BLS Medical Direction

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BLS CLINICAL STANDARDS OF PRACTICE

TITLE: BLS Epinephrine Administration for Anaphylaxis
MEDICAL DIRECTOR: Dr. Mark Merlin
APPROVAL DATE: November 1st, 2018
REVIEWED: November 1st, 2019
REVISED: November 1st, 2019

Purpose: To allow BLS to administer IM Epinephrine auto-injector to a patient who is experiencing signs and symptoms of an anaphylactic reaction

Goals: To assure early administration of epinephrine in a patient that is showing signs and symptoms of an anaphylactic reaction

Indications: There is no age restriction for this protocol. Patient must be showing signs of a known or suspected anaphylactic reaction including credible allergic exposure with itching, urticaria, agitation, abdominal pain or distress along with any of the following: Airway swelling or compromise, respiratory distress or arrest, shock.

Contraindications: No true contraindication when used in a life-threatening situation. Use caution if the medication is discolored, cloudy, precipitated or expired. Use cautiously in the setting of coronary disease or ischemia when jeopardy to airway, breathing or circulation is unclear.

Procedure:

Patients >4 years old, administer 0.3mg into the lateral thigh via an auto injector. Patients <4 years old, administer 0.15mg in the lateral thigh.
A second dose maybe administered after 10 minutes if required.

ALS must be requested for any patient that receives epinephrine via an auto injector.

Adverse Effects: Anxiety, headache, nausea, hypertension, vomiting, nervousness, tremors, chest pain, cardiac arrhythmias.

Documentation: In the narrative note the dose and time of administration, patient response to medication, communication to ALS and/or receiving facility staff of administration of medications.

Complete supplemental run sheet form on medication administration.

All PCRs that utilized a BLS medications administration will be reviewed by the Clinical Department for appropriate usage and documentation.

OEMS must be notified within 72 hours of usage and the PCR along with final emergency department diagnosis and disposition must be provided to OEMS with 45 days of usage.

References:
New Jersey Department of Health Office of Emergency Medical Services EMT treatment protocols for Anaphylaxis issued February 2015

New Jersey Department of Health Office of Emergency Medical Services EMT Treatment Protocols

Anaphylaxis

Initial actions:

- Conduct scene size up, primary assessment, & immediate life-saving interventions.
- Promptly administer oxygen by NRB at 10-15 liters/minute or by NC at 6 liters/minute, if a NRB is not tolerated.

If available, monitor SpO_2

- Request Advanced Life Support (ALS) considering their availability & hospital proximity. Minimize on scene time.
- Obtain baseline vital signs, SAMPLE history, & conduct a secondary assessment attentive to cardiopulmonary deterioration.

If available, consider epinephrine therapy for patients with suspected life-threatening anaphylaxis (allergic reaction with a compromised airway, breathing, or circulatory performance).

Prompt transport is important-DO NOT delay transport to administer this treatment.

Therapy	Epinephrine auto-injector
Form	Solution for intramuscular (1M) auto injector administration
Source	• Prescribed for, and supplied by, the patient • Supplied by OEMS registered & approved EMT/agency under a Medical Director
Authorization	• Patient supplied & assisted – All EMTs • EMTs operating for a registered agency who successfully completed OEMS approved
Age	No restriction, but doses vary
Indications	Signs & symptoms of known or suspected anaphylaxis (credible allergic exposure with itching, urticaria, agitation, abdominal pain or distress etc.) with any of the following: • Airway swelling or compromise • Respiratory distress or arrest • Shock
Contraindications	• No absolute contraindication when used in life threatening anaphylaxis • Medication is discolored, cloudy, precipitated, or expired. • Use cautiously (relative contraindication) in the setting of coronary disease or ischemia when jeopardy to airway, breathing, or circulation is unclear
Adverse Effects	• Anxiety • Headache • Nausea • Hypertension • Vomiting • Nervousness • Tremors • Chest pain • Cardiac arrhythmias
Administration	• Administer the auto-injector to the lateral thigh according to the manufacturer's recommendations • Assure the receiving hospital is notified •Properly dispose of auto-injector in a sharps container For EMTs/agencies equipped with their own epinephrine auto-injector: • If immediately available, utilize the patient's own epinephrine auto-injector prior to yours. You may utilize yours as a second dose if needed after at least 10 minutes. • Administer 0.15 mg to children younger than 4 years old & 0.3 mg to all other patients
Documentation	• Note dose(s), time(s) of administration & patient response & communicate this during transfer of care to ALS and/or receiving facility staff When supplied by an EMT/agency, further notify: • Medical Director according to agency policy or procedure • OEMS verbally or by electronic message within 72 hours. • Provide OEMS with a copy of the patient care report with final emergency department diagnosis & disposition within 45 days.

EMTs may administer IM autoinjector epinephrine supplied by an agency to persons suspected of suffering from anaphylaxis only upon completion of training & with the approval of their Medical Director.

REMEMBER: WHEN QUESTIONS OR CONCERNS ARISE, CONTACT MEDICAL CONTROL

BLS CLINICAL STANDARDS OF PRACTICE

TITLE: BLS Narcan Administration
MEDICAL DIRECTOR: Dr. Mark Merlin
APPROVAL DATE: November 1st 2018
REVIEWED: November 1st, 2019
REVISED: November 1st, 2019

Purpose: To allow BLS to administer Narcan to a patient with respiratory depression or arrest secondary to known or suspected opiate overdose (as evidenced by pinpoint pupils, depressed mental status etc.)

Goals: To assure early administration of Narcan to reverse the effects of an opiate overdose to a patient with respiratory depression or arrest secondary to known or suspected opiate overdose (as evidenced by pinpoint pupils, depressed mental status etc.) prior to arrival of an ALS unit Indications for: Any patient over the age of 5 years old with respiratory depression or arrest secondary to known or suspected opiate overdose (as evidenced by pinpoint pupils, depressed mental status etc.)

Contraindications:
Known sensitivity to the drug,
Medication is discolored, cloudy, precipitated or expired.
Use with caution in patients with cardiac disease, supraventricular arrhythmia, head trauma, brain tumor or polysubstance overdose.

Procedure:
This is for Intra-Nasal (IN) administration only. Maintain vigilant airway care and ventilatory support.
Assemble the pre-filled syringe and the mucosal atomizer device (MAD). Place the tip of the MAD device into the nostril and briskly push the plunger forward, administering 1ml (1mg) into each nostril.

Effect of medication should take 2 to 5 minutes. During this time continue the airway care and support, monitor for agitation, combativeness, and other withdrawal symptoms.

The patient may vomit; have a suction unit with you when the medication is administered. Be prepared for the possibility of cardiac arrest, have an AED present when the medication is administered.

Only a single dose maybe administered, repeat dosages are not permitted. ALS must be requested for any patient that Narcan is administered to.
Adverse Effects: Agitation/combativeness, nausea, vomiting, diarrhea, tremulousness, diaphoresis, tachycardia, seizures, dyspnea, abdominal cramping, increased blood pressure, cardiac arrest, pulmonary edema.

Documentation: In the narrative note the dose and time of administration, patient response to medication, communication to ALS and/or receiving facility staff of administration of medications. Complete supplemental run sheet form on medication administration. All PCRs that utilized a BLS medications administration will be reviewed by the Clinical Department for appropriate usage and documentation

References:
New Jersey Department of Health Office of Emergency Medical Services EMT treatment protocols for Opiate overdose issued February 2015

New Jersey Department of Health Office of Emergency Medical Services EMT Treatment Protocols

Opiate Overdose

Initial actions:

- Conduct scene size up, primary assessment, & immediate life-saving interventions. Have airway, ventilation & suction devices nearby & ready.
- Promptly administer oxygen by NRB or BVM at 10-15 liters/minute as needed. If available monitor SpO2.
- Request Advanced Life Support (ALS) considering their availability & hospital proximity.
- Obtain baseline vital signs, SAMPLE history, & conduct a secondary assessment attentive to respiratory depression, failure, or arrest.

Respiratory depression, secondary to an opiate overdose, is primarily managed by continuous, attentive airway care & ventilatory support. If available, reversal therapy with naloxone can be secondarily considered after ventilatory support.
Prompt transport is important- DO NOT delay transport to administer this treatment.

<table>
<tr><td>Therapy</td><td colspan="2">Naloxone (Narcan ®)</td></tr>
<tr><td>Form</td><td colspan="2">Solution for atomized intranasal administration (IN)
Solution for intramuscular (IM) auto-injector administration</td></tr>
<tr><td>Source</td><td colspan="2">Supplied by OEMS registered & approved EMT/agency under a Medical Director</td></tr>
<tr><td>Authorization</td><td colspan="2">EMTs operating for a registered agency who successfully complete OEMS approved training while operating under the agency Medical Director's approved protocol.</td></tr>
<tr><td>Age</td><td colspan="2">No restriction, but for patients under 5 years old on-line consultation with medical control and/or Medical Director protocol is required.</td></tr>
<tr><td>Indications</td><td colspan="2">Patients with respiratory depression or arrest secondary to known or suspected opiate overdose (as evidenced by pinpoint pupils, depressed mental status, etc.)</td></tr>
<tr><td>Contraindications</td><td colspan="2">• Hypersensitivity or allergy to naloxone (Narcan ®), nalmefene, or naltrexone
• Medication is discolored, cloudy, precipitated, or expired.
• Use cautiously with cardiac disease, supraventricular arrhythmia, head trauma, brain tumor, or poly-substance overdose</td></tr>
<tr><td>Adverse effects</td><td colspan="2">• Agitation/Combative • Nausea • Vomiting • Diarrhea • Tremulousness
• Diaphoresis • Tachycardia • Seizures • Dyspnea • Abdominal cramps
• Increased Blood Pressure • Cardiac Arrest/Ventricular Fibrillation • Pulmonary Edema</td></tr>
<tr><td></td><td colspan="2">The adverse effects following naloxone administration, particularly in chronic opioid users & abusers, may place the patient, emergency personnel & bystanders at risk.</td></tr>
<tr><td>Administration</td><td colspan="2">IN & IM auto-injector administration are the only authorized routes for EMTs</td></tr>
<tr><td></td><td><u>Intranasal (IN) Administration</u>
• Assemble prefilled syringe & mucosal atomizer device (MAD)
• Place tip of MAD into the nostril & briskly push the plunger forward, administering 1 mL (1mg, half the medication) into each nostril (1 mg/mL per nare). (Naloxone should take effect in 2-5 minutes).</td><td><u>Intramuscular (IM) auto-injector administration</u>
• Administer 0.4mg of Naloxone via IM auto-injector to the lateral thigh according to the manufacturer's recommendations
• Properly dispose of auto-injector in sharps container</td></tr>
<tr><td colspan="3">• Maintain vigilant airway care & ventilation support. Be prepared to remove oropharyngeal airway, suction, & use a nasopharyngeal airway if gag reflex returns after medication administration (vomiting and pulmonary edema may occur).
• Monitor for agitation, combativeness, and other withdrawal symptoms should reversal occur (typically over 2-5 minutes).
• Have AED nearby and ready; misled by a sedated appearance, Ventricular Fibrillation cardiac arrest may develop after treatment.
• Administer only a single dose. A repeat dose is not authorized in this protocol.</td></tr>
<tr><td>Documentation</td><td colspan="2">• Note dose(s) & time(s) of administration & patient response & communicate this during transfer of care to ALS and/or receiving facility staff.
• All incidents where an EMT has administered Naloxone shall be reported to OEMS within 24 hours via DOH web-based Naloxone Reporting Form.</td></tr>
</table>

EMTs may administer IN or IM auto-injector naloxone to persons suspected of suffering from an opioid overdose only upon successful completion of training & with the approval of their Medical Director.
EMTs may administer one dose of IN or IM auto-injector naloxone to persons suspected of suffering from an opioid overdose even if an on scene police officer or lay person has already administered one dose.
REMEMBER: WHEN QUESTIONS OR CONCERNS ARISE, CONTACT MEDICAL CONTROL!

BLS CLINICAL STANDARDS OF PRACTICE TITLE: BLS Respiratory Distress
MEDICAL DIRECTOR: Dr. Mark Merlin
APPROVAL DATE: November 1st 2018
REVIEWED: November 1st, 2019
REVISED: November 1st, 2019

Purpose: To identify and treat patients with acute respiratory distress who are still hypoxic despite supplemental oxygenation administration.
Goals: To increase oxygenation and decrease the work of breathing. Indications of CPAP include:
·Age >18 years old
• Respiratory Distress
·Increased WOB
• RR>24 BPM
• Sp02 <94%

Contraindications of CPAP include:
• Age<18 years old CPR
• Active Vomiting
• Possible Pneumothorax
• Facial Trauma
• Recent tracheal, pulmonary, esophageal or gastric surgery
• Inability to maintain airway open
·Hypotension SBP<100 mmHg
• Intolerance to CPAP Mask

Procedure: Patient's identified during the primary assessment to be short of breath or having difficulty breathing should be placed on supplemental oxygen as needed.

Treatment options under this policy include the application of:

• Continuous Positive Airway Pressure (CPAP) Mask for the treatment of hypoxia.
• Assistance with a patient's prescribed personal High-flow or Small Volume Nebulizer (HFN/SVN) for the treatment of a wheeze.
• Addition of a patient's prescribed personal HEN to the CPAP Mask
• Assistance with a patient's prescribed, personal Metered Dose Inhaler (MDI) for the treatment of a wheeze.
• Addition of PEEP Valves to Bag Valve Masks (BVM)

Use of CPAP, HFNC, HFN or MDI treatments must be document in the patient's PCR. Refusal of indicated treatments must be documented in the patient's PCR. Withholding indicated treatments must also documented with the rationale behind withholding treatment in the patient's PCR.

Notes:

Positive End Expiratory Pressure (PEEP) is a pressure or resistance applied to the end of expiration to reopen collapsed alveoli and improve oxygenation.

Continuous Positive Airway Pressure (CPAP) is a non-invasive ventilation strategy to assist spontaneously breathing patients in respiratory distress to increase oxygenation and reduce the work of breathing (WOB).

Pulse Oximetry measures the percent of hemoglobin with the red blood cells (%Sp02). Hypoxia is defined as blood oxygen concentrations below 94%.
The goal is to increase oxygenation to >94%Sp02 and decrease the patient's WOB.

High Flow Nasal Cannula (HFNC) is the use of a standard nasal cannula set to an oxygen flow rate greater or equal to 15 liters per minute (LPM) of oxygen.

High-Flow or Small Volume Nebulizers (HFN or SVN) are adjuncts that are air or oxygen driven to atomize medications for inhalation.

Metered Dose Inhalers (MDI) are pressurized delivery devices of various rescue and maintenance bronchodilator medications for inhalation. All patients with dyspnea should have a nasal cannula applied. This gives providers the ability to titrate oxygen flow rates to maintain a pulse ox value between 94-99%.

Nasal cannulas can be used in conjunction with any mask applied to a patient's face, nebulizers or MDI.

When a patient does not improve after supplemental oxygen therapy, providers should increase the liter flow of the nasal cannula to at least 15 LPM (HFNC).

Providers may then apply the CPAP mask to increase the inspiratory flow and apply PEEP to the airway in spontaneously breathing patients who can follow directions.

If a patient has a complaint of dyspnea or shortness of breath with wheezing or diminished lung sounds and a prescription for a bronchodilator, EMS may assist the patient with drug administration (bronchodilators) and continue the use of an MDI or HFN treatment to the hospital.

If CPAP is required for the treatment of dyspnea with hypoxia and a patient has a HFN prescription, EMS may add the patient's HFN to the CPAP Mask to administer the nebulizer medication treatment.

If a patient has several bronchodilator medications to choose from, administer rescue medications such as albuterol, DuoNeb, or Xopenex, first, if available.

Bag Valve Mask (BVM) is a tool to provide manual ventilations to a patient with a respiratory rate (RR) less than 4 breaths per minute (BPM) or when a patient in respiratory failure is hypoxic after high flow oxygen supplementation.

Patients who are unresponsive and breathing less than 4 bpm should be ventilated with a BVM with a PEEP Valve and adjunct airways (NPAIOPA) as needed.

Every use of a BVM should include the application of a PEEP Valve

Adjunct Airways are either nasal pharyngeal airway (NPA) or oral pharyngeal airway (OPA). These adjuncts

may be used solely or in conjunction to open and maintain a patient's airway. It is acceptable to use one or two NPAs and an OPA as needed, to maintain a patent's airway.

References:

NJOEMS "Respiratory Distress" EMT Treatment Protocols, February 2015.

Aguilar, SA; etal. "Assessment of The Addition of Prehospital Continuous Positive Airway Pressure (Cpap) To An Urban
Emergency Medical Services (Ems) System In Persons With Severe Respiratory Distress". J of EM 2013;45(2):210-219.

Cheskes, S; etal. "The Impact Of Prehospital Continuous Positive Airway Pressure On The Rate Of Intubation And
Mortality From Acute Out-Of-Hospital Respiratory Emergencies". Prehospital Emergency Care 2013;17:435-441.

Goodacre, S; etal. "Prehospital Noninvasive For Acute Respiratory Failure: Systematic Review, Network Meta-Analysis, And Individual Patient Data Meta-Analysis". Academic Emergency Medicine 2014;21:960-970.

Montanes, RM; etal. "Use Of High-Flow Nasal Cannula Oxygen Therapy To Prevent Desaturation During Tracheal
Intubation Of Intensive Care Patients With Mild To Moderate Hypoxemia". Grit Care Med. 2015;43(3):574-83.

Weingart, SO; Levitan, RM. "Pre-Oxygenation And Prevention Of Desaturation During Emergency Airway Management". Annals of Emergency Medicine 2012;59(3):175e1.

Initial actions:

• Conduct scene size-up, primary assessment, & immediate life-saving interventions. Have an airway adjunct, ventilation & suction devices nearby & ready.
• Promptly administer oxygen as tolerated by the patient and, if available, titrate with pulse oximetry to desired SpO2•
• Place the patient in a position of comfort (preferably seated in fowler's position)
• Request Advanced Life Support (ALS) considering their availability & hospital proximity.
• Obtain baseline vital signs, SAMPLE history, & conduct a secondary assessment attentive to respiratory fatigue, failure, or arrest.

Initiate the following treatment(s) as indicated & appropriate for awake, spontaneously breathing patients with respiratory distress.

Prompt transport is important – DO NOT delay transport to administer these treatments.

Therapy	Short-acting bronchodilator mist		Continuous Positive Airway Pressure (CPAP)
Form	Metered Dose Inhaler (MDI)	• Unit-dose solution by small volume nebulizer (SVN) • High-flow nebulizer (HFN)	• Driven by oxygen or air • Full face or nasal mask, NO nasal prongs
Source	Must be prescribed for, & supplied by, the patient		• Prescribed for, & supplied by, the patient • Supplied by EMT/agency under Medical Director
Authorization	All EMTs		• Patient prescribed, or • EMTs under on-line Medical Control, or • Medical Director protocol
Age	No restriction		18 years or older
Indication(s)	• Dyspnea & signs of respiratory distress associated with bronchospasm (breath sounds diminished or wheezing, retractions, etc.) • Alert patient physically able to use inhaler or nebulizer.		• Dyspnea & signs of respiratory distress associated with pulmonary edema (breath sounds diminished, wheezing, or significant rales; retractions; etc.) • Continuation of CPAP therapy in progress prior to EMS arrival or initiated by ALS.
Contraindications	• Medication is expired. • Known hypersensitivity or allergy to the medication. • Inability of the patient to physically assist in using the device. • Maximum prescribed dose has been met or exceeded prior to EMS arrival		• Respiratory failure or apnea • Hypotension (SBP < 100 mm Hg) • Pneumothorax • Facial, laryngeal, or pulmonary trauma • Tracheoesophageal fistula • Recent tracheal, esophageal, or gastric surgery • Active or anticipated vomiting or upper GI bleeding • Failure to tolerate or completely seal CPAP mask
		SVN and/or HFN Solution is discolored, cloudy, or precipitated	
Adverse Effects	• Hyperglycemia • Hypokalemia • Palpitations • Anxiety • Tremors • Nausea • Vomiting • Dry mouth • Epitaxis • Hypertension • Dyspepsia • Insomnia • Headache • Sinus tach • Throat irritation • Paradoxical bronchospasm		• Claustrophobia • Epitaxis • Chest discomfort • Excessive cooling • Nausea • Sinus discomfort • Difficulty exhaling • Cardiac arrhythmia • Pneumothorax • Pneumomediastinum • Edema • Aerophagia • Subcutaneous emphysema

REMEMBER: When questions or concerns arise. contact medical control.

Administration (MDI)	• Obtain & use spacer, if available • Determine number of puffs that make one dose per physician order • Coach the patient to exhale, depress canister while inhaling, hold breath as long as comfortable, then exhale slowly through pursed lips or nose • Separate puffs within one dose with 30-60 seconds of oxygen • May repeat one full dose once if indications remain after 5 minute reassessment unless the repeat dose would exceed the maximum prescribed dose			
Administration (SVN) or (HFN)	• Select mouthpiece or mask delivery • Assemble & supply O_2 to SVN or HVN according to manufacturer's specifications • Coach patient to slowly & deeply inhale the mist, hold breath as long as comfortable & then exhale slowly • Tap nebulizer as necessary to encourage solution to accumulate & settle into cup/bowl & sustain mist delivery • Replace the original oxygen device after fog concludes • May repeat once if indications remain after 5 minute reassessment unless the repeat dose would exceed the maximum prescribed dose			
Administration (CPAP)	• Limit CPAP to no more than 10 cm H_2O unless directed by medical control or patient prescription • Brief patient on what to expect & how to cooperate when CPAP mask is applied • Assemble & supply O_2 to CPAP device according to manufacturer's specifications • Assure a snug fit of CPAP mask & adequate O_2 supply • Reassess for tolerance of therapy, gastric distention, respiratory fatigue or failure, hypotension, &, if available, SpO_2 desaturation • Be prepared to abandon CPAP & provide original O_2 therapy or assisted ventilation • If possible, notify receiving facility prior to arrival that patient is receiving CPAP			
Documentation	**MDI** **SVN** **HFN**	Note dose(s), time(s) of administration & patient response & communicate this during transfer of care to ALS and/or receiving facility staff	**CPAP**	Note therapy, CPAP pressure, & patient response & communicate this during transfer of care to ALS and/or receiving facility staff

REMEMBER: When questions or concerns arise, contact medical control.

BLS CLINICAL STANDARDS OF PRACTICE TITLE: BLS Non-Traumatic Chest Pain Protocol
MEDICAL DIRECTOR: Dr. Mark Merlin
APPROVAL DATE: November 1st 2018
REVIEWED: November 1st, 2019
REVISED: November 1st, 2019

Purpose: To identify patients with chest pain associated with suspected Acute Coronary Syndromes (ACS).

Goals: Acute Coronary Syndromes commonly generate EMS dispatches and requests for assistance; aspirin (ASA) and nitroglycerine (NTG) administration should be considered for all patients with chest discomfort with a suspected cardiac etiology.

Indications: Patients must be 19 years in age or older to receive ASA or NTG from EMS personnel, as per NJOEMS EMT Protocols, February 2015.

Contraindications:

ASA Administration contraindications include:

- ASA allergy or hypersensitivity
- Active Bleeding
- Pregnancy
- Suspected aortic aneurysm, dissection or rupture
- Previous ASA dose of 324mg within the last 24 hrs.

NGT Assistance contraindications include:
- Hypotension
- PDE Inhibitor use with 72 hours (Viagra/Cialis)
- Recent Head Injury

Procedure:

Patients without contraindications should receive up to 324mg of Aspirin by mouth, chewed and swallowed.

If a patient is prescribed and has their own personal nitroglycerine sublingual tablets or spray, EMTs may assist in the administration of NTG to patients with active chest discomfort. 0.4mg NTG SL may be given by EMS providers every 5 minutes up to a total to 3 doses or resolution of chest discomfort.

Systolic Blood Pressure {SBP) must be assessed prior to each dose and be greater than 100 mmHg. If a patient becomes hypotensive, discontinue NGT administration.
ASA and NTG administration must be recorded in the ePCR and a hand-off report must be given to other health care team members such as the responding paramedic team and emergency department staff.

Patients who refuse ASA and or NTG, when indicated, must be documented in the ePCR.
If ASA and/or NTG is indicated and not administered, appropriate documentation must be recorded in the PCR.

All patients with a complaint of chest discomfort should be evaluated by paramedics and paramedics should be requested if not simultaneously dispatched to the assignment.

If the time to transport the patient with chest pain to an appropriate emergency department is less than the paramedic's ETA, prompt transport to the ED should begin.

Paramedic prehospital evaluations and 12-lead ECGs are critical in the triage of chest pain patients to cardiac interventional facilities. All efforts should be made to facilitate an advanced prehospital cardiac assessment.

Notes:

- Severity of pain does not correlate with the probability of Acute Myocardial Infarction (AMI).
- Diaphoresis with chest pain is the strongest predictor of AMI.
- There are no specific characteristics of chest pain that indicate a safe discharge without further testing.
- The most significant findings associated with chest pain include 4 signs and symptoms:

1. Chest Pain that radiates bilaterally > right > left.
2. Diaphoresis with chest pain
3. Vomiting with chest pain
4. Pain with exertion

References:

NJOEMS "Atraumatic Chest Pain/Discomfort" EMT Treatment Policy. February 2015.

Edwards M, etal. "Relationship between pain severity and outcomes in patients presenting with potential acute coronary syndromes'. Ann Emerg Med. 2011 Dec;58(6):501-7.

Body R, etal. "The value of symptoms and signs in the emergent diagnosis of acute coronary syndromes". Resuscitation. 2010 Mar;81(3):281-6.

Rezaie, S. "Chest Pain: What is the Value of a Good History?". http://www.aliem.com/chestpain-part-1-of-3- what-is-the-value-of-a-good-history

Libby, P. "Mechanisms of Acute Coronary Syndromes and Their Implications for Therapy". N Engl J Med 368;21.

Atraumatic Chest Pain/Discomfort

Initial actions:

- Conduct scene size up, primary assessment, & immediate life-saving interventions. Have an AED nearby & ready.
- Administer oxygen by NC at 4 liters/minute unless the patient has respiratory distress, abnormal breath sounds, or SPO_2 < 94% (if available) then use a NRB mask at 15liters/minute.
- Avoid exerting the patient (ie. If possible, patient should be carried) & place in a position of comfort unless necessitated by other factors.
- Request Advanced Life Support (ALS) considering their availability & hospital proximity. Consider transport to a receiving facility with emergency cardiac catheterization (PCI) capability. Minimize on scene time.
- Obtain baseline vital signs, SAMPLE history, & conduct a secondary assessment attentive to contraindications to fibrinolytic therapy (recent bleeding, surgery, etc.) and cardiac compromise.

Initiate each of the following two treatments as Indicated & appropriate If the patient Is an adult still experiencing atraumatic chest pain or discomfort of known or suspected cardiac origin. If both are ready to be administered at the same time, give ASA before NTG. Otherwise they can be given in either order.

Prompt transport is important- DO NOT delay transport to administer these treatments.

Therapy	Oral acetylsalicylic acid (aspirin, ASA)	Sublingual nitroglycerin (NTG) or glyceryl trinitrate (GTN)
Form	Oral tablet or powder	Sublingual tablet or spray
Source	Available at the scene or supplied by EMT/agency under a Medical Director.	Must be prescribed for, & supplied by the patient.
Authorization	All EMTs	All EMTs
Age	19 years or older	18 years or older
Indications	Patient currently experiencing chest discomfort	
Contraindications	• Known hypersensitivity or allergy to ASA • 325mg ASA taken in the past 24 hours • Bleeding or active bleeding disorder • Pregnancy • Suspicion of thoracic or AAA • ASA is expired	• 3 doses of NTG within a 15-minute period prior to or during this episode • Systolic BP <100 • Recent head injury • Phosphodiesterase (PDE) inhibitor (erectile dysfunction drugs such as viagra® & cialis®) use within 72 hours • NTG is expired
Adverse Effects	• Anaphylaxis • Angioedema • Nausea • Vomiting • Bleeding • Stomach irritation	• Headache • Bradycardia • Cardiovascular collapse • Flushing • Lightheadedness • Hypotension • Methemoglobinemia
Administration	• Administer non-enteric coated tablets/powder to a cumulative dose of 324mg (using 81 or 162 mg tablets) or 325 mg (using regular adult tablets) • Have the patient thoroughly chew then swallow the ASA tablet(s), even it the tablet is not "chewable" ASA. A small sip of water may be given if the patient can't chew well (e.g., dentures are not in) • Minimize interrupting mask oxygen	• Assist with one tablet or spray under the tongue • Reassess chest discomfort using 1-10 pain scale & vital signs after 1-2 minutes • Repeat one dose of NTG every 5 minutes until a maximum of three has been administered for any one episode • Contact medical control if appropriate
Documentation	Note dose(s), time(s) of administration & patient response & communicate this during transfer of care to ALS and/or receiving facility staff	

REMEMBER: WHEN QUESTIONS OR CONCERNS ARISE, CONTACT MEDICAL CONTROL!

BLS CLINICAL STANDARDS OF PRACTICE

TITLE: Pre-hospital spinal motion restriction
MEDICAL DIRECTOR: Dr. Mark Merlin
APPROVAL DATE: November 1st 2019
REVIEWED: November 1st, 2019
REVISED: November 1st, 2019

Purpose: To insure that patients are having proper spinal motion restriction decisions made in the field and are not undergoing full spinal immobilization needlessly. Use of a long spine board should be limited to extrication and transferring of the patient to the EMS cot and not as a transporting device on an EMS cot.

Goals: To be able to assure proper patient selection in spinal motion restriction

Definitions:

Spinal Motion Restriction: the application of a cervical collar and the maintenance of the spine in neutral alignment on an ambulance cot.

Full Spinal immobilization: the application of a cervical collar and securing a patient to a long backboard for full immobilization of the patient's spine.

Indications for Spinal Motion Restriction:

If the patient has injuries resulting from penetrating trauma (i.e. stab wound, gunshot wound etc.) and does not have any neurological deficits, then neither spinal motion restriction precautions or full spinal immobilization are required for the patient.

If the patient has injuries from penetrating trauma and does have neurological deficits, then only spinal motion restriction will be utilized.

If the patient has injuries resulting from blunt trauma, (i.e. MVC, pedestrian struck, falls etc.), then only spinal motion restriction will be utilized.

Indications for Full Spinal Immobilization:

If the patient has suffered blunt trauma and is to be flown from the scene by a medevac unit, then full spinal immobilization must be utilized until the patient is placed on the medevac stretcher or onto the medevac skid. At that point, if the medevac crew and time will allow, the patient can be removed from the full spinal immobilization for the transport.

Contraindications: None

Procedure:

Patients sustaining penetrating trauma that do not exhibit neurological deficit do not need to have

spinal motion precautions utilized. The patient is to be placed supine on the ambulance cot with the head at approximately 20° to 30°.

If the patient exhibits a neurological deficit, spinal motion restrictions shall be utilized by placing a cervical collar on the patient and then placing the patient supine on the ambulance cot with the head at approximately 200 to 30°.

Patients that have suffered a blunt trauma injury shall have spinal motion restrictions utilized by placing a cervical collar on the patient and then placing the patient supine on the ambulance cot with the head at approximately 20° to 30°.

The patient can be transferred to the EMS cot by a long spine board, but is not to be transported to the hospital on the long spine board.

Method of transfer of patient on scene:
If the patient can manipulate themselves out of the situation, they can move themselves to the EMS cot, or a long spine board can be used to transfer the patient to the EMS cot. If the patient cannot manipulate themselves out of the situation, then the patient will be placed on a long spine board or scoop type stretcher and transferred to the EMS cot.

Once on the EMS cot, the transfer devices will be removed from under the patient. If a long spine board is used, one of two methods can be used for removal. The board can be removed by the long axis method, where the board is removed from the foot of the patient, or the log roll method, where the patient is log-rolled to a side and the board is removed from the patient.
If the patient is transferred on a scoop stretcher, it shall be separated and removed from under the patient.
Transfer of patient at the hospital:
When you arrive at the hospital, the patient can be transferred off the EMS cot to the hospital stretcher by using a slide board at the hospital or by a taught sheet under the patient.

The move shall be slow, gentle and purposeful and not quick and jerky in nature.

Special Considerations:
Patients found in full spinal immobilization prior to arrival of ALS:

If a patient in found by ALS in full spinal immobilization by BLS prior to their arrival, a neurological exam will be completed by the paramedics and if it will not delay the transport of the patient to the trauma center, the patient will be removed from the long spine board and placed on the ambulance cot, with a cervical collar in place and the head of the cot at approximately 20° to 30°.

Removal from the board will be by the long-axis method, where the board is removed from the foot of the patient, or the log roll method, where the patient is log-rolled to a side and the board is removed from the patient.

If the transport time to the hospital is short and transport of the patient will be delayed by removing the patient from full spinal immobilization, then the patient will remain in the full spinal immobilization on the long backboard to the trauma center.

If the patient is found to be in a vest type immobilization device (i.e. KED), the same procedure as above should be followed.

All findings for deciding to follow the particular section of the spinal motion precaution procedure must be fully documented in the narrative of the PCR.

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BLS CLINICAL Standards of Practice

TITLE: Tourniquet Protocol
MEDICAL DIRECTOR: Dr. Mark Merlin
APPROVAL DATE: November 1st 2018
REVIEWED: November 1st, 2019
REVISED: November 1st, 2019

Purpose: To assure proper use of a tourniquet in the pre-hospital setting

Goals: To control bleeding in cases where direct pressure and pressure points do not work or are not applicable
Indications: To control potentially fatal hemorrhage only after other means of hemorrhage control have failed
Contraindications: None
Procedure: Attempt to control the hemorrhage by using direct pressure with a small amount of gauze over the bleeding area.

If that is unsuccessful in controlling the bleeding, apply the tourniquet.

In applying the tourniquet, first, cut away all clothing as to not obscure visualization of the tourniquet, then either open the tourniquet fully, or keep it clipped and large enough to fit around the area to which it is being applied.

Apply the tourniquet proximal to the wound and not across any joints.

Either clip the two ends together or just pull the tourniquet tight onto the patient. Tighten the tourniquet by turning the windless until the bleeding stops. Lock the windless into the triangular latch.

On the end of the tourniquet mark the time and date that the tourniquet was placed on the patient.

Do not remove the tourniquet once placed in the field; it should only be removed by the receiving hospital.
Documents the use in the PCR with the intervention: Wound Care-Tourniquet.
Note: Application of Topical Hemostatic agent is for reference only and will only be applicable if the agent is to be carried in the future

This protocol is based on the position statement from the National Association of EMS Physicians (2014)

BLS CLINICAL STANDARDS OF PRACTICE TITLE: BLS Request for and/or cancellation of ALS
MEDICAL DIRECTOR: Dr. Mark Merlin
APPROVAL DATE: November 1st 2018
REVIEWED: November 1st, 2019
REVISED: November 1st, 2019

Purpose: In accordance with sound clinical practice and applicable standards of care, EMTs are required to recognize the need for ALS and should use the following as a guideline to appropriately request ALS or to cancel them when not needed.

Goals: To establish a standard of practice compliant with proper patient care

Indications: In accordance with sound clinical practice and applicable standards of patient care.
Contraindications: None
Procedure:

1) The following conditions necessitate BLS personnel to request an ALS unit if one has not been dispatched and to know when to cancel an ALS unit that has been dispatched:

a) Cardiac arrest (see Note B below)
b) Atraumatic chest pain or palpitations, regardless of the nature or resolution of the pain or BLS administration of ASA or NTG to a patient.
c) Difficulty breathing, abnormal breath sounds or SP02 readings of less than 95%, regardless of the nature or resolution or if BLS has assisted a patient with a nebulizer.
d) Unconscious person
e) Altered mental status, GCS $\leq$ 14
f) Overdoses with prescription or illicit medications or poisonings
g) Multiple system trauma, or single system trauma in high speed collisions/rollover/ejection h) Hypotension with systolic pressure less than 100 mm hg
i) Hypertension with a systolic pressure above 200 mg hg, and/or a diastolic pressure above 110 mm hg
j) Syncope
k) Diabetic emergency
l) Anaphylaxis/allergic reaction
m) Uncontrolled bleeding prior to the application of a tourniquet
n) Signs or symptoms of a Stroke/CVA (facial droop or arm drift or slurred speech)
o) MVA entrapment with possible multiple trauma involved p) All seizures, including postictal patients
q) Burns greater than 9% TBS in adults or 3% TBS in children, or > first degree facial bums or inhalation burns
r) Pedestrian Struck
s) Falls from a height greater than twice the patient's height t) Signs and symptoms of a Gl bleed
u) Any patient age 75 or older with any abnormal vital signs
v) Any patient that has been administered a medication by a physician prior to arrival of BLS or if an

EMT has administered or assisted in administering a medication to a patient.

2) All other patients may be treated by a BLS unit without consideration of an ALS unit.

NOTES:

A) If a dispatched ALS unit is confirmed a farther distance to the scene than the location of the transporting hospital, the BLS unit may at the time of transport cancel the ALS unit and proceed to transport to the hospital with proper notification to the receiving hospital.
B) If in the case of a cardiac arrest situation and no ALS unit is on-scene, proper high-quality CPR must continue for a period of 20 minutes, if the ALS unit is still not within the timeframe of the transport time to the hospital, the BLS crew can decide to transport the patient to the closest hospital with proper notification to the receiving hospital.