REGION I EMERGENCY MEDICAL SERVICES

Emergency Medical Responder
Standing Medical Orders

As prepared by:

Dr. Erin Rigert, EMSMD, OSF Northern Region EMS System
Dr. Greg Conrad, EMSMD, Northwestern Medicine Kishwaukee Hospital EMS System
Dr. Muhammad Shareef, EMSMD, UW Health Northern Illinois, SwedishAmerican EMS System
Dr. Matt Smetana, EMSMD, Mercyhealth System

James Graham, OSF Northern Region EMS System
Richard Robinson, UW Northern Illinois, SwedishAmerican EMS System
Anthony Woodson, Northwestern Medicine Kishwaukee Hospital EMS System
Don Crawford, Mercyhealth System

IDPH Approval
Date: December 6, 2017
Re-Issued: August, 2018
Annual Review: December, 2019
Reviewed: June, 2020
Reissued: July, 2020
Reviewed: October 2021
Reissued: January 2022

SMO	Section		
Abuse/Neglect: Adult/Child/Geriatric	General Guidelines	1.003	
Airway Management	Medical	1.004	
Alcohol/Substance Abuse Emergencies	Medical	1.005	
Automatic Implantable/Wearable Cardiac Devices	Procedure	1.010	
Behavioral Emergencies/Restraints	General Guidelines	1.011	
Body Substance Exposure	General Guidelines	1.013	
Body Substance Isolation (Universal Precautions)	General Guidelines	1.014	
Bronchospasm (Asthma/COPD)	Medical	1.016	
Cardiac Arrest - CPR/AED Return to Spontaneous Respiration	Cardiac	1.020	
Childbirth – Normal/Abnormal Deliveries	OB/GYNE	1.026	
Diabetic Emergencies	Medical	1.030	
EMR Formulary	Formulary		
EMR Pharmacology	Formulary		
In-Field Termination/Notification of Coroner	General Guidelines	1.036	
Intercept Criteria/Transfer of Patient Care	General Guidelines	1.037	
Intranasal Medications/MAD Device	Procedure	1.038	
Neonatal Resuscitation	Pediatric	1.042	
Pain Assessment and Management	General Guidelines	1.043	
Refusal of Medical Care or Transport	General Guidelines	1.048	
Routine Medical Care	Adult Medical	1.049	
Routine Pediatric Care	Pediatric Medical	1.050	
EMR Medical Emergencies – Adult & Peds	Medical	1.090	
Routine Trauma Care	Trauma	1.051	
EMR Trauma Emergencies – Adult & Peds	Trauma	1.091	
Special Needs Patients	General Guidelines	1.055	
Spinal Restriction	Procedures	1.056	

Return to EMR Table of Contents

SMO	Section		
Resources			
Burn Reference Guide	Resources		
Primary Patient Assessment	Resources		
Secondary Patient Assessment	Resources		

Key Considerations:

A. Bruises/welts/lacerations.
B. Injuries that are unexplained/poorly explained/incompatible with the explanation.
C. Burns shape and size often reflect object used to burn.
D. Repeated injuries.
E. Frequent hospitalization.
F. Repeated use of Emergency Department services for injury.
G. Discrepancies between history and presenting illness.
H. Time delay between injury and coming to hospital (1-2 days).
I. Reluctance to discuss circumstances surrounding injury.
J. Unexplained injuries.
K. Alleged third party inflicted injuries.

Treatment:

A. Scene safety, notify law enforcement if needed.
B. Routine Medical Care, Routine Pediatric Care, and/or Routine Trauma Care.
C. Treat injuries see appropriate SMO, such as Pain Management SMO.
D. If a parent or caregiver refuses to allow transport of the patient notify the police and stay on scene until they arrive.
E. Attempt to preserve evidence.
F. All suspected abuse must be reported to the appropriate agency.

Resources:

- **Adult Protective Services -** To report financial exploitation or neglect of an older person or a person with disabilities, ages call Adult Protective Services hotline number **1-866-800-1409**.
- **Department of Children and Family Services – 1-800-25ABUSE (1-800-252-2873).**
- **Domestic Abuse -** Information about shelter and alternatives is available 24 hours per day by calling the **Domestic Violence Hotline (1-800-799-7233).**
- **Elder Abuse (All persons 60 years of age or older):**
  - Adult Protective Services, 1-866-800-1409.
  - In Winnebago and Boone counties, the Visiting Nurse Association of Rockford (VNA) is designated by the Department of Aging to investigate all possible elder abuse cases. A report can be made directly to VNA at **(815) 971-3550**, 24 hours a day, seven days a week.
- **Nursing Home Abuse -** Suspected victims of nursing home abuse or neglect are to be reported to the proper authority as mandated by Illinois State Law PA 82-120, "The Abused and Neglected Long Term Care Facility Residents Reporting Act". This authority is the Division of Enforcement, Illinois Department of Public Health: call **1-800-252-4343** or the Ombudsman Program at **815-316-0040**.
- **Supportive Living Facilities -** For residents who live in Supportive Living Facilities call the Illinois Department of Healthcare and Family Services Complaint Hotline at **1-800-226-0768**.

Key Considerations: Mental status (AVPU), airway patency (head-tilt chin lift OR modified jaw thrust for unconscious patient or if c-spine trauma is a possibility), oxygenation and circulatory status (pulse oximetry, vital signs).

TREATMENT:

A. Assess airway patency utilizing adjuncts as indicated.
B. Oxygen as indicated for patient condition. Maintain SpO2 levels in the 94% to 99% if possible.
   - Nasal cannula (2-6 L/min) for awake, oriented, stable patients without evidence of hypoperfusion
   - High flow via non-rebreather mask (10-15 L/min).
   - Assist ventilations with BVM and 100% oxygen if indicated.
C. Manage Foreign Body Airway Obstruction per American Heart Association standards.
D. Assess airway patency utilizing adjuncts as indicated:
   - OPA
   - NPA
   - Supraglottic airway per EMS System approval according to manufacturer's guidelines
     - Kings Airway sizing
     - I-GEL Airway sizing
     - Confirm placement with three of the following: chest rise and fall; lung sounds; absence of gastric sounds; auscultation; Colormetric (if available)

Pediatric Patients

Key Considerations:

TREATMENT:

A. Pediatric Routine Care.

Kings Airway Chart

Size	Patient Criteria	Color	Inflation Volume	NG Max Size
0	< 5 kg (12.5 lbs)	Clear	10 ml	10 F
1	5-12 kg (12.5-26.4 lbs)	White	20 ml	10 F
2	12-25 kg (26.4-55 lbs)	Green	35 ml	16 F
2.5	25-35 kg (55-77 lbs)	Orange	40-45 ml	16 F
3	4-5 ft	Yellow	45-60 ml	18 F
4	5-6 ft	Red	60-80 ml	18 F
5	> 6 ft	Purple	70-90 ml	18 F

I-GEL Airway Chart

Size	Patient Criteria	Color
1.0	Neonate – 2-5 kg	Pink
1.5	Infant - 5-12 kg	Blue
2.0	Small Pediatric – 10-25 kg	Grey
2.5	Large Pediatric – 25.35 kg	White
3	Small Adult – 30-60 kg	Yellow
4	Medium Adult – 50-90 kg	Green
5	Large Adult – 90+ kg	Orange

Key Considerations: Amount of alcohol/drugs ingested, possibility of other drugs involved, medical history (trauma, tranquilizers, anticonvulsants, diabetes), altered mental status (AVPU), conditions that mimic intoxication (hypoglycemia, hypoxia, head injury, behavioral emergency).

TREATMENT:

A. Routine Medical Care.
B. Protect airway. Anticipate the possibility of respiratory arrest, seizures and/or vomiting.
C. O_2 and Airway Management as indicated.
D. If there is impending respiratory arrest and narcotic use is suspected or if patient unable to protect airway, consider **Naloxone**.
E. Obtain glucose check for adult:
   - If <80 and if gag reflex is intact, consider **Oral Glucose**.
F. Follow appropriate SMOs for:
   - Seizures:
     Seizures/Status Epilepticus
   - Respiratory/ cardiac arrest:
     Cardiac Arrest/CPR/AED
     Neonatal Resuscitation
     Pediatric Respiratory Distress/Failure/Obstruction/Arrest
   - Hypoglycemia
     Diabetic Emergencies
   - Refusal of Transport
     Refusal of Medical Care or Transport

Pediatric Patients

A. Routine Pediatric Care.
B. Obtain glucose check:
   • If <60 and if gag reflex is intact, consider **Oral Glucose**.

Key Considerations: Personnel in contact with the patient at the time of AICD firing will receive a shock of approximately 3 joules. This energy level constitutes NO DANGER to pre-hospital personnel (may feel a slight tingling).

Patient with ICD:

A. Routine Medical Care.
B. Avoid direct placement of defib pads over the ICD unit as this could damage the unit.
C. Any patient who has been shocked by his/her AICD should be strongly encouraged to seek medical attention regardless of the patient's current condition.
D. Notify receiving hospital early in order to enable them to get magnet ready to deactivate AICD.

Patient with LifeVest:

A. Routine Medical Care.
B. When a patient is wearing a LifeVest be aware of the following:
    - The LifeVest has an alert sequence that is initiated upon recognition of a treatable shock.
    - Listen to the voice prompts before making physical contact with the patient.
    - The EMS Provider can be shocked if contact with the patient during treatment sequence of the LifeVest.
    - If the LifeVest has blue stains the device has delivered a shock.
C. Any patient who has been shocked by his/her LifeVest should be strongly encouraged to seek medical attention regardless of the patient's current condition.

Patient with Pacemaker:

A. Routine Medical Care.
B. Avoid direct placement of defib pads over the pacemaker unit as this could damage the unit.

Patient with VAD

A. Routine Medical Care.
B. Contact Implant Coordinator:
    - Patient should have information sheet with number; they may be the best resource.
C. There are multiple devices in use; internal and external.
D. Blood flow may be continuous:
    - Patient may not have a palpable pulse
    - Look at other indication such as: LOC, shortness of breath, lightheadedness, skin
    - Non-invasive BP may or may not work
    - Pulse ox will not be accurate
E. No chest compressions unless approved by Implant Coordinator.
F. Defibrillation - standard method, do not put PADS over hardware.
G. VAD generally have two alarms:
    - Yellow – advisory
    - Red – critical
H. Patients are typically on anticoagulant / antiplatelet medication.
I. Patient could be in VF and awake if the pump is working.

Key Considerations: abnormal emotional behavior could be the result of injuries or disease. Initiate treatment as required. Consider at attempt to evaluate for possible causes of behavioral problems. Behaviors may range from hostility and anxiety to withdrawn. Consider altered mental status and injuries if patient has self-destructive behaviors. Search for a medical alert bracelet or card.

TREATMENT:

A. Scene safety—STAY ALERT – at all times avoid placing yourself in danger.
B. Contact Resource Hospital, police, and/or Fire Department back-up as appropriate.
C. Routine Medical Care, Routine Pediatric Care or Routine Trauma Care.
D. Identify yourself clearly.
E. Approach patient in a calm and professional manner. Talk to patient alone—request bystanders to wait in another area. Show concern for family members as well. Allow patient to verbalize his problem in his own words. Reassure patient that help is available.
F. Get patient's permission to do your assessment before touching patient.
G. Transport female with another non-threatening female bystander or relative, if possible.
H. In the case of suicide attempt, be prepared to:
    - Treat any injuries
    - If drug or poison was ingested, transport agent with patient to hospital if the agent can be safely transported. A photo of the agent / label may also be helpful.
    - Consider the use of Naloxone if narcotic overdose suspected and patient has significant respiratory depression.

RESTRAINTS:

Key Considerations: Physical and/or chemical restraints are a last resort in caring for the emotionally disturbed patients. Never apply physical restraints for punitive reasons, or in a manner that restricts breathing and circulation, or in places that restrict access for monitoring the patient.

- At no point should the paramedics place themselves in danger. Additional manpower should be requested as needed.
- In emergency situations, a paramedic may initiate application of restraints in the absence of an order from Medical Control.
- Explain the procedure to the patient (and the family) if possible. The team leader should be the one communicating with the patient.
- If attempts at verbally calming the patient have failed and the decision is made to use restraints, do not waste time bargaining with the patient.
- Remember to remove any equipment from your person which can be used as a weapon against you (i.e. trauma shears).
- Approach the patient, keeping the team leader near the head to continue communications and at least one person on each side.
- Always keep the patient informed of why the restraints are being used.
- Soft, disposable restraints are preferred for EMS use.
- No hog-tying or hobble restraints allowed. No "sandwiching" with long boards or scoop stretchers.
- Do not attempt IV access until patient becomes cooperative.

RESTRAINTS PROCEDURE:

A. Scene size-up:
   - Assess the patient and surroundings for potential weapons.
   - When dealing with an agitated and combative patient consider law enforcement to help gain control of the situation.
   - If scene is unsafe, back out and call law enforcement.

B. Utilize verbal de-escalation methods whenever possible - consider physical/chemical restraints a last resort when verbal control is ineffective.

C. To safely restrain a patient use a minimum of 4 people, if possible.

D. Once restrained, place patient in semi-fowlers or recovery position to maximize breathing.

E. Assess and address any medical conditions after the patient is safely restrained.

F. If law enforcement restrains a patient with handcuffs, an officer with a key must accompany the patient during transport (it is preferred that the officer accompanies in the ambulance, but in certain circumstances, possibly based on location in Region 1, the law enforcement may follow in their vehicle).

Resources/Precautions:

- If the patient is judged to be either suicidal or lacking decision making capacity and dangerous to self or others, the treatment and transport should be carried out in the interest of the patient's welfare.
- If the patient resists police involvement is necessary. If it is necessary to transport a patient against their will, a Petition for Involuntary/Judicial Admission (Form 5) needs to be completed by the person who heard the patient state they are a danger to themselves or others.
- It may be necessary to get contact information from a family member for forms to be completed by EMS/Police/Hospital staff.

Pediatric Patients

Key Considerations: Instruct the patient's legal guardian that in this situation, they are acting on behalf of the patient and they understand the above information regarding refusal of treatment or transport, and accept responsibility for the patient. The State of Illinois permits Emancipated Minors to be treated as adults.

PROCEDURE:

A. All reasonable attempts should be made to release a minor to a legal guardian. If a legal guardian cannot be located document attempts made to contact.
   - Minor may be turned over to local police or juvenile authority, or
   - Minor may be released if legal guardian is contacted by phone and consent for release is given. Document phone call, name of guardian, and witness.

B. If the need for emergency care exists or if the behavior of the patient suggests a lack of capacity to make a refusal in a valid manner continue to render care, up to and including transport.

Key Considerations: If there are questions regarding BSI precautions, vaccinations, or proper reporting contact the local hospital, host agency / Department Chief or EMS Officer or the EMS Systems Coordinator at the EMS Resource Hospital. It is imperative that the EMS provider who has a potential exposure report to the receiving hospital's emergency department at the time of exposure. Delay in reporting could result in hospital and staff's inability to attain host blood for testing and effectively provide counseling, intervention or follow-up.

Recommendations:

A. Each hospital has specific procedures for the pre-hospital exposure. Consult with the ED Nurse Manager for specific response to reporting, treatment and follow-up care.
B. If a pre-hospital provider, (EMT, Firefighter, Police Officer, etc), has a significant exposure, (e.g. blood or body fluid on non-intact skin, contact with mucous membranes or a needle stick), they should report to the emergency department who is receiving the patient. The person that has the exposure should notify the charge nurse of the receiving hospital emergency department and advise that a potential significant exposure has occurred.
C. The appropriate hospital, system and department incident reports must be completed. Some departments require additional notification paperwork be completed). Once the appropriate forms are completed, they will be turned into the receiving hospitals Emergency Department Charge Nurse and appropriate agency / department officer.
D. An EMS system form must be completed and returned to the resource hospital of the agency involved (e.g., an exposure happens to an EMT on XYZ department in Anywhere. A form must be filled out for Anywhere Hospital, XYZ department and the EMS Resource Hospital of XYZ department)
E. The appropriate person in the receiving hospitals emergency department will evaluate the exposure to determine if a significant exposure has occurred.
F. If a significant exposure has occurred or is suspected the receiving hospitals Emergency Department Charge Nurse or appropriate designee will implement the hospital specific response procedure. This procedure will include but not be limited to baseline blood test on the EMS provider and host patient, interview and counseling of risks to EMS provider, follow-up information and / or referral which may or may not include prophylaxis.
G. The response action will be documented on the incident report forms and forwarded to the EMS provider, receiving facility infection control provider, provider's department officer (if applicable, and the provider's EMS System Resource Hospital.
H. Follow-up notification of test results is the responsibility of the receiving hospital infectious disease provider. The EMS Systems Coordinator will follow up within 48 hours of receipt of incident report to clarify procedure has been accomplished and notification and follow-up has occurred.
I. If the exposure is identified as non-significant the EMS provider will be advised of same and further testing will per EMS Agency policy. The EMS provider will be counseled on proper use of BSI in the pre-hospital environment.
J. The non-significant exposure will be documented on the incident report and forwarded to the chain of command of the provider and the EMS Resource Hospital System Coordinator.

Key Considerations: Assume all patients are carriers of infectious / contagious disease. If a specific contagion is identified respond with addition PPE protection. If disease etiology dictates provide PPE for patient. Consider potential respiratory contagion in a closed ambulance and ventilate accordingly. Consider contagions from bodily fluids, mucous membranes, non-intact skin, body issues, and medications/drugs/illicit substances when handling blood.

GENERAL TREATMENT:

A. Gloves will be worn whenever personnel are in contact with a patient. Consider double gloves when handling blood, body fluids, mucous membranes, non-intact skin, body tissues, and medications/drugs/illicit substances.
B. New gloves should be worn for each patient contact. Hands must be washed (wet or dry wash) after glove removals and between patient contacts.
C. Procedure masks will be worn whenever personnel are in contact with a patient. Consider N-95 masks for high risk patients and/or aerosol generating procedures.
D. If emergency ventilatory support is necessary a resuscitation mask with one-way valve and filter or bag valve mask should be used.
E. Do not recap needles. Promptly place sharps in a designated puncture resistance, protected lid container.
F. Place all soiled linen in a properly marked laundry bag before sending in to laundry or leaving at hospital.
G. Do not launder contaminated clothes with regular laundry. Wash separately then rinse washer with at least a 1-10 bleach solution.
H. Use a solution of 1-part bleach to 10 parts water (or equivalent solution) to clean equipment, clean spills, and decontaminate walls, floors, and other objects soiled with blood or body fluids.
I. If pre-hospital provider has a skin break (cut, abrasion, dermatitis, etc) use gloves and clothing to protect from exposure with blood or body fluids.
J. Keep vaccinations current and have proper annual testing
K. Significant exposure to and possible contamination from blood or body fluids should be reported immediately (ask for receiving hospital's Exposure Report Form).
L. Patients should be asked if they are allergic to latex. Non-latex equipment should be used on all patients that have latex allergies.

HIGH-RISK TREATMENT:

A. A full face shield and wrap around eye protection or goggles should be worn for respiratory emergencies involving an airway procedure (intubation, suctioning, aerosol treatment, etc) or patient with an active cough from an apparent infectious source.
B. Consider providing the patient with a procedure mask.
C. An impermeable gown should be worn for any situation likely to generate splash/liquid exposures.
D. If possible, isolate the cab of the ambulance during transport.
E. Consider ventilation for aerosol procedures in the ambulance.
F. Include information regarding aerosol procedures for high-risk patients during inbound report. Aerosol procedures may need to be discontinued while transporting the patient through the Emergency Department.

CPR GUIDELINES			
Component	Adults and Adolescents	Child (1 year to puberty)	Infant (under 1 year of age, excluding neonates)
Airway	Head tilt-chin lift. Jaw thrust if suspected cervical trauma		
Breathing: Without CPR	10-12 breaths/min (*Approximate*)	One breath every 2-3 seconds (12-20 breaths /minute) (*Approximate*)	
Breathing: CPR with advanced airway	One breath every 6 seconds (10 breaths/min) asynchronous with chest compressions. About one second/breath. Visible chest rise. (*If using a BVM with ventilation rate timer follow timing light*)		
Foreign Body: Conscious patient	Abdominal thrusts (*use chest thrusts in pregnant and obese patients)* or chest thrusts if abdominal thrusts are not effective		Five back slaps and five chest thrusts
Foreign Body: Unconscious patient	Lower victim to the floor. Begin CPR, starting with chest compressions. Do not check for a pulse. Before you deliver breaths, look into the mouth. If you see a foreign body that can easily be removed, remove it. Continue CPR.		
Compression landmarks	Lower half of sternum between nipples		Just below nipple line (*lower half of sternum*)
Hand placement	Heel of one hand, other hand on top	As for adults (*may use both hands or the heel of one hand depending on the size of the child*)	Two thumbs – encircling hands preferred for two rescuers
Compression depth	At least 2 inches	Approximately one-third anterior/posterior depth of chest (*Approximately 2 inches in child/1 ½ inches in infant*)	
Compression rate	100-120 per minute		
Compression – ventilation ratio without advanced airway	30:2 10:1 with continuous compressions	30:2 (single rescuer) 15:2 (two rescuers)	
AED GUIDELINES			
AED Defibrillation	Use adult pads	Use pediatric dose-attenuator system for children and infants if available. Use pediatric pads. If unavailable, use adult pads.	
NEONATAL GUIDELINES (*Less than 30 days old*)			
Assisted ventilation should be delivered at a rate of 40-60 breaths/minute to achieve or maintain a heart rate > 100 bpm. The ratio of compressions to ventilations should be 3:1 with 90 compressions and 30 breaths to achieve approximately 120 events per minute.			

Cardiac Arrest Post Resuscitation (ROSC)

Key Considerations: If patient has Return of Spontaneous Circulation (ROSC) consider that hyperventilation reduces venous return and may cause hypotension.

TREATMENT:

A. Optimize ventilation and oxygenation.
B. Contact Medical Control for further instruction.
C. Consider ALS Intercept.

[EMR care for Region 1 SMOs: Asystole/PEA, Ventricular Fibrillation/Ventricular Tachycardia, Symptomatic Bradycardia, and Narrow/Wide Complex Tachycardia]

Key Considerations: Delivering an infant usually progresses independently of prehospital providers. The critical question is whether delivery is imminent, indicated by crowning of the head or bulging of the perineum or rectum. The focus of care is to control delivery and prevent injury from expulsive forces that cause tearing of maternal perineal and pelvic tissues, injury of the infant's head, or inadvertently dropping the infant. However, make no attempt to stop an imminent delivery. Spontaneous abortion of fetus (>20 weeks) gestational age should be considered a neonatal resuscitation. See Neonatal Resuscitation SMO. Consider ruptured ectopic pregnancy in a woman of childbearing age with signs of shock.

TREATMENT:

A. Routine Medical Care.
B. Inspect the perineal area for:
    a. Fluid or bleeding
    b. Crowning (check during contractions)
    c. Abnormal presentation (breech, extremity, cord)
C. If birth is not imminent, place patient in left lateral position.

Normal Delivery

A. Assist with delivery.
B. Sterile technique.
C. Control and guide delivery of baby's head. After the head delivers, use bulb syringe to suction the infant's mouth first, then nares. This is critical if meconium is present, because aspiration causes significant lung injury.
D. Check for nuchal cord – slide over head if possible. If tight, clamp and cut, unwind, and deliver baby quickly.
E. Proceed to control and guide delivery of the body.
F. Suction mouth first, then nares.
G. Clamp and cut cord – clamps should be placed at approximately 6 inches and 9 inches from baby, then cut between clamps.
H. Dry and wrap infant for warmth (especially the head); if possible, place with mother for shared body heat.
I. Note time of delivery.
J. Assess infant's status using APGAR score at 1 and 5 minutes post-delivery.
K. Evaluate mother post-delivery for evidence of shock due to excessive.

Pre-partum Hemorrhage – near term

A. Assume placenta previa (painless bleeding) or abruption placenta (sharp pain).
B. Check for crowning but DO NOT attempt vaginal exam.
C. Treat for shock.
D. Do not pack the vagina with any material to stop bleeding. An externally placed dressing or pad should be used to absorb flow.

Post-partum Hemorrhage

A. Fundal massage.
B. Immediate transport to nearest hospital.
C. Do not pack the vagina with any material to stop bleeding. An externally placed dressing or pad should be used to absorb flow.

Breech Delivery

A. Contact Medical Control for breech delivery.
B. Assist with delivery, if able.
C. Provide airway with gloved hand for baby if needed.
D. If unable to deliver, left lateral Trendelenburg position and rapid transport.

Prolapsed Cord

A. Left lateral Trendelenburg position, elevate hips, if possible or knee-chest position.
B. If cord is present, manually displace presenting part off cord and maintain displacement.
C. Rapid transport.

APGAR SCORE:

Appearance (skin color)	0=Body and extremities blue, pale	1=Body pink, extremities blue	2=Completely pink
Pulse	0=Absent	1=Less than 100/min	2=100/min and above
Grimace (Irritability)	0=No response	1=Grimace	2=Cough, sneeze, cry
Activity (Muscle tone)	0=Limp	1=Some flexion of the extremities	2=Active motion
Respirations	0=Absent	1=Slow and irregular	2=Strong cry

BLOOD LOSS ESTIMATION GUIDE

250 ml = 1 cup or clot mass size of an orange
355 ml = 12 oz soda can
500 ml = 2 cups or clot mass size of a softball

Floor spill
500 ml = 20 inches diameter
1000 ml = 30 inches diameter
1500 ml = 40 inches diameter

Cardiac Arrest

A. CPR with continuous manual left lateral uterine displacement using the two-handed method.
B. Ensure BVM ventilations are with high flow oxygen utilizing a two-person (if available) technique to prevent gastric inflation.
C. Consider BLS/ALS Intercept.

Key Considerations:

SPECIAL SITUATIONS

A. Patient with DNR/POLST (follow DNR/POLST Policy).
B. Patient with definitive signs of death include at least one of the following:
    - rigor mortis
    - dependent lividity
    - decomposition of body tissues
    - fatal/unsurvivable injury(s)-an injury clearly incompatible with life:
        - decapitation
        - incineration
        - separation of vital internal organs from the body or total destruction of organs
        - gunshot wound to the head that clearly crosses the midline (entrance and exit)
C. Patients meeting the above conditions do not require Medical Control contact prior to calling Coroner.
D. Patient has a valid DNR/POLST where resuscitation efforts where initiated prior to knowledge of resuscitation status. All providers, when presented with a valid DNR/POLST after initiating CPR, should contact Medical Control prior to ending resuscitation efforts.
E. Prolonged resuscitation efforts beyond 20 minutes with full ACLS without a return of spontaneous circulation or shockable rhythm throughout arrest it may be appropriate to terminate in the field.
F. If cardiac arrest is compounded by hypothermia, submersion in cold water, or if there has been transient ROSC or continued shockable rhythm transport is indicated.
G. Correctable causes or special resuscitation circumstances have been considered and addressed.
H. Family requests for termination should be relayed to Medical Control.

PROCEDURE:

A. CPR initiated.
B. Airway Management per Airway Management SMO.
C. AED/cardiac monitor applied.
D. AHA Guidelines followed for a minimum of 20 minutes. At 20 minutes consider transporting the patient, continuing treatment, or discontinuing treatment. When termination or transport is being consider:
    - Availability of local resources (e.g., time for coroner to arrive if care is terminated vs time of transport)
    - Trauma codes
    - Scene is unsafe
    - Family members present
    - Age/condition of patient
    - Obvious death at crime scene
E. Contact Medical Control for termination.
F. Any/all equipment that was used to treat the patient such as ET tubes, airway adjuncts, IVs, IOs etc should not be removed from the patient and be left in position that they were in at the time the patient was pronounced.
G. If termination is approved contact Coroner in the county of patient death. The Coroner should be contacted for all out of hospital deaths.
    - Note time of death and confirm signs. Remain on scene until coroner, law enforcement, or other appropriate professional arrives.
    - Do not transport patient who is dead at the scene unless otherwise directed by the coroner.

Key Considerations: Abandonment is defined as terminating medical care without legal excuse or turning care over to personnel who do not have training and expertise appropriate for the medical needs of the patient. The EMR crew must remain with the patient until the intercepting care provider accepts responsibility for the patient through a written or verbal report provided by EMR personnel.

If transport time to the receiving hospital is less than the time to complete an ALS/BLS intercept initiate rapid transport.

ALS care should be initiated according to the following guidelines:

A. Symptomatic patient with abnormal vital signs—use assessment skills and common sense. The following guidelines for adults:
   - Pulse < 60 or > 130; or irregularity
   - Respirations <10 or > 28; or irregularity
   - Systolic BP < 90 or diastolic > 110
   - Pulse oximeter reading < 90

B. Any patient with a potentially life-threatening condition which exists or might develop during transport. Examples of situations in which ALS care is usually indicated include, but are not limited to:
   - Impending airway compromise
   - Altered mental status and/or unconsciousness
   - Persistent cardiac related chest pain
   - Ongoing seizures
   - Neurologic deficit/ stroke
   - Syncope
   - Abdominal pain
   - Shortness of breath
   - Signs of impending hypovolemic shock
   - Complication of pregnancy or emergency childbirth
   - GI bleeding
   - Significant trauma patient (Category I or II)
   - Overdose/ Poisoning
   - Patient condition warrants advanced prehospital medical care

C. Call for BLS/ILS/ALS intercept EARLY. NEVER discontinue BLS/ILS/ALS care once initiated.

D. Consider BLS/ALS intercept time versus EMR transport.

PROCEDURE:

A. Upon request of EMR ambulance for assistance, a BLS/ILS/ALS crew may board the EMR vehicle and begin care of the patient.

B. BLS/ILS/ALS equipment must be transferred to the EMR ambulance to render a higher level of care.

C. The BLS/ILS/ALS provider will assume responsibility from the EMRs for the care and treatment of the patient.

D. EMRs should assist the BLS/ILS/ALS provider enroute and on the scene and work together as a team to provide the best patient care possible.

E. The EMR ambulance will be approved by the Department to function as a BLS/ILS/ALS ambulance for the transport.

F. Report to Medical Control will be the responsibility of the BLS/ILS/ALS provider.

Key Considerations: In the absence of an established IV intranasal is a rapid route offering high level of bio-availability of the medication being administered. The intranasal route can reduce the risk of needle sticks while delivering effective medication levels. The nasal cavity provides a direct route into the bloodstream for medications that easily cross the mucous membranes. Due to this direct absorption into the bloodstream, rate and extent of absorption are relatively comparable to IV administration.

- The *ideal* volume for intranasal administration is 0.2-0.3 ml and the maximum recommended volume per nostril is 1 ml. If dose is greater than 0.5 ml, apply it in two separate doses allowing 5-10 minutes apart for each dose. The spacing allows the former dose to absorb.
- The MAD® atomizer has a dead space of 0.1ml, so particularly for doses less than 0.9 ml be sure to take the dead space into account by adding 0.1 ml to the final volume (i.e. volume of dose + 0.1 ml).

Contraindications:

A. Epistaxis (nosebleed)
B. Nasal trauma
C. Nasal septal abnormalities
D. Nasal congestion/discharge

Medication that may be used via intranasal route by EMRs:

- Naloxone

PROCEDURE:

A. Attach MAD tip to syringe.
    - Intranasal doses are listed in the Medication Administration Chart
    - Do not exceed 0.5 – 1.0 ml per nostril
B. Remove air from syringe.
C. Placed MAD tip into nostril.
D. Timing with respirations depress the plunger rapidly when the patient fully exhales and before inhalation.
E. Evaluate the effectiveness of the medication. If the desired effect has not been achieved consider repeating and/or changing the route of administration.

Key Considerations: Assessment, airway and infant body temperature cannot be over emphasized. The anatomical and physiological differences that are present in a newborn can cause severe problems if not recognized. All neonatal emergency patients should be transported to the hospital. Neonate is defined as less than 30 days old.

INFORMATION NEEDED

A. Gestational age.
B. Infant is part of a multiple birth or NICU graduate.
C. Meconium stained during birth (See Meconium Staining section below.)
D. Mother use of drugs or alcohol.
E. Known infant history.
F. Presence of special need (e.g. apnea monitor, etc).
G. If just born, time since birth.

OBJECTIVE FINDINGS

A. If just born 30 second cardiopulmonary assessment:
    - Airway, breathing (respiratory rate, quality, work of breathing, presence of cry)
    - Circulation (skin color, temperature, pulses, capillary refill, mental status)
B. If infant less than 30 days same arrest intervention as just born
C. Airway interventions and keep baby warm

TREATMENT:

Meconium Staining Noted

A. As soon as head is delivered attempt to suction before baby starts to breath.
B. If thick meconium or secretion present and signs of respiratory distress thoroughly suction mouth, then nose.

No Meconium Staining Noted:

A. Assess patient, dry immediately if wet and stimulate.
B. Assess airway patency. Secure the airway.
C. Suction mouth then nasopharynx.
D. Cover head with stocking cap or equivalent.
E. Clamp and cut the cord if necessary.
F. Evaluate respirations. Assist with BVM ventilation with 40-60 breaths / min with 100% oxygen for severe respiratory depression; use mask with 100% oxygen for mild distress.
G. Check heart rate at base of umbilical cord or auscultate precordium as indicated. Further treatment depends on heart rate.
H. If heart rate less than 60 bpm, continue assisted ventilations and begin chest compressions at 120 min.
I. If heart rate is 60-80 bpm then continue ventilations. If poor perfusion and no improvement after 30 seconds of ventilations with 100% oxygen, consider compressions at 120 min.
J. If hearts rate 80-100 bpm. Give 100% oxygen by BVM. Reassess heart rate after 15-30 seconds.
K. If heart rate greater than 100 bpm, check skin color. If peripheral cyanosis give oxygen by mask.
L. If unable to ventilate effectively with BVM consider supraglottic device.
M. Confirm proper airway device placement and ventilate 30 times a minute with continued chest compressions.
N. Continue to reassess respiratory rate and heart rate while enroute.
O. Perform chest compressions on the neonate per American Heart Association guidelines

Key Considerations: General appearance of patient, age, mental status (AVPU), skin condition, perfusion status, respiratory rate, breathing rhythm and pattern (patient positioning, such as tripoding), and blood pressure.

Pain Assessment (**O-P-Q-R-S-T**):

- **Onset –** when did the pain start?
- **Provokes** - what brings on the pain?
- **Quality** - what does it feel like?
- **Region / Radiation** where is it? Where does it go?
- **Severity** - how bad is it? (Rated on a consistently used scale) (1-10 grading scale)
- **Timing** - when did it start/end? How long does it last? How long have you had it?

TREATMENT:

A. Perform patient assessment and record vital signs, level of consciousness and oxygen saturation.
B. Reassure and comfort patient.
C. Provide care based on other SMOs related to the patient's presenting complaint.
D. Place the patient in position of comfort. If risk of spine injury, institute spinal restrictions.
E. Coach the patients breathing – calm, deep inhalations and slow relaxed exhalations.
F. Distract patient or encourage them to focus on something other than their injury or pain.

Pediatric Patients

Key Considerations: Consider use the FLACC Scale for patients 0-7 years of age

TREATMENT:

A. Perform skills as listed above.

FLACC Scale	0	1	2
1 Face	No particular expression or smile.	Occasional grimace or frown, withdrawn, disinterested.	Frequent to constant frown, clenched jaw, quivering chin.
2 Legs	Normal position or relaxed.	Uneasy, restless, tense.	Kicking, or legs drawn up.
3 Activity	Lying quietly, normal position, moves easily.	Squirming, shifting back and forth, tense.	Arched, rigid or jerking.
4 Cry	No crying (awake or asleep).	Moans or whimpers; occasional complaint.	Crying steadily, screams or sobs, frequent complaints.
5 Consolability	Content, relaxed.	Reassured by occasional touching, hugging or being talked to, distractible.	Difficult to console or comfort.

Key Considerations:

Generally an Emergency Medical Responder will not execute patient refusals. This SMO is provided to be informational regarding the refusal process. In the event that there is not a higher level of care present and the patient insists on refusing transport the EMR should follow this SMO as closely as possible and contact Medical Control for any high-risk refusals. Certain injuries, illnesses, ingestions, or injected substances can alter behavior and create a situation where the patients' capacity to make a valid judgment no longer exists. It is better to treat and prevent any further harm to the patient who may not be able to judge his/her own condition. A patient is conscious and determined to have decision-making capacity (defined as oriented to person, place, time, and event) with no suspicion of being under the influence of drugs or alcohol.

A patient is considered high-risk for signing a refusal under the following circumstances:

A. Concern with decision-making capacity.
B. A minor with no legal guardian available.
C. Suspected high risk medical conditions, such as:
    - Chest pain
    - Syncope
    - Altered Mental Status
    - Stroke/TIA
    - Abnormal vital signs
    - EMS provider impression

PROCEDURE:

Refusal of Treatment by Adult Patients with Decision-Making Capacity

A. Patients have the right to refuse treatment and/or transport.
B. The patient will be informed of the risk of refusal of possibility of deterioration of medical condition up to and including death.
C. Attempt to assess vital signs and SAMPLE history if possible.
D. For high risk refusals, as defined above:
    - Consider contacting Medical Control.
    - Attempt to leave patient in care of a responsible party.
    - Provide post refusal instructions as indicated.
    - Inform patient to call back if conditions changes or decision to refuse treatment is reconsidered.
E. Once the allowed assessment is performed, and the patient persists in refusing care and/or transport, the patient will be asked to sign the Region One Prehospital Refusal form (or a form mandated by the agency's EMS MD). The refusal form must also be signed by the EMT and by one other witness (preferably law enforcement or family) if available.
F. Complete patient care report.

Multiple Victims Refusal of Consent for Treatment

A. If an incident is declared an MVI or Disaster by the on scene commander a reasonable/ common sense approach should be used and provider safety must be considered. If mechanism of the incident indicates the potential for victims or the Incident Commander has declared and MVI or Disaster, and the patients are refusing treatment, the Region One Multiple Victim Release Form may be completed in lieu of individual Patient Refusal Form.
B. One EMS Run Report must be completed and a copy of the Multiple Victim Release form must be attached to the Run Report.

Pediatric Patients

Key Considerations: Instruct the patient's legal guardian that in this situation, they are acting on behalf of the patient and they understand the above information regarding refusal of treatment or transport, and accept responsibility for the patient. The State of Illinois permits Emancipated Minors to be treated as adults.

PROCEDURE:

A. All reasonable attempts should be made to release a minor to a legal guardian. If a legal guardian cannot be located document attempts made to contact.
   - Minor may be turned over to local police or juvenile authority, or
   - Minor may be released if legal guardian is contacted by phone and consent for release is given. Document phone call, name of guardian, and witness.

B. If the need for emergency care exists or if the behavior of the patient suggests a lack of capacity to make a refusal in a valid manner continue to render care, up to and including transport.

Key Considerations:

Post-Treatment Refusals

When treatment has been given by EMS and the patient considers their condition improved to the point that they refuse transport, including treatments for:

- Hypoglycemia
- Overdose
- Asthma/respiratory
- Chest pain
- Syncope
- Pain control

PROCEDURE:

- EMS evaluation and/or treatment is not a substitute for medical evaluation and treatment by a doctor. EMS will advise the patient to see a doctor or go to a hospital. The patient will be given the Discharge Instruction form. EMS will circle the appropriate potential diagnosis with the patient and document this discussion on the refusal form.
- If patient's condition was discussed with Medical Control on scene, inform them that this also does not substitute for medical evaluation.
- Patient's condition may be worse than originally evaluated. Without treatment, patient's condition or problem could become worse.
- If patient changes their mind or condition becomes worse, patient should be made aware that they may call 911 and EMS will respond as always.
- Complete patient care report.

Key Considerations: Status of airway, breathing, and circulation. Patients' chief complaint, allergies, and medications with special attention to patient prescription for blood thinners.

TREATMENT:

A. Appropriate blood and body secretions precautions should be used at all times by all personnel.
B. Perform patient assessment and determine chief complaint.
C. If load and go situation is found, transport immediately. Depending on time of transport consider ILS/ALS intercept.
D. Place patient in position of comfort unless contraindicated per Spinal Restriction SMO.
    - Unconscious patients should be placed on their side, to prevent aspiration.
    - If immobilized, tilt backboard if there is risk of aspiration.
E. When indicated administer oxygen:
    - For most patients maintain O_2 sats 94% to 99%.
        - If history of COPD sats 90% to 92% are preferred to avoid respiratory depression.
        - Don't withhold high flow O2 from cyanotic, confused, or distressed patient because of a history of COPD.
    - O_2 2-6 liters by nasal cannula.
    - O_2 10-15 liters by non-rebreather mask.
    - O_2 100% by BVM and move to Airway Management SMO .
F. Assess blood glucose for all suspected medical conditions including, but not limited to: altered mental status, diabetic emergencies, hypothermia, and multi-system trauma.
G. Pain Management, as appropriate.
H. All patients receive a set of vital signs at the beginning of patient care. A second vital signs will be taken, preferably just prior to transfer of care. Repeat vital signs every 10 minutes.
I. Assess response to interventions and medication (to include repeat vital signs).
J. Contact receiving hospital as soon as possible with patient assessment and treatment.
K. DO NOT delay transport. Treatment SMOs are guidelines, and are not intended to be completed while on the scene, but continued enroute. All possible effort should be made to minimize scene time.

Key Considerations: Patient age, weight, scene assessment, nature of illness/mechanism of injury. Assessments and interventions must be tailored to each child in terms of age, size, and development. Providers must be familiar with assessment algorithms for medical emergencies, assessment mnemonics such as DCAP-BTLS for trauma emergencies, and use the current edition of the Broselow tape for determining appropriate equipment sizes, IV fluid rates, and medication dosing.

Consider the following when performing a pediatric patient assessment:

- Smile if appropriate to the situation.
- Keep voice at an even quiet tone.
- Speak slowly using simple, age appropriate terms.
- Use toys or penlight as distracters.
- Keep small children with their caregiver(s), allowing the caregiver to hold the child and assist with the assessment if necessary. Child must be properly restrained during transport.
- Kneel down to the level of the child if possible.
- Make as many of the following observations as possible prior to touching the child as physical contact may upset the child:
  - Level of consciousness.
  - General appearance, age appropriate behavior, malnourished or well-nourished appearance, purposeful eye movement, general mood, playing, using a pacifier or bottle.
  - Obvious respiratory distress or extreme pain.
  - Position of the child: upright, tripod, recumbent, semi-fowlers.
  - Muscle tone: good vs. flaccid.
  - Movement: spontaneous, purposeful, or symmetrical.
  - Skin color.
  - Life-threatening injuries.
- It may be necessary to interview an adolescent without a caregiver present to obtain accurate information about drug use, alcohol use, LMP, sexual activity, or abuse.

TREATMENT:

AIRWAY

A. Self-maintained.
B. Maintainable with positioning or assistance: held tilt/chin lift, jaw thrust, tripod, high fowlers.
C. Maintainable with adjuncts: Use Broselow tape for correct size.
D. Maintainable with suction.
E. Most pediatric patients can be successfully ventilated using BVM.
F. BVM, supraglottic are preferred airways for pediatric patients.

BREATHING

A. Rate - compare to normal for age. Rate greater than 60/min is critical in all ages.
B. Rhythm: regular; irregular; agonal.
C. Quality: work of breath; use of accessory muscles, head bobbing, see-saw breathing, retractions, nasal flaring.
D. Auscultate respiratory sounds for absence, presence, snoring, stridor, crackles, gurgling, wheezing, grunting.
E. Administer oxygen of 02 sat <94 and/or other signs of respiratory compromise:
   - Blow by
   - Nasal cannula
   - Non-rebreather
   - BVM

CIRCULATION

A. Heart rate – compare to normal for age.
B. Central/truncal pulses (apical, femoral, carotid) – strong, weak, absent.
C. Peripheral pulses – present/absent, strong, weak, thready.
D. Skin/mucous membrane color.
E. Skin temperature – hot, warm, or cool.
F. Blood pressure – use appropriate sized cuff: Use Broselow tape for correct size.
G. Use the Broselow Pediatric Trauma Score for B/P determination if appropriate cuff is unavailable or capillary refill time (children under age 3).
H. Hydration status – infant anterior fontanel status, mucous membranes, skin turgor, tears, urine output history.

DISABILITY

A. Use AVPU to assess responsiveness.
B. Assess pupil response.
C. Assess distal neurologic status – numbness or tingling.
D. Assess blood glucose.

EXPOSURE

A. Assess for hypo/hyperthermia. See: Hyperthermia SMO or Hypothermia SMO.
B. Check for significant bleeding.
C. Check for petechiae or purpura (purple discolorations that do not blanch with skin pressure).
D. Be aware of signs of child abuse and, if present, report to authorities.

Considerations for Children with Special Healthcare Needs (CSHN)

A. Refer to child's emergency care plan formulated by their medical providers, if available.
B. Understanding the child's baseline will assist in determining the significance of altered physical findings. Parents/caregivers are the best source of information on: medications, baseline vitals, functional/normal mentation, likely medical complications, equipment operation and troubleshooting, emergency procedures.
C. It may be helpful to use the DOPE mnemonic to assess problems with ventilation equipment or long-term catheters for feeding tubes. DOPE stands for:
    - D – Dislodged tube
    - O - Obstructed tube
    - P – Pneumothorax
    - E – Equipment failure
D. Assess in a systematic and thorough manner, regardless of underlying conditions. Use parents/caregivers as medical resources.
E. Be prepared for differences in airway anatomy, physical development, cognitive development, surgical alterations, or mechanical adjuncts. Common home therapies include: respiratory support, nutritional therapy, intravenous therapy, urinary catheterization, dialysis, biotelemetry, ostomy care, orthotic devices, communication or mobility devices, or hospice care.
F. Communicate with the child in an age appropriate manner. Maintain communication with and remain sensitive to the parents/caregivers and child.
G. The most common emergency encountered with the pediatric patient is respiratory related and so familiarity with respiratory emergency interventions/adjuncts/treatment is appropriate.

NORMAL VITAL SIGNS

Respiratory Rates

Age	Breaths/min
Infant (< 1 year)	30 – 60
Toddler (1-3 years)	24 – 40
Preschool (4-5 years)	22 – 34
School age (6-12 years)	18 – 30
Adolescent (13-18 years)	12 – 16

Heart rates

Age	Awake Pulse/min	Mean	Sleeping Pulse/min
Newborn-3 months	85-205	140	80-160
3 months-2 years	100-190	130	75-160
2-10 years	60-140	80	60-90
> 10 years	60-100	75	50-90

Blood pressure

Age	Systolic		Diastolic	
	Female	Male	Female	Male
1 day	60-76	60-74	31-45	30-44
4 days	67-83	68-84	37-53	35-53
1 month	73-91	74-94	36-56	37-55
3 months	78-100	81-103	44-64	45-65
6 months	82-102	87-105	46-66	48-68
1 year	68-104	67-103	22-60	20-58
2 years	71-105	70-106	27-65	25-63
7 years	79-113	79-115	39-77	38-78
Adolescent (15 years)	93-127	95-131	47-85	45-85

Abdominal Pain – 1.002

Key Considerations: Consider level of discomfort, associated symptoms, GI symptoms, urination, gynecological symptoms, and medical history.

Treatment:

A. Routine Medical Care
B. Nothing by mouth (NPO).
C. Consider ILS/ALS intercept.
D. Pain Management per SMO.

Pediatric Patients

A. Routine Pediatric Care.
B. Pediatric dosing for medications listed above.

Allergic Reactions: Mild or Moderate Reaction – 1.008

Key Considerations: Allergic reactions can vary in severity from a mild reaction consisting of hives and rash to a severe generalized allergic reaction termed anaphylaxis resulting in cardiovascular and respiratory collapse. Common causes of allergic reactions include: bee/wasp stings, penicillin or other drug allergies and seafood or nuts. Exposures can occur from ingestion, inhalation, injection or absorption through skin or mucous membranes. Common assessment findings include exposure to common allergens (bee stings, drugs, nuts, seafood, medications), prior allergic reactions, wheezing, stridor, respiratory distress, itching, hives, rash, nausea, weakness, anxiety

A. Routine Medical Care.
B. Remove etiologic agent if possible or relocate patient.
C. Oxygen as indicated.

Allergic Reactions: Severe Reaction / Anaphylaxis

A. Routine Medical Care.
B. To be categorized as a severe allergic reaction / anaphylaxis patient will have one or more if the following:
   - Altered mental status.
   - Hypotension (SBP < 90 and evidence of hypoperfusion).
   - Bronchospasm (difficulty breathing / wheezing).
   - Swelling of the face and/or airway.
C. Administer Epinephrine Autoinjector
   - Epi JR. 0.15mg for children weighing 33 pounds (15 kg) to 66 pounds (30kg).
   - Epi 0.3mg for patients greater than 66 pounds (30kg).
   - Consult Medical Control for children less than 33 pounds.

Pediatric Patients

A. Routine Pediatric Care.
B. Follow treatment as listed above.
C. Administer Epinephrine Autoinjector
   - Epi JR. 0.15mg for children weighing 33 pounds (15 kg) to 66 pounds (30kg).
   - Epi 0.3mg for patients greater than 66 pounds (30kg).
   - Consult Medical Control for children less than 33 pounds.

Altered Mental Status – 1.006

Key Considerations: The term *altered mental status* describes a change from the "normal" mental state. The term *level of consciousness* indicates a patient's state of awareness. Check surroundings for syringes, blood glucose monitoring supplies, insulin, etc. Be alert to changes in mental status and symptoms such as headache, seizures, confusion, trauma, etc. Obtain medical history: psychiatric and medical problems, medications, and allergies.

TREATMENT:

A. Routine Medical Care
B. Protect the patient's airway. Watch for vomiting and have suction available.
C. Protect patient's c-spine.
D. If equipment available, determine blood glucose level – normal range 60-120mg/dL
E. Blood glucose < 80 with signs and symptom of hypoglycemia:
F. Oral Glucose if patient is alert with intact gag reflex
G. Naloxone (Narcan) 2mg intranasal, for suspected opiate overdose with respiratory depression consisting of respirations < 12 and or very shallow respirations and/or signs of shock

Pediatric Patients

A. Routine Pediatric Care.
B. Pediatric dosing of medications listed above.

Bites, Stings and Envenomation – 1.012

Key Considerations: An insect, animal or human bite or sting frequently is a combination of puncture, laceration, avulsion and crush injuries. Complications are common—all patients who have been bitten/ stung should seek physician evaluation. Try to find out the type of animal or insect, time of exposure and history of previous exposures, allergic reactions, and any known specific allergen.

TREATMENT:

A. Routine Medical Care.
B. See Allergic Reaction Mild/Moderate or Allergic Reaction Severe as needed.
C. If patient is hypotensive, treat for Shock.
D. Scrape off any remaining stinger or tentacles.
E. Clean the affected area with saline, cover with sterile dressing.
F. Do not perform any of the following:
    - Tourniquets or constricting bands above or below the site
    - Incision and / or suction
    - Application of cold for snake or spider bites

Pediatric Patients

A. Routine Pediatric Care.
B. Follow treatment as above.

Bronchospasm (Asthma/COPD/Wheezing) – 1.016

Key Considerations: Respiratory distress with acute bronchospasm can be seen in patients as a result of many causes including asthma, COPD, bronchitis, and allergic reaction. Treatment must be concentrated on airway patency and ventilation.

TREATMENT:

A. Routine Medical Care.
B. Administer O_2 as indicated.
C. If available, administer Albuterol Nebulizer or assist with patients' prescribed medication / inhalers.
D. Rapid transport.

Pediatric Respiratory Distress/Arrest/Obstruction/Arrest Patients

TREATMENT:

A. Routine Pediatric Care.
B. Administer O_2 as indicated.
C. If available, administer Albuterol Nebulizer or assist with patients' prescribed medication / inhalers.
D. Follow SMO for CPR/AED if patient condition worsens.

Heart Failure/Pulmonary Edema/Cardiogenic Shock/ – 1.022

Key Considerations: Mental status, skin signs, perfusion status, respiratory rate (rhythm, pattern, and work of breathing), lung sounds, heart rate (rhythm and blood pressure trends), pedal edema, and JVD.

TREATMENT:

A. Routine Medical Care.
B. Position of comfort, usually upright.
C. Oxygen as indicated.
D. If patient is wheezing see Bronchospasm SMO.

Pediatric Patients

Key Considerations: Cardiogenic shock is not typical in pediatric patients and is generally a result of congenital issues.

Treatment:

A. Routine Pediatric Care.

Chest Pain of Suspected Cardiac Origin/STEMI – 1.025

Key Considerations: Patients with acute non-traumatic chest pain are among the most challenging patients cared for in EMS. They may appear seriously ill or completely well and yet remain at significant risk of sudden death or acute myocardial infarction. Sorting out which patient is experiencing chest pain of cardiac origin represents a tremendous challenge. Whenever there is question as to whether or not you should utilize this SMO, contact medical control for further guidance.

TREATMENT:

A. Routine Medical Care.
B. Administer O_2 as indicated.
C. Low Dose- ASA 81 mg X FOUR tablets chew and swallow.
D. If at any time patient becomes unconscious and pulseless, begin CPR.

Diabetic Emergencies- 1.030

Key Considerations: Altered level of consciousness, combativeness, cold/clammy skin, seizure, dizziness, weakness, odor of breath, blood glucose level.

TREATMENT:

A. Routine Medical Care.
B. Determine blood glucose level, if available.
C. If adult patient with glucose <80 **and/or** exhibiting signs of hypoglycemia:
   - Oral Glucose if patient is alert with intact gag reflex.
D. Reassess patient after medication is given. If no change in condition contact Medical Control for further orders.

Pediatric Patients

A. Routine Pediatric Care.
B. If patient with glucose <60 **and/or** exhibiting signs of hypoglycemia follow pediatric dosing for medications listed above.

Environmental Emergencies

Altitude Illness -1.007

Key Considerations: While uncommon in Illinois, Altitude Illness is defined in terms of Acute Mountain Sickness (typically greater than 5,000 ft), High Altitude Pulmonary Edema (HAPE), and High Altitude Cerebral Edema (HACE) (both typically greater than 8,000 feet). The highest elevation in Illinois is 1,235 feet in Scales Mound, Illinois in JoDaviess County. If Altitude Illness is suspected assessment should also consider alternate causes of the symptoms.

TREATMENT:

A. Stop ascent.
B. Airway Management, as symptoms dictate.
C. Descend as soon as scene conditions permit.
D. Consider treatment for:
   - Hypoglycemia
   - Hypo/Hyperthermia
   - Altered Mental Status
   - Pain Management
   - Dehydration
   - Exhaustion
E. If needed, administer oxygen to saturations ≥ 90%.

Pediatric Patients – Altitude Sickness:

A. Routine Pediatric Care.
B. Follow treatment as listed above.

Hyperthermia – 1.034

Key Considerations: Heat illness results from one of two basic causes:

- Normal mechanisms that regulate the body's thermostat are overwhelmed by environmental conditions such as heat stress or increased exercise in moderate to extreme environmental conditions.
- Failure of the body's regulatory mechanisms especially in older adults, young children, babies and ill or debilitated patients.

TREATMENT:

A. Routine Medical Care.
B. Remove the patient from the hot environment.
C. Begin cooling measures with cool water and fanning.

Pediatric Patients:

A. Routine Pediatric Care.
B. Follow treatment as listed above.

Hypothermia – 1.035

Key Considerations: Core body temperature less than 95 º F [35º C] can result from a decrease in heat production, an increase in heat loss, or a combination of the two factors. Most common cause is exposure to extreme environmental conditions. Classified as Mild (CBT of 96.8º F to a CBT of 93.2º F [36-34º C]), Moderate (CBT of 86º F [30ºC]), and Severe (CBT of < 86.0º F [<30ºC]).

TREATMENT:

1. Routine Medical Care.
2. Handle the patient very gently.
3. Remove the patient from the cold environment.
4. Cut away any wet clothing.
5. Conserve body heat with blankets.
6. Do NOT add external warming measures.
7. Assess pulse for 30- 45 seconds.
8. If the use of the AED is warranted do not shock the patient more than 3 times.

Pediatric Patients

A. Routine Pediatric Care.
B. Follow treatment as listed above.

Pediatric ALTE/BRUE Event – 1.044

Definition: A Brief Resolved Unexplained Event (BRUE) or Apparent Life Threatening Event (ALTE) is an event in an infant < 2 years old lasting less than one minute. Underlying causes can include pneumonia, bronchiolitis, seizure, sepsis, intracranial hemorrhage, and/or meningitis and characterized by one or more of the following:

A. Cyanosis or pallor.
B. Absent, decreased, or irregular breathing.
C. Marked change in muscle tone (hypertonia or hypotonia).
D. Altered level of consciousness.
E. Choking or gagging not associated with feeding or a witnessed foreign body aspiration.
F. Seizure-like activity.
G. Assess for signs of hypoglycemia - patient with glucose <60 (neonates <40) **and/or** exhibiting signs of hypoglycemia

Key Considerations: ALTE/BRUE is a group of symptoms but not a specific disease. Consider overdose, hypoglycemia, trauma (accidental and non-accidental) and/or seizure.

TREATMENT:

A. Routine Pediatric Care.
B. Follow Airway Management SMO, as indicated.
C. Obtain and document any complications of pregnancy, birthdate and gestational age at birth, fever or recent infection, prior ALTE/BRUE episodes, and underlying medical conditions.
D. Assess blood glucose; see Diabetic Emergencies SMO.

Seizure – 1.052

Key Considerations: A seizure is a temporary, abnormal electrical activity of the brain that results in a loss of consciousness, loss of organized muscle tone, and presence of convulsions. The patient will usually regain consciousness within 1 to 3 minutes followed by a period of confusion and fatigue (post-ictal state).

Multiple seizures in a brief time span or seizures lasting more than five minutes may constitute status epilepticus and require EMS intervention to stop the seizure. Causes of seizures include: epilepsy, stroke, head trauma, hypoglycemia, hypoxia, infection, a rapid change in core body temperature (e.g. febrile seizures), eclampsia, alcohol withdrawal, and overdose.

TREATMENT:

A. Routine Medical Care.
B. Protect the patient from injury during the seizure. Take special care to protect the patient's head and airway (watch for vomiting and have suction available).
C. Administer O_2.

Pediatric Patients

TREATMENT:

A. Routine Pediatric Care.
B. Treatment as above.

Sepsis 1.053

Key Considerations:

A. All patients will be evaluated for sepsis if they exhibit any of the following infections:
- Pneumonia (cough/thick sputum)
- Urinary tract infection (painful urination, hematuria, change in urination)
- Altered mental status
- Blood stream/catheter related
- Abdominal pain, distention and/or diarrhea
- Wound infection, cellulitis
- Skin/soft tissue infection
- Device related infection

B. Any patient exhibiting signs of infection will be assessed for the following:
- Temperature > 100.4˚ F
- Temperature < 96.8˚ F
- Tachypnea > 20/min., PaCO2<32 mmHg; SpO2 ≤ 92%
- Tachycardia > 90 bpm
- Systolic BP < 90 mmHg

TREATMENT:

A. Routine Medical Care.

Pediatric Patient

A. Routine Pediatric Care.

Stroke 1.057

Key Considerations: Stroke, also known as cerebrovascular accident (CVA), is a sudden interruption in blood flow to the brain that results in neurological deficit. This interruption can be caused by ischemia (blockage) or hemorrhage (bleeding). It is the third leading cause of death in the United States and frequently leaves its survivors severely debilitated.

TREATMENT:

A. Routine Medical Care.
B. Perform GFAST Exam.
C. Protect airway, suction as necessary. Seizure and vomiting.
D. Administer O_2 as indicated.
E. Maintain head and neck in neutral alignment. Do NOT flex the neck.
F. If BP > 90 mmHg, elevate head of bed to 30°.
G. If altered sensorium, seizure, or focal neurological deficit, obtain and record blood sugar level.
H. If blood sugar < 80 administer Oral Glucose if patient is alert with intact gag reflex.
I. Monitor and record neurological status and any changes.
J. Protect paralyzed limbs from injury.
K. Whenever possible, the EMR should establish the last known well time.

Pediatric Patients

Key Considerations: Although rare in children, strokes can occur at any age.

TREATMENT:

A. Routine Pediatric Care.
B. Administer pediatric dosing for medications listed above.

G-FAST Screening:

GAZE DEVIATION: Does the person stare to one side and cannot move their eyes back to center
_____**Normal**: Patient able to move eyes from side to side and back to midline
_____**ABNORMAL**: Patient stares to one side and cannot move eyes back to midline or to look elsewhere

FACIAL DROOP: Ask the person to smile and/or show their teeth
_____**Normal**: Both sides of the face are equal, there is no droop noted to one side
_____**ABNORMAL**: One side the mouth or face is drooping, drooling or does not look the same

ARM DRIFT: Ask the person to hold both arms out in front of them for the count of 10
_____**Normal**: Both arms move equally
_____**ABNORMAL**: One arm drifts down or does not move at all, the other is normal

SPEECH: Have the person say a sentence (example: You can't teach an old dog new tricks.)
_____**Normal**: Sentence sounds normal, no slurring words and person uses correct words
_____**ABNORMAL**: Patient unable to speak (mute), words are slurred, incorrect words used

TIME: If the time of **Last Known Well** is **GREATER** than **24 hours**, then a stroke alert is **NOT** paged because the patient is outside of acute treatment window.

Syncope/Near Syncope 1.060

Key Considerations: Duration of the syncopal episode, symptoms before episode (palpitation, seizure, incontinence, aura), previous episodes of syncope, circumstances of occurrence (patient position, severe pain, emotional stress), vital signs (especially pulse rate, quality, regularity).

TREATMENT:

CONSCIOUS, ALERT, ORIENTED WITH HISTORY OF SYNCOPAL EPISODE

A. Routine Medical Care.
B. Cardiac monitoring.
C. Obtain and record blood sugar level.
D. Consider possible causes of syncope and/or altered sensorium:

T	-	Trauma/Temperature
I	-	Infection
P	-	Psychiatric
S	-	Stroke, Subarachnoid, Shock
A	-	Alcohol and other Toxins
E	-	Endocrine
I	-	Insulin
O	-	Oxygen/Opiates
U	-	Uremia

ALTERED SENSORIUM, UNCONSCIOUS, OR SIGNS OF HYPOPERFUSION AND/OR SYSTOLIC BP < 90

A. Routine Medical Care.
B. If adult blood glucose < 80, administer:
   - Oral Glucose for conscious patient with gag reflex intact.
C. Naloxone IN for suspected opiate overdose with respiratory depression consisting of respirations < 12 and or very shallow respirations and/or signs of shock. Consider Spinal Restriction.

Pediatric Patients

A. Routine Pediatric Care.
B. If patient with glucose <60 and/or patient is a known diabetic follow pediatric dosing for medications listed above.

Toxic Exposure (*formerly Poisoning and Overdose*) 1.062

Key Considerations: Poisoning and overdose can take several forms and patients may range from mildly ill to very critical. Variances in condition occur due to amount of substance involved, time of incident, type of substance involved, and whether it is an overdose or actual poison.

A. Routine Medical Care.
B. Attempt to identify the substances and method of ingestion.
C. Collect bottles, pills, syringes, MSDS papers or other items that may help identify the substance.
D. For patient suspected of overdosing on narcotics or unknown substances:
   - Ensure ABC's, oxygenation, ventilation.
   - Naloxone (Narcan) 2mg intranasal for altered mental status with severe respiratory depression or arrest; signs and symptoms of shock; or hypoventilation.

Key Considerations: A trauma assessment needs to be completed on all trauma patients to identify and immediately correct life- threatening problems in accordance with PHTLS and ITLS guidelines. Scene times should be kept to a minimum and the patient should be promptly transported to the trauma center.

TREATMENT:

A. Scene Assessment:
   - Assess scene safety and situation.
   - Apply Personal Protection Equipment.
   - Identify mechanism of injury and any special extrication needs.
   - Call for additional resources.
   - Minimal disturbance of crime scene should be considered.

B. Patient Treatment:
   - Assess airway patency utilizing adjuncts as indicated (OPA, NPA). Secure the airway with C- spine precautions.
   - Spinal Restriction as indicated.
   - Assess breathing, apply oxygen as indicated:
     - Oxygen via nasal cannula (2-6 L/min) for awake, oriented, stable patients without evidence of hypoperfusion or mental status changes.
     - High-flow via non-rebreather mask (10-15 L/min) if indicated. Assist ventilations with BVM and 100% oxygen if indicated.
     - Prepare to suction or maintain Spinal Restriction while log rolling patient for vomiting.
     - Airway Management as indicated.
   - Immediately control external bleeding. Refer to Hemorrhage Control SMO.
   - If load and go situation is found, transport immediately and activate the Trauma System per Field Triage Criteria.
   - Pain Management as appropriate
   - See Shock Treatment SMO if SBP < 90 mmHg for patient management.
   - Assess disability: AVPU, pupils and Glasgow Coma Scale.
   - If altered mental status, check blood glucose.
   - Remove clothing to expose injuries. Cover patient with a blanket to avoid hypothermia.
   - Obtain SAMPLE history.
   - Reassess airway patency and maintain good ventilation.
   - Reassess ABC's including patient's color.
   - Perform serial vital signs. Repeat vital signs every 10 minutes.
   - Perform Secondary Assessment.
   - Assess for pelvic instability. If present, apply pelvic binder, commercial or improvised.
   - Splint fractures and bandage wounds, control bleeding. Re-check PMS.
   - Reassessment of critical patients frequently.

Pediatric Patients – Trauma Care

A. Routine Pediatric Care.
B. Refer to the Pediatric Section of the Spinal Restriction SMO for consideration of safe transportation.
C. Consider Abuse/Neglect: Child for injuries that are presented with an inconsistent history or discrepancy between the history of the injury and the physical exam
D. Pediatric Head Trauma:
    - Consider oxygen/ventilation as needed
    - Pulse ox as available
    - Pediatric Glasgow Coma Scale
    - PGCS 13-15 – Mild
        - Control Hemorrhage
    - PGCS 9-12 - Moderate
        - Airway Management
    - PGCS ≤ 8 – Severe
        - Seizure SMO, as appropriate

In-Field Trauma Triage Criteria

Overview: The following patients are those who in the opinion of the American College of Surgeons Committee on Trauma are to have an increased mortality/ morbidity if not treated at a trauma center, and should therefore be classified as trauma patients. These patients require transport to the nearest trauma center. The decision to triage to the nearest trauma center or directly to the Level I trauma center remains with Medical Control, as does aeromedical evacuation.

GUIDELINES

I. Physiologic Factors
- A. Adult Trauma Score of 10 or less or Pediatric Score of 8 or less
- B. Airway difficulties requiring intubation or other interventions at the scene
- C. Trauma with altered respiratory rate > 35/ minute or < 12/ minute
- D. Any multiple trauma patient with signs of hypoperfusion

II. Anatomic Factors
- A. Head, face and eye
  1. HEAD INJURY WITH PERSISTENT UNCONSCIOUSNESS OR FOCAL SIGNS (i.e. SEIZURES, POSTURING, UNABLE TO RESPOND TO SIMPLE COMMANDS)
  2. Head injury with LOC or an altered Glasgow Coma Score
  3. Traumatic and chemical eye injuries
  4. Maxillofacial trauma
  5. Penetrating injury to the neck
- B. Chest
  1. TRANSMEDIASTINAL GUNSHOT WOUNDS
  2. Penetrating injury to the chest
  3. Blunt chest trauma (significant pain and/or obvious external signs)
- C. Abdomen
  1. Penetrating injury to the abdomen or groin
  2. Blunt abdominal trauma (significant pain and/or obvious external signs)
- D. Spinal Cord
  1. SPINAL CORD INJURY WITH PARALYSIS
  2. Any suspected spinal cord injury in the absence of neurological deficit
- E. Extremity
  1. Multiple orthopedic injuries (>1 long bone fracture)
  2. Major extremity injury with vascular compromise (blunt and penetrating)
  3. Traumatic amputation proximal to the wrist or ankle

III. Deceleration Injury
- A. High energy dissipation—rapid acceleration with blunt chest or abdominal injury
- B. Falls of 20 feet or greater with the adult patient
- C. Falls of 3 times the height of the pediatric patient

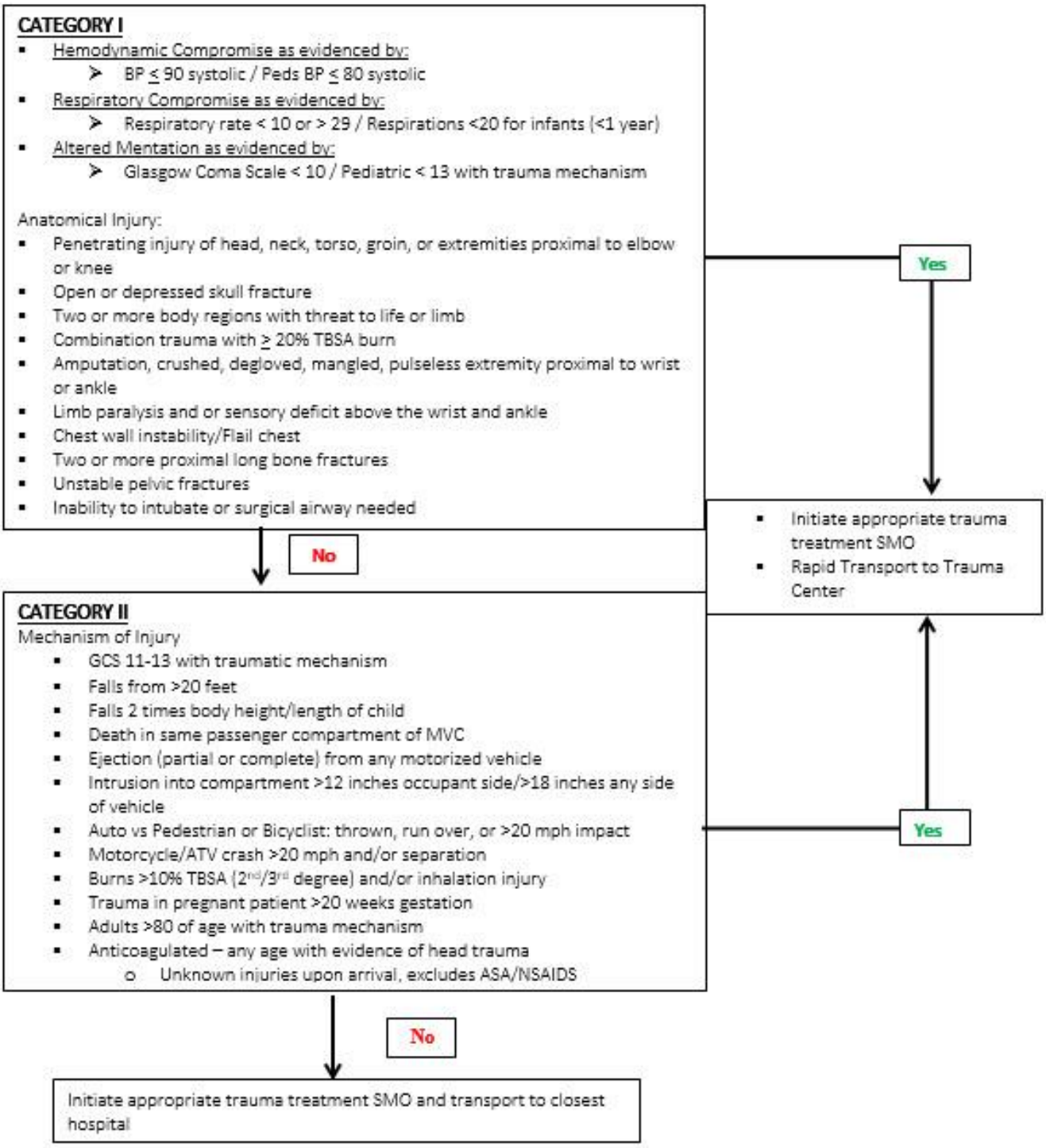
IV. Motor Vehicle Incidents
- A. Extrication time of 20 minutes or more
- B. Passenger space invaded by 12 or more inches
- C. Ejection
- D. Fatality at the scene within the same motor vehicle
- E. Rollover
- F. Child under 12 years struck by car
- G. Child 5 years old or younger involved in any MVA without age appropriate restraint (under age 4 or less than 40 pounds require a car seat)
- H. Motorcycle crash greater than 20 mph and separation of rider from bike

V. Major Burns
- A. 20% total body surface of 2nd and 3rd degree burns
- B. Any burn patient with obvious head, neck or airway involvement

VI. Pediatric Trauma with one or more of the following:
- A. HEAD TRAUMA WITH PERSISTENT ALTERED LEVEL OF CONSCIOUSNESS OBVIOUS CHEST OR ABDOMINAL TRAUMA, EITHER PENETRATING OR BLUNT
- B. Pediatric Trauma Score of 8 or less
- C. Child under 12 struck by car
- D. Child 5 years old or younger involved in any MVA without age appropriate restraint (under age 4 or less than 40 pounds require a car seat)

VII. Maternal Trauma Patients with significant mechanism and/or obvious signs of Trauma
- A. THE PREGNANT PATIENT 20 – 32 WEEKS
- B. The pregnant patient 32 – 40 weeks
- C. Maternal patient who meets any other trauma criteria

VIII. Blunt and Penetrating Traumatic Arrests are at the discretion of Medical Control


CATEGORY I
Hemodynamic Compromise as evidenced by:
BP ≤ 90 systolic / Peds BP ≤ 80 systolic
Respiratory Compromise as evidenced by:
Respiratory rate < 10 or > 29 / Respirations <20 for infants (<1 year)
Altered Mentation as evidenced by:
Glasgow Coma Scale < 10 / Pediatric < 13 with trauma mechanism
Anatomical Injury:
Penetrating injury of head, neck, torso, groin, or extremities proximal to elbow or knee
Open or depressed skull fracture
Two or more body regions with threat to life or limb
Combination trauma with ≥ 20% TBSA burn
Amputation, crushed, degloved, mangled, pulseless extremity proximal to wrist or ankle
Limb paralysis and or sensory deficit above the wrist and ankle
Chest wall instability/Flail chest
Two or more proximal long bone fractures
Unstable pelvic fractures
Inability to intubate or surgical airway needed
Yes
No
Initiate appropriate trauma treatment SMO
Rapid Transport to Trauma Center
CATEGORY II
Mechanism of Injury
GCS 11-13 with traumatic mechanism
Falls from >20 feet
Falls 2 times body height/length of child
Death in same passenger compartment of MVC
Ejection (partial or complete) from any motorized vehicle
Intrusion into compartment >12 inches occupant side/>18 inches any side of vehicle
Auto vs Pedestrian or Bicyclist: thrown, run over, or >20 mph impact
Motorcycle/ATV crash >20 mph and/or separation
Burns >10% TBSA (2nd/3rd degree) and/or inhalation injury
Trauma in pregnant patient >20 weeks gestation
Adults >80 of age with trauma mechanism
Anticoagulated – any age with evidence of head trauma
Unknown injuries upon arrival, excludes ASA/NSAIDS
Yes
No
Initiate appropriate trauma treatment SMO and transport to closest hospital

ADULT GLASGOW COMA SCORE

EYE OPENING	Eyes open ***Spontaneously***	4
	Eyes open in response to ***Voice***	3
	Eyes open in response to ***Pain***	2
	No eye opening response	1
VERBAL RESPONSE	***Oriented*** (e.g., to person, place, time)	5
	Confused, speaks but is disoriented	4
	Inappropriate but comprehensible words	3
	Incomprehensible sounds but no words are spoken	2
	None	1
MOTOR RESPONSE	***Obeys Commands*** to move	6
	Localized Painful stimuli	5
	Withdraws from painful stimulus	4
	Flexion, abnormal *decorticate* posturing	3
	Extension, abnormal *decerebrate* posturing	2
	No movement or posturing	1
TOTAL POSSIBLE SCORE		3 - 15
	Severe Head Injury	≤ 8
	Moderate Head Injury	9 – 12
	Minor Head Injury	13 - 15

ADULT TRAUMA SCORE

The Trauma Score is a numerical grading system for estimating the severity of injury. The score is composed of the Glasgow Coma Scale (reduced to approximately one-third value) and measurements of cardiopulmonary function. Each parameter is given a number (high for normal and low for impaired function). Severity of injury is estimated by summing the numbers. The lowest score is 0, and the highest score is 12.

RESPIRATORY RATE (spontaneous patient-initiated inspirations/ minute)	10 - 29 / minute	4
	greater than 29	3
	6 - 9 minutes	2
	1 - 5 / minute	1
	None	0
SYSTOLIC BLOOD PRESSURE	Greater than 89	4
	76 - 89 mm Hg	3
	50 - 75 mm Hg	2
	1 - 49 mm Hg	1
	No pulse	0
GLASGOW COMA SCALE (see above)	13 – 15	4
	9 – 12	3
	6 – 8	2
	4 – 5	1
	3	0
TOTAL POSSIBLE SCORE		0 – 12

PEDIATRIC GLASGOW COMA SCORE

AREAS OF RESPONSE	>1 year	< 1 year	GCS
EYE OPENING	Spontaneously To ***Verbal Command*** To ***Pain*** No eye opening response	Spontaneously To ***Shout*** To ***Pain*** No eye opening response	4 3 2 1
MOTOR RESPONSE	***Obeys Commands*** to move ***Localized Painful*** stimuli ***Withdraws*** from painful stimulus ***Flexion,*** abnormal *decorticate* posturing ***Extension***, abnormal *decerebrate* posturing No movement or posturing	***Obeys Commands*** to move ***Localized Painful*** stimuli ***Flexion—normal*** ***Flexion,*** abnormal *decorticate* posturing ***Extension***, abnormal *decerebrate* posturing No movement or posturing	6 5 4 3 2 1

VERBAL RESPONSE	> 5 years	< 2 – 5 years	0 - 23 months	
	Oriented and converses	Appropriate words & phrases for age	Smiles, coos, cries appropriately	5
	Disoriented but converses ***Inappropriate*** words	Inappropriate words Cries and/or screams	Cries Inappropriate crying and/or screaming	4 3
	Incomprehensible	Grunts	Grunts	2
	No response	No response	No response	1
			TOTAL POSSIBLE SCORE	3 - 15

PEDIATRIC TRAUMA SCORE

	VALUES		
COMPONENT	+2	+1	-1
Size	≥ 20 kg	10 – 20 kg	≤ 10 kg
Airway	Normal	Maintainable	Unable to maintain
CNS	Awake	Obtunded	Coma
Systolic BP	≥ 90 mm Hg	50 – 90 mm Hg	≤ 50 mm Hg
Open wound	None	Minor	Major
Skeletal Injuries	None	Closed fracture	Open or multiple fractures

Revised Trauma Score

Glasgow Coma Scale (GCS)	Systolic Blood Pressure (SBP)	Respiratory Rate (RR)	Coded Value
13-15	>89	10-29	**4**
9-12	76-89	>29	**3**
6-8	50-75	6-9	**2**
4-5	1-49	1-5	**1**
3	0	0	**0**

Abdominal/Pelvic Trauma (Blunt, Penetrating/Perforating Injuries)

A. Routine Trauma Care.
B. Evisceration – use moist, bulky dressing.
B. Impaled Object – stabilize, do not remove object unless it blocks airway or CPR.
C. Pelvic Fracture – do not log roll. Stabilize with pelvic splint or improvised methods (such as sheets).

Amputations

A. Routine Trauma Care.
B. Control bleeding.
C. Place body part in plastic bag. Place plastic bag containing body part in a larger bag or container and place in container with ice/ water.
D. Use caution to not freeze body part.

Burns

A. Routine Trauma Care.
B. The first priority is to stop the burning process by removing the patient from the source of the burn or eliminate the source.
C. Thermal burns:
   - Continuously monitor the airway. Examine the mouth and nose for signs of respiratory burns.
   - Remove clothing and jewelry from the affected site.
   - Cover the burn with dry sterile dressing.
   - Protect patient from Hypothermia.
   - Treat for shock
D. Chemical burns:
   - Body Substance Isolation.
   - Remove clothing and jewelry.
   - For dry chemicals brush off all visible chemical prior to beginning the water flush.
   - The site should be flushed with copious amounts of water for 20 minutes.
E. Electrical burns:
   - Scene safety.
   - Treat entrance and exit wounds as thermal burns.
   - Spinal restriction is indicated with serious electrical burns.
   - If the patient is pulseless refer to CPR SMO.
F. Lightning Strike:
   - Immediately check respiratory and circulatory status. If patient is in cardio-pulmonary arrest, follow AHA guidelines for resuscitation including high quality CPR. Lightning injuries may cause prolonged respiratory arrest.
   - Airway Management.
   - Spinal Restriction for victims of musculoskeletal trauma associated with electrocution.
G. Radiation:
   - If the patient is contaminated with radioactive material, they will need decontamination by a HAZ-MAT team specifically trained to scan and decontaminate radioactive material.
   - Non-contaminated patients will present with injuries similar to thermal burns and should be treated according to THERMAL BURN procedures.
   - Exposed victims do not present a hazard to responders unless they have radioactive contamination present.
H. Inhalation:

Chest Injuries

A. Routine Trauma Care.
B. If an open wound is present (sucking chest wound), cover the wound with a 3-sided, occlusive dressing. If the patient develops increased difficulty breathing or cyanosis, temporarily release the dressing.

Conducted Electrical Weapon (TASER):

A. If barbs are deployed to the eye/eyelid, ear, nose, female breast, or genitalia transport the patient for removal. Refer to local police protocols for all other barb removal.
B. Consider Restraints as needed.

Drowning and Near Drowning

A. Routine Trauma Care.
B. Keep the victim warm. If hypothermia is suspected, handle patient very gently. Remove wet clothing and apply warm blanket.

***NOTE**: Because of possible serious delayed reactions, all near drowning patients should be evaluated in the Emergency Department even if they appear to be uninjured at the scene*.

SCUBA Injury

Key Considerations: Any incident while using SCUBA equipment, or breathing in a pressurized environment or altitude chamber, may result in sudden depressurization. Consider: fatigue, vertigo, focal weakness, visual disturbances, speech difficulty, marbled rash, numbness, tingling, confusion, seizure, and/or cardiac arrest.

TREATMENT:

A. Remove SCUBA equipment.
B. Follow treatment above for drowning/near-drowning, as appropriate.
C. Routine Medical Care.
D. Routine Trauma Care, as appropriate.
E. Airway Management as appropriate. Ensure oxygen saturation between 94-99%.
F. Consider ALS Intercept.

Facial/Dental Trauma:

A. See Airway Management, as appropriate.
B. See Ophthalmic Trauma, as appropriate.
C. Dental – placed avulsed tooth in saline. Avoid touching the root.
D. Unstable mandible – transport patient sitting up with emesis basin/suction available (if no suspected spinal injury).
E. Nose/ear avulsion – place recovered tissue in dry, sterile gauze in a plastic bag, on ice, if available. Cover severe ear and nose lacerations with a protective, moist, sterile dressing.
F. Epistaxis – squeeze nose (or have patient do so) for 10-15 minutes continuously.

Head Trauma:

A. Elevate head approximately 15-30 degree unless the patient is hypotensive.
B. Monitor level of consciousness.
C. Monitor for Seizures.

Hemorrhage Control/Wound Packing

A. Routine Trauma Care.
B. For external bleeding use direct pressure, if direct pressure is not effective a tourniquet should be considered.
C. Direct pressure is the primary method of controlling most external bleeding and should be used as soon as possible.
D. Tourniquets:
   - Consider tourniquets when direct pressure does not control breathing.
   - Tourniquets may not be practical on proximal extremity locations.
   - Cut away clothing.
   - Tighten per manufacturers' instructions until hemorrhage stops.
   - Secure tourniquets per manufacturers' recommendations.
   - Note time of tourniquets application and provide this information to receiving care provider. Do not remove any tourniquet without authorization from Medical Control.
   - If one tourniquet is not sufficient to control bleeding consider a second tourniquet proximal to the first.
E. Wound Packing:
   - Consider wound packing for life threatening bleed from a penetrating injury to the buttock, pelvis (pelvic girdle), axilla (armpit), or neck. Also, consider for penetrating injuries to extremity with significant bleeding that cannot be controlled with direct pressure or tourniquets.
   - Wound packing is contraindicated for the chest, back, head, abdomen, and dialysis graft bleeding.
   - Wound packing procedure:
     Attempt to control bleeding with direct pressure.
     - Cut away clothing at wound site.
     - Have wound packing supplies on hand – use a roll of plain gauze.
     - Carefully remove any obvious foreign object from the wound (splintered wood, etc.)
     - Apply direct pressure just proximal to the wound to reduce bleeding. With one finger of the other hand push the end of the gauze as deeply into the wound as possible. Continue to feed the gauze deep into the wound in small increments. Do not attempt to feed a large amount of gauze all at once.
     - Continue to pack gauze deeply and tightly in order to apply direct pressure over the source of the bleed. When the packing reaches the level of the skin apply any remaining gauze over the wound to help apply pressure.
     - Hold direct pressure over the wound for at least ten minutes. Do not release this pressure to "check" for bleeding.
     - If possible, wrap with gauze to maintain pressure.
     - Note: this is a very painful procedure, provide Pain Management per SMO.
F. Treat for shock.

Musculoskeletal Trauma

A. Routine Trauma Care.
B. Control external bleeding.
C. Manual stabilization - support the joint above and below the injury.
D. Cover open wounds with sterile dressing.
E. Pad to prevent pressure and discomfort.
F. Use caution to not replace protruding bones.
G. Reassess pulses as needed.
H. Assess treat for shock.

Ophthalmic Trauma:

A. General: Transport patient in a seated position unless contraindicated.
B. Chemical Splash/Burn -
   - Thoroughly and continuously irrigate affected eye(s) using copious amounts of saline instilled through IV tubing. Start irrigation as soon as possible and continue throughout transport.
C. Penetrating Injury/Ruptured Globe –
   - Do not removed impaled object; do not irrigate eye
   - Avoid all pressure on injured eye. Cover with cup or metal/plastic protective patch and cover the uninjured eye.
D. Corneal Abrasions/Foreign Body –
   - Do not wipe eye. Consider irrigation.
   - Shade patients' eyes from light.

Shock/ Internal Bleeding

A. Routine Trauma Care
B. Maintain the patient's body position as flat.
C. Keep patient warm.

Pediatric Patients

A. Routine Pediatric Care.
B. Refer to the Pediatric Section of the Spinal Restriction SMO for consideration of safe transportation.
C. Consider Abuse/Neglect: Child for injuries that are presented with an inconsistent history or discrepancy between the history of the injury and the physical exam.
D. Pediatric Head Trauma:
   - Consider oxygen/ventilation as needed
   - Pulse ox as available
   - Pediatric Glasgow Coma Scale
   - PGCS 13-15 – Mild
     - Control Hemorrhage
   - PGCS 9-12 - Moderate
     - Airway Management
   - PGCS ≤ 8 – Severe
     - Seizure SMO, as appropriate

Key Considerations:

A. Communication Barriers:
   - Language Barriers
     - Expressive and/or receptive aphasia
     - Nonverbal
     - Fluency in a different language than the EMS provider
   - Sensory Barriers
     - Visual Impairment
     - Auditory Impairment

B. Assistance Adjuncts:
   - Device examples include, but are not limited to:
     - Extremity prostheses
     - Hearing aids
     - Tracheostomy
     - Central Intravenous Catheters
     - CSF Shunt
     - Gastrostomy Tube (G-Tube or J-Tube)
     - Colostomy or Ileostomy
     - Ureterostomy or Nephrostomy Tube (or Foley Catheter)
   - Service Animals

C. Identify the functional need from the patient, the patient's family, bystanders, medic alert bracelets or documents, or the patient's adjunct assistance devices. Attempt to identify the normal baseline vital signs.

D. The performance of a physical examination should not intentionally be diminished during the assessment although the manner that the exam is performed may need to accommodate the specific needs of the patient.

E. When possible, for patients with communication barriers, it may be desirable to obtain secondary confirmation of pertinent data (e.g., allergies) from the patient's family, interpreters, or available written information.

F. Presence of technology assisted devices, such as ventilators or central intravenous catheter and feeding tube pumps.
   - Consider utilizing patient's medical equipment/supplies for optimal results and appropriate sizing.

G. Use parents/caregivers/home health nurse as a medical resource at home and enroute.

TREATMENT:

<u>TRACHEOSTOMY/Ventilator Dependent Patients</u>

A. Enlist the caregiver whenever possible.
B. Assessment for displaced or obstructed tubes.
C. Assessment for proper ventilation.
D. Assessment for equipment issues such as ventilator malfunction, oxygen depletion, kinked tubing.
E. Assessment for infection.
F. If patient is on a ventilator, disconnect and attempt to oxygenate with bag using tracheostomy adaptor (if present) or mask over trach opening or stoma.
G. If patient is not on a ventilator administer oxygen with bag or mask over trach as needed.
H. Suction as needed, no more than 10 seconds. Insert no more than ¾ length of neck.
I. If inner cannula present request that the caregiver remove and clean with saline.
J. If unable to ventilate cover opening and ventilate with bag and mask over mouth and nose (consider using a small pediatric mask even on adult patients).

FISTULA, SHUNT, OR ARTERIOVENOUS GRAFT (AV SHUNT)

A. Blood pressure should not be taken in an arm with an AV Shunt.
B. IV should not be started in an arm with an AV Shunt.
C. Direct pressure to control bleeding at site.

OTHER SPECIAL NEEDS SITUATIONS

- If possible, consider transporting an individual who is fluent in the patient's language with the patient. If this is not possible, consider the use of the following:
    - Medical translation cards
    - Online translation services
    - Any other translation service utilized by the individual agency
- Any written communication between the patient and the EMS provider becomes part of the medical record, even if it is written on a scrap of paper, and should be retained with the storage and confidentiality policies and procedures that are applicable to the written or electronic patient report.
- Patients with Downs Syndrome, especially children, may have upper cervical instability and may be more prone to spinal cord injury. Consider spinal restriction in any mechanism of injury where there has been significant movement of the neck.
- If a caregiver is present, ask if there is a "best way" to move the patient.
- Service animals are not classified as a pet and should, by law, always be permitted to accompany the patient with the following exceptions:
    - The animal is out of control and the animal's handler does not or cannot take effective action to control it.
    - The animal is not housebroken.
- Service animals are not required to wear a vest or a leash and it is illegal to make a request for special identification or documentation from the animal's partner. EMS providers may only ask the patient if the service animal is required because of a disability and the form of assistance the animal has been trained to perform.
- EMS Providers are not responsible for the care of the service animal. If the patients is incapacitated and cannot personally care for the service animal a decision can be made whether or not to transport the animal with the patient.
- According to legislation in Illinois, any "EMR, EMT, EMT-I, A-EMT, or Paramedic may transport a police/arson dog injured in the line of duty to a veterinary clinic or similar facility if there are no persons requiring medical attention or transport at that time."
- Should a service animal be transported by ambulance insure proper cleaning and decontamination of unit per Body Substance Isolation SMO.

Key Considerations: Indication for spinal restriction includes any patient that experiences a mechanism of injury that creates the potential for spinal injury. Consider the patients' mental status and neuro assessment (LOC, pupils, and ability to move and feel extremities.

PROCEDURE:

Selective Spinal Restriction

A. If any of the following is present or a spine injury is suspected then perform spinal restriction:
   - Any focal deficits noted in the neuro exam.
   - Patient age 65 or greater or less than 5 with a mechanism of injury.
   - Alteration in mental status.
   - Evidence of intoxication:
     - Evidence of intoxication may include: GCS less than 15, slurred speech, dilated pupils, flushed skin, unsteady gate, irregular behavior or presence of paraphernalia.
   - Inability of patient to communicate.
   - Distraction injury: any painful injury that may distract the patient from the pain of a spinal injury:
     - Examples of distracting injuries: long bone fractures, rib fractures, pelvic fractures, abdominal pain, large contusion, avulsion to the face or scalp, partial thickness burns greater than 10% TBSA or full thickness burns or any significantly painful injury.
   - Tenderness, swelling or deformity noted when the spine is palpated.
   - Pain to Range of Motion (ROM):
     - ROM should not be assessed if any one of the above is present.
     - To assess ROM have patient touch chin to chest, look up, and turn head from side to side. If any pain is noted stop this assessment.

B. If none of the above is present, spinal restriction is not required.

Spinal Restriction Techniques

A. Assessment
   - Assess motor and sensory function before and after spinal restriction and regularly during transport.
   - Consider the use of S_PO_2 to monitor respiratory function.

B. Ambulatory patients
   - Alert cooperative patients may be allowed to self-limit movement but a cervical collar is and should be recommended.
   - Apply appropriate sized cervical collar. If the cervical collar does not fit then, use alternate mode of stabilization.
   - Instruct patient to sit on the cot. Secure the patient in position of comfort. Limit the movement of the neck during this process.

C. Non- ambulatory patients
   - Extricate patient as needed by the safest method available while limiting flexion, extension, rotation and distraction of the spine.
   - Tools such as pull sheets, scoop stretchers, KED, vacuum splints and backboards may be used.
   - Place the patient in the best position suited to protect the airway while applying appropriate spinal restriction.
   - If patient is transported on a hard device apply adequate padding.

D. Penetration trauma
   - Patients without spinal pain or neuro deficits do not need spinal restriction.

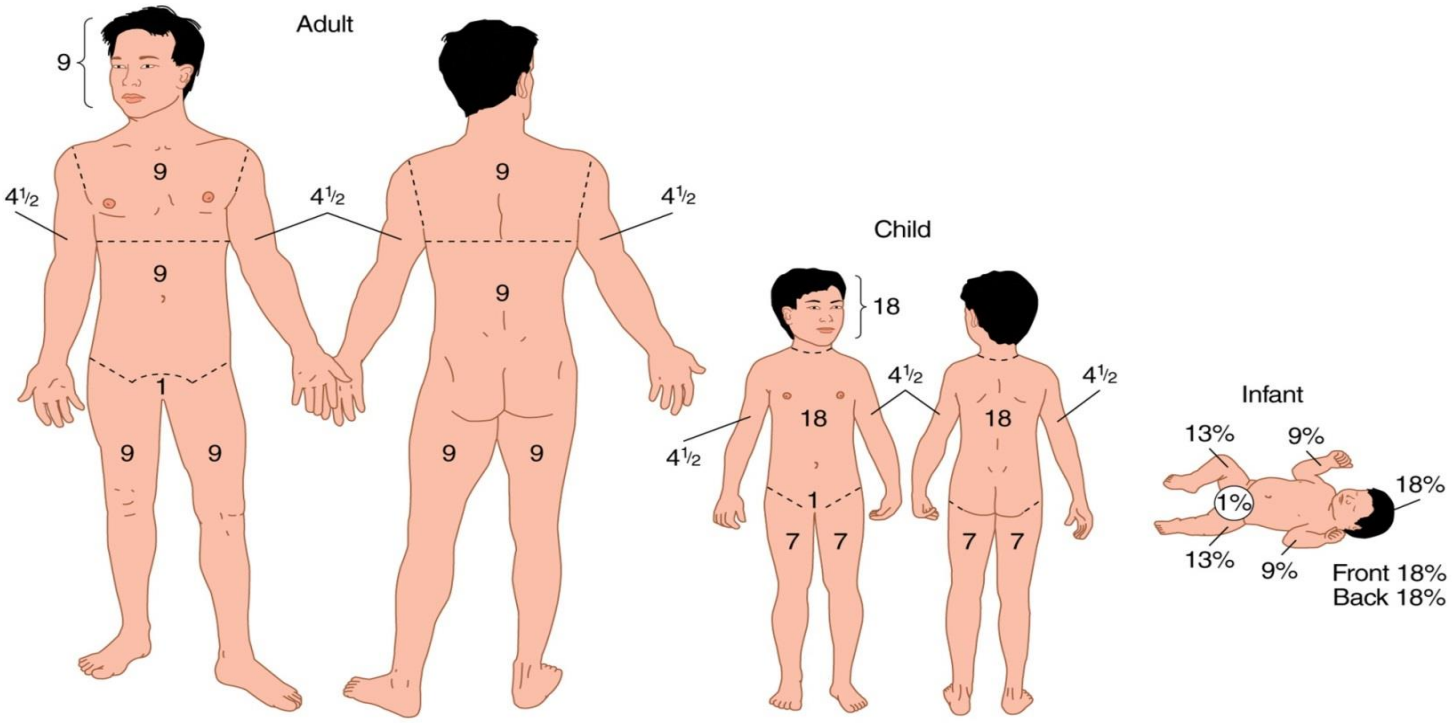
Pediatric Patients

- Routine Pediatric Care.
- Pediatric patients may not understand why they are being separated from their parent / guardian and are being placed in spinal restriction. Fighting with the pediatric patient may cause more harm to their spine. Consider leaving the child in their uncompromised car seat with added padding. If parent / guardian are available include them in the child's care. This may alleviate the need to force the patient into spinal restriction.
- If child has been removed from the vehicle / car seat consider the use of pediatric restriction devices (or adult restriction with additional padding). If this causes increased agitation, movement and potential harm to the child consider placing the child in a car seat and pad to restrict movement.
- During transport every effort should be made to safely restrain the pediatric patient.

Acceptable methods / tools to achieve spinal restriction. This list is arranged from the least invasive to the most invasive:

1. Fowler's, semi-fowlers or supine positioning on cot with correctly sized cervical collar.
2. Supine position with vacuum splint from head to toe.
3. For pediatric patients, uncompromised child car seat with appropriate padding.
4. Supine position on scoop stretcher, secured with straps and appropriate padding including head blocks.
5. KED (vest type extrication device).
6. Supine position on long backboard, secured with straps and appropriate padding including head blocks.

RULE OF NINES:



RULE OF PALMS: To measure the extent of irregular burns, the percentage of burned surface can be estimated by considering the palm of the patient's hand as equal to 1% of the total body surface and then estimating the TBSA burned in reference to the palm.

Return to Table of Contents

Key Considerations: A Primary assessment needs to be completed on all patients to identify and immediately correct any life-threatening problems.

SCENE SIZE-UP/GLOBAL ASSESSMENT

A. Recognize hazards, ensure safety of scene, and secure a safe area for treatment.
B. Apply appropriate universal body/substance isolation precautions.
C. Recognize hazards to patient and protect from further injury.
D. Identify number of patients and resources needed.
E. Call for EMS and /or law enforcement back-up if appropriate.
F. Initiate Incident Command Structure System (ICS), if appropriate.
G. Initiate Triage System, if appropriate.
H. Observe position of patient.
I. Determine mechanism of injury.
J. Plan strategy to protect evidence at potential crime scene.

GENERAL IMPRESSION

A. Check for life-threatening conditions.
B. AVPU (A=alert, V=responds to verbal stimuli, P=responds to painful stimuli, U=unresponsive).
C. Determine chief complaint or mechanism of injury.

AIRWAY (A)

A. Ensure open airway.
B. Protect spine from unnecessary movement in patients at risk for spinal injury.
C. Ensuring airway patency supersedes spinal immobilization.
D. Look and listen for evidence of upper airway problems and potential obstructions:
    - Vomitus
    - Bleeding
    - Loose or missing teeth
    - Dentures
    - Facial trauma
E. Utilize any approved adjuncts as indicated to maintain airway.

BREATHING (B)

A. Look, listen, and feel assessing ventilation and oxygenation.
B. Expose chest and observe chest wall movement, if necessary.
C. Determine approximate rate, depth, and work of breathing.
D. Reassess mental status.
E. Obtain pulse oximetry reading if available.
F. Intervention for inadequate ventilation and/or oxygenation:
    - Pocket mask BVM.
    - Supplementary oxygen.
    - Appropriate airway adjunct (oropharyngeal/ nasal).
    - Advance airway management if indicated after bag-valve- mask ventilation.

CIRCULATION (C)

A. Check for pulse and begin CPR if necessary.
    - Note: defibrillation should not be delayed for CPR; if defibrillator is present and operator is qualified, use it to check patient for a shockable rhythm.
B. Palpate radial pulse if appropriate: absence or presence; quality (strong/weak); rate (slow, normal, or fast); regularity.
C. Control life-threatening hemorrhage with direct pressure.
D. Assess skin for signs of hypoperfusion or hypoxia.
E. Reassess mental status for signs of hypoperfusion.
F. Treat hypoperfusion if appropriate.

LEVEL OF CONSCIOUSNESS & DISABILITIES (D)

A. Determine need for Spinal Restriction.
B. Determine GLASCOW COMA SCALE (GCS) SCORE.

EXPOSE, EXAMINE & EVALUATE (E)

A. In situations with suspected life-threatening trauma mechanism, a rapid head-to-toe assessment should be performed.
B. Expose head, trunk, and extremities.
C. Head to toe for DCAP-BTLS (see Note section of Secondary Assessment SMO).
D. Treat any newly discovered life-threatening wounds as appropriate.
E. Assist patient with medications, if appropriate.

Key Considerations: The secondary assessment is the systematic assessment and complaint focused relevant physical examination of the patient. The secondary assessment may be done concurrently with the patient history and should be performed after:

A. The Primary Assessment and initial treatment and stabilization of life-threatening airway, breathing, and circulation difficulties.
B. Spinal Restriction, as indicated.
C. Routine Trauma Care assessment, as indicated.
D. Investigation of the chief complaint and associate complaints, signs, or symptoms.
E. An initial set of vital signs – pulse, respirations, and blood pressure.
F. Lung sounds.
G. Consider orthostatic vital signs when needed to assess volume status.
H. Pulse oximetry, if indicated.

Begin initial treatment, including oxygen, ventilation, if indicated, hemorrhage control, if needed, and/or basic wound or fracture care.

The above set of assessment/treatments is referred to Routine Medical Care, Routine Pediatric Care, or Routine Trauma Care in the SMOs. This care should be provided to all patients regardless of presenting complaint. The purpose of the focused assessment is to identify problems which, though not immediately life or limb-threatening, could increase patient morbidity and mortality. Exposure of the patient for examination may be reduced or modified as indicated due to environmental factors.

HISTORY

A. Optimally, should be obtained directly from the patient. If language, culture, age-related, disability barriers, or patient condition interferes consult family members, significant others, scene bystanders, or first responders.
B. Check for advance directives, patient alert bracelets, and prescription bottles, as appropriate.
C. Be aware of patients' environment and issues such as domestic violence, child or elder abuse, and/or neglect.
D. Check for patient allergies and medications.
E. Obtain past medical history relevant to patients' chief complaint. Examples are: previous myocardial infarcts, hypertension, diabetes, substance abuse, seizure disorder, and hospital of choice.
F. Have patient prioritize his/her chief complaint if multiple problems are presented.
G. Ascertain recent medical history including hospital admissions, doctor visits, and/or new medications.
H. Question patient about pain – OPQRST – O=onset, P=provoked, Q=quality, R=radiating, S=severity, T=time – plus location and factors that increase or decrease the severity of the pain.
I. Obtain mechanism of injury, if appropriate.

HEAD and FACE

A. Observe and palpate the skull (anterior and posterior) and face for DCAP-BTLS.
B. Check eyes for: equality, responsiveness of pupils, movement and size of pupils, foreign bodies, discoloration, contact lenses, and/or prosthetic eyes.
C. Check nose and ears for foreign bodies, fluid, and/or blood.
D. Recheck mouth for potential airway obstructions (swelling, dentures, bleeding, loose or avulsed teeth, vomitus, malocclusion, absent gag reflex) and odors, alter voice or speech patterns, and evidence of dehydration.

NECK

- Observe and palpate for DCAP-BTLS, jugular vein distention, use of neck muscles for respiration, tracheal tugging, shift or deviation, stoma, and medical information medallions.

CHEST

A. Observe and palpate for DCAP-BTLS, scars, implanted devices (AICD or pacemakers), medication patches, chest wall movement, asymmetry, and accessory muscle use.
B. Have patient take a deep breath, if possible, and observe and palpate for signs of discomfort, asymmetry, and air leak from any wound.

ABDOMEN

A. Observe and palpate for DCAP-BTLS, scars, diaphragmatic breathing, and distention.
B. Palpation should occur in all four quadrants taking special note of tenderness, masses, and rigidity.

PELVIS/GENITO-URINARY

A. Observe and palpate for DCAP-BTLS, asymmetry, sacral edema, and, as indicated, for incontinence, priapism, blood at urinary meatus, or presence of any other abnormalities.
B. Palpate and gently compress lateral pelvic rims and symphysis pubis for tenderness, crepitus, or instability.
C. Palpate for bilateral femoral pulses.

SHOULDERS and UPPER EXTREMITIES

A. Observe and palpate for DCAP-BTLS, asymmetry, skin color, capillary refill, edema, medical information bracelets, and equality of distal pulses.
B. Assess sensory and motor function, as indicated.

LOWER EXTREMITIES

A. Observe and palpate for DCAP-BTLS, asymmetry, skin color, capillary refill, edema, and equality of distal pulses.
B. Assess sensory and motor function, as indicated.

BACK

- Observe and palpate for DCAP-BTLS, asymmetry, and sacral edema.

Resources:

A. Reassess vital signs, particularly in critical or rapidly-changing patients. Changes and trends observed are essential data to be documented and communicated to the receiving facility.
B. DCAP-BTLS is mnemonic for:
Deformity
Contusion/Crepitus
Abrasion
Puncture
Bruising/Bleeding
Tenderness
Laceration
Swelling

REGION I EMERGENCY MEDICAL SERVICES

PREHOSPITAL FORMULARY
For
Emergency Medical Responders

As prepared by:

Kirk Schubert, PharmD, SwedishAmerican Hospital EMS System

Dr. Erin Rigert, EMSMD, OSF Northern Region EMS System
Dr. Greg Conrad, EMSMD, Northwestern Medicine Kishwaukee Hospital EMS System
Dr. Muhammad Shareef, EMSMD, SwedishAmerican Hospital EMS System
Dr. Matt Smetana, EMSMD, Mercyhealth System

James Graham, OSF Northern Region EMS System
Anthony Woodson, Northwestern Medicine Kishwaukee Hospital EMS System
Richard Robinson, SwedishAmerican Hospital EMS System
Don Crawford, Mercyhealth System

IDPH Approval
Date: December 6, 2017
Re-Issued: August, 2018
Annual Review: December, 2019
Reviewed: June, 2020
Reissued: July, 2020
Reviewed: October 2021
Reissued: January 2022

Return to Table of Contents

Pharmacology EMR Only

Adult Patients

GENERIC NAME	INDICATIONS	CONTRAINDICATIONS	Route	Dose
Albuterol Sulfate	Shortness of Breath with bronchoconstriction / wheezing, Allergic Reaction, Hyperkalemia	Caution in tachycardia patients with severe cardiac disease	Nebulizer with 8 lpm O2, inline CPAP	2.5 mg (in 3 ml) may repeat if needed off-line
Aspirin chewable tablets	Chest Pain suggestive of ACS	Recent GI bleed, Allergy, Bleeding Disorders	PO Chewed	324 mg (4 - 81 mg) off-line
Epi Auto-Injector (Adrenalin)	Anaphylaxis / allergic reaction bronchoconstriction / wheezing refractory to neb	Caution in patients with severe cardiac disease	IM	0.3 mg off-line Anaphylaxis on-line allergic reaction
Naloxone (Narcan)	Opioid overdose with respiratory depression	Caution with narcotic-dependent patients who may experience withdrawal syndrome	MAD	2 mg (in 2 ml) MAD is preferred route 1/2 in each nare may repeat X 1 dose off-line
Oral Glucose	Hypoglycemia	Patient who is not able to follow commands	PO	15 grams off-line

Return to Table of Contents

Pharmacology EMR Only

Pediatric Patients

GENERIC NAME	INDICATIONS	CONTRAINDICATIONS	Route	Dose
Albuterol Sulfate	Shortness of Breath with bronchoconstriction / wheezing, Allergic Reaction, Hyperkalemia	Caution in tachycardia patients with severe cardiac disease	Nebulizer with 8 lpm O_2	2.5 mg (in 3 ml) may repeat if needed off-line Full dose make not be appropriate / needed in smaller patients, monitor patient and discontinue if extreme tachycardia or patient improved and additional medication not required
Aspirin chewable tablets	NA not used in pediatric patients			NA not used in pediatric patients
Epi Auto-Injector (Adrenalin)	Anaphylaxis / allergic reaction bronchoconstriction / wheezing refractory to neb	Caution in patients with severe cardiac disease	IM	Epi Jr. 0.15 for patient 15 to 30 Kg (33-66 pounds) Epi 0.3 for patient greater than 30 kg (66 pounds) under 15 kg (33 pounds) call Medical Control off-line Anaphylaxis on-line allergic reaction
Naloxone (Narcan)	Opioid overdose with respiratory depression	Caution with narcotic-dependent patients who may experience withdrawal syndrome	MAD	1 mg for patients 10-20 kg (22-44 pounds)2 mg for patients over 20 kg (44 pounds) 1/2 in each nareMay repeat X 1 doseoff-line
Oral Glucose	Hypoglycemia	Patient who is not able to follow commands	PO	15 grams off-line

Return to Table of Contents

Albuterol Sulfate	(Proventil, Ventolin)
Classification:	Bronchodilator
Actions:	Relaxes bronchial smooth muscle by stimulating beta$_2$ receptors resulting in bronchodilation.
Indications:	• Acute asthma/emphysema • Allergic reactions • COPD/bronchitis • Bronchospasm • Known or suspected patients with hyperkalemia
Contraindications include but not limited to:	○ Symptomatic tachycardia (>150 BPM) ○ Chest pressure ○ Prior hypersensitivity reaction to Albuterol
Adverse effects include but not limited to :	➢ Tachycardia ➢ Hypertension ➢ Palpitations ➢ Dizziness ➢ Dysrhythmias ➢ Restlessness ➢ Nausea
Adult Administration: **Packaging Information:** (2.5 mg/3 ml) Ampule/Nebulizer	Via nebulizer – 2.5 mg - repeat PRN until relief of symptoms
Pediatric Administration:	Via nebulizer – up to 2.5 mg Call Medical Control for repeat dosing
Onset:	Within 5 minutes
Duration:	3-4 hours
Pregnancy Safety:	Category C
Precautions and Comments: Pharmacology Chart **Used in SMO:**	Monitor blood pressure and heart rate closely. Use with caution in patients with: • Heart disease • Hypertension • Tachy-dysrhythmias • Patients being treated with MAO inhibitors and tricyclics may experience tachycardia and hypertension • Patients who are hypersensitive to sympathomimetics

Return to Table of Contents

Aspirin	(ASA)
Classification:	Antiplatelet, Analgesic, Antipyretic, Anti-inflammatory
Actions:	Inhibition of platelet aggregation and platelet synthesis. Reduction of risk of death in patients with a history of myocardial infarction or unstable angina.
Indications:	Chest pain with suspected myocardial ischemia
Contraindications include but not limited to:	○ Allergy to ASA/NSAID ○ Peptic ulcer disease ○ Hypersensitivity to salicylates
Adverse effects include but not limited to:	➢ Nausea, GI upset ➢ Hepatotoxicity ➢ Occult blood loss ➢ Anaphylaxis
Adult Administration: **Packaging Information:** (81 mg) Chewable Tablet	324 mg / 4 tablets
Pediatric Administration:	Not recommended
Onset:	30-60 minutes
Duration:	4-6 hours
Pregnancy Safety:	Category D in the third trimester: use ONLY if benefit to mother justifies the risk to the fetus.
Precautions and Comments: Pharmacology Chart **Used in SMO:** Chest Pain of Suspected Cardiac Origin	Patients who have already taken Aspirin today (such as 81 mg daily dose) can still be administered Aspirin. Consider Aspirin early in the appropriate intervention as it has been shown to improve mortality.

Return to Table of Contents

Epinephrine Injector	Adrenalin, Epinephrine Hydrochloride
Classification:	Sympathomimetic agent (Catecholamine)
Actions:	Acts directly on Alpha and Beta receptors of the SNS. Beta effect is more profound than Alpha effects. Effects include: • Increased heart rate (chronotropy) • Increased cardiac contractile force (inotropy) • Increased electrical activity within myocardium (dromotropy) • Increased systemic vascular resistance • Increased blood pressure • Increased bronchial smooth muscle dilation
Indications:	• Allergic Reaction o Shortness of breath (wheezing, hoarseness, other abnormal breath sounds) o Itching/hives that are severe and rapidly progressing o Oral swelling/laryngospasm/difficulty swallowing o Hypotension/unresponsiveness o Patients with an exposure to known allergen with progressively worsening symptoms (i.e., hives) • Severe Asthma
Contraindications:	o None when indicated
Adverse effects include but not limited to:	➢ Hypertension-tachycardia ➢ Tremor, weakness ➢ Pallor, sweating, nausea, vomiting ➢ Nervousness, anxiety ➢ Increases myocardial oxygen demand and potentially increases myocardial ischemia
Adult Administration: **Packaging Information:** Epinephrine (0.3 mg/0.3 ml) Epinephrine (0.15 mg/0.3 ml)	Patients over 30 kg (66 pounds): Epinephrine (Adult dose) 0.3 mg (0.3 mL, 1:1 ml) IM – lateral high thigh is preferred. May repeat in 10 minutes if patient condition warrants.
Pediatric Administration:	Patient 15-30 kg (33-66 pounds): Epinephrine (Pediatric dose) 0.15 mg (0.3 mL, 1:2 ml) – lateral high thigh is preferred. May repeat in 10 minutes if patient condition warrants.
Onset:	5-10 minutes
Duration:	20 minutes
Pregnancy Safety:	Category C
Precautions and Comments: Pharmacology Chart **Used in SMO:** Anaphylaxis and Allergic Reaction	Use with caution in elderly or pregnant patients, but don't withhold if patient has serious signs or symptoms (i.e., airway compromise, severe SOB, profound hypotension)

Return to Table of Contents

Naloxone Hydrochloride	Narcan
Classification:	Opioid antagonist
Actions:	Reverses the effects of narcotics by competing for opiate receptor sites in the central nervous system.
Indications:	• Narcotic agonist - Morphine - Heroin - Hydromorphone - Methadone - Meperidine - Paregoric - Fentanyl - Oxycodone - Codeine • Narcotic agonist/antagonist - Butrophanol - Pentazocine - Nalbuphine • Decreased level of consciousness • Coma of unknown origin
Contraindications include but not limited to:	○ Use caution with narcotic-dependent patients who may experience withdrawal syndrome ○ Avoid use in meperidine-induced seizures
Adverse effects include but not limited to:	➢ Hypertension ➢ Tremors ➢ Nausea/vomiting ➢ Dysrhythmias ➢ Diaphoresis ➢ Withdrawal (opiates) ➢ Flash pulmonary edema
Adult Administration:	See Pharmacology Chart
Pediatric Administration:	See Pharmacology Chart
Onset:	Within 2 minutes
Duration:	20-30 minutes
Pregnancy Safety:	Category B
Precautions and Comments: Pharmacology Chart **Used in SMO:** Altered Mental Status Intranasal Medication/MAD Device Toxic Exposure (formerly Poisoning and Overdose)	Check and remove any transdermal systemic opioid patch. The goal of Naloxone administration is to improve respiratory drive, not to return the patient to their full mental capacity. High dose/rapid reversal of narcotic effects may lead to combative behavior, possible severe withdrawal, and other adverse drug reactions. Consider other causes/ potency of opiate agonist when evaluating need for repeat dosing. Observe for: seizures, hypertension, chest pain, and/or severe headache.

Return to Table of Contents

Oral Glucose	
Classification:	Monosaccharide carbohydrate
Actions:	After absorption from GI tract, glucose is distributed in the tissues and provides a rapid increase in circulating blood sugar.
Indications:	Suspected or known hypoglycemia
Contraindications:	Patient who is not able to follow commands
Adverse effects include but not limited to:	• Nausea/vomiting • Aspiration • Hyperglycemia
Adult Administration:	15 GM/37.5 GM tube Alternative: Glucose tablets – 15-20 GM PO. Recheck blood sugar in 15 minutes. If BS still below 80 mg/dL and/or exhibiting signs/symptoms of hypoglycemia another 15-20 GM may be administered.
Pediatric Administration:	Up to 15 GM as tolerated
Onset:	5-10 minutes
Duration:	Variable
Pregnancy Safety:	Category A
Precautions and Comments: Pharmacology Chart **Used in SMO:** Altered Mental Status Stroke	Not a substitute for IV dextrose in extreme cases of hypoglycemia (blood sugar <40) unless IV access is unobtainable. Alternative: Glucose tablets – tablets are not recommended for patients who cannot protect their airway or of an appropriate age to swallow a tablet.

Return to Table of Contents

Review of Standing Medical Orders

Ongoing review of Region I EMS Standing Medical Orders is required to remain current with interventions known to be effective in prehospital care and should be the responsibility of each provider in Region I. It is expected that each provider maintain a functional knowledge of the Standing Medical Orders and apply them appropriately during all patient interactions.

Updates and new Standing Medical Orders are noted with either the "Original SMO Date" or "Last Revision" within each SMO. The most current version and implementation date of the entire document is noted in the footer on each page. Distribution and education regarding any updates remains the purview of each Region I EMS Resource Hospital.

The Standing Medical Orders have been developed and approved through a collaborative process involving the Medical Directors listed below:

_____

Greg Conrad, MD, EMSMD
Northwestern Medicine Kishwaukee Hospital EMS System
1 Kish Hospital Drive, DeKalb, IL

_____

Erin Rigert, DO, EMSMD
OSF Northern Region EMS System
5666 East State Street, Rockford, IL

_____

Muhammad Shareef, MD, EMSMD
UW Health EMS
SwedishAmerican Hospital EMS System
1401 East State Street, Rockford, IL

_____

Matt Smetana, DO, EMSMD
Mercyhealth Prehospital and Emergency Services Center
2400 North Rockton Avenue, Rockford, IL

Return to Table of Contents