and Airway Management” protocol (*Wording different*)
    • Consider high concentration, humidified, blow-by oxygen delivered by tubing or face mask held about 3-5 inches from face (as tolerated)
    • Facilitate transportation, ongoing assessment, pulse oximeter, and supportive care
P3.10.3 Dif Breathing: Stridor—Pediatric continued

• **Paramedic**
  – Added
    • Racemic Epinephrine dose
      – If SEVERE respiratory distress (severe stridor especially with drooling), epinephrine (1:1,000/1mg/mL) 3 mg via nebulizer or racemic epinephrine (2.25%) 0.5 mL in 3 mL of normal saline via nebulizer

• **Key Points/Considerations**
  – Added or changed wording
    • If the patient has stridor (inspiratory), it is often an upper airway problem (physiologic or mechanical obstruction)
    • Viral croup should be considered in children presenting with absent or low grade fever, barking cough, stridor, and/or sternal retractions
• **Key Points/Considerations (continued)**

  • If the patient has stridor (inspiratory), it is often an upper airway
    Epiglottitis should be considered in children with a high fever, muffled
    voice, tripod position, and/or drooling
      – A vaccination history should be obtained because unvaccinated children
        are at higher risk of epiglottitis
  
  • Agitating a child with croup or epiglottitis could cause a complete
    airway obstruction
  
  • Limit interventions that may cause unnecessary agitation in a child with
    stridor such as assessment of blood pressure in a child who can still
    breathe, cough, cry, or speak
3.11.1 Environmental- Cold Emergencies

- **CFR and All Levels**
  - Moved guidance for local cold injury and generalized hypothermia to this level
  - Under generalized hypothermia added
    - Especially for infants and young pediatric patients, cover the head with a cap or towel to decrease heat loss

- **EMT, Advanced, CC, Paramedic**
  - Changed anticipated time of transport to the hospital to 60 minutes from 30 minutes under Rewarming extremity

- **Key Points/Considerations**
  - Added
    - Pulse oxygenation measurement may be inaccurate if the patient is hypothermic. If the patient is cyanotic and in apparent respiratory distress, administer oxygen
3.11.2 Environmental- Heat Emergencies

• **Advanced, CC, Paramedic**
  – Added “For adult patient only” before consider normal saline 500 cc IV bolus; may repeat up to 2 liters as needed, if there are no signs of pulmonary edema and no concern for water intoxication*
• **Criteria**

  – Adult patient with the following:
    • Temperature > 100.4°F (38°C) – **OR** –
    • Temperature ≥ 2°F (1°C) over baseline

  – **AND** –
    • Suspected infection – **OR** –
    • Recipient of a blood / blood product transfusion

  – Patient has not had a total dose of >650 mg of acetaminophen (either acetaminophen or an acetaminophen containing product) or > 400 mg of ibuprofen within the last 4 hours
3.12 Fever-Adult (continued)

- **EMT**
  - ABCs and vital signs, to include SpO2 and temperature*
  - Airway management and appropriate oxygen therapy

- **Advanced**
  - Large bore vascular access
  - Normal saline 500 mL bolus; may repeat once, if lung sounds remain clear (no concerns for pulmonary edema)
  - If able to tolerate oral fluid consider one of the following:
    - Acetaminophen 650 mg/20.3 mL PO (2–325 mg/10.15 mL PO unit doses)*
    - Ibuprofen 400 mg/20 mL PO (4–100 mg/5 mL PO unit doses)*
• **CC, Paramedic**
  – Consider cardiac monitor, continuous SpO₂
  – Consider a 12-lead ECG if appropriate

• **Medical Control Considerations**
  – Additional acetaminophen 325 mg/10.15 mL PO (1 additional – 325 mg/10.15 mL PO unit dose)
  – Additional ibuprofen 100 mg/5 mL PO (1 or 2 additional – 100 mg/5 mL PO unit dose)

• **Key Points/Considerations**
  – *If equipped and trained
Key Points/Considerations (continued)

- *If equipped and trained
- Acetaminophen contraindications (unless medical control approved):
  - Hx of liver problems / acute liver failure
  - Acute liver inflammation due to hepatitis C virus
  - In the setting of shock or overdose (especially acetaminophen overdose)
- Ibuprofen contraindications (unless medical control approved):
  - Severe renal impairment (dialysis dependent)
  - In the setting of shock or overdose
  - Prescribed ‘blood thinners’ (i.e. warfarin / Coumadin)
  - Allergy to any NSAID / aspirin
  - Pregnancy (late)
• **Key Points/Considerations (continued)**
  
  – Administer oxygen therapy utilizing the appropriate delivery device and titration to maintain SpO2 > 92%
  
  – If fever is due to suspected viral or bacterial infection, refer to protocol “General: Severe Sepsis / Septic Shock” protocol and treat as indicated
  
  – If fever is due to suspected reaction to blood / blood product transfusion, immediately stop the transfusion, replace all tubing (save for receiving hospital blood bank) and maintain IV access with new bag of 0.9% NaCl, contact medical control, and treat per appropriate protocol
    
    • Temperature monitoring, take initial and every 10 minutes
    
    • Cardiac monitor, continuous SpO2 and continuous pCO2 monitoring
    
    • Consider a 12-lead ECG if appropriate
P3.12 Fever-Pediatric (NEW)

• **Criteria**
  – Adult patient with the following:
    • Temperature > 100.4°F (38°C) – OR –
    • Temperature ≥ 2°F (1°C) over baseline
  – AND –
    • Suspected infection – OR –
    • Recipient of a blood / blood product transfusion
  – Patient has not had a dose of acetaminophen (either acetaminophen or an acetaminophen containing product) or ibuprofen within the last 4 hours
P3.12 Fever-Pediatric (continued)

• EMT
  – ABCs and vital signs, to include SpO2 and temperature*
  – Airway management and appropriate oxygen therapy
  – Check blood glucose level, if equipped. If abnormal, refer to the “General: Hyperglycemia – Pediatric” or “General: Hypoglycemia – Pediatric” protocol, and treat as indicated

• Advanced
  – If able to tolerate oral fluid consider one of the following
  – Acetaminophen 15 mg / kg PO* or: (follow weight based dosing chart in protocol)
  – Ibuprofen 10 mg/kg PO* or: (follow weight based dosing chart in protocol)
• **CC, Paramedic**
  – Consider cardiac monitor, continuous SpO2
  – If indications of hypoperfusion, refer to the “General: Sepsis/Shock/Hypoperfusion – Pediatric” protocol and treat as indicated

• **Medical Control Considerations**
  – Acetaminophen 10–15 mg/kg/dose if given Ibuprofen
  – Ibuprofen 10 mg/kg/dose if given Acetaminophen
Key Points/Considerations (continued)

- *If equipped and trained

- Acetaminophen contraindications (unless medical control approved):
  - Hx of liver problems / acute liver failure
  - Acute liver inflammation due to hepatitis C virus
  - In the setting of shock or overdose (especially acetaminophen overdose)

- Ibuprofen contraindications (unless medical control approved):
  - Severe renal impairment (dialysis dependent)
  - In the setting of shock or overdose
  - Prescribed ‘blood thinners’ (i.e. warfarin / Coumadin)
  - Allergy to any NSAID / aspirin
  - Pregnancy (late)
P3.12 Fever-Pediatric (continued)

• **Key Points/Considerations (continued)**
  
  – Administer oxygen therapy utilizing the appropriate delivery device and titration to maintain SpO2 > 92%
  
  – If fever is due to suspected viral or bacterial infection, refer to protocol “Sepsis/Shock/Hypoperfusion – Pediatric” and treat as appropriate
  
  – Diagnostic indications for hypoperfusion include: cool / clammy or mottled skin, inability to recognize parents, restlessness, listlessness, tachycardia, tachypnea, systolic BP < 70 mmHg (2 years and older), or systolic BP < 60 mmHg (less than 2 years old)
• **Key Points/Considerations (continued)**
  
  – If fever is due to suspected reaction to blood / blood product transfusion, immediately stop the transfusion, replace all tubing (save for receiving hospital blood bank) and maintain IV access with new bag of 0.9% NaCl, contact medical control, and treat per appropriate protocol

  • Temperature monitoring, take initial and every 10 minutes
  • Cardiac monitor, continuous SpO2 and continuous pCO2 monitoring
A3.15 Hypoglycemia - Adult

• Criteria Added
  – For patients with known or suspected hypoglycemia
  – See also, “General: Altered Mental Status” protocol, as required

• CFR and All Levels
  – Airway Management wording versus ABC’s and VS
  – Added
    • Check pupils and, if constricted, consider “General: Opioid (Narcotic) Overdose" protocol
    • Added examples of carbohydrates to give if patient can swallow
    • Do not delay transport in place of calling for ALS intercept
    • Ongoing assessment of the effectiveness of breathing
      – Refer to “Extremis: Respiratory Arrest/Failure – Adult” protocol, if necessary
• **Key Points/Considerations**
  
  – **Added**
    
    • Assess the scene for safety and, if it is not, retreat to a safe location and obtain police assistance
• **Criteria Added**
  – For pediatric patients with known or suspected hypoglycemia
  – See also, “General: Altered Mental Status” protocol, as required

• **CFR and All Levels**
  – Airway Management wording versus ABC’s and VS
  – Added
    • Check pupils and, if constricted, consider “General: Opioid (Narcotic) Overdose" protocol
    • Do not delay transport in place of calling for ALS intercept
    • Added examples of carbohydrates to give if patient can swallow
    • Ongoing assessment of the effectiveness of breathing
      – Refer to “Extremis: Respiratory Arrest/Failure – Pediatric” protocol, if necessary
• **Advanced**
  
  – If unable to obtain adequate results with oral glucose consider glucagon 0.5 mg IM if < 20 kg, otherwise, 1 mg IM*, if needed
3.17 Opioid (Narcotic) Overdose

- **Adult and Pediatric**
  - previously some of the information was in Pediatric OD/Toxic Exposure protocol

- **CFR and All Levels**
  - For suspected opioid overdose and hypoventilation* or respiratory arrest, administer naloxone (Narcan®) 2 mg** intranasal; 1 mg per nostril, may repeat once in 5 minutes, if no significant improvement occurs (higher-level providers may substitute titration directions and routes specified below)
    - In the pediatric patient, administer naloxone (Narcan®) 1 mg** intranasal; ½ mg per nostril, may repeat once in 5 minutes, if no significant improvement occurs
• **Advanced**
  – Moved to Advanced level
    • Titrate naloxone (Narcan) to max 2 mg per dose IV, IM, or intranasal, ONLY if hypoventilation or respiratory arrest. (Consider administering in ≤ 0.5 mg increments, if giving IV)

• **Key Points/Considerations**
  – **May substitute alternative FDA and SEMAC approved, commercially prepared 4mg nasal spray unit dose device**
    • This device is approved for the full 4 mg dose in the adult or pediatric patient
    • Administer 4mg in 1 nostril as a single spray
3.18 Organophosphate Exposure

• **Adult and Pediatric Protocol Combined**
  – previously some of the information was in Pediatric OD/Toxic Exposure protocol

• **Paramedic**
  – Added Pediatric dose of Atropine and removed Versed dose and put in referral to seizure protocol
    • For symptomatic patients with organophosphate poisoning:
      – For the pediatric patient:
        » Atropine 1 mg IV every 3-5 minutes, until secretions dry
    • For seizures:
      – For adult seizures see, “General: Seizures – Adult” protocol
      – For pediatric seizures see, “General: Seizures – Pediatric” protocol
**Advanced**

- Added
  - If able to tolerate oral fluid consider one of the following:
    - Acetaminophen 650 mg/20.3 mL PO (2–325 mg/10.15 mL PO unit doses)*
    - Ibuprofen 400 mg/20 mL PO (4–100 mg/5 mL PO unit doses)*

**CC, Paramedic**

- Moved Ketorolac as a choice with Morphine and Fentanyl standing order from Medical Control Considerations
  - May Choose one***
    - Ketorolac** (Toradol) 15 mg IV or 30 mg IM

**Key Points Considerations**

- Removed
  - lower dosing of Ketorolac should be considered for those weighing less than 50 kg
• **Key Points/Considerations (continued)**
  – Added the word Non-oral, acetaminophen and Ibuprofen information

• ***ONE*** non-oral pain medication may be given under standing orders. For dosing that exceeds the standing order maximum, or to switch to another agent, you must consult medical control

• Acetaminophen contraindications (unless medical control approved):
  – Hx of liver problems/acute liver failure
  – Acute liver inflammation due to hepatitis C virus
  – In the setting of shock or overdose (especially acetaminophen overdose)

• Ibuprofen contraindications (unless medical control approved):
  – Severe renal impairment (dialysis dependent)
  – In the setting of shock or overdose
  – Prescribed ‘blood thinners’ (i.e. warfarin / Coumadin)
  – Allergy to any NSAID/aspirin
  – Pregnancy (late)
P3.19 Pain Management - Pediatric

• **Advanced**
  – Added
    • Nitrous oxide by self-administered inhalation*
    • If able to tolerate oral fluid consider one of the following:
      – Acetaminophen 15 mg / kg PO* or: (follow weight based dosing chart in protocol)
      – Ibuprofen 10 mg/kg PO* or: (follow weight based dosing chart in protocol)

• **Key Points/Considerations**
  • Added the word Non-oral, acetaminophen and Ibuprofen information mirroring adult Pain Management Protocol
  • Added Nitrous information
    – **Nitrous oxide is not a required formulary item**
    – Contraindications to nitrous oxide include: suspected bowel obstruction, pneumothorax, hypoxia, or the inability to self-administer
3.20 Poisoning/Overdoses: Undifferentiated (formerly under Overdose/Toxic Exposure)

• Criteria
  – Added referral to Altered Mental Status Protocol
    • For altered mental status, see “General: Altered Mental Status” protocol

• CFR and All Levels
  – Added referral to Trauma: Burns
    • For contamination of the skin or eyes, refer to the “Trauma: Burns” protocol

• Key Points/Considerations
  – Added
    • Take precautions to assure providers do not get exposed
    • For inhalation exposures, assure patient is moved to fresh air
• **Criteria Added**
  - This protocol is intended for the undifferentiated toxic exposure of the pediatric patient
    - For a suspected carbon monoxide exposure, see the “General: Carbon Monoxide Exposure – Suspected” protocol
    - For an opioid overdose, see the “General: Opioid (Narcotic) Overdose” protocol
    - For an organophosphate exposure, see “General: Organophosphate Exposure” protocol
    - For smoke inhalation, see “General: Smoke Inhalation/Cyanide Poisoning – Symptomatic” protocol
    - For altered mental status, see “General: Altered Mental Status” protocol
    - If suspected WMD nerve agent, refer to the “Resource: Nerve Agent – Suspected” protocol
P3.20 Poisoning/Overdoses: Undifferentiated (formerly under Overdose/Toxic Exposure)

- CFR and All Levels
  - Added
    - For contamination of the skin or eyes, refer to the “Trauma: Burns” protocol
  - Removed
    - Opioid Overdose information, Narcan dosing, and Organophosphate poisoning as this already exist in other protocols

- Key Points/Considerations
  - Added
    - Dystonic reaction is a reaction to medication resulting in uncontrolled muscle contractions of the face, neck, or tongue. Extrapyramidal side effects may also include extreme restlessness and may be treated as a dystonic reaction
    - Take precautions to assure providers do not get exposed
    - For inhalation exposures, assure patient is moved to fresh air
3.24 Seizures

• CFR and All Levels
  – Added Under Airway Management
    • Suction the airway as needed
    • Position the patient on the side if vomiting
    • Do not put anything in the patient’s mouth when the patient is actively seizing
      – Utilize an appropriate airway adjunct, if needed, after the seizure has ended
  – Added Protect the patient from harm
    • Remove hazards from the patient’s immediate area
    • Avoid unnecessary restraint
  – Added Ongoing assessment of the effectiveness of breathing
    • Refer to the “Extremis: Respiratory Arrest/Failure – Adult” protocol, if necessary
  – Removed ABC’s and VS
3.24 Seizures (continued)

• **Key Points/Considerations**
  – Added
    • Patients may become confused and combative after a seizure (in the postictal state)
      – Protect yourself and the patient
      – Obtain law enforcement assistance, if needed
    • Status epilepticus (continuing seizure) is a critical medical emergency. Anticonvulsant medication should be administered as soon as possible, preferably starting no later than 5-10 minutes after the onset of the seizure
• All changes mirror the changes made to the Adult Seizures Protocol in previous slides
A3.25.1 Shock: Shock/Hypoperfusion

• CFR and All Levels
  – Added
    • Administer supplemental oxygen; refer to the “Resource: Oxygen Administration and Airway Management” protocol
    • Facilitate transportation, ongoing assessment, and supportive care
• **CFR and All Levels**
  – Removed
    • Including Blood Pressure after ABC’s and VS
    • Blood Glucose Check
  – Added
    • (Non-rebreather as tolerated) after Airway Management
    • If the patient has altered mental status, refer to the “General: Altered Mental Status” protocol
    • Attempt to maintain normal body temperature
    • Advise the destination hospital that the patient has signs of sepsis/septic shock
    • Obtain vital signs, including blood pressure, frequently
• **Advanced**
  
  – Added
  
  – After NS Bolus- if SBP < 100 mmHg or MAP < 65 mmHg; may repeat up to a total of 2 L if lung sounds remain clear
• **Criteria added to include sepsis**
  
  – For sepsis:
    
    • Pediatric patients with suspected infection who are abnormally hot or cold to touch, and/or have a fever over 100.4° F (38° C), or less than 96.8° F (36° C) and high heart rate (age dependent) and/or high respiratory rate (age dependent) with:
      
      – Poor perfusion (capillary refill > 3 seconds, decreased peripheral pulses, distal extremity [hands/feet] coolness and dusky color, or age-dependent
      – hypotension) *and/or*
      – need for oxygen, *and/or*
      – altered mental status (lethargy, irritability)
• CFR and all levels
  – Added
    • Including blood pressure after ABC’s and VS
    • Give high flow Oxygen (Non-rebreather as tolerated) after airway management
    • If the patient has altered mental status, refer to the “General: Altered Mental Status” protocol
    • Attempt to maintain normal body temperature

• EMT and Advanced
  • Added
    – Advise the destination hospital **forthwith** that the patient has signs of sepsis/septic shock
    – Obtain vital signs, including blood pressure, frequently
• **Key Points/Considerations**
  
  – **Added**
    
    • Sepsis / septic shock is a life-threatening condition in children and must be recognized and treated as rapidly as possible
    
    • Vital sign criteria for defining sepsis:
      
      \[
      \begin{array}{cccc}
      \text{< 1 mo.} & \text{< 1 yr} & \text{1 yr-11 yr} & \text{> 11 yr} \\
      \text{Tachycardia} & >180 & >180 & >140 \\
      \text{Tachypnea} & >60 & >40 & >30 \\
      \text{Hypotension*} & <60 & <70 & (<70 + 2 x age) <90 \\
      \end{array}
      \]
    
    • *Blood pressures may be very difficult to obtain in infants – assure the respiratory rate and pulse are measured accurately
    
    • Communication with the destination hospital is critical so that they can prepare to treat the child aggressively
3.26 Smoke Inhalation/Cyanide- Symptomatic

- Added Cyanide to the title of protocol
- Applies to adult and pediatric patients
- CFR and All provider levels
  - Moved to this level
    - ABC’s and VS
    - Oxygen via NRB mask at 15 LPM
- EMT
  - Changed wording with some additions for CPAP
    - If the patient is in respiratory distress or rales are present and there is no soot in the airway, consider CPAP* 5-10 cm H₂O (if the device delivers 100% oxygen)
      - For the adult patient
      - For older pediatric patients consider CPAP, as equipment size allows if available and trained
• CFR and All levels
  – Removed
    • ABC’s and VS

• EMT
  – Added after acquire and transmit 12-lead ECG **
    • For patients with a STEMI, confirmed by medical control, begin transport to a facility capable of primary angioplasty if estimated arrival to that facility is within 90 minutes of patient contact or if directed by medical control or regional procedure
    • If the patient requests added in front of assist patient with his or her prescribed nitroglycerin...
• **CC, Paramedic**
  - Added
    - Goal SBP > 100 mmHg and MAP > 65 mmHg after consider NS Bolus

• **Key Points/Considerations**
  - Added maintaining ABC’s
    - Focus on maintaining ABCs, rapid identification, rapid notification, and rapid transport to an appropriate facility
3.28 General Stroke
Applies to adult and pediatric patients

• **Criteria Added**
  – For patients presenting with acute focal neurologic deficits including, but not limited to, slurred speech, facial droop, and/or unilateral (one-sided) weakness or paralysis

• **EMT**
  – Time changed to 3.5 hours, unless otherwise regionally designated
    • If time from last known well or time of symptom onset to estimated arrival in the ED will be less than 3.5 hours, *unless otherwise regionally designated*, transport the patient to a NYS DOH Designated Stroke Center, or consult medical control to discuss an appropriate destination facility

• **Removed**
  • Request ALS, if available
• **Key Points/Considerations**
  – Added
  • Make sure to collect family or witness contact information to assist with hospital care
  • Make sure to record **Last Known Well** and who reported that information as part of your verbal report at the hospital and in your written documentation
  • **“Time of Symptom Onset”** is also a key piece of information if available from witnesses
• **Criteria**

  – Children with special health care needs requiring technological assistance for life support:

    • Tracheostomy
      – Breathing tube in neck
    • Central venous catheters (tunneled catheter, Broviac catheter, Mediport, PICC)
      – Catheters that enter a large (central) vein
    • CSF shunt (e.g. ventriculoperitoneal or V-P shunt)
      – Internal tube that drains spinal fluid from the brain into the abdomen
    • Gastrostomy (PEG tube, MIC-KEY® “button”) or J-tube
      – Feeding tube that goes through the abdominal wall
    • Colostomy or ileostomy
      – Bowel connected through abdominal wall for collection of waste in a bag
**Criteria (continued)**

- Ureterostomy or nephrostomy tube
  - Connection of the urinary system through the abdominal wall or through the back for collection of urine in a bag
- Foley catheter
  - Catheter in urethra to collect urine from the bladder into a bag

**CFR and all levels**

- ABCs and vital signs including blood pressure
- Basic airway management if needed, give high flow oxygen (non-rebreather) if needed
- Supportive measures (device-specific):
  - Tracheostomy
    - If on ventilator and there are respiratory concerns, disconnect and attempt to ventilate via tracheostomy adapter using BVM
    - If tracheostomy tube is fully or partially dislodged, remove it, cover tracheostomy stoma with an occlusive dressing, and ventilate via mouth
• CFR and all levels (continued)
  – Supportive measures (device-specific):
    • Tracheostomy
      – If on ventilator and there are respiratory concerns, disconnect and attempt to ventilate via tracheostomy adapter using BVM
      – If tracheostomy tube is fully or partially dislodged, remove it, cover tracheostomy stoma with an occlusive dressing, and ventilate via mouth and nose using BVM
    • Central venous catheters: if catheter is broken or leaking, clamp (pinch off) catheter between patient and site of breakage or leakage
    • Gastrostomy tube or button, ureterostomy or nephrostomy tube: if tube or button is fully dislodged, cover the site with an occlusive dressing; if partially dislodged, tape in place
    • Gastrostomy, colostomy, ileostomy, or nephrostomy: if stoma site is bleeding, apply gentle direct pressure with a saline-moistened gauze sponge
    • Foley catheter: if catheter is dislodged, tape in place
• EMT, Advanced, CC, Paramedic
  – Notify the destination hospital ASAP and state that the patient has special health care needs that requires technological assistance (be specific)
  – Obtain frequent vital signs, including blood pressure

• Key Points/ Considerations
  – Listen to the caregivers. They know their child best. Allow them to assist with care.
    • Inquire about:
      – Presence of a Patient Care Plan (PCP) - What is different today
      – Syndromes/diseases - Best way to move the child
      – Devices/medications
      – Child’s baseline abilities
      – Usual vital signs
      – Symptoms
• Key Points/Considerations (continued)

– Look for MedicAlert® jewelry, Emergency Information Form (EIF), or Patient Care Plan (PCP), or other health care forms, if usual caregiver is not available

– Take Emergency Information Form (EIF), Patient Care Plan, or other health care forms to the hospital with the patient

– Assess and communicate with the child based on developmental, not chronological, age

– Take necessary specialized equipment (e.g. patient trach/ventilator pack, G-tube connectors, etc.) to the hospital with the patient, if possible
3.30 Total Artificial Heart (TAH)

• Criteria
  – Any request for service that requires evaluation and transport of a patient with a Total Artificial Heart.

• CFR and all levels
  – Assess airway and breathing. Hypertension or volume overload can quickly cause pulmonary edema to develop
  – Do not use an AED or cardiac monitor.
  – Assess pulse and artificial heart function:
    • If no pulse present:
    • Consider early consult with TAH coordinator or medical control
    • Check for severed or kinked TAH driveline (address if possible)
    • Check battery position and power status (replace if possible)
3.30 Total Artificial Heart (TAH) (continued)

- **CFR and all levels (continued)**
  - Assess airway and breathing. Hypertension or volume overload can quickly cause pulmonary edema to develop.
  - Do **not** use an AED or cardiac monitor.
  - Assess pulse and artificial heart function:
    - If no pulse present:
    - Consider early consult with TAH coordinator or medical control
    - Check for severed or kinked TAH driveline (address if possible)
    - Check battery position and power status (replace if possible)
    - Use the backup driver, or hand pump, if available
    - Do **not** perform chest compressions or place an AED
  - Assess blood pressure: goal blood pressure is >90 mmHg and <150 mmHg
  - Perform a secondary assessment and treat per protocol
• CFR and all levels (continued)
  – If unresponsive with a pulse, evaluate for noncardiac etiologies
  – Notify the receiving hospital that your patient has a TAH while on scene or promptly after initiation of transport regardless of patient’s complaint
  – Assure that patient has both drivers (compressors), hand pump, all batteries, and power cords for transport
  – Any trained support member should remain with patient
3.30 Total Artificial Heart (TAH) (continued)

- **Advanced, CC, Paramedic**
  - If blood pressure is >150 mmHg administer sublingual nitroglycerin 0.4mg
    - Repeat sublingual nitroglycerin 0.4mg every 5 minutes if BP>150 mmHg
  - Assess for hypovolemia. If blood pressure <90mmHg, or evidence of distributive shock, blood loss, or dehydration:
    - IV 0.9% NS in 250mL boluses; may be repeated to one liter total if hypotension is persistent. Contact medical control for additional fluids beyond one liter
  - Do **not** apply a cardiac monitor, or perform pacing or defibrillation and do **not** administer vasopressors or antiarrhythmics
3.30 Total Artificial Heart (TAH) (continued)

• Medical Control Considerations
  – Termination of resuscitation
  – Consultation with a TAH program provider

• Key Points/Considerations
  – TAH patients have had their heart removed and replaced with a rigid device which pneumatically pumps blood throughout the body
  – As these patients do not have a heart, there is no indication for an ECG or cardiac monitoring. A functioning TAH will not result in any measurable electrical activity
  – TAH patients are on multi-agent anticoagulation and may have significant bleeding with minor injuries
3.30 Total Artificial Heart (TAH) (continued)

• Key Points/Considerations (continued)
  – The TAH patient has normal pulse and blood pressure detectable by conventional methods and are highly preload and afterload sensitive:
  – Target Blood Pressure is <150 mmHg and > 90 mmHg
  – Pulse rate is set and regular, between 120-135 bpm
• **CFR and all Provider Levels**
  
  – Changed wording from ABC’s and VS
    
    • Assess airway and breathing. Treat airway obstruction or respiratory distress per protocol. Treat medical or traumatic conditions per protocol.
  
  – Added word changes
    
    • Assess airway and breathing. Treat airway obstruction or respiratory distress per protocol. Treat medical or traumatic conditions per protocol.
  
  – Added
    
    • In continuous flow VAD patients (HeartMate II, Heartware, or axial flow device), the absence of a palpable pulse is normal even in the setting of a normally functioning device. Patients may not have a readily measurable blood pressure.
3.31 Ventricular Assist Device – (VAD)

• CFR and all Provider Levels
  – Added
    • In pulsatile flow VAD patients with a HeartMate 3 centrifugal device, patients may have a palpable pulse (pulse is generally set to 30 BPM) in the setting of a normally functioning device, yet may not have a readily measurable blood pressure
    • Perform a secondary assessment and treat per appropriate protocol
  – Wording Change
    • Notify the receiving facility promptly and consider early consultation with the VAD coordinator or medical control, regardless of the patient’s complaint

• EMT
  – Added
    • Unless otherwise directed by medical control, transport patient to a facility capable of managing VAD patients
3.31 Ventricular Assist Device – (VAD) (continued)

- Advanced, CC, Paramedic
  - Added
    - Apply cardiac monitor and obtain 12-lead ECG
  - Removed
    - Place patient in a supine position if possible
  - Wording Change
  - If inadequate perfusion or oxygenation, despite the device being on, treat with standard ACLS measures. Consider early medical control consultation as patients with a VAD often have dysrhythmias
3.31 Ventricular Assist Device – (VAD) (continued)

• Key Points/Considerations

  – Added

    • The most common complication in VAD patients is infection. VAD patients are susceptible to systemic illness, sepsis, and septic shock due to their abdominal driveline as a conduit of infection.
    • Patients with a VAD are highly preload dependent and afterload sensitive. Low flow alarms are frequently due to MAP >90 mmHg. The devices are sensitive to alterations in volume status and careful volume resuscitation is often necessary.

  – Wording Change

    • One set of fully charged batteries provides 8-10 hours of power:
      – If the battery or power is low, the batteries need to be replaced immediately.
      – Assist with the replacement of batteries if directed by patient/caregiver.
      – Never disconnect both batteries at once as this can cause complete loss of VAD power.
• Key Points/Considerations (continued)
  – Wording Change
    • One set of fully charged batteries provides 8-10 hours of power:
      – If the battery or power is low, the batteries need to be replaced immediately
      – Assist with the replacement of batteries if directed by patient/caregiver
      – Never disconnect both batteries at once as this can cause complete loss of VAD power
    • VAD patients are heavily anticoagulated and susceptible to bleeding complications

• Controller Device Normal Values added- See chart in protocol
4.0 Trauma Protocols
Applies to adult and pediatric

• Tourniquet and Hemostatic dressings are approved by use for CFR, previously the CFR level was not in the collaborative and it read BLS.

• Referral to Trauma Patient Destination (previously worded CDC trauma triage Criteria)
4.1 Amputation

- **CFR and all levels**
  - Added
    - Referral to Trauma: Suspected Spinal Injuries protocol
  - Removed
    - Referral link to General Pain Management

- **Key Points/Considerations**
  - Added
    - Transport the amputated part with the patient, if possible, but do not delay transport to search for amputated part
• **Key Points/Considerations**
  
  – Added
  
  – The best *transport medium* for an avulsed tooth is in the socket, in the appropriate situation
• **Criteria**
  
  – **Wording Change**
    
    • Removed the word compressive devices
    
    • Junctional tourniquets, wound closure devices, and other hemostatic devices may be used in accordance with manufacturer instructions, if regionally approved
    
    • Tactical application of these devices beyond this protocol may be regionally approved
    
    • Referral to Shock protocol versus Hypoperfusion protocols for adult and pediatric patients
  
  • **CFR and All Levels**
    
    – Removed
      
      • Airway management and appropriate oxygen therapy (covered in other protocols)
4.3 Bleeding/Hemorrhage Control (continued)

- **Key Points/Considerations**
  - Added
    - **Do not remove a tourniquet that was placed for life threatening bleeding**
      - If a tourniquet had been placed for apparently non-life threatening bleeding, the tourniquet may be released while maintaining the ability to immediately reapply and otherwise control the hemorrhage should significant bleeding occur.
    - These steps are not intended to be used in sequence; interventions should be taken using the best judgement of the EMS professional.
    - Hemodialysis access sites may result in life threatening hemorrhage. Direct digital pressure should be used first followed by tourniquet ONLY in the setting of life-threatening hemorrhage when other means of hemorrhage control have been unsuccessful.
4.3 Bleeding/Hemorrhage Control (continued)

- **Key Points/Considerations (continued)**
  - When extremity bleeding sites cannot be rapidly determined, tourniquets may be placed high and tight in accordance with training
  - Conventional and pressure splints may also be used to control bleeding
  - Hemostatic dressings* should be used according to manufacturer’s instructions and training and may require removal of coagulated blood to directly access the source of bleeding
  - *If equipped and trained
• **CFR and All Levels**
  – Added
    • Burns to the eye require copious irrigation with normal saline – do not delay irrigation
      – Other neutral fluid may be used, if needed, such as tap water

• **EMT**
  – Wording Change
    • Burns should be covered with dry, sterile dressings
      – Moist sterile dressings *may* be used to augment pain management *only* if the burn is ≤ 10 % BSA (body surface area)
4.4 Burns
Applies to adult and pediatric patients

• CC/Paramedic
  – Added
    • For eye exposures:
      – Tetracaine (0.5%) 2 drops in the affected eye for pain every 3 minutes, as needed
      – For chemical exposure to the eye, you may use a Morgan Lens for irrigation

• Key Points/Considerations
  – Wording Changes
    • Consider other injuries... versus be alert for other injuries....
    • The whole area of the patients hand is ~1% BSA versus just the palm
  – Added
    • Hypothermia is a significant concern for these patients
  – Removed
    • Considerations for direct transport to Burn Center- Have that discussion with Medical Control
4.5 Chest Trauma
Applies to adult and pediatric patients

• CFR and All Levels
  – Added
  – A sucking chest wound occurs when air passes through a wound in the chest wall when the patient breathes in

• Advanced
  – Added
    • If the patient is in cardiac arrest, proceed with bilateral needle chest decompression and refer to appropriate arrest protocol*
      – This was previously under CC level and is not taught under the national AEMT curriculum, should only be used by Tactical trained AEMT’s

*Advanced EMTs in tactical EMS may be trained and equipped for decompression, but the agency must be approved by the REMAC
• **Key Points/Considerations**
  
  – Minor word change

  • A minimum was removed before 50 mL NS in IV between calcium chloride and sodium bicarbonate
• Exposures removed from the protocol name
• Care for contaminated eyes moved to burn protocol
• **CFR and All Levels**
  - Added
    - Refer immediately to the “Trauma: Bleeding / Hemorrhage Control” protocol, as indicated

• **Key Points/Considerations**
  - Consider any open wound near a suspected bone injury site to be the result of bone protrusion
  - Physical examination for unstable pelvis fractures is unreliable and stabilization of the pelvis is indicated based on the mechanism of injury
• EMT, Advanced, CC, Paramedic
  – Wording Change
  – Consider pain management versus initiate pain management
4.10 Suspected Spinal Injuries (New)
Applies to adult and pediatric patients

Does the patient meet Adult/Pediatric Major Trauma Criteria with a BLUNT mechanism of injury?

NO

If the patient does not meet Major Trauma Criteria for Blunt Mechanism and/or does for Penetrating Mechanism, does the patient have any of the following:

- Altered mental status – associated with trauma – for any reason including possible intoxication from alcohol or drugs (GCS<15)
- Complaint of neck and/or spine pain or tenderness
- Weakness, tingling or numbness of the trunk or extremities at any time since the injury
- Deformity of the spine not present prior to the incident
- Painful distracting injury or circumstances (i.e. anything producing an unreliable physical exam)
- High risk mechanism of injury associated with unstable spinal injuries that include, but are not limited to:
  - Axial load (i.e. diving injury, spearing tackle)
  - High speed motorized vehicle crashes or roll over

YES

Spine injury should be suspected and the patient should be placed in a properly fitted cervical collar and spinal movement minimized

NO

Patients without any of the above findings may be transported without the use of a cervical collar or any other means to restrict spinal motion
4.10 Suspected Spinal Injuries (New) (continued)

• **Key Points/Considerations**
  
  – Spinal movement can be minimized by application of a properly fitting rigid cervical collar and securing the patient to the EMS stretcher
  
  – The head of the stretcher should not be elevated by more than 30 degrees
  
  – When spinal motion restriction has been initiated and a higher level of care arrives, patients may be reassessed for spinal injury (per this protocol)
  
  – When possible, the highest level of care on scene will determine if spinal motion restriction is to be used or discontinued (collar removed, etc.)
• Previously named Trauma Associated Hypoperfusion

• Advanced, CC, Paramedic
  – Added
    • Under decompensated shock NS Fluid Bolus
      – If SBP <100 mmHg or MAP<65, may repeat up to a total of 2 L if lung sound remain clear
  – Removed
    • Additional vascular access
    • 500 mL an hour follow 2 L fluid bolus

• Key Points/Considerations
  – Changes SBP parameter to 100 instead of 90 mmHg
  – Changed MAP parameters to 65 instead of 60 mmHg
4.12 Trauma Patient Destination
Applies to adult and pediatric patients

- Previously named Trauma Triage-CDC
- Remains the 2011 guidelines for field triage of injured patients published by the CDC
• P5.2 APGAR

• 5.3 Automatic Transport Ventilator
  – Under Key Points
    • Removed ATV will not be used with CPR,
      – ventilate with BVM during CPR

• 5.5 Glasgow Coma Score (GCS) New in protocols
  – A calculator on app already exists under tools
• 5.6 Incident Command- New (moved from patient care responsibilities)
• 5.7 Interfacility Transports- Moved to resources
• 5.8 Medication Formulary- Added chart of optional medications
  – Nitrous Oxide Inhaled
  – Acetaminophen PO
  – Ibuprofen PO
• **5.10 Needlestick/Infectious Exposures**
  – Removed some key points on follow up care
  – These points should be part of an agencies exposure control plan

• **5.11 Nerve Agent- Suspected**
  – Moved to resources
  – Guidance for Disaster Setting – **All levels of care**
  – You should be familiar with your local Chempack Program.
Added or Changed Resources - Please review

- 5.13 Oxygen Administration and Airway Management
  - Moved to Resources
  - Added CFR and all provider levels
  - Added - Ongoing assessment of the effectiveness of breathing
    - refer to the “Extremis: Respiratory Arrest/Failure – Adult” or “Extremis: Respiratory Arrest/Failure – Pediatric” protocol, if necessary
• 5.13 Oxygen Administration and Airway Management (continued)
  – % Change from <92 and 2 informational points added
    • Oxygen therapy via non-rebreather mask (NRB) 10-15 LPM, or nasal cannula (NC) 2-6 LPM, to maintain oxygen saturation if saturation is < 94% or to effectively manage other signs of dyspnea
      – Some children with cardiac conditions may have baseline oxygen saturations between 65 and 85% rather than above 94% (ask care provider about patient’s usual oxygen saturation level)

    – Infant oxygen administration, if needed, should be provided at 0.5-2 LPM via appropriately sized nasal cannula
• 5.13 Oxygen Administration and Airway Management (continued)
  – Added -Any patient with suspected carbon monoxide poisoning should receive high flow oxygen via non-rebreather mask (NRB), see also “General: Carbon Monoxide Exposure – Suspected” protocol
  – NPA and OPA changed to Appropriate BLS airway adjuncts
  – Oxygen powered nebulizer devices for use in accordance with manufacturer specifications (typically ~6-8 LPM)
5.13 Oxygen Administration and Airway Management (continued)

- Added - Continuous positive airway pressure (CPAP) 5-10 cm H₂O*
  - For the adult patient
  - For older pediatric patients consider CPAP for EMT, as equipment size allows if available and trained

5.14 Pediatric Assessment Triangle – Added

5.15 Prescribed Medication Assistance – Moved to Resources

- Added under Paramedic - Steroids (SoluCortef and others) via IM injection
- Medical Control Considerations- wording change to “within scope of practice” from “not listed above”
• 5.16 Refusal of Medical Attention – New
• 5.17 Responsibilities of Patient Care- moved to Resources
• 5.18 Transfer of Patient Care – New
• 5.19 Vascular Access- Moved Resources
• 5.20 Vascular Devices – Pre-Existing (no change in protocol, moved to resources)
Please make sure you view additional, required educational modules