



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

THIS DOCUMENT AS A RESULT OF REVIEW AND RECOMMENDATION FROM THE CLINICAL ISSUES COMMITTEE CONTAINS INFORMATION FOR CLARIFICATION OF CURRENT CLINICAL PRACTICES AS WELL AS NEW CLINICAL PRACTICES APPROVED FOR EMS PERSONNEL BY THE BOARD OF EMERGENCY MEDICAL SERVICES.

ANY PRODUCT THAT HAS FDA APPROVAL FOR PREHOSPITAL USE, LOCAL MEDICAL DIRECTION APPROVAL AND FALLS WITHIN THE SCOPE OF PRACTICE FOR THE PROVIDER DOES NOT REQUIRE EMS BOARD APPROVAL

The Clinical Issues committee encourages EMS providers to submit their questions, concerns, performance data, and recommendations for improvement to the Clinical Issues Committee.

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CONTINUOUS 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)

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 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 is recommended at the level of EMT-IV and above after documentation of training and education.

Training/Education Needed:

Training and Education regarding CPAP may occur at the EMS service level using the manufacturers training program. 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. EMS services should more diligently monitor the use of this device by EMT-IV's until more clinical evidence is available.

Scope of Recommendation:

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



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EZ-IO (INTRA-OSSEOUS ACCESS)

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Procedure/Drug Name w/brief description:

EZ-IO (Intra-osseous Access)

Intra-osseous Access Devices are used to provide an alternative means of intra-vascular access. The EZ-IO device uses a unique powered driver to insert the needle.

Need:

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

Recommended staff/skill level:

EZ-IO is recommended for paramedics only, who are trained with the device.

Training/Education Needed:

Training and Education regarding EZ-IO may occur at the EMS service level following the manufacturer's training program. 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 EZ-IO intra-osseous access device.



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GLUCAGON BY AN EMT-IV

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Procedure/Drug Name w/brief description:

Glucagon (by EMT-IV)

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

Need:

Expanding the use of this drug to EMT-IVs 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 at the use of EMT-IV and above.

Training/Education Needed:

Training and Education regarding Glucagon may occur at the EMS service level using a manufacturer's training program. Individual providers should be credentialed in the use of this device 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 EMT-IV's until more clinical evidence is available.

Scope of Recommendation:

This recommendation applies to the pre-hospital use of Glucagon by EMT-IV's.



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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 only.

Training/Education Needed:

Training and Education regarding Ondansetron may be provided at the EMS service level.

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.



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APPROVAL RESENDERED BY EMS BOARD June 25, 2008

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 performed by EMS providers.

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 Basic or EMT-IV 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 Basic or EMT-IV is for the purpose of improving the quality of care serviced by the EMS providers and is appropriate only for the acquisition and/or transmission of the EKG. Any interpretation, intervention, or patient care decisions utilizing 12 Lead EKG is within scope of practice for Paramedics only.

Recommended staff/skill level:

Acquisition and/or transmission of 12 Lead EKG is appropriate for the EMT-Basic or EMT-IV. **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. 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 obtained by EMT B or EMT-IV's. Services should also carefully review patient care reports to ensure compliance with local protocol and adherence to EMT B or EMT-IV 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 Basic or EMT IV in obtaining and/or transmission of 12 Lead EKG.



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12 Lead EKG performed by EMS Providers

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Procedure/Drug Name w/brief description

12 Lead EKG performed by EMS Providers

12 Lead EKG is used for the evaluation of patients exhibiting symptoms of Acute Coronary Syndrome. EKG lead placement and transmitting a 12 Lead EKG is appropriate at the EMT Basic and EMT-IV Level in the physical presence of the Paramedic caring for the patient. Interpretation of 12 Lead EKG and patient intervention based on the 12 Lead EKG is within the scope of practice for Paramedics only.

Need

Paramedics caring for critically ill patients may need to delegate certain tasks. Expanding the use of 12 Lead EKG to the EMT Basic and EMT-IV is appropriate only for the acquisition and transmission of the EKG in the physical presence of the Paramedic caring for the patient. Any interpretation, intervention, or patient care decisions utilizing 12 Lead EKG is within scope of practice for Paramedics only.

Recommended staff/skill level

Acquisition and transmission of 12 Lead EKG is appropriate for the EMT Basic or EMT-IV in the physical presence of the Paramedic caring for the patient. Any interpretation, intervention, or patient care decisions utilizing 12 Lead EKG is within scope of practice for Paramedics only.

Educational Needed

Education regarding 12 Lead EKGs will occur at the EMS service level. The EMS Agency's Medical Director, who has authorized the 12 Lead EKG acquisition and transmission by EMT Basic or EMT IV in the physical presence of the Paramedic, must show documentation of education and competency of the each individual provider on acquisition and transmission of 12 Lead EKG.

Quality Improvement Parameters

EMS services should carefully monitor the quality of EKGs obtained by EMT Basic or EMT-IV in the physical presence of the Paramedic caring for the patient. Services should also carefully review patient care reports to ensure compliance with local protocol and adherence to EMT-IV 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-Basic or EMT-IV in obtaining and/or transmitting of 12 Lead EKG in the physical presence of the Paramedic caring for the patient.



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INTRATNASAL 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 dosing. 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 and are no longer cost prohibited.

Need

Intranasal Medication can be utilized when IV or IM access is difficult or dangerous. Combative diabetic patients, actively seizing patients, and those with narcotic overdose provide multiple opportunities for injury to the patient or the pre-hospital provider.

Recommended staff/skill level

Intranasal Routes of administration for Benzodiazepine, Anti-Convulsive, Narcan, and Glucagon are appropriate at the Paramedic level. Intranasal use of Glucagon may also be used by EMT-IV and Paramedic per protocol or standing order.

Education Needed

Education regarding intranasal medication administration will occur at the EMS service level. 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 Paramedics and EMT IVs authorized by service protocols.



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King LT Emergency Rescue Airway Device

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

King LT Emergency Rescue Airway Device

The King LT is a non tracheal blind insertion airway device which can be utilized as an emergency and/ or backup airway management device. The device comes in various sizes for pediatric to adult patients.

Need

King LT provides an emergency rescue airway device and is approved for use in adults and pediatrics.

Recommended staff/skill level

King LT is for use by EMT IV and Paramedics only.

Training/Education Needed

Training and Education regarding King LT Emergency Rescue Airway Device will occur at the EMS service level. EMS Agency's Medical Director, who has authorized the use of King LT Emergency Rescue Airway Device by EMT IV and/or Paramedics, must show documentation of education and competency of the EMT IV and/or Paramedics in the use of King LT Emergency Rescue Airway Device.

Quality Improvement Parameters

EMS services should carefully monitor of use of the King LT Rescue Airway by the EMT IV and/or Paramedic. Services should also carefully review patient care reports to ensure compliance with local protocol and adherence to EMT IV and/or Paramedic scope of practice.

Scope of Recommendation

This recommendation applies to the pre-hospital use of the King LT rescue airway device by EMT IV and Paramedics in the pre-hospital setting as an emergency and/or backup airway management device in adult and pediatric patients.



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SALT (Supraglottic Airway Laryngopharyngeal Tube) Airway Device

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

SALT Airway Device

The SALT is a non tracheal blind insertion airway device which can be utilized as an oral airway and intubation aid. The device is currently available for adults only.

Need

As an oral airway and intubation aid, SALT is approved for use in adults.

Recommended staff/skill level

SALT is approved for use by Paramedics only.

Training/Education Needed

Training and Education regarding SALT Airway Device will occur at the EMS service level. EMS Agency's Medical Director, who has authorized the use of SALT Airway Device by Paramedics, must show documentation of education and competency of the Paramedics in the use of SALT Airway Device.

Quality Improvement Parameters

EMS services should carefully monitor of use of the SALT Airway 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 the SALT airway device by Paramedics in the pre-hospital setting as an oral airway and intubation aid in adult patients.



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**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 will occur at the EMS service level. 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.



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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 injured patients in the prehospital setting. The use of these medications can lead to 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 patients in order to facilitate the management of the airway.

Recommended staff/skill level

The use of RSI / DAI is recommended at the Paramedic skill level and above ONLY and after documentation of Medical Director approval of protocol, training, education, and continuing proof of competence.

Training/Education Needed

Training and education regarding RSI / DAI must 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 review of each use of Rapid Sequence Intubation / Drug Assisted Intubation for appropriate setting, patient outcome, complications and technical problems. Each Paramedic 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.



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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 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 (I-20 cm H₂O)
7. Spontaneous patient ventilation (cycling on patient demand).

Recommended staff/skill level:

A paramedic who has successfully completed the EMS Board approved inter-facility transport curriculum and meets the annual in-service hour requirements

or

A 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. Individual providers must be credentialed in the use of this ventilator through documentation of training maintained at the service and verified by the Medical Director. Individuals qualified by training to use transport ventilators must receive a minimum of two hours annual on the use of the transport ventilator used by the service.



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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 in the use of Transport Ventilators.



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EMT-IV 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 EMT-IV 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

Convalescent 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 EMT IV and above.

Training/Education Needed

The EMT-IV is already trained to recognize anaphylaxis and treat by administering Epi 1/1000. Those guidelines would be reviewed with emphasis on probable side effects of antibiotics. Training should include how to stop the infusion via pump.

Quality Improvement Parameters

EMS services should identify all transports of patients receiving IV antibiotics by 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 EMT-IV attendants for patients receiving IV antibiotics. This would apply all medications that fall under the class of "IV Antibiotics"



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IV Antibiotics to include:

Amikacin
Amphotericin 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