State of Tennessee Board of Emergency Medical Services
For EMS Medical Direction

APPROVED CLINICAL PRACTICES

CONTINUOUS POSITIVE AIRWAY PRESSURE
BILEVEL POSITIVE AIRWAY PRESSURE

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description:

CPAP (Continuous Positive Airway Pressure)
BIPAP (Bilevel Positive Airway Pressure)

Positive airway pressure devices are used in treatment of patients in severe respiratory distress from a variety of causes. These devices generate pressure to help force fluid out of the lungs and improve airflow.

Need:

CPAP/BIPAP is a non - invasive treatment method which reduces the need for intubation and mechanical ventilation in seriously ill patients.

Recommended staff/skill level:

The use of pre-hospital CPAP/BIPAP is recommended at the level of EMT and above after documentation of training and education.

Training/Education Needed:

Training and Education regarding CPAP/BIPAP may occur at the EMS service level unless previously taught in core educational curriculum. Individual providers should be credentialed in the use of this device through documentation of training.

Quality Improvement Parameters:

EMS services should carefully monitor patient selection for appropriate use of the device, patient outcomes, complications, and for technical problems with the device.

Scope of Recommendation:

This recommendation applies to the pre-hospital use of Positive Airway Pressure Devices.

State of Tennessee Board of Emergency Medical Services
For EMS Medical Direction
APPROVED CLINICAL PRACTICES

NON-TRACHEAL AIRWAY DEVICES

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description

Non-Tracheal Airway Devices

There are multiple non tracheal blind insertion airway devices (e.g., King LT, IGel, SALT, LMA) which can be utilized as an emergency and/ or backup airway management device. The devices come in various sizes for pediatric to adult patients.

Need

Non-Tracheal airway devices provide an emergency rescue airway and are approved for use in adults and pediatrics.

Recommended staff/skill level

Non-Tracheal airway devices are for use by EMR and above.

Training/Education Needed

Training and Education regarding Non-tracheal airway devices for EMR and EMT may occur at the EMS service level unless previously taught in core educational curriculum. EMS Agency's Medical Director, who has authorized the use of non- tracheal airway devices by EMRs and EMTS, must show documentation of education and competency of the EMR and EMT in the use these devices.

Quality Improvement Parameters

EMS services should carefully monitor of use of the non-tracheal airway device by EMRs and EMTs. Services should also carefully review patient care reports to ensure compliance with local protocol and adherence to scope of practice.

Scope of Recommendation

This recommendation applies to the pre-hospital use of non-tracheal airway devices (including IGel, King LT, and LMA) by EMRs and EMTs in the pre-hospital setting as an emergency and/or backup airway management device in adult and pediatric patients.
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MECHANICAL VENTILATOR TRANSPORT PRACTICE

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Practice w/brief description

VENTILATOR TRANSPORTS
To safely and legally conduct inter-facility transports of ventilator dependent patients, an ambulance service MUST fulfill requirements of the Emergency Medical Services Board:

1. Properly qualified Ventilator trained or Critical Care Paramedic or Respiratory Therapist
2. A Transport ventilator
3. Minimum of two hours in-service annually on transport ventilator

Transport ventilators must meet the following minimum features:

1. Variable tidal volume (for example, 100-1500 ml)
2. Variable ventilator rate (2-30 breaths/min)
3. Variable minute ventilation (4-20 Lmin)
4. Intermittent mandatory ventilation (IMV) and controlled mechanical ventilation (CMV)
5. Low- and high-pressure alarms
6. Continuous positive airway pressure (l-20 cm H20)
7. Spontaneous patient ventilation (cycling on patient demand).

Recommended staff/skill level:

A paramedic who has successfully completed the EMS Board approved inter-facility ventilator transport curriculum or licensed as a Critical Care Paramedic and meets the annual in-service hour requirements

or

A licensed Paramedic and respiratory therapist as the transport team.

Training/Education Needed:

Training and Education regarding transport ventilators may occur at the EMS service level using the EMS Board approved curriculum requirements to include approved faculty. Ventilator Training Programs must be approved by the EMS Division prior to first training course. Ventilator Training Approval Course Request, to include a course schedule, must be submitted to the regional consultant prior to course starting to receive a course approval number. Individuals qualified by training to use transport ventilators must receive a minimum of two hours

training annually on the use of the transport ventilator used by the service. Individual providers must be credentialed in the use of this ventilator through documentation of training maintained by the service and verified by the Medical Director.

Quality Improvement Parameters:

EMS services should carefully monitor patient ventilator transports for appropriate use of the transport ventilator, patient outcomes, complications, and for technical problems with the device.

Scope of Recommendation:

This recommendation applies to the Paramedics qualified through training and Critical Care Paramedics in the use of Transport Ventilators.

RAPID SEQUENCE INTUBATION / DRUG ASSISTED INTUBATION (RSI/DAI)

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description
The use of medications in the facilitation of obtaining or maintaining airway control is often required in severely ill or injured patients in the pre-hospital setting. The use of these medications may include Neuromuscular blockade rendering the patient unable to breathe on their own, and therefore require significant training and oversight to be done in a safe manner.

Need
Rapid Sequence Intubation / Drug Assisted Intubation may be required in severely ill or injured patients in order to facilitate the management of the airway.

Recommended staff/skill level
The use of RSI / DAI is approved at the Paramedic skill level and above ONLY and after documentation of Medical Director's approval of protocol, training, education, and continuing proof of competency.

Training/Education Needed
Training and education regarding RSI / DAI may occur at the EMS service level. Individual providers must be credentialed in the use of this procedure with thorough documentation of training. In addition, continuous reevaluation of skills and knowledge is required every six months, as is documentation of competency.

Quality Improvement Parameters
EMS services must carefully monitor to include Medical Director's review of each use of Rapid Sequence Intubation / Drug Assisted Intubation for appropriate setting, patient outcome, complications and technical problems. Each Paramedic should be re-credentialed every six months.

- This may be done by performing at least one RSI/DAI procedure every six months with no issues found in a quality improvement review and signed off by EMS Service Medical Director.

or

- Documentation of training and a competency for re-credentialing, review signed by Medical Director if the paramedic has not utilized the technique in the field in the preceding six months.

Paramedics must have documentation of credentialing signed by Medical Director to perform RSI/DAI for each service in which they perform RSI/DAI.

Scope of Recommendation
This recommendation applies to the Pre-Hospital use of Rapid Sequence Intubation / Drug Assisted Intubation.

VIDEO LARYNGOSCOPY

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description

Video Laryngoscopy

Video laryngoscopy is a device that allows the paramedic to view the airway via video in order to ease intubation.

Need

Video laryngoscopy allows the paramedic to view an airway during intubation where they would otherwise be unable, and may help eliminate the use of blind airway devices.

Recommended staff/skill level

Video Laryngoscopy is for use by Paramedics and above only.

Training/Education Needed

Training and Education regarding Video Laryngoscopy can occur at the EMS service level. EMS Agency's Medical Director, who has authorized the use of Video laryngoscopy by Paramedics, must show documentation of education and competency of the Paramedics in the use of the video laryngoscopy device.

Quality Improvement Parameters

EMS services should carefully monitor of use of the Video Laryngoscopy by the Paramedic. Services should also carefully review patient care reports to ensure compliance with local protocol and adherence to Paramedic scope of practice.

Scope of Recommendation

This recommendation applies to the pre-hospital use of Video Laryngoscopy by Paramedics and above in the pre-hospital setting as an emergency aid in intubation of adult and pediatric patients.

ADMINISTRATION OF GLUCAGON BY AN AEMT

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description:

Glucagon (by AEMT)
Glucagon is used for the treatment of Hypoglycemia in patients in which IV access is not obtainable. The drug is given intramuscularly (IM) or intranasal (IN) as a temporary means of elevating blood sugar.

Need:

Expanding the use of this drug to AEMTs may decrease delays in patient treatment due to lack of immediate availability of a paramedic.

Recommended staff/skill level:

The use of Glucagon is recommended for use at the level of AEMT and above.

Training/Education Needed:

Training and Education regarding Glucagon may occur at the EMS service level unless previously taught in core educational curriculum. Individual providers must be credentialed in the use of this medication through documentation of training.

Quality Improvement Parameters:

EMS services should carefully monitor use of this drug, patient outcomes, and complications. EMS services should more diligently monitor the use of this drug by AEMTs.

Scope of Recommendation:

This recommendation applies to the pre-hospital use of Glucagon by AEMTs.

ADMINISTRATION OF ZOFRAN (ONDANSETRON)

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description:

Zofran (Ondansetron)
Ondansetron is used for control of nausea and vomiting.

Need:

Provide an alternative to Promethazine for the pre-hospital control of nausea and vomiting.

Recommended staff/skill level:

This medication is recommended for Paramedics and above only.

Training/Education Needed:

Training and Education regarding Ondansetron may be provided at the EMS service level unless previously taught in core educational curriculum.

Quality Improvement Parameters:

EMS services should carefully monitor use of the drug.

Scope of Recommendation:

This recommendation applies to the pre-hospital use of Odansetron.

AEMT ATTENDANT FOR PATIENTS RECEIVING IV ANTIBIOTICS

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description

EMT-IV Attendant for Patients Receiving IV Antibiotics

This procedure will allow AEMT and above pre-hospital providers to accompany patients with the drug class of IV antibiotics infusing. i.e.: Penicillin, Ampicillin, Nafcillin, etc. Patients should have previous exposure to this medication, not a new administration. In addition, these medications should be delivered via IV Pump only.

Need

Patients often have IV antibiotics being administered via infusion when being transferred from one facility to another for admission of medical tests.

Recommended staff/skill level

Attendant for Patients Receiving IV Antibiotics is for AEMT and above.

Training/Education Needed

The AEMT are trained to recognize and treat anaphylaxis. Those guidelines should be reviewed with emphasis on probable side effects of antibiotics. Training should include how to stop the infusion via pump as well as complications, adverse effects, and appropriate management of IV antibiotics.

Quality Improvement Parameters

EMS services should identify all transports of patients receiving IV antibiotics by AEMT/EMT-IV (and above). The EMS Service's Medical Director should review PCRs of those transports. If there are no risks identified, further reviews would be performed per standard QI parameters. If risks are identified, immediate retraining and additional observation should be continued.

Scope of Recommendation

This recommendation applies to AEMT/EMT-IV attendants for patients receiving IV antibiotics. This would apply all medications that fall under the class of "IV Antibiotics"

IV Antibiotics to include:

Amkiacin
Amophotericin B Lipid Complex
Ampicillin
Ampicillin-Subactam
Azithromycin
Aztreonam
Cefazolin
Cefepime
Cefatoxime
Cefoxitin
Ceftazidime
Ceftriaxone
Clindamycin
Daptomycin
Doripenem
Doxycycline
Ertapenem
Fluconazole
Foscarnet
Ganciclovir
Gentamicin
Impinem
Levofloxacin
Linezolid
Meropenem
Metronidazole
Micafungin
Nafcilin
Penicillin G Potassium
Piperacilin-Tazobactam
Rifampin
Tigecycline
Tobramycin
Vancomycin
Voriconazole

INTRANASAL MEDICATION ADMINISTRATION

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services

Procedure/Drug Name w/brief description
Intranasal Medication Administration

Intranasal routes of drug administration provide an alternative to needle based administration. Use of intranasal dosing is often quicker and safer for both the patient and EMS Personnel. Intranasal routes medications are equally effective to other routes of administration.

Need
Intranasal Medication can be utilized when IV or IM access is difficult or dangerous.

Recommended staff/skill level

Intranasal Routes of administration for medications are appropriate at the EMR and above levels per protocol or standing order.

Education Needed

Education regarding intranasal medication administration can occur at the EMS service level unless previously taught in core educational curriculum. EMS Agency's Medical Director, who has authorized the use of intranasal medication administration, must show documentation of education and competency of the EMS Personnel authorized by the service protocols in intranasal medication administration.

Quality Improvement Parameters

EMS Services should carefully monitor the use of Intranasal Medications for appropriate use, technique, and complications.

Scope of Recommendation

This recommendation applies to the pre-hospital use of Intranasal Medications by EMRs authorized by service protocols.

INTRANASAL USE OF NALOXONE BY AN EMR and EMT

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description

Intranasal Use of Naloxone

This procedure will allow Emergency Medical Responders (EMR) and Emergency Medical Technician (EMT) to administer intranasal naloxone for the treatment of respiratory compromise in opiate overdose.

Need

Life threatening respiratory depression can occur with use of opioid medications. Intervention at the earliest possible time is vital if lives are to be saved.

Recommended staff/skill level

Intranasal Routes of administration of naloxone is appropriate for EMR and EMT.

Training/Education Needed

Training in recognition of opiate effects, administration of naloxone, expected responses, and additional care needed in life threatening events can be performed at the EMS service level unless previously taught in core educational curriculum and documented for each responder.

Quality Improvement Parameters

EMS services should identify all patients receiving naloxone by EMS. The EMS Service's Medical Director should review PCRs of those transports. If there are no risks identified, further reviews would be performed per standard QI parameters. If risks are identified, immediate retraining and additional observation should be continued.

Scope of Recommendation

This recommendation applies to EMR and EMT. This procedure is currently in the approved scope of practice for AEMT and Paramedic.

PATIENT CONTROLLED DEVICES

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description

Patient Controlled Devices

Patient Controlled Devices provide ongoing medication administration to patients. These devices are usually programmable by the prescriber. If it is programmed and functioning as intended, the machine is unlikely to deliver an overdose of medication. These devices may be patient adjustable.

Need

Patients with PCDs often require transport by EMS.

Recommended staff/skill level

Transport of Patients with PCDs is approved for EMT, AEMT, and Paramedics.

Training/Education Needed

Training and Education regarding PCDs may occur at the EMS service level unless previously taught in core educational curriculum. EMS should show documentation of education and competency.

Quality Improvement Parameters

EMS services should carefully monitor the transport of use of patients with PCDs. Services should also carefully review patient care reports to ensure compliance with local protocol and adherence to EMT, AEMT/EMT IV, and/or Paramedic scope of practice.

Scope of Recommendation

This recommendation applies to the pre-hospital transport of patients with Patient Controlled Devices.

State of Tennessee Board of Emergency Medical Services
For EMS Medical Direction
APPROVED CLINICAL PRACTICES

USE OF D10 IN EVENT OF D50/D25 SHORTAGE

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description
Substitution of D10 in the event of D50/D25 shortage

Need
Current drug shortages include D50/D25, this will provide an alternative.

Recommended staff/skill level
N/A

Training/Education Needed
Training and Education regarding substitution of D10 may occur at the EMS service level for those authorized by scope of practice and Medical Direction. Individual providers should possess documentation of training. Suggested protocol update:

For patients in need of D50 or D25, you may substitute 250 cc D10 value which is the equivalent of 1 amp of D50. It is recommended that you give in approximately 100cc boluses, and assess the patient for resolution of symptoms and recheck blood glucose levels.

Quality Improvement Parameters
EMS services should carefully monitor cases requiring any drug substitution including D10 (250 cc D10 value). Services should also carefully review patient care reports to ensure compliance with local protocol and adherence to the scope of practice.

Scope of Recommendation
This recommendation applies to the emergency substitution of D10 in the pre-hospital setting in pediatric and adult patients.

ACCESSING INDWELLING SUBCUTANEOUS INTRAVENOUS ACCESS PORTS WHEN ALL OTHER ATTEMPTS TO OBTAIN INTRAVENOUS ACCESS HAVE FAILED

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board Of Emergency Medical Services.

Procedure/Drug Name w/brief description

Accessing Indwelling Subcutaneous Intravenous Access Ports When All Other Attempts to Obtain Intravenous Access Have Failed

Many patients who have significant problems with intravenous access have received implanted subcutaneous intravenous access ports such as the “Port-A-Cath”. The use of specialized needles (Huber) when accessing these devices will provide Paramedics a means of obtaining IV access when all other access attempts have failed.

Need
The ability to obtain intravenous access is a vital skill for the Paramedic. Subcutaneous Implanted Intravenous Access Ports may provide the only intravascular access available in certain patients when all other access attempts have failed. Specialized needles such as the Huber needle are required to properly access these ports.

Recommended staff/skill level
Accessing Indwelling Subcutaneous Intravenous Access Ports is a skill appropriate for the Paramedic service level only.

Training/Education Needed
Training and Education regarding access of subcutaneous access ports may occur at the EMS service level unless previously taught in core educational curriculum. EMS Agency’s Medical Director who has authorized the access of subcutaneous access ports by Paramedics as a last resort for gaining IV access, must show documentation of education and competency of the paramedic in accessing subcutaneous access ports.

Quality Improvement Parameters
EMS services should carefully monitor the indications and complications of accessing indwelling subcutaneous intravenous access ports by a Paramedic. Services should also carefully review patient care reports to ensure compliance with local protocol and adherence to Paramedic scope of practice.

Scope of Recommendation
This recommendation applies to the pre-hospital access of Subcutaneous IV access ports by Paramedics in the pre-hospital setting when all other IV access sites have failed.

INTRA-OSSEOUS ACCESS

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description:

Intra-osseous Access Devices are used to provide an alternative means of intra-vascular access.

Need:

Expand the definition of IO devices to include those with powered drivers.

Recommended staff/skill level:

IO is within scope of practice AEMT and Paramedics who are trained with the device.

Training/Education Needed:

Training and Education regarding EZ-IO may occur at the EMS service level unless previously taught in core educational curriculum. Individual providers should possess documentation of training.

Quality Improvement Parameters:

EMS services should carefully monitor use of the device.

Scope of Recommendation:

This recommendation applies to the pre-hospital use of the intra-osseous access device.

VASCULAR ACCESS PORTABLE ULTRASOUND

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description

Portable Ultrasound

Portable ultrasound is a device to allow the AEMT and Paramedic to visualize difficult to locate veins in patients in the pre-hospital setting.

Need

Some patient's veins have proven very difficult to locate for IV needs and Portable Ultrasound can assist in location of veins, limiting the need for IO devices and/or multiple needle sticks.

Recommended staff/skill level

Portable Ultrasound is for use by AEMT and Paramedics only.

Training/Education Needed

Training and Education regarding Portable Ultrasound may occur at the EMS service level unless previously taught in core educational curriculum. EMS Agency's Medical Director, who has authorized the use of Portable Ultrasound Devices by AEMT and/or Paramedics must show documentation of education and competency of the provider in the use of Portable Ultrasound Devices.

Quality Improvement Parameters

EMS services should carefully monitor of use of Portable Ultrasound. Services should also carefully review patient care reports to ensure compliance with local protocol and adherence to AEMT and/or Paramedic scope of practice.

Scope of Recommendation

This recommendation applies to the pre-hospital use of Portable Ultrasound by AEMT and Paramedics in the pre-hospital setting as a way to aid IV insertion without more invasive measures. Portable Ultrasound is NOT to be used as a diagnostic tool in the field.

12 Lead EKG performed by EMS Providers

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description:

12 Lead EKG is used for the evaluation of patients exhibiting symptoms of Acute Coronary Syndrome. EKG lead placement and the procedure for obtaining and/or transmitting a 12 Lead EKG is appropriate at the EMT and above Level. ***Interpretation of 12 Lead EKG and patient intervention based on the 12 Lead EKG is within the scope of practice for Paramedics only.***

Need:

Expanding the use of 12 Lead EKG to the EMT and above level is appropriate only for the acquisition and/or transmission of the EKG.

Recommended staff/skill level:

Acquisition and/or transmission of 12 Lead EKG is appropriate for the EMT and above. **Any interpretation, intervention, or patient care decisions utilizing 12 Lead EKG is within scope of practice for Paramedics only.**

Training/Education Needed:

Training and Education regarding 12 Lead EKGs may occur at the EMS service level unless previously taught in core educational curriculum. EMS Services shall have appropriate documentation of all individual providers that have received appropriate training for obtaining and transmitting only of 12 Lead EKGs

Quality Improvement Parameters
EMS services should carefully monitor the quality of EKGs. Services should also carefully review patient care reports to ensure compliance with local protocol and adherence to scope of practice. Paramedic obtained 12 Lead EKGs should also be monitored for proper interpretation and documentation and adherence to local treatment protocol.

Scope of Recommendation:
This recommendation applies to the pre-hospital use of 12 Lead EKG by an EMT or AEMT in obtaining and/or transmission of 12 Lead EKG.

HEMORRHAGE CONTROL CLAMP DEVICES

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description

Hemorrhage Control Clamp Devices for Acute Hemorrhage

Use of the Hemorrhage Control Clamp Devices in the pre-hospital setting is for acute exsanguinating hemorrhage. Application of these devices should follow manufacturers recommendations.

Need

Rapid use of the Hemorrhage Control Clamp Devices is approved for use in adults and pediatrics.

Recommended staff/skill level

Hemorrhage Control Clamp Devices is for use by all levels of EMS provider beginning at EMR.

Training/Education Needed

Training and Education regarding the Hemorrhage Control Clamp Devices may occur at the EMS service level unless previously taught in core educational curriculum. EMS Agency's Medical Director, who has authorized the use of the Hemorrhage Control Clamp Devices by all EMS providers, beginning at EMR, must show documentation of education and competency in the use of the Hemorrhage Control Clamp Devices.

Quality Improvement Parameters

EMS services should carefully monitor of use of the Hemorrhage Control Clamp Devices by EMS providers. Services should also carefully review patient care reports to ensure compliance with local protocol and adherence to the scope of practice.

Scope of Recommendation

This recommendation applies to the pre-hospital use of the Hemorrhage Control Clamp Devices by all EMS personnel, beginning with EMR in the pre-hospital setting to control acute hemorrhage in adult and pediatric patients.

State of Tennessee Board of Emergency Medical Services
For EMS Medical Direction
APPROVED CLINICAL PRACTICES

TOURNIQUETS FOR ACUTE HEMORRHAGE

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description

Tourniquets for Acute Hemorrhage

Use of tourniquets in the pre-hospital setting for the acute exsanguinating hemorrhage is appropriate for all levels of EMS providers.

Need

Rapid use of tourniquets appears to reduce morbidity and mortality in acute vascular traumatic injury and is approved for use in adults and pediatrics.

Recommended staff/skill level

Tourniquets are for use by EMS providers at all levels.

Training/Education Needed

Training and Education regarding tourniquets may occur at the EMS service level unless previously taught in core educational curriculum. EMS Agency's Medical Director should show documentation of education and competency of the EMS providers in the use of tourniquets.

Quality Improvement Parameters

EMS services should carefully monitor of use of tourniquet by the EMS Provider. Services should also carefully review patient care reports to ensure compliance with local protocol and adherence to EMS provider scope of practice.

Scope of Recommendation

This recommendation applies to the pre-hospital use of tourniquets by EMS Providers in the pre-hospital setting to control acute hemorrhage in adult and pediatric patients.

State of Tennessee Board of Emergency Medical Services
For EMS Medical Direction
APPROVED CLINICAL PRACTICES

TIME CRITICAL ILLNESS SYSTEMS OF CARE

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description

Time Critical Illness Systems of Care

The State EMS Board approves the concept of regionalized systems of care related to time critical illnesses such as trauma, Acute Coronary and Cerebrovascular illness, and pediatrics. The goal of these systems is to expedite patients to the appropriate specialty care as quickly as possible, and may require EMS systems to bypass facilities which cannot provide the proper services.

Need
Specialty care for time critical illness is often not available at the geographically closest hospital, and may require EMS systems to alter their destination guidelines to ensure patients are transported to appropriate facilities. A system built on concepts similar to the Trauma care system has been shown to improve patient outcomes for many time-sensitive diseases.

Recommended staff/skill level
EMS systems, in cooperation with local Healthcare facilities, should implement guidelines for transport to ensure no delays in the care of these patients.

Training/Education Needed
N/A

Quality Improvement Parameters
EMS services should carefully monitor system outcomes for patients with time critical illnesses to ensure they are being transported without delays to the most appropriate facility to care for the disease process.

Scope of Recommendation
This recommendation applies to all EMS systems.

State of Tennessee Board of Emergency Medical Services
For EMS Medical Direction
APPROVED CLINICAL PRACTICES

FIELD INITIATION OF IV ANTIBIOTICS

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description

Field Initiation of IV Antibiotics

This procedure will allow Paramedics to initiate IV antibiotics in the field.

Need

Patients with conditions such as open fractures and sepsis may benefit from the early prehospital initiation of IV antibiotic therapy.

Recommended staff/skill level

Initiation of IV Antibiotics is for paramedic and above only.

Training/Education Needed

Training regarding the initiation of IV antibiotic therapy in the prehospital setting may occur at the service level unless previously taught in core educational curriculum. Training should include complications, adverse effects, and appropriate management of IV antibiotics.

Quality Improvement Parameters

The EMS Service's Medical Director should review PCRs of those transports. If there are no risks identified, further reviews would be performed per standard QI parameters. If risks are identified, immediate retraining and additional observation should be continued.

Scope of Recommendation

This recommendation applies to Initiation of IV antibiotics by paramedics and above.

State of Tennessee Board of Emergency Medical Services
For EMS Medical Direction

APPROVED CLINICAL PRACTICES

Administration of Blood Transfusions

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description
Administration of blood transfusions during EMS transport.

Need
EMS may be required to administer blood products during transport.

Recommended staff/skill level
Blood transfusion is a Paramedic only skill.

Training/Education Needed
Training and Education regarding blood transfusion, safety procedures, and management of adverse reactions may occur at the EMS service level unless previously taught in core educational curriculum. Individual providers should possess documentation of training.

Quality Improvement Parameters
EMS services should carefully monitor cases requiring blood transfusion. Services should also carefully review patient care reports to ensure compliance with local protocol and adherence to the Paramedic scope of practice.

Scope of Recommendation
This recommendation applies to the emergency transfusion of blood by Paramedics in the pre-hospital setting in pediatric and adult patients.

State of Tennessee Board of Emergency Medical Services
For EMS Medical Direction
APPROVED CLINICAL PRACTICES

Transporting Patients on Continuous Infusions of Sedating Agents

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Practice w/brief description

Transporting Patients with Infusions of Sedation Agents
Patients who are being transported while on continuous IV infusions of sedating medications must be transported by a paramedic or above. The transporting medic (or above) must ensure that they are capable and comfortable in their ability to manage the medication, pump, and its side effects and complications during transport.

Recommended staff/skill level:

A paramedic or above may transport patients on continuous infusions of sedating agents as long as they are have completed initial training, are monitored through an ongoing PI process, and are comfortable with their ability to manage the medication and its complications during transport.

Training/Education Needed
Training and education regarding the transportation of patients on continuous infusion of sedating agents may occur at the EMS service level unless previously taught in core educational curriculum. Initially, individual providers should be credentialed in the use of this procedure with thorough documentation of training. In addition, continuous reevaluation of skills and knowledge is required every six months.

Quality Improvement Parameters
EMS services should carefully monitor each use of continuous infusions of sedating agents for appropriate setting, patient outcome, complications and technical problems. Each Paramedic credentialed in this procedure should perform at least one transport of a patient with ongoing continuous infusion of sedating agents every six months or be required to be recertified through a quality improvement oversight process.

Scope of Recommendation:

This recommendation applies to the Paramedic and above.

State of Tennessee Board of Emergency Medical Services
For EMS Medical Direction
APPROVED CLINICAL PRACTICES

ACCESSING EXTERNAL JUGULAR SCALP VEINS IN CHILDREN WHEN ALL OTHER ATTEMPTS TO OBTAIN INTRAVENOUS ACCESS HAVE FAILED

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description

Accessing External Jugular and Scalp Veins in Children When All Other Attempts to Obtain Intravenous Access Have Failed

Many pediatric patients who have significant problems with intravenous access will need peripheral vein access. Accessing External Jugular veins will give Paramedics a means of obtaining IV access when all other access attempts have failed.

Need
The ability to obtain intravenous access is a vital skill for the Paramedic. Access of the External Jugular may provide the only intravascular access available in certain patients when all other access attempts have failed

Recommended staff/skill level
Accessing External Jugular and scalp veins is a skill appropriate for the Paramedic service level only.

Training/Education Needed
Training and Education regarding access of external jugular and scalp veins may occur at the EMS service level unless previously taught in core educational curriculum. EMS Agency's Medical Director who has authorized the access of these veins by Paramedics must show documentation of education and competency of the paramedic in accessing Scalp and External Jugular veins.

Quality Improvement Parameters
EMS services should carefully monitor the indications and complications of accessing External Jugular and Scalp veins by a Paramedic. Services should also carefully review patient care reports to ensure compliance with local protocol and adherence to Paramedic scope of practice.

Scope of Recommendation
This recommendation applies to the pre-hospital access External Jugular and Scalp Veins in pediatric patients by Paramedics in the pre-hospital setting when all other IV access sites have failed.

State of Tennessee Board of Emergency Medical Services
For EMS Medical Direction
APPROVED CLINICAL PRACTICES

Fistula Clamp Devices

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description

Fistula Clamp Devices for Acute Shunt Hemorrhage

Use of the Fistula Clamp Devices in the pre-hospital setting is for acute exsanguinating hemorrhage due to dialysis fistulas. Application of these devices should follow manufacturers recommendations.

Need

Rapid use of the fistula clamp devices appears to reduce morbidity and mortality in acute vascular traumatic injury and is approved for use in adults and pediatrics.

Recommended staff/skill level

Fistula Clamp Devices is for use by all levels of certified EMS providers.

Training/Education Needed

Training and Education regarding the Fistula Clamp Devices may occur at the EMS service level unless previously taught in core educational curriculum. EMS Agency's Medical Director, who has authorized the use of the Fistula Clamp Devices by all EMS providers, must show documentation of education and competency in the use of the Fistula Clamp Devices.

Quality Improvement Parameters

EMS services should carefully monitor of use of the Fistula Clamp Devices by all EMS providers. Services should also carefully review patient care reports to ensure compliance with local protocol and adherence to scope of practice.

Scope of Recommendation

This recommendation applies to the pre-hospital use of the Fistula Clamp Devices by all certified EMS personnel in the pre-hospital setting to control acute fistula hemorrhage in adult and pediatric patients.

State of Tennessee Board of Emergency Medical Services
For EMS Medical Direction
APPROVED CLINICAL PRACTICES

EMT Use of Glucometer

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description

Use of Glucometers by EMT
Glucometers are used for the evaluation of patients exhibiting symptoms of altered blood sugar. These devices are used by patients routinely, and can provide valuable clinical knowledge that may affect patient care.

Need
Assessment of patients who may be experiencing symptoms of altered blood sugar should include serum glucose levels.

Recommended staff/skill level
Use of glucometers to determine blood glucose level is appropriate at the EMT and above level.

Training/Education Needed
Training and Education regarding glucometers may occur at the EMS service level unless previously taught in core educational curriculum.

Quality Improvement Parameters
EMS services should carefully monitor the results and use of glucometers. Services should also carefully review patient care reports to ensure compliance with local protocol.

Scope of Recommendation
This recommendation applies to the pre-hospital use of glucometers by EMT or above.

State of Tennessee Board of Emergency Medical Services
For EMS Medical Direction
APPROVED CLINICAL PRACTICES

Transport of Home Ventilators

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Practice w/brief description

HOME VENTILATOR TRANSPORTS
Patients with ventilators which are managed by family or other caregivers must be transported by a paramedic or above. The transporting medic (or above) must ensure the caregiver responsible for the ventilator is present in the vehicle, capable and comfortable in their ability to manage the ventilator, and its complications during transport.

Recommended staff/skill level:

A paramedic or above may transport patients on home managed ventilators provided the caregiver is capable, present in the vehicle, and comfortable with their ability to manage the ventilator and its complications during transport. If no capable caregiver is available, the transporting paramedic must have successfully completed the EMS Board approved inter-facility ventilator transport curriculum or be licensed as a Critical Care Paramedic and meets the annual in-service hour requirements.

Training/Education Needed:

Training and Education regarding patient caregiver managed ventilators may occur at the EMS service level using the EMS Board approved curriculum requirements to include approved faculty. Ventilator Training Programs must be approved by the EMS Division prior to first training course

Quality Improvement Parameters

EMS services must carefully monitor to include Medical Director's review of mechanical ventilator transports, patient outcome, complications and technical problems. Paramedics transporting such patients can care for the airway, and should have knowledge of the issues associated with ventilator transport. A capable caregiver responsible for the management of the ventilator must be present in the ambulance during patient transport.

Scope of Recommendation:

This recommendation applies to the Paramedic and above.

State of Tennessee Board of Emergency Medical Services
For EMS Medical Direction
APPROVED CLINICAL PRACTICES

EMT Use of Levalbuterol (Xopenex)

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description

Use of Levalbuterol by EMT
Levalbuterol (and other inhaled Beta Agonist medications) is used for the treatment of patients exhibiting symptoms of bronchospasm. Levalbuterol is similar to albuterol, which has been within scope of practice for EMTs, but only when administered in a dose-controlled administration device.

Recommended staff/skill level
Use of Levalbuterol type medications is appropriate at the EMT and above level.

Training/Education Needed
Training and Education regarding Levalbuterol may occur at the EMS service level unless previously taught in core educational curriculum. The EMS Agency's Medical Director, who has authorized the use of Levalbuterol by EMTs must show documentation of education and competency of each individual provider and the implementation of a written protocol covering the use of the device.

Quality Improvement Parameters
EMS services should carefully monitor the results and use of Levalbuterol by EMTs. Services should also carefully review patient care reports to ensure compliance with local protocol.

Scope of Recommendation
This recommendation applies to the pre-hospital use of Levalbuterol by EMT or above.

State of Tennessee Board of Emergency Medical Services
For EMS Medical Direction
APPROVED CLINICAL PRACTICES

Use of Warning Lights and Sirens

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description

Use of Warning Lights and Sirens
Clinical Issues Committee recommends the following Best Practices regarding use of Warning Lights and Siren (WLS) during ambulance response and transport:

1. Use of WLS is not equivalent to an Emergency Response. The use of WLS is based on an assessment of the risks/benefits to the patient, crew, and public of this clinical intervention.

2. Use of lights and sirens should be justified by the need for immediate medical intervention that is beyond the capabilities of the ambulance crew using available supplies and equipment.

3. Use of WLS is a clinical intervention in the same way that application of Oxygen or administration of a defibrillation is so.

4. The mode of transport of each case should be documented in the narrative of the PCR.

5. When WLS use is required, the clinical justification shall also be documented in the narrative portion of the PCR.

6. Please remember the increased risk to yourself, your patients, and the public and operate with maximal caution when using WLS.

7. The decision to use WLS is determined by the transporting crew based on the risks and benefits to the patient.

When responding to infacility requests, the following is recommended:
Ambulance service providers and requesting agencies should develop a preagreed upon definition of medical issues that warrant a WLS and/or an Emergency response. Consideration for system response capability, individual patient care needs, and crew and public safety must be included. Educate requestors of EMS on the definition, impact, and risks/benefits of emergent response, and that WLS are not necessarily related to emergency response.
WLS should not be a physician order unless the physician is providing direct patient care in the vehicle.
Need
Use of WLS should be utilized with the same approach as any other clinical intervention, as the

impact on patient care and response time, as well as safety of the crew and public, has risks as well as benefits.

Training/Education Needed

Training and Education regarding the use of WLS may occur at the EMS service level unless previously taught in core educational curriculum. The EMS Agency should incorporate best practices, and educate service consumers of proper use of WLS.

Quality Improvement Parameters

EMS services should carefully monitor the use of WLS and strive to ensure use only when appropriate and impactful.

Scope of Recommendation

This recommendation applies to the use of WLS.

State of Tennessee Board of Emergency Medical Services
For EMS Medical Direction
APPROVED CLINICAL PRACTICES

EMT Use of Epinephrine

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description

Use of Epinephrine by EMT
Epinephrine is used for the treatment of patients exhibiting symptoms of anaphylaxis. Epinephrine has been within scope of practice for EMTs, but only when administered in a dose controlled administration device. Logistical and economic issues have impacted this practice, and this practice will provide alternative methods for delivery of the medication.

Recommended staff/skill level
Use of epinephrine from multidose containers is appropriate at the EMT and above level.

Training/Education Needed
Training and Education regarding epinephrine from multidose containers may occur at the EMS service level unless previously taught in core educational curriculum. The EMS Agency's Medical Director should show documentation of education and competency of each individual provider and the implementation of a written protocol covering the use of the device.

Quality Improvement Parameters
EMS services should carefully monitor the results and use of epinephrine by EMTs. Services should also carefully review patient care reports to ensure compliance with local protocol.

Scope of Recommendation
This recommendation applies to the pre-hospital use of epinephrine from multidose containers by EMT or above.

State of Tennessee Board of Emergency Medical Services
For EMS Medical Direction
APPROVED CLINICAL PRACTICES

Serum Lactate Analysis in the Field

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description

Serum Lactate Analysis in the Field

Assessment of Serum Lactate levels in the prehospital setting can provide an early marker of poor perfusion states. These tests can now be performed utilizing simple point of care testing procedures similar to blood glucose analysis.

Need

Establish parameters for additional point of care testing in the field

Recommended staff/skill level

Serum Lactate point of care testing is for use by AEMTs and Paramedics.

Training/Education Needed

Training and Education regarding Serum Lactate Point of Care Testing may occur at the EMS service level unless previously taught in core educational curriculum. EMS Agency's Medical Director, who has authorized the use of this procedure, should show documentation of education and competency in the use of Serum Lactate Point of Care Testing.

Quality Improvement Parameters

EMS services should carefully monitor of use of the Serum Lactate Point of Care testing. Services should also carefully review patient care reports to ensure compliance with local protocol and adherence to AEMTs and/or Paramedic scope of practice.

Scope of Recommendation

This recommendation applies to the pre-hospital use of the Serum Lactate point of care testing by AEMTs and Paramedics in the pre-hospital setting in adult and pediatric patients.

State of Tennessee Board of Emergency Medical Services
For EMS Medical Direction
APPROVED CLINICAL PRACTICES

EMS Specimen Collection and Test Performance for Infectious Diseases

The following procedure and/or patient care issue has been evaluated by the Tennessee State Medical Director for practical use in the interest of advancing patient care and approved for Emergency Medical Services personnel by the Board of Emergency Medical Services.

EMS Specimen Collection and Test Performance for Infectious Diseases

Licensed EMS personnel may obtain dermatological, serologic, oropharyngeal, and nasopharyngeal specimens and perform testing related to Infectious Diseases.

Recommended staff/skill level

Specimen Collection and Test Performance for Infectious Disease testing is to be performed by EMT and above level.

Training/Education Needed

Training and Education regarding specimen collection and test performance may occur at the EMS service level unless previously taught in core educational curriculum. The EMS Agency's Medical Director, who has authorized the practice, should show documentation of education and competency of each individual provider and the implementation of a written protocol covering the procedure. Training must be done by personnel certified to collect and perform Infectious Disease Specimens and testing, and may be promulgated by a train the trainer approach.

Quality Improvement Parameters

EMS services should carefully monitor the outcomes of testing by licensed EMS personnel. Services should also carefully review patient care reports to ensure compliance with local protocol. EMS personnel must understand the consequences of inappropriate specimen collection, and be provided feedback on specimen quality.

Scope of Recommendation

This recommendation applies to the collection of specimens and test performance by licensed EMS personnel.

State of Tennessee Board of Emergency Medical Services
For EMS Medical Direction
APPROVED CLINICAL PRACTICES

Suctioning of Stoma or Obstruction in Airway
Sterile Deep Suction

The following procedure and/or patient care issue has been evaluated by the Clinical Issues Committee for practical use in the interest of advancing pre-hospital patient care and approved for Emergency Medical Service personnel by the Board of Emergency Medical Services.

Procedure/Drug Name w/brief description

Suctioning of Stoma or Obstruction in Airway

Need

Patient need of immediate care of suctioning a Stoma or an obstruction of airway

Recommended staff/skill level

Stoma and Obstruction in airway suction may be performed by EMTs and above. Sterile Deep Suction of a patient should be done only by a Paramedic.

Training/Education Needed

Training and Education regarding Suction may occur at the EMS service level unless previously taught in core educational curriculum. EMS Agency's Medical Director, who has authorized the use of this procedure by EMT, AEMTs and/or Paramedics, must show documentation of education and competency of these suction techniques and devices.

Quality Improvement Parameters

EMS services should carefully monitor of use Suction of a Stoma or Obstructed airway by the EMT, AEMT, and/or Paramedic as well as Sterile Deep Suction for the Paramedic and above. Services should also carefully review patient care reports to ensure compliance with local protocol and adherence to EMT and/or Paramedic scope of practice.

Scope of Recommendation

This recommendation applies to the pre-hospital use of suction devices for Stoma and Obstruction in airway by EMTs and above as well as Sterile Deep Suction by Paramedics or above in the pre-hospital setting in adult and pediatric patients.