THE REGIONAL EMERGENCY MEDICAL SERVICES COUNCIL OF NEW YORK CITY, INC.

NYC REMAC

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The Regional Emergency Medical Advisory Committee (REMAC) of New York City is responsible to develop, approve and implement prehospital treatment and transport protocols for use within the five boroughs of the City of New York. The Regional Emergency Medical Advisory Committee (REMAC) of New York City operates under the auspices of Article Thirty of the New York State Public Health Law.

The NYC REMAC has updated protocols for implementation August 1st, 2026.

Training for the protocol updates can be found on the REMSCO LMS at https://nycremsco.org/lms/. EMS members with current REMSCO LMS accounts will have the appropriate training assigned to their accounts. EMS members without LMS accounts can register for the LMS using the link above, and can access the training using the links below. EMS members are required to complete the REMAC Protocol Update training appropriate to their credential.

Training Links:

- 2026 BLS Protocol Update: https://collabornation.net/course/226746
- 2026 ALS Protocol Update: https://collabornation.net/course/226745

This advisory includes the following:

- 2026 NYC REMAC Protocol Update – Summary of Changes
- 2026 REMAC GOP Changes
- 2026 REMAC Treatment Protocol Changes
- 2026 REMAC Appendices Changes

The full NYC REMAC Unified Protocols can be found at: https://nycremsco.org/protocols/

Owners/operators of Ambulance and ALS First Response Services providing prehospital medical treatment within the five boroughs of the City of New York are responsible to provide copies of the NYC REMAC Prehospital Treatment Protocols to their personnel, and to ensure that Service Medical Directors and EMS personnel are informed of all changes/updates to the NYC REMAC Prehospital Treatment Protocols.

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2026 NYC REMAC UNIFIED PROTOCOL CHANGES SUMMARY

1. GOP: Spinal motion restriction and addition of helmet removal section

Language changed from "spinal precautions" to "spinal motion restriction" to be consistent with current nomenclature. Additions were included for helmet removal as to when and how they should be removed, if present, that is consistent with current curriculum for PHTLS and ATLS.

2. GOP: CPR

Language changed to allow for use of pediatric pads such that it is not strictly governed by weight, but rather by the specific manufacturer directions to be inclusive of all monitors.

3. GOP: Oxygen administration

The phrase regarding the use of pulse oximetry was moved to the oxygen administration section with its wording unchanged. Pulse oximetry technically is not a method to monitor the airway and is better categorized in the oxygen administration section.

4. GOP: Airway management and airway monitoring

Emphasizing language added to the use of PEEP valves when providing BVM ventilations that is consistent with recent literature and AHA guidelines.

The phrase regarding the use of pulse oximetry was moved to the oxygen administration section in its wording unchanged.

The phrase "recordable and available for QA" was added to the section regarding capnography as well as language that is inclusive of all providers performing advanced airway management as, if un-noticed, displacement or mismanagement can be detrimental to the patient.

Clarifying language was added to define an "airway attempt" that is consistent with current training as well as limitations to the number of airway management attempts that should be performed in the field before secondary measures be applied. Overall language was added that unless specified, BVM is an acceptable method of airway management, especially for the pediatric patient.

5. GOP Medication Administration

New section was added regarding the providers' ability to assist patients with their own medications so long as those medications and routes are within their scope of practice and contained within these NYC protocols. Any questions regarding a patient's medications may be consulted with a REMAC physician.

Language was modified to be inclusive of all advanced airway devices and their use as a route for medication administration. Besides a nebulized medication, this route is not to be used within these protocols.

6. GOP Alternative treatment/alternative transport destination decisions

Language was modified to make clearer the patients that would qualify for treat in place/alternate destination as well as use the current nomenclature of "treat in place".

Emphasis is placed regarding the role of the telehealth provider in that they cannot provide online medical direction and may not authorize transport to a specific hospital.

Language added to be consistent with recent NYS legislation defining a "treat in place" even if the patient refuses transport.

When introduced into NYC protocols, it was known that this would be a dynamic section that would need to be updated regarding the types of patients and operations once implemented. After discussions with many partnering agencies as well as the implementation of the NYC BEHEARD program, behavioral health issues were removed from this section.

7. Protocol: Nontraumatic cardiac arrest (adult)

Language was added to the BLS section to allow for BLS use of supraglottic airways, as approved by NYS, if allowed and trained to do so by their agency medical director.

Similar language was modified to not put a strict limit to the number of CPR cycles prior to transport and changed to "at least" three cycles.

8. Protocol: Nontraumatic cardiac arrest (peds)

Reinforcing the key points and GOP sections regarding the use of advanced airway management in the pediatric patient, language was added to the procedures of the protocol itself advising ALS providers to only perform advanced procedures if BVM ventilations are ineffective. This language change has been based on NAEMSP guidelines for the management of the pediatric airway as well as many other literature sources stating that due to the low frequency and high risk of performing an advanced airway on a pediatric patient, if BLS airway maneuvers are adequate, providers are to continue with the BLS airway.

Language was also modified to not put a strict limit to the number of CPR cycles prior to transport and changed to "at least" three cycles.

9. Protocol: Obstructed airway

The word "direct" was removed as a descriptor for laryngoscopy due to the increased use of video laryngoscopy by ALS agencies.

10. Protocol: Respiratory distress (adult)

The term, "if available" was added to the MCO of Furosemide administration. This language was added to be inclusive of different provider types working within NYC. This language acknowledges that Furosemide does not play a large role in undifferentiated, acute, emergency care patients, as evidenced by recent literature; however, it may still be used by MIH units for established patients who also use these protocols.

11. Protocol: Altered mental status

Language added to the CFR section that for any suspected hypoglycemic patients, they may administer a glucose solution so long as the patient is conscious and able to drink. This skill is within the CFR scope of practice and is part of the current CFR curriculum.

12. Protocol: Eye injuries

Correction to protocol to use of "conjugate" [simultaneous movement of both eyes] vs. "consensual" [simultaneous pupillary constriction]

Modification made to add language to protect any injured eye with bulky dressings or eye shields, and not only to the avulsed eye as previously indicated, so long as the injured eye does not require irrigation.

13. Protocol: Bone Joint injuries

Minor language changes were made to this protocol to be inclusive of different traction devices that may have different contraindications to their use. It was also discussed at the time, that the word "isolated" should be removed, as oftentimes while a femur fracture may be part of a multi-system injury, it should not preclude the use of a traction splint as long as other contraindications are not present.

14: Protocol: Head, neck, spine injuries

Step 7 was added to include directions to EMTs/paramedics to remove the patient's helmet, as described in the new GOP Helmet Removal Section, to allow for appropriate patient assessment when required.

16. Protocol: OB Emergencies and Seizures

Pre-eclampsia qualifying criteria (BP criteria, symptoms, post-partum timeframe) has been updated to reflect the recent changes and recommendations as per the American College of Obstetricians and Gynecologists (ACOG)

Terminology updated from "severe pre-eclampsia" to "pre-eclampsia with severe features"

Key point to emphasize the need to not delay treatment of seizures as per Unified Protocols

Definition for pre-eclampsia/eclampsia timeframe has also been updated in the Seizures Protocol

17. Protocol: Atrial Fibrillation/Atrial Flutter

Joule settings updated to reflect changes made in 2025 AHA Guidelines

18. Protocol: Asthma/COPD/Wheezing and Anaphylaxis/Severe Allergic Reaction

Epinephrine dosing at the paramedic level has been changed to 0.5 mg IM in both protocols to reflect current best practices as recent literature has shown that significantly fewer patients who received an initial 0.5 mg IM Epinephrine dose required escalation of care (ICU admissions, longer hospital length of stay, continuous Epinephrine infusions)

Language has been clarified such that only pediatric patients who have been previously prescribed Albuterol shall receive treatments under standing orders.

19. Protocol: Traumatic Cardiac Arrest

All changes to protocol made to emphasize the need for rapid transport for patients in traumatic arrest. This is consistent with guidance from the National Association of EMS Physicians (NAEMSP) and American College of Surgery (ACS). Changes include:

At BLS level, providers shall call for ALS assistance as needed; however, this should not delay transport

At the ALS level, providers shall only perform life-saving critical procedures such as needle decompression of a suspected tension pneumothorax while on scene; any other ALS procedures shall be performed enroute to the hospital. This specifically includes and re-emphasizes language in the GOP that if BVM ventilations are adequate, performing advanced airway maneuvers should not delay transport**.**

20. Appendix G: Stroke correction

There were noted inconsistencies with the Stroke Protocol and accompanying appendix detailing the process for LVO patient transport decisions. The appendix was modified using the same language, where possible, from the Stroke protocol itself. The flowchart diagram was also updated to reflect the transport decision. This is a correction to the appendix and does not reflect any changes to the Stroke protocol itself.

21. Appendix R: removal

Appendix R was removed as this has persistently caused confusion amongst field providers even though this has been introduced as purely educational material. Thus, while educational, this material is not needed and is a potential area of confusion, prompting its removal.

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Changes to the General Operating Procedures (GOPs)

- **ST Elevation Myocardial Infarction (STEMI)**
  - If the history or physical exam findings indicate an acute myocardial infarction and the 12-lead EKG reveals at least one (1) mm ST-segment elevation in two (2) or more contiguous leads; transport the patient to the closest STEMI Center after consultation with OLMC unless the patient has ANY of the following conditions:
    - Unmanageable airway
    - Trauma Center transport criteria (i.e. patients with STEMI and major trauma must be taken to the closest NYC 911 Trauma Center)
  - If the patient deteriorates into cardiac arrest during transport, the unit shall continue transport to the STEMI Center as previously directed by OLMC
- **Other Specialty Care**
  - If the mechanism of illness/injury, history or physical exam findings indicates a need for another type of specialty care not previously listed, transport the patient to the nearest NYC 911 ambulance receiving facility with the required specialty care capability (Appendix I: Hospital Specialty Capabilities). These capabilities may include:
    - Hyperbaric
    - Replantation
    - Left ventricular assist device (LVAD)
    - Venomous bites
    - Sexual assault
    - Child abuse and neglect
    - Critical pediatric care

Helmet Removal

- Helmets should be removed from all patients, once operationally safe to do so, to allow any needed airway assessment, management, or spinal motion restriction
- For patients undergoing spinal motion restriction, helmet removal should be performed by two providers, with one provider stabilizing the head and spine while the other removes the helmet

- If a patient is wearing a helmet with shoulder pads AND the shoulder pads cannot be removed, it is acceptable to remove the helmet facepiece and leave the helmet and shoulder pads in place to maintain normal alignment of the spine

Spinal Motion Restriction~~Precautions~~

- Patients shall be assessed for spinal cord injuries and require spinal motion restriction~~precautions~~ as indicated. Whenever the term spinal motion restriction~~precautions~~ is used in these protocols, it refers to the following:
    - Removal of a helmet, if present
    - Application of an appropriately-sized rigid cervical collar
    - Maintenance of patient in a supine position; if the patient is unable to tolerate a supine position, the head of the stretcher may be raised to position of comfort (maximum 45°)
    - Appropriate security of the patient's trunk and limbs to a padded stretcher
    - Minimal movement and transfers
    - Maintenance of inline stabilization during any movement
    - Extrication and conveyance of patients may be performed with a rigid longboard. If resources are sufficient, the longboard should be removed via logroll maneuver with manual inline stabilization after the patient is moved to the EMS stretcher. Patients in extremis may remain on the rigid longboard to expedite rapid transport

Cardiopulmonary Resuscitation (CPR)

- Basic cardiac life support in adult and pediatric patients that is not specifically described in these protocols shall follow the current American Heart Association (AHA) guidelines
- CPR shall be initiated on all patients who are not breathing (apneic) and pulseless unless the patient has any of the following conditions:
    - Extreme dependent lividity
    - Rigor mortis
    - Tissue decomposition
    - Obvious mortal injury
    - Valid do not resuscitate (DNR) order or medical orders for life-sustaining treatment (MOLST) form or eMOLST (Appendix C: Do Not Resuscitate (DNR) / Medical Orders for Life Sustaining Treatment (MOLST)
        - Terminal illness is not a contraindication to CPR
- Cardiac arrests secondary to drowning, hanging, or electrocution shall be treated as non-

traumatic cardiac arrests

- **Pediatric:**
  - CPR is required for pediatric patients with severe bradycardia (heart rate < 60 beats/min AND signs of shock or altered mental status)
  - If available, pediatric AED/monitor pads and cables shall be used for all pediatric patients according to manufacturer's directions~~age < 9 years~~
  - If pediatric AED/monitor pads and cables are not available, the adult AED/monitor pads and cables shall be used
- CPR shall be continued until any of the following conditions are present
  - Return of spontaneous circulation (ROSC)
  - Resuscitative efforts have been transferred to providers of equal or higher level of training

Oxygen Administration

- All patients who are in respiratory arrest must have ventilatory assistance unless a valid NYS prehospital DNR order, MOLST or eMOLST is presented
- Use of pulse oximetry (SpO_2) is mandatory for ALS and BLS units

- Wherever the term "appropriate oxygen therapy" is used throughout these protocols, oxygen therapy shall be administered via a non-rebreather mask (NRB) at 10-15 liters/min, or a nasal cannula (NC) at 2-6 liters/min and is required for any of the following conditions:
  - SpO_2 < 92%
  - SpO_2 is unavailable
  - Other signs/symptoms of respiratory distress
- Wherever the term "administer oxygen" is used throughout these protocols, administer high concentration oxygen via a non-rebreather mask at 10-15 liters/min. The reservoir bag must remain at least one-third full following inspiration
  - If a mask is not tolerated by the patient, a nasal cannula at 6 liters/min should be used and properly documented
  - Patients who are chronically maintained on oxygen and who do not require high concentration oxygen shall be administered oxygen at their prescribed flowrate
  - Assisted ventilations may be required using a bag valve mask and reservoir with oxygen flowrate at 10-15 liters/min for patients with signs of hypoxia, inability to adequately protect their airway, or signs of inadequate respiration
- **Pediatric Patients:**
  - High concentration oxygen should always be used
  - Blow-by oxygen is an inadequate method of oxygenation. Use the closest age or size-appropriate oxygen delivery mechanism (e.g. nasal cannula, facemask, bag valve mask)
  - Do not allow the mask to press against the eyes
  - Chest rise is the best indication of adequate ventilation in pediatric patients
  - Do not overinflate the lungs when assisting ventilations

Airway Management and Airway Monitoring

AIRWAY MANAGEMENT

- All patients require continuous monitoring of their airway to ensure patency
- ~~Utilize a PEEP valve~~A PEEP valve shall be utilized when performing assisted ventilations, if available, ~~when performing assisted ventilations~~unless contraindications such as hypotension are present
- Wherever the term "airway management" is used throughout these protocols, the following shall be considered:
  - Position of the patient's head
  - Need for airway adjuncts
  - Need for oropharyngeal suctioning
  - Need for ALS advanced airway management
- **Pediatric Patients:**
  - Do not hyperextend the neck as this may obstruct the airway.

AIRWAY MONITORING

- ~~Use of pulse oximetry (SpO_2) is mandatory for ALS and BLS units~~
- Continuous waveform capnography ($ETCO_2$) that is recordable and available for QA is mandatory ~~for ALS~~ and must be used whenever advanced airway management (endotracheal intubation or use of a supraglottic device) is performed EXCEPT when a supraglottic device is used and there are insufficient resources available to provide continuous waveform capnography to all patients requiring advanced airway management (e.g. MCI event or other similar situations)
- Non-invasive capnography is optional for monitoring a patient's respiratory status due to medication administration (i.e. opioids, benzodiazepines) and/or medical condition (i.e. severe asthma, altered mental status)

ADVANCED AIRWAY MANAGEMENT

- Advanced airway management refers to endotracheal intubation or the use of a supraglottic airway device (i.e. dual-lumen esophageal/tracheal tubes, laryngotracheal tubes, or other non-visualized airways as approved by an EMS agency Medical Director)
- An endotracheal intubation attempt is defined as the introduction of the laryngoscope blade past the teeth; it is still defined as an attempt even if there is no insertion of an endotracheal tube

- For adult patients, effective bag valve mask ventilation is an acceptable alternative to advanced airway placement, unless the protocol specifically requires an advanced airway
- Either effective bag valve mask ventilation shall be continued or the placement of a supraglottic airway shall be performed after two TOTAL unsuccessful attempts at endotracheal intubation (either by one or multiple providers)
- For patients in cardiac arrest, there is no preference for the type of advanced airway intervention performed (endotracheal intubation or use of a supraglottic airway); however, do not interrupt chest compressions for placement of an advanced airway. ~~If after two unsuccessful attempts at endotracheal intubation, a supraglottic air~~way device shall be used
- Nasal intubation is not an approved form of advanced airway management within the New York City region
- **Pediatric Patients**
  - Effective bag valve mask ventilation is preferred ~~a reasonable alternative to~~over advanced airway interventions (endotracheal intubation or use of a supraglottic airway) in the management of pediatric airways. During pediatric cardiac arrest~~, s in the out-of-hospital~~ setting advanced airway management should only be performed if unable to provide effective bag valve mask ventilation
  - Cuffed endotracheal tubes shall be used whenever performing endotracheal intubation in pediatric patients ~~When noted in the protocols, or when other maneuvers used to ventilate the pediatric patient are inadequate,~~When ~~endotracheal intubation is performed in pediatric~~ patients, ~~it should be attempted with a cuffed endotra~~cheal tube

OROGASTRIC TUBE

- After performing advanced airway management and after the device is secured, consider placement of an orogastric tube

- Nasal intubation is not an approved form of advanced airway management within the New York City region
- **Pediatric Patients**
  - Effective bag valve mask ventilation is a reasonable alternative to advanced airway interventions (endotracheal intubation or use of a supraglottic airway) in the management of pediatric cardiac arrests in the out-of-hospital setting
  - When noted in the protocols, or when other maneuvers used to ventilate the pediatric patient are inadequate, endotracheal intubation should be attempted with a cuffed endotracheal tube

OROGASTRIC TUBE

- After performing advanced airway management and after the device is secured, consider placement of an orogastric tube

Blood Drawing

- Blood drawing by Paramedics is permitted at the discretion of an EMS agency Medical Director

Medication Administration

MEDICATION ADMINISTRATION

- With few exceptions, the medications in the REMAC protocols are written as weight-based dosages with maximums that refer to the maximum weight-based dose for the patient. When calculating the appropriate dose, a patient's actual body weight should be used. It is understood that weight-based dosing may lead to calculated patient doses that are difficult to accurately measure and administer. Additionally, the prehospital setting oftentimes necessitates the use of estimated patient weights that may also be less accurate. Therefore, medication dosages may be rounded to the closest, practical-to-administer dose. The actual administered dose must be documented in the ePCR.

PRESCRIBED MEDICATION ADMINISTRATION ASSISTANCE

- Assistance with a patient's prescribed medications shall be within the provider's scope of practice and limited to medications and routes specified within the NYC REMAC Prehospital Treatment Protocols. Contact a REMAC certified physician for further guidance if medications and routes are not included within the NYC REMAC Prehospital Treatment Protocols

ADVANCED AIRWAY DEVICE ENDOTRACHEAL MEDICATION ADMINISTRATION

- Other than nebulized medications, mMedication administration via an advanced airway the endotracheal tube device is not approvedthe standard of care in the NYC region

INTRANASAL (IN) MEDICATION ADMINISTRATION

- In the absence of intravascular access, the following medications are approved for intranasal administration when an appropriate atomizer device is available. Use the dosing as specified in the protocols for the following medications:
  - Glucagon
  - Fentanyl
  - Lorazepam
  - Midazolam
  - Naloxone
  - Ketamine
  - Diazepam
- The intranasal route of administration is contraindicated in patients with epistaxis

INTRAVASCULAR ACCESS AND MEDICATION ADMINISTRATION

- The term “intravascular access” refers to either intravenous (IV) or intraosseous (IO) access. For adult and pediatric patients in shock in which IV access is not obtained after two attempts, IO access shall be attempted (maximum 2 attempts)
- Where ever the term “IV” is used in these Prehospital Treatment Protocols, medications may be administered with the same dosages via IV or IO as these are considered equivalent routes
- For a conscious patient, administer preservative-free 2% Lidocaine 0.5 mg/kg IO (maximum 50 mg) slowly over 2-3 minutes, PRIOR to the administration of any medication or fluid IO. If needed, administer additional preservative-free 2% Lidocaine 0.25 mg/kg IO (maximum 25 mg) slowly over 30 seconds

VASOPRESSOR MEDICATION ADMINISTRATION

- All continuous vasopressor infusions MUST be administered using an IV flow regulating device or IV infusion pump
- These infusions should be preferably administered via an 18 gauge or larger IV catheter
- Standard IV administration sets are not considered to be IV flow regulating devices

Alternative Treatment / Alternative Transport Destination Decisions

- If that patient meets criteria in Appendix P: Alternative Destination/Treat-in-Place Patient Selection Criteria, ~~If the mechanism of illness/injury, history or physical exam findings do not indicate major trauma, burns, or a need for other types of specialty care,~~ the patient must be offered either treat-in-place ~~with patient release~~ or transport to an alternate destination ~~if that patient meets criteria in Appendix P: Alternative Destination/Treat-in-Place Patient Selection Criteria~~. If the patient refuses despite appropriate explanations, then the patient may be offered transport to the nearest NYC 911 System Ambulance Destination Emergency Department (Appendix I), unless the patient has any of the following conditions:
    - The patient is stable and remains stable throughout transport, and the patient requests transport to an alternative 911 system ambulance destination emergency department or regionally approved alternative destination if the patient meets criteria established for that destination type or to an equivalent destination less than or equal to an additional ten minutes
    - The patient requires specialty care as described previously that is available at an alternative 911 system ambulance destination emergency department, but is unavailable at the nearest New York City 911 system ambulance destination emergency department, or OLMC so directs

TREAT-IN-PLACE ~~WITH PATIENT RELEASE~~

1. Medical Issue/Complaint (i.e. physical injury/illness/complaint):
    1.1 All patients considered for treat-in-place ~~with patient release~~ must be offered a choice between treat-in-place, transport to the nearest appropriate alternative destination, or transport to the nearest appropriate 911 receiving emergency department. Prehospital providers must not refuse a patient's request for transport. For patients agreeing to treat-in-place, the provider shall:
        - Contact Telehealth if the patient meets criteria as specified in Appendix P: Alternative Destination/Treat-In-Place Patient Selection Criteria AND whom the provider thinks may be safely considered for this option
        - Contact OLMC for approval of a Telehealth consultation for patients who do not fulfill the criteria as specified in Appendix P: Alternative Destination / Treat-In-Place Patient Selection Criteria

    1.2 If Telehealth determines that the patient is not appropriate for treat-in-place then Telehealth can direct the prehospital provider to follow their standard protocol, policy and procedures for transport. If the patient refuses transport, then the RMA shall be processed through OLMC

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Changes to the Prehospital Treatment Protocols

1.3 The prehospital provider is responsible for monitoring patient stability during the Telehealth interaction. If at any time the provider determines that the patient is unstable, the provider is to announce this to Telehealth and immediately suspend Telehealth and follow 911 system protocol(s) to provide patient stabilization and transport to the nearest appropriate 911 system ambulance destination emergency department. OLMC contact is not required unless the provider has questions or requires medical control direction

1.4 Telehealth cannot provide online medical control ~~direction and~~ (e.g., cannot direct an~~the~~ EMS~~prehospital~~ provider~~s~~ to administer medications) and cannot authorize patient transport to a specific hospital.

1.5 Either Telehealth or OLMC may refer patients to the other as appropriate

1.6 If a patient refuses transport after EMS assessment and treatment, the patient shall be considered as 'treat-in-place' in accordance with NYS law. All required RMA procedures must be followed (e.g. OLMC authorization of RMA if indicated).

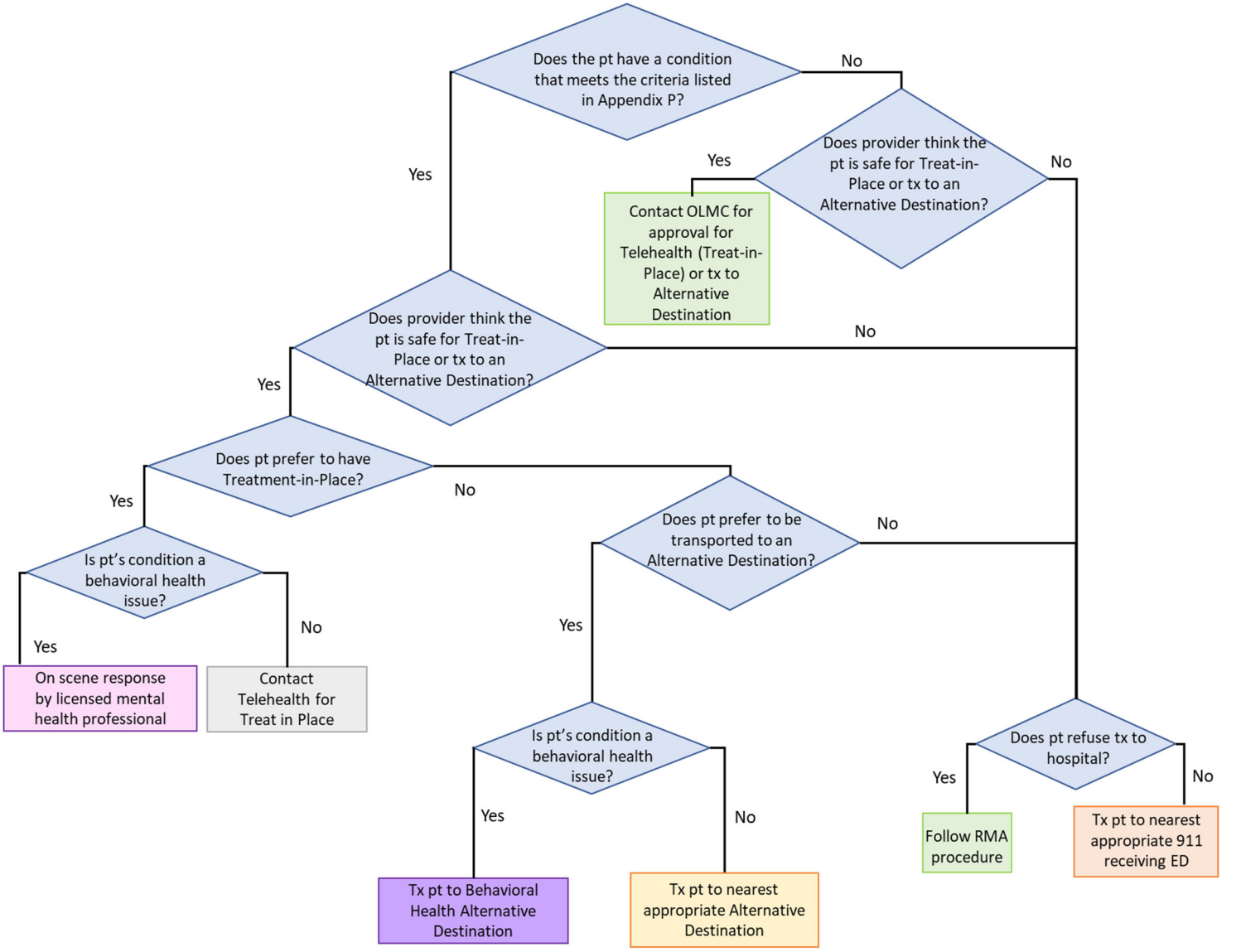
~~2. Behavioral Health Issue/Complaint:~~

~~2.1 If the prehospital provider believes that the patient meets behavioral health criteria as specified in Appendix P: Alternative Destination/Treat-In-Place Patient Selection Criteria AND whom the provider thinks may be safely considered for treat-in-place; (On scene evaluation by a licensed mental health professional when available, details to be provided in a separate directive)~~

~~2.2 Behavioral health issues/complaints are not appropriate for Telehealth~~

ALTERNATIVE TRANSPORT DESTINATIONS

3. For patients that fulfill the criteria listed in Appendix P: Alternative Destination/Treat-In-Place Patient Selection Criteria, AND who the provider feels are not appropriate for treat-in-place ~~with patient release~~ or refuse treat-in-place may be transported to the nearest appropriate alternative destination without contacting OLMC.
4. For patients that do not fulfill the criteria as specified in Appendix P: Alternative Destination/Treat-In-Place Patient Selection Criteria, the EMT/paramedic~~provider~~ must contact OLMC for consultation, and if approved,~~/approval~~ transport to ~~transport the following patients whom the provider thinks may still be appropriately transported to~~ an alternative destination.
5. The provider must contact OLMC for RMAs.


Does the pt have a condition that meets the criteria listed in Appendix P?
No
Yes
Does provider think the pt is safe for Treat-in-Place or tx to an Alternative Destination?
Yes
No
Contact OLMC for approval for Telehealth (Treat-in-Place) or tx to Alternative Destination
Does provider think the pt is safe for Treat-in-Place or tx to an Alternative Destination?
No
Yes
Does pt prefer to have Treatment-in-Place?
Yes
No
Is pt's condition a behavioral health issue?
Yes
No
On scene response by licensed mental health professional
Contact Telehealth for Treat in Place
Does pt prefer to be transported to an Alternative Destination?
No
Yes
Is pt's condition a behavioral health issue?
Yes
No
Tx pt to Behavioral Health Alternative Destination
Tx pt to nearest appropriate Alternative Destination
Does pt refuse tx to hospital?
Yes
No
Follow RMA procedure
Tx pt to nearest appropriate 911 receiving ED

Non-Traumatic Cardiac Arrest (Adult)

CFR and All Provider Levels

1. Begin CPR as per AHA guidelines
2. Turn on the Automated External Defibrillator (AED)
3. Apply the AED pads to the patient's bare chest with minimal interruption of chest compressions
4. Connect AED pads and follow the AED voice prompts
5. Continue CPR, re-analyze every two (2) minutes and shock as indicated

CFR STOP

EMT

6. Request ALS assistance
7. Continue CPR and AED analysis with minimal interruption of chest compressions

~~7.~~8. Only if unable to provide effective bag valve mask ventilation, perform advanced airway management (i.e. supraglottic airway) ~~May place supraglottic airway~~, if available and trained to do so~~and authorized~~, ~~only~~ after second rhythm analysis

~~8.~~9. ~~Only l~~initiate t~~T~~ransport after at least ~~total of~~ three (3) cycles of CPR and AED analysis **EMT STOP**

Paramedic

~~9.~~10. Continue CPR and defibrillation cycles with minimal interruption of chest compressions 10.11. ~~If a~~n AED is in place, transition from the AED to an ALS monitor after AED analysis and begin cardiac monitoring. Use the maximum joule setting possible when defibrillating

~~11.~~12. Perform needle decompression for a suspected tension pneumothorax (Appendix M: Needle Decompression of Tension Pneumothorax) as needed

~~12.~~13. Obtain intravascular access

~~13.~~14. Administer Epinephrine 1 mg IV (10 ml of a 1:10,000 concentration). Repeat every 3-5 minutes until patient achieves return of spontaneous circulation (ROSC)

14.~~15. P~~If ~~p~~Performing advanced airway management, only do so after second rhythm analysis if needed

15.~~16.~~ Obtain blood glucose level and treat as needed

16.~~17.~~ If the rhythm is ventricular fibrillation/pulseless ventricular tachycardia, administer one of the following:

- OPTION A: Amiodarone 300 mg IV
- OPTION B: Lidocaine 100 mg IV

~~17.~~18. If on scene and after 20 minutes of ALS treatment, consider contacting OLMC for medical control options if indicated, or for termination of resuscitation

Paramedic STOP

Medical Control Options

~~18.~~19. For suspected tricyclic antidepressant overdose, salicylate toxicity, or hyperkalemia, administer Sodium Bicarbonate 44-88 mEq IV. Repeat Sodium Bicarbonate 44 mEq IV as needed every 10 minutes

~~19.~~20. For suspected hyperkalemia or calcium channel blocker overdose, administer Calcium Chloride ~~-~~1 g IV slowly followed with a crystalloid fluid flush

~~20.~~21. Administer crystalloid fluids 20 ml/kg IV (maximum 2 L)

~~21.~~22. For persistent or recurring ventricular fibrillation or pulseless ventricular tachycardia, administer one of the following:

- OPTION A: Amiodarone 150 mg IV
- OPTION B: Lidocaine 50 mg IV
- OPTION C: Magnesium Sulfate 2 g IV diluted in 10 ml Normal Saline over 2 minutes

Key Points / Considerations

- Do not interrupt compressions for placement of an advanced airway
- Minimize interruption in compressions for placement of a mechanical CPR device
- Do not delay compressions to begin ventilations
- Do not delay ventilations to connect supplemental oxygen
- An AED should be placed as soon as possible without interrupting compressions
- Artifact from vibrations in a moving ambulance may compromise the effectiveness of an AED
- Maximum joule setting may vary depending on the defibrillator used
- Consider the possibility of conditions with reversible causes masquerading as PEA/asystole that require immediate treatment
- Routine use of Calcium Chloride and/or Sodium Bicarbonate in cardiac arrest has not been shown to improve outcomes
- Calcium Chloride and Sodium Bicarbonate should be given in separate IV lines or separated by a flush of at least 20 ml of crystalloid fluid to prevent precipitation
- As per AHA, the benefit of double sequential defibrillation for refractory shockable rhythms has not been established

Non-Traumatic Cardiac Arrest (Pediatric)

CFR and All Provider Levels

1. Begin CPR as per AHA guidelines
2. Turn on the Automated External Defibrillator (AED)
3. Apply appropriately-sized AED pads to the patient's bare chest with minimal interruption of chest compressions
4. Connect AED pads and follow the AED voice prompts
5. Continue CPR, re-analyze every two (2) minutes and shock as indicated

CFR STOP

EMT

6. Request ALS assistance
7. Continue CPR and AED analysis with minimal interruption of chest compressions
8. ~~Transport Only l~~initiate transport after at least ~~total of~~ three (3) cycles of CPR and AED analysis

EMT STOP

Paramedic

9. Continue CPR and defibrillation cycles with minimal interruption of chest compressions
10. Perform advanced airway management ~~after second rhythm analysis~~ only if unable to provide effective bag valve mask ventilations

~~10.~~11. If an AED is in place, transition from the AED to an ALS monitor after AED analysis and begin cardiac monitoring

~~11.~~12. Obtain intravascular access

~~12.~~13. Administer Epinephrine 0.01 mg/kg IV (maximum 1 mg) (0.1 ml/kg of a 1:10,000 concentration). Repeat every 3-5 minutes until patient achieves return of spontaneous circulation (ROSC)

~~13.9. Perform advanced airway management after second rhythm analysis only if unable to provide effective bag valve mask ventilations~~

14. If the rhythm is ventricular fibrillation/pulseless ventricular tachycardia:
    - 14.1 Defibrillate with the following energy settings using appropriately-sized AED/monitor pads:
        - Initial defibrillation: 2 joules/kg
        - Second defibrillation as needed: 4 joules/kg
        - Subsequent defibrillations as needed: 10 joules/kg
    - 14.2 Administer one of the following medications:
        - OPTION A: Amiodarone 5 mg/kg IV (maximum 300 mg)
        - OPTION B: Lidocaine 1 mg/kg IV (maximum 100 mg)
15. Obtain blood glucose level (BGL). If BGL < 60 mg/dl, administer Dextrose 0.5 g/kg IV

(maximum 25 g)

16. Administer crystalloid fluids 20 ml/kg IV (maximum 2 L)

Paramedic STOP

Medical Control Options

17. For suspected tricyclic antidepressant overdose, salicylate toxicity, or hyperkalemia, administer Sodium Bicarbonate 1 mEq/kg IV (maximum 44 mEq). Repeat as needed every 10 minutes
18. For suspected hyperkalemia or calcium channel blocker overdose, administer Calcium Chloride 20 mg/kg IV (maximum 1 g) slowly, followed with a crystalloid fluid flush
19. Administer crystalloid fluids 20 ml/kg IV (maximum 2 L)
20. For persistent or recurring ventricular fibrillation or pulseless ventricular tachycardia, administer one of the following:
    - OPTION A: Amiodarone 5 mg/kg IV (maximum 150 mg). Repeat as needed (maximum cumulative 3 doses, maximum cumulative 450 mg)
    - OPTION B: Magnesium Sulfate 25-50 mg/kg IV (maximum 2 g)

Key Points / Considerations

- Defibrillation should not be delayed or withheld for any reason
- If the cardiac monitor is unable to deliver the desired weight-based joule setting, use the closest setting without exceeding the desired setting
- Do not interrupt chest compressions for placement of an advanced airway
- Effective bag valve mask ventilation is a reasonable alternative to advanced airway interventions (endotracheal intubation or use of a supraglottic airway) in the management of pediatric cardiac arrests in the out-of-hospital setting
- Utilize a PEEP valve, if available, when performing assisted ventilations
- 10% Dextrose is strongly preferred for patients with age ≤ 1 month; 5% Dextrose may be used if 10% Dextrose is unavailable. For patients with age between 1 month – 14 years, 5% Dextrose, 10% Dextrose or 25% Dextrose may be used
- Magnesium Sulfate must be diluted prior to administration. An example method uses Magnesium Sulfate 2 g diluted in 50 ml Normal Saline (final concentration 40 mg/ml). Agitate the solution prior to withdrawing the desired volume
- If the provider is uncertain whether a patient should be treated under adult or pediatric cardiac arrest protocols, begin CPR and consult OLMC

Obstructed Airway (Adult and Pediatric)

CFR and All Provider Levels

1. If the patient is conscious and can breathe, cough, speak, or cry; encourage the patient to cough
2. If the patient is unconscious or cannot breathe, cough, speak, or cry; perform airway maneuvers or CPR, as per current AHA guidelines
3. ABCs and vital signs
4. Airway management and appropriate oxygen therapy

CFR STOP

EMT

5. Request ALS assistance
6. Transport
7. Perform obstructed airway maneuvers enroute to the hospital as needed

EMT STOP

Paramedic

8. Perform ~~direct~~ laryngoscopy and attempt to remove the foreign body with Magill forceps
9. Perform advanced airway management as needed
10. If intubation is confirmed with ~~direct~~ visualization, but unable to ventilate:
    - 10.1 Note the depth of the endotracheal tube
    - 10.2 Deflate the endotracheal tube cuff, if using a cuffed tube
    - 10.3 Advance the endotracheal tube to its deepest depth
    - 10.4 Return the endotracheal tube to its originally noted depth
    - 10.5 Re-inflate the endotracheal tube cuff, if using a cuffed tube, and attempt ventilations
    - 10.6 If unable to effectively ventilate the patient using the above maneuvers, immediately initiate transport

Paramedic STOP

Medical Control Options

Key Points / Considerations

Respiratory Distress / Respiratory Failure (Adult)

CRITERIA

- This protocol is for patients who have respiratory distress or respiratory failure from an unclear etiology or who have persistent respiratory distress or respiratory failure despite treatment under other existing protocols
- Patients with respiratory distress or respiratory failure due to specific reasons (e.g. obstructed airway, anaphylaxis/severe allergic reaction) should be treated accordingly

CFR and All Provider Levels

1. ABCs and vital signs
2. Use airway adjuncts as needed and administer oxygen as follows:
    - For respiratory distress, administer oxygen and allow the patient to maintain a position of comfort
    - For respiratory failure, assist ventilations at a rate of 10 breaths/min with supplemental oxygen
3. Assess and treat for an overdose as needed

CFR STOP

EMT

4. Request ALS assistance
5. For patients with persistent respiratory distress, begin continuous positive airway pressure (CPAP) therapy (Appendix N: Continuous Positive Airway Pressure Therapy), if available
6. Transport

EMT STOP

Paramedic

7. Perform advanced airway management as needed
8. Assess and treat for a tension pneumothorax as needed (Appendix M: Needle Decompression of a Tension Pneumothorax)
9. Begin cardiac monitoring
10. Perform, record and evaluate EKG rhythm
11. Obtain intravascular access
12. For patients with suspected acute cardiogenic pulmonary edema AND who have a SBP > 120 mmHg, administer Nitroglycerin 0.4 mg SL/IV. Repeat every 5 minutes as needed
13. Monitor vital signs every 2-3 minutes

Paramedic STOP

Medical Control Options

14. Administer Furosemide 20-80 mg IV, if available

Key Points / Considerations

- All patients who are in respiratory arrest must receive ventilatory assistance unless a valid New York State Prehospital DNR Order and/or MOLST/eMOLST form is presented to the crew
- Patients who require supplemental oxygen should receive high concentration oxygen via a non-rebreather mask set at 10-15 liters/min:
    - If a mask is not tolerated by the patient, a nasal cannula set at 6 liters/minute should be used and properly documented
    - There is no reason to withhold high concentration oxygen when required in adult or pediatric patients
    - Patients who are chronically maintained on oxygen and who do not require high concentration oxygen shall be administered oxygen at their prescribed flowrate
- Monitor breathing continuously and assess for signs of hypoxia and/or increasing respiratory distress
- Nitroglycerin shall not be administered to patients who have used erectile dysfunction medications within the past 72 hours, unless otherwise directed by OLMC

Altered Mental Status (Adult and Pediatric)

CFR and All Provider Levels

1. Assess the scene for potential or actual danger and establish a safe zone, if necessary
2. ABCs and vital signs
3. Airway management
4. Administer oxygen
5. Assess and treat for an overdose as needed

CFR only:

~~5.~~6. If the patient's blood glucose level is suspected to be low AND the patient is conscious AND able to drink without assistance, administer a glucose solution or other sugar containing beverage

CFR STOP

EMT

7. Request ALS assistance
8. Obtain blood glucose level (BGL)

~~1.~~ 9. If BGL < 60mg/dl, AND the patient is conscious AND able to drink without assistance, administer a glucose solution or other sugar containing beverage

~~2.~~ 10. ~~Obtain blood glucose level (BGL)~~

~~3. If BGL < 60 mg/dl AND the patient is conscious AND able to drink without assistance, administer a glucose solution or other sugar containing beverage~~

~~4.~~ Transport

EMT STOP

Paramedic

~~1.~~9. Obtain intravascular access

~~2.~~10. For patients with a glucometer reading < 60 mg/dl, administer Dextrose OR Glucagon as follows. Repeat as needed if there is no change in symptoms or if symptoms fail to improve significantly:

- **ADULT**: Dextrose up to 25 g IV
- **PEDIATRIC**: Dextrose 0.5 g/kg IV (maximum 25 g)
- For **ADULT** and **PEDIATRIC** patients, administer Glucagon 1 mg IM/IN if intravascular access is unavailable

Paramedic STOP

Medical Control Options

Key Points / Considerations

- For pediatric patients, no more than 2 (two) attempts at obtaining intravascular access shall be made before administering Glucagon. Intranasal (IN) Glucagon is the preferred administration route
- 10% Dextrose is strongly preferred for patients with age ≤ 1 month; 5% Dextrose may be used if 10% Dextrose is unavailable. For patients with age between 1 month – 14 years, 5% Dextrose, 10% Dextrose or 25% Dextrose may be used
- Consider underlying causes of altered mental status (e.g. trauma, medical, behavioral) and treat appropriately
- Do not administer oral solutions to unconscious patients or to patients with head injuries
- Diabetic patients with a blood glucose level reading between 60-80 mg/dl may still be symptomatic secondary to hypoglycemia. In the presence of such signs and symptoms, treat accordingly

Eye Injuries (Adult and Pediatric)

CFR and All Provider Levels

1. ABCs and vital signs
2. Airway management and appropriate oxygen therapy
3. Do not apply pressure to the globe of the eye
4. For non-penetrating foreign object/chemical eye injuries, immediately and continuously flush the affected eye(s) with Normal Saline for a minimum of 20 minutes
5. For eye injuries not requiring irrigation, pProtect the eye from further trauma by applying a bulky dressing or eye shield as appropriate
5.6. For impaled objects to the eye, stabilize the object with bulky dressings and cover both eyes to prevent conjugateconsensual eye movement
6.7. For an avulsed eye:
    - Do not attempt to replace the eye into the socket
    - Cover the eye with saline-moistened, sterile dressings
    - Stabilize dressings with eye shield aor paper cup or similar object

CFR STOP

EMT

8. Assist the patient with removal of contact lenses as needed
9. Transport

EMT STOP

Paramedic

10. For chemical eye injuries, administer one of the following medications to assist with irrigation as needed:
    - OPTION A: Proparacaine 0.5% 1-2 gtts topically in affected eye(s). Repeat as needed
    - OPTION B: Tetracaine 0.5% 1-2 gtts topically in affected eye(s). Repeat as needed

Paramedic STOP

Medical Control Options

Key Points / Considerations

Bone and Joint Injuries (Adult and Pediatric)

CFR and All Provider Levels

1. Control external bleeding
2. ABCs and vital signs
3. Airway management and appropriate oxygen therapy
4. Assess for shock and treat as needed
5. Manually stabilize the injury
6. Cover protruding bones and wounds with dry sterile dressings
7. Assess for peripheral pulses, motor function, and sensation to the injured extremity
8. Apply cold pack(s) to closed injury sites

CFR STOP

EMT

9. Immobilize the extremity injury:
    - 9.1 Assess for peripheral pulses, motor function, and sensation to the injured extremity before and after immobilization
    - 9.2 Align the extremity by applying gentle manual traction prior to splinting if the distal extremity has ANY of the following conditions: cyanotic, pulseless or if the long bone is severely deformed. If there is increased pain or resistance, stop and splint extremity in its original position
    - 9.3 Immobilize an injured joint in its position of function. If unable to move the joint due to increased pain or resistance, splint the joint in its original position
    - 9.4 Elevate the extremity
10. For ~~isolated,~~ suspected, ~~isolated,~~ closed ~~, suspected~~ mid-thigh fractures, apply a traction splint. ~~as indicated~~
11. Stabilize ~~potentially~~ suspected ~~unstable~~ pelvic fractures
12. Transport

EMT STOP

Paramedic

Paramedic STOP

Medical Control Options

EMT and Paramedic

13. For reduction of a clinically obvious, isolated medial or lateral patella dislocation:
    - Gradually extend the knee while a second provider simultaneously applies pressure on the patella towards the midline of the knee
    - Immobilize the lower extremity when the leg is fully extended
    - If there is increased pain or resistance, splint the joint in its original position
    - If a patella dislocation is uncertain or if the patient's body habitus prevents accurate assessment, immobilize the joint in its original position

Key Points / Considerations

- Splinting should not delay transport of the critical or unstable patient
- Depending on the traction splint device used, evaluate for any suspected injuries to the pelvis, knee, lower leg, or ankle on the same side of the injury prior to use, as these may be contraindications to traction splinting.
- Do not attempt to reduce intra-articular or superior patella dislocations

Obstetric Emergencies

CFR and All Provider Levels

1. ABCs and vital signs
2. Airway management and appropriate oxygen therapy
3. Check for crowning if the mother is having contractions, the urge to push, or has the sensation of having a bowel movement. If crowning is present, prepare for imminent delivery
4. If delivery has begun, treat appropriately
5. If delivery is not imminent, place the patient in a LEFT lateral recumbent position
6. Assess for shock and treat as needed

CFR STOP

EMT

7. Request ALS assistance if delivery is imminent or for any special emergency childbirth considerations
8. For vaginal bleeding in pregnancy:
    - Place dressings over the vagina to help estimate the quantity of blood loss
    - If the patient is immediately post-partum, massage the mother's abdomen over the uterus
9. Transport

EMT STOP

Paramedic

10. Obtain intravascular access for patients with severe pre-eclampsia, eclampsia or post-partum hemorrhage
11. For patients with eclampsia (i.e. seizures secondary to elevated blood pressures during pregnancy), administer Magnesium Sulfate 4 g IV (diluted in 50-100 ml Normal Saline) over 10 minutes

Paramedic STOP

Medical Control Options

12. For ~~severe~~ pre-eclampsia with severe features, administer Magnesium Sulfate 42~~2~~ g IV (diluted in 50-100 ml Normal Saline) over 10 minutes

Key Points / Considerations

- Do not delay treatment for seizures while preparing and/or administering Magnesium Sulfate
- Consider supine hypotension syndrome as a cause of shock
- ~~Severe P~~pre-eclampsia with severe features is when pregnant patients have EITHER~~BOTH~~ of the following conditions:
    - Systolic blood pressure ≥ 160 mm Hg OR a diastolic blood pressure ≥ 110 mm Hg
    - Systolic blood pressure ≥ 140 mmHg OR diastolic blood pressure ≥ 90 mmHg with ANY of the following: severe~~Symptoms of a~~ headache, visual disturbances, right upper quadrant or epigastric abdominal pain~~pulmonary edema or lower extremity edema~~

- Eclampsia and pre-eclampsia do not occur prior to 20 weeks of gestation
- Eclampsia and pre-eclampsia may occur up to six weeks~~one (1) month~~ post-partum

Seizures (Adult and Pediatric)

CFR and All Provider Levels

1. Protect the patient from injury
2. ABCs and vital signs
3. Perform airway management with the following special considerations:
    - Position the patient to maintain airway patency
    - Do not attempt placement of OPA during convulsions
    - Consider use of NPA during active seizures, if available
4. Administer oxygen
5. Avoid unnecessary or excessive restraint
6. Treat injuries as needed

CFR STOP

EMT

7. Obtain blood glucose level and treat as needed
8. Request ALS assistance for ongoing seizures at time of patient contact
9. Transport

EMT STOP

Paramedic

10. For patients experiencing generalized seizures that are ongoing or recurring AND if the patient is actively seizing, administer one of the following:
    - OPTION A: Midazolam 0.2 mg/kg IV/IN/IM (maximum 5 mg). Repeat as needed after 5 minutes (maximum cumulative dose 10 mg)
    - OPTION B: Lorazepam 0.1 mg/kg IV/IN/IM (maximum 2 mg). Repeat as needed after 5 minutes (maximum cumulative dose 4 mg)
    - OPTION C: Diazepam 0.2 mg/kg mg IV (maximum 5 mg) slowly over 1 minute. Repeat as needed after 5 minutes (maximum cumulative dose 10 mg)
11. Perform advanced airway management as needed
12. Obtain intravascular access
13. Begin cardiac monitoring

Paramedic STOP

Medical Control Options

14. If the patient continues to actively seize, administer an additional dose of any standing order medication

Key Points / Considerations

- Status epilepticus (prolonged or repetitive seizures) is a critical medical emergency. Anticonvulsant medication should be administered as soon as possible, preferably starting no later than 5 minutes after the onset of the seizure
- Intravascular access is the preferred route for benzodiazepine administration if it has already been established. If intravascular access has not been established, utilize the most appropriate and quickest route of administration available, with the intranasal (IN) route preferred over the intramuscular (IM) route
- The order of preference of medications when treating seizures is determined by a quick onset of action. Because of its fastest onset of action, Midazolam is the preferred medication; followed by Lorazepam and then Diazepam
- For patients who continue to seize despite benzodiazepine administration, it is preferential to continue additional dosing of the same benzodiazepine, rather than switching to a different medication
- Diabetic patients with a blood glucose level reading between 60-80 mg/dl may still be symptomatic secondary to hypoglycemia. In the presence of such signs and symptoms, treat accordingly
- Consider eclampsia as a cause of seizures for pregnant patients in their third trimester or who have delivered within six weeks~~one month~~ and treat as needed
- When using any of the above medications, monitor the patient using non-invasive capnography, if available
- Do not administer medications for seizures that have stopped

Atrial Fibrillation / Atrial Flutter with Rapid Ventricular Response (Adult)

Paramedic

1. Unstable Atrial Fibrillation/Atrial Flutter
    1.1 Perform initial synchronized cardioversion using 200~~100~~ joules
    1.2 Repeat synchronized cardioversion as needed using ~~200,~~ 300, and 360 joules
2. Stable Atrial Fibrillation/Atrial Flutter
    2.1 Consider contacting OLMC for medication administration options

Paramedic STOP

Medical Control Options

3. For unstable atrial fibrillation/atrial flutter
    - OPTION A: Administer Amiodarone 150 mg IV (diluted in 100 ml D_5W) over 10 minutes
    - OPTION B: Repeat synchronized cardioversion at maximum joule setting
4. For patients with stable atrial fibrillation/atrial flutter with a persistently elevated heart rate administer one of the following:
    - OPTION A: Crystalloid fluids 10 ml/kg IV
    - OPTION B: Diltiazem 0.25 mg/kg IV slowly over 2 minutes while continuously monitoring blood pressure
    - OPTION C: Amiodarone 150 mg IV (diluted in 100 ml of D_5W) over 10 minutes

Key Points / Considerations

- Treat the underlying cause of the dysrhythmia if it is due to a non-cardiac etiology (i.e. infection, fever, asthma, behavioral)

Anaphylaxis / Severe Allergic Reaction (Adult and Pediatric)

CFR and All Provider Levels

1. ABCs and vital signs
2. Airway management
3. Administer oxygen
4. If patient is suspected to have anaphylaxis, perform the following:
    - Assist the patient with administration of their prescribed Epinephrine auto-injector IM
    - If Epinephrine has not been prescribed, administer Epinephrine auto-injector IM according to age and/or weight, if available and trained to do so:
        - Age < 9 years and weight < 30 kg: Pediatric Epinephrine (0.15 mg) auto-injector IM
        - Age ≥ 9 years or weight ≥ 30 kg: Adult Epinephrine (0.3 mg) auto-injector IM
5. Assess for respiratory distress/respiratory failure, shock, cardiac arrest and treat as needed

CFR STOP

EMT

6. Request ALS assistance
7. If patient has symptoms of anaphylaxis, administer Epinephrine as follows:
    - Age < 9 years and weight < 30 kg:
        - OPTION A: Epinephrine 0.15 mg IM via syringe
        - OPTION B: Pediatric Epinephrine auto-injector IM
    - Age ≥ 9 years or weight ≥ 30 kg:
        - OPTION A: Epinephrine 0.3 mg IM via syringe
        - OPTION B: Adult Epinephrine auto-injector IM
8. Transport
9. For continued symptoms after 3-5 minutes, administer a repeat dose of Epinephrine IM (maximum 2 doses, including Epinephrine dose that was administered by CFR)
10. For wheezing, administer 0.083% Albuterol Sulfate 3 ml (1 unit dose) mixed with 0.02% Ipratropium Bromide 2.5 ml (1 unit dose) nebulized over 5-15 minutes. Repeat as needed (maximum 3 doses)

EMT STOP

Paramedic

11. Perform advanced airway management as needed
12. For patients with symptoms of anaphylaxis, administer Epinephrine 0.01 mg/kg IM (maximum 0.5~~3~~ mg) of a 1:1,000 concentration. For continued symptoms after 3-5 minutes, repeat as needed [maximum 3 doses, including Epinephrine doses administered by BLS and/or CFR]
13. For patients with signs of shock:
    13.2 Obtain intravascular access

13.3 Administer crystalloid fluids 20 ml/kg IV (maximum 2 L)

14. Administer one of the following:
    - OPTION A: Dexamethasone 0.6 mg/kg IV/IM/PO (maximum 12 mg)
    - OPTION B: Methylprednisolone 1 mg/kg IV/IM (maximum 60 mg)
15. Administer Diphenhydramine 1 mg/kg IV/IM (maximum 50 mg)
16. Administer 0.083% Albuterol Sulfate 3 ml (1 unit dose) nebulized over 5-15 minutes. Repeat as needed (maximum 3 doses)
17. Begin cardiac monitoring

Paramedic STOP

Medical Control Options

EMT:

18. Administer weight-appropriate dose of Epinephrine IM, if available as follows:
    - Age < 9 years and weight < 30 kg:
        - OPTION A: Epinephrine 0.15 mg IM via syringe, if available
        - OPTION B: Pediatric Epinephrine auto-injector IM
    - Age ≥ 9 years or weight ≥ 30 kg:
        - OPTION A: Epinephrine 0.3 mg IM, if available
        - OPTION B: Adult Epinephrine auto-injector IM
19. Administer 0.083% Albuterol Sulfate 3 ml (1 unit dose) nebulized over 5-15 minutes

Paramedic:

20. Administer Epinephrine 0.01 mg/kg IM (maximum 0.53 mg) of a 1:1,000 concentration
21. Administer 0.083% Albuterol Sulfate 3 ml (1 unit dose) nebulized over 5-15 minutes
22. Administer crystalloid fluids 20 ml/kg IV (maximum 2 L)

Key Points / Considerations

- Do not delay transport for any reason, including waiting for a potential second dose of Epinephrine
- Anaphylaxis is considered as an allergic reaction with any of the following:
    - Respiratory compromise (dyspnea, wheezing, stridor, hypoxemia)
    - Signs of shock
    - Two or more signs/symptoms from the following systems:
        - Skin (urticaria, itchy skin)
        - Mucosal (swollen tongue or lips)
        - Gastrointestinal (vomiting, abdominal pain)
    - History of anaphylaxis AND exposure to a known allergen AND one of the mucosal or gastrointestinal signs/symptoms listed above

- Anaphylaxis can be a potentially life-threatening situation most often associated with a history of exposure to:
    - Inciting agent/allergen (bee sting or other insect venom)
    - Medication/drugs
    - Food (i.e. peanuts, seafood)
- IV formulation of Dexamethasone may be administered orally (PO)
- Administration of steroids via IV shall be performed slowly over 2 minutes
- Do not delay transport to the hospital
- Under standing orders:
    - CFR may administer one (1) dose of Epinephrine
    - BLS may administer up to a total of two (2) doses of Epinephrine, including any doses that were administered by CFR
    - ALS may administer up to a total of three (3) doses of Epinephrine, including any doses that were administered by CFR or BLS
    - If first on scene, ALS shall administer the appropriate weight-based dose of Epinephrine as their first dose

Asthma / COPD / Wheezing (Adult and Pediatric)

CFR and All Provider Levels

1. ABCs and vital signs
2. Airway management
3. Administer oxygen
4. Place the patient in a position of comfort
5. Assist the patient with administering their prescribed Albuterol (metered dose inhaler or nebulizer), if available and trained to do so
6. Evaluate for any respiratory distress/respiratory failure, shock, cardiac arrest and treat as needed

CFR STOP

EMT

7. For **ADULT** and **PEDIATRIC** patients (age ≥ 2 years or age ≥ 18 months with previously prescribed ~~treatment with a history of~~ Albuterol ~~use~~), administer 0.083% Albuterol Sulfate 3 ml (1 unit dose) mixed with 0.02% Ipratroprium Bromide 2.5 ml (1 unit dose) nebulized over 5-15 minutes. Repeat as needed (maximum 3 doses)
8. Transport
   - Initiate transport after starting nebulizer treatment
   - Do not delay transport to complete medication administration
9. For **ADULT** patients with persistent respiratory distress, begin continuous positive airway pressure (CPAP) therapy (Appendix N: Continuous Positive Airway Pressure Therapy), if available
10. For patients who are in severe respiratory distress/respiratory failure and/or shock, administer Epinephrine as follows:
    - Age < 9 years and weight < 30 kg:
      - OPTION A: Epinephrine 0.15 mg IM via syringe, if available
      - OPTION B: Pediatric Epinephrine auto-injector IM
    - Age ≥ 9 years or weight ≥ 30 kg:
      - OPTION A: Epinephrine 0.3 mg IM via syringe, if available
      - OPTION B: Adult Epinephrine auto-injector IM

EMT STOP

Paramedic

11. For **ADULT** and **PEDIATRIC** patients (age ≥ 2 years or age ≥ 18 months with previously prescribed ~~a history of~~ Albuterol ~~use~~), administer 0.083% Albuterol Sulfate 3 ml (1 unit dose) nebulized over 5-15 minutes. Repeat as needed (maximum 3 doses)
12. For patients with persistent symptoms:
    12.1 Obtain intravascular access

12.2 For **ADULT** patients, administer Magnesium Sulfate 2 g IV (diluted in 50-100 ml Normal Saline) over 10 minutes

12.3 For **ADULT and PEDIATRIC** patients ≥ 2 years old, administer one of the following:

- OPTION A: Dexamethasone 0.6 mg/kg IV/IM/PO (maximum 12 mg)
- OPTION B: Methylprednisolone 1 mg/kg IV/IM (maximum 60 mg)

13. For patients who are in severe respiratory distress/respiratory failure and/or shock:

13.1 Perform advanced airway management as needed

13.2 If not already administered, or for persistent symptoms despite prior administration, administer Epinephrine 0.01 mg/kg IM (maximum 0.5~~3~~ mg) of a 1:1,000 concentration [maximum 2 doses, including Epinephrine administered by BLS. Multiple Epinephrine doses shall be given at least 20 minutes apart]

14. Monitor vital signs every 5 minutes
15. Begin cardiac monitoring

Paramedic STOP

Medical Control Options

EMT:

16. Administer additional weight-appropriate dose of Epinephrine IM, if needed and as available:
    - Age < 9 years and weight < 30 kg:
        - OPTION A: Epinephrine 0.15 mg IM, if available
        - OPTION B: Pediatric Epinephrine auto-injector IM
    - Age ≥ 9 years or weight ≥ 30 kg:
        - OPTION A: Epinephrine 0.3 mg IM, if available
        - OPTION B: Adult Epinephrine auto-injector IM
17. Administer 0.083% Albuterol Sulfate 3 ml (1 unit dose) nebulized over 5-15 minutes. Repeat as needed (maximum 3 doses)

Paramedic:

18. Administer Epinephrine 0.01 mg/kg IM (maximum 0.5~~3~~ mg) of a 1:1,000 concentration
19. Administer 0.083% Albuterol Sulfate 3 ml (1 unit dose) nebulized over 5-15 minutes. Repeat as needed (maximum 3 doses)
20. For **PEDIATRIC** patients, administer Magnesium Sulfate 50 mg/kg IV (maximum 2 g) diluted in 50-100 ml Normal Saline over 10 minutes
21. For **PEDIATRIC** patients age < 2 years, administer one of the following:
    - OPTION A: Dexamethasone 0.6 mg/kg IV/IM/PO (maximum 12 mg)
    - OPTION B: Methylprednisolone 1 mg/kg IV/IM (maximum 60 mg)

Key Points / Considerations

- Children < 2 years with their first episode of wheezing likely have viral bronchiolitis. There is no role for racemic Epinephrine, Albuterol, Ipratropium Bromide or steroids in bronchiolitis
- The management of bronchiolitis includes supplemental oxygen for hypoxic or dyspneic patients, intravenous fluids for signs of severe dehydration, or ventilatory support as needed
- ~~For children ≥ 18 months for whom there is a history of Albuterol use, or a strong family history of asthma, atopy or eczema; Albuterol may be administered followed by evaluation for clinical response~~
- Epinephrine should be used with caution in patients with COPD
- A silent chest is an ominous sign that indicates respiratory failure and arrest are imminent
- Under standing orders, ALS may administer a total of 2 doses of Epinephrine, if it was not previously administered by BLS
- IV formulation of Dexamethasone may be administered orally (PO)
- Administration of steroids via IV shall be performed slowly over 2 minutes
- When administering steroids to pediatric patients, Dexamethasone is preferred over Methylprednisolone

Traumatic Cardiac Arrest (Adult and Pediatric)

CFR and All Provider Levels

1. Begin CPR as per AHA guidelines
2. Control any bleeding as needed without interrupting CPR
3. Turn on the Automated External Defibrillator (AED)
4. Apply appropriately-sized AED pads to the patient's bare chest with minimal interruption of chest compressions
5. Connect AED pads and follow the AED voice prompts
6. Continue CPR, re-analyze every two (2) minutes and shock as indicated

CFR STOP

EMT

7. Request ALS assistance~~, but do not delay transport awaiting ALS~~
8. Continue CPR and AED analysis with minimal interruption of chest compressions
9. Transport

~~9.~~ • Do not delay transport for ALS assistance

EMT STOP

Paramedic

10. Perform needle decompression for a suspected tension pneumothorax (Appendix M: Needle Decompression of Tension Pneumothorax) as needed
11. Continue CPR and defibrillation cycles with minimal interruption of chest compressions

~~10.~~12. Transport

- Other than needle decompression, all other ALS interventions should not delay transport and shall be performed enroute to the hospital

~~13. Perform advanced airway management after second rhythm analysis~~

•

~~11.~~13. If an AED is in place, transition from the AED to an ALS monitor after AED analysis and begin cardiac monitoring. Defibrillate with the following energy settings using appropriately-sized AED/monitor pads:

- **ADULT:** Maximum joule setting possible
- **PEDIATRIC:**
  - Initial defibrillation: 2 joules/kg
  - Second defibrillation as needed: 4 joules/kg
  - Subsequent defibrillations as needed: 10 joules/kg

~~12.10. If the cause of the cardiac arrest is suspected to be secondary to a medical condition that is non-traumatic, treat accordingly as a non-traumatic cardiac arrest~~

~~13.10. Perform needle decompression for a suspected tension pneumothorax (Appendix M: Needle~~

~~Decompression of Tension Pneumothorax) as needed~~

~~14.~~10. ~~Perform advanced airway management after second rhythm analysis~~

~~15.~~14. Obtain intravascular access via either large bore IV or intraosseous site~~. Consider intraosseous access for pediatric patients if needed~~

~~16.~~15. Administer crystalloid fluid 20 ml/kg IV (maximum 2 L)

Paramedic STOP

Medical Control Options

18. Administer additional crystalloid fluid 20 ml/kg IV (maximum 1 L)

Key Points / Considerations

If the cause of the cardiac arrest is suspected to be secondary to a medical condition that is non-traumatic, treat accordingly as a non-traumatic cardiac arrest

- Do not interrupt compressions for placement of an advanced airway
- Traumatic arrests should be transported as soon as possible
- AED should be placed as soon as possible without interrupting compressions
- Artifact from vibrations in a moving ambulance may compromise the effectiveness of an AED
- Maximum joule setting may vary depending on the defibrillator used
- As per AHA, the benefit of double sequential defibrillation for refractory shockable rhythms has not been established
- If the cardiac monitor is unable to deliver the desired weight-based joule setting, use the closest setting without exceeding the desired setting

Head, Neck, and Spine Injuries (Adult and Pediatric)

CFR and All Provider Levels

1. Control external bleeding
2. ABCs and vital signs
3. Airway management and appropriate oxygen therapy
4. Cover open neck wounds with an occlusive dressing while ensuring not to bandage completely around the neck
5. Assess for shock and treat as needed
6. Perform spinal motion restriction for patients who have a mechanism for spinal injury AND any of the following:
    - Altered mental status, including intoxication
    - Distracting injury or unreliable physical exam/history
    - Neck/spine pain, tenderness or deformity
    - Weakness, paralysis, numbness or tingling
    - High risk mechanism of injury

CFR STOP

EMT

7. Remove the patient's helmet while maintaining spinal motion restriction as needed

~~7.~~8. Transport

EMT STOP

Paramedic

~~8.~~9. Perform advanced airway management as needed

~~9.~~10. Begin cardiac monitoring

~~10.~~11. Obtain intravascular access

Paramedic STOP

Medical Control Options

Key Points / Considerations

- Do not use a nasopharyngeal airway in patients with suspected facial or skull fractures
- Do not hyperventilate patients when assisting ventilations
- Do not hyperventilate patients when assisting ventilations as this may worsen outcomes, especially in patients with closed head injuries
- Patients with isolated, penetrating injuries to the back, chest, abdomen, or pelvis should not have a cervical collar applied
- Examples of high-risk mechanisms for spinal injury include: ejection from a vehicle or motorcycle, diving injuries, falls > 10 feet, or being struck by a vehicle at high speed

THE REGIONAL EMERGENCY MEDICAL SERVICES COUNCIL OF NEW YORK CITY, INC.

Changes to the Appendices

Appendix G: Stroke Patient Assessment Triage and Transportation

NYC S-LAMS SCALE

Element	Finding	Score
Facial Droop	Absent	0
	Present	1
Arm Drift	Absent	0
	Drifts Down	1
	Falls Rapidly	2
Speech Deficit	Absent	0
	Present	1
Grip Strength	Normal	0
	Weak Grip	1
	No Grip	2
TOTAL SCORE		0-6

STROKE ASSESSMENT

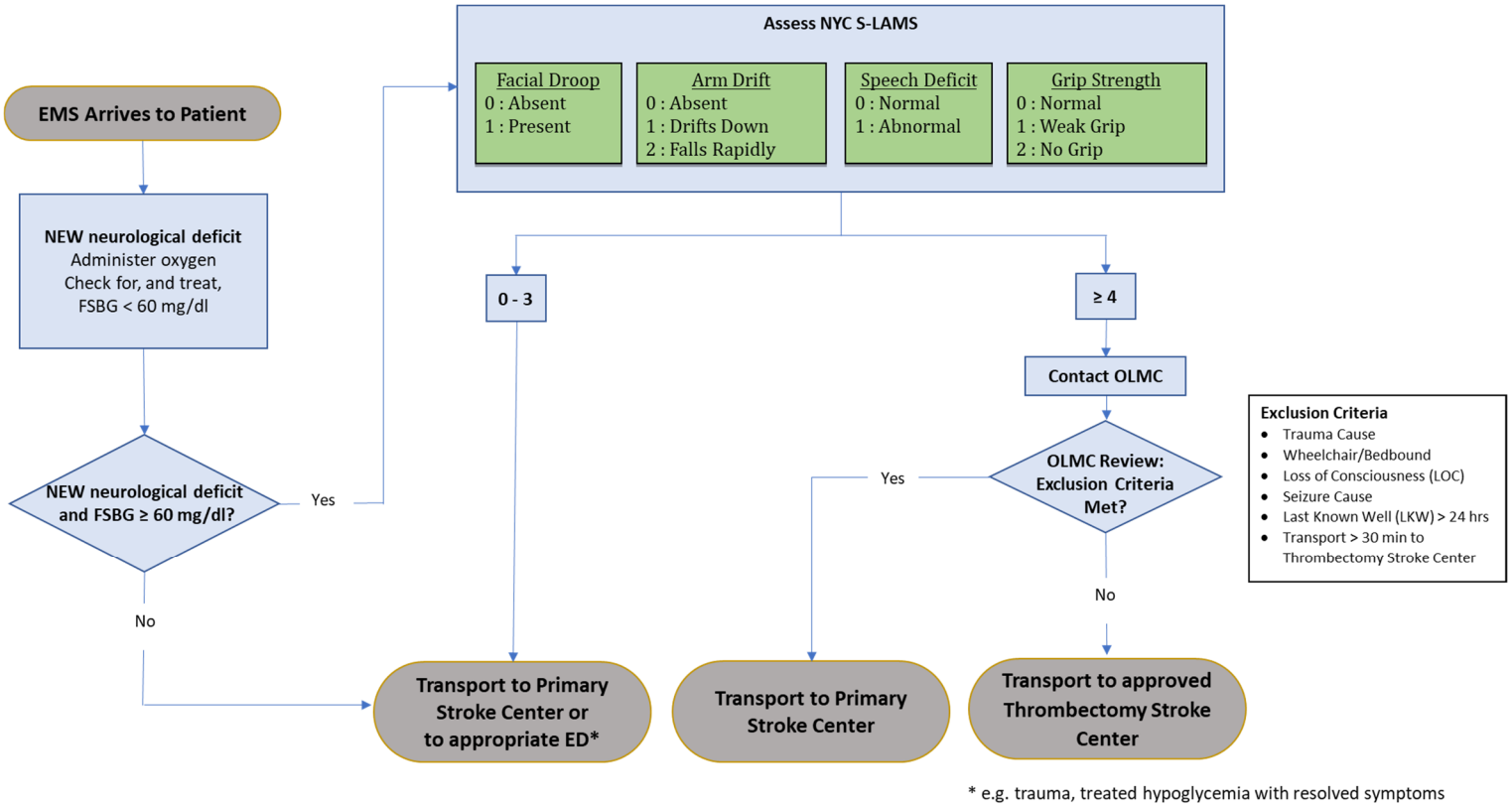
1. For patients exhibiting signs and symptoms of a stroke (cerebrovascular accident [CVA]), utilize the NYC S-LAMS scale and assess the patient as follows:
   - 1.1 Facial droop: Have the patient show their teeth or smile
     - Absent (score 0): If both sides of the face move equally
     - Present (score 1): If one side of the face does not move as well as the other
   - 1.2 Arm drift: Have the patient close their eyes and hold both arms straight out with their palms facing up for 10 seconds
     - Absent (score 0): If both arms remain up or move the same
     - Drifts down (score 1): If one arm drifts down slowly compared to the other arm
     - Falls rapidly (score 2): If one arm falls rapidly
   - 1.3 Speech deficit: Have the patient say a simple sentence (e.g. “you can’t teach an old dog new tricks”)
     - Normal (score 0): If the patient uses correct words with no speech slurring
     - Present (score 1): If the patient slurs words, uses incorrect words or is unable to speak
   - 1.4 Grip strength: Have the patient hold both of your hands and squeeze them at the same time
     - Normal (score 0): If the patient squeezes both hands equally
     - Weak grip (score 1): If one hand has a weaker grip than the other
     - No grip (score 2): If one hand does not grip at all

2. Document the scores for each of the four S-LAMS components and the total score in the ePCR narrative (or ePCR pre-assigned fields, if available)
3. If any of the elements of the NYC S-LAMS Stroke Scale are positive, establish onset of signs and symptoms, and document in the ePCR, by asking the following:
    - For the patient: “When was the last time you remember before you became weak, paralyzed, or unable to speak clearly?”
    - For the patient, family members, or bystanders: “When was the last time you remember before the patient became weak, paralyzed, or unable to speak clearly?”
    - For the above questions, if the patient woke from sleep with the deficit, the time of onset is the time the patient went to sleep

TRANSPORT DECISION ~~EXCLUSION CRITERIA~~

- If the patient has a NYC S-LAMS score ≤ 3, transport the patient to the closest appropriate Primary Stroke Center (Appendix I: Hospital Specialty Capabilities)
- If the patient has a NYC S-LAMS score ≥ 4, contact OLMC for a transport decision to the closest appropriate Thrombectomy Stroke Center (Appendix I: Hospital Specialty Capabilities). OLMC will determine the transport destination based on the patient having any one of the following exclusion criteria:
- ~~Transport the patient to the closest appropriate Primary Stroke Center if the patient has a NYC S-LAMS score ≥ 4 with ANY of the following exclusion criteria:~~
    - Total time from onset of patient’s symptom to EMS patient contact > 24 hours
    - Patient is wheelchair or bed-bound
    - Seizure is cause of patient’s neurologic symptoms
    - Loss of consciousness (LOC)
    - Trauma is cause of patient’s neurologic symptoms
    - Transport time to Thrombectomy Stroke Center > 30 minutes

STROKE TRIAGE AND TRANSPORT ALGORITHM



* e.g. trauma, treated hypoglycemia with resolved symptoms

THE FOLLOWING APPENDIX IS INFORMATION FROM THE NEW YORK STATE BASIC LIFE SUPPORT ADULT AND PEDIATRIC TREATMENT PROTOCOLS. THESE ARE INCLUDED AS AN EDUCATIONAL REFERENCE FOR NYC PREHOSPITAL PROVIDERS

ANY INFORMATION CONTAINED IN THE FOLLOWING APPENDIX THAT IS IN CONFLICT WITH REGIONAL POLICIES, PROCEDURES OR PROTOCOLS SHALL BE TREATED AS EDUCATIONAL INFORMATION ONLY AND SHALL NOT BE USED AS PROTOCOLS

NYC PREHOSPITAL PROVIDERS SHALL NOT ATTEMPT TO MODIFY OR TROUBLESHOOT ANY OF THE LISTED MEDICAL DEVICES UNLESS SPECIFICALLY TRAINED AND AUTHORIZED TO DO SO BY THEIR AGENCY MEDICAL DIRECTOR

Appendix R: New York State BLS Prehospital Protocol Educational References

NEEDLESTICK / INFECTIOUS EXPOSURE

- This section outlines the immediate actions to be taken following any mucous membrane or open skin contact with blood or other body secretions
  - Puncture wounds
    - Immediately cleanse with betadine or chlorhexidine and then soak the affected area for five (5) minutes in a solution of betadine and sterile water
  - Skin exposure
    - Wash the area with soap and water then clean the area with Betadine or chlorhexidine
  - Mucous membrane exposure
    - Mouth: Rinse mouth out with a large volume of tap water
    - Eyes: Flush with water from an eyewash station. If an eyewash station is not available, use tap water
- Thoroughly cleanse the area of exposure
- Decontamination may be limited because of the availability of resources
- Immediately report the exposure to a supervisor
- Seek immediate medical attention and post-exposure evaluation at the same hospital where the source patient was transported, if possible

PRESCRIBED MEDICATION ASSISTANCE (ADULT AND PEDIATRIC)

- This section is to guide prehospital providers when providing assistance to patients or caregivers of patients who require assistance with their previously prescribed medication
- The following medications, as stated in the NYS BLS Prehospital Protocols, may be administered by prehospital providers in accordance with the NYS BLS Prehospital Protocols:
  - Nitroglycerin SL

- ~~Beta-agonist inhalers~~
- ~~Diazepam per rectum (PR)~~
- ~~Epinephrine auto-injector IM~~
- ~~Naloxone auto-injector IM or IN~~
- ~~OLMC approval of assisted medication administration within the prehospital provider's scope of practice~~

~~PROVISION OF MEDICAL CARE~~

- ~~The provision of patient care is a responsibility given to certified individuals who have completed a medical training and evaluation program specified by the NYS Public Health or Education Laws and are subject to regional and State regulations or policy. Prehospital providers are required to practice to the standards of the certifying agency (DOH) and the medical protocols authorized by the local REMAC~~
- ~~Patient care takes place in many settings, some of which are hazardous or dangerous. The equipment and techniques used in these situations are the responsibility of locally designated, specially trained, and qualified personnel. Emergency incident scenes may be under the control of designated incident commanders who are not emergency medical care providers. These individuals are generally responsible for scene administration, safe entry to a scene, or decontamination of patients or responders~~
- ~~Pursuant to the provisions of Public Health Law, the individual having the highest level of prehospital medical certification, and who is responding with authority (duty to act) is responsible for providing and/or directing the emergency medical care and the transportation of a patient. Such care and direction shall be in accordance with all NYS standards of training, applicable state and regional protocols, and may be provided under medical control~~

~~TRANSFER OF PATIENT CARE~~

- ~~Providers are responsible for the patient while in their care~~
- ~~Patients may be transferred to a provider with the equivalent or higher level of certification~~
- ~~Patients may be transferred to a provider with a lower level of certification, only if the patient is not anticipated to require higher-level care and the lower level provider has formally accepted the transfer of care~~
- ~~When transferring patients, both the receiving and transferring providers shall:~~
  - ~~Ensure that all patient information is transferred to the receiving provider (i.e. chief complaint, past medical history, current history, vital signs, and any treatments or medications administered prior to transfer)~~
  - ~~Assist the receiving provider until they are ready to assume patient care~~
  - ~~Be willing to accompany the receiving provider to the hospital, if the patient's condition warrants or if the receiving provider requests, if possible~~

- All personnel and agencies must comply with NYSDOH BEMS policy statement 12-02 (or updated version) regarding documentation:
  - Both providers will complete an ePCR, as appropriate, detailing the care administered to the patient while in their care
  - The receiving provider must briefly document care given prior to receiving the patient
  - Providers within the same agency may utilize the same ePCR as technology, agency, regional and state policy allow
- Contact OLMC for assistance with any disagreements between transferring and transporting providers
- Any disparity between prehospital providers shall be resolved by OLMC or the provider with higher certification must transport the patient
- In situations involving multiple patients or mass casualty incidents, prehospital providers may triage patients to other providers with lower level of certification as resources allow
- A standardized process of transfer of care may be implemented by regional systems

ADVANCED MEDICAL TECHNOLOGIES

Technology-Assisted Pediatric Patients

- Pediatric patients' special health care needs that require technological assistance for life support including the following:
  - Tracheostomy: Breathing tube in neck
  - Central venous catheters (i.e. 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 (i.e. PEG tube 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
  - 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
- When treating these patients, prehospital providers shall perform the following:
  - ABCs and vital signs
  - Airway management and appropriate oxygen therapy
- Device-specific supportive measures:
  - Tracheostomy
    - If patient is ventilator-dependent and there are respiratory concerns, disconnect and attempt to ventilate with a BVM via tracheostomy adapter

- Remove the tracheostomy tube if it is fully or partially dislodged and cover the tracheostomy stoma with an occlusive dressing; ventilate via mouth and nose via 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: Cover the site with an occlusive dressing if tube or button is fully dislodged; and tape the device in place if it is partially dislodged
- Gastrostomy, colostomy, ileostomy, or nephrostomy: Apply gentle direct pressure with a saline-moistened dressing if stoma site is bleeding,
- Foley catheter: Tape dislodged catheter in place

- Notify the destination hospital and specify the patient's health care need that requires technological assistance
- Obtain frequent vital signs
- Allow caregivers to assist with patient care as needed
- Inquire caregivers about the following:
  - Presence of a Patient Care Plan (PCP)
  - Syndromes/diseases
  - Devices/medications
  - Child's baseline abilities
  - Usual vital signs
  - Symptoms
  - What is different today
  - Best way to move the child
- Look for medication-alert jewelry, emergency information form (EIF), or patient care plan (PCP), or other health care forms, if the patient's usual caregiver is not available
- Ensure to take the EIF, PCP, or other health care forms with the patient to the hospital
- 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

TOTAL ARTIFICIAL HEART (TAH)

- For any request for service that requires evaluation and transport of a patient with a total artificial heart (TAH), prehospital providers are to perform the following:
  - Assess airway and breathing as 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 is present:
  - Consider early consult with TAH coordinator or medical control
  - Check for severed or kinked TAH driveline (troubleshoot 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 with a goal SBP between 90-150 mmHg
- Perform a secondary assessment and treat per protocol
  - If the patient is unresponsive with a pulse, evaluate for noncardiac etiologies
- Notify the receiving hospital that a 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, batteries, and power cords for transport
- Any trained support member should be transported with the patient
- Contact OLMC for termination of resuscitation or for consultation with a TAH program provider
- 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 anticoagulation and may have significant bleeding with minor injuries
- A patient with a TAH has normal pulse and blood pressure detectable by conventional methods and are highly preload and afterload sensitive:
  - Target SBP between 90-150 mmHg
  - Pulse rate is set and regular, between 120-135 beats/min

VENTRICULAR ASSIST DEVICE (VAD)

- For any request for service that requires evaluation and transport of a patient with a ventricular assist device (VAD), prehospital providers are to perform the following:
  - Assess airway and breathing
  - Treat medical or traumatic conditions per protocol
  - Assess circulation:
    - Auscultate over the precordial/epigastric area for a motorized "hum" and simultaneously visualize the controller for a green light or lit screen
    - Assess perfusion based on mental status, capillary refill, and skin color
    - In continuous flow VAD patients (i.e. HeartMate II©, Heartware©, 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

- In pulsatile flow VAD patients with a HeartMate 3© centrifugal device, patients may have a palpable pulse (pulse is generally set to 30 beats/min) in the setting of a normally functioning device, but may not have a readily measurable blood pressure
- Perform CPR only when there are no signs of flow or perfusion (unresponsive, pulseless, and there is no evidence of the pump functioning [eg: no motor "hum"])

- Assess pump function:
  - Ascertain, and make note of pump model, installing institution, and institution VAD coordinator phone number from a tag located on the pocket controller. Patients may also have a medical bracelet, necklace, or wallet card with this information

- Perform a secondary assessment and treat as needed
- Notify the receiving facility promptly and consider early consultation with the VAD coordinator or OLMC, regardless of the patient's complaint
- Assure that patient has the power unit, extra batteries, and backup controller for transport
- A trained support member should be transported with the patient
- Unless otherwise directed by OLMC, transport patient to a facility capable of managing VAD patients
- Community patients with VADs are typically ambulatory and independent
- Trained support members include family and caregivers who have extensive knowledge of the device, its function, and its battery units and are useful resources to prehospital providers when caring for a VAD patient
- One set of fully charged batteries typically 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 power to the VAD
- Keep the device components dry
- 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 source 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
- VAD patients are heavily anticoagulated and susceptible to bleeding complications
- Patients may have VF/VT and be asymptomatic

Controller Device Normal Values			
	Heartmate II©	**Heartmate 3©**	**HVAD©**
Speed (RPM)	8000-10,000	5000-6000	2400-3200
Power (watts)	4-7	3-7	3-6

Flow (L/min)	4-8	3-6	3-6
Pulsatility Index (PI)	4-6	1-4	n/a

AUTOMATIC TRANSPORT VENTILATOR (ATV)

- The following are general parameters and information regarding the use of automatic transport ventilators and does not supersede device-specific practice guidelines provided through individual agency education

General Parameters

- FiO_2: Maintain $SaO_2 \geq 94\%$
- PEEP: 5 cmH_2O (increase up to 10 cmH_2O as needed)
- Mode: A/C or SIMV
- Pressure Support (SIMV): 5-10 cmH_2O, if available
- Volume Control: Tidal volume (V_t) 6-8 ml/kg ideal body weight (maintain plateau pressure [P_{plat}] < 30 cmH_2O or PIP < 35 cmH_2O)
- Rate: Pediatric: 16-20 breaths/min; Adult: 12-14 breaths/min
- I-Time: Pediatric :0.7-0.8 sec; Adult: 0.8 – 1.2 sec
- Refer to the manufacturer's ventilator operation manual for specific directions

Recommended Minimum Parameters for ATV

- Pressure limit/safety relief with 40 cm H_2O maximum
- Ability to adjust volume to 4-8 ml/kg of ideal body weight
- Ability to adjust rate with a minimum range of 10-30 breaths/min
- Ability to add PEEP or PEEP valve with a minimum range of 5-10 cmH_2O
- Ability for patient triggered breaths (complete control ventilation is prohibited)

Initiating Mechanical Volume Ventilation

- Use $ETCO_2$ detection and pulse oximetry to evaluate the effectiveness of the ventilation technique and to verify artificial airway patency and position
- Prepare the BVM device for emergent use in case of a ventilator failure
- Assure a secondary oxygen source with a minimum of 1000 psi in the D tank
- Attach a ventilator to an appropriate oxygen/air source
- Attach a disposable ventilator circuit to ventilator
- Attach a gas outlet, pressure transducer, and exhalation valve tubes to corresponding connectors
- Select the appropriate mode, if applicable
- Select the appropriate respiratory rate and titrate to appropriate $ETCO_2$
    - Adult: 12-14 breaths/min
    - Pediatric: 16-20 breaths/min

- ~~Select the appropriate tidal volume (V_t) of 6-8 ml/kg of ideal body weight~~
- ~~Select the appropriate inspiratory time (I_t), if applicable~~
- ~~Select the desired FiO_2 if applicable. It is standard to set FiO_2 = 1.0 (100% O_2) and then titrate to maintain SpO_2 ≥ 94%~~
- ~~Verify a high pressure alarm no greater than 40 cmH_2O~~
- ~~Set PEEP = 5 cm H_2O~~
- ~~Observe the delivery of several breaths~~
- ~~Evaluate the patient for adequate chest rise, $ETCO_2$, and SpO_2~~
- ~~Adjust the ventilator settings as needed to improve clinical parameters~~
- ~~Record all set parameters on the ePCR~~
- ~~Monitor and record PIP, if applicable~~
- ~~If at any time the ventilator should fail, or an alarm is received that cannot be corrected, the patient should be immediately ventilated with a BVM with high concentration oxygen~~

~~PEDIATRIC ASSESSMENT: APPARENT LIFE-THREATENING EVENT (ALTE) / BRIEF RESOLVED UNEXPLAINED EVENT (BRUE)~~

- ~~Applies to pediatric patients age < 2 years~~
- ~~ALTE/BRUE are episodes in infants or children age < 2 years which may be frightening to the observer, but has resolved and are characterized by any 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~~
- ~~Prehospital providers shall provide the following to their certification level:~~
    - ~~Airway management and appropriate oxygen therapy~~
    - ~~Assess for suspected opiate overdose and treat as needed~~
- ~~Most patients will appear stable and have an unremarkable physical exam~~
- ~~An ALTE/BRUE may be a sign of an underlying serious illness or injury and further evaluation by medical staff is strongly recommended~~