Foreword

Change
Includes reference to Spinal Immobilization protocol; EMS Office name change to EMSTS.

Reason for change(s):
When the protocols were originally changed to an assessment-based format, only the General Patient Care protocol was required to be followed in the sequence listed. Since that time, the Spinal Immobilization protocol was added and this also must be followed in the order listed.

The 2005 State Legislature gave the local health authority in a county with a population greater than 400,000 increased oversight of the local trauma system. The Southern Nevada Health District Board of Health placed this responsibility in the EMS Office, thus the name change to Emergency Medical Services and Trauma Systems (EMSTS). This change is carried throughout the protocol manual, where appropriate.

Educational PEARLS:
For the majority of the protocols, the letter and numerical outline format is strictly for rapid and uniform reference and does not imply or direct a mandatory sequence for patient care. However, there are now two protocols which ***must*** be followed in the exact order listed: the General Patient Care and the Spinal Immobilization protocols. The succeeding steps of these two protocols build upon the previous steps and are sequenced in order to ensure completeness and patient safety.

General Patient Care

Change
Added “Alert Box” requiring telemetry via radio, or if by telephone then only via a recorded phone patch through the FAO; Added requirement for trauma telemetry to provide an incident identifier if multiple patients are involved (e.g. fire department command code “Main Street Command); Specifies that patients transported based on the CPI protocol are to be transported to the closest facility; Revised criteria for placing patients directly into waiting room at a receiving facility to specifically exclude Legal 2000 patients and patients who have received more than one dose of morphine or phenergan, and specifically requires the patient to be alert and oriented x 4;

Reason for change(s):
The changes ensure accurate communication with the receiving facility and clarify areas of potential confusion.

Educational PEARLS:
The ability to review telemetry calls is a critical component of the Quality Improvement Review process. All calls made via radio are recorded by the FAO, therefore telemetry contact should be made by radio. There are times, however, when radio contact is not possible (e.g., system failure or poor reception) or not advised (e.g., discussion of termination of resuscitation or sensitive information). In these situations, telephone contact with the receiving facility is permitted, ***IF*** the

call is patched by the FAO. This provides a level of protection for both the EMS provider and he physician, as well as the ability to review the call for QI purposes.

The Trauma Medical Audit Committee of the Regional Trauma Advisory Board identified an issue when multiple patients are transported from the same scene. EMS providers must remain mindful that there are other EMS calls occurring at the same time and calling in telemetry and saying "this patient is from the same accident" can be confusing to the hospital. In order to alleviate this potential problem, EMS personnel will now need to identify the incident in some manner when multiple patients are involved. The simplest way may be to use the fire department command code, such as "Main St Command."

In order to decrease the number of times you are asked by the receiving facility, "Why did you bring this patient here," when transporting CPI patients, the protocol now provides the answer by requiring the patient to be transported to the closest facility.

Legal 2000 patients are individuals who present a danger to themselves or others. As such, they ***cannot*** be left unattended in a hospital waiting room.

The additive effects of multiple doses of morphine or phenergan may not manifest until after the patient is delivered to the receiving facility. Increased sedation or decreased respiratory effort, if unnoticed, may place the patient at an increased risk for an adverse event.

Similarly, placing a patient who is not fully awake, oriented, and reactive, for whatever reason, into the waiting room of a receiving facility may place the patient at an increased risk for an adverse event.

Abdominal Pain (Non-Traumatic)

Change

Changed nomenclature from "IVF" to "NS"; Changed morphine dose to "0.1 mg/kg, with a maximum single dose of 10 mg" and allow repeat doses at 5 minute intervals until pain is relieved or respiratory/mental status depression occurs; Replaced Phenergan with Zofran.

Reason for change(s):
The Official Drug Inventory specifies normal saline as the only IV fluid to be used in the EMS system. This nomenclature change reflects the inventory requirements.

Previously, there were two standard morphine doses in the protocol manual – one for somatic pain and another for visceral pain. This change provides for one, uniform dose that is in line with the standard morphine dosing regimen. This change is carried throughout the protocol manual, where appropriate.

Zofran replaces Phenergan in the Official Drug Inventory. Zofran has a safer therapeutic profile and can be used in children 2 years of age or greater.

Educational PEARLS:
One of the most important components of the care that we provide is to alleviate the pain and suffering of our patients. Yet research consistently reveals that patients in pain are under-

medicated, both in and out of the hospital. This change facilitates the more complete and thorough treatment of this aspect of a patient's complaint.

While a longtime mainstay in the treatment of nausea, phenergan is associated with increased sedation, tissue damage in the event of extravasation, and it is contraindicated in children. Ondansetron HCl (Zofran) has a much safer therapeutic profile and has gained wide-spread acceptance as the anti-emetic of choice in the hospital setting.

Acute Coronary Syndrome (Suspected)

Change
Added "IV access should be obtained prior to administration of Nitroglycerin" at the ALS level; Replaced Phenergan with Zofran.

Reason for change(s):
Emphasizes the information contained in the ALERT box concerning the use of nitroglycerin in patients with evidence of right-sided ischemia.

Educational PEARLS:
Patients with evidence of right-sided ischemia on EKG are at an increased risk of a hypotensive response to nitrates. A precipitous drop in blood pressure will decrease coronary perfusion pressure and may result in an extension of the infarct. It is for this reason that nitrates must be used with caution in this patient population. Although this is emphasized in the ALERT box contained within this protocol, we do not routinely perform right-sided EKG's, thus the potential for an unrecognized right-sided infarct persists. The change to the protocol encourages IV access prior to the administration of nitroglycerin so that in the event of a sudden drop in blood pressure appropriate and immediate fluid resuscitation can be initiated.

BLS providers are still permitted to assist a patient with the administration of their own nitroglycerin without the need for IV access.

Advanced Airway Management

Change
Adds phrase "as appropriate" to 1.h. "Insert orotracheal or nasotracheal tube."

Reason for change(s):
Housekeeping

Educational PEARLS:
None

Allergy / Anaphylaxis

Change
Removed the term "distress" and replaced with "allergic reaction" throughout protocol

Reason for change(s):
Housekeeping

Educational PEARLS:
None

Altered Mental Status

Change
Added IN as route of administration for Narcan and Versed; Listed all routes of administration for Narcan and Versed; Deleted Valium and replaced with Versed; Changed "Attempt" to "Consider" for vascular access.

Reason for change(s):
The intranasal (IN) route of medication administration has proven to be a quick, effective, non-invasive way to deliver certain medications during an emergency.

Versed has been demonstrated to be just as effective as valium in the treatment of seizures and has better IN and IM absorption. This change also streamlines the drug formulary by removing one of the two drugs currently carried that are in the same drug classification.

With the introduction of the IN route of medication administration, IV access may not be required.

Educational PEARLS:
Starting an IV on an intravenous drug abuser or a seizing patient poses significant risk of an inadvertent needle stick to EMS personnel. The IN route of medication administration can, under certain circumstances, obviate this risk and provide faster treatment.

Since the IN route of medication administration is now an option for medication administration in a patient with an altered mental status, an IV may be unnecessary. If, however, the patient does not respond to the IN route an IV should be initiated to provide appropriate follow-on care.

In streamlining the protocols, all appropriate routes of medication administration for a given situation are listed in the preferred order of use. The EMS provider must determine which of the available routes are most appropriate for a specific patient, taking into consideration severity, acuity, and the presence/absence of an existing IV access.

Behavioral Emergencies

Change
Added IN as route of administration for Versed; Deleted Valium from protocol; Changed "Attempt" to "Consider" for vascular access

Reason for change(s):
The intranasal (IN) route of medication administration has proven to be a quick, effective, non-invasive way to deliver certain medications during an emergency.

With the introduction of the IN route of medication administration, IV access may not be required.

Educational PEARLS:
Starting an IV on a combative patient poses significant risk of an inadvertent needle stick to EMS personnel. The IN route of medication administration can, under certain circumstances, obviate this risk and provide faster treatment.

Since the IN route of medication administration is now an option for medication administration in a patient with an altered mental status, an IV may be unnecessary. If, however, the patient does not respond to the IN route an IV should be initiated to provide appropriate follow-on care

Burns

Change
Removed telemetry requirement for first dose of morphine in the pediatric patient; Changes in reference to IV fluids and morphine dosage as previously described and carried forward throughout the manual.

Reason for change(s):
The ability to treat the pain associated with severe burns is an important aspect of prehospital care. With the previously discussed dosage changes to morphine, EMS personnel can now begin immediate treatment of pain in the pediatric patient without the need for telemetry contact.

Educational PEARLS:
It is important to note that this change applies to the ***first*** dose of morphine only and that additional doses still require telemetry orders.

Cardiac Arrest

Change
Changed Dopamine dose to “starting at 5 mcg/kg/min via continuous IV infusion. Titrate to a **SYSTOLIC** blood pressure of 100 mmHg, not to exceed 20 mcg/kg/min.

Reason for change(s):
This change clarifies the route of administration and maximum rate of infusion, and is carried throughout the protocol manual, where appropriate.

Educational PEARLS:
To have its desired effect, Dopamine must be delivered by a continuous infusion and there is no added benefit from doses greater than 20 mcg/kg/min.

Cardiac Dysrhythmia: Asystole

Change
Removed BLS & ILS treatment sections; Added “identify and treat potential underlying causes” for prolonged arrest per ACLS guidelines; Added Hs & Ts which lists the indications for Sodium Bicarbonate.

Makes protocol consistent with current AHA ACLS guidelines, and is carried throughout the protocol manual, where appropriate.

Educational PEARLS:
The use of sodium bicarbonate in the treatment of cardiac arrest is not without controversy. Previous editions of the protocol manual reflected the changes as recommended by the latest research. The most current research demonstrates no value in the empiric use of sodium bicarbonate, but supports the judicious and targeted use for suspected or identified conditions that are known to benefit from bicarbonate administration.

Cardiac Dysrhythmia: Bradycardia

Change
Removed BLS & ILS treatment sections; Deletes Valium and ands IN route for Versed; Changed morphine dose to "0.1 mg/kg, with a maximum single dose of 10 mg" which may be repeated at 5 minute intervals until pain is relieved or respiratory/mental status depression occurs; Changed Dopamine dose to "starting at 5 mcg/kg/min via continuous IV infusion. Titrate to a **SYSTOLIC** blood pressure of 100 mmHg, not to exceed 20

Reason for change(s):
As previously discussed

Educational PEARLS:
As previously discussed

Cardiac Dysrhythmia: Monomorphic VT

Change
Removed BLS & ILS treatment sections; Added provision for immediate defibrillation if there is any doubt whether an unstable patient has monomorphic or polymorphic VT; Specified IV route of administration for Etomidate and Admiodarone; Added option for defibrillation in the unstable patient with unresolved VT.

Reason for change(s):
Makes protocol consistent with current AHA ACLS guidelines.

Educational PEARLS:
Polymorphic VT will not usually trigger a synchronized cardioversion, therefore if there is any doubt to the rhythm in the unstable patient or if the cardioversion does not proceed, immediate defibrillation should be applied.

In the stable patient, polymorphic VT is less likely, but still possible. Hence the same option is provided, however this remains by telemetry order only.

Cardiac Dysrhythmia: PEA

Change
NO CHANGES

Cardiac Dysrhythmia: SVT

Change
Removed BLS & ILS treatment sections.

Reason for change(s):
Housekeeping only

Educational PEARLS:
None.

Cardiac Dysrhythmia: Torsades De Pointes

Change
Removed BLS & ILS treatment sections; Added provision for immediate defibrillation if there is any doubt whether an unstable patient has monomorphic or polymorphic VT; Added provision for defibrillation in the unstable patient with unresolved Torsades.

Reason for change(s):
As previously discussed

Educational PEARLS:
As previously discussed

Cardiac Dysrhythmia: V.FIB./Pulseless V.TACH.

Change
Removed BLS & ILS treatment sections; Added “identify and treat potential underlying causes” for prolonged arrest per ACLS guidelines; Added Hs & Ts which lists the

Reason for change(s):
As previously discussed

Educational PEARLS:
As previously discussed

Hyperkalemia

Change
Removed BLS & ILS treatment sections

Reason for change(s):
BLS & ILS personnel are neither trained nor authorized to recognize and treat hyperkalemia.

Obstetrical/Gynecological Emergencies

Change
Changes as previously described regarding IV fluids, and carried forward throughout the manual

Overdose/Poisoning

Change
Changed the order in which the specific overdoses are listed and added Aspirin Overdose; Added IN as route of administration for Narcan and listed all routes of administration for Narcan; Changed "Attempt" to "Consider" for vascular access.

Reason for change(s):
Perhaps the most life-threatening overdose that EMS personnel may encounter is the tricyclic antidepressant OD. Thus, this particular overdose was moved to the top of the list. Additionally, since the treatment of TCA overdose with sodium bicarbonate is the same as the treatment for an aspirin overdose, aspirin was added to this portion of the protocol.

Other changes as previously discussed

Educational PEARLS:
TCA overdoses can quickly decompensate into ventricular dysrhythmias. Therefore, the early recognition of a TCA overdose by history and the ECG findings of a widened QRS complex and the immediate initiation of treatment with sodium bicarbonate can be life-saving.

Pulmonary Edema/CHF

Change
Changed Lasix dose from "1 mg/kg to maximum dose of 80mg" to "0.5 mg/kg to a total maximum dose of 40 mg"; Removed "For patients on chronic lasix therapy, administer twice the prescribed dose (e.g. for a patient on 40 mg, administer 80 mg)"; Added "via continuous IV infusion" to administration of Dopamine.

Reason for change(s):
Changes the dose of lasix to the current and more commonly used dosage.

Educational PEARLS:
The use of lasix in the treatment of pulmonary edema and CHF has been called into question in general and specifically where larger doses are used. Untoward effects include hypotension and depleted intravascular volume. Thus, a more judicious dose and cautious use is advised.

Respiratory Distress with Bronchospasm

Change
No significant changes – housekeeping only

Shock – Non-Traumatic

Change
Changes as previously described regarding IV fluids and use of Dopamine, and carried forward throughout the manual

Trauma

Change
Removed steps to control hemorrhaging; Changes in reference to IV fluids and morphine dosage as previously described and carried forward throughout the manual

Reason for change(s):
Listing the steps to control hemorrhage is an educational issue and not necessary in protocol.

Educational PEARLS:
None.

Chronic Public Inebriate

Change
Specifies that patients transported based on the CPI protocol are to be transported to the closest facility.

Reason for change(s):
As previously discussed

Educational PEARLS:
As previously discussed

Do Not Resuscitate

Change
Format. No substantial changes.

Interfacility Transfer

Change
NO CHANGES

Pediatric Patient Destination

Change
NO CHANGES

Prehospital Death Determination

Change
NO CHANGES

Quality Improvement Review

Change
Housekeeping. No substantial changes.

Termination of Resuscitation

Change
NO CHANGES

Trauma Field Triage

Change
Added "A fall *from a height* of at least 20 feet"

Reason for change(s):
Clarifies the intent of this mechanism of injury.

Educational PEARLS:
There has been confusion over what constitutes "a fall of at least 20 feet." Some have interpreted this to mean any fall that travels a distance of 20 feet, to include a tumble down a flight of steps. The intent is that the fall encompasses a vertical distance, or height, of 20 feet.

Combitube/Combitube SA

Change
NO CHANGES

Defibrillation

Change
Changes distance for placement of paddles/electrodes near pacemaker generator from 5 inches to 1 inch

Reason for change(s):
Reflects newer technology

Educational PEARLS:
None

Endotracheal Intubation

Change
Removed references to specific indications for intubation

Reason for change(s):
Housekeeping

Educational PEARLS:
Listing specific criteria that may indicate the need for intubation does not take into account variations in patients' ages or ability to compensate.

Needle Cricothyrotomy

Change
NO CHANGES

Needle Thoracentesis

Change
NO CHANGES

Spinal Immobilization

Change
NO CHANGES

Synchronized Cardioversion

Change
NO CHANGES

Tracheostomy Tube Replacement

Change
NO CHANGES

Transcutaneous Pacing

Change
Added IN as route of administration for Narcan

Reason for change(s):
As previously discussed

Educational PEARLS:
As previously discussed

Vagal Manuevers

Change
NO CHANGES

Vascular Access

Change
Removed age restriction for IO use; Removed procedural language regarding IO device placement; Added Alert Box that clarifies when IO is an option and what medications can be given via IO route

Reason for change(s):
IO use is now widely accepted as an alternative form of vascular access in the adult patient population. The Office of EMSTS is currently reviewing the available IO devices and will authorize the selected device's use in the adult patient. This change is in anticipation of that process.

Educational PEARLS:
Vascular access is critical in the unstable patient, whether for the administration of fluids or medications. The intra-osseous route may be life-saving in the patient without intravenous access.