MSHVFAS - Albuterol for BLS

1. Policy Statement:

1) **Purpose:** To provide guidance to the EMTs in managing patients in respiratory distress
2) **Policy**:
   - **a)** MSHVFAS in coordination with medical oversight shall provide initial and annual training and competency verification to all clinical members on the topic of administration of Albuterol Sulfate. The initial training shall take place either during orientation, or during a time designated by the Training Lieutenant. The training program must be approved by both the New Jersey Office of Emergency Medical Services (NJOEMS) and the Mobile Health Medical Director. The didactic portion of this training program may be offered online, in person, or both. The psychomotor portion must be conducted in person by a qualified educator.
   - **b)** Only NJ Certified EMTs may utilize this protocol after successfully completing the training and competency evaluation.
   - **c)** MSHVFAS will stock and supply albuterol sulfate, nebulizers, and masks in an appropriate supply to ensure every response vehicle has no fewer than 2 complete administration setups available at all times.
   - **d)** Pulse oximeters are available on every response vehicle.
   - **e)** The medication, and nebulizer, will be stored in a standardized location in accordance with the manufacturers' guidelines.
   - **f)** MSHVFAS will conduct, at a minimum, initial and annual training/competency verification of the knowledge and skills needed to safely administer albuterol sulfate to both adult and pediatric patients.

3) Procedure:

- **a)** **<u>General Protocol:</u>**
  - **i)** Follow General patient care guidelines.
  - **ii)** Request ALS or ensure ALS is enroute.
    - **(1)** If severe distress, initiate treatment and transport; arrange rendezvous with ALS unit.
  - **iii)** Do not allow patient to eat or drink.
  - **iv)** Do not significantly delay transport for on-scene activity.

- ***b)*** **<u>Respiratory Distress:</u>** *Defined as complaints of dyspnea, mild-moderate increase work of breathing, tachypnea.*

i) Position patient in a position of comfort, preferably seated upright.
   (1) Supine positioning for patients with respiratory distress is often not appropriate for these patients.
ii) Apply supplemental oxygen to patient.
   (1) Titrate to sat of 94%
      (a) If unable to obtain pulse oximetry, high flow oxygen should be applied to patients with significant respiratory distress until ALS arrival.
iii) Assess lung sounds.
   (1) If wheezes are noted and history/exam are consistent with asthma or COPD:
      (a) Consider bronchodilator therapy with nebulized Albuterol Sulfate 0.083% 2.5mg if no contraindications noted [See Section IV below]
      (b) May repeat once after 10 min if no improvement is noted.
      (c) If worsening, or severe distress, consider CPAP with PEEP of 5 mmHg. [See section V below] with inline albuterol nebulization.
   (2) If rales are noted and history/exam are consistent with pulmonary edema:
      (a) Initiate CPAP with PEEP of 10 mmHg if no contraindications
   (3) If clear, diminished, or unable to determine:
      (a) Maintain supplemental oxygen.
         (i) If severe distress, apply CPAP at 5mmHg of PEEP.
            1. If known history of asthma/COPD and severe, add nebulized inline albuterol as noted in Section IV below.
iv) Monitor patient closely for changes, including vital signs at least every 5 min is unstable/severe distress and every 15 if stable.
   (1) If condition deteriorates, move to Respiratory Failure Section c below.
v) Transport patient to ED with/without ALS as indicated.

c) **<u>Respiratory Failure:</u>** *Defined as slow, shallow breathing, unresponsiveness, signs of shock/poor perfusion.*
i) Position patient in a position to facilitate BVM ventilations.
   (1) If unresponsive, this should be semi fowlers or, if necessary, supine
   (2) If still responsive and you are assisting, patient should be in a semi-fowler.
ii) Begin assisting patient with BVM ventilations at 15 lpm O2.
   (1) Apply PEEP valve to BVM as follows:
      (a) Suspected COPD/Asthma: 5 mmHg
      (b) Suspected CHF 10 mmHg
      (c) Undifferentiated: 5 mmHg
   (2) Insert airway adjuncts:
      (a) NPA should always be used.
      (b) If no gag reflex, consider an OPA.
   (3) Continually reassess patient's response, and reassess vital signs at least every 5 min.

(4) Transport patient to nearest ED or rendezvous with ALS

d) Albuterol:

i) Indications

(1) Dyspnea and signs of respiratory distress associated with bronchospasm.

ii) Contraindications

(1) Allergy to albuterol

(2) Diastolic BP >120 mmHg (may be given if approved after discussion with on-line medical command)

(3) Concern for CHF, discuss with command before proceeding.

iii) Dosing

(1) 1 ampule of Albuterol Sulfate 0.083% 2.5mg/3mL (2.5mg)

(a) May repeat every 5 minutes, for a maximum of 3 doses, for continued symptoms.

iv) Side Effects:

(1) Common side effects include:

(a) tachycardia

(b) anxiety

(c) tremors

(d) headache

(2) Severe side effects are rare and likely limited to those with allergy to the parent medication or additives.

e) CPAP:

i) Indications:

(1) Dyspnea and signs of respiratory distress associated with acute pulmonary edema (CHF, Sepsis, Drowning, Inhalation injury) or severe distress associated with bronchospasm from Asthma and/or COPD.

ii) Contraindications:

(1) Suspected or known pneumothorax.

(2) Obvious chest trauma

(3) Severe facial injury or deformity

(4) Tracheostomy

(5) Hypotension (defined as SBP <100)

(6) Altered mental status.

(7) Respiratory depression or respiratory arrest

(8) Nausea/Vomiting (relative contraindication)

iii) Dosing:

(1) Suspected APE: PEEP 10 mmHg

(2) Suspected COPD/Asthma: PEEP 5 mmHg

(3) Undifferentiated: 5 mmHg

iv) Side Effects:

(1) Hypotension

(2) Claustrophobia
(3) Anxiety (initial application, should improve as symptoms improve)

v) Additional Considerations:
(1) Some patients may not tolerate the CPAP mask as it may cause severe anxiety/claustrophobia in patients will already high anxiety from dyspnea. These patients will require coaching from providers on scene and gradual application of the CPAP mask, by holding close to face and then gently against face until it is firmly secured to the face. Do not immediately abandon CPAP therapy due to severe anxiety; instead take time to coach patients through the procedure.
(2) There is an accessory port on the mask. Oxygen should be hooked up to this port and starting 8 lpm to increase the FiO2 of the CPAP.

f) **Select diseases that cause respiratory distress:** *Given the different strengths of CPAP that we can provide, and the ability to add albuterol, differentiating between causes of respiratory distress if very important to the care of our patients*.

i) Bronchoconstriction secondary to COPD/Asthma:
(1) Symptoms include: Cough, shortness of breath (SOB), wheezing, and/or air hunger.
(2) Signs include: Wheezing, diminished breath sounds, retractions, and tachypnea. Patients with Bronchoconstriction can have rales and hypertension.
(3) Treatment: Bronchodilators and steroids are the mainstay of treatment. CPAP generally with lower PEEP can help in severe distress.

ii) Acute pulmonary edema
(1) Symptoms include: SOB, orthopnea (increased distress when supine), air hunger, sensation and appearance of drowning, acute onset.
(2) Signs include: Rales, tachypnea, pink frothy sputum, tripod position, often severe hypertension, lower extremity edema. Patients with CHF can wheeze
(3) Treatment: CPAP with higher PEEP is often necessary in combination with aggressive BP control; may require diuresis and additional treatment to manage underlying cause for fluid build up

4) Record Keeping & Documentation:

a) EMTs must complete an electronic patient care report (ePCR) documenting, at a minimum, all elements including administration of albuterol sulfate, a complete respiratory assessment prior to and post-administration of albuterol sulfate, a previous diagnosis of asthma or COPD, and the administration of albuterol (drug, dose, route, etc.) through the ePCR's Medication field.

i) The administration should be documented in emsCharts on Pg 8:
(1) Select ADD ACTION
(2) Select Medication
(3) Select Albuterol

5) Quality Assurance:

a) The use of CPAP will be reviewed as a part of the routine quality improvement activities.

i) BLS use of CPAP requires a 100% mandatory review.

(1) For the first six months of the program, this will be a physician review.

b) Emergency Department outcomes for patients treated under this protocol by BLS should be obtained via the HL7 feed or the clinical department.

MSHVFAS – CPAP - Non-Invasive Positive Pressure Ventilation (NIPPV)

1. **Policy Statement:**

- **Purpose**: To outline the use of Continuous Positive Airway Pressure (CPAP).
- **Policy:**
  - **A.** It is the policy of MSHVFAS that BLS units are permitted to perform Continuous Positive Airway Pressure (CPAP).
  - **B.** Each unit should stock CPAP devices, the unit should be stocked with at least 1 medium and 1 large device.
  - **C.** The devices should be stored in accordance with the manufacturer's recommendations.
  - **D.** Only NJ Certified personnel that have completed the training and competency may administer CPAP under this policy.
    - **i.** The competency will be reviewed at the annually.
- **Procedure:**
  - **A. Indications and Contraindications:**
    - **i.** Indications for the use of CPAP shall be limited to patients presenting with the following signs and symptoms:
      1. Dyspnea
      2. Hypoxemia
      3. Tachypnea

4. Any other signs of moderate to severe respiratory distress
5. **Use on patients under 18 years of age is limited to ALS and SCTU only.**

ii. Contraindications for CPAP shall include, but are not limited to:

1. Signs/symptoms of pneumothorax
2. Patients whose level of consciousness is insufficient to protect their own airway.
3. Patients who are not in respiratory failure
4. Patients with a BP of less than 100 systolic
5. Patients who cannot tolerate the facemask or the procedure.
6. Facial, laryngeal, or pulmonary trauma
7. Tracheoesophageal fistula
8. Recent tracheal, esophageal, or gastric surgery
9. Active or anticipated vomiting or upper GI bleeding

iii. Equipment

1. Rescuer II Compact CPAP System
2. Manometer
3. Appropriate size face mask with tubing
4. Appropriate head strap
5. Oxygen tank with at least 1000 psi
6. Liter flow availability of at least 20 LPM
7. Pulse oximeter
8. Cardiac monitor (for ALS and SCTU units)

iv. Procedure

1. BLS units must ensure that ALS has been requested for any patient experiencing respiratory distress as outlined in the ALS Utilization Policy.

2. Fully assess patient to determine eligibility.

3. Connect CPAP tubing to an Oxygen source (D size tanks should have at least 1000 psi)

4. Place the mask on the patient's face, fitting it as secure as possible, then secure it with straps.

5. Slowly increase gas flow to 6-8 lpm to detect leakage. Find any places that the mask is leaking and adjust the straps and / or inflate the mask as needed.

6. Gradually adjust the flow until the desired pressure is obtained. Typically, 12-15 lpm is needed to reach CPAP pressures of 8.5-10 cm H2O.

    - *BLS Units: Limit CPAP to no more than 10 cm H2O unless directed by medical control or patient prescription.*

7. SPO2 should be continuously monitored using a pulse oximeter.

8. Ensure continuous re-assessment of patient's respiratory and mental status.

9. If patient's respiratory or mental status deteriorates, the procedure will be discontinued, and ALL necessary steps taken to protect the airway and ensure adequate ventilation.

v. Documentations:

1. All uses of CPAP should be documented in emsCharts in accordance with the Patient Care Documentation Policy as follows:

    - On Page 8 – Activity Log

        - Use ADD ACTION Airway Other

- Choose CPAP as the Action
- Complete the applicable fields.

- A special report must be filed for any complications, adverse events, deterioration of patient condition or device failure.
  - This will be reviewed and followed up by the regional clinical coordinator.

vi. Quality Assurance:

1. The use of CPAP will be reviewed as a part of the routine quality improvement activities.
   - BLS use of CPAP requires a 100% mandatory review.
   - For the first six months of the program, this will be a physician review.
2. Emergency Department outcomes for patients treated under this protocol by BLS should be obtained via the HL7 feed or the clinical department.

MSHVFAS - Positive End Expiratory Pressure

1. Policy Statement:

- **Purpose**: To outline the use of Positive End Expiratory Pressure (PEEP).
- **Policy:**
  - **A.** It is the policy of MSHVFAS that BLS units are permitted to utilize of Positive End Expiratory Pressure (PEEP).
  - **B.** Each BVM is supplied with a PEEP valve.
  - **C.** Each ambulance has a minimum of 2 of each sized BVMs.
  - **D.** The devices should be stored in accordance with the manufacturer's recommendations.
  - **E.** Only NJ Certified personnel that have completed the training and competency may administer PEEP under this policy.
    - **i.** The competency will be reviewed at the annually.
- **Procedure:**
  - **A. Indications and Contraindications:**
    - **i.** Indications for the use of PEEP shall be limited to patients presenting with the following signs and symptoms:
      1. Hypoxic despite supplemental oxygen
      2. In need for assisted ventilations
         - Cardiac Arrest

- Pulmonary Edma

ii. Contraindications for CPAP shall include, but are not limited to:

1. Signs/symptoms of pneumothorax
2. Limit PEEP to 5 cmH2O in patients in cardiac arrest or are hypotensive

iii. Equipment

1. Bag Valve Mask (BVM)
2. PEEP Valve
3. Supplemental Oxygen

iv. Procedure

1. BLS units must ensure that ALS has been requested for any patient experiencing respiratory distress as outlined in the ALS Utilization Policy.
2. Fully assess patient to determine eligibility.
3. Apply the PEEP Valve to the BVM
    - Adjust settings to 5 cmH2O
        - May increase to 10mmH20 for Acute Pulmonary Edema if NOT hypotensive
4. Begin ventilations
    - A 2 person BVM technique is preferred
5. SPO2 should be continuously monitored using a pulse oximeter.
6. Ensure continuous re-assessment of patient's respiratory and mental status.
    - If the patient vomits, clear the airway with suction

v. Documentations:

1. All uses of PEEP should be documented in emsCharts in accordance with the Patient Care Documentation Policy as follows:

    - On Page 8 – Activity Log
    - Add action – Airway Other
    - BVM
    - Add a comment “PEEP @X cmH2O”

2. A special report must be filed for any complications, adverse events, deterioration of patient condition or device failure.

    - This will be reviewed and followed up by the regional clinical coordinator.

vi. Quality Assurance:

1. The use of PEEP will be reviewed as a part of the routine quality improvement activities.

    - BLS use of PEEP requires a 100% mandatory review.

    - For the first six months of the program, this will be a physician review.

2. Emergency Department outcomes for patients treated under this protocol by BLS should be obtained via the HL7 feed or the clinical department.

MSHVFAS - Blood Glucose Monitoring

1. Policy Statement:

- **Purpose**: Define when and how MSHVFAS personnel monitor blood glucose and perform quality control testing of glucometers.

- **Policy:** It is the policy of MSHVFAS to measure blood glucose levels in at risk patient populations. This policy will describe the procedure for blood glucose determination, quality control testing and limitations of the procedure.

- **Procedure:**

1. General
    a. The use of the patient's personal glucometer is not permitted for any treatment.
    b. The meters must be cleaned after every use. Acceptable cleaning agents include the following: alcohol-based wipes (alcohol prep pad or SaniCloth Plus) or SaniCloth Wipes with bleach.
    c. EMS units should always have a spare vial of strips on the ambulance.
2. Quality Control Testing
    a. Each glucometer will be quality control (QC) tested at the beginning of each shift (day and night).
    b. Crews will submit the QC check log as soon as possible after completing QC of each glucometer on the units.
    c. Assemble the necessary equipment including the glucometer, test strips and two test solutions (QC1 and QC2).
        i. Test strips expire 6 months (180 days) after opening, or manufacturer's expiration date, whichever comes first.

ii. Store in original vial closed tightly when not in use at room temperature.

iii. ALWAYS write the date opened and discard date on the vial.

iv. Two levels of QC solution are available.

1. Store at room temperature.
2. Keep vials tightly closed when not in use.
3. QC solutions are stable until printed manufacture's expiration date, or 3 months (90 days) after being opened, or whichever comes first.
4. ALWAYS write the date opened, or whichever comes first.

c. To begin the QC analysis and to turn the meter ON, insert a Glucose Test Strip into the meter. The strip is inserted into the strip-port at the bottom of the meter.

d. Shake the Assure Prism Control Solution bottle well before each test. Remove the cap and squeeze the bottle to discard the first 1 or 2 drops. Apply one drop of control solution to the top of the control solution cap.

e. After the blood symbol appears on the display, apply the solution to the narrow edge of the test strip until the meter beeps. Make sure the confirmation window fills completely.

f. A test result will appear after the meter counts down from 5 to 1.

g. After your control solution result appears on the display, press the "LEFT ARROW" button for 3 seconds until "check" appears on the display. When "check" is displayed, the result is stored in the meter's memory, but it is not included in the averages.

h. Remove the used test strip from the meter's test strip port. The meter will turn off automatically. Used test strips should be safely discarded in disposable containers.

3. Patient Testing
    a. Blood glucose level testing is indicated in the following patients:
        i. Diabetic patients regardless of complaint
        ii. Altered mental status patients including syncope, unconscious, and cardiac arrest patients
        iii. Patients that have had a seizure
        iv. Patients with neurological signs or symptoms including suspected stroke
        v. Any case where the EMS provider feels blood glucose level testing may benefit patient care
    b. Assemble necessary equipment and supplies: Glucometer, test strips, lancets, alcohol prep pad, gauze pads, appropriate PPE which at a minimum includes gloves.
    c. To begin patient analysis and to turn the meter on, insert a glucose test strip into the meter. The strip is inserted into the strip-port at the bottom of the meter.
    d. Once the strip is inserted, the meter screen will show a blood droplet with a test strip-indicating it is ready for analysis and sample application.
    e. Clean the patient's finger with an alcohol prep pad, dry thoroughly, and perform a finger stick using a lancet. (It is recommended to wipe away the first blood droplet).
    f. When the blood drop appears on the meter, touch the end of the test strip with the sample of blood making sure the test strip fills completely. Make sure the meter is held level or slightly downward. Do not touch the strip to the blood sample a second time. After five seconds a quantitative result will appear.
    g. Document results in the electronic patient care report within the activity log.

4. Results

a. Expected results:

   i. Fasting 70 – 110 mg/dL

   ii. Two hours postprandial < 140 mg/dL

b. In alert values, repeat the test to confirm:

   i. Adult blood glucose less than 50 mg/dL or greater than 350 mg/dL.

   ii. Pediatric blood glucose less than 50 mg/dL or greater than 200 mg/dL.

   iii. Neonatal blood glucose level less than 30 mg/dL or greater than 140 mg/dL.

   iv. Any result of "LO" which is a blood glucose level below 10 mg/dL.

   v. Any result of "HI" which is a blood glucose level above 600 mg/dL.

c. Analysis Related Error Codes

   i. Er1 – **A used test strip was inserted.** Repeat the test with a new test strip.

   ii. Er2 – **The blood or control solution sample was applied before the "blood" symbol appeared.** Repeat the test with a new test strip and wait until the "blood" symbol appears before applying the blood or control solution sample.

   iii. Er4 – **The blood sample has abnormally high viscosity or insufficient volume.** Repeat the test with a new test strip.

   iv. Er5 – **This error message may appear when the wrong blood glucose test strip is used instead of an Assure Prism multi Blood Glucose Test Strip.** Repeat the test with an Assure Prism multi Blood Glucose Test Strip

   v. Er6 – **There is a problem with the meter. Do not use the meter.** Contact Technical Customer Service at 800.818.8877, option 5, 24 hours a day, 7 days a week.

   vi. Er8 – An electronic error occurred during the test. Repeat the test with a new test strip. If the error messages persist, please contact Technical Customer Service at 800.818.8877, option 5, 24 hours a day, 7 days a week.

   vii. HIF — **The temperature during the test was above the operating range.**

   viii. LOF — **The temperature during the test was below the operating range.**

5. Limitations of the Procedure

   a. Flow errors may occur with:
      i. Extreme high or low Hematocrit, attempt to test with a new strip. If unsuccessful a lab draw will be needed.
      ii. Finger touching the strip which may slow the sample.
      iii. Failure to fill the strip on the first touch and then reapplying the strip to the blood.

      Erroneous results may occur with test strips:

      i. Used after the "Use By" date.
      ii. Not filled on the first touch of blood then applied to the blood again.

   c. In situations of decreased peripheral blood flow, finger stick testing may not reflect the true physiological state (e.g., severe dehydration due diabetic ketoacidosis or HHNK, hypotension, shock, or peripheral vascular disease)

   d. Capillary samples must be obtained from free-flowing blood. Excessive milking or squeezing of the puncture site may produce erroneous results.

   e. Glucose results less than 20 mg/dL or greater than 600 mg/dL are outside the linearity range and should not be considered accurate.

   f. Test results are best when obtained within an operating relative humidity of 10-90% (non-condensing). Testing outside of these ranges may produce inaccurate result.

Documentation:

1. MSHVFAS personnel document all patient blood glucose levels on the electronic patient care report in the activity log.
2. MSHVFAS personnel document all quality control testing levels on the daily check sheet

MSHVFAS - BLS Utilization of ALS

1. Policy Statement:

- **Purpose:** The Millburn-Short Hills Volunteer First Aid Squad has reviewed the current practices for patients that are dispatched as ALS calls and after appropriate assessment, ALS is cancelled. The goal of this document is to improve patient care and outcomes by identifying those patients at higher risk for deterioration and require further advanced prehospital care and/or monitoring.

- **Policy:**

  - Since, no protocol or guideline can anticipate every possible patient condition, clinical judgment is critical in the use of these guidelines.

  - If BLS staff makes patient contact, the patient will receive a full assessment. This requires a patient assessment by BLS. Patient contact is defined by NJAC 8:40.

  - For those patients who meet the criteria listed below, the expectation is that BLS crews will request ALS units or not cancel responding ALS units unless the BLS unit is closer to Emergency Department than to the responding ALS unit or meeting the ALS unit would require the BLS unit to drive away from the Emergency Department.

  - If after appropriate evaluation by the BLS crew, and application of the following guidelines, the patient is deemed to not require advanced prehospital care, the team must document the findings and rationale as to why the patient is safe to be transported without ALS in the electronic patient care report.

  - If there is any concern regarding the appropriateness of a patient disposition, the clinical team should err on the side of caution and ALS should be requested or not be cancelled.

  - All BLS cancellations of ALS will be reviewed through the QA process to determine if there are concerns for patient care or safety.

- **Procedure:**

1. **Cardiac / Chest Pain**

    a. Consistent or episodic chest or epigastric pain, pressure, tightness, burning, or discomfort ≥ age 35 or any age with cardiac risk factors including but not limited to: diabetes, hypertension, high cholesterol, obesity, smoking history, family history of early cardiac disease/death, and/or history of illicit drug use

        - Note that if patients do not meet all the criteria above but there exists suspicion for possible cardiac etiology for the chest pain, still act in the best interest of the patient, request and / or keep ALS responding unless they are cancelled due to proximity or ALS availability.

2. **Respiratory**

    a. Respiratory distress (anything but normal, non-labored effort *regardless of rate*)

    b. Orthopnea (trouble breathing while lying flat)

    c. Dyspnea on exertion

    d. Abnormal lung sounds

3. **Neuro**

    a. New Onset Seizure irrelevant of suspected etiology

    b. Multiple or ongoing seizures

    c. Seizures during pregnancy

    d. Unilateral weakness, arm drift, speech abnormality, facial droop within 24 hours

    e. Visual disturbances (sudden loss of vision in one or both, blurred vision, etc.)

    f. Ataxia or loss of coordination

    g. Acute alteration in mental status

4. **Syncope**

    a. Syncope, near-syncope, or any loss of consciousness within 24 hours excluding patients less than 35 years old without a cardiac history, if the history is unknown err on the side of the patient and assume there is one.

5. **Pediatrics**

    a. Any caregiver-described signs of a possible Apparent Life-Threatening Event (ALTE) in children <1 year of age including: a period of apnea, skin color change, change in muscle tone, choking or gagging:

        1. Infant apnea is defined by the American Academy of Pediatrics as "an unexplained episode of cessation of breathing for 20 seconds or longer, or a shorter respiratory pause associated with bradycardia, cyanosis, pallor, and/or marked hypotonia."

    b. Fever in any neonate (<28 days of age) regardless of suspected cause

6. **Hypoglycemia**

    a. Any patient that experienced a hypoglycemic episode and is being transported to the hospital should be assessed by ALS.

7. **ETOH**

    a. As alcohol has the potential to change patient perception, extreme caution is needed in the assessment of patients with any concerns of alcohol use/intoxication. Furthermore, marked decrease in mental status/GCS in a patient needs to be managed like any other patient with an altered mental status. A full assessment of an ETOH patient will be expected. The following patients should be considered for ALS treatment:

        1. Combative/agitated and needing sedation
        2. Trauma that meets the criteria for trauma center transport in the presence of ETOH intoxication
        3. Airway compromise due to altered mental status
        4. Hypoglycemia

8. **Anxiety**

    a. Using a working diagnosis of **Anxiety** in any patient, without previous clinical diagnosis or treatment, should be used with extreme caution as the likelihood of new onset without previous diagnosis is low. Additionally, the

potential for the patient being anxious or demonstrating signs and symptoms that can be interpreted as anxiety from an alternate underlying condition, including those that may be life-threatening, is significant.

b. Prior to concluding that the patient's presentation is due to anxiety, consider the possible underlying conditions i.e., underlying cardiac/pulmonary condition, infection/sepsis, hypoglycemia, condition causing metabolic acidosis, etc.

9. Language/communication barriers

a. Caution should be given to patients for whom a full detailed assessment cannot be completed such as in the presence of a language barrier or communication issue.

1. Utilize interpretation services offered through dispatch.

10. Medications administered by BLS or others:

a. **Epinephrine for anaphylaxis:** Due to the potential that the half-life of epinephrine is shorter than the condition that necessitated its administration, those patients who received epinephrine prior to the arrival of an ALS unit should be treated by the ALS unit during transport to the hospital. Also, additional considerations need be given to those patients who received these medications, with unclear indication, that are prone to potential side effects such as cardiac conditions including dysrhythmias and ischemia. This includes administration to patients with no clear anaphylaxis prior to administration. The potential side effects of the misadministration of Epinephrine warrant an ALS treat/monitoring.

b. **Naloxone:** Due to the potential that the half -life of naloxone is shorter than the half- life of the agents that necessitated its administration, those patients who received naloxone prior to the arrival of an ALS unit should be treated by the ALS unit during transport to the hospital. Additionally, consider the effects of agents that may have adulterated the narcotics used by the patient.

c. **Nebulized bronchodilator/MDI:** Due to the potential that the underlying etiology of dyspnea will outlast the effects of the medication or have incomplete resolution of the condition, any patient who had a complaint of dyspnea prior to the use of nebulizer and/or MDI should be treated by the

ALS unit during transport to the hospital.

d. **Nitroglycerin:** If the reason the patient administered nitroglycerin was presumed by the patient to be cardiac, the patient should be treated by the ALS unit during transport to the hospital.

e. **Diastat:** Any patient who experienced a seizure and has Diastat administered should be treated by the ALS unit during transport to the hospital.

11. Vitals signs outside of normal limits (see attached table with normal vital signs):

a. The following is guidance regarding the expectation of patients who will be treated by the ALS unit during transport to the hospital who have vital signs outside of the listed ranges.

b. While vital signs alone should not be used as criteria for inclusion/exclusion, a release of patient with abnormal vital signs should be taken with caution. Clinicians are expected to consider the underlying etiology when evaluating vital signs:

c. A complete physical assessment and history on all patients including an EKG rhythm strip must be performed on all patients being triaged to BLS. This includes:

1. Two complete sets of vital signs at least 5 (five) minutes apart

2. Documentation of a room air SpO_2 or corresponding SpO_2 on supplemental oxygen if that is the patient's baseline condition. If the patient is on oxygen upon ALS arrival, and not on chronic O2, room air should be measured at least 3 minutes post removal of the supplemental oxygen.

    - If a low SPO2 was obtained by BLS or staff prior to applying O2, utilize that number instead of taking the patient off of the O2.

3. Assessment and documentation of a blood glucose level for all patients with suspected seizure or altered mental status.

4. Any omissions to this policy must be documented on the patient care report with the rationale.

Adult Vital Signs Guidelines			
	Minimum	Maximum	Additional Consideration
Level of consciousness / GCS=	15	-	• GCS<15 without dementia or chronic confusion history • Any change from baseline per family, caregiver, etc.
Respiratory rate	10	24	RR outside range listed Any lung sounds but normal • SpO2<94% on room air without known history of baseline
Pulse Rate	50	120	• Any accompanying feeling of palpitations or fluttering sensation • New onset of irregular heart rate
Systolic Blood Pressure	100	180	• Presence of Systolic Blood pressure above listed high when any symptom consistent with elevated intracranial pressure such as headache or nausea is present
Diastolic Blood Pressure	50	120	DBP outside range listed

Normal Pediatric Vital Signs			
Age Groups	Respiratory Rate	Hear	Systolic BP
Newborn	30-50	120-160	>60

MSHVFAS – Epinephrine Auto Injector

Policy Statement:

- **Purpose**:
- **Policy:** The Administration of an Epinephrine Auto Injector is authorized in the event that a patient presents with allergic reaction / anaphylactic shock in accordance with the following protocols.
- **Procedure:**

1. Perform scene size up and initial assessment. Do not delay transport.
2. Administer 100% oxygen using a non-rebreather mask at flow rate of 12 – 15 lpm, unless the patient is unable to tolerate the mask, in which case use a nasal cannula at a flow rate of 6 lpm;
3. Request Advanced Life Support Services;
4. Obtain baseline vital signs and obtain the SAMPLE history;
5. Conduct the focused assessment and physical exam;

   Initial treatment with the appropriate epinephrine auto injector if any of the following signs/symptoms are present and signs/symptoms of known or suspected anaphylaxis (credible allergic exposure with itching, urticaria, agitation abdominal pain or destress etc.):

   i. A chief complaint of respiratory distress;

   ii. Respiratory Arrest;

iii. Signs and symptoms of shock (hypoperfusion) with an increased heart rate. Look for the following indications:

1. Heart rate of greater than 180 bpm for an infant (0-12 months) and/or blood pressure less than 60 mmHg for an infant (0-12 months);
2. Heart rate of greater than 140 bpm for a child (1-12 years) and/or blood pressure less than 70 mmHg for a child (1-12 years)
3. Heart rate greater than 120 for an adult (older than 12 years) and/or blood pressure less than 80 mmHg for an adult (older than 12 years);
4. A tightening feeling in the chest and/or throat;
5. Wheezing or stridor;
6. Altered appearance with restlessness and/or agitation, seizure, unconsciousness
7. Swelling of the face/tongue/lips or generalized urticaria;

iv. If the patient possesses his/her own prescribed Epinephrine Auto Injector, use theirs.

v. If the patient does not possess his/her own prescribed Epinephrine Auto Injector, use the appropriate Epinephrine Auto Injector from your vehicle's stock. For patients between 15 and 30 kg (33 - 66 lbs.), use the EpiPen Junior (0.15mg). For patients 30 kg or heavier (> 66 lbs.), use the EpiPen (0.3 mg)

vi. Administer the appropriate Epinephrine Auto Injector as follows:

1. Check the color of the medication (if able to view) and the manufacturer's expiration date. If the medication is discolored (yellowed) or beyond the expiration date, DO NOT USE;

2. Carefully remove the safety cap from the auto injector;

3. Place the auto injector firmly against the lateral portion of the patient's thigh, midway between the waist and the knee. Firm pressure will activate the spring loaded mechanism in the auto injector and force the needle through the patient's clothing and into the thigh muscles;

4. Hold the auto injector in place for at least 10 seconds to ensure that the medication injected;

5. Dispose of the auto injector in a biohazard sharps container;

6. Record the location of the injection site, time, dose, medication name, vital signs and any changes in the patient's condition after administration of the medication on patient care report.

vii. Continuously monitor the patient (level of consciousness, level of distress, respiratory rate and quality, pulse rate and quality, blood pressure temperature, etc.).

viii. Maintain normal body temperature.

ix. Notify the receiving hospital if ALS is not available.

x. Upon arrival at the ED, ensure that the receiving RN is aware that EMS administered an Epi Auto injector.

MSHVFAS – Naloxone for BLS

Policy Statement:

- **Purpose:** To assist in the treatment of suspected Opioid overdoses.
- **Policy:**

Indications:

The patient exhibits signs and symptoms of an opiate overdose where respiratory depression is present.

- The patient may exhibit any of the following: respiratory depression, apnea, miosis, decreased intestinal motility, and/or change in mental status.

Contraindications:

- Medication has expired
- Known hypersensitivity or allergy to naloxone, nalmefene, or naltrexone
- The medication is discolored, or particulate is noted
- Child under 5 years of age and/or <20kg – contact medical director for guidance or online medical direction
- The patient has met the maximum prescribed dose per the NJDOH Protocol
- Use caution with patients with history of supraventricular arrhythmias or other cardiac disease, head trauma, or brain tumor
- Administration of Naloxone by the endotracheal tube, intramuscular or intravenous routes remains prohibited for EMTs.

Adverse Effects:

- Agitation/Combative
- Nausea/Vomiting/Diarrhea

- Tremulousness
- Diaphoresis
- Dyspnea
- Pulmonary Edema
- Abdominal Cramps
- Increased Blood Pressure
- Tachycardia
- Seizures
- Cardiac Arrest/Ventricular Fibrillation

The adverse effects following naloxone administration, particularly in chronic opioid users and abusers, may place the patient, emergency personnel and bystanders at risk.

Procedure:

1. Ensure that ALS has been requested (ALS cannot be cancelled due to no need following administration)
2. Intranasal (IN) Administration ONLY
3. Open the medication package
4. Place tip of device in the nostril and briskly push the plunger forward.
5. Repeat primary and secondary assessments, monitoring patient for response and continue supportive care.
6. May repeat initial dose after 5 minutes
7. The administration will be documented in the ePCR as an intervention.

Note: Contact online medical direction for guidance when necessary