

# **BUCKS COUNTY EMERGENCY MEDICAL SERVICES**



## **Regional Treatment & Transfer Protocols Effective August 1, 2010**



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

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# **BUCKS COUNTY EMERGENCY MEDICAL SERVICES**

## **Regional Treatment & Transfer Protocols**

### **SECTION I**

### **GENERAL INFORMATION**



# **BUCKS COUNTY EMERGENCY MEDICAL SERVICES**

## **Regional Treatment & Transfer Protocols**

### **FOREWORD**

This manual is intended as guidance for emergency care personnel (BLS and ALS) and Medical Command physicians functioning within the Bucks County EMS System. It also gives structure and consistency through out the Bucks County EMS Systems.

These procedures are based on the premise that patient care begins with a full BLS assessment and then BLS treatment as outlined in the Pennsylvania Statewide BLS Protocols. Then an ALS assessment and then ALS treatment if indicated as outlined in the Statewide ALS Protocols.

This manual was approved by the Bucks County Medical Advisory Committee and the Pennsylvania Department of Health Bureau of EMS.

**EFFECTIVE August 1, 2010**



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### DEFINITIONS

**Active Command Status:** EMT-Paramedics or PHRN who has received authorization to practice as an ALS provider for an ALS service

**ALS - Advanced Life Support:** The advanced prehospital and interhospital emergency medical care of serious illness or injury by appropriately trained health professionals and by certified EMT-paramedics.

**ALS Responder Unit:** A vehicle, which carries ALS personnel and ALS equipment, but is not capable of patient transport. Usually used to assist BLS units on ALS calls.

**Ambulance Attendant:** An individual who holds a valid certificate evidencing the successful completion of a course in First Response sponsored by the American Red Cross, and a valid certificate evidencing the successful completion of a course in CPR sponsored by the American Heart Association or the American Red Cross, or an individual who can evidence the successful completion of an equivalent training program approved by the DOH.

**Ambulance Service Medical Director:** A physician licensed in the Commonwealth of Pennsylvania and approved by the Pennsylvania Department of Health, who is employed by, or contracts with, a licensed ambulance service and is responsible for providing medical guidance and advice and evaluating the quality of patient care provided by the ambulance personnel.

**BLS services - Basic Life Support services:** The prehospital or interhospital emergency medical care and management of illness or injury performed by specially trained and certified or licensed personnel.

**BCEMS - Bucks County Emergency Medical Services**

**Emergency Care Personnel:** An ambulance attendant, First Responder, EMT, EMT-Paramedic, or Health Professional.

**EMT- Emergency Medical Technician:** An individual trained to provide prehospital emergency medical treatment and certified as such by the Department in accordance with the current National Standard Curriculum for basic EMT's.

**EMT-Paramedic - Emergency Medical Technician-Paramedic:** An individual who is trained to provide prehospital emergency medical treatment at an advanced level and certified as such by the Department of Health under the current National Standard Curriculum for EMT-Paramedics.

**First Responder:** An individual who holds current CPR certification plus a valid certificate of successful completion of a training program that conforms to the National Standard Curriculum approved by the Department of Health.



## BUCKS COUNTY EMERGENCY MEDICAL SERVICES Regional Treatment & Transfer Protocols

**Health Professional:** A licensed physician or professional registered nurse who has education & continuing education in ALS & prehospital care, and is certified by the Commonwealth as such.

**Inactive Status:** EMT Paramedics who do not have medical command with a service.

**Intubation Attempt:** The insertion of a laryngoscope with the intent to intubate the patient.

**Medical command:** An order given to personnel of EMS by an authorized medical command physician who meets qualifications prescribed by the Department of Health.

**Medical command physician:** A physician licensed by the Commonwealth of Pennsylvania who meets the criteria set forth by the Department of Health for medical command physician and who is approved by the regional EMS council medical director to provide medical command to prehospital and inter-hospital personnel.

**MICU - Mobile Intensive Care Unit:** An ambulance, which carries ALS personnel & equipment, and is capable of patient transport.

**OIC - Officer-In-Charge:** The officer in charge of all functions of a particular service (i.e., EMS, fire), usually the highest-ranking officer of the primary responding station or unit. The highest level of medically trained EMS Personnel is responsible for all aspects of patient care.

**Patient Contact:** Prehospital provider who was responsible for the care of a patient on scene and transport to tertiary care facility and transfer of care to the tertiary care facility or EMS agency .

**Restricted Command:** EMT-Paramedics are assigned restricted command by their ALS Service Director. This means they have additional requirements to operate as an ALS provider.

**Trauma Center:** A facility accredited as such by the Pennsylvania Trauma Systems Foundation.



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### PATIENT CONTACT

Follow Statewide BLS Protocol 201

Consent shall be obtained from the patient and documented on the Pennsylvania Emergency Medical Services Patient Care Report prior to initiation of evaluation and management whenever possible. However, the emergency exception to the requirement for consent is implied for all patients, regardless of age, in whom consciousness or competency is impaired. Thus, patients whose consciousness or competency is impaired cannot refuse treatment.

Upon arrival at the scene of a sick or injured person, an initial, focused, and ongoing assessment shall be performed and care shall be initiated based upon the appropriate procedures contained in the protocols. **In order to perform an assessment and prompt emergency care at the patient's side you must bring necessary (i.e. First in bag, oxygen) equipment with you to the patient's side.**



# **BUCKS COUNTY EMERGENCY MEDICAL SERVICES**

## **Regional Treatment & Transfer Protocols**

### **SECTION III**

#### **Specific Skill Procedures**



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### NASOTRACHEAL INTUBATION

#### INDICATIONS:

Nasotracheal intubation is indicated for hypoventilation and for airway protection in the patient with depressed mental status. It can be used where endotracheal intubation is contraindicated due to C-spine injuries. The patient must be breathing.

#### CONTRAINDICATIONS:

Nasotracheal intubation is contraindicated in the patient who is too combative to allow the procedure to be completed, and in the patient who is not breathing.

#### PRECAUTIONS:

The endotracheal balloon must be functioning and should be pretested.

Do not move the C-spine if injury is suspected.

Confirmation of proper placement. See Statewide ALS Protocol #2032

#### PROCEDURE:

As Instructed.

#### COMPLICATIONS:

1. Epistaxis.
2. The tube may be placed in the esophagus or into the right mainstem bronchus, providing inadequate ventilation.



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### Sedation Assisted Intubation Regional Requirements

#### Services Requirements:

1. ALS Service Medical Director must submit a letter of interest to the Regional Medical Advisory Committee for their service to participate in the pre-credentialing process.
2. After approval to participate in the pre-credentialing process from Regional Medical Advisory Committee. Service must meet the following requirements for a period of six months prior to Etomidate placed on the ambulance on every intubated patient.
  - EKG strips attached to every patient care report. (Documenting continuous monitoring)
  - Wave-form ETCO<sub>2</sub> Strips attach (Documenting continuous monitoring)
  - Complete an regional airway management checklist
  - Mandatory review of every chart where intubation was performed or attempted by the service QA committee and ALS Service Medical Director.
  - Copy of patient care report with strips attached sent to regional office for QI review for every intubation performed or attempted. Documented training as outlined in Statewide ALS Protocol #4002
    1. Service medical director must personally assure training and continuing education in patient selection, endotracheal intubation, use of alternative/ rescue airway device, use of wave-form ETCO<sub>2</sub> monitoring, and use of this protocol.
    2. Service medical director must assure initial and ongoing competence (including supervised sedation-assisted intubation) for each individual EMS practitioner who will use sedation assisted intubation. Only individuals credentialed for this procedure will perform the procedure. Medical directors should strongly consider requirements for regular supervised operating room intubations (if it is possible to arrange for such experience) and should consider the use of high fidelity simulation as a component of assuring competence.

#### Credentialing Process

- a) Letter from regional office to regional medical advisory committee verifying service meets equipment and QI requirements.
  - b) ALS Service Medical Director must attend Regional MAC meeting to request approval to proceed.
    - ALS Service Medical Director must provide documentation of how compliance as outlined in Statewide ALS Protocol 4002 will be initiated and maintained after credentialing by RMAC
  - c) Regional MAC may approve or deny with just cause.
  - d) If approved, ALS service may now place Etomidate on their unit and credentialed ALS providers may follow Statewide ALS protocol 4002.
  - e) If denied, regional MAC will provide written documentation of deficiencies and recommendations for improvement and resubmission.
4. ALS Service is responsible for purchasing Etomidate.
  5. ALS Service must maintain the list credentialed providers and update this list quarterly to the regional EMS office.

#### Notes:

1. **Two ALS Practitioners-** Two credentialed providers must be providing care while the procedure is performed. At least one credentialed provider must continue care during transport to hospital.



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### NEEDLE CRICOTHYROIDOTOMY

#### INDICATIONS:

1. Pediatric and adult medical cases:
  - a. Respiratory arrest or severe respiratory distress, especially in the setting of upper airway obstruction due to foreign body or infection, and;
  - b. Inability to ventilate by mask or intubate trachea.
  
2. Trauma:
  - a. Advanced airway is required due to:
    1. Respiratory arrest, or;
    2. Inability to maintain airway due to face, neck, or chest trauma, or;
    3. Respiratory insufficiency, and;
  - b. Inability to ventilate by mask or intubate trachea whether due to obstruction of airway, distortion of area, or inability to extend neck in cases of suspected C-spine injury.

#### PROCEDURE:

1. Palpate the cricothyroid membrane, in midline just below the thyroid cartilage and above the cricoid cartilage.
2. Prep the area.
3. Insert a 14-gauge catheter midline directed at a 45-degree angle towards the navel, while aspirating the syringe.
4. When trachea is entered, air will be aspirated easily.
5. Attach the appropriate adapter and ventilate using the approved high flow set-up.
6. Assess for adequacy of ventilation. Listen for breath sounds and observe for chest expansion.
7. Despite proper technique, ventilation may still be inadequate, especially in an adult. Patient will require advanced airway (cricothyrotomy with ET, endotracheal intubation, tracheostomy) ASAP.

#### COMPLICATIONS:

1. Bleeding.
2. Perforation of the esophagus or perforation through the trachea.
3. Local cellulitis or hematoma.
4. Subcutaneous or mediastinal emphysema.

#### **Commercial Cricothyroidotomy Kits**

Services may use commercial cricothyroidotomy kits such as Melker kit or Nu-trake. Services are responsible for training and assuring their providers are competent with equipment. Services must also have a written procedure for the equipment.



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### NEEDLE CHEST DECOMPRESSION

INDICATIONS: Tension pneumothorax, as suggested by:

1. Setting of blunt or penetrating chest trauma, or;
2. Setting of spontaneous pneumothorax, such as sudden onset pleuritic chest pain, usually in a patient with asthma, COPD, or other chronic lung disease, and;
3. Physical findings of:
  - a. Severe chest pain.
  - b. Severe respiratory distress.
  - c. Unilateral absence of breath sounds or increased resonance to chest percussion on the affected side.
  - d. Hypotension and/or shock.
  - e. Tracheal deviation away from the affected side.
  - f. Jugular venous distension.
  - g. Narrow pulse pressure.

\* Patient must have systolic BP < 90 and signs/symptoms consistent with tension pneumothorax before performing needle decompression.

PROCEDURE:

1. Palpate the second intercostal space in line of the nipple on the suspected side of the pneumothorax. You may use the sternal notch as the landmark for this space.
2. Insert a 14-gauge catheter just OVER the third rib at a 90-degree angle to the skin in this space until a "pop" is felt. (Nerves and blood vessels run just under each rib.)
3. Air should be aspirated easily, or may be forced out under pressure.
4. If air comes out under force and/or patient's symptoms or vital signs improve, the needle should be removed and the catheter should be left in place until the patient arrives at the receiving facility. Attach a commercial flutter valve (i.e., Heimlich valve) if available.
5. Remove the needle/catheter if no air is returned and apply an occlusive dressing.

COMPLICATIONS:

1. Cellulitis.
2. Hematoma.
3. Pleural infection or infusion.
4. Pneumothorax

#### **Commercial Decompression Kits**

Services may use commercial cricothyroidotomy kits such as Cook Decompression Kit. Services are responsible for training and assuring their providers are competent with equipment. Services must have a written procedure for the equipment



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### Mucosal Atomization Device (Optional)

Services are permitted to use Mucosal Atomization Devices for the purpose of intranasal administration of approved medications.

#### Service requirements

- ALS service medical director must approve its use for the service.
- ALS service medical director is responsible for training and continued competency for device

#### Note:

##### **Intranasal (IN) naloxone: Drug concentration and volume**

- Particle size of delivered medication: Large drops of medication tend to run down into the throat and are not available for nasal absorption. Spray and atomized particles distribute more evenly over a larger surface area, making absorption more effective.
- Volume of delivery: The nasal mucosa will become saturated if too large a volume of medication is applied to its surface, this results in runoff out the nose or into the back of the throat, reducing the amount of drug available for absorption
- Concentration of medication: If the drug that is administered is too dilute, then sufficient quantities of drug will not be available for absorption. Concentrated solutions are more effective

#### **Problems with nasal drug delivery:**

- Damage to the nasal mucosa: If the nasal mucosa is injured (by trauma) or destroyed (by chronic cocaine use) then reduced mucosal surface area exists, and it is unlikely that nasal drug delivery will be effective.
- URI, secretions: Patients with active URI that have large amounts of mucous secretion, as well as those who are suffering a bloody nose will not absorb the medications as well because the medication will have difficulty contacting the nasal mucosa.
- Perfusion: Severe hypotension, severe vasoconstriction, etc will reduce blood flow to the nasal mucosa and may prevent adequate absorption.
- **IMPORTANT:** If a patient fails to awaken following nasal naloxone, they may still respond to intravenous naloxone. Therefore, if you suspect an opiate overdose and the patient fails to awaken following an IN dose of naloxone, you should administer naloxone as a shot.



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### Intra-osseous Infusion

#### Criteria:

- Consider for use in any critical medical or trauma patient in whom IV access cannot be established in a timely fashion

Cardiac Arrest – IV access not obtained after 2 attempts or 1 minute

Critically unstable patient – IV access not obtained after 3 attempts or 2 minutes

#### Exclusion Criteria:

- Inability to locate landmarks secondary to trauma or body habitus
- Clinical evidence of a fracture or recent surgery in the extremity to be used for insertion
- Evidence or recent history of soft tissue, skin, or bone infection in the region of the insertion site
- Placement in same extremity within past 24 hours.

#### PROCEDURE: Also see manufactures recommendations for specific devices

##### a. Pediatric:

1. **Infants & Toddlers** (0-6 years old) 1cm medially and 1cm distally to the tibial tuberosity
2. **Pediatrics** (6-11 yrs old) 1-2cm medially and 1-2cm distally to the tibial tuberosity.

##### b. Adults:

1. **12 years and older:** 2cm Medially and 1cm proximally to the tibial tuberosity or proximal humerus

#### PAIN

IO infusion can cause severe discomfort for conscious patients: prior to IO bolus or flush on an alert patient.

Adults: SLOWLY administer 40mg 2% Lidocaine (preservative free) through the IO Needle

Peds. : 0.5mg/kg 2% Lidocaine (preservative free) through the IO Needle

#### Service Requirements:

Services should be sure all ALS providers are properly trained on the services specific device (i.e. EZ-IO, Bone Injection Gun or Manual Device) .

#### NOTES:

1. Do not puncture the same bone more than once.
2. Sterile technique should be utilized during IO placement.
3. Self-injury has also occurred while performing this procedure. Avoid this by holding the lower limb side-to-side, rather than with one hand underneath the limb, opposite the needle insertion site.
4. All of the complications of peripheral IV lines apply to IO lines, including air and other emboli.

Other complications include:

Osteomyelitis (be sure to use a sterile technique)

Joint and growth plate damage (be sure to angle away from the joint).

5. Remove the stylet and aspirate with a blank syringe.
6. Infuse 10ml NSS (adult) 5ml NSS (peds.) through the IO needle and observe for extravasation around the site and on the side of the leg opposite the needle entry site.

Proper placement is characterized by:

Solid anchoring of the needle;

Minimal resistance to infusion; and

Lack of extravasation of infused fluid.

7. Attach tubing from IO solution container
8. Secure the IO needle.
9. Adjust IO rate as desired, and monitor.
10. Any medications, fluids, or blood products that can be given intravenously can be given via the IO route.
11. The needle can safely remain in place for up to 24 hours post-insertion
12. **WARNING:** Sternal IO is **NOT** in scope of practice.



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### NEBULIZER TREATMENT

#### PURPOSE:

To provide a method of drug administration, specifically bronchodilators, upon direct orders of a medical command physician.

#### INDICATION:

Respiratory difficulty due to bronchospasms (asthma, bronchitis, emphysema).

#### PRECAUTIONS:

- a. Cardiac arrhythmias associated with tachycardia
- b. Hypertension
- c. C.A.D.
- d. C.H.F.
- e. Diabetes
- f. Pregnancy
- g. Use with care with other sympathomimetics

#### SIDE EFFECTS:

- a. Nervousness
- b. Tachycardia
- c. Tremors
- d. Nausea
- e. Rarely, Hypertension, Palpitations, Vomiting, Bad Taste in Mouth.

#### PROCEDURE:

- a. Hand held nebulizer and unit dose of treatment
- b. Oxygen set at 6-10 LPM (enough to provide a fine mist through the mouthpiece opening).
- c. Patient should take slow, deep breaths with lips firmly around mouthpiece.
- d. Continue treatment until medication is finished or patient is having ill effects.
- e. Record patient response to treatment.

#### DOCUMENTATION:

1. Patient assessment prior to treatment must include;
  - A) Respiratory status - i.e. difficulty
  - B) Skin color and temperature
  - C) Lung sounds - i.e. rales wheezing
  - D) Cardiac-pulse, blood pressure, respirations, EKG findings
2. Any problems, side effects during treatment
3. Patient assessment/Post treatment-Note if any improvement.



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

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### INT

**PURPOSE:** To be used in the hemodynamically stable patient in place in fluids.

#### INDICATIONS:

- (1) Any patient who by current protocols require IV access;
- (2) Patients who require IV access for possible medication administration;
- (3) Any patient who during primary assessment is found not to require fluid resuscitation.

#### CONTRAINDICATIONS:

- (1) Unstable or potentially unstable multi-system trauma;
- (2) Cardiac arrest;
- (3) Clinical dehydration;
- (4) Clinical evidence of shock.

#### PROCEDURE:

- (1) Percutaneous cannulation of vein;
- (2) Vacutainer blood drawn;
- (3) Placement of INT;
- (4) 1 cc Normal Saline flush;
- (5) Fluids or medications as needed followed by a saline flush.

#### COMPLICATIONS:

The complications are those associated with IV access.



# **BUCKS COUNTY EMERGENCY MEDICAL SERVICES**

## **Regional Treatment & Transfer Protocols**

### **Termination of Resuscitation**

Bucks County has adopted the Statewide ALS Protocol Guideline # 3091 “Termination of Resuscitation” as their regional treatment protocol for situations when providers may consider field termination of resuscitation.



# **BUCKS COUNTY EMERGENCY MEDICAL SERVICES**

## **Regional Treatment & Transfer Protocols**

### **SECTION III**

### **EMS SYSTEM GUIDELINES**



# **BUCKS COUNTY EMERGENCY MEDICAL SERVICES**

## **Regional Treatment & Transfer Protocols**

### **Regional Optional Equipment**

Services are responsible for training and assuring their providers are competent with equipment. Services must have a written procedure for their service specific equipment.

**The equipment listed below may be used when appropriate as indicated according to the Statewide ALS Protocols.**

**Activated Charcoal**  
**Intra-osseous access**



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### MEDICATIONS

#### 1. FORMULARY

Only medications approved by the DOH as published in the Pa Bulletin will be considered for use in Bucks County Paramedic system. Upon review of the Bucks County MAC and approval of the Regional Medical Director, and the Pa DOH, a medication will be placed in the formulary and be made available for field use. In instances where a specific product has particular advantages (ease of use, rapid identification, container fits proportions of Drug Box, etc.), the brand name will be specified and generic equivalent substitution is discouraged. When substitution is necessary, the substituted item is to be labeled by the pharmacist "Same as (Brand Name Dose)."

#### 2. PHARMACY SEAL AND DATE OF EXPIRATION

The issuing hospital pharmacy is to seal the drug box with a break away seal and note on the outside of the box the expiration date of the item which expires the earliest. This pharmacy seal will be broken by the ALS practitioner when the box is exchanged from the Emergency Department and inspected prior to being placed on the vehicle.

#### 3. EXCHANGE OF MEDICATION BOXES

When a medication is administered in the pre-hospital setting, the entire drug box will be exchanged at the end of the call for another box in the hospital Emergency Department. This applies for all seven Bucks County Hospitals, Abington Hospital in Montgomery County and Frankford Hospital-Torresdale Campus in Philadelphia. Patients transported to facilities outside of the Bucks County may exchange drug for 1 for 1, but are not required to exchange. If a facility does not exchange drugs make an attempt to exchange the used drug at an in county facility.

A Bucks County EMS drug box-billing sheet shall be supplied by the pharmacy. Anytime a drug boxed is exchanged this must be completed.

**Note: This is the default program hospitals may site specific exchange programs.**

**Remember this program is a privilege not a hospital requirement.**



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

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### “First In Bag Drugs”

ALS services may choose to carry medications in their "first-in bag" providing the following guidelines are met:

- a. No controlled substances are to be carried in the first- in bags.
  
- b. Only medications designated by the ALS Service Medical Director for first line drugs may be carried in first-in bags. These medications are initially received from the pharmacy, so the county drug box is always intact.
  
- c. Medications carried are to be accounted for at least once a day and the squad shall be responsible for keeping the check out sheets as required. This will be kept on file with Narcotic accountability sheets available for review by Federal, State, County, Hospital officials.
  
- e. The bag must be locked in a cabinet when the ambulance is not in direct supervision of an ALS practitioner who has medical command authorization.
  
- f. Medications used from the first-in bag, are to be replenished from the county drug box. The county drug box is to be exchanged in the normal fashion.

The ALS service is responsible to insure all drugs and solutions are stored within the recommended temperature guidelines.

To determine the expiration of the first-in bag, the Paramedic checking the unit shall determine the date of the drug expiring SOONEST and that date shall be documented. If a drug in the first-in bag is expired, it is to be exchanged with the equivalent out of the County box, and the box taken to a hospital IMMEDIATELY and exchanged.

When the ambulance is unattended or not under direct supervision of an ALS practitioner with medical command authorization, the first-in bag must be locked.

When a drug is administered from the first-in bag, it is to be replaced FROM the County drug box. The used drug is to be put in the County box, and the box is to be traded at the hospital.

The County drug box is to be 100% at all times. Drugs for the first-in bag are not to be taken from the County box.



# **BUCKS COUNTY EMERGENCY MEDICAL SERVICES**

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### **CONTROLLED SUBSTANCES**

The following procedure will be strictly adhered to in the handling and record keeping of medications classified as controlled substances by the DEA. This includes Morphine Sulfate (schedule II) and Diazepam (Valium) (Schedule IV), and Midazolam (Versed).

1. The ALS practitioner receiving the controlled medications for the squad will be expected to produce a picture identification, current ALS practitioner certification card and current squad membership card (or authorizing letter) for positive proof of identification.
2. The paramedic will obtain the controlled medications from the hospital receiving the patient. A Script from the receiving physician or medical command physician shall be obtained, noting any wasted narcotic as well as the amount administered. If the receiving or medical command physician does not provide you with a script or care has been transfer it will be the responsibility of the ALS Service Medical Director write the script.
3. Controlled medications must be stored in a double-locked system. Typically this involves a locked box within a locked drug cabinet. Systems other than a separately locked box within the cabinet may be employed as long as double-locked security is maintained and approved by the Regional EMS office. It is strongly recommended services limit the access to controlled substances such as limiting the number of keys to these locks.
4. Before and after each ALS shift at a minimum of every 12 hours, inventory is to be conducted at squad level on provided standardized forms. This form will be kept on file at the squad, available for inspection at request of the supplying hospital, the DEA or the County/Council office. These inventory records will be kept for a period of two years.
5. Act 45 1005.11 must be adhered to immediately upon discovery of any lost/missing narcotics.

# DRAFT Pending State Approval



## BUCKS COUNTY EMERGENCY MEDICAL SERVICES Regional Treatment & Transfer Protocols

### Regional ALS Drug List

Description	Par Quantity
Albuterol	2
Adenocard 6mg/ 2ml Vial or Adenocard 6mg (prefilled syringe)	3 1
Adenocard 12mg (prefilled syringe)	1
Asprin 81mg (chewable)	4
Atropine 1.0mg / 10ml. Syringe	5
Atrovent 0.5mg/2.5ml	2
Calcium Chloride 10% (10ml) prefilled syringe	1
<b>**Cardizem 25mg (Optional)</b>	1
Cordarone 150mg 3ml	3
*Solumedrol 125mg/2cc or Decadron 10mg/1cc	2 2
Dextrose 25gm/50ml 50% prefilled syringe	2
Diphenhydramine 50mg/1ml	2
Dopamine 400mg/250ml premix	1
Epinephrine 1:1,000 1mg ampule	2
Epinephrine 1:10,000 1mg/10cc prefilled syringe	8
<b>**Etomidate 40mg (Optional)</b>	1
Furosemide 100mg prefilled syringe	2
Glucagon	2
Lidocaine 100mg/5ml prefilled syringe	3
Magnesium Sulfate 50% solution 1gm/2cc	4
Naloxone 2mg prefilled syringe	3
Ondansetron 4mg	1
Nitro-Lingual Pump spay	1
Sodium Bicarb 50meq/ 50ml prefilled syringe	2

#### Controlled Substances

Description	Par Quantity	Maximum Quantity
Valium 10mg/2ml	2	3
Morphine 4mg/1ml	3	5
Versed 5mg/5ml	1	2
<b>**Lorazepam 2mg/ml (Optional)</b>	0	4
<b>**Fentanyl 0.05mg/2ml (Optional)</b>	0	4

\* Maybe substitute with Dexamethasone 10mg  
 \*\* Optional medication. Service must be approved by Regional office.  
 Service is also responsible for purchasing.



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### ALS to BLS TRANSFER

ALS maybe dispatched with BLS, or requested by a BLS unit. The following guidelines should be followed by both ALS and BLS units.

#### **If a BLS unit should arrives onscene prior to the ALS arrival:**

- If multiple patients, perform triage.
- Performs primary & secondary assessment of the patient in accordance with Statewide BLS protocols and prepare for transport.
- Advise in coming ALS unit of findings.
- ALS may triage to BLS via radio report or continue in to assess patient.

#### **If an ALS unit arrives with a BLS unit:**

- BLS unit will give a quick patient report including treatment to the ALS provider.
- ALS provider will continue assessment and determine if patients needs ALS care.
- ALS provider may triage patient to BLS unit if patient does not require ALS care.
- If ALS provider performs any of the following procedures they must contact Medical command prior to triage to BLS:
  - ⇒ EKG
  - ⇒ Glucose check

Any patient who refuses ALS care (i.e. patient refuses IV) should be transported by the ALS unit, unless patient refuses transport by the ALS unit then contact medical command.

**In no case should treatment and transport be delayed waiting for ALS.**

#### **Documentation**

- Assessment and/ or report given by BLS if not onscene
- Vitals, including Glucose if applicable

EKG attach a six second strip if applicable

#### **ALS Units with Mixed Crews Certifications (i.e. EMT, ALS Practitioner)**

All calls regardless of dispatch (ALS/BLS)

The highest certified provider must PERFORM and document on the patient care report as performing the initial assessment (i.e. BLS assessment performed by: Joe Smith, EMT-P).

The highest certified provider must review and co-sign all patient care reports completed by EMT partner.



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### Air Ambulance Service Request

#### Definitions

**Standby** is the notification to the Air Medical service that a potential condition exists which may require the services of their helicopter.

**Activation** is the request for a helicopter to proceed to the emergency scene (or appropriate location).

When a police or fire officer requests activation of the helicopter service, the dispatcher will place a helicopter on standby and notify the incoming ALS unit that a helicopter was placed on standby and provide a brief report. If ALS is not available the helicopter should be launched.

EMS officers may activate the helicopter service. The dispatcher will notify the incoming EMS unit.

The ultimate authority to decide on to fly or not fly; is that of the first arriving, ALS unit, or if none, the arriving BLS crew member with the highest level of training.

#### Responsibility for Coordination of Landing

The responsibility for the preparation of a landing site and coordination of the landing procedure will be that of the officer in charge of the fire service. The dispatcher will determine the radio frequency.



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### HOSPITAL STATUS AND DIVERSION

The following terms will be used to describe hospital bed status.

1. **Normal Status** – indicates hospital is able to receive EMS patients.
2. **Divert Status** – indicates the resources at the Department of Emergency Medicine are temporarily and completely involved with patients. Diversion of medical patients should be considered if practical.
3. **Trauma By-Pass** - indicates the resources at a trauma center are temporarily and completely involved with trauma patients presently in the Emergency Department. Diversion of trauma patients to another trauma center should be considered if practical.
4. **Medical Command Divert**– Facility is not available for medical command. Must contact another Medical Command facility
5. Any hospital reporting their bed status as set forth in "1" through "3" above must reconfirm that status to the Communications Department at least every 2 hours. Those hospitals not reconfirming their status within the prescribed time will have their status automatically changed back to fully operational

#### Diversion Criteria

1. No class I patients are to be diverted regardless of bed status. Such patients require stabilization prior to any diversion.
2. Class II and III patients may be considered for diversion. If all hospitals in a reasonable proximity are on divert status for a given type of patient (i.e. cardiac), an EMT or paramedic may take a class II patient (potentially unstable) to the nearest hospital for further stabilization regardless of bed status. Hospitals must respect the judgment of the EMT or Paramedic in such circumstances.
3. Trauma centers are never closed to trauma regardless of bed status, though the Emergency Department may be on temporary "trauma by-pass" status when fully involved with current trauma cases.



# **BUCKS COUNTY EMERGENCY MEDICAL SERVICES**

## **Regional Treatment & Transfer Protocols**

### **DESIGNATION OF TRANSPORT VEHICLE**

On an ALS call, the Paramedic/Health Professional has the ultimate choice of transport vehicle if both ALS and BLS transporting units are on the scene.



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

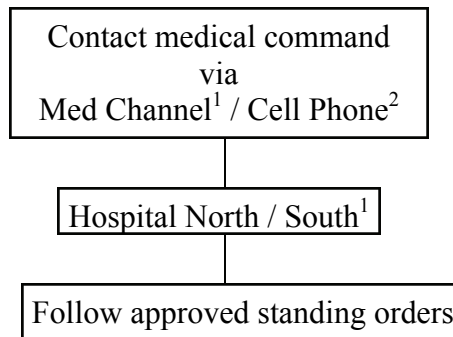
## Regional Treatment & Transfer Protocols

### Communication Failure

In the event of communication failure between prehospital providers and medical command facility should a provider need medical command advice.

Providers should only provide treatment within the approved standing orders.

All units will have Med channel & Hospital North / South capabilities



1. As signed by Bucks County Communications Center
2. Optional form of communication. Maybe used as primary or secondary communication for medical command purposes. Must use approved medical command phone line.



# **BUCKS COUNTY EMERGENCY MEDICAL SERVICES**

## **Regional Treatment & Transfer Protocols**

### **Transportation of Bariatric Patients** (Guideline)

This "Guideline" maybe adopted by any Emergency Medical Service licensed within the Bucks County Region. Services that choose not to adopt this "Guideline" must have alternative process within their service to meet the goal of this guideline.

**GOAL:** Provide safe emergency transportation for patients that exceed the weight and/or width of conventional ambulance stretchers who are in need of emergency care and make every attempt to maintain the patient's dignity.

Prevent provider injury while treating and transporting this patient population.

**Criteria:**

Patient who weighs 400 pounds or more.

Patient who are wider than 26 inches.

**Exclusions Criteria:**

Patient who are not in need of emergency transport to a local emergency department.

**Procedure:**

Request a Bariatric Support Unit via Bucks County Communications Center. Also request assistance from Fire Department for lift assistance and/or extrication if needed.

Provide patient care as outlined in state and regional protocols until the arrival of the bariatric support unit.

Bariatric support unit will provide bariatric transportation and specialized bariatric patient transfer equipment.  
The bariatric support unit will have a minimum of one provider who trained on the use of bariatric equipment.

The service providers who request the bariatric support unit will continue care during transport to the receiving facility.



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### Medical Command Refusals

**Goal:** Prevent individual hospitals from becoming overwhelmed with large volumes medical command contacts for patients who do want care or transportation by EMS.

**Criteria:**

1. Meets statewide protocol 111 and requires medical contact.

**Procedure:**

1. Providers will contact their service's assigned medical command facility for refusals. See Appendix 1



# **BUCKS COUNTY EMERGENCY MEDICAL SERVICES**

## **Regional Treatment & Transfer Protocols**

### **SECTION IV**

#### **Inter-facility Transfers**



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### Inter-Facility Transfers (Hospital to Hospital)

This protocol establishes standards for advanced life support services that provide advance life support (ALS) inter-facility care and transportation (from a hospital to another hospital or extended care facility). During these patient transfers which out-of- facility ALS treatment is necessary or should be anticipated. This protocol does not apply to patient care provided by non-EMS facility personnel who accompany the patient during transfer, except where the protocol expressly mentions such personnel. When the sending facility provides a nurse for the transfer, patient care provided by that nurse will be regulated by The Professional Nursing Law and regulations of the State Board of Nursing. This nurse's scope of practice will be defined by the aforementioned statute and regulations, any limitations on that scope of practice imposed by the sending facility, and the orders of the sending physician, as regulated by The Professional Nursing Law and the relevant medical practice act, and regulations under those acts. The medical command physician has primary responsibility for patient care during the inter-facility transport and may give orders to a facility nurse while the nurse is accompanying the patient during the transport.

#### **Prior to inter-facility transfer:**

The sending facility must secure an accepting facility and accepting physician. Under the Emergency Medical Treatment and Active Labor Act (EMTALA), it is the responsibility of the sending facility to assure that appropriately trained personnel and equipment are available to ensure an appropriate patient transfer. The ambulance crew must secure from the sending facility a patient report and pertinent medical records (including radiographs) for the patient before transferring the patient, including:

- a) Complete medical history (past and present)
- b) Current treatment underway
- c) Medications being administered (concentrations, dose, rates of administration)

The prehospital personnel staffing the ambulance may not treat the patient with any medications that are not included on the drug list in the regional medical treatment protocols, and each treatment and skill provided by a prehospital practitioner must be within the practitioner's scope of practice, as regulated by the EMS Act and regulations adopted under that act. Additionally, the prehospital practitioner must be trained in the administration of any medication administered, and the ambulance must be equipped with the equipment necessary to provide the patient care ordered, as well as the patient care that should be anticipated during the transport. The prehospital personnel staffing the ambulance may follow the written orders of the sending physician if the orders are consistent with the regional medical treatment protocols. The concentrations and rates of infusions must fall within the permitted range, as outlined in the regional medical treatment protocols, unless a medical command physician is contacted and approves orders from the sending physician permitting concentrations and rates of infusion that are not permitted by the regional medical treatment protocols. If the patient is to receive medications or IV fluids outside the scope of practice of prehospital practitioners who are staffing the ambulance, the transferring hospital must provide adequately trained staff to accompany the patient.



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

A medical command physician must be contacted before the ambulance leaves the sending facility if any of the following conditions apply:

- 1) Patient is hypotensive at time of transfer (systolic BP <90).
- 2) Medications ordered are outside of the concentrations or infusion rates that are permitted by regional medical treatment protocols.
- 3) Patient is receiving more than one medication infusion (excluding intravenous crystalloid or standard Heparin and Nitro combination) by regional treatment protocol.
- 4) The prehospital practitioner has any concern that the practitioner's experience or ability, or the available equipment, may not meet the patient's anticipated needs during the transport.

The crew of the ambulance must consider the continuous availability of medical command during the transfer before it leaves the sending facility. The ambulance service must make arrangements for continuing medical command, with a second medical command physician if necessary, if the patient is being transferred out of the normal service area.

### **During the transfer:**

If a patient's condition deteriorates or the need for medical command arises, the ambulance crew of the ambulance must attempt to contact medical command. When contacting medical command, the prehospital practitioner shall begin the report by advising the physician that this is an inter-facility transfer. The practitioner shall identify the transferring and receiving facilities and then proceed with the standard patient report. In general, it is best to contact the initial medical command physician, if available, if additional medical command is required during the transfer.

If a facility staff member is accompanying the patient, the prehospital practitioner who contacts the medical command physician shall advise the physician of the facility staff person's presence and level of training (i.e. physician, CCU RN, OB RN, CRT, etc.). The facility staff person should have the availability to communicate with the medical command physician also.

If, during the transport, medical command cannot be contacted due to communication problems, the ambulance crew shall follow the most appropriate regional medical treatment protocol and continue attempts to contact medical command. If contact cannot be made with the medical command physician, the ambulance crew may also contact another medical command facility for direction. When medical command cannot be reached, the ambulance crew shall consider the need to divert to a closer receiving facility if available and appropriate. At the first contact with medical command, the crew shall advise of what was done while communications were disrupted. The crew shall document the circumstances surrounding the communication problem, the care provided, what justified the care, and the patient's response to therapy. If eventual contact with medical command is made, the crew shall also document that.

The following procedures shall be documented every 15 minutes during transport:

- 1) Vitals (BP, respirations, Heart rate, pulse oximetry)
- 2) EKG – six second strip
- 3) Assess intravenous access sites for infiltration
- 4) Assess for any changes.
- 5) ETCO2 readings (*if available*)



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### Notes:

#### **1. Use of an automatic intravenous rate control device:**

An automatic intravenous rate control device (e.g. Autosyringe, IV pump) is permitted for use by an ALS ambulance service. The device may only be used by an ALS prehospital practitioner who has been trained and is qualified to use the device. Each ALS ambulance service and its medical director are responsible for training its ALS personnel in the use of these devices.

#### **2. Use of an automatic ventilator:**

An automatic ventilation device (e.g. Autovent) is permitted for use by an ALS ambulance service. Only an ALS practitioner trained and qualified to use each specific device may use that device. Each ALS ambulance service and its medical director will be responsible for training its ALS personnel in the use of these devices.

#### **3. Ambulance service personnel:**

ALS care may be provided by an EMT-paramedic (paramedic), prehospital registered nurse (PHRN), or health professional physician. To provide ALS care, an ALS prehospital practitioner must have current medical command authorization with the ALS ambulance service. Each ALS service is responsible for assuring that all of its ALS personnel participating in ALS inter-facility transfers have received training, approved by the ALS service medical director, in the skills, equipment, intravenous pumps, and medications that may be used pursuant to regional medical treatment protocols during inter-facility transports.

A PHRN with medical command authorization shall follow the regional medical treatment and transport protocols when providing patient care as a practitioner with an ALS ambulance service. A PHRN may exceed the scope of practice of a paramedic if the PHRN is providing additional care as authorized under The Professional Nursing Law and as permitted by the regional medical treatment protocols or the order of a medical command physician. To administer drugs not included in the regional medical treatment protocols, the PHRN must receive permission from the ALS service medical director and be ordered to do so by a medical command physician.

#### **4. Medical Command:**

A medical command order (whether written, verbal, or on-line) may only be given by a medical command physician functioning in that capacity under the auspices of a medical command facility. A prehospital practitioner may only follow the orders of a sending physician if these orders are consistent with and included in the regional medical treatment protocols, unless otherwise authorized by a medical command physician. A prehospital practitioner shall also follow the direct orders of a medical command physician. If the sending facility physician and the medical command physician cannot come to a consensus regarding the treatment, the sending facility is responsible for sending qualified staff to accompany the patient.



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

An ALS ambulance service must work with its medical director and medical command facilities to identify the medical command facility that will be contacted for inter-facility transports. An ALS service that participates in ALS inter-facility transfers must arrange an agreement with a medical command facility to serve in this capacity.

It is the responsibility of the transporting ALS ambulance service to ensure the ability to contact medical command through the duration of the transport. The service may be able to assure continuous command capability simply by calling the prearranged medical command facility using a cellular telephone if coverage will not be disrupted during the transport. Additionally, in case of communications failure with the prearranged medical command facility, the service should identify various approved medical command facilities along the anticipated transport route. Telephone numbers and radio frequencies for these medical command facilities shall be available to the service's prehospital personnel.

### **5. Documentation:**

The responsible prehospital provider, as designated by the written policy of the ambulance service, shall complete the standard Statewide EMS patient care report for each inter-facility transfer. Transfer data shall be submitted, along with the service's other prehospital data, to the regional EMS council on a monthly basis. The prehospital practitioner completing the report shall note in the patient care record if any special equipment or personnel from the transferring hospital were used. Only those skills and interventions performed by the personnel of the ambulance service should be documented on the EMS patient care report



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### Amiodarone (Cordarone) (Intravenous Infusion)

#### **Inclusion Criteria:**

Patients who are receiving an Amiodarone infusion that was established by the sending facility prior to the inter-facility transfer.

#### **Exclusion Criteria:**

Patients receiving multiple infusions or who are unstable require consultation with an on duty Medical Command Physician prior to transport.

#### **Procedure:**

1. Prior to transfer, perform a patient assessment including:
  - a. Chief complaint
  - b. History of present illness
  - c. Past medical history including medications and allergies
  - d. Physical examination
  - e. Severity of patient's current distress.
2. Attach cardiac monitor and document baseline vital signs. Vitals signs and EKG strips will be recorded every fifteen minutes and more often if changes occur.
3. Inspect the patient's infusion for:
  - Concentration of mix
  - Time of infusion initiation
  - Changes in dose including patient's response
  - Current dose/Verify correct dose (**Common Dose: 0.5-1.0mg/min**)
  - Permitted Concentration / Permitted Dose (900mg/500ml)  
0.5mg/min =16gtt/min
4. Adverse reactions
  - Sinus bradycardia, hypotension, heart block, other Dysrhythmias
  - Fever, shortness of breath
  - Nausea, vomiting, anorexia, abdominal pain
  - Allergic rash, tremor, ataxia

#### **If any adverse reactions develop:**

- a. Discontinue the infusion
- b. Contact Medical Command immediately.
- c. Maintain adequate Ventilation and Oxygenation.
- d. Treat any side effects per appropriate protocol(s).

#### **Notes:**

1. Calculate volume needed to complete transfer. Infusions should be given using an accurate electronic intravenous pump. "Dial-a-flow" IV tubing does not deliver the appropriate accuracy for medications during inter-facility transfer.
2. The concentrations and rate of infusions should fall within the permitted range. If the medications fall outside the permitted range or if complicating circumstances exist, medical command must be sought before leaving the sending facility



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### Diltiazem (Intravenous Infusion)

#### **Inclusion Criteria:**

Patients who are receiving an Diltiazem infusion that was established by the sending facility prior to the inter-facility transfer.

#### **Exclusion Criteria:**

#### **Procedure:**

1. Prior to transfer, perform a patient assessment including:
  - a. Chief complaint
  - b. History of present illness
  - c. Past medical history including medications and allergies
  - d. Physical examination
  
2. Attach cardiac monitor and document baseline vital signs. Vitals signs and EKG strips will be recorded every fifteen minutes and more often if changes occur.
  
3. Inspect the patient's infusion for:
  - Concentration of mix
  - Time of infusion initiation
  - Changes in dose including patient's response
  - Current dose/Verify correct dose (**Common Dose 5-10mg/hr**)
  - Permitted Concentration(125mg(25cc)/100ml=1 mg/cc)
  - Permitted Dose range 5mg/hr =5gtt/min 10mg/hr=10gtt/min
  
4. Adverse reactions
  - EKG changes
  - Hypotension, flushing, atrial flutter, AV block, bradycardia, chest pain, CHF, ventricular dysrhythmias
  - Nausea and vomiting
  - Dizziness, paresthesia, headache, dry mouth
  - Dyspnea, edema

#### **If any adverse reactions develop:**

- a. Discontinue the infusion
- b. Contact Medical Command immediately.
- c. Maintain adequate Ventilation and Oxygenation.

#### **Notes:**

1. Calculate volume needed to complete transfer. Infusions should be given using an accurate electronic intravenous pump. "Dial-a-flow" IV tubing does not deliver the appropriate accuracy for medications during inter-facility transfer.
  
2. The concentrations and rate of infusions should fall within the permitted range. If the medications fall outside the permitted range or if complicating circumstances exist, medical command must be sought before leaving the sending facility .
  
3. Incompatible with Lasix



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### Dobutamine (Intravenous Infusion)

#### **Inclusion Criteria:**

Patients who are receiving an Dobutamine infusion that was established by the sending facility prior to the inter-facility transfer.

#### **Exclusion Criteria:**

Patients receiving multiple infusions or who are unstable require consultation with an on duty Medical Command Physician prior to transport.

#### **Procedure:**

1. Prior to transfer, perform a patient assessment including:
  - a. Chief complaint
  - b. History of present illness
  - c. Past medical history including medications and allergies
  - d. Physical examination
  - e. Severity of chest discomfort if any using 1-10 scale (1= painfree- 10=Severe pain)
2. Attach cardiac monitor and document baseline vital signs. Vitals signs and EKG strips will be recorded every fifteen minutes and more often if changes occur.
3. Inspect the patient's infusion for:
  - Concentration of mix
  - Time of infusion initiation
  - Changes in dose including patient's response
  - Current dose/Verify correct dose (**Common Dose 2-20mcg/kg/min**)
  - Permitted Concentration 500mg/250ml / Permitted Dose range 2-10mcg/kg/min**
4. Adverse reactions:
  - Increased heart rate, increased blood pressure, ectopic beats.
  - Increase in AV conduction
  - Angina, nausea, vomiting, tingling, dyspnea, headache, mild leg cramps
5. If pulse rate increases by >30 bpm **-or-** Blood Pressure increases by > 50 mm/HG systolic **-or-** Number of PVC's increases then **Immediately Decrease Infusion rate by 50% and Contact Medical Command** for Further Orders.

#### **Notes:**

1. Calculate volume needed to complete transfer. Infusions should be given using an accurate electronic intravenous pump. "Dial-a-flow" IV tubing does not deliver the appropriate accuracy for medications during inter-facility transfer.
2. The concentrations and rate of infusions should fall within the permitted range. If the medications fall outside the permitted range or if complicating circumstances exist, medical command must be sought before leaving the sending facility.
3. Extravasation may cause sloughing of skin and necrosis
4. Drip may turn light pink after several hours—still stable to use.
5. **Incompatible with:** calcium, lasix, magnesium sulfate, potassium, sodium bicarbonate, valium



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### Dopamine (Intravenous Infusion)

#### **Inclusion Criteria:**

Patients who are receiving a Dopamine infusion that was established by the sending facility prior to the inter-facility transfer.

#### **Exclusion Criteria:**

Patients receiving multiple infusions or who are unstable require consultation with an on duty Medical Command Physician prior to transport.

#### **Procedure:**

1. Prior to transfer, perform a patient assessment including:
  - a. Chief complaint
  - b. History of present illness
  - c. Past medical history including medications and allergies
  - d. Physical examination
  - e. Severity of chest discomfort if any using 1-10 scale (1= painfree- 10=Severe pain)
2. Attach cardiac monitor and document baseline vital signs. Vitals signs and EKG strips will be recorded every fifteen minutes and more often if changes occur.
3. Inspect the patient's infusion for:
  - Concentration of mix
  - Time of infusion initiation
  - Changes in dose including patient's response
  - Current dose/Verify correct dose (**Common Dose 1-20mcg/kg/min**)
    - Renal perfusion: start at 1 – 5 mcgs/kg/min and titrate.
    - Blood pressure: start at 5 – 10 mcgs/kg/min and titrate.
    - Above 20 mcgs/kg/min stop drug—will shut patient down hemodynamically
  - Permitted Concentration / Permitted Dose range:
    - Concentration: 1600mcg/ml (400mg in 250ml NSS)
    - Permitted Dose Range (2-10mcg/kg/min)
4. Reassessment:
  1. If Hypertension or Tachyarrhythmias develop, **discontinue infusion and treat as per standard protocols. Contact Medical Command for further orders.**
  2. If hypotension develops, increase infusion by 5 mcg/kg/min increments every 5-10 minutes. Do not exceed 20 mcg/kg/min without orders from Medical Command. If any other side effects develop or worsen, contact Medical Command for orders.
5. Adverse reactions:
  - Ectopic beats, tachycardias, anginal pain, palpitation, vasoconstriction, hypotension
  - Nausea, vomiting, headache, dyspnea
  - May have aberrant conduction, bradycardia, widening QRS complex

#### **Notes:**

1. Calculate volume needed to complete transfer. Infusions should be given using an accurate electronic intravenous pump. "Dial-a-flow" IV tubing does not deliver the appropriate accuracy for medications during inter-facility transfer.
2. The concentrations and rate of infusions should fall within the permitted range. If the medications fall outside the permitted range or if complicating circumstances exist, medical command must be sought before leaving the sending facility.



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### Glycoprotein IIb/IIIa Inhibitors (Intravenous Infusion)

#### **Commonly used Glycoprotein IIb/IIIa Inhibitors:**

**Aggrastat (Tirofiban)**

**Integrilin (Eptifibatide)**

**Reopro (Abciximab)**

#### **Inclusion Criteria:**

Patients who are receiving a Glycoprotein IIb/IIIa infusion that was established by the sending facility prior to the inter-facility transfer.

#### **Exclusion Criteria:**

Patients receiving multiple infusions or who are unstable require consultation with an on duty Medical Command Physician prior to transport.

#### **Procedure:**

1. Prior to transfer, perform a patient assessment including:
  - a. Chief complaint
  - b. History of present illness
  - c. Past medical history including medications and allergies
  - d. Physical examination
  - e. Severity of chest discomfort if any using 1-10 scale (1= painfree- 10=Severe pain)
2. Attach cardiac monitor and document baseline vital signs. Vitals signs and EKG strips will be recorded every fifteen minutes and more often if changes occur.
3. Inspect the patient's infusion for:
  - Concentration of mix
  - Time of infusion initiation
  - Changes in dose including patient's response
  - Current dose/Verify correct dose
4. Continuous assessment:
  - Examine all body sites for bleeding. If any bleeding occurs, treat appropriately and report findings to the referring facility and to medical command prior to departure.
5. Treatment:
  1. If a complication occurs, the paramedic will immediately stop the infusion and call medical command.
  2. Treat bleeding by stopping the infusion and applying pressure as needed.

#### **Notes:**

1. Calculate volume needed to complete transfer. Infusions should be given using an accurate electronic intravenous pump. "Dial-a-flow" IV tubing does not deliver the appropriate accuracy for medications during inter-facility transfer.



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### Heparin (Intravenous Infusion)

#### **Inclusion Criteria:**

Patients who are receiving a Heparin infusion that was established by the sending facility prior to the inter-facility transfer.

#### **Exclusion Criteria:**

Patients receiving multiple infusions or who are unstable require consultation with an on duty Medical Command Physician prior to transport.

#### **Procedure:**

1. Prior to transfer, perform a patient assessment including:
  - a. Chief complaint
  - b. History of present illness
  - c. Past medical history including medications and allergies
  - d. Physical examination
  - e. Severity of chest discomfort if any using 1-10 scale (1= painfree- 10=Severe pain)
2. Attach cardiac monitor and document baseline vital signs. Vitals signs and EKG strips will be recorded every fifteen minutes and more often if changes occur.
3. Inspect the patient's infusion for:
  - Concentration of mix
  - Time of infusion initiation
  - Changes in dose including patient's response
  - Current dose/Verify correct dose
  - Permitted Concentration 25000/250 or 25000/500
  - Permitted Dose range 500-2000 units/hr
4. Continuous assessment:
  - Examine all body sites for bleeding. If any bleeding occurs, treat appropriately and report findings to the referring facility and to medical command prior to departure.
  - If chest pain develops contact medical command
5. Treatment:
  - If a complication occurs, the paramedic will immediately stop the infusion and call medical command
  - Treat bleeding by stopping the infusion and applying pressure as needed.

#### **Notes:**

1. Calculate volume needed to complete transfer. Infusions should be given using an accurate electronic intravenous pump. "Dial-a-flow" IV tubing does not deliver the appropriate accuracy for medications during inter-facility transfer.
2. The concentrations and rate of infusions should fall within the permitted range. If the medications fall outside the permitted range or if complicating circumstances exist, medical command must be sought before leaving the sending facility.



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### Lidocaine (Intravenous Infusion)

#### **Inclusion Criteria:**

Patients who are receiving a Lidocaine infusion that was established by the sending facility prior to the inter-facility transfer.

#### **Exclusion Criteria:**

Patients receiving multiple infusions or who are unstable require consultation with an on duty Medical Command Physician prior to transport.

#### **Procedure:**

1. Prior to transfer, perform a patient assessment including:
  - a. Chief complaint
  - b. History of present illness
  - c. Past medical history including medications and allergies
  - d. Physical examination
  - e. Severity of chest discomfort if any using 1-10 scale (1= painfree- 10=Severe pain)
2. Attach cardiac monitor and document baseline vital signs. Vitals signs and EKG strips will be recorded every fifteen minutes and more often if changes occur.
3. Inspect the patient's infusion for:
  - Concentration of mix
  - Time of infusion initiation
  - Changes in dose including patient's response
  - Presence of ventricular ectopy
  - Current dose/Verify correct dose (1-4mg/min)( 2g=2000mg/500ml)
    - a. 1 mg/min: 15ml/hr
    - b. 2mg/min: 30ml/hr
    - c. 3mg/min: 45ml/hr
    - d. 4mg/min: 60ml/hr
4. Adverse reactions:
  - Hypotension, arrhythmias, heart block, cardiovascular collapse, bradycardia.
  - Confusion, agitation, nausea, vomiting, seizures

#### **If any adverse reactions develop:**

- a. Discontinue the infusion
- b. Contact Medical Command immediately.

#### **Notes:**

1. Calculate volume needed to complete transfer. Infusions should be given using an accurate electronic intravenous pump. "Dial-a-flow" IV tubing does not deliver the appropriate accuracy for medications during inter-facility transfer.
2. The concentrations and rate of infusions should fall within the permitted range. If the medications fall outside the permitted range or if complicating circumstances exist, medical command must be sought before leaving the sending facility.



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### Magnesium Sulfate (Intravenous Infusion)

#### **Inclusion Criteria:**

Patients who are receiving a Magnesium Sulfate infusion that was established by the sending facility prior to the inter-facility transfer.

#### **Exclusion Criteria:**

Patients receiving multiple infusions or who are unstable require consultation with an on duty Medical Command Physician prior to transport.

#### **Procedure:**

1. Prior to transfer, perform a patient assessment including:
  - a. Chief complaint
  - b. History of present illness
  - c. Past medical history including medications and allergies
  - d. Physical examination
2. Attach cardiac monitor and document baseline vital signs. Vitals signs and EKG strips will be recorded every fifteen minutes and more often if changes occur.
3. Inspect the patient's infusion for:
  - Concentration of mix
  - Time of infusion initiation
  - Changes in dose including patient's response
  - Current dose/Verify correct dose
  - **Maximum permitted dose (2gm/hr)**
4. Adverse reactions:
  - CNS depression, flushing, hypotension, circulatory collapse, depression of the myocardium, hypothermia, sweating, muscle paralysis, respiratory failure
  - ECG changes—prolonged PR interval, increased QRS complex, prolonged QT interval asystole, heart block

#### **If any adverse reactions develop:**

- a. Discontinue the infusion
- b. Contact Medical Command immediately.

#### **Notes:**

1. Calculate volume needed to complete transfer. Infusions should be given using an accurate electronic intravenous pump. "Dial-a-flow" IV tubing does not deliver the appropriate accuracy for medications during inter-facility transfer.
2. The concentrations and rate of infusions should fall within the permitted range. If the medications fall outside the permitted range or if complicating circumstances exist, medical command must be sought before leaving the sending facility. **Medical Command must be contacted before transporting a patient in active labor, unless responsible personnel from the sending hospital are accompanying the patient during transfer.**
3. Medical Command may request provider to perform patellar reflex checks prior to and during transport.



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### Nitroglycerin (Tridil) (Intravenous Infusion)

#### **Inclusion Criteria:**

Patients who are receiving a Nitroglycerin infusion that was established by the sending facility prior to the inter-facility transfer.

#### **Exclusion Criteria:**

#### **Procedure:**

1. Prior to transfer, perform a patient assessment including:
  - a. Chief complaint
  - b. History of present illness
  - c. Past medical history including medications and allergies
  - d. Physical examination
  - e. Severity of chest discomfort if any using 1-10 scale (1= painfree- 10=Severe pain)
2. Attach cardiac monitor and document baseline vital signs. Vitals signs and EKG strips will be recorded every fifteen minutes and more often if changes occur.
3. Inspect the patient's infusion for:
  - Concentration of mix
  - Time of infusion initiation
  - Changes in dose including patient's response
  - Current dose/Verify correct dose (**Common Dose 10-200mcg/min**)
  - Permitted concentration 50mg/250ml or 100mg/250ml
  - Permitted dose range 10mcg/min to 100mcg/min
4. Adverse reactions:
  - Reflex tachycardia, bradycardia, flushing, headache, dizziness
  - Hypotension (see Treatment)
5. Treatment:
  1. If the patient's pain persists or increases, the Nitroglycerin infusion can be increased in increments of 5 mcg/min. every 5-10 minutes until relief is obtained or the patient's blood pressure drops below 90 mm Hg. systolic. If patient has developed chest pain during transport, contact medical command if initial increase in nitroglycerine rate does not alleviate the pain.
  2. If hypotension or bradycardia develop, decrease the administration rate by increments of 5 mcg/min. every 5-10 minutes until signs stabilize. Also, if hypotensive, place the patient into a supine position and elevate their legs. If severe hypotension or bradycardia develop, stop the infusion, contact medical command.
  3. Hypotensive patients may also respond to a fluid bolus. Use this with caution in patients experiencing congestive heart failure or respiratory distress.

**Continued next page**



# BUCKS COUNTY EMERGENCY MEDICAL SERVICES

## Regional Treatment & Transfer Protocols

### Nitroglycerin (Tridil) continued (Intravenous Infusion)

**Notes:**

1. Calculate volume needed to complete transfer. Infusions should be given using an accurate electronic intravenous pump. "Dial-a-flow" IV tubing does not deliver the appropriate accuracy for medications during inter-facility transfer.
2. The concentrations and rate of infusions should fall within the permitted range. If the medications fall outside the permitted range or if complicating circumstances exist, medical command must be sought before leaving the sending facility.

# Appendix



# **BUCKS COUNTY EMERGENCY MEDICAL SERVICES**

## **Regional Treatment & Transfer Protocols**

### **Medical Command Facilities**

Abington Memorial Hospital  
Medical Command-215-886-0425

Lower Bucks Hospital  
Medical Command— 215-785-2728

Frankford Hospital Torresdale Campus  
Medical Command— 215-632-3435

Frankford Hospital Bucks County Campus  
Medical Command— 215-547-4990

St. Mary Medical Center  
Medical Command —215-752-5229

Doylestown Hospital  
Medical Command -215-345-4154

St. Luke's Hospital- Quakertown Campus  
Medical Command- 215-536-5588

Grand View Hospital  
Medical Command- 215-257-8529



# **BUCKS COUNTY EMERGENCY MEDICAL SERVICES**

## **Regional Treatment & Transfer Protocols**

### **Medical Command Facility Assignments**

**Medical Command Facility Assignments are for refusals only.**

Lower Bucks Hospital

Squad 143

Squad 154

Frankford Hospital Torresdale Campus

Squad 114

Squad 185/186

Frankford Hospital Bucks County Campus

Squad 100

Squad 139

Squad 155

St. Mary Medical Center

Squad 113/115

Squad 135

Squad 145

Squad 167/168

Doylestown Hospital

Squad 122

Squad 124

Squad 125

Squad 129

Squad 134

St. Luke's Hospital– Quakertown Campus

Squad 108

Squad 141/142

Grand View Hospital

Squad 151

Squad 339

