Suffolk County EMS System

Basic and Advanced Life Support Policy Manual

Steven Bellone
Suffolk County Executive

Gregson H. Pigott, MD, MPH
Commissioner, Department of Health Services

Paul Marra, EMT-P
Chief, EMS Operations

William M. Masterton, NREMT-P
Chief, Education and Training

Jason Winslow, MD, MPH, FACEP
EMS System Medical Director and
Director of Suffolk County EMS Division and
Public Health Emergency Preparedness

2022

SUFFOLK COUNTY BLS AND ALS POLICY MANUAL 2022 EDITION

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INTRODUCTION

The Suffolk County Emergency Medical Services (EMS) System is an organized and integrated system consisting of ambulance services, first responder services, emergency physicians, specialty physicians, hospitals, other support services and personnel providing patient care through approved patient care protocols under the supervision of the designated EMS System Medical Director (Medical Director) and the Suffolk County Department of Health Services, EMS Division, as the designated Regional EMS Program Agency.

Although in this home-rule New York (NY) State and in recognition of the duties and powers of other municipalities that operate or contract for ambulance services, we work together in the unified Suffolk County EMS System. Within the EMS System, out-of-hospital emergency medical care is the delegated practice of medicine, whereby non-physicians, with the appropriate certifications, credentialing, and authorizations, are empowered by the Medical Director to provide patient care under the direction and control of a licensed physician. Direction may be provided "on-line" (direct, radio or telephone contact) with a supervising physician, or "off-line" pursuant to standing orders and protocols. This care may be provided at the scene of a medical emergency and/or during transportation of the ill or injured to a hospital.

The Suffolk County EMS System's **Basic Life Support (BLS) and Advanced Life Support (ALS) Policies Manual (the "Manual")** serves as the reference for patient care within the Regional EMS System. It is intended to:

- Define the standard of care and establish quality assurance and quality improvement procedures for the System;
- Guide personnel in delivering the highest standard of emergency medical care in a safe environment; and
- Encourage the interdisciplinary approach to emergency medical care.

The **Manual** is divided into the three (3) sections identified below:

A. GENERAL ADMINISTRATIVE POLICIES:

This Section contains the administrative and operating policies and procedures for the Suffolk County EMS System.

B. MEDICAL PROTOCOLS:

This section contains the clinical medical treatment protocols that govern advanced level prehospital emergency medical care in our EMS System. There is a single set of BLS and ALS protocols used by Certified First Responders (CFRs), Emergency Medical Technician-Basics (EMT-Bs), Emergency Medical Technician-Critical Cares (EMT-CCs) and Emergency Medical Technician-Paramedics (EMT-Ps), with treatment options per certification level, followed by Medical Control options, clearly delineated. The medical protocols contained in this **Manual** are *intended for the emergency prehospital care environment and are not to be used on inter-facility transports.*

The **Manual** has been updated with broad-based, interdisciplinary input, and represents a regional consensus of opinion on the application of emergency medical care, and meets the standard of care defined by the New York State Emergency Medical Advisory Committee (SEMAC). The ALS protocols contained in the **Manual** are predicated on the presence of a single ALS Provider. In cases where multiple ALS Providers are present, concurrent application of procedures is encouraged, concurrent with Medical Control contact, when indicated. Guidelines for pediatric patients are more fully described in Section B, II, and in the appendices section of the manual.

C. APPENDICES:

It is important to note that while limited protection from liability is afforded by Article 30 of the New York State Public Health Law (PHL), and financial protection is provided by various forms of insurance written for participants in the EMS System, such protection is not intended to extend to an individual who, or agency which, fails to adhere to the standard of care specified in this **Manual**.

While an attempt has been made to provide policies, protocols and "how-to" appendices for most eventualities, situations may arise which have not been addressed in this **Manual**. In such cases, field personnel and Medical Control Physicians must use their training and good judgment to provide interventions which meet the accepted standard of care and which is within the scope of their certification or licensure.

This **Manual** has been reviewed and approved for use in the Suffolk County Emergency Medical Services System.

Developed: December, 2021
Revised: September 2022

Jason A. Winslow, MD, MPH
EMS Medical Director
Director, Suffolk County EMS Division &
Public Health Emergency Preparedness

Gregson H. Pigott, MD, MPH
Commissioner of Health
Suffolk County Department of Health Services

Brian Blaustein, MD
Chairman
Suffolk Regional Emergency
Medical Advisory Committee

William Michael Masterton, NREMT-P
Chief, Education & Training &
Course Sponsor Administrator

Trevor Marshall, MD
Chairman, Regional Emergency
Medical Advisory Protocol Sub-Committee

SECTION A

GENERAL ADMINISTRATIVE POLICIES

1. MEDICAL CONTROL:

A) DEFINITION:

Responsibility for all aspects of out-of hospital patient care provided within the Suffolk County EMS System rests with the EMS System Medical Director. All such patient care is provided as an extension of the Medical Director's license to practice medicine. Ambulance Service-level Medical Directors are responsible for quality improvement and educational initiatives on a local level with each of his/her respective ambulance services.

Basic Life Support (BLS) and Advanced Life Support (ALS) providers certified at EMT-Basic, EMT-Critical Care (EMT-CC) or EMT-Paramedic (EMT-P) level, provide Basic Life Support (BLS) and Advanced Life Support (ALS) under the standing orders defined in the **Manual** or under the direction of an **On-Line Medical Control Physician** or a **Designated EMS Field Physician.** The Medical Control Physician or Designated EMS Field Physician is responsible for the care of a patient entered into the BLS and ALS System. The physician's obligation is to apply the standard of care presented in the **Manual** to the individual patient care situation. An **On-Line Medical Control Physician** is a physician authorized by the Medical Director to provide advice and direction to BLS and ALS Providers providing out-of-hospital medical care. A **Designated EMS Field Physician** is a physician authorized by the EMS System Medical Director and the Regional Emergency Medical Advisory Committee (REMAC) to provide advice and direction when such physician is present at the scene of an out-of-hospital medical emergency. A **Disaster Medical Response Team (DMRT) Physician** is a physician receiving additional authority as a Deputy Fire Coordinator-Medical (DFC-Medical) to operate as an agent of the county, when specifically called upon.

B) CONTACT WITH MEDICAL CONTROL:

Contact with Medical Control is required in specific circumstances, and based on the level of certification of the provider(s) treating the patient, whenever an advanced, diagnostic, or therapeutic procedure is performed. In **all** cases where BLS medications have been administered or ALS is performed, a post-call telephone call (Signal 34) to Medical Control to register the call with the system is required, as soon as feasible after the call. Failure to contact Medical Control when required to do so by protocol increases liability and risk for the BLS and ALS Provider and the ambulance service. **Once an IV is attempted, the cardiac monitor is applied, prehospital medications are administered, or patients are assisted with their own prescribed medications, as specified by protocol, the ALS Provider continue care of the patient until arrival at the hospital. Notable exception is for patients who have received prehospital Narcan if certain conditions have been met as are outlined in Part 16 section D of this manual.**

When required by protocol, voice contact with Medical Control should be established as promptly as possible, **but not more than 20 minutes**, after technician-patient contact is established. Communication with Medical Control should not delay the initiation of appropriate care authorized under Standing Orders.

Following 12 lead acquisition by an EMT-B or EMT-CC, the provider **must transmit and contact** Medical Control at once. EMT-Ps **must transmit and contact Medical Control** at once if 12 lead shows STEMI. Providers of all levels should make the pre-arrival notification to the receiving hospital as soon as feasible, and before they begin transport, to pass along information regarding a positive STEMI.
Medical Control may be reached by cellular or landline telephone at 631-689-1430, or by using the 800 MHz radio system by "hailing" Medical Control on the talk group identified as "ALS CALL." Medical Control will direct the caller to the available talk group, MEDCONTROL 1 or MEDCONTROL 2, where technician-to-physician conversation can take place. (MEDCONTROL 3 and 4 are reserved for future use, or for use as directed by a representative of the Suffolk County EMS Division, or Suffolk County FRES.).

In the event that contact cannot be made by cellular telephone **OR** 800 MHz radio, prehospital personnel may contact Medical Control via VHF channel 4 (155.175MHz) on the Medcom radio. **NOTE:** Refusal of Medical Assistance (RMA) consults, as more fully described in Section 5 below, must take place on the telephone.

If a system-wide communications system failure occurs, the EMS Division may institute the Catastrophic Communications Failure Policy. If activated, and an ALS Provider is unable to establish contact with Medical Control, the ALS Provider may only perform those procedures authorized as S**tanding Orders** in the applicable protocol. In these cases, EMT-Paramedics may repeat their standing orders, based on patient needs while enroute to the hospital. EMT-Critical Cares may only follow their own standing orders while enroute to the hospital.

A BLS/ALS Provider has the right to question an order that is believed to be contraindicated or for which the BLS/ALS Provider is not certified. The BLS/ALS Provider should clarify the order and restate the patient's condition. If the order is not altered or retracted, the BLS/ALS Provider must carry out the order unless he/she is not credentialed or trained in that intervention, or if that intervention is not listed in the formulary of authorized procedures. Any such action should be referred to the EMS System Medical Director as soon as possible for review.

C) CELLULAR TELEPHONE ACCESS TO ON-LINE MEDICAL CONTROL:

Article 30 of the NYS Public Health Law and Part 800 of the NYS EMS Code require that voice communications **and** bio-telemetry capability be available as part of any ALS System for technician-to-physician communication, including transmission of dynamic real-time three (3) lead rhythm strips and twelve (12) lead data-stored electrocardiograms. The use of cellular telephones or other devices with telemetry capability are considered acceptable for contact with Medical Control and ALS services are required to maintain telemetry-transmitting capabilities. It is each agency's responsibility to ensure that they have the necessary peripheral equipment needed for the specific cardiac/monitor in use.

D) MEDICAL CONTROL AS A RESOURCE:

Medical Control may be accessed by any prehospital provider while on duty status with an authorized agency on an emergency medical alarm **at any time** for consultation and advice regarding patient care including, but not limited to, questions about triage, questions regarding diversion requests, treatment, selection of destination hospital, appropriateness of medevac utilization, and refusal of medical assistance. Contact with Medical Control **is required** in specific protocols, based on the level of certification of the provider(s) taking care of the patient.

E) STANDING ORDERS:

Standing Orders identify actions that may be taken by field personnel under specific medical protocols, based on level of certification of the provider(s) treating the patient, prior to contact with Medical Control. Procedure attempts are limited to **TWO (2)** attempts per patient without contacting Medical Control.

In cases where there are BLS Providers trained in acquiring and transmitting 12-lead EKG, the use of a BLS provider to perform this skill, when working with an ALS provider performing advanced assessment or therapies, is encouraged. This facilitates good patient care by allowing concurrent activity, thereby reducing time.

With the exception of patients in extremis*, once contact with Medical Control has been established, Standing Orders are no longer authorized without approval of Medical Control. For Paramedics, STEMI notification to Medical Control is not considered Medical Control contact.

The use of IO insertion as a procedure for infusing fluids and administering medications is applicable to ADULT and PEDIATRIC PATIENTS. ALS Providers primary insertion site is the upper extremity at the humeral head. If unable to access the upper extremities, the secondary insertion site is the lower extremity at the proximal tibia.

*EXTREMIS includes, but is not limited to: Cardiac Arrest; Respiratory Arrest, Status Epilepticus; Decompensated Shock; and life threatening Arrhythmias

F) REGIONAL TREATMENTS

The following list applies to treatments noted as "if trained and equipped" or "if regionally approved" in the Protocol Manual.

Authorized for use in the Suffolk County 911 System:

- Finger Stick Blood Sugar at the CFR and EMT Level
- Epinephrine IM at the EMT Level
- Non-Invasive Positive Pressure Ventilation (ex. CPAP) at the EMT Level
- 12 Lead EEKG Acquisition and Treatment at the EMT Level
- Measurement of Temperature
- Administration of Acetaminophen and Ibuprofen at the CC and Paramedic Level
- Hemostatic Dressings and Junctional Tourniquet
- Etomidate for Procedural Sedation at the Paramedic Level
- Rapid Sequence Intubation for REMAC approved Paramedics working at REMAC authorized agencies
- OG Tube placement if authorized by the agency with REMAC approval

NOT authorized for use in the Suffolk County 911 System:

- Nitrous Oxide
- Blood Administration
- Oxymetazoline
- Surgical Cricothyroidotomy
- Tranxexamic Acid

G) ROLE OF ON-SCENE PHYSICIANS:

1) **Designated EMS Physicians:** Emergency Medical Services (EMS) Agencies may sponsor a physician to serve as a Field Physician for their EMS agency. These physicians must have a current unrestricted New York State (NYS) Medical License to practice medicine and also be a sponsored member of an EMS agency in Suffolk County. To be authorized to serve as a Field Physician, the physician needs to demonstrate competency in the ALS protocols at the highest level in the Suffolk County 911 EMS System with passage of a proctored examination at the Suffolk County EMS Division (this will be waived if the physician also carries current NYS Emergency Medical Technician-Paramedic credentialing) and be authorized to Field Physician status by Suffolk REMAC. All Field Physicians will practice Advanced Life Support (ALS) for their EMS Agency at the highest level in the System and provide field medical care under the direction of their sponsored EMS agency. Field Physicians may serve as on-scene Medical Control and do not have to establish contact with Suffolk County Medial Control where indicated in the ALS Protocol Manual. Field Physicians may also execute Refusal of Medical Assistance (RMA) on their own. These physicians may serve as a field physician in any area of Suffolk County as a member of their EMS agency when responding to a mutual aid request. All field medical care, procedures and RMA's must be documented on a Pre-hospital Care Report (PCR). Field Physicians are subject to the same policies and quality improvement processes as any other EMS provider in the System. Field Physicians may request to be Rapid Sequence Intubation (RSI) credentialed by the REMAC RSI Sub-Committee.

2) **Disaster Medical Response Team (DMRT):** Physicians may request to have the additional credentialing as DMRT members. This requires a credentialing process and indemnification from the Suffolk County Department of Health Services. This is a joint approval by the Department of Health Services, the Suffolk County EMS Division, and the Department of Fire Rescue and Emergency Services (FRES). This is a Suffolk County credentialing that authorizes the DMRT physician to perform EMS duties as a Physician in the field when called upon to service by FRES. DMRT physicians will serve as Deputy Fire Coordinators and may be dispatched by FRES for the purposes of major disasters and long scene-time operations, MCI events, HazMat events and USAR deployment, transportation incidents such as plane and train crashes or bus accidents. As DMRT physicians, these physicians may provide for field medical care as a physician commensurate with their education and training, provide for field medical oversight as a Deputy Fire Coordinator, and function as Medical Control. DMRT members are sponsored by FRES and have the same protections and indemnification as any other Deputy Fire Coordinator. DMRT members may not self-deploy to any scene unless requested and authorized by FRES. As an agent of Suffolk County, all field medical care must be documented on a PCR and submitted to FRES and to the Suffolk County EMS Division. DMRT physicians are subject to the same quality improvement processes as any other EMS provider in the System. The lead DMRT physician in Suffolk County will be the Regional EMS System Medical Director who will be in charge of all administration and quality improvement of the DMRT.

3) **Other Physicians:** In the event that a non-designated physician is at the scene and wishes to assume responsibility for the care of his/her patient in his/her office, or as a passer-by at the scene of a call, the physician must be properly identified. Acceptable forms of identification include, but are not limited to, a medical society card, professional organization membership card, or hospital identification card. Until proper identification has been established, the ALS Provider shall render care to the patient in the usual manner.

To assume responsibility for the care of a patient, an on-scene physician must agree to assume all responsibility for the patient, document the assumption of responsibility on the Prehospital Care Report (PCR), and agree to accompany the patient to the hospital **in the ambulance.**
If the on-scene physician agrees to these terms, the physician's orders may be carried out. However, such orders must conform to the level of training of the field personnel and to the protocols established in the **Manual**.

Orders that are not within established Suffolk County EMS System policy or protocol, or those that are out of the scope of practice of an CFR, EMT-B, EMT-CC or EMT-P require that the physician perform the task, use his/her own equipment, and accompany the patient to the hospital in the ambulance. Any out-of-protocol procedures initiated by a non-designated physician remain the responsibility of that physician at the scene and during transport. Medical Control need not be contacted until the post-event telephone report if the above conditions are met, unless the BLS/ALS Provider is uncomfortable with the non-designated physician's actions. EMS Providers should always maintain a professional approach to other health care professionals during the transition of care phase of the alarm. All procedures and medications performed or administered by the physician must be clearly documented on the PCR or electronic equivalent.

If the on-scene physician is reluctant to agree to these terms, or is unwilling or unable to perform the task and orders an out-of-protocol procedure, the BLS/ALS Provider must contact Medical Control. The Medical Control Physician will make a judgment concerning the on-scene physician's participation and responsibility. Communication between the Medical Control Physician and on-scene physician is encouraged. If the on-scene physician refuses to communicate with the Medical Control Physician, the BLS/ALS Provider must inform the on-scene physician that the BLS/ALS Provider may only accept the orders of the Medical Control Physician.

H) ROLE OF PHYSICIAN-EXTENDERS AT THE SCENE:

If a "Physician Extender" **(Physician Assistant or Nurse Practitioner),** is present at an emergency **in their usual employment setting,** and requests to assume responsibility for the care of the **patient, under the license of their absentee supervising physician,** the "physician extender" may do so, provided that the individual has been properly identified. Acceptable forms of identification include, but are not limited to, a state registration certificate, professional medical society card or hospital identification card. Until proper identification has been established, the BLS/ALS Provider shall render care to the patient in the usual manner. The "physician extender" must abide by the terms and conditions defined for "other physicians" (see Section F-3 above).

A physician extender outside the normal setting of his/her usual place of employment may not provide on-scene medical direction and EMS providers may only take medical direction from a physician, as described above.

I) OTHER HEALTH CARE PROFESSIONALS AT THE SCENE:

In any event where a health care professional other than a physician or physician extender, as specified above, is at the scene, the BLS/ALS Provider is to maintain responsibility for patient care.

2. EMS PROVIDERS:

The Suffolk County EMS System recognizes two (2) levels of care:

A) Basic Life Support: BLS is provided by those certified by New York State as Certified First Responders (CFR) or Emergency Medical Technician – Basics (EMT-B) and render care in accordance with the NY State BLS Protocols. Suffolk County does not recognize the AEMT level of certification.

B) Advanced Life Support: ALS is provided by those certified by New York State as Emergency Medical Technician – Critical Care (EMT-CC) or Emergency Medical Technician – Paramedic (EMT-P) and render care in accordance with the NY State BLS Protocols AND with the policies and protocols set forth in the **Manual**.

In order to perform at the BLS/ALS Level, ALS providers must complete the REMAC-approved credentialing and authorization process and receive clearance by the EMS System Medical Director before they are allowed to function in the System. The BLS/ALS provider must be a member, employee or authorized representative of an agency that has a BLS/ALS agreement with the Suffolk County Department of Health Services, and may only operate in the System when acting as a member of such agency or when specifically requested to assist another agency that has a BLS/ALS agreement with the Suffolk County Department of Health Services. A BLS/ALS Provider who is no longer a member of an authorized BLS/ALS agency **MAY NOT** continue to function as a BLS/ALS Provider in the System. In order to maintain operating privileges, a BLS/ALS Provider must complete all EMS System/REMAC-authorized protocol or policy updates. BLS/ALS Providers are responsible to provide proper documentation to the EMS Division upon successful completion of original and refresher training. The credentialing and authorization process is fully described in the appendices section of the manual.

C) The ALS Approach: Once the cardiac monitor is applied, IV access is attempted, blood glucose* determination has been made, prehospital medications are administered**, or patients are assisted with their own pre-prescribed medications, the ALS Provider continue care of the patient until arrival at the hospital. ALS Providers are expected to function at the ALS level and provide care consistent with their training and expertise, and give the patient access to the highest of care available.

*** In cases where a blood glucose determination is the only procedure that has been performed and the blood glucose level is greater than (>) 60 mg/dl and less than (<) 400 mg/dl AND the patient does not have an altered level of consciousness/altered mental status, patient care may be transferred from an ALS provider to a BLS provider for transport to the hospital**

**** With the exception of administration of IN Naloxone as indicated in Part 16 section D of this manual, PATIENT TRANSFER PROTOCOL.**

3. SELECTION OF DESTINATION HOSPITAL:

NY State DOH policy for ambulance transport requires that patients be transported to the closest *appropriate* hospital Emergency Department. When a patient's condition requires ADVANCED LEVEL CARE OR INTERVENTIONS, OR IS CONSIDERED TO BE LIFE THREATENING, the ambulance service is obligated to transport the patient to the **nearest appropriate hospital Emergency Department, unless directed to another facility by state or regional protocols, or by a Medical Control Physician or Designated EMS Field Physician.**

- Appropriateness is defined as the hospital most appropriate by NY State DOH designation (i.e.: Trauma Center, Pediatric Trauma Center, Stroke Center, Burn Center, PCI-Capable Center) where an admitting physician has privileges into a recognized specialty care area (i.e.: pediatrics), or in cases where there are no specific services at a particular hospital (i.e.: OB/GYN and Labor & Delivery).
- Please reference the Suffolk County Receiving Hospital Designation List in Appendix 17.
- Psychiatric Emergencies should be transported to the closest emergency department for medical evaluation and clearance for secondary transfer, as indicated by additional diagnostic testing.
- Patients that may require hyperbaric therapy should be transported to the closest emergency department for evaluation and clearance for secondary transfer, as indicated by additional diagnostic testing.
- In certain cases, patients may request transport to the Northport Veterans Affairs Hospital (NVAH). Patients should not be transported to NVAH if applicable Emergency Medical Dispatch Determinant Code indicates and/or the patient presents with sign/symptoms and/or chief complaint indicative of ischemic chest pain/STEMI, CVA/TIA, trauma, burns, and obstetrical/gynecologic emergencies. Similarly, pediatric patients should not be transported to the NVAH. Medical Control (MC) should be used as a resource as some of these cases may lead to delays in definitive care accessed through secondary transfer that may be detrimental and should be avoided.

Patients that are victims of sexual assault should be transported to a hospital that maintains a Sexual Assault Nurse Examiner (SANE) Program, unless the assault is compounded by an unstable illness or injury.

SANE Centers are maintained at Good Samaritan Hospital Medical Center, Peconic Bay Medical Center, and Stony Brook University Hospital.

In many instances the patient's illness or injury is not immediately life threatening. In such situations, the following factors should be considered when selecting the destination hospital, provided that the drive time to the alternative receiving hospital does not exceed more than twenty (>20) minutes additional time than it would have taken to get to the original facility, per NY State BLS policy:

- NY State or Regional injury/illness specific protocols;
- The patient's or family's request to be transported to a more distant hospital;
- The hospital affiliation of the patient's private physician;
- Travel time and road conditions; and
- The ambulance agency's internal policy for the selection of a destination.

A decision to transport a patient to a facility other than the nearest hospital implies that a judgment has been made that the risks of prolonged transport are outweighed by the potential benefits to the patient. Medical Control should be contacted for assistance in transport decisions when questions regarding the appropriateness of by-passing a hospital arise.

An ambulance service's duty to act is to the patient in their presence, not the "patient they might get," therefore, agency internal policies should reflect care that is most appropriate and safe for the patient, not convenience of returning back to the district. The duty to act is not terminated until the transfer at the hospital bedside is complete. In the event that EMS providers at any level are unsure as to the appropriate destination hospital, they should contact Medical Control for physician advice.

In general terms, the duty to act begins upon receipt of a call for EMS assistance, and ends upon transfer of care to hospital staff, including verbal bedside summary and transfer of written report.

4. HOSPITAL DIVERSION:

Section 405.19 (e) (4) of the NYS Hospital Code authorizes hospitals to request diversion of ambulances to other facilities when the acceptance of another critical patient might endanger the life of that or another patient. A *request* for **diversion does not require that the ambulance** divert from that facility. *EMS personnel are not obligated to honor such a request if they believe that a critically ill or injured patient's condition warrants transport to the closest hospital.* **However,** EMS providers should consider the negative effects of bringing a patient to an emergency department that has declared that they are over capacity, or don't have enough equipment or space to properly care for additional patients. If it is determined that the patient is stable, the diversion request may be honored. Medical Control may be contacted to assist in the transport decision. Personnel **should fully document** the reason(s) for their decision on the PCR.

Hospital diversion is a dynamic process, and may be the result of general overcrowding during seasonal variances, or the result of the loss of specific diagnostic and/or treatment equipment, or infrastructure. Each hospital's decision to request diversion is made based upon different thresholds, in turn, based on each hospital's specific resources. Hospitals must take aggressive action within the institution to decompress patient load prior to requesting diversion. In cases of general overcrowding, where a particular hospital is overwhelmed with a full census and extenuating circumstances in the emergency department, it may be acceptable to temporarily divert patients to allow the hospital to decompress. However, in cases where hospitals with contiguous catchment areas are requesting diversion, it may not be appropriate to honor such requests.

In cases where a hospital-specific event of magnitude, or a loss of critical infrastructure or diagnostic equipment negatively affects a hospital's ability to receive patients, and the hospital makes an affirmative decision to temporarily place its emergency department out-of service, every effort will be made to effectively communicate information to ambulances and to redirect patients. Personnel **should expect to receive** information via Suffolk County FRES Communications, or appropriate Public Safety Answering Point (PSAP) / Dispatch Center and **should fully document** the reason(s) for their decision on the PCR.

5. REFUSAL OF MEDICAL ASSISTANCE (RMA):

In the event that an ambulance service responds to a reported medical emergency where both the individuals at the scene and EMS personnel believe that no injuries or illnesses exist and that there are no individuals requiring or requesting EMS assistance, a PCR shall be prepared using the following Disposition Codes: 008 [Gone on Arrival (patient removed prior to arrival)] or 008 [Unfounded (false alarm) (no patient found)]. A thorough assessment of the scene is required to rule out mechanism of injury criteria. A physical assessment may also be necessary to make the determination that there are no patients at the scene. Consider the High Risk Criteria identified below before determining that there are no patients at the scene. Refer to the "No Patient Found" policy in the appendices section of the manual for guidance on determining patients from individuals.

If in the judgment of EMS personnel there is a patient at the scene that requires treatment and/or ambulance transport, but who refuses such services, Medical Control must be contacted in an attempt to convince the patient to consent to appropriate care and / or transport.

The Medical Control Physician will assess the patient's capability to refuse treatment, encourage the patient to allow appropriate care as indicated, and offer advice and guidance to EMS personnel. If the Medical Control Physician determines that the patient warrants treatment and/or transport, every effort should be made, using all available resources at the scene, to encourage the patient to consent to treatment and/or transport to the hospital. If all efforts are unsuccessful, the refusal should be thoroughly documented on the PCR, signed by the patient and witnessed, preferably by a family member or a police officer.

Documentation should also include a complete patient assessment, and a statement that the patient has received explanation of the risks associated with refusal of transport, and that there is some level of support in place for them, including an alternative plan. **The use of the Suffolk County RMA Checklist, or an agency-specific checklist approved by Suffolk County EMS, must accompany PCRs or electronic report submissions for all RMA cases,** whether or not Medical Control was contacted. For high risk cases, where contact with Medical Control is required, the RMA Checklist should be completed to the degree possible prior to contacting Medical Control, so that essential information is obtained and can be readily communicated. A sample RMA checklist can be found in the appendices section of the manual.

From time to time, patients may receive treatment and then refuse further treatment or transportation to the hospital. In the event that a patient receives treatment but refuses transportation by ambulance, and the EMS provider agrees that ambulance transportation is not warranted and no high-risk illness or injury exists, Medical Control need not be contacted. The patient's decision to refuse, the risks of refusal, and any recommended follow-up offered to the patient, should be noted on the PCR and the RMA signed by the patient, indicating he/she has refused transportation. If the EMS provider believes that ambulance transport is indicated, or high-risk illness or injury exists, Medical Control must be contacted. In all cases where there is no transport to a hospital, the yellow copy of the PCR must be sent to Medical Control by the ambulance service, or entered into the electronic reporting format, in the prescribed format and time frame.

The Medical Orders for Life Sustaining Treatment (MOLST) Form or electronic MOLST Form (eMOLST) is an advanced directive where a patient or the surrogate decision maker has communicated end-of-life wishes extending well beyond the DNR, with implications for the ALS provider regarding limited medical interventions, pain management, fluid resuscitation and transportation to the hospital.

Patients with a valid MOLST/eMOLST Form may elect to determine which treatments they are willing to accept or refuse, and you are obligated to honor that request. This includes decisions to attempt treatment, withhold treatment, initiate a trial course of treatment, or elect to NOT be transported to a hospital.

In cases where there may be high-risk RMA Criteria, and an individual has expressed his/her end-of-life wishes on a MOLST/eMOLST Form, this is not considered an RMA and Medical Control need not be contacted.

eMOLST allows for electronic completion of the current New York State Department of Health-5003 MOLST form. By moving the MOLST form to a readily accessible electronic format and creating the New York eMOLST Registry, health care providers, including EMS, can have access to MOLST forms at all sites of care including hospitals, nursing homes and in the community. eMOLST is a secure web-based application.

While there are no cut and dry answers to address the many variables you may encounter in the field, there are general guidelines and principles you can apply.

IF AN ALS PROVIDER is on the scene, it is expected that the ALS provider with the highest level of certification be responsible for the assessment of the presence/absence of HIGH RISK CRITERIA and that those cases not be triaged down to a BLS provider.

RMA MEDICAL CONTROL CRITERIA: An RMA should not be considered without contacting Medical Control if any of the following **Criteria** are present. A physical assessment may be necessary to rule out these criteria, when the patient:

- has received a medication, either by administration or self-assistance of an EMS provider, regardless of patient condition;
- has altered mental status;
- is less than (<) eighteen (18), including situations where the legal guardian is on scene;
- is older than (>) seventy (70) years of age for any condition;
- Serious chief complaint (including, but not limited to, chest pain, shortness of breath, syncope and focal neurologic deficit;
- Pulse >120 or 29 or <10; or
- Has known or suspected alcohol or drug intoxication.

EMS personnel must contact Medical Control by telephone at 631-689-1430. For confidentiality purposes, and for ease of use by patients, the radio must not be used for RMA consultations. This policy cannot address every issue or possibility regarding RMA situations, therefore questions regarding appropriate action must be directed to Medical Control. These Regional criteria for required Medical Control Contact are slightly different then the high risk criteria in Refusal of Medical Attention Protocol.

6. MEDEVAC SERVICE:

GUIDELINES FOR USE OF MEDEVAC SERVICE:

The process for determining that medevac service is appropriate for a particular patient includes consideration of the patient's condition, distance from a designated specialty hospital, physical findings, mechanism of injury, contraindications for medevac service and the logistics of removing a patient unique to the given situation. Medevac operations are costly and inherently dangerous. Effort must be made to first consider ground transport times and the ability of a ground ambulance crew to continue care while enroute to the hospital, before requesting medevac services. In determining the appropriateness of medevac service you must first evaluate the following:

INCLUSION CRITERIA. It is appropriate to consider medevac request if the patient's condition:

- Requires expeditious transport to a hospital capable of providing specialized care, such as a designated Trauma Center; Stroke Center; Burn Center; STEMI Center; hospital with Obstetric (OB) services, etc. if transport time to the appropriate center by ground is greater than 30 minutes;
- Requires specialized services (medications or procedures) offered by the air medical crew not available to the ground crew prior to arrival at the hospital;
- Is a "life or limb" threatening situation demanding intensive multi-disciplinary treatment and care;
- Includes signs/symptoms/physical findings suggestive of unstable trauma patient;
- Includes critical burn patients;
- Includes signs/symptoms/physical findings suggestive of an ill, unstable medical patient as defined in the medical protocols.
- Is a patient in critical condition, including cardiac arrest, on a barrier island or other remote area;
- During an MCI event to distribute patients to appropriate receiving hospitals which may not be in the immediate vicinity;
- A medical patient presumed to be suffering from a stroke/CVA in an area where there are no designated stroke centers, or the patient needs comprehensive stroke care; or
- A medical patient with STEMI per 12 lead EKG and the nearest PCI-capable Center is greater than sixty (>60) minutes by ground transport.

EXCLUSION CRITERIA. It is inappropriate to request medevac service if the patient:

- Drive time to the closest appropriate hospital can be accomplished within thirty (<=30) minutes.

Medical Control should be contacted to assist with transport decisions if questions as to appropriateness arise.

For specialty hospital referrals, the patient must still meet New York State or Suffolk County criteria for selection of destination hospital.

In all cases, the goal of prehospital care, selection of transportation mode, and selection of destination hospital should be focused on getting the patient to the hospital best capable of caring for the particular injury or illness in the most expedient manner.

HOW TO REQUEST AND / OR CANCEL MEDEVAC SERVICE:

- The first responding medically certified person on-scene is responsible for making the determination that medevac service is appropriate. To avoid confusion, the decision to cancel medevac response should be made by the same person who made the original medevac service request.
- The primary method of requesting medevac service is through the police officer at the scene. If there is no police officer present, the medevac service can be requested through the **MEDCOM or FIRECOM** dispatcher. Although establishing a landing zone (LZ) is primarily the responsibility of the on-scene police, responding EMS providers should be familiar with the guidelines and safety procedures, outlined in the appendices section of this manual.
- For cases outside the Suffolk County Police District or when there is no sector car on scene, EMS providers should relay their operating frequency type (i.e. UHF, VHF, 800 MHz, other) and number through FRES MEDCOM to facilitate direct ambulance-to-helicopter communications.

7. DOCUMENTATION:

A) Written Documentation: A New York State Prehospital Care Report (PCR) or recognized accepted electronic patient care report (ePCR) must be completed for every request for ambulance response in the Suffolk County EMS System, and accounted for per NY State EMS Policy Statement 21-04. Each ePCR is required to be transmitted to the receiving facility no more than 3 hours following patient transfer. Each technician's name and NYS EMT number must be included on every PCR. NY State policy requires that a written report be submitted with the patient at the receiving emergency department.

B) Post-Call Follow-up: Medical Control must be contacted by telephone (631-444-3600) at the completion of every call when there is on-line contact with Medical Control, whenever ALS intervention(s) are provided or attempted, as well as every time an automated external defibrillator is placed on a patient, or when medications are administered or procedures are performed by a BLS provider.

The data collected during these follow-up reports are an integral part of the System's quality improvement and statistical documentation processes. In addition, information collected in these reports is used to credit each technician's participation in the System and to document any skills that may have been performed.

8. QUALITY ASSURANCE AND QUALITY IMPROVEMENT:

Appropriate patient care is a medical and legal necessity. NYS BLS and Suffolk County ALS protocols define such care. EMS alarms are reviewed on a routine basis in accordance with the Suffolk County Division of EMS Quality Improvement Plan, referenced in the appendices section of the manual and the NY State Department of Health Quality Improvement for Prehospital Providers *Workbook and Guidance Document for Service Level and Regional Level Quality Improvement Activities.*

A) DEVIATION FROM PROTOCOLS:

All unauthorized administration of medication, unauthorized use of any procedure, or deviation from protocol must be reported for review by the EMS System Medical Director. Such review may result in the temporary suspension of BLS/ALS operating privileges, temporary suspension or restriction of standing orders, a warning, or mandatory remedial education. Intentional deviation from protocol or obstruction of the quality assurance process may result in the suspension / restriction of BLS/ALS operating privileges or expulsion from the BLS/ALS System. ***Agencies that restrict or suspend BLS/ALS provider privileges per internal agency level CQI audits MUST notify the Suffolk County EMS Division in writing, summarizing the infraction, restriction process, and remedial plan of action.***

B) MANDATORY NY STATE DOH NOTIFICATION OF IMPROPER ACTIVITY:

The ambulance service, and in turn, the EMS System Medical Director is obligated, under New York State Department of Health EMS Policy to report specific types of occurrences, including activity that is contrary to a technician's level of certification to the State Health Department for investigation. Such action may lead to the revocation of an EMT / AEMT certificate and / or the pursuit of civil or criminal action.

C) MANAGEMENT OF THE PATIENT WITH AN ADVANCED AIRWAY:

Prevention of unrecognized esophageal intubation is of paramount importance and is a medical and legal necessity. Therefore, the use of End-Tidal CO2 waveform capnography, the use of a commercially available tube holder **is required on all endotracheal intubations and supraglottic airways (SGA) performed in the ALS System.** Immobilization of the head with a cervical collar may be considered for patients following advanced airway placement. For patients where a waveform is initially obtained and cannot be maintained, the advanced airway must be removed.

For patients with a pulse requiring advanced airway management, whether or not they have received medication to facilitate intubation, ***pulse oximetry, continuous ETCO2 waveform capnography, and cardiac monitoring is required prior to intubation and/or SGA placement, and is to be maintained throughout transport to the hospital.***

The use of continuous ETCO2 capnography should be used for all non-intubated patients complaining of respiratory distress.

The Suffolk REMAC Verification of Intubation Form must be completed and signed by the confirming party, and submitted to the EMS Division Office with a copy of the PCR and ETCO2 waveform capnography as soon as feasible after the alarm. Agencies with a REMAC approved ePCR Advanced Airway verification dataset are not required to submit an additional form.

D) EMS DISPATCH, CREW CONFIRMATION AND MUTUAL AID PROTOCOL:

In the interest of optimizing out-of-hospital care, establishing a standard procedure for EMS response in Suffolk County and providing continuous improvement to regional ambulance response, the following Dispatch, Crew Confirmation and Mutual Aid Protocol has been established (i):

The protocol does not apply to scheduled, interfacility transports, or contractual response by non-911 responding services. (i)

1. All Emergency Medical Services agencies operating in Suffolk County will utilize Emergency Medical Dispatch and certified Emergency Medical Dispatchers.
2. **Advanced Life Support (ALS)** shall be requested an alarm activation for **Charlie, Delta, and Echo** calls from either intra-agency or inter-agency mutual aid agreements.
3. All agencies shall establish and participate in a **Crew Confirmation System**.
4. For all **Alpha, Bravo and Charlie** calls:

    A. Crew shall notify dispatch that they are in or enroute to quarters within 2 minutes.
    B. If a complete crew cannot be identified **within 2 minutes** from initial dispatch, a call for additional personnel (signal 3) shall be initiated.
    C. If a complete crew cannot be identified at **4 minutes** from time of initial dispatch, a request for **Mutual Aid** (signal 24) shall be initiated by the dispatch agency. All agencies should establish procedures identifying means for continual alarm notification after mutual aid has been requested. The primary agency shall continue to attempt to muster a crew as per agency procedures until dispatch notifies the agency that the ambulance has arrived on scene.

5. For all **Delta and Echo** calls:

    A. Crew shall notify that they are in or enroute to quarters within 2 minutes.
    B. If a complete crew cannot be identified at 2 minutes, a request for mutual aid (signal 24) shall be initiated. All agencies should establish procedures identifying means for continual alarm notification after mutual aid has been requested. The primary agency shall continue to attempt to muster a crew as per agency procedures until dispatch notifies the agency that the ambulance has arrived on scene.

6. The first arriving Emergency Medical Technician on scene may extend or shorten the time to request mutual aid as medical appropriate or as scene conditions dictate.

Glossary:

Emergency Dispatched Ambulances and First Responders: EMS resources dispatched by the 911system or in house dispatcher to the scene of a call for emergency medical help.

Emergency Medical Dispatch (EMD): "A medically approved system used by a medical dispatch center to dispatch appropriate aid to medical emergencies". (NAEMSP) The system includes systematized caller interrogation questions, systematized pre-arrival instructions, and protocols that match the dispatcher's evaluation of the illness or injury type and severity with vehicle response mode and configuration. (Clawson) The EMD system in use in Suffolk County is Clawson's Medical Priority Dispatch, with priority categories Alpha, Bravo, Charlie, Delta and Echo. EMD should be consistent throughout the County.

Plain Language: May be used when conveying to corps information consistent with, but not limited to, Emergency Medical Dispatch determinant code. It must specify nature of call, level of care, time to mutual aid and response mode.

Advanced Life Support Request at Alarm Activation: A request for Advanced Life Support (ALS) shall be initiated when the call is identified to be Charlie, Delta or Echo priority, and thus likely to require Advanced Life Support intervention. Under no circumstances shall Basic Life Support responders or ambulances delay responding to the scene or the hospital to wait for ALS.

Crew Confirmation System: A crew confirmation may consist of notification of dispatch of in house crew per designated shift, or a call in system in which responders indicate their intent to respond to the call.

Complete Crew: A complete crew to roll an ambulance is agency specific. At a minimum, a driver and EMT are required by State law.

Frequently Asked Questions (FAQs):

Question 1 – Why did Suffolk REMAC and REMSCO establish this protocol?

Answer 1 – The protocol was established to encourage coordination of resources as we strive to improve response times. An analysis of EMS calls revealed that the most extended response times are for those calls for which the initial agency dispatched is unable to respond. This protocol is intended to encourage the establishment of a mechanism to quickly verify that a confirmed crew is intending to respond to the call. If an appropriate crew cannot be confirmed, mutual aid from a neighboring agency is quickly requested while the original corps continues to attempt to muster personnel as well.

Question 2 – Does this protocol require that an appropriately staffed ambulance be on a signal 2 within 2 minutes of all Delta and Echo calls and within 4 minutes of all Alpha, Bravo, and Charlie calls?

Answer 2 – No. This protocol requires that, in the case of Delta and Echo calls, if a responding crew (responding to the ambulance) cannot be confirmed in 2 minutes, the call must be mutual aided. This means that if an EMT and a driver (or the agency definition of an ambulance crew) have committed their intent to respond (as confirmed by phone-in, radio, in-house status, or other confirmation system established by the agency) within 2 minutes, the agency need not mutual aid the call.

In the case of an Alpha, Bravo, or Charlie call, failure to confirm a crew (as above) within 2 minutes requires the agency to broadcast a signal 3 for more personnel. If after 2 more minutes a complete crew cannot be confirmed as responding, the agency must request mutual aid.

In both examples above when the agency has requested mutual aid, the original agency should continue its efforts to muster an appropriate crew of its own until it is confirmed that an appropriately staffed ambulance is on scene.

Question 3 – What does crew confirmation mean?

Answer 3 – This means any mechanism by which the agency (dispatcher) can confirm that an appropriate crew is intending to handle the call. This can be a call indicating an in house crew to dispatch, providers calling the dispatch agency by cell phone, providers contacting a crew chief by radio who will then notify dispatch, or any other confirmation system that will allow the agency's dispatcher to be aware that a crew for the call is confirmed.

Question 4 – What help is available to facilitate implementation of this Protocol?

Answer 4 – REMSCO and the EMS Division are available to facilitate coordination of efforts.

Question 5 – How do we get help?

Answer 5 – Direct your concerns to either the Chair of REMSCO or the System Medical Director. You may also attend REMSCO and REMAC meetings to be involved in the process.

Question 6 – Do we have to use Red Lights and Sirens for all responses?

Answer 6 – No. Emergency Medical Dispatch (EMS) does not assign response mode (hot or cold) based on dispatch levels (Alpha, Bravo, Charlie, Delta, or Echo). This decision is determined at the agency level in conjunction with your medical director.

Question 7 – How do we know when we can terminate attempts to muster a crew?

Answer 7 – The agency sending an ambulance shall, through their dispatcher, notify the EMS or fire district that was originally dispatched that an ambulance has arrive on scene.

9. DO NOT RESUSCITATE (DNR) ORDERS / ADVANCED DIRECTIVES:

Non-hospital DNR orders and an advanced directive called the Medical Orders For Life Sustaining Treatment (MOLST) are permitted by the Family Health Care Decisions Act (FHCDA) and governed by Public Health Law (PHL) Article 29-CCC. A DNR order is an order not to perform ventilations, compressions, defibrillation, intubation or medication administration in the event of cardiac **OR** respiratory arrest, including mechanical ventilation after removal of a foreign body airway obstruction if ventilations are not spontaneously restored.

The MOLST Form, or eMOLST, more formally described previously in Section 5, is an advanced directive where a patient or the surrogate decision maker has communicated end-of-life wishes extending well beyond the DNR, with implications for the ALS provider regarding limited medical interventions, pain management, fluid resuscitation and transportation to the hospital.

The approved NYSDOH NON-HOSPITAL DNR ORDER, or an approved DNR bracelet, or the bright pink multi-page MOLST Form, or electronic access to eMOLST are to be honored. The DNR form must be signed and dated by the patient's attending physician. Nursing Homes and other Article 28 licensed facilities may use their own DNR form and EMS providers must honor that form. The MOLST Form also must be signed by the decision maker and the physician. Like the DNR Form, the MOLST Form is subject to periodic review with no date/time parameter attached.

Therefore, DNR Forms and MOLST Forms should be considered valid as long as they have been signed and there is no indication to suggest the order has been modified.

Absence of a valid DNR Form, MOLST Form, or eMOLST requires that full treatment be rendered. CPR must be initiated in the absence of a Non-Hospital DNR, or a facility DNR, or MOLST Form; however, CPR may be stopped once the DNR or MOLST Form is produced.

Public Health Law (PHL) 2994-gg provides immunity from liability for good faith actions concerning DNR and MOLST orders. If it is believed that a DNR order or MOLST Form is invalid, and CPR is performed, the technician will not be held liable. If a DNR order or MOLST Form is disputed, CPR may be started in order to avoid a physical confrontation. Contact with Medical Control should be made to resolve any disputes with a DNR or MOLST / eMOLST Form.

10. TERMINATON OF RESUSCITATION:

Termination of Resuscitation can only be performed by Paramedics on Standing Order, EMT-CC and BLS providers must contact Medical Control. Paramedics must complete at least 20 minutes of ACLS resuscitation (Vascular Access, Monitor, Advanced Airway, medications, etc.) prior to termination of resuscitation under Standing Order.

11. CONTROLLED SUBSTANCES:

Only those controlled substances approved by the NY State Emergency Medical Advisory Committee (SEMAC) and the NY State Department of Health (NYSDOH) may be administered by appropriately certified and authorized ALS Providers of certified ALS ambulance services or certified ALS first response services participating in the Suffolk County ALS System, with a Class 3C Controlled Substance License. Controlled Substances may be administered either under standing orders, or upon the order of a Medical Control Physician or Designated EMS Field Physician, per applicable clinical protocols. Controlled substances may not be carried in the private vehicles of EMS providers, including private vehicles authorized by the ambulance service as first responder vehicles (EASV), as described below. Marked and certified ambulances or EASVs must be used to transport controlled substances. All certified personnel and all authorized officers, members and / or employees of an ALS agency are under a **continuous duty to immediately report** to the EMS System Medical Director, the Service Medical Director, the Controlled Substances Agent and the NYSDOH / BEMS any loss, theft, and / or diversion of controlled substances. ALS Providers must be engaged in "active response" with the agency that holds the Class 3C Controlled Substances license in order to administer controlled substances.

12. ALS EQUIPMENT IN PRIVATE VEHICLES:

Except as provided for in the next paragraph, ALS personnel are **not** authorized to carry any item that requires a physician's prescription in their private vehicle. Such items include, but are not limited to, needles, syringes, medications, and defibrillators.

The only circumstance under which such equipment may be legitimately carried in a private vehicle is when the vehicle operator is serving as an authorized agent of an agency participating in the Suffolk County ALS System, functioning as an "ALS first-responder." In those cases, the member's personal vehicle is considered an Emergency Ambulance Service Vehicle (EASV) and must meet the criteria set forth in NY State policy. The ALS equipment may be carried **only** with the prior knowledge and approval of a chief officer of the ALS Provider's agency, and with the authorization of the NYSDOH. All such ALS equipment must be able to be used under protocols applicable to the ALS Provider's level of certification, and must include, but is not limited to, IV administration supplies and fluids, monitor / defibrillator, endotracheal intubation/airway adjunct equipment, and telemetry / communications equipment.

13. AREA OF OPERATION:

A BLS/ALS Provider credentialed and authorized by the EMS Medical Director to participate in the Suffolk County BLS/ALS System may legally operate only within the geographical confines of the Suffolk County EMS System, or out of Suffolk County as part of a bona fide mutual aid response. An ALS Provider may not perform ALS as a "passer-by" when the technician is outside of their agency's district, unless the provider's assistance is requested by an agency that participates in the Suffolk County ALS System, per guidelines in section 209i in General Municipal Law. Refer to Suffolk County EMS Policy "Inter-agency Utilization of Advanced Life Support Personnel," outlined in the appendices section of this manual. Based on inter-regional agreements, in cases where the ALS Provider is operating outside Suffolk County on a bona fide mutual aid response, the Suffolk County ALS Protocols are to be used, and contact with Suffolk County Medical Control, when indicated, is expected.

14. INTERACTION BETWEEN LEVELS OF EMS PROVIDERS:

If a CFR or EMT-B initiated patient care prior to the arrival of an EMT-CC or EMT-P, the EMT-CC or EMT-P should allow personnel to continue to perform those Standing Orders which have been initiated. **Common sense and good patient care are to prevail in all provider interactions. When questions arise, patient care activity should be directed by the individual with the highest certification. Medical Control must be contacted to resolve any conflicts occurring during patient care activity. Once medications have been administered / assisted to any patient (by BLS or ALS technicians), or the cardiac monitor placed on any patient, the ALS Provider must assume care of that patient until arrival at the hospital.**

**** With the exception of administration of IN Naloxone as indicated in Part 16 section D of this manual, PATIENT TRANSFER PROTOCOL.****

15. PATIENT TRANSFER PROTOCOL:

FROM ALS PROVIDER (EMT-CC OR EMT-P) TO BLS PROVIDER

A New York State certified EMS provider with a higher level of certification may transfer responsibility for the on-going care of a patient to a provider with a lesser New York State certification if the following conditions are met:

A) The patient does not have cardiac, respiratory, neurologic, or allergic signs / symptoms, and does not fit into an ALS Protocol.

B) The provider with the higher level of certification must have assessed the patient and made an affirmative decision to transfer care of the patient to a provider with a lesser certification, indicating that the patient is not in need of ALS level interventions and will not likely decompensate to the point where ALS interventions may become necessary during transport to the hospital.

C) The provider with the higher level of certification must have made the determination that the patient will not require any care or skills which would be possessed by the provider with the higher level of certification and not possessed by the provider with the lesser level of certification, nor need assistance of an additional advanced provider on difficult cases. **In cases where the provider of lesser certification administered or assisted with administration of a medication, applied CPAP or has acquired a 12-lead, the provider with the higher certification must assume care of that patient.**

D) ALS providers may transfer care to a BLS provider who has received IN naloxone (Narcan™) if the following conditions are met:

Patient must be fully awake and breathing normally; EMT must consent to the transfer; Transport time to the closest ED must be less than (<) 30 minutes; There is no suspicion or indication that would indicate that the opioid reversal has triggered the onset of agitation / seizure or other medical complication caused by another substance that could be treated by an ALS Provider; There is no need for restraint of the patient; and the patient exhibits: **Normal Vital Signs (≥ 110 / 70, HR < 110, RR ≥ 12, BG > 80 mg/dl).**

If transfer is made, and during transport the patient relapses, exhibiting hypoventilation, developing unresponsiveness, and constricting pupils, the EMT-B may administer one (1) additional 2 mg Narcan™ IN while enroute under standing orders.

E) The provider with the lesser level of certification must agree to assume responsibility for patient care. If the provider with the lesser level of certification refuses to accept that responsibility, the provider with the higher level of certification must continue to care for the patient until the transfer at the hospital is complete.

F) If either provider who is a party to the transfer has any questions concerning the appropriateness of the transfer they must contact Medical Control for a physician consultation.

G) **The patient transfer must be documented on the Prehospital Care Report (PCR) or electronic reporting format. The ALS Provider must document assessment and transfer on the PCR, Continuation Form, or ePCR as part of the patient care transfer process.** When different services are involved, the *transferring* ambulance service must provide the *transporting* ambulance service with the pink and yellow copies of its PCR. The transporting ambulance service must leave the transferring service's pink and yellow copies of its PCR at the receiving hospital emergency department for inclusion in the patient's hospital file and the data collection system. Each service is responsible for documenting their respective service's interaction with the patient and with each other.

FROM ALS PROVIDER (EMT-P) TO ALS PROVIDER (EMT-CC)

A New York State certified EMS provider with a higher level of certification may transfer responsibility for the on-going care of a patient to a provider with a lesser New York State certification if the following conditions are met:

A) The EMT-P may transfer ALS level care to an EMT-CC provided that the patient does not require an ALS level intervention that the EMT-CC is not authorized to carry out, and the patient will not likely decompensate to the point where specific paramedic level ALS ***STANDING ORDER*** interventions may become necessary during transport to the hospital.

B) The EMT-P may transfer ALS level care to an EMT-CC provided that the patient is not deemed to be unstable, either by assessment, or by protocol, and that the patient will not likely decompensate to the point of becoming unstable or critical during transport to the hospital. Documentation should include the medications and procedures initiated by the EMT-P prior to transfer of care to the EMT-CC, and that the conditions of transfer have been met.

C) If either provider who is a party to the transfer has any questions concerning the appropriateness of the transfer they must contact Medical Control for a physician consultation.

16. AUDIT FORMS:

From time to time, specific audit forms are to be used to provide ancillary documentation of a particular procedure, or in response to a particular request for information. It is the responsibility of the BLS/ALS Provider to ensure the following documents are submitted to the EMS Division in the prescribed format. Forms may be transmitted via fax to 631-852-5028 or scanned and sent as a .pdf file to william-michael.masterton@suffolkcountyny.gov.

- Suffolk County Verification of Intubation Form, with copy of the PCR (or electronic equivalent printout) and ETCO2 Waveform printout.
- Suffolk County BLS Continuous Positive Airway Pressure (CPAP) Quality Improvement (QI) Form, with copy of the PCR (or electronic equivalent printout).
- Agency Cover Sheet documenting administration of controlled substances with copy of the PCR (or electronic equivalent printout).
- BLS 12 Lead ECG QI Form, with copy of the 12 lead ECG and the PCR (or electronic equivalent printout).
- Other forms that may be requested.

17. ALS PRECEPTORS:

ALS Providers must successfully complete the Suffolk County EMS Preceptor Process and be authorized by the Suffolk County EMS Division to perform the duties of an ALS Preceptor. Authorized ALS Preceptors may allow ALS course students that are either enrolled in an ALS Training Course in Suffolk County, or in an ALS Training Course recognized by the Division, to carry out the procedures they have been cleared for, with prior approval. This allows the student to perform only those skills that have been authorized by his / her Certified Instructor Coordinator (CIC). The Suffolk County ALS Policies and list of authorized procedures shall be followed at all times. On the post call telephone call to Medical Control, the student's name must be provided as well as any procedure attempts.

18. MOBILE STROKE UNIT:

A) Interaction with a Mobile Stroke Unit

- On calls where the Mobile Stroke Unit (MSU) is simultaneously dispatched the MSU may be cancelled prior to arrival by EMS providers on-scene if they feel there is low probability the patient is having an acute stroke (ischemic or hemorrhagic).
- Transportation of the patient to the closest appropriate hospital should not be delayed by the remaining on-scene awaiting the arrival of the MSU.
- Upon assuming patient care, the paramedic on the MSU will assume primary responsibility for patient care.
- Medical Control may be contacted at any time if there are questions regarding these criteria.

B) Requesting a Mobile Stroke Unit

- On calls when a MSU was not simultaneously dispatched, the responding EMS providers may request a MSU response if an acute stroke is suspected; however this request should not delay providers departing the scene to transport the patient to the closest appropriate hospital. As such, this request should not be made if transport is able to be initiated before a MSU may arrive on-scene.

SECTION B

MEDICAL PROTOCOLS

1. INTRODUCTION:

BASIC LIFE SUPPORT (BLS) is the foundation of all out-of-hospital emergency medical care including **ADVANCED LIFE SUPPORT (ALS)**. The New York State Department of Health (NYSDOH) BLS Protocols have been adopted as the standard of care for BLS in Suffolk County.

The Protocols set forth in this **Manual** constitute the standard of care for all out-of hospital emergency medical care provided in the Suffolk County System.

2. PEDIATRIC ALS GUIDELINES:

A REMAC approved commercially available pediatric length resuscitation tape must be carried as part of the standard ALS equipment package and must be used to estimate the pediatric patient's body weight, guide medication dosage adjustments, determine energy selection requirements, and tube sizes. IO access may be utilized on any pediatric patient who meets the age criteria above and weight criteria. **Please refer to pediatric protocols and the relevant appendices. For patients under 3kg weight, contact Medical Control.**

3. PILOT PROGRAMS:

From time to time, and in response to additional training or new technology, additional procedures or medications may be authorized by the EMS Medical Director and REMAC, with the approval of NY State DOH, and added to the protocols for use by select agencies in a pilot program prior to adaptation by the entire system. In those cases, it is the responsibility of the BLS/ALS Provider to ensure that all necessary paperwork (audit forms, PCRs, electronic printouts, etc.) required by the pilot program authorization are completed and submitted to the EMS Division and the REMAC in a timely manner. *Under no circumstances may an agency implement a pilot project or employ new technology that has not been pre-approved by the EMS Medical Director, in consultation with the REMAC and / or NY State DOH.*

4. NON-EMERGENCY TRANSPORTATION:

The medical protocols in this manual are intended for use in emergency situations for care rendered in cases received through the emergency response system. These protocols are not intended for routine transportation use or interfacility transfer situations. In cases where an EMS System ambulance may be necessary to transport a patient between home and a health care facility, or between health care facilities, or any other non-emergent situation, requiring BLS Level care and interventions, **PRIOR APPROVAL FROM THE EMS SYSTEM MEDICAL DIRECTOR, OR DESIGNEE, IS REQUIRED.** Interfacility transportation at the ALS level is outside the scope of these protocols and is generally not acceptable but may be approved by the EMS System Medical Director on a case by case basis depending on the patient's condition.

5. SAFETY DURING SCENE OPERATIONS

All providers operating at the scene of a medical emergency should be conscious of their surroundings at all times. "Scene safety" is more than just a simple yes or no question that occurs upon approach. On-going assessment of the scene is equally important as on-going assessment of the patient. EMS Providers should apply the theory of a "contact provider" to provide primary patient care and a "cover provider" to remain less distracted by the patient and more attentive to people, affect, crowd formation, egress paths and the like. If the scene turns from docile to hostile, and EMS providers safety is in jeopardy, hasty retreat is not abandonment. EMS providers should remain on the scene in a safe area of refuge, until scene safety can be re-established, and patient care can continue. Thorough documentation on the PCR / ePCR is required.

6. SAFETY DURING TRANSPORTATION

BLS/ALS providers should be mindful of how their therapies and interventions ultimately affect the patient. The foundation of BLS/ALS is to stabilize an unstable patient and safely transport them to the hospital. Therefore, the decision to use emergency lights and sirens should be based on the patient's clinical needs and BLS/ALS providers' judgement regarding the severity of their illness / injury in terms of immediate threats to life and limb.

Whenever possible, EMS providers should perform patient care skills at the scene. If skills need to be performed in a moving ambulance, providers should be appropriately restrained. As an alternative, as long as it is safe and appropriate to do so, the ambulance should be pulled off the road and stopped for the duration of necessary interventions and procedures. As a matter of safety, EMS providers should plan their patient care so that essential interventions are performed prior to beginning transport and have ready access to patient care equipment that may be needed while enroute to the hospital.

7. STANDARD PATIENT PRESENTATION FORMAT FOR COMMUNICATING WITH MEDICAL CONTROL

Clear and concise verbal communication is necessary for the coordinated relay of pertinent patient information and appropriate medical orders. A standard presentation format greatly enhances the EMS Provider's ability to quickly and effectively communicate essential information to Medical Control personnel, minimizes the chance for error, streamlines the patient care process, and reduces the amount of time that an EMS Provider needs to spend on this function.

As a rule, the following standard presentation format should be used during routine communications with Medical Control. However, the presentation format may be adjusted based on the nature and severity of the case.

- UNIT ID / TECHNICIAN NAME / LEVEL OF CERTIFICATION
- AGE
- SEX
- CHIEF COMPLAINT
  - History of the present illness
  - Aggravating / Alleviating factors
- INITIAL VITAL SIGNS
  - Mental Status
  - Blood Pressure
  - Pulse Rate and Quality

Respiratory Rate, Quality and Effort
Lung Sounds
Skin Color, Condition and Temperature
Pupils
Physical Examination (including pertinent negatives)

- PAST MEDICAL HISTORY
- MEDICATIONS
- ALLERGIES
- TREATMENTS SO FAR / REPEAT VITAL SIGNS / RESPONSE TO THOSE TREATMENTS
- RECEIVING HOSPITAL AND ETA

Remember the simple **SOAPIE** formula in your approach to examining AND presenting your patient:

Subjective Interview – the patients words and description +
Objective Examination – your physical assessment +
Assessment – your prehospital impression or presumptive diagnosis (including differentials) =
Plan – your treatment(s) under standing orders or requested / ordered treatment(s)
Interventions **–** what's been done by patient and/or technician
Evaluation – of any changes from therapy.

8. CONTINUOUS QUALITY IMPROVEMENT PLAN

Typically, when one thinks of the term Quality Assurance (QA), the negative connotation of *big-brother-watching-what-I-do* emerges. Past QA efforts revolved around someone performing a retrospective review to establish that policies, protocols, or procedures were not followed appropriately and as a result, some sort of sanction against the offending individual would follow. In today's rapidly changing health care environment, this is no longer the case. Enhancing organizational effectiveness and efficiency, utilizing the strategic planning process, and striving for excellence to promote customer service, are the current undertones. *Quality Assurance* has been replaced by C*ontinuous Quality Improvement* in both process and spirit.

Continuous Quality Improvement (CQI) initiatives remain a major tool for problem solving activities. The focus of quality improvement activities is centered on asking "why," instead of "who," and examines the organization as opposed to the individual. Rather than assessing blame for a lack of compliance, the QI approach seeks to identify the actions to determine if the organization is operating at peak efficiency, applying uniform and appropriate care and response to recognize areas of excellence, and to address deficiencies through the continuing medical educational process.

At the county level, and at the agency level, individual CQI is an on-going and important tool in ensuring standards of care are adhered to, in effort to ensure optimal patient care consistent with established policies and protocols, reduce liability and risk to providers, agencies, the county, and all interested parties. The EMS System Medical Director and the Suffolk Regional Emergency Medical Advisory Committee (REMAC) is responsible on a macro level, for overall system wide CQI, concentrating on protocol and policy. Service Medical Directors, through their commitment attested to on the Medical Director's Affirmation Statement (NYSDOH Form 4362), are responsible on the micro level, for the day-to-day close proximity CQI of the providers they interact with regularly. Together, physician oversight remains the cornerstone of quality prehospital emergency medical care.

Continued

A variety of appropriateness, statistical, and red-flag monitors are itemized and analyzed and presented to the EMS System Medical Director and applicable Service Medical Director(s) as needed. Information will also be made available to local hospitals to assist in fulfilling their 405.19, 708.2b, and 708.5 regulations, and to the Suffolk REMAC's Quality Improvement Sub-Committee. Monitors include, but are not limited to:

Appropriateness Monitor

- PCR completion reports
- RMA review
- Time reports
- Protocol Appropriate Treatment
- Policy Appropriate Action
- Diagnosis Comparison
- High Risk Procedures
- RLS use enroute to hospital

Statistical Monitor

- Cardiac Arrest Outcome
- Time of dispatch to arrival of ambulance
- Treatment appropriate to patient condition and technician availability, consistent with protocol & policy

Red-Flag Monitors

- Deviations from protocol / procedure / untoward events.
- Deviations from NY State or Suffolk County Policy Statements, including, but not limited to:
    - Transfers of Care;
    - RMA;
    - Destination Hospital;
    - Initial Case Review/Field Case Review forms;
    - Citizen or response agency complaints;
    - Technical malfunction of equipment; and/or
    - Time parameters

Patient Outcome Monitor

- Correlation of return of spontaneous circulation (ROSC) to time of defibrillation, presenting arrhythmia
- Hospital disposition for patients receiving ALS care
- Correlation between survivability and cumulative prehospital care options

Program Outcome Monitors

- Performance consistent with medically accepted standards
- Adequacy of resource allocation
- Increased skill level for field providers
- External validity of QI program

Continued.

Deviations from procedure, protocol, or potential untoward events are documented and categorized on an Initial Case Review Report form generated by the Medical Control facility at University Hospital & Medical Center Stony Brook or a Field Case Review Report form generated by an emergency responder. Forms are forwarded to the Chief of Education & Training according to the pre-determined time schedule. The Chief, and/or his designee, will review each case. In instances where technician input is necessary to aid in the investigation, letters or telephone calls will be made to elicit required information. The case review summary and the outcome and recommendations are documented on the INITIAL CASE REVIEW - FIELD REPORT PROCEDURE AND FORM, which can be found on the Suffolk REMSCO website under "Downloads and Forms" or in APPENDIX 13 of these policies.

On-going and / or topical reports produced by University Hospital & Medical Center Stony Brook personnel and / or EMS Division personnel will be forwarded to the EMS System Medical Director, the Regional Medical Advisory Committee's Quality Improvement Sub-Committee and the technicians and agencies involved.

The scope of resolution includes efforts to foster a partnership between prehospital EMS providers, provider agencies, and those individuals and agencies responsible for medical oversight in the Suffolk region. The purpose of the QI initiative is to ensure the highest quality patient care. Guiding change is a principal activity of the QI program, and positive feedback is an essential part of the process. Actions imposed on prehospital providers and provider agencies may be:

- Reinforcing, in an attempt to encourage continued excellence; and / or
- Rationalization, in an attempt to effect change through the educational process; and / or
- Punitive, in that disciplinary action may be warranted under certain circumstances.

The Chief of Education & Training and the EMS System Medical Director collaborate and offer the following dispositions:

- Standing Order restriction, with full ALS privileges upon contact with Medical Control;
- ALS privilege suspension with full BLS privileges, pending successful remediation; or
- ALS and BLS privileges suspension pending successful remediation.

Once a decision is made, the EMS Division will notify the EMS Provider(s) involved, and an initial meeting will be scheduled to discuss the case, from the provider's perspective. The meeting will be held at a mutually convenient time, as soon as feasible after the case is identified. EMS Division staff notifies Medical Control, and the provider's agency leadership of the type of restriction.

A program for skill remediation that will allow for supervised reinforcement in the clinical setting has been implemented. Sessions will be "tailor-made" to the specific needs of the individual(s) involved. A mentoring program utilizing previously identified preceptors within each agency has been established by the EMS Division.

A series of didactic and / or practical skill workshops to rationalize appropriate actions will be scheduled by the EMS Division, or other qualified instructor, designated by the EMS Division staff.

In rare circumstances, the EMS System Medical Director may require attendance at mandatory specialty training classes or completion of a refresher course at the appropriate certification level, prior to reinstatement of privileges.

Continued.

Disciplinary procedures, when unavoidable, may consist of:

- Verbal counseling - for least serious offenses.
- Written counseling - for documentation of an incident serious in nature or repeated offenses of a minor nature.
- Probation - for conveying the importance of the expected standard.
- Suspension - for occurrences perceived to be a threat to public health and safety.

To ensure complete objectivity and transparency, cases that result in real or perceived conflict of interest on the part of EMS Division staff are passed along to the REMAC's Medical Review Committee, a committee that convenes upon request, to review cases referred by the EMS System Medical Director.

The EMS Division uses known and referenceable sources as the benchmark for monitoring activity including, but not limited to: NY State DOH Policy Statements; SEMAC / STAC Guidance Documents; NY State BLS Protocols; Suffolk County ALS Protocols; Suffolk County ALS Policies and Procedures; REMAC / RTAC Guidance Documents; certification-specific NY State DOH-approved curricula; and AHA Consensus Guidelines.

For instances that exceed routine and regular CQI, the EMS Division reserves the right, per requirements of NY State DOH Policy Statement 84-26, to report activity contrary to a technician's level of certification to the NY State DOH for investigation.

The EMS Division will make every effort to resolve remedial activities within a reasonable time frame, based on scheduling and other demands, generally within a one (1) to two (2) week time period. The goal is to put a qualified and capable technician back on the ambulance as quickly as possible. However, the EMS Division has the responsibility to balance remedial efforts with ensuring that EMS providers are capable of providing quality care with reduced liability exposure to the provider, the agency and the county.

It is the responsibility of the EMS Provider to ensure that all agencies in which that provider is credentialed and authorized are aware of restrictions and/or remedial activity. EMS Providers that are restricted may not perform any skill or level of care while restricted.

In cases where a provider is either a volunteer or salaried provider, in multiple agencies, EMS Division staff will make every effort to contact all known agencies and inform them of the issues. EMS Providers at both BLS and ALS levels who have had their privileges suspended reserve the right to appeal a decision, in writing, to the Chief of Education & Training and the EMS System Medical Director. The appeal will be forwarded to the REMAC Chair, who will be asked to convene a Medical Review Committee.

The REMAC's Medical Review Committee ruling will be final, and include either of the following dispositions:

- Agree with and abide by the decisions of the EMS System Medical Director.
- Overrule the decision of the EMS System Medical Director and repeal the suspension.
- Modify the decision of the EMS System Medical Director by either reducing or lengthening the suspension.

9. Entry Requirements for Suffolk Regional Emergency Medical Advisory Committee (REMAC)-approved BLS Provider Credentialing and Authorization and Re-Credentialing / Re-Authorization

The Suffolk County Department of Health Services, EMS Division, is the Region's designated Regional EMS Program Agency, and serves as the Suffolk County EMS System Administrator. Clinical care is performed under the general supervision of the Regional EMS Medical Director. The EMS Program Agency is responsible for managing the REMAC credentialing and authorization process for BLS providers.

In order for a New York State certified EMT-Basic or Certified First Responder (CFR) to function at the BLS level, and/or to perform any diagnostic or therapeutic procedures in Suffolk County, they must also be regionally CREDENTIALED AND AUTHORIZED. Required upon initial entry into the Regional EMS System and re-credentialing and re-authorization of BLS providers on an as needed basis as protocols are revised.

INITIAL CREDENTIALING & AUTHORIZATION – This process is typically used for currently certified individuals from another region seeking membership or employment in a Suffolk County-approved agency, or certified providers in a Suffolk County-approved agency that attain certification as an EMT-Basic or CFR through a New York State-approved Course Sponsorship.

CREDENTIALED is defined as meeting minimum standard pre-requisite eligibility criteria for BLS authorization, completing an online protocol and policies in-service session, and passing qualifying examinations within the online modules.

Pre-requisite Eligibility Criteria includes:

- Current New York State EMT-Basic or CFR Certification;
- Current AHA, ARC, ECSI or similar entity BLS CPR card; and
- Member of a Suffolk County-approved EMS Agency

Once the candidate successfully completes the online credentialing process, they are considered CREDENTIALED.

AUTHORIZATION is defined as the ability to provide BLS care under the delegated practice of the Regional EMS System Medical Director. In order to receive authorization to perform BLS, the provider must be a member or employee of an agency that has an Ambulance Services Agreement with the Suffolk County Department of Health Services.

They may only operate in the System when acting as an agent of their agency, or when specifically requested to assist another agency that has an Ambulance Services Agreement with the Suffolk County Department of Health Services.

NOTE: Commercial and hospital-based ambulance services operating in the Suffolk Region providing routine inter-facility transportation or specialty care transportation are responsible for developing their own agency-specific credentialing and authorization requirements and are outside the scope of the Suffolk County EMS System.

10. Entry Requirements for Suffolk Regional Emergency Medical Advisory Committee (REMAC)-approved ALS Provider Credentialing and Authorization and Re-Credentialing / Re-Authorization

The Suffolk County Department of Health Services, EMS Division, is the region's designated Regional EMS Program Agency, and serves as the Suffolk County EMS System Administrator. Clinical care is performed under the general supervision of the Regional EMS Medical Director. The EMS Program Agency is responsible for managing the REMAC credentialing and authorization process for ALS providers, required upon initial entry into the regional EMS System and re-credentialing and re-authorization of ALS providers, on an as needed basis, as protocols are revised. In order for a NY State certified EMT-Critical Care or EMT-Paramedic to function at the ALS level, and/or to perform any advanced, diagnostic, or therapeutic procedures in Suffolk County, he/she must also be regionally CREDENTIALED AND AUTHORIZED.

INITIAL CREDENTIALING & AUTHORIZATION

This process is typically used for currently certified individuals from another region seeking membership or employment in a Suffolk County-approved agency, or certified providers in a Suffolk County-approved agency that attain certification EMT-Paramedic through an NY State-approved Course Sponsorship.

CREDENTIALED is defined as meeting minimum standard pre-requisite eligibility criteria for ALS authorization, completing an online protocol and policies in-service session, and passing a qualifying protocol exam. Pre-requisite Eligibility Criteria includes:

- Current NY State EMT-Critical Care or EMT-Paramedic Certification;
- Current AHA Advanced Cardiac Life Support (ACLS) Certification (Paramedics Only)
- Successful completion of a Suffolk County EMS-sponsored CPAP course: and
- Familiarity with the current edition of the Suffolk County EMS ALS Policies and Protocols Manual, obtained from the EMS Division.

Once the pre-requisite eligibility requirements are satisfied, the candidate must then:

- Complete the Suffolk Regional Emergency Medical Advisory Committee (REMAC) ALS online credentialing course; and
- Sit for the Suffolk County ALS Protocol Exam, at the appropriate certification level. This written exam is a minimum of fifty (50) questions based on current ALS Policies, Protocols and Suffolk County EMS System Standard Operating Procedures contained in the ALS Policies and Protocols Manual. A minimum score of 80% is needed to pass. The candidate may not use any resources during the exam. Suffolk County EMS Division staff reserve the right to add additional questions to ensure competency in the subject material.

Depending on the actual score, EMS Division staff provides remedial services to ensure appropriate knowledge of the subject material and reserves the right to administer an alternate written exam, under the same rules as the original exam.

Continued.

Once the candidate successfully completes the exam, they are considered CREDENTIALED. This status alone does not allow an ALS provider to perform at the ALS level.

AUTHORIZATION is defined as the ability to provide ALS care under the delegated practice of the Regional EMS System Medical Director. In order to receive authorization to perform ALS, the provider must be a member or employee of an agency that has an Ambulance Services Agreement with the Suffolk County Department of Health Services. He/she may only operate in the system when acting as an agent of his/her agency, or when specifically requested to assist another agency that has an Ambulance Services Agreement with the Suffolk County Department of Health Services, per the requirements outlined in the Suffolk County Interagency Utilization of ALS Personnel Policy.

NOTE*:* Commercial and hospital-based ambulance services operating in the Suffolk Region providing routine inter-facility transportation or specialty care transportation are responsible for developing their own agency-specific credentialing and authorization requirements and are outside the scope of the Suffolk County EMS System.

Generally speaking, CREDENTIALING AND AUTHORIZATION occurs simultaneously, but may occur independently. From time to time, providers seek to become credentialed prior to admission into an agency in the Suffolk County EMS System. This is acceptable, and the candidate may complete the credentialing process. Authorization will occur after documentation of membership in a Suffolk County-approved agency is provided. Once the process is complete, the EMS Division issues a picture ID card documenting regional authorization.

The EMS Division passes this information along to Suffolk County Medical Control, responsible for maintaining the credentialed and authorized technician database and ensuring the medical control orders are forwarded to properly identified, credentialed and authorized ALS providers.

Credentialed and authorized EMT-Critical Care technicians that upgrade to EMT-Paramedic are required to complete the Suffolk County ALS Protocol Exam at the EMT-Paramedic level, administered by the EMS Division, in accordance with the testing and remediation practices previously described. The candidate will receive an updated regional authorization card at the higher level upon return of the previously issued card.

An EMT-CC or EMT-P that is NO LONGER a member of a recognized agency automatically loses his/her AUTHORIZATION and MAY NOT continue to function as an advanced provider in the system. The provider is responsible for returning the regional authorization picture ID card to the EMS Division upon separation of service. The EMS Division notifies Suffolk County Medical Control and the provider's name is purged from the database. Should the provider seek reinstatement by way of membership or employment with a new Suffolk County-approved agency, the EMS Division will determine the pathway to re-authorization based on length of absence, quality improvement reviews, and other factors deemed necessary.

Continued.

RE-CREDENTIALING & RE-AUTHORIZATION

RE-CREDENTIALING / RE-AUTHORIZATION is defined as the periodic refreshing of a provider's ALS status. Generally speaking, re-credentialing/re-authorization is required whenever there are substantive changes to medical protocols, introduction of new medications and/or introduction of new practical skills/therapeutic modalities. In order to maintain operating privileges, an EMT-CC or EMT-P must complete all EMS System protocol or policy updates in the prescribed format and time frame established by the Regional EMS System Medical Director, which is based on the relative complexities of the changes being introduced.

The Regional EMS System Medical Director, has the responsibility of ensuring appropriate prehospital medical care, and with the EMS Division and Suffolk County Medical Control, manages a comprehensive countywide Quality Improvement Program. EMS System authorization may be restricted, suspended pending successful remediation, or revoked, per the progressive remedial and disciplinary actions documented in the EMS Division's Quality Improvement Plan.

11. INTER-AGENCY UTILIZATION OF ADVANCED LIFE SUPPORT PERSONNEL

This policy has been developed to assist you in providing timely prehospital ALS care, comply with NY State BLS protocols for *Consideration of ALS Intercept*, reduce exposure to liability and encourage a cooperative partnership within our EMS system.

It is incumbent on ambulance services to ensure that those individuals having access to ALS equipment are properly trained, credentialed and authorized to operate in the Suffolk County ALS System. This policy does not allow for unauthorized response by individuals to calls outside their response area. However, in the interest of good patient care, ambulance services are encouraged to take advantage of the assistance of on-scene personnel and call for ALS intercept with pre-designated and approved mutual aid services when appropriate.

1. ALS intercept agreements between agencies should be in writing and agreed upon by each ambulance service in advance. ALS intercept should be requested when it is reasonable to expect that ALS personnel can arrive at the scene quicker than the patient can arrive at the appropriate hospital.

2. An ALS provider who is outside his / her normal response area and who is willing to assist the responding ambulance service that may have ALS equipment but no ALS personnel available should identify themselves to the officer-in-charge or senior medical personnel by presenting their:

    - Name
    - NY State certification level and number
    - Suffolk County EMS System-affiliated ambulance service photo identification card
    - Suffolk REMAC Credentialing/Authorization Card

3. NY State certification cards, ambulance service identification cards, and Suffolk REMAC credentialing / authorization cards should be available for inspection by the officer-in-charge or senior medical personnel, and are required documentation on any out-of-county deployment.

4. The officer-in-charge or senior medical personnel shall verify the validity of this information by reviewing the cards. In the event that no identification cards are available, Medical Control may be contacted for authentication.

Upon proper authentication, prehospital emergency medical care should be rendered consistent with the Suffolk County ALS protocols and ambulance service standard operating procedures. The officer-in-charge shall remain in charge of "the scene" and the ALS provider shall be in charge of "the patient."

12. "NO PATIENT FOUND" POLICY

PURPOSE:

The purpose of this policy is to assist EMS personnel with clear guidance for managing situations when an individual for whom an EMS provider has been dispatched to, responds and encounters an individual, who denies injury/illness and has no apparent injury/illness when assessed by the EMS provider. The addition of the term "Patient Encounter" refers to visual contact with an individual during an EMS response, and the term "No Patient Found" replaces the term "Unfounded," thereby eliminating confusion.

POLICY:

1. A "*Patient*' is any person who is injured or ill or in need of treatment by medical personnel. This includes any person that has activated the EMS system **OR** for whom the EMS system has been activated for an ambulance response, **OR** any person that presents themselves to EMS personnel with a medically related complaint such that it could be reasonably inferred that the person is seeking or in need of medical attention. Appropriate paperwork will be completed, including a Prehospital Care Report (PCR), or electronic equivalent.

2. A "*No Patient Found*" is for use in the following situations:

   - No physical person found on EMS arrival after an adequate investigation of the surrounding area; or
   - Unintentional / accidental activation of an emergency medical alert system; or
   - After an adequate investigation it is reasonably certain that the person or persons on-scene did not request an ambulance, and the person:

     - Denies any injury / illness complaints;
     - Does not appearing to have an actual or potential injury / illness;
     - Is capable of making competent decisions regarding refusal of care;
     - Does not have a mechanism of injury is present; and
     - Where EMS personnel on scene ascertain this information having not performed anything other than a visual assessment.

   - After following the criteria of "*No Patient Found*" the highest ranking EMT on-scene must thoroughly document the circumstances of the alarm on the PCR. The PCR may be completed with a disposition code of 009 *"No Patient Found."*

3. Any individual who is given any level of assessment or examination beyond a visual observation, such as a physical assessment / examination, vital signs, treatment or any diagnostic assessment constitutes patient care and the individual is considered a "*Patient"* requiring appropriate disposition.

4. Anytime the EMS provider on-scene feels that an individual has actual **OR** potential for an injury / illness, the individual becomes a "*Patient*" and the EMS provider must follow appropriate patient treatment protocol / RMA policy.

5. Lift assist is a situation that has a high potential for injury, both from the fall and from the conditions that may have precipitated the fall. An individual requiring a lift assist is considered a "*Patient"* and the EMS provider must follow appropriate patient treatment protocol / RMA policy.

13. USE OF RESTRAINT POLICY

A number of factors may contribute to a patient's abnormal behavior, including metabolic causes secondary to low blood sugar, hypoxia, or head trauma, the use of mind altering substances, or psychiatric pathology. **Signs and symptoms associated with a "behavioral emergency" should be considered of a medical nature, and patients should be transported to the closest emergency department for evaluation.** Medical Control may be contacted in cases where questions about necessity of restraint or care arise. BLS providers should consider ALS Intercept. As always, transport should not be delayed.

Patients have the right to refuse treatment and/or transport if they are of legal age and are capable of making an informed decision. A person is considered capable until proven otherwise. There are situations in which the interests of the general public outweigh an individual's right to liberty, including;

- the individual is threatening self-harm or suicide; and / or
- the individual presents a threat to third parties, including medical care-givers.

The purpose of this policy is to provide guidelines on the use of humane medical restraint in out-of-hospital situations for patients who are violent, potentially violent, or who may harm themselves or others, regardless of the underlying cause, when restraint is necessary to limit mobility or temporarily immobilize such patients. *Providers are to use the minimum and least restrictive amount of humane restraint necessary to safely accomplish patient care and transportation with regard to safety for both the patient and provider* dependent on body size and strength, type of abnormal behavior, and mental state.

Indications for restraint include:

- behavior or threats that imply or create a danger to the patient and others;
- the need for safe and controlled access for medical care (medical restraint); or
- involuntary treatment / transportation of irrational or uncontrollable combative patients (behavioral restraint).

To provide care and transportation without the patient's informed consent, EMS providers must be able to document a reasonable belief that the patient would be a threat to self or others. If, during your scene assessment, a patient is encountered who threatens the safety of your crew, retreat and await assistance from law enforcement personnel to assure scene safety.

- in the presence of law enforcement personnel, and after other methods of de-escalating the patient have failed; or
- under standing orders, without law enforcement presence, in situations where crew safety is paramount, based on changes in the patient's mental/behavioral status.

Restraints should only be used in an emergency or crisis situation where the patient is non-compliant with direction, does not follow orders, or when the actions of the patient may result in physical harm to self or others. Once restraints have been applied, they should not be removed until transfer of care occurs at the hospital, under the direction of accepting hospital personnel.

Continued.

Soft restraints are approved for use by EMS providers. Hard restraints, such as handcuffs, cable ties, restraints that require a key and other like restraint devices are not approved for EMS providers. When soft restraints are necessary such activity will be undertaken in a manner that protects the patient's health and safely preserves his/her dignity, rights, and well-being.

The method of restraint used shall allow for adequate monitoring of vital signs and shall not restrict the ability to protect the patient's airway or compromise neurological or vascular status. Restrained extremities should be evaluated for the presence of circulation and motor function every five (5) minutes, with findings documented on the PCR.

In ideal circumstances, four (4) point restraints should be applied (each limb), and upper arm muscle groups should be isolated by restraining the arms in opposite directions. Once the decision to restrain is made, the team should act quickly, and four (4) persons should approach the patient, each pre-assigned to a separate limb.

EMS personnel must ensure that the patient's position does not compromise the patient's respiratory/circulatory systems, or does not preclude any necessary medical intervention to protect the patient's airway should vomiting occur.

If the patient is spitting, EMS providers should cover the patient's face with an oxygen mask, with oxygen flowing, if indicated. Alternatively, a surgical mask may be used as a personal protective barrier, if oxygen is not indicated. Under no circumstances should an EMS provider hold pillows, towels, or other objects over a patient's face.

Patients are to be transported in the supine or left lateral recumbent position. NEVER PLACE A PATIENT FACE DOWN TO RESTRAIN. Fractures, dislocations and positional asphyxia are common complications to the restraint process, and care should be taken to avoid. DO NOT transport a patient in the prone position.

- ***NEVER restrain a patient's hands and feet behind the patient, i.e. hog-tying.***

- ***NEVER "sandwich" patients between backboards, scoop-stretchers, or lying flat as a restraint.***

In situations where EMS providers encounter patients under arrest, or in cases where law enforcement personnel have applied handcuffs or plastic ties, assessment should include ensuring sufficient slack in the restraint device to allow unrestricted abdomen and chest wall movement.

NOTE: If a patient is restrained by law enforcement personnel with handcuffs or other lockable devices, law enforcement personnel must accompany the patient to the hospital in the ambulance. In other circumstances where restraints are applied by EMS providers, and the patient represents a safety risk, EMS providers should request that law enforcement personnel accompany the patient and crew to the hospital for safety purposes.

Continued.

In cases where restraints are applied, complete and thorough documentation on the PCR is essential, and should include specific information as to:

- the reasons restraints were needed, and reasonable force was necessary;
- the need for treatment / transport was explained to the patient regardless of capability;
- evidence of the patient's incapability to make an informed decision;
- whether the restraints were applied by law enforcement or EMS agency and under whose orders the restraints were applied;
- failures of less restrictive measures to de-escalate the incident; and
- on-going assessment regarding the monitoring of airway, breathing and circulation, including circulation and motor function in the restrained extremities.

14. RAPID SEQUENCE INTUBATION (RSI) POLICY – SUFFOLK COUNTY

- Credentialing of RSI paramedics is performed by the Suffolk County RSI Sub-Committee
- Credentialing of an EMS Agency in Suffolk County to be able to perform the RSI procedure will be performed by the Suffolk County REMAC
- RSI may be performed as a single paramedic on standing orders in any adult protocol requiring advanced airway management
- There is no patient GCS requirement in the use of RSI in Suffolk County
- A maximum of **2** (two) intubation attempts (at passing an endotracheal tube) per provider (interchanged with BVM ventilations) is allowed
- If attempts at intubation fail, insertion of a Supraglottic airway is required by protocol
- Use of RSI in pediatric patients requires Medical Control consultation
- Use of RSI in Suffolk County requires the EMS agency and all RSI paramedics' participation in the Suffolk County RSI Sub-Committee regional Quality Improvement process
- Medication Facilitated Intubation (MFI) is not allowed in Suffolk County

APPENDIX 1

ALS FORMULARY

Acetaminophen – for PO administration
Adenosine – for IV administration
Albuterol – for inhalation
Amiodarone – for IV administration
Aspirin – for oral (PO) administration
Atropine – for IV or ET administration
Calcium Chloride – for IV administration
Dexamethasone – for IV, IM or PO administration
Diazepam – for IV administration**
Diltiazem – for IV administration
Diphenhydramine – for IV or IM administration
DuoDote ™
Epinephrine – for IV, IM, IV infusion, IN, or ET administration
Epinephrine Auto-Injectors (adult and pediatric) – for IM administration
Etomidate – for IV administration
Fentanyl Citrate – for IV, IM or IN administration**
Furosemide – for IV administration
Glucagon – for IM or IN administration
Haloperidol – for IM administration
Hydrocortisone Sodium Succinate – for IM administration
Hydroxocobalamin – for IV infusion
Ibuprofen – for PO administration
Ipratropium Bromide – for inhalation
Ketamine Hydrochloride – for IV or IM administration
Ketorolac – for IV or IM administration
Lidocaine – for IO administration
Lorazepam – for IV or IM administration**
Magnesium Sulfate – for IV and IV infusion administration
Mark I™
Metoprolol Tartrate – for IV administration
Midazolam Hydrochloride – for IV, IM or IN administration**
Morphine Sulfate – for IV or IM administration**
Naloxone – for IV, IM, IN or ET administration
Nitroglycerin – for sublingual (SL) administration
Norepinephrine – for IV administration
Normal Saline – for IV administration
Ondansetron Hydrochloride – for IV or IM administration
Ringers Lactate – for IV administration
Rocuronium – for IV administration
Sodium Bicarbonate – for IV administration
Succinylcholine – for IV administration
Vecuronium Bromide – for IV administration
50% Dextrose in Water – for IV administration

Continued.

APPENDIX 1 – Continued.

ALS FORMULARY

25% Dextrose in Water – for IV administration
10% Dextrose in Water – for IV administration
Sodium Chloride – for irrigation

See Medication Fact Sheets in this Appendix for detailed medication-specific information. In addition to the medications listed above, the necessary IV catheters, needles, syringes, administration sets, cardiac monitor/defibrillators, EKG electrodes, hands-free pads (monitoring, defibrillation, cardioversion, transcutaneous pacing), laryngoscopes and blades, endotracheal tubes, nebulizers, Broselow Tapes, or any other equipment or devices necessary to perform authorized ALS procedures may also be purchased.

** Requires a Class 3C Controlled Substance License.

APPENDIX 2

SUFFOLK COUNTY ANIMAL BITE REGISTRY

The Suffolk County Legislature adopted Resolution 1083-1995 on November 28, 1995 establishing a registry for animal bite incidents that occur in Suffolk County. The law requires that any ambulance or rescue squad responding to an incident that involves an animal bite file a report with the Suffolk County Police Department, the Suffolk County Department of Health Services – Division of Public Health, and the animal control shelter in the township in which the bite incident occurred.

To comply with the reporting requirements of the law, the following procedures must be adhered to:

1. The ANIMAL BITE REGISTRY form must be completed in its entirety and mailed to the authorized agencies within twenty-four (24) hours of the incident.

2. The white (1st) copy shall be retained by the reporting agency and attached to the agency's copy of the Pre-Hospital Care Report (PCR) generated for the incident.

3. The yellow (2nd) copy shall be mailed to the Suffolk County Police Department – Police Headquarters, 30 Yaphank Avenue, Yaphank, NY 11980.

4. The pink (3rd) copy shall be mailed to the Suffolk County Department of Health Service's Division of Public Health – 3500 Sunrise Highway, Suite 124, P.O. Box 9006, Great River, New York 11739-9006

5. The gold (4th) copy shall be mailed to the Animal Control Shelter in the township in which the bite incident occurred.

Suffolk County Animal Bite Registry information and forms can be found on the Suffolk REMSCO website under "Downloads and Forms," and agencies must make / distribute the appropriate copies.

APPENDIX 3

Procedures Requiring Regional Authorization

- EMT 12 Lead Acquisition and Transmission
- EMT CPAP
- Paramedic RSI

APPENDIX 4

BOUGIE DEVICE

Indications:

The Bougie Device may be used in the patient with an identified or pending difficult airway. Identification of the difficult airway may be made from past history, pre-procedure visualization exam, an unsuccessful ET intubation attempt, or in anticipation of a difficult airway. The device may be used in the following situations:

- tracheal intubation via direct or video laryngoscopy, especially in difficult airways or during CPR
- tracheal intubation via supraglottic airway device
- needle cricothyrotomy
- confirmation of endotracheal tube position

Contraindications:

- Any intubation requiring a tube smaller than size 6.0.

Procedure:

1. Once the sterile package of the bougie has been opened, create the desired shape and bend the distal end if required to form a coude tip.
2. The bougie is typically held by the intubator 20-30 cm proximal to the coude tip.
3. Perform video laryngoscopy or direct laryngoscopy in the traditional manner to view the patient's vocal cords. If the vocal cords are not completely visible (Mallampati Grade III or Grade IV), insert the distal end of the bougie with the bend facing up into the oropharynx and attempt to place the bougie into the larynx.
4. The bougie should be inserted via the side of the mouth, rather than down the center, so that rotation of the bougie provides better control of the coude tip in the vertical plane.
5. The user should feel the tip of the bougie 'click' as it passes along the tracheal rings.

5a. The bougie is typically inserted directly into the trachea and then used as a guide over which the endotracheal tube can be railroaded; or

5b. The bougie can be preloaded with an endotracheal tube or an assistant can pass the endotracheal tube over the free end of bougie while the intubator maintains visualization of the bougie/cords and ensures the placement of the bougie remains secure

6. The tracheal tube should be introduced through the cords, over the bougie, using a 90º counter-clockwise rotation to prevent its beveled point from getting caught in the arytenoids
7. Once the ET tube is in the correct position the ET tube is securely held in place while the assistant slowly removes the bougie. Final steps will consist of removing the laryngoscope, inflate the cuff, and confirm and secure the ET tube.
8. When used to confirm endotracheal placement the bougie is passed down the endotracheal tube and there should be 'hold up' at 30-40cm depth, indicating that the bougie has reached the carina or a mainstream broncus. If this does not occur the bougie is likely to be in the esophagus.

APPENDIX 5

CERTIFIED EMS PROVIDERS AS MANDATED REPORTERS OF CHILD ABUSE

This policy applies to all certified EMS providers, while on "duty status" in NY State, as required by Section 415 of Social Services Law. The law states that:

"Reports of suspected child abuse or maltreatment made pursuant to this title shall be made immediately by telephone or facsimile machine on a form supplied by the Commissioner. Oral reports shall be made to the statewide register of child abuse and maltreatment unless the appropriate local plan for the provision of child protective services provides that oral reports should be made to the local child protective services." EMS providers are also mandated to make a referral if a child is encountered at a location where there is evidence of methamphetamine production (meth lab) or use.

10NYCRR Part 800.21(p) (11) (ii) requires all ambulance services to have and enforce a written policy regarding the reporting of child abuse/maltreatment cases. This policy shall include at a minimum:

- *PCR Documentation;*
- *Emergency Department staff notification;*
- *Placing a call to the toll-free number; and*
- *Completion of the DSS 2221-A form.*

Oral reports of suspected child abuse/maltreatment shall be made by calling the **NY State Child Abuse/Maltreatment Register at: 1-800-635-1522 and by** mailing the completed DSS 2221-A form to:

CPS Register/Intake Unit
Suffolk County Department of Social Services
PO Box 18100
Hauppauge, NY 11788-8900

The oral telephone report must be made as soon as feasible after the alarm and the written report must be submitted within 48 hours of the alarm. When multiple EMTs are on a call, only 1 EMT needs to make the call and submit the report on behalf of the entire crew, ***however,*** each EMT must ensure that his / her name is on all DSS reports to document compliance with the requirement.

Please refer to NY State Policy Statement 02-01 for additional detailed information. The DSS 2221-A form can be found on the Suffolk REMSCO website under "Downloads and Forms."

APPENDIX 6

DESIGNATED EMS FIELD PHYSICIANS

MD 1	*Jason Allen Winslow, MD*	*EMS System Medical Director*
MD 103	*Maury Greenberg, MD*	*Yaphank Fire Department*
MD 105	*Michael Torelli, MD*	*Exchange Ambulance of the Islips*
MD 107	*Jack Geffken, DO*	*Centerport Fire Department*
MD 108	*David Kugler, MD*	*Melville Fire Department*
MD 110	*Carl Goodman, DO*	*Port Jefferson Ambulance*
MD 120	Scott Coyne, MD	Cold Spring Harbor Fire Department
MD 132	Frank Adipietro, MD	Town of Shelter Island EMS
MD 134	David Seres, MD	Ocean Beach Fire Department
MD 137	*Augustus Mantia, MD*	*Hauppauge FD, St. James FD*
MD 138	Brian Blaustein, DO	Commack VAC, Sayville VAC
MD 145	*Christopher Ng, MD*	*Selden Fire Department*
MD 147	*Juan Acosta, MD*	*CI-Hauppauge Ambulance*
MD 148	Susan O'Malley, MD	Kings Park Fire Department
MD 150	Ben Zabar, MD	Saltaire Fire Department
MD 152	Christopher Ingram, MD	Fishers Island Fire Department
MD 153	*James Vosswinkel, MD*	*Suffolk County Police Department*
MD 154	Trevor Marshall, MD	Stony Brook University EMS
MD 155	Lauren Maloney, MD	Stony Brook University EMS, Holbrook FD, Stony Brook VAC
MD 156	Daryl Williams, MD	Stony Brook University EMS
MD 157	Chris Guszack, MD	Bay Shore-Brightwaters VAC
MD 158	Joseph Artale, DO	Shirley Community Ambulance
MD 159	Jerry Rubano, MD	Shirley Community Ambulance
MD 444	*Ethan Brandler, MD*	*Huntington Community First Aid Squad*

The physicians denoted in *italics type* are members of the Suffolk County Disaster Medical Response Team (DMRT).

APPENDIX 7

FACE, LEGS, ACTIVITY, CRY, CONSOLABILITY (FLACC) PAIN SCALE

Normally used for infants, the FLACC Pain Scale is a good assessment tool to help the provider determine, to a relatively accurate level, the level of pain experienced by any patients who cannot communicate.

Medscape® www.medscape.com

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

Note: Each of the five categories Face (F), Legs (L), Activity (A), Cry (C), and Consolability (C) is scored from 0-2, which results in a total score between 0 and 10.

From Merkel, Voepel-Lewis, Shayevitz, & Malviya (1997). The FLACC: A behavioral scale for scoring postoperative pain in young children. *Pediatric Nursing, 23*(3) 293-297.

APPENDIX 8

INITIAL CASE REVIEW – FIELD REPORT PROCEDURE AND FORM

As part of our expanding quality improvement initiative, the Emergency Medical Services (EMS) Division has developed a mechanism to give EMS providers an opportunity to document their concerns about issues that may arise during any phase of out-of-hospital emergency medical care. Examples may include, but are not limited to, interactions with other providers, agencies, receiving hospitals and Medical Control.

The form has been distributed to each ambulance service with recommendations to duplicate and keep available at your headquarters. The form gives you the opportunity to initiate the review of a particular concern and provides a follow-up mechanism where feedback can be used to help identify and resolve a problem. The goal is to encourage a partnership approach to patient care among the many components of our emergency medical services system.

The procedure for using the form is as follows:

1. Generate the form, listing the details and your concerns about the issue.

2. Mail the form to:

Suffolk County EMS Division
360 Yaphank Ave., Suite 1B
Yaphank, New York 11980
Attn: Chief, Education & Training

3. A review of the incident will be performed.

4. The individual generating the report will receive a written summary of the review and recommendations for remedial action, should it be required.

NOTE: The form may also be sent via FAX to 631-852-5028 or as a .pdf file via email to william-michael.masterton@suffolkcountyny.gov.

A sample copy is provided on the next page.

Continued.

APPENDIX 8 – Continued.

INITIAL CASE REVIEW - FIELD REPORT PROCEDURE AND FORM

Suffolk County Emergency Medical Services System
Initial Case Review Field Report

QUALITY IMPROVEMENT DOCUMENT
CONFIDENTIAL INFORMATION

Report Date:_____ Incident Date:_____

Medical Control Run # (when applicable):_____

Report Submitted By: _____ _____
_____ _____
_____ _____

Description of event:

_____
_____
_____
_____
_____
_____
_____
_____
_____
Continue on separate sheet if necessary

SCEMS/ICRFR/Quality Improvement Program Document. Information is used for quality improvement purposes and protected by the Health Insurance Portability and Accountability Act (HIPAA) guidelines.

APPENDIX 9

NEEDLE CRICOTHYROTOMY

Paramedic Skill Only*

Indications:

This is a temporary procedure to provide oxygenation in the presence of upper airway obstruction. This procedure shall be performed after attempts at insertion of the endotracheal tube or supraglottic airway are unsuccessful and the airway cannot be controlled. Use of a jet-insufflator is required for ventilation through a needle cricothyrotomy and delivers a large volume of oxygen under high pressure.

Equipment:

- Large bore catheter (12-14 gauge over-the-needle)
- 5 ml or 10 ml syringe
- Jet Insufflator
- Alcohol preps
- Adhesive tape
- Oxygen source

Procedure:

1. Ensure that the patient is supine, and that the cricothyroid membrane has been identified. If a cervical spine injury is suspected use in-line stabilization.

2. Stabilize the larynx using the thumb and middle finger of one gloved hand.

3. With the other gloved hand, palpate the small depression below the thyroid cartilage and slide the index finger down to locate the cricothyroid membrane.

4. Insert the needle of the syringe at a downward angle (45-60 degree) towards the patient's carina, while aspirating air with the syringe during insertion. (Air entering the syringe will be the indicator that the needle has entered the trachea).

5. Remove the syringe and needle while advancing the catheter.

6. Secure the catheter in place with adhesive tape.

7. Connect the Jet Insufflator to the catheter and begin to ventilate by pressing in on the colored (gray) plunger. Once the chest begins to rise, release the plunger to ensure adequate exhalation.

8. The paramedic should deliver twenty (20) breaths per minute and continue to monitor ventilatory support by assessing adequacy of ventilations and checking for complications, such as pneumothorax or inadequate chest deflation.

APPENDIX 10

KING AIRWAY

Indications: The Pharyngo-Esophageal King Airway Device is a latex-free airway device that may be used on the **Adult or Pediatric** patient in CARDIAC ARREST or RESPITATORY ARREST without a gag reflex, if intubation is not successful or a difficult airway is anticipated based on assessment of the patient's anatomy. The device comes in multiple sizes, each of which is to be carried, and choice is made based on patient height parameters, as indicated below.

Description: Similar to the Combi tube, the King Airway utilizes two (2) balloons to isolate the hypopharynx and laryngeal inlet. The ventilation then passes through the outlets at the distal end into the trachea. The King Airway is not a definitive airway as the tube does not pass below the vocal cords. Features include: a curved tube with a 15 mm standard ventilation circuit connector; and ventilation ports between the proximal inflatable cuff (seals the oropharynx) and distal inflatable cuff (seals the esophagus).

Size	**2**	**2.5**	**3**	**4**	**5**
Connector color	**Green**	**Orange**	**Yellow**	**Red**	**Purple**
Patient size	**35-45 in**	**42-51 in**	**4-5 feet**	**5-6 feet**	**>6 feet**
Cuff volume	**25-35 mL**	**30-40 mL**	**45-60mL**	**60-80 mL**	**70-90 mL**

Contraindications:

- Responsive patients with an intact gag reflex;
- Patients with known esophageal disease, i.e. esophageal varices; or
- Patients known or suspected to have ingested caustic substances.

NOTE: Medications cannot be administered through the King Airway.

Instructions for use:

- Choose appropriate size based on patient's height.
- Test cuffs by inflating to recommended volume of air and deflate cuffs completely before attempting to insert.
- Generously lubricate tube using a water soluble lubricant.
- Pre-oxygenate patient with 100% O2.
- Have suction available.

Insertion:

1. Position the head in a slightly sniffing position, unless spinal injury is known or suspected, then maintain cervical alignment and keep the head in a neutral position.
2. Insert King, rotated 45-90 degrees laterally, into mouth
3. Gently advance the tube rotate tube to midline.
4. Advance tube until base of connector aligns with teeth or gums.
5. Inflate cuffs with minimum volume necessary to seal the airway according to tube size.
6. Attach to resuscitator bag and ventilate using 100% O2 source.

Continued.

APPENDIX 10 – Continued.

KING AIRWAY

7. Assure chest rise and fall. Auscultate breath sounds.
8. Secure tube, using a commercially approved device, noting depth of tube placement.
9. Monitor end tidal CO2.

Notes:

- Once in the hospital, the King Airway may continue to be used to ventilate a patient similar to an endotracheal tube. You can ventilate using a bag-valve or ventilator utilizing a standard connector and utilize adjuncts such as end-tidal carbon dioxide monitoring.
- As with an endotracheal tube, adequacy of ventilation should be based on multiple criteria such as adequate chest rise, auscultation of breath sounds, wave form capnography, and/or adequate oxygenation.
- The esophageal balloon will prevent gastric decompression, so conversion to an endotracheal tube would be needed to achieve this task.
- The King Airway may be left in place for several hours, until more optimal airway management can be achieved.

APPENDIX 11

LEFT VENTRICULAR ASSIST DEVICE (LVAD)

An increasing number of individuals are discharged home implanted with a left ventricular assist device or left ventricular assist system (LVAD / LVAS) to sustain life while either waiting for a heart transplant, treatment for congestive heart failure, or as destination therapy. The most common device being used in our community is the HeartMate 3 left ventricular assist system. As these devices do not provide pulsatile flow and it is very rare that you will be able to get a palpable pulse and you may not have a readily measurable blood pressure. This appendix shall provide guidance to the EMS provider when encountering a patient with such device regardless of whether the emergency is due to the device or not.

An LVAD / LVAS is a surgically implanted, battery-powered pump that helps the left ventricle pump adequate amounts of blood to the body. The LVAD / LVAS is implanted in the left ventricle and connected to a power supply located outside the body. Blood is sent through a tube (inflow cannula) in the left ventricle into the LVAD / LVAS, which pumps the blood through another tube (outflow cannula) into the aorta and throughout the body. An LVAD / LVAS can be implanted in people who are candidates for a heart transplant as a "bridge to transplant." Some patients may experience improved heart function while the LVAD / LVAS is in place, which may make the transplant unnecessary. In patients who are ineligible for a heart transplant, the LVAD can be a "destination therapy," that is, the LVAD / LVAS is implanted permanently.

A patient may request emergency medical services for a problem that may or may not be related to the device, or cardiac in nature. The patient and family are likely to be very well trained in responding to emergencies related to the device. Defer to the expertise of the patient and family when possible. This material is not a substitute for additional education from appropriately trained individuals. Ascertain, and make note of: pump model; installing institution; and institution VAD coordinator phone number from a tag located on the pocket controller. Patients may also have a medical bracelet, necklace, or wallet card with this information.

Warnings and Precautions:

- Patient may not have a palpable pulse or measurable blood pressure even when the pump is providing adequate circulation.
- LVAD / LVAS patients should be assessed for signs of circulation as an indication of adequate perfusion (capillary refill, skin color, warmth).
- Check with family for DNR or MOLST instructions.
- The use of an automated blood pressure cuff is recommended. A Doppler is used ONLY in the event the automated BP cuff is unable to obtain a reading.
- Keep the Power Module (PM) / Power Base Unit (PBU) away from water. If the PM / PBU comes in contact with water, the pump may stop, or the patient may receive a serious electrical shock.
- Connect the device to a properly tested, grounded and dedicated AC outlet when necessary. Do not use an adapter for an ungrounded wall outlet or power strip.
- Do not connect to an outlet controlled by a wall switch.
- In the event that the LVAD / LVAS stops operating, attempt to restore pump function immediately. In the event that the LVAD / LVAS stops operating and blood is stagnant in the pump for more than a few minutes, there is risk for stroke or thromboembolism.

Continued.

LEFT VENTRICULAR ASSIST DEVICE (LVAD)

- You should **NEVER** disconnect both System Controller power leads at the same time. In the event this advertently occurs, the back-up battery in the system controller will take over running the pump for fifteen (15) minutes.
- **Disconnecting the percutaneous (skin) lead from the Controller System will result in loss of pump function. The System controller must be reconnected as quickly as possible to resume pump function.**
- Do not force connections. You can break a pin which will interfere with proper functioning of the device.
- At least one (1) set of fully-charged spare batteries and back System Controller should remain with the patient at all times. These items are usually included in the patient's emergency back-up bag which should always accompany the patient.
- Do not disconnect controller from patient unless instructed by Medical Control.

Handling Emergencies Related to the LVAD / LVAS:

An emergency condition exists whenever the device is potentially or actually unable to pump an adequate amount of blood. These conditions are signified by a HAZARD ALARM symbol and CONTINUOUS AUDIO TONE. The System Controller should not be removed or replaced unless directed by Medical Control in consultation with the LVAD coordinator.

There is no back up pump. In the event that LVAD / LVAS stops operating, all attempts must be made to restore function immediately by:

- Checking the percutaneous lead connection to the System Controller;
- Switch power source; and/or

Emergency Scenarios

- Assess airway and breathing. Treat airway obstruction or respiratory distress per protocol. Treat medical or traumatic conditions per protocol;
- Assess circulation;
- Auscultate (listen with a stethoscope) over the precordial / epigastric (heart / upper stomach) area for a motorized "hum" and simultaneously visualize the controller for a green light or lit screen;
- Assess perfusion based on mental status, capillary refill, and skin color;
- In continuous flow VAD patients (HeartMate II, Heartmate 3 and HeartWare©), the absence of a palpable pulse is normal even in the setting of a normally functioning device. Patients may not have a readily measurable blood pressure.
- Perform CPR **only** when there are no signs of flow or perfusion (the person is unresponsive, pulseless, and there is no evidence of the pump functioning [eg: no motor "hum"]);
- Assess pump function;
- Ascertain, and make note of: pump model; installing institution; and institution VAD coordinator phone number from a tag located on the pocket controller. Patients may also have a medical bracelet, necklace, or wallet card with this information;
- Perform a secondary assessment and treat per appropriate protocol;

Continued.

- **Notify the receiving facility promptly and consider early consultation with the VAD coordinator or medical control,** *regardless* of the patient's complaint;
- Assure that patient has the extra batteries, and backup controller for transport, these items should be in the patients Emergency Back-Up Bag; and
- A trained support member should remain with patient.

A. LVAD / LVAS Failure – Continuous Alarm (Red Heart) – LVAD / LVAS may have stopped:

- The patient's own heart is intact and ***may*** provide minimal cardiac output while the LVAD / LVAS is stopped.
- **ALS providers should place the patient on a cardiac monitor and fully assess the patient. Medical Control should be contacted for treatment orders and to assist with a destination decision. When an emergency condition exists, unless the patient is in extremis, the patient should be transported to Stony Brook University Hospital (LVAD Center) if it is no more than twenty (20) minutes past the closest hospital. Medical Control may be contacted for assistance with a transportation destination decision. Medical Control should be contacted prior to transporting an LVAD patient to a non-LVAD center.**

KEY POINTS/CONSIDERATIONS

- Community patients with VADs are typically entirely mobile and independent.
- Trained support members include family and caregivers who have extensive knowledge of the device, its function, and its battery units. They may act as a resource to the EMS provider when caring for a VAD patient.
- One set of fully charged Heartmate II batteries provide 10-12 hours of power and Heartmate 3 batteries provide 14-16 hours of power.
- If the battery or power is low, the batteries need to be replaced immediately.
- Assist with the replacement of batteries if directed by patient / caregiver.
- Avoid disconnecting both batteries at once as the back-up battery in the system controller will only provide an additional 15 minutes of power).
- Keep the device components dry.
- The most common complication in VAD patients is infection. VAD patients are susceptible to systemic illness, sepsis, and septic shock due to their abdominal driveline as a conduit of infection. The DRIVELINE DRESSING SHOULD NOT BE REMOVED EVEN IF SOILED. If required the dressing may be reinforced.
- Patients with a VAD are highly preload dependent and afterload sensitive. Low flow alarms are frequently due to MAP >90 mmHg. The devices are sensitive to alterations in volume status and careful volume resuscitation is often necessary.
- VAD patients are heavily anticoagulated and susceptible to bleeding complications.
- Patients may have VF / VT and be asymptomatic.

Controller Device Normal Values:

	Heartmate II©	Heartmate 3©	HVAD©
Speed	8,000-10,000 RPM	5,000-6,000 RPM	2400-3200 RPM
Power	4-7 watts	3-7 watts	3-6 watts
Flow	4-8 L/min	3-6 L/min	3-6 L/min
Pulsatility Index (PI)	4-6	1-4	NA

APPENDIX 12

MEDICAL MATH FORMULAS

Finding ordered dose:

$$x = \frac{\text{(volume on hand) (ordered dose)}}{\text{(concentration on hand)}}$$

Finding units per kilogram:

$$x = \frac{\text{(ordered dose) (weight [kg])}}{\text{1 kg}}$$

Finding the concentration of a solution:

$$x = \frac{\text{solute (grams or milligrams of drug)}}{\text{solvent (liters or milliliters of volume)}}$$

Calculating an IV drip:

$$x = \frac{\text{IV bag volume}}{\text{Amount of drug in bag}} \times \frac{\text{unit ordered}}{\text{1 min.}} \times \frac{\text{administration set (gtt)}}{\text{1 mL}}$$

Milliliters per hour to drops per minute:

$$x = \frac{\text{order amount (mL)}}{\text{order time (min.)}} \times \frac{\text{administration set (gtt)}}{\text{1 mL}}$$

APPENDIX 13

MEDICATION DRIP CHART – EPINEPHRINE

1mg of 1:10,000 Epinephrine in 250 cc of N.S. = (4 mcg/ml)
All Epinephrine Infusions must be run on a rate-limiting device (dial-a-flow)

2 mcg/min	**30ml/hr.**
3 mcg/min	**45ml/hr.**
4 mcg/min	**60ml/hr.**
5 mcg/min	**75ml/hr.**
6 mcg/min	**90ml/hr.**
7 mcg/min	**105ml/hr.**
8 mcg/min	**120ml/hr.**
9 mcg/min	**135ml/hr.**
10 mcg/min	**150ml/hr.**

MEDICATION DRIP CHART – NOREPINEPHRINE

4 mg Norepinephrine (Levophed ™) in 1,000 mL of Normal Saline
400 mcg / 100mL = 4 mcg/mL

All Norepinephrine Infusions must be run on a rate-limiting device (dial-a-flow).

5 mcg/minute	**75 mL/hr.**
10 mcg/minute	**150 mL/hr.**
15 mcg/minute	**225 mL/hr.**
20 mcg/minute	**300 mL/hr. (OPEN)**

APPENDIX 14

NEEDLE DECOMPRESSION

Indication:

To emergently treat a patient with a life threatening tension pneumothorax.

Pathophysiology of a Tension Pneumothorax:

Tension occurs due to a disruption of the visceral and parietal pleura. A one-way valve is formed during inspiration and pressure rises causing a lung to collapse on the effected side. The mediastinum begins to shift towards the side of the unaffected side due to an increase pressure build up in the pleural space. Cardiac output begins to decrease as venous return is inhibited. Remember some patients may require a second decompression and the chest wall may be thicker than three (3) inches deep.

Etiology:

- Blunt or penetrating trauma
- Barotrauma secondary to positive pressure ventilation.
- Chest compressions
- Conversion of a spontaneous pneumothorax

Signs and Symptoms:

- Severe dyspnea / tachypnea
- Absent or diminished breath sounds on the affected side
- Tracheal deviation
- Hyperresonance
- Chest pain
- Decreased level of consciousness
- Hemodynamic compromise (tachycardia, hypotension)

Procedure:

1. Administer 100% oxygen, consider assisting ventilations with BVM.
2. Locate anatomic landmark
3. (Angle of Louis) and the 2nd intercostal space – above the 3rd rib, midclavicular.
4. Prepare the area that is going to be punctured by swabbing with an alcohol wipe.
5. Use the fingers of the non-dominant hand to stretch the skin.
6. Insert a large-bore appropriate length over-the-needle catheter, into the 2nd intercostal space, just above the 3rd rib.
7. Insert needle and catheter perpendicular to the chest wall.
8. Once the needle is in the pleural space, listen for the hissing sound of escaping air.
9. Remove the needle, (**be careful not to kink the catheter*)*** and secure the catheter in place with tape.
10. Auscultate for bi-lateral lung sounds.

APPENDIX 15

NON-INVASIVE CO-OXIMETRY AT CARBON MONOXIDE EMERGENCIES

Carbon Monoxide (CO) is a common by-product of incomplete combustion, present whenever fossil fuels are burned. CO is a colorless, odorless, tasteless, non-irritating gas, and is a SYSTEMIC ASPHYXIANT that interferes with oxygen transportation throughout body and interferes with oxygen utilization at the cellular level.

Because you can't see, taste, smell, or sense CO, the gas can cause irreparable harm or death before you know it is even present in your environment. CO has a Vapor Density of 0.97, which means that its weight, relative to the ambient air, is slightly less than/just about equal to that of the ambient air, which has a value of 1.0. That means that CO will not float, and seek out higher areas, nor will it sink, and collect in low lying areas. Rather, CO will be carried throughout the structure, following natural air currents and flow patterns. Potential sources that should be sought out at an alarm include, but are not limited to:

- Blocked Chimney Opening
- Clogged Chimney
- Portable Heaters / Space Heaters
- Gas Clothes Dryers
- Wood-burning Fireplace / Stove
- Gas Stoves & Ovens
- Gas Heaters (Forced Air/Hot Water)
- Corroded or Disconnected Water Heater Vent Pipes
    - Leaking Chimney Pipe or Flue
    - Auto Exhaust in Garage
    - Yard Equipment Exhaust in Garage
    - Using Gas Grills in Enclosed Spaces
    - Using gasoline generators in / around buildings
- Fire Scenes: Refer to Emergency Incident Rehab Policy for emergency responders operating at fire scenes.

While fire department or hazardous materials responders conduct atmospheric monitoring activities, EMS personnel should be seeking out occupants to ensure that individuals are not patients, with the following in mind:

Everyone is at risk for CO-related illness or death; some individuals are more vulnerable, including: unborn babies of pregnant females**; infants; children; the elderly; individuals with history of heart or lung disease; and individuals under the influence of alcohol or drugs. Severity of symptoms influenced by four (4) main factors: concentration of CO in the environment; duration of exposure; activity; and rate/work of breathing.

In addition, the dose/rate/weight relationship directly proportional to progression of signs & symptoms of exposure, **therefore, signs & symptoms play a far greater role in identifying exposed people that a SpCO value. REMEMBER – The use of pulse oximetry (SpO2) in individuals exposed to CO will produce false high SpO2 readings.**

Continued.

APPENDIX 15 – Continued.

NON-INVASIVE CO-OXIMETRY AT CARBON MONOXIDE EMERGENCIES

At low levels, symptoms can include: headache/impaired judgment; dizziness / confusion / loss of memory / AMS; weakness / fatigue / sleepiness; visual disturbances; vertigo / tinnitus; nausea, vomiting; chest tightness; dyspnea; and at higher levels can progress rapidly through these signs & symptoms to loss of consciousness; seizure; coma; and death.

AT ANY TIME THAT AN INDIVIDUAL EXPRESSES ANY CHIEF COMPLAINT, OR HAS ABNORMAL VITAL SIGNS, HE/SHE BECOMES A PATIENT AND ALL APPLICABLE POLICIES AND PROTOCOLS MUST BE FOLLOWED.

EXPOSURE TO CO IS A HIGH RISK CRITERIA, REQUIRING MEDICAL CONTROL CONTACT, INCLUDING CASES WHERE SpCO MEASUREMENT IS TAKEN AND WHEN THERE ARE ANY LEVELS OF CO IN THE ATMOSPHERE ABOVE NORMAL LEVELS.

Non-invasive CO-oximetry may be used by any EMS provider trained and authorized in its use. If SpCO greater than or equal to (≥) 12% – TREAT with 100% oxygen and TRANSPORT to the closest emergency department.

If SpCO less than (<) 12% **BUT** signs of CO exposure are present – TREAT with 100% oxygen and TRANSPORT to the closest emergency department.

ANY PATIENT WITH ASSOCIATED BURNS SHALL BE TRANSPORTED IN ACCORDANCE WITH THE BURN DESTINATION DECISION POLICY REGARDLESS OF THEIR CARBON MONOXIDE LEVEL.

If SpCO less than (<) 12% and NO SIGNS OF CO EXPOSURE AND NORMAL VITAL SIGNS AND ATMOSPHERIC MONITORING LEVELS ARE WITHIN NORMAL LIMITS, no further medical monitoring is needed. Advise individuals to pay attention for the appearance of the signs & symptoms noted above and to seek medical attention if signs & symptoms develop. An emergency incident log must be established to document history, physical exam, SpCO reading and disposition.

Per the High Risk RMA Criteria, Medical Control must be contacted in situations where there is atmospheric monitoring indicating elevated levels of CO in the atmosphere, and/or any non-invasive CO-oximetry reading greater than (>) 12 regardless of the presence or absence of signs/symptoms.

WHEN IN DOUBT CONTACT MEDICAL CONTROL FOR PHYSICIAN CONSULTATION.

The following reference table provides expected signs or symptoms that can be predicted based on percentage of CO detected in the blood. This is only a guideline, based on a variety of variables that the EMS provider may not be aware of.

Continued.

APPENDIX 15 – Continued.

NON-INVASIVE CO-OXIMETRY AT CARBON MONOXIDE EMERGENCIES

Patients should be transported to the closest appropriate emergency department, NOT directly to a hospital with a hyperbaric chamber, unless that hospital is in your catchment area. Hyperbaric therapy for patients with CO exposure is ordered based on abnormal neurological examination and laboratory confirmed blood values (>25% CoHb). In addition, hyperbaric chambers may not be readily available upon your arrival and 100% oxygen via non-rebreather facemask changes blood saturation.

SpCO Expected signs / symptoms

0-3%	Normal non-smoker
4-10%	Mild headache, shortness of breath with exertion
10-20%	Moderate headache, fatigue, shortness of breath
20-30%	Severe headache, blurred vision, nausea, dizzy, irritable, cardiac ischemia
30-40%	Muscle weakness, vomiting, vertigo, confusion
40-50%	Arrhythmias, syncope
50-60%	Seizures, shock, apnea, coma

**** NOTE: Medical Control MUST BE CONTACTED for any pregnant female patient exposed or potentially exposed to CO, regardless of absence of signs / symptoms, OR a SpCO reading of 0% or higher.**

APPENDIX 16

PEDIATRIC GUIDELINES

A Pediatric Length Based Resuscitation Tape is required for use on all pediatric patients. The tape should be used to measure the pediatric patient to estimate the body weight and provides you with pertinent weight based pharmaceutical and procedural information. To use the tape, place the patient's **heel** at the "Measure From This End" notation. Pull the tape taut and note the level of the **head**. The top of the patient's head coincides with the appropriate color-coded section.

- **ALL MEDICATIONS** delivered via the IV/IO route should be followed by a 10-20 cc NS flush.

- **IN ROUTE** may be used for Midazolam in pediatric seizures, Narcan for pediatric opiate OD, Glucagon (double the dose that is listed per Broselow tape) and fentanyl for pediatric pain management.

- **BAG VALVE MASKS** should not have a "pop-off" value, or the "pop-off" valve, if present, should be disabled if adequate chest rise is not achieved.

- Ibuprofen should not be administered to patients under 6 months of age.

Vital Sign Parameters for Pediatric Patients by Age Group

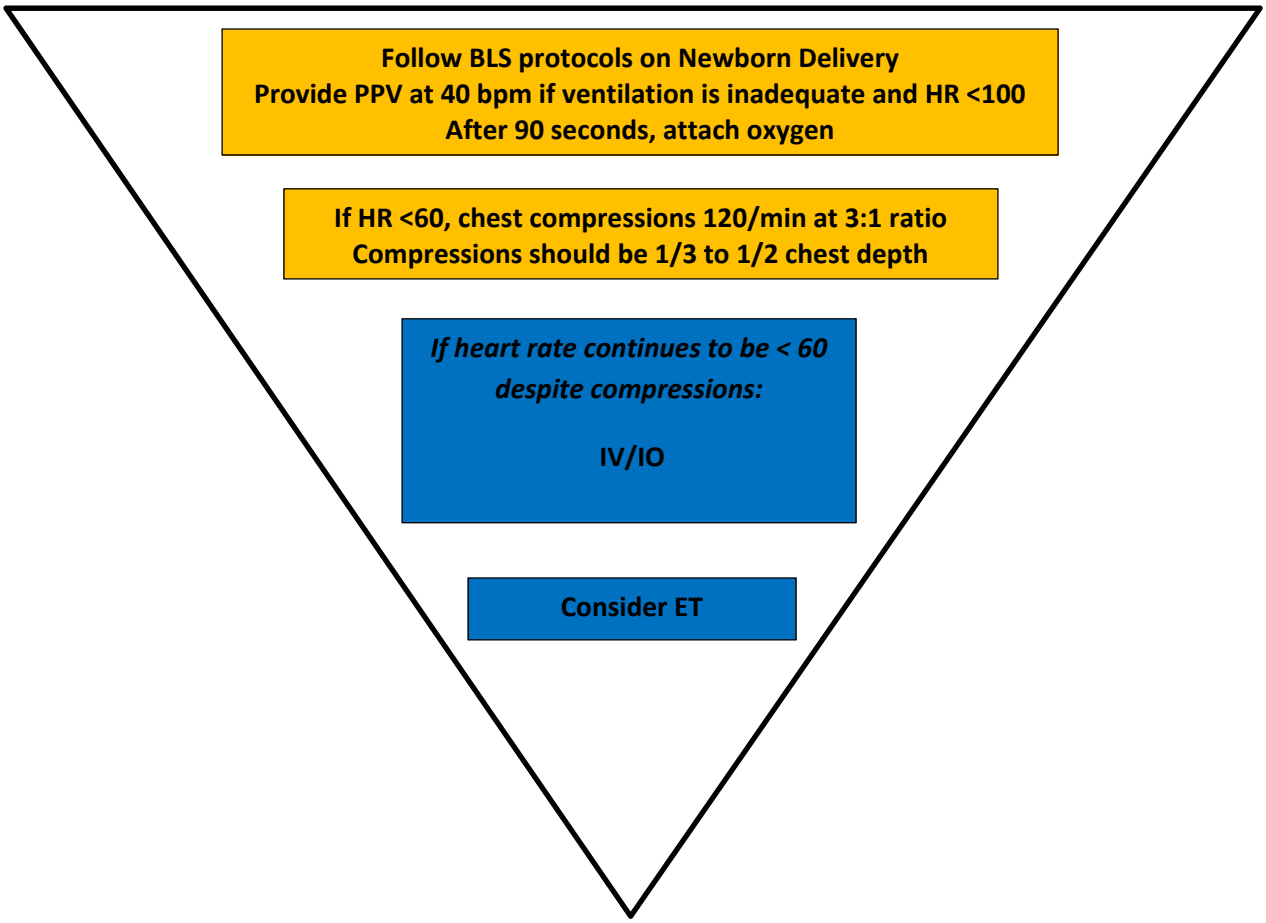
Age Group	*Respiratory Rate*	*Heart Rate*	*Systolic BP*
Newborn (birth – 1 month)	30-60	100-160	**
Infant (1 month – 12 months)	25-40	100-160	> 60**
Toddler (1 – 3 years)	25-30	90-140	> 75**
Preschool (3 – 6 years)	20-25	80-140	> 80
School Age (6 – 12 years)	18-25	70-120	> 85
Adolescent (13 – 18 years)	12-20	60-110	> 90

****In infants and children three (3) years and younger, the presence of a strong central pulse should be substituted for a blood pressure reading.**

Continued.

PEDIATRIC GUIDELINES

0	1	2
Blue or pale all over	Body pink, extremities blue	No cyanosis
Absent	< 100	> 100
No response to stimulation	Feeble cry when stimulated	Cry or pull away when stimulated
None	Some flexion	Flexed arms and legs that resist extension
Absent	Weak, irregular, gasping	Strong cry



Continued.

APPENDIX 16 – Continued.

PEDIATRIC GCS

	1	2	3	4	5	6
EYES	Does not open eyes	Opens eyes in response to painful stimuli	Opens eyes in response to speech	Opens eyes spontaneously		
VERBAL	No verbal response	Inconsolable, agitated	Inconsistently inconsolable, moaning	Cries but consolable, inappropriate interactions	Smiles, orients to sounds, follows objects, interacts	
MOTOR	No motor response	Extension to pain (decerebrate response)	Abnormal flexion to pain for an infant (decorticate response)	Infant withdraws from pain	Infant withdraws from touch	Infant moves spontaneously or purposefully

Best eye response: (E)

4. Eyes opening spontaneously
3. Eye opening to speech
2. Eye opening to pain
1. No eye opening or response

Best verbal response: (V)

5. Smiles, oriented to sounds, follows objects, interacts
4. Cries but consolable, inappropriate interactions
3. Inconsistently inconsolable, moaning
2. Inconsolable, agitated
1. No verbal response

Best motor responses: (M)

6. Infant moves spontaneously or purposefully
5. Infant withdraws from touch
4. Infant withdraws from pain
3. Abnormal flexion to pain for an infant (decorticate response)
2. Extension to pain (decerebrate response)
1. No motor response

Any combined score of less than eight (< 8) represents a significant risk of mortality.

APPENDIX 17

RECEIVING HOSPITALS / HOSPITAL DESIGNATIONS

NY State DOH Policy requires transport to the closest appropriate hospital, based on services available and patient needs. While it is not required, it is allowable for agencies on the western-most border to transport to appropriately designated hospitals in Nassau County.

DESIGNATED 911 RECEIVING HOSPITALS

Eastern Long Island Hospital
Good Samaritan Hospital Medical Center
Huntington Hospital
Long Island Community Hospital
Mather Hospital
Peconic Bay Medical Center
South Shore University Hospital
St. Catherine of Siena Hospital
St. Charles Hospital
Stony Brook/Southampton Hospital
Stony Brook University Hospital

**Northport VA Hospital is not a regionally designated emergency receiving hospital. NVA Hospital acknowledges that hospital care has becomes more specialized, and neighboring hospitals have received specialty designations, and concurrently, veteran patients are increasing in numbers and medical complexities. Therefore, veteran patients who are classified by the applicable Emergency Medical Dispatch (EMD) Determinant Code, and/or present with signs/symptoms and/or chief complaint indicative of ischemic chest pain / STEMI, CVA / TIA, trauma, burns, and obstetrical/gynecological emergencies should not be transported to the NVAH hospital. Similarly, pediatric patients should not be transported to the NVAH. Patients not fitting these EMD Determinant Codes, or with signs/symptoms unrelated to these presenting problems for which there are more appropriate hospitals, may be transferred by ambulance to the NVAH. As a reminder, the NVAH does have 800 MHz radio capabilities and pre-arrival notification of inbound patients' should be made on the "Hospital North" talk group.

ADULT TRAUMA CENTERS

Stony Brook University Hospital	Level I including pediatric capabilities
Good Samaritan Hospital Medical Center	Level II including pediatric capabilities
South Shore University Hospital	Level II
Long Island Community Hospital	Level III
Huntington Hospital	Level III
Peconic Bay Medical Center	Level III
Stony Brook/Southampton Hospital	Level III

PEDIATRIC TRAUMA CENTERS

Stony Brook University Hospital	Level I Pediatric
Good Samaritan Hospital Medical Center	Level II Pediatric

Continued.

APPENDIX 17 – Continued.

RECEIVING HOSPITALS / HOSPITAL DESIGNATIONS

REGIONAL BURN CENTER

Stony Brook University Hospital

PCI / STEMI CENTERS

Good Samaritan Hospital Medical Center
Huntington Hospital
Long Island Community Hospital
Mather Hospital
Peconic Bay Medical Center
South Shore University Hospital
St. Catherine of Siena Hospital
Stony Brook/Southampton Hospital
Stony Brook University Hospital

DESIGNATED STROKE CENTERS

Good Samaritan Hospital Medical Center
Huntington Hospital
Long Island Community Hospital
Mather Hospital
Peconic Bay Medical Center
South Shore University Hospital
St. Catherine of Siena Hospital
St. Charles Hospital
Stony Brook/Southampton Hospital
Stony Brook University Hospital

HOSPITALS WITH OB/GYN SERVICES

Good Samaritan Hospital Medical Center
Huntington Hospital
Peconic Bay Medical Center
South Shore University Hospital
St. Catherine of Siena Hospital
St. Charles Hospital
Stony Brook/Southampton Hospital
Stony Brook University Hospital

HOSPITALS WITH SANE CENTER AFFILIATIONS

Good Samaritan Hospital Medical Center
Peconic Bay Medical Center
Stony Brook University Hospital

APPENDIX 18

EMERGENCY INCIDENT REHABILITATION (REHAB)

The physical and mental demands associated with firefighting and other emergency operations in hazardous situations, coupled with environmental dangers of extreme heat and humidity or extreme cold create conditions that may have an adverse impact on the safety and health of emergency response personnel. Additionally, in specific types of response activities, emergency responders may be exposed to Carbon Monoxide as a by-product of incomplete combustion, which places them at increased risk for occult exposure.

Adequate rest and rehydration activities and routine medical monitoring of emergency response personnel has become commonplace in the out-of-hospital setting. The Federal Emergency Management Agency (FEMA) and the United States Fire Administration (USFA) have issued Emergency Incident Rehabilitation SOPs that designate a Rehabilitation Sector (Rehab) as a sector within the EMS operations component of the Incident Command System (ICS).

Routine medical monitoring and evaluation in the Rehab Sector consists of the measurement of heart rate and orally acquired body temperature as primary vital signs associated with the assessment for medical problems that may result from working in extreme weather conditions. Firefighters, hazardous materials technicians and other emergency responders are routinely required to wear personal protective ensembles that inhibit the natural cooling process, thereby placing emergency responders at greater risk for succumbing to heat related emergencies.

Obtaining an oral body temperature measurement.i is a skill that can be performed by EMT-Bs, EMT-CCs and EMT-Ps when engaged in emergency incident rehabilitation activities at the scene of an incident. This protocol is for the routine medical monitoring of otherwise healthy emergency response personnel and is not intended for use on patients who present to EMS with an acute onset illness or injury.

Oral body temperature shall be obtained as part of the routine medical monitoring or medical evaluation of emergency response personnel engaged in activities requiring the use of personal protective equipment that inhibits the natural cooling process, placing emergency responders at greater risk for succumbing to heat related emergencies.ii

1. Follow the manufacturer's recommendations regarding the application of oral (PO) single patient use thermometers. Oral temperature should be obtained as early in the rest phase as possible and in accordance with the FEMA / USFA Rehabilitation guidelines.iii The oral temperature measurement must be taken ***prior to*** the administration of fluids by mouth for rehydration.

2. Follow the event recording and disposition guidelines of the FEMA/USFA Rehabilitation SOPs or your agency's emergency incident rehabilitation plan AND THE FOLLOWING STANDARD OPERATING PROCEDURE. When performing Rehab as part of routine medical monitoring, a PCR IS NOT necessary. An Emergency Incident Rehab Log Sheet should be used to record all activity in the rehab sector and retained with the agency fire alarm report.

Continued.

EMERGENCY INCIDENT REHABILITATION (REHAB)

3. If at any time, an emergency responder presents with a chief complaint, signs / symptoms, and / or abnormal vital signs, the responder becomes a patient, a PCR is required, and all applicable NY State and Suffolk County Policies and Protocols must be followed.

4. Follow the manufacturer's recommendations regarding the application of non-invasive SpCO measurement devices.

Purpose:

To serve as a monitoring standard for BLS & ALS providers operating in an Emergency Incident Rehabilitation Sector. Rest, rehydration, rehab evaluation, and nutrition, are key components in supporting firefighters and other emergency responders operating in personal protective clothing for prolonged periods of time, as this activity often times impedes the body's natural cooling process. Other health hazards, such as exposure to carbon monoxide, hydrogen cyanide gas, and other atmospheric hazards are common in specific types of emergency response. Carbon monoxide is a colorless, odorless, tasteless toxic gas and is a product of incomplete combustion of any carbon-based material, and generally presents with vague flu-like symptoms, fatigue, or other general complaints. The addition of non-invasive CO-oximetry is an effective tool in measuring carboxyhemoglobin levels in the field.

This policy covers any event, including drills, fire-ground operations, hazardous materials incidents, technical rescues, lengthy extrications and any other event where emergency response personnel are wearing personal protective equipment and fluid loss, heat-related emergencies or exposure to carbon monoxide is a concern.

Consider the activation of a Suffolk County EMS Field Physician if more than one (1) agency will be requiring incident rehab and / or operations are expected to last for long periods of time.

Continued.

EMERGENCY INCIDENT REHABILITATION (REHAB)

REST

Avoid going from hot directly to air conditioning. Ideally, there should be a ten (10) minute wait in ambient temperature. Firefighters should follow the "2 air bottle rule" or forty five (45) minutes work time maximum. Typically one (1) ten (10) minute rest period is appropriate unless otherwise indicated by the results of the evaluation.

REHYDRATION STRATEGY

Rehydrate emergency responder with *at least 12* oz. water or sports drink. Do not use carbonated beverages or caffeine. **NOTE:** PO Body temperature should be obtained prior to allowing the emergency responder to drink cold liquids.

EVALUATION

- Observe for behavioral changes, such as change in affect, loss of motor coordination/dexterity, or emotional decompensation.
- Measure Heart Rate and Oral (PO) Body Temperature.
- If temperature greater than (>) 100.6 F, do not allow emergency responder to don PPE for the remainder of the event.
- If heart rate greater than (>) 110 bpm & temperature is less than (<) 100.6 F, one (1) additional ten (10) minute rest period is indicated.
- If heart rate does not return to normal after twenty (20) minutes continuous rest, the emergency responder becomes a patient and is transported to the closest emergency department.

NOTE: Emergency responders should be taken out of service and treated and transported to the closest emergency department per protocol whenever:

- Signs / symptoms of heat stroke;
- Altered Mental Status of any kind;
- PO temp greater than (>) 101 degrees F;
- Irregular heart beat;
- HR greater than (>) 150 bpm at any time and greater than (>) 140 bpm after rest;
- SPB greater than (>) 200 at any time; or
- DBP greater than (>) 120 at any time.

Continued.

EMERGENCY INCIDENT REHABILITATION (REHAB)

AT ANY TIME THAT AN EMERGENCY RESPONDER COMPLAINS OF AN INJURY OR EXPRESSES ANY CHIEF COMPLAINT, OR HAS ABNORMAL VITAL SIGNS, HE/SHE BECOMES A PATIENT AND ALL APPLICABLE POLICIES AND PROTOCOLS MUST BE FOLLOWED, PARTICULARLY IF THE FOLLOWING PRESENTATIONS OCCUR:

- Chest pains;
- SOB / Dyspnea;
- AMS;
- Headache (major sign of dehydration);
- Persistent tachycardia;
- Orthostatic vital signs;
- Self-monitoring of urine – reported dark color/strong smell; or
- Nausea / Vomiting

Any EMS provider who is trained and authorized in its use may use Non-invasive CO-oximetry in conjunction with rest and rehydration activities to determine the carboxyhemoglobin level of emergency responders.

For an SpCO greater than or equal to (≥) 12% – TREAT with 100% oxygen and TRANSPORT to the closest emergency department.

For an SpCO less than (<) 12% **BUT** signs of CO exposure are present – TREAT with 100% oxygen and TRANSPORT to the closest emergency department.

For an SpCO less than (<) 12% and NO SIGNS OF CO EXPOSURE AND NORMAL VITAL SIGNS – no further medical monitoring is needed. An emergency incident rehabilitation log must be maintained to document rehab activities and filed with the department's fire report. Emergency responders should be instructed to seek medical attention if signs or symptoms develop over time.

ANY PATIENT WITH ASSOCIATED BURNS SHALL BE TRANSPORTED IN ACCORDANCE WITH THE BURN DESTINATION DECISION POLICY REGARDLESS OF THEIR CARBON MONOXIDE LEVEL.

REMEMBER – The use of pulse oximetry (SpO2) in individuals exposed to CO will produce false high SpO2 readings.

Patients should be transported to the closest appropriate emergency department, NOT directly to a hospital with a hyperbaric chamber, unless that hospital is in your catchment area. Hyperbaric therapy for patients with CO exposure is ordered based on failed neurological examination and laboratory confirmed blood values (> 25% CoHb). In addition, hyperbaric chambers may not be readily available upon your arrival and 100% oxygen via non-rebreather facemask changes blood saturation.

Continued.

APPENDIX 18 – Continued.

EMERGENCY INCIDENT REHABILITATION (REHAB)

The following reference table provides expected signs or symptoms that can be predicted based on percentage of CO detected in the blood. This is only a guideline, based on a variety of variables that the EMS provider may not be aware of.

SpCO	***Expected signs/symptoms***
0-3%	Normal non-smoker
4-10%	Mild headache, shortness of breath with exertion
10-20%	Moderate headache, fatigue, shortness of breath
20-30%	Severe headache, blurred vision, nausea, dizzy, irritable, cardiac ischemia
30-40%	Muscle weakness, vomiting, vertigo, confusion
40-50%	Arrhythmias, syncope
50-60%	Seizures, shock, apnea, coma

WHEN IN DOUBT CONTACT MEDICAL CONTROL FOR PHYSICIAN CONSULTATION.

NUTRITIONAL/CARBOHYDRATE STRATEGY

During emergencies that occur over several days and include multiple operational periods, it is likely that rehab operations will be expanded to include providing snacks and/or meals concurrent with other rehab activities.

Simple carbohydrates are present in fluids and power bars and their key ingredients are rapidly available and are indicated when quick bursts of energy are needed. Complex carbohydrates are present in pastas and breads, and their key ingredients are available over longer periods of time, as they account for a more sustained release of energy.

APPENDIX 19

RMA CHECKLIST

Name:	Age:	Date:
Location of Call:		PCR #:

I. Assessment of Patient (Complete each item, circle appropriate response)

Oriented to:

Person	Yes	No
Place	Yes	No
Time	Yes	No
Situation	Yes	No
Altered level of consciousness	Yes	No
Head injury	Yes	No
Alcohol or drug ingestion by exam or history	Yes	No

Medical Control

Contacted by: _____ Phone _____ Radio at _____ hours.

_____Unable to contact (explain in comments)

Orders:

_____Indicated treatment and / or transport may be refused by patient.
_____Use reasonable force and / or restraints to provide indicated treatment.
_____Use reasonable force and / or restraint to transport.
_____Patient refusal against medical advice.

Other:_____

_____

_____

_____

_____

_____

Patient Advised of the following: (Complete each item, circle appropriate response)

Medical treatment/evaluation recommended……	Yes	No
Ambulance transport recommended……	Yes	No
Further harm could result without medical treatment or evaluation……..……..	Yes	No

Continued.

RMA CHECKLIST

Transport by means other than ambulance could be hazardous

In light of patient's present illness / injury……..	Yes	No
Patient provided with refusal advice sheet……..	Yes	No
Patient would not accept refusal advice sheet…….	Yes	No

Disposition

_____Refused all EMS services.
_____Refused transport, accepted field treatment.
_____Refused field treatment, accepted transport.
_____Released in care of self/relative/friend
_____Released in custody of law enforcement agency.

Additional Comments, if needed:

_____
_____
_____
_____
_____
_____
_____
_____
_____

Patient Information Sheet provided to patient. Yes No

Signature of
Patient:_____ Date:_____

Signature of
Witness:_____ Date:_____

Signature of
Provider:_____ Date:_____

Continued.

APPENDIX 19 – Continued.

RMA CHECKLIST

Refusal of Care Information Sheet

Dear Patient;

Please read and keep this form!

This form has been given to you because you have refused treatment and/or transport by the responding ambulance service. *Your health and safety are our primary concern.* Even though you have decided not to accept the advice of the EMS provider, please remember the following:

- The evaluation and/or treatment provided to you by the ambulance service is not a substitute for medical evaluation and treatment by a doctor. You are advised to get medical evaluation and treatment by a doctor.

- Your condition may not seem as bad to you as it actually is. Without treatment, your condition or problem could become worse. If you are planning to get medical treatment, a decision to refuse treatment or transport by the ambulance service may result in a delay that could make your condition or problem worse.

- Medical evaluation and / or treatment may be obtained by calling your doctor, if you have one, or by going to any hospital emergency department in this area, all of which are staffed 24 hours a day by emergency physicians. You may be seen at these emergency departments without an appointment.

- If you change your mind or your condition becomes worse and you decide to accept treatment and transport by the ambulance service, please do not hesitate to call them back and they will do their best to help you.

- Don't wait! When medical treatment is needed, it's usually better to get it right away.

I have received a copy of this information sheet.

Patient Signature_____ Date_____

APPENDIX 20

EMS RESPONSE TO SCHOOL INCIDENTS AND SCHOOL BUS ACCIDENTS

The purpose of this policy statement is to provide guidance to EMS providers on their responsibilities, and the responsibilities of school district personnel during responses to school incidents and school bus accidents involving minors.

The potential number of patients, the frequent presence of uninjured children who do not require hospitalization, the jurisdiction of the school district and the responsibilities of EMS providers often raise conflicting issues of jurisdiction, consent, treatment, and transportation. The roles and responsibilities of the school district and the EMS agency must be identified in advance of any incident, by jointly developing operations plans so that a common understanding of their respective expectations and responsibilities are well defined.

EMS personnel are there to see to the physical well-being of those who may be injured or potentially injured, render appropriate emergency medical care as dictated by mechanism of illness/injury, operational policy and clinical protocol, and to remove patients from the scene to a hospital as quickly and efficiently as possible.

The New York State Education Law §912 places legal guardianship of the children involved on the school board/school district, including for the health and welfare of all children and the administration of emergency medical evaluation and care for all ill or injured pupils while in their charge. During the transportation phase, the transportation company acts as an agent of the school district during transportation and the bus driver in turn is able to make legal decisions for the children until the arrival of school board/school district/bus company representatives. In Decision 10,587 (1981), the New York State Education Commissioner ruled that the responsibility for the student's safety shifts from the parent/guardian to the school board / school district / bus company from the point of pick up by the school bus in the morning, to drop off by the school bus in the afternoon.

There is no NY State or Suffolk County EMS policy that states that all children must be taken to the hospital if an ambulance is required at the scene. Proper dispositions include one of the following:

- Transportation to the hospital;
- Refusal of Medical Assistance, per Suffolk County RMA Policy, in the presence of a legal guardian; or
- No Patient Found designation.

Continued.

APPENDIX 20 – Continued.

EMS RESPONSE TO SCHOOL INCIDENTS AND SCHOOL BUS ACCIDENTS.

Complete documentation on a PCR, or electronic equivalent, and Suffolk County RMA Checklist is required for cases where a child is a patient and is transported, or in cases where an RMA is executed.

General Guidelines:

- If a child has a complaint, or if the EMS provider observes an actual or potential physical injury / illness, or where there is a mechanism of injury, the EMS provider is permitted to render patient care and transport consistent with prehospital protocols and procedures under implied consent. If there is any doubt, always advocate for emergency department evaluation.

- EMS Providers are expected to treat school board/school district/bus company representatives as if they were the child's parent / legal guardian. Clearly state any of your findings, assessment, and treatment to them. Clearly articulate your concerns about real or potential illness / injury. If there is any doubt, always advocate for emergency department evaluation.

- If the child presents themselves without an actual or potential physical injury / illness and the EMS provider also feel that there is no actual or potential injury / illness or significant mechanism of injury, the school board / school district / bus company representative can make legal decisions for the child and can sign a Refusal of Medical Assistance (RMA) sheet as if they were the child's parent / legal guardian.

- It is acceptable to use a Prehospital Care Report (PCR), or electronic equivalent, for each child involved in the school incident or bus accident if the EMS provider chooses to do so. It is also acceptable to use a single PCR to document your assessment and actions, list the names of the children involved and obtain a single signature from the school board / school district / bus company representative.

- Accountability and the disposition of each and every child is paramount. Documentation should be shared with school board / school district / bus company representatives to ensure that your records match theirs and all children are accounted for, before the alarm is cleared.

- There are circumstances where some children may be "patients" and received treatment and transportation to a hospital, while others may not. Likewise, there may be circumstances where the occupant(s) of another vehicle are "patients" and the bus, by nature of its unique size and construction protects occupants resulting in "no patients." Accountability and disposition records should include an accounting of which children were transported to the hospital, by name, and by ambulance company, and which children remained at the scene and were turned over to their legal guardian.

Continued.

EMS RESPONSE TO SCHOOL INCIDENTS AND SCHOOL BUS ACCIDENTS

In cases where parents or other legal guardians arrive at the scene, no child should be released to his / her parent or other legal guardian without proper validation from school board / school district / bus company representatives.

This sample form may be duplicated and used to document response as an addendum to agency reports to document accountability for cases where a PCR and RMA Checklist are not required.

Alarm#:_____ **Date:** _____ **Time:**_____

Fire/EMS Agency:_____

Location of Incident:_____

School District:_____ **School Representative:**_____

Transportation Company:_____

Bus Operator:_____

Police Officer (Name / Badge #):_____

The following children were involved in a school bus incident. They have been triaged and have been found to offer no complaint, no actual or no potential injury / illness and no significant mechanism of injury. School board, school district/bus company representatives have been advised to **CALL 911 IMMEDIATELY** if there is change in any of the children that raises any suspicion of a potential injury. The appropriate School Representative has made the legal decision to assume legal responsibility for the children.

Continued.

EMS RESPONSE TO SCHOOL INCIDENTS AND SCHOOL BUS ACCIDENTS

1. Print:_____

DOB / AGE_____

2. Print:_____

DOB / AGE_____

3. Print:_____

DOB / AGE_____

4. Print:_____

DOB / AGE_____

5. Print:_____

DOB / AGE_____

6. Print:_____

DOB / AGE_____

7. Print:_____

DOB / AGE_____

8. Print:_____

DOB / AGE_____

9. Print:_____

DOB / AGE_____

Continued.

APPENDIX 20 – Continued.

EMS RESPONSE TO SCHOOL INCIDENTS AND SCHOOL BUS ACCIDENTS

School Representative:

Print Name:_____

Signature:_____ **Date:**_____

Highest Ranking EMS Provider on Scene:

Print Name:_____

Signature:_____ **Date:**_____

Witness:

Print Name:_____

Signature:_____ **Date:**_____

APPENDIX 21

TRANSPORTATION OF SERVICE ANIMALS

From time to time, EMS personnel in Suffolk County may encounter situations in which a patient requiring treatment and transportation to a hospital is being assisted by a service animal. Questions may arise about the proper transportation of a patient's service animal in an ambulance. According to the NYS DOH BEMS Policy Statement 07-01, *Service Animals* "in the last several decades, the concept of a service dog has expanded greatly, with dogs helping the hearing-impaired, people who use wheelchairs and those who have many other kinds of physical challenges."

The Americans with Disabilities Act made the rights of people who use service animals the law. The U.S. Department of Justices (DOJ) defines any guide dog, signal dog, or other animal as individually trained to provide assistance to an individual with a disability. If the animal meets this definition, it is considered a service animal under the Americans with Disabilities Act (ADA) regardless of whether it has been licensed or certified by a state or local government. A service animal is **NOT** considered a pet.

New York State Agriculture and Markets Article 7 §108 defines different types of Service Animals, as follows:

- **"Guide dog"** means any dog that is trained to aid a person who is blind and is actually used for such purpose, or any dog owned by a recognized guide dog training center located within the state during the period such dog is being trained or bred for such purpose; and
- **"Service dog"** means any dog that has been or is being individually trained to do work or perform tasks for the benefit of a person with a disability, provided that the dog is, or will be, owned by such person or that person's parent, guardian or other legal representative.

Service animals may include dogs of any breed or size as well as other animals including, but not limited to birds, primates and ponies. The EMS provider may ask the following types of questions when presented with a service animal:

- "Is this a service dog?" or "Does your animal have legal allowances?"
- "Is the service animal required because of a disability?"

The EMS provider may **NOT** ask about the nature or extent of the patient's disability except as it relates to patient care.

When transporting a patient with a service animal, every effort should be made to do so in a safe manner for the patient, the animal and the crew members. **Regardless of the purpose of the animal, if the animal is a potential threat to health or safety of anyone involved in response, the animal may be excluded from transport.** If possible, the animal should be secured in some manner in order to prevent injury to either the animal or the crew during transport. Safe transport devises may include:

- Crates, cages, specialty carriers; or
- Seatbelts or passenger restraints using a specialized harness or seat belt attachments.

In certain situations it may not be possible for the animal to be transported with the patient. In those situations, every effort should be made to ensure safe care and transportation of the animal by alternative means (animal control personnel, police, family members, etc.). EMS should notify the receiving facility of the presence of a service animal accompanying the patient, either in the ambulance, or by alternate transportation.

APPENDIX 22

CHEMPACK PROGRAM

Please refer to the appendices in this manual for specific information on medications contained in Mark I Kits / DuoDote Kits.

If EMS providers encounter patients with the signs / symptoms of nerve agent / organophosphate poisoning, Suffolk County FRES must be contacted to initiate the response procedures for release of Chempack assets. Medical Control must also be contacted to get required medical approval for the use of chemical agent antidote. This authorization is for the event, and does not require a patient-specific order for every patient.

Each Chempack has enough antidote to treat approximately 1000 patients.

HUB HOSPITALS feed themselves, SPOKE HOSPITALS and/or the EMS SYSTEM; as follows:

HUB HOSPITAL	**SPOKES**
Good Samaritan Hospital	Good Samaritan and EMS System
St Catherine of Siena Hospital	St. Catherine and Huntington
South Shore University Hospital	Southside
Long Island Community Hospital	Brookhaven
Stony Brook University Hospital	University, EMS System, St. Charles, J.T. Mather
Peconic Bay Medical Center	Peconic Bay Medical Center, EMS System, Eastern LI
Stony Brook/Southampton Hospital	Southampton, EMS System

NY State DOH Fielding Logic:

In effort to forward deploy chemical agent antidote into local communities, in preparation for a large-scale mass intoxication scenario, the NY State Department of Health (DOH) maintains the CHEMPACK Program, in partnership with the Centers for Disease Control (CDC) Strategic National Stockpile (SNS) Program. Chempack assets are for treatment of exposure to nerve agent/organophosphate-based chemicals only. The hospitals listed below are referred to as HUB HOSPITALS, meaning that they have Chempack stored at the facility:

Good Samaritan Hospital	West Islip, NY
Long Island Community Hospital	East Patchogue, NY
Peconic Bay Medical Center	Riverhead, NY
South Shore University Hospital	Bay Shore, NY
St. Catherine of Siena Hospital	Smithtown, NY
Stony Brook/Southampton Hospital	Southampton, NY
Stony Brook University Hospital	Stony Brook, NY

Continued.

APPENDIX 22 – Continued.

CHEMPACK PROGRAM

The hospitals listed below are referred to as SPOKE HOSPITALS, meaning that they DO NOT have Chempack stored at the facility, but are fed by a specific pre-determined HUB HOSPITAL:

Eastern Long Island Hospital	Greenport, NY
Huntington Hospital	Huntington, NY
Mather Hospital	Port Jefferson, NY
St. Charles Hospital	Port Jefferson, NY

Chempack assets are for treatment of NERVE AGENT / ORGANOPHOSPHATE EXPOSURE only; and includes:

- Mark I auto-injectors (Atropine 2.0 mg and Pralidoxime 600 mg {2PAM})
- Atropine for IV use
- Pralidoxime (2-PAM) for IV use
- Diazepam (Valium) auto injectors
- Diazepam (Valium) for IV use
- Atropen (Atropine 0.5 mg for pediatrics) auto-injector
- Atropen (Atropine 1.0 mg for pediatrics) auto-injector
- Sterile water

APPENDIX 23

MANUFACTURER – SPECIFIC ENERGY SETTINGS

Overview:

Each cardiac monitor manufacturer utilizes a complex electrical algorithm to analyze, measure, and create electrical current for cardioversion and defibrillation. The common goal for all of these devices is to positively influence aberrant conduction pathways with the least amount of energy with the least amount of damage to the myocardium yet with the highest degree of efficacy. Since chest impedance is very patient-specific, the use of biphasic waveform technology has emerged as the industry standard for electrical therapy, which allows the device to deliver patient-specific electrical current. Standard energy settings for defibrillation should be used and settings for synchronized cardioversion are listed below. Equivalents are based on protocol dosages incrementally from 50J to 360J.

APPENDIX 24

AUTOMATIC TRANSPORT VENTILATOR (ATV)

EFFECTIVE: JULY, 2017

This protocol is intended for use by EMT-Ps in agencies authorized by their Service Medical Director, in accordance with training supplied by their Service Medical Director, approved by the EMS System Medical Director, and with strict Quality Improvement review and data sharing mechanism in place. This protocol is permissive under the preceding conditions but not required. Only ATVs, meeting the specifications contained herein, and approved by the REMAC, may be used.

This protocol for use when a patient requires mechanical ventilation and is already intubated with either an endotracheal tube, a REMAC-approved Supraglottic airway, or has a tracheostomy in place, in order to provide consistent assisted ventilations.

NOTES: May be used in cardiac arrest undergoing CPR with chest compressions;
May be used with a mechanical thoracic compression device;
May be used in patients who have been paralyzed and sedated by RSI; and/or
May be used in patients who are more than 40 kg estimated weight.

1. Set up your ventilator to assure that the oxygen source and circuit are functioning properly
2. Attach the ventilator to the disposable circuit tubing and then to the patient (either on the end of the ETT, REMAC-approved Supraglottic airway or tracheostomy)
3. Set the ventilator rate to provide a minimum of 10 breaths per minute.
4. Set the ventilator to provide a tidal volume of 6 – 8 ml/kg estimated ideal body weight based on REMAC-approved tidal volume chart.
5. You may select 5 cm of H2O of PEEP (positive end expiratory pressure) (not for use if the patient is in cardiac arrest).
6. Check the ventilator alarm by occluding the patient valve assembly outlet.
7. Attach capnography end-tidal CO2 monitoring device.
8. Attach pulse oximetry device.
9. Ensure that the patient is on a cardiac monitor.
10. Assess ventilations and auscultate for bilateral breath sounds, observe for proper chest rise and fall and adjust tidal volume to achieve desired results
11. Monitor and document HR, BP, RR, pulse oximetry and end-tidal CO2 every 5 minutes while the ventilator is attached – and if the patient's vital signs deteriorate check the patient's breath sounds immediately to check for a tension pneumothorax or for tracheal tube dislodgement, check the ventilator circuit and make adjustments as needed to provide adequate ventilation, and consider removal of the ventilator and assisting ventilations with bag-valve-mask device.
12. If the ventilator alarm sounds, check the patient's vital signs and capnography immediately, check the ventilator circuit and make any adjustments as necessary to provide assisted ventilations, and consider removal of the ventilator and assisting ventilations with bag-valve-mask device.

Ventilator Specifics

To qualify as a ventilator, any device may be used regardless of vendor, manufacturer or model as long as the device:

- provides 100% oxygen;
- has an adjustable rate;
- has an adjustable tidal volume;
- provides 5cm H20 of PEEP;
- has an alarm that will notify the providers if there is a problem with the circuit;
- allows for patient spontaneous breathing over the ventilator device; and
- has a disposable circuit that will allow each patient use to be free of possible infectious secretions.

APPENDIX 25

NEW YORK STATE / SUFFOLK COUNTY TRAUMA TRIAGE FLOW CHART

National Guideline for the Field Triage of Injured Patients

RED CRITERIA
High Risk for Serious Injury

Injury Patterns	Mental Status & Vital Signs
• Penetrating injuries to head, neck, torso, and proximal extremities • Skull deformity, suspected skull fracture • Suspected spinal injury with new motor or sensory loss • Chest wall instability, deformity, or suspected flail chest • Suspected pelvic fracture • Suspected fracture of two or more proximal long bones • Crushed, degloved, mangled, or pulseless extremity • Amputation proximal to wrist or ankle • Active bleeding requiring a tourniquet or wound packing with continuous pressure	**All Patients** • Unable to follow commands (motor GCS < 6) • RR < 10 or > 29 breaths/min • Respiratory distress or need for respiratory support • Room-air pulse oximetry < 90% **Age 0–9 years** • SBP < 70mm Hg + (2 x age in years) **Age 10–64 years** • SBP < 90 mmHg or • HR > SBP **Age ≥ 65 years** • SBP < 110 mmHg or • HR > SBP

Patients meeting any one of the above RED criteria should be transported to the highest-level trauma center available within the geographic constraints of the regional trauma system

YELLOW CRITERIA
Moderate Risk for Serious Injury

Mechanism of Injury	EMS Judgment
• High-Risk Auto Crash – Partial or complete ejection – Significant intrusion (including roof) • >12 inches occupant site OR • >18 inches any site OR • Need for extrication for entrapped patient – Death in passenger compartment – Child (age 0–9 years) unrestrained or in unsecured child safety seat – Vehicle telemetry data consistent with severe injury • Rider separated from transport vehicle with significant impact (eg, motorcycle, ATV, horse, etc.) • Pedestrian/bicycle rider thrown, run over, or with significant impact • Fall from height > 10 feet (all ages)	**Consider risk factors, including:** • Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact • Anticoagulant use • Suspicion of child abuse • Special, high-resource healthcare needs • Pregnancy > 20 weeks • Burns in conjunction with trauma • Children should be triaged preferentially to pediatric capable centers **If concerned, take to a trauma center**

Patients meeting any one of the YELLOW CRITERIA WHO DO NOT MEET RED CRITERIA should be preferentially transported to a trauma center, as available within the geographic constraints of the regional trauma system (need not be the highest-level trauma center)

ACETAMINOPHEN

Class
Analgesic and antipyretic

Description
Acetaminophen is used to treat mild to moderate pain, moderate to severe pain in conjunction with opiates, or to reduce fever. Common conditions treated include headache, muscle aches, arthritis, backache, toothaches, sore throat, colds, flu, and fevers. Acetaminophen is also available in many over-the-counter and prescription combination medications with other drugs. Acetaminophen is typically used orally.

Onset & Duration

Onset (PO): < 1 hour
Duration: 4-6 hours

Indications
Relief of pain, reduction of fever

Contraindications
Hypersensitivity to acetaminophen, history of severe hepatic impairment or severe active hepatic disease

Adverse Reactions
Nausea, stomach pain, loss of appetite, itching, rash, headache, dark urine, clay-colored stools, and jaundice.

Drug Interactions
No severe interactions with acetaminophen and any other drugs.

Special Considerations
Pregnancy safety: Category B

How Supplied
In a liquid suspension of 325 mg/10.15 mL for PO administration.

ADENOSINE

Class
Endogenous nucleotide

Description
Adenosine is primarily formed from the breakdown of adenosine triphosphate (ATP). Both compounds are found in every cell of the human body and have a wide range of metabolic roles. Adenosine slows tachycardias associated with the AV node via modulation of the autonomic nervous system without causing negative inotropic effects. It acts directly on sinus pacemaker cells and vagal nerve terminals to decrease chronotropic and dromotropic activity. Adenosine is the drug of choice for paroxysmal supraventricular tachycardia (PSVT) and can be used diagnostically for stable, wide-complex tachycardias of unknown type after two doses of lidocaine.

Onset & Duration

Onset: Almost immediate

Duration: 10 seconds

Adult Dosage: 6 mg rapid IV/IO push; may repeat at 12 mg rapid IV/IO push.
Pediatric Dosage: 0.1 mg/kg IV/IO rapid push (max. 6 mg.); repeat at 0.2 mg/kg rapid IV/IO push (max. 12 mg.).

Indications
Conversion of PSVT to sinus rhythm

Contraindications
Second or third degree AV block; Sick sinus syndrome; Hypersensitivity to adenosine, Wolff-Parkinson White (WPW) syndrome.

Adverse Reactions
Facial flushing; lightheadedness; paresthesia; headache; diaphoresis; palpitations; chest pain; hypotension; nausea; metallic taste; shortness of breath

Drug Interactions
Methylxanthines (for example caffeine and theophylline) antagonize the action of adenosine; Dipyridamole potentiates the effect of adenosine; reduction of adenosine dose may be required; Carbamazepine may potentiate the AV-nodal blocking effect of adenosine.

Special Considerations
Pregnancy safety: category C; may produce bronchoconstriction in patients with asthma or bronchopulmonary disease; at the time of conversion asystole or new rhythms may result. These generally last a few seconds without intervention. Adenosine is not effective in atrial flutter or fibrillation.

How Supplied
Parenteral for IV injection in 3 mg/mL in 2 mL flip-top vials.

ALBUTEROL SULFATE

Class
Relatively selective beta-2 adrenergic bronchodilator

Description
B-agonist agents are considered sympathomimetic that is selective for beta-2 adrenergic receptors. It relaxes smooth muscles of the bronchial tree peripheral vasculature by stimulating adrenergic receptors of the sympathetic nervous system.

Onset & Duration

Onset: 5-15 minutes after inhalation; 30 minutes PO

Duration: 3-4 hours after inhalation; 4-6 hours PO (variable as per agent)

Adult Dosage: 2.5 mg, one unit dose, repeat as necessary every 5-15 minutes.
Pediatric Dosage – Same as adult.

Indications
Relief of bronchospasm in patients with reversible obstructive airway disease; prevention of exercise induced bronchospasm.

Contraindications
Prior hypersensitivity reaction to B-agonist; cardiac dysrhythmias associated with tachycardia; tachycardia caused by digitalis intoxication.

Adverse Reactions
Tachycardia; restlessness; apprehension; headache; dizziness; nausea; palpitations; increase in blood pressure; dysrhythmias; hypokalemia

Drug Interactions
Sympathomimetics may exacerbate adverse cardiovascular effects. Antidepressants may potentiate the effects on the vasculature. Beta blockers may antagonize B-agonists. B-agonists may potentiate diuretic induced hypokalemia.

How Supplied
Solution for aerosolization: 0.083%, 2.5mg in 3 mL.

Special Considerations
Pregnancy safety: Category C. May precipitate angina pectoris and dysrhythmias; should be used with caution in patients with diabetes mellitus, hyperthyroidism, prostatic hypertrophy, or seizure disorder.

AMIODARONE

Class
Antiarrhythmic, Class III

Description
Acts directly on the myocardium to delay repolarization and increase the duration of the action potential. This results in the prolongation of the effective refractory period in all cardiac tissue. Amiodarone also possesses the weak ability to block the sodium channels, which decreases the rate of membrane depolarization and impulse conduction. It also depresses automaticity in both SA and AV nodes. Amiodarone also noncompetitively inhibits both alpha and beta-receptors. Amiodarone does cause relaxation in both smooth and cardiac muscle, which causes a decrease of coronary and peripheral vascular resistance that leads to a reduction of afterload.

Indications
Ventricular fibrillation and pulseless ventricular tachycardia. Amiodarone may also been used in ventricular tachycardia with a pulse and supraventricular tachycardias that have been recurrent and/or refractory.

Contraindications
Hypersensitivity to amiodarone, cardiogenic shock, severe bradycardias, sinus node dysfunction, heart blocks

Adverse Reactions
Bradycardia; hypotension; congestive heart failure; nausea; vomiting

Drug Interactions
Beta blockers can cause hypotension and bradycardia.
Digoxin increases the chance of toxicity.

Special Considerations
Amiodarone must be diluted with a minimum of 15 cc of 0.9% NS. Rapid infusion leads to decrease in blood pressure and heart rate.

Incompatible Solutions
DO NOT mix Amiodarone with Furosemide or Heparin Sodium.

How Supplied
150 mg/3 cc vial

Adult Dosage:
V-Tach w/ pulse: 150 mg in 100cc over 10 minutes
V-Tach/ V-Fib Arrest: 300mg IV/IO Bolus; may repeat 150 mg IV/IO bolus

Pediatric Dosage: 5 mg/kg IV/IO over 20-60 minutes

ASPIRIN

Class
Platelet Aggregator Inhibitor/Anti-Inflammatory Agent

Description
Aspirin is an anti-inflammatory agent and an inhibitor of platelet function. This makes it a useful agent in the treatment of various thromboembolic diseases such as acute myocardial infarction.

Onset & Duration

Onset: Varied
Duration: Varied

Adult Dosage: 324 mg PO

Indications
New chest pain suggestive of acute myocardial infarction (AMI).

Contraindications
Aspirin is contraindicated in patients with known hypersensitivity to the drug. It is relatively contraindicated in patients with active ulcer disease and asthma.

Adverse Reactions
Aspirin can cause heartburn, GI bleeding, nausea, vomiting, wheezing, and prolonged bleeding.

Drug Interactions
When administered together, aspirin and other anti-inflammatory agents may cause an increased incidence of side effects and increased blood levels of both drugs. Administration of aspirin with antacids may reduce the blood level of the drug by decreasing absorption.

How Supplied
Aspirin is supplied in tablets (chewable and standard) containing 160 mg and 325 mg of the drug. Enteric-coated aspirin (Ecotrin) is available for those with a tendency for GI upset with aspirin therapy.

ATROPINE SULFATE

Class
Anticholinergic

Description
Atropine is a parasympatholytic (anticholinergic) that is derived from parts of the *Atropa belladonna* plant.

Onset & Duration

Onset: Minutes after IV administration
Duration: 3-5 minutes

Adult Dosage:
Symptomatic Bradycardia: 0.5 mg IV; repeat to max of 3.0 mg.
Organophosphate Overdose/Nerve Agent Exposure: 2 mg IV/IO

Pediatric Dosage:
(MINIMUM single dose 0.1 mg to avoid reflex Bradycardia, MAXIMUM single dose 0.5 mg.)
Neonatal Resuscitation: 0.02 mg/kg IV/IO. Pediatric Bradycardia: 0.02 mg/kg IV/IO
Organophosphate/Nerve Agent: (<12 years old: 0.02-0.05 mg/kg IV/IO, >12 years old: 2mg IV/IO)

Indications
Hemodynamically-significant bradycardia; Asystole

Contraindications
None in emergency situations.

Adverse Reactions
Atropine sulfate can cause blurred vision, dilated pupils, dry mouth, tachycardia, drowsiness and confusion.

Drug Interactions
Few in the prehospital setting.

How Supplied
Atropine is supplied in prefilled syringes containing 1.0 milligrams in 10 milliliters of solution.

CALCIUM CHLORIDE

Class
Calcium Supplement

Description
Calcium chloride provides elemental calcium in the form of the cation (Ca++). Calcium chloride replaces calcium in cases of hypocalcemia. Calcium chloride causes a significant increase in the myocardial contractile force and appears to increase ventricular automaticity. Calcium chloride is an antidote for magnesium sulfate and can minimize some of the effects of calcium channel blocker usage.

Onset & Duration

Onset: IV – immediately
Duration: IV – rapid excretion

Adult Dosage: Asystole/PEA/Post-Arrest with ROSC/Beta or Calcium-channel blocker OD: 500 to 1000mg (0.5g to 1.0g) IV/IO

Pediatric Dosage: The safety and efficacy of this drug for use in children has not been established.

Indications
Known or suspected hyperkalemia (eg, renal failure), (elevated potassium).
Known or suspected hypocalcemia (decreased calcium).
Calcium channel blocker overdose. (Diltiazem, Verapamil, Nifedipine)

Contraindications
Patients receiving digitalis, hypercalcemia and hypercalciuria (e.g., in hyperparathyroidism, vitamin D overdosage)

Adverse Reactions
Arrhythmias (bradycardia and asystole); Hypotension (Vasomotor collapse may ensue if IV injection is too rapid); Syncope; Nausea; Vomiting; and Cardiac Arrest

Drug Interactions
Calcium chloride will interact with sodium bicarbonate and form a precipitate. The IV line should be flushed between calcium chloride and sodium bicarbonate administration. In addition, calcium chloride can cause elevated digoxin levels, and possibly digitalis toxicity.

How Supplied
Prefilled syringes: 1,000 mg in 10 ml of solution (10 ml of a 10% solution)

Special Considerations

Injections should be made slowly though a small needle into a large vein in order to avoid too rapid an increase in serum calcium and extravasation of calcium solution into surrounding tissue.

DEXAMETHASONE (Decadron)

Class
Corticosteroid

Description
Reduces inflammation and suppresses the immune response.

Onset & Duration

Onset: 10-30 minutes
Duration: 36-72 hours

Indications
Anti-inflammatory agent for a variety of medical conditions including: asthma, COPD, allergic/anaphylactic reactions, airway edema, etc.

Contraindications
Fungal infections, known hypersensitivity (including sulfites). Use with caution in patients with renal disease, active infections, and penetrating spinal cord injury.

Adverse Reactions
Depression, euphoria, headache, restlessness, hypertension, bradycardia, nausea, vomiting, edema, diarrhea, weakness, swelling, paresthesia

Drug Interactions
Interacts with non-steroidal anti-inflammatory (NSAID) medications, and blood thinners by potentiating bleeding and bruising. Should be withheld in patents with known active infections (pneumonia, sepsis).

How Supplied
In vials of 20 mg/ 5 mL

Special Considerations
Pregnancy safety: category C; parenteral formulation may also be administered PO if needed.

DEXTROSE

Class
Carbohydrate, Hypertonic Solution

Description
The term dextrose is used to describe the six-carbon sugar d-glucose, the principal form of carbohydrate used by the body. D50 is used in emergency care to treat hypoglycemia and to manage coma of unknown origin.

Onset & Duration

Onset: ≤ 1 minute, depends on degree of hypoglycemia
Duration: Depends on the degree of hypoglycemia

Adult Dosage: 25g (50cc) IV/IO Bolus of 50% Solution or 10% 250mL IVB;

Pediatric Dosage (0.5 to 1g/kg)
Neonatal Resuscitation (10% Solution): 5 to 10 **MilliLITERS**/kg IV/IO Bolus

Indications
Hypoglycemia; altered level of consciousness; coma of unknown etiology; seizure of unknown Etiology; refractory cardiac arrest (controversial)

Contraindications
There are no significant contraindications for IV administration of dextrose in emergency care.

Adverse Reactions
Warmth; pain and burning from medication infusion; thrombophlebitis; rhabdomyolysis

Drug Interactions
There are no significant drug interactions with other emergency medications.

Special Considerations
Pregnancy safety: NA; draw blood sample before administration if possible; extravasation may cause tissue necrosis; use a large vein and aspirate occasionally to ensure route patency.

How Supplied
D50W = 25 g/50 ml prefilled syringe
D10W in 100 ml bag (100mg/ml)
NOTE: D10% can also be made by diluting D50% with Normal Saline at 1:4 ratio.

Pediatric D_{10} Dosage Chart

	Patient Weight	Dose Desired	Volume to Administer	
	3 kg	**1.5 g**	**15 mL**	
	4 kg	**2.0 g**	**20 mL**	
	5 kg	**2.5 g**	**25 mL**	
	6-7 kg	**3.25 g**	**32.5 mL**	
	8-9 kg	**4.25 g**	**42.5 mL**	
	10-11 kg	**5.25 g**	**52.5 mL**	
	12-14 kg	**6.5 g**	**65 mL**	
	15-18 kg	**8.25 g**	**82.5 mL**	
	19-23 kg	**10.5 g**	**105 mL**	
	24-29 kg	**13.5 g**	**132.5 mL**	
	30-36 kg	**16.5 g**	**165 mL**	

Base: D_{10} is equivalent to a 10% solution of Dextrose in Normal Saline.

10% Dextrose = 10 grams of Dextrose in 100mL = 10,000 mg / 100mL =

0.1 mg/mL of Dextrose is equivalent to 0.5 mg/5 mL

One 250mL bag of 10 % Dextrose administers 25g of Dextrose.

DIAZEPAM (Valium)

Class
Benzodiazepine (sedative-hypnotic, anticonvulsant)

Description
Diazepam is frequently prescribed to treat anxiety and stress. In emergency care, it is used to treat alcohol withdrawal and grand mal seizure activity. Diazepam acts on the limbic, thalamic, and hypothalamic regions of the CNS to potentiate the effects of inhibitory neurotransmitters, raising the seizure threshold in the motor cortex. It may also be used in conscious patients during cardioversion to induce amnesia and sedation. Though the drug is still widely used as an anticonvulsant, it is relatively weak and of short duration. Rapid IV administration may be followed by respiratory depression and excessive sedation.

Onset & Duration

Onset:	(IV) 1-5 minutes	**Duration**:	(IV) 15 min-1 hour
	(IM) 15-30 minutes		(IM) 15 min-1 hour
	(PR) Varied		(PR) Peak concentration 1.5 hours

Adult Dosage: Seizures: 5-10 mg IV/IO (5 mg over 5 minutes)
Sedation: 5-15 mg IV/IO (over 5-10 minutes prior to cardioversion/pacing)

Pediatric Dosage: Seizures: 0.5 mg/kg PR (Maximum dose 10 mg.)

Indications
Seizure activity; acute anxiety states; acute alcohol withdrawal; muscle relaxant; preoperative sedation

Contraindications
Hypersensitivity to the drug; acute narrow angle glaucoma; open-angle glaucoma

Adverse Reactions
Hypotension; reflex tachycardia; respiratory depression, ataxia; psychomotor impairment; confusion; nausea

Drug Interactions
Diazepam may precipitate CNS depression and psychomotor impairment when the patient is taking CNS depressant medications; Diazepam should not be administered with other drugs because of possible precipitation (incompatible with most fluids; should be administered into an IV of normal saline solution).

Special Considerations
Pregnancy safety: Category D; may cause local venous irritation; has short duration of anticonvulsant effect; reduce dose by 50% in elderly patients; resuscitation equipment should be readily available.

How Supplied: Tablet: 2, 5, 10 mg; Sustained released capsule; Parenteral: Vials, ampules, Tubex; Oral solution

DILTIAZEM (Cardizem)

Class
Calcium Channel Blocker

Description
Diltiazem is a calcium ion antagonist. It inhibits calcium ion influx across cell membranes during cardiac depolarization, decreases SA and AV conduction and dilates coronary and peripheral arteries and arterioles. It slows the rapid ventricular rate associated with atrial fibrillation and atrial flutter, and reduces coronary and peripheral vascular resistance. Diltiazem has a nearly equal effect on vascular smooth muscle and AV conduction.

Onset & Duration

Onset: IV – immediately
Duration: IV – 4 to 6 hours

Adult Dosage: 20 mg (0.25 mg/kg) IV over 2 minutes.
May repeat in 15 minutes at 20 to 25 mg (0.35 mg/kg) over 2 minutes.

Indications
Rapid ventricular rates associated with atrial fibrillation and atrial flutter. Used after adenosine to treat refractory PSVT in patients with narrow QRS complex and adequate blood pressure.

Contraindications
Severe hypotension; Second or third degree AV block; sick sinus syndrome; ventricular tachycardia, wide-QRS tachycardias of uncertain origin; poison / drug-induced tachycardia; Wolff-Parkinson-White syndrome.

Adverse Reactions
Hypotension; bradycardia; heart block; chest pain; and asystole
Nausea and vomiting; headache; fatigue; drowsiness

Drug Interactions
Avoid use in patients with poison - or drug - induced tachycardia. Diltiazem should not be administered to patients receiving intravenous beta blockers because of an increased risk of congestive heart failure, bradycardia, and asystole.

Continued.

How Supplied
Parenteral for IV injection in 5.0 mg/ml and 10 ml vials

Special Considerations
Diltiazem requires refrigeration. Diltiazem must be used with caution in patients with liver or kidney disease, congestive heart failure, atrioventricular conduction abnormalities, and/or hypotension. Medical Control should be alerted to these conditions, and the dose should be reduced to **HALF** the normal dose.

NOTES:

Dosage Forms and Packaging:

Liquid form must be kept refrigerated or discarded one month after removal from refrigeration.

Continuous Infusion:

In-hospital maintenance infusion 5 to 15 mg/hour, titrated to heart rate.

Standard Solution:

Dilute 100 mg (20 ml) in NS 80ml (mg/ml).

Pediatric Dosage:

The safety and efficacy of this drug for use in children has not been established.

DIPHENHYDRAMINE (Benadryl)

Class
Antihistamine

Description
Diphenhydramine is a potent antihistamine that blocks H1 and H2 histamine receptors.

Onset & Duration

Onset: 1-3 hours
Duration: 6-12 hours

Adult Dosage: 25-50 mg IV/IM/IO

Pediatric Dosage: 1-2 mg/kg Slow IV/IO or IM

Indications
Anaphylaxis; Allergic Reactions

Contraindications
Diphenhydramine should not be used in patients with hypersensitivity to the medication, or for the management of lower respiratory disease, i.e. asthma. Diphenhydramine should not be used for neonates, premature infants, or nursing mothers. Diphenhydramine should be used with caution in patients with narrow-angle glaucoma.

Adverse Reactions
Diphenhydramine can cause hypotension, headache, palpitations, tachycardia, drowsiness, and disturb coordination. Can cause increased intraocular pressure. Can also cause excitation in children.

Drug Interactions
The sedative effects of Diphenhydramine can be potentiated by the administration of CNS depressants, other antihistamines, narcotics and alcohol. May increase anticholinergic effects in patients taking MAO inhibitors.

How Supplied
Diphenhydramine is supplied in ampules and prefilled syringes containing 50 mg of the medication in 1 ml of saline.

DOPAMINE

Class
Sympathomimetic

Description
Dopamine is chemically related to epinephrine and norepinephrine**.** It acts primarily on alpha-1 and beta-1 adrenergic receptors, increasing systemic vascular resistance and exerting a positive inotropic effect on the heart. In addition, the actions of this drug on dopaminergic receptors dilate renal and splanchnic vasculature, maintaining blood flow. Dopamine is commonly used to treat hypotension associated with cardiogenic shock.

Onset & Duration

Onset: 2-4 minutes
Duration: 10-15 minutes

Indications
Hypotension; shock; low cardiac output states

Contraindications
Patients with pheochromocytoma

Adverse Reactions
Dose-related tachydysrhythmias; hypertension; increased myocardial oxygen demand

Drug Interactions
May be deactivated by alkaline solutions (sodium bicarbonate and furosemide); MAO inhibitors and bretylium may potentiate the effect of dopamine; sympathomimetics and phosphodiesterase inhibitors exacerbate dysrhythmia response; beta-adrenergic antagonists may blunt inotropic response; when administered with phenytoin, hypotension, bradycardia, and seizures may develop.

How Supplied
200 mg/5ml, 400 mg/5 ml prefilled syringe and ampule for IV infusion (IV piggyback)

Special Considerations
Pregnancy safety: category C; infuse through a large, stable vein to avoid the possibility of extravasation injury; monitor patient for signs of compromised circulation

DOPAMINE DOSING CHART

All Dopamine Infusions must be run on a rate-limiting device (dial-a-flow).

200 mg in 250 cc

Table displays ml/hr.

WEIGHT LBS/KG	10 mcg/kg/min	15 mcg/kg/min	20 mcg/kg/min
79 lbs/36 kg	28	40	54
84 lbs/38 kg	28	42	56
88 lbs/40 kg	30	44	60
99 lbs/45 kg	34	48	68
110 lbs/50 kg	38	56	76
121 lbs/55 kg	42	62	82
132 lbs/60 kg	44	68	90
143 lbs/65 kg	48	74	98
154 lbs/70 kg	52	78	104
165 lbs/75 kg	56	84	112
176 lbs/80 kg	60	90	120
187 lbs/85 kg	64	96	128
198 lbs/90 kg	68	102	136
209 lbs/95 kg	71	106	142
220 lbs/100 kg	74	112	148
231 lbs/105 kg	79	118	158
242 lbs/110 kg	81	124	162
253 lbs/115 kg	86	130	172
264 lbs/120 kg	90	136	180
275 lbs/125 kg	94	140	188
286 lbs/130 kg	98	146	196
292 lbs/135 kg	101	152	202
308 lbs/140 kg	105	158	210
319 lbs/145 kg	108	163	216

DUO-DOTE (or COMBO PEN) AUTO-INJECTOR

Class
Nerve agent/organophosphate antidote

Description
Auto-injector containing 2.1 mg of atropine sulfate and 600 mg Pralidoxime Chloride.

Onset & Duration

Onset: IM – Highly dependent on exposure route, duration, and underlying patient condition.
Duration: IM – Highly dependent on exposure route, duration, and underlying patient condition.

Indications
Signs/symptoms that include salivation, lacrimation, urination, defecation, GI discomfort, emesis, miosis, altered mental status, and/or seizure following exposure to nerve agent or organophosphate-based pesticide/insecticide.

Contraindications
There are no known contraindications in an emergency.

Adverse Reactions
Additional atropine maybe needed to halt secretions, highly dependent on exposure route, duration, and underlying patient condition.

Drug Interactions
No known drug interactions in an emergency.

Special Considerations
Medical Control Physician or designated EMS Field Physician must authorize the use of antidote for a patient, or in the case of a mass intoxication setting, the scene. In MCI scene, independent patient orders are not needed once the release of nerve agent antidote is made by a physician.

Adult Dosage

1 Duo-Dote for mild/moderate symptoms, 3 Duo-Dotes for severe symptoms. Additional atropine may be needed until secretions dry. Pralidoxime is given to a maximum individual dose of 1.8 grams (3 doses).

Pediatric Dosage

Weight-based per the Broselow Pediatric Antidote for Chemical Emergencies Tape.

EPINEPHRINE

Class
Sympathomimetic

Description
Epinephrine stimulates alpha, beta-1, and beta-2 adrenergic receptors in dose-related fashion. It is the initial drug of choice for treating bronchoconstriction and hypotension resulting from anaphylaxis as well as all forms of cardiac arrest. It is useful in managing reactive airway disease, but beta-adrenergic agents are often used initially because of their bronchial specificity and oral inhalation route. Rapid injection produces a rapid increase in systolic pressure, ventricular contractility and heart rate. In addition, epinephrine causes vasoconstriction in the arterioles of the skin, mucosa, and splanchnic areas and antagonizes the effects of histamine.

Onset & Duration

Onset: (SQ) 5-10 minutes; (IV) 1-2 minutes
Duration: 5-10 minutes

Adult Dosage:

Asthma/COPD: 0.3-0.5 mg IM
Anaphylaxis: 0.3-0.5 mg IM; Infusion (1:10,000) 0.1 mg (1 mL) over 5 minutes IV/IO
Symptomatic Bradycardia: Infusion 2-10 µg/min IV/IO
Cardiac Arrest: 1 mg (1:10,000) IV/IO

Pediatric Dosage:

Neonatal Resuscitation: 0.01 mg/kg IV/IO (0.1 **mL**/kg of 1:10,000) Max 1 mg; 0.01 mg/kg (1:1,000) IV/IO Max Dose 1 mg
Bradycardia: 0.01 mg/kg IV/IO (0.1 **mL**/kg of 1:10,000); Infusion (1:10,000) 2-10 µg/minute IV/IO
Asthma: 0.01 mg/kg (1;1,000) IM MAX dose 0.3mg
Stridor: 0.5 mL/kg of 1;1,000, MAX of 5 mL, diluted in 3 mL NS
Anaphylaxis: 0.15 mg (1:1,000) IM; Infusion (1:10,000) 2-10 µg/minute IV/IO
Cardiac Arrest: 0.01 mg/kg (1:10,000) IV/IO; 0.1 mg/kg (1:1,000) IV/IO
Hypoperfusion: Infusion (1:10,000) 2-10 µg/minute

Indications
Bronchial asthma; acute allergic reaction; cardiac arrest; asystole; pulseless electrical activity; ventricular fibrillation unresponsive to initial defibrillatory attempts

Contraindications
Hypersensitivity; hypovolemic shock; narrow-angle glaucoma

Continued.

Adverse Reactions
Headache; nausea; restlessness; weakness; dysrhythmias; hypertension; precipitation of angina pectoris

Drug Interactions
MAO inhibitors and bretylium may potentiate the effect of epinephrine; beta-adrenergic antagonists may blunt inotropic response; sympathomimetics and phosphodiesterase inhibitors may exacerbate dysrhythmia response; may be deactivated by alkaline solutions (sodium bicarbonate, furosemide).

How Supplied

Parenteral: 1 mg/ml (1:1,000), 0.1 mg/ml (1:10,000) ampule and prefilled syringe
Autoinjector (EpiPen): 0.5 mg/ml (1:2,000); 0.01 mg/ml (1:100,000) pediatric

Special Considerations
Pregnancy safety: Category C; syncope has occurred after epinephrine administration to asthmatic children; may increase myocardial oxygen demand

EPINEPHRINE MEDICATION DRIP CHART

1 mg of 1:10,000 Epinephrine in 250 cc of N.S. = (4 mcg/ml)

All Epinephrine Infusions must be run on a rate-limiting device (dial-a-flow).

2 mcg/min	**30 ml/hr.**
3 mcg/min	**45 ml/hr.**
4 mcg/min	**60 ml/hr.**
5 mcg/min	**75 ml/hr.**
6 mcg/min	**90 ml/hr.**
7 mcg/min	**105 ml/hr.**
8 mcg/min	**120 ml/hr.**
9 mcg/min	**135 ml/hr.**
10 mcg/min	**150 ml/hr.**

NOREPINEPHRINE MEDICATION DRIP CHART

4 mg Norepinephrine (Levophed ™) in 1,000 mL of Normal Saline
400 mcg / 100mL = 4 mcg/mL

All Norepinephrine Infusions must be run on a rate-limiting devise (dial-a-flow).

5 mcg/minute	**75 mL/hr.**
10 mcg/minute	**150 mL/hr.**
15 mcg/minute	**225 mL/hr.**
20 mcg/minute	**300 mL/hr. (OPEN)**

ETOMIDATE

Class
General Anesthetic

Description
Etomidate is an ultra-short-acting, non-barbiturate hypnotic without analgesic activity. The drug has a shorter duration of action than other short-acting barbiturates, a rapid recovery, and a wide safety margin. Etomidate has a rapid onset of action and a low cardiovascular risk profile, and therefore is less likely to cause a significant drop in blood pressure than induction agents.

Indications
To induce anesthetic sedation for medical procedures, such as ETT or Cardioversion.

Contraindications
Hypersensitivity

Adverse Reactions
Apnea; hyperventilation; hypoventilation; hiccups; snoring; and laryngospasm. Nausea and vomiting. Arrhythmias, bradycardia or tachycardia. Hypotension or hypertension. Myoclonic and tonic skeletal muscle movements.

Drug Interactions
Etomidate potentiates the effects of CNS depressants such as alcohol, antidepressants, H1 blockers, opiate agonists, muscle relaxants, phenothiazines, barbiturates and benzodiazepines.

Special Considerations
It has no analgesic properties and should be administered with an analgesic for any painful procedures. Use with caution during lactation. Use with caution in the elderly and patients with hepatic disease.

Onset/Duration

Onset of action of less than 1 minute
Duration usually between 2-4 minutes

Adult Dosage: 0.2-0.4 mg/kg over 30-60 seconds for MFI
0.15 mg/kg for sedation

Pediatric Dosage: Same as adult.

FENTANYL CITRATE

Class
Narcotic analgesic

Description
Phenylpiperidine derivative; produces pharmacologic effects and degree of analgesia similar to morphine.

Onset & Duration

Onset: IV – immediately **Onset:** IM/IN – 7 to 8 minutes

Indications
Severe pain and is used with anesthesia.

Contraindications
Known hypersensitivity; respiratory depression; severe hemorrhage; shock; children under 2 years old; and Myasthenia gravis

Adverse Reactions
Hypotension; bradycardia; respiratory depression; apnea; nausea/vomiting; dizziness; sedation; diaphoresis; muscle rigidity; and palpitations

Drug Interactions
Other CNS depressants drugs (e.g. barbiturates, tranquilizers, narcotics and general anesthetics) will have additive or potentiating effects with fentanyl.

How Supplied
Parenteral for IV/IM & IN injection in 2 ml ampules (50 mcg/ml)

Special Considerations
Check for the presence of a fentanyl patch prior to administration. Resuscitation equipment and a narcotic agonist such as naloxone should be readily available to manage apnea. Pregnancy class B.

Adult Dosage
1 mcg/kg slow IV to maximum 100 mcg per dose. May be repeated, titrated to effect, with a maximum individual dose of 200 micrograms. Half dose for IN administration (50 mcg per dose).

GLUCAGON

Class
Pancreatic hormone; insulin antagonist

Description
Glucagon is a hormone secreted by the alpha cells of the pancreas. When released, it elevates blood glucose levels by increasing the breakdown of glycogen to glucose and inhibiting glycogen synthesis. In addition, glucagon exerts positive inotropic action on the heart and decreases renal vascular resistance. The drug is only effective in treating hypoglycemia if liver glycogen is available. Therefore it may be ineffective in chronic hypoglycemia, starvation, and adrenal insufficiency. Glucagon also causes relaxation of smooth muscle of the stomach, duodenum, small bowel, and colon.

Onset & Duration

Onset:	IM/IN:	Within 1 minute
Duration:	IM/IN:	3-6 minutes

Adult Dosage: 0.5-1.0 mg IM or 2 mg IN
Calcium or Beta – Blocker Overdose: 3 mg IM, or 2 mg IN (1 mg administered in each nostril)

Pediatric Dosage: 0.5-1 mg/kg IM or 2 mg/kg IN; In patients less than 20 kg, 20 to 30 μg/kg IM/IN (half the desired dose administered in each nostril).

Indications
Altered level of consciousness where hypoglycemia is suspected; May be used as an inotropic agent in beta-blocker overdose.

Contraindications
Hypersensitivity; Patients with pheochromocytoma

Adverse Reactions
Tachycardia; hypertension; nausea; and vomiting

Drug Interactions
There are no significant drug interactions with other medications.

Special Considerations
Pregnancy safety. Should not be considered a first-line choice for hypoglycemia.
Intravenous glucose must be administered if the patient does not respond to a second dose of Glucagon.

How Supplied
Glucagon is supplied in a combination package containing 1 mg (1 unit) of the medication. This comes in a powder form that must be reconstituted with the diluting solution prior to administration. Once reconstituted, glucagon should be administered after mixing.

HALOPERIDOL (Haldol)

Class Antipsychotic Agent

Description
Inhibits central nervous system (CNS) catecholamine receptors; strong antidopaminergic and weak anticholinergic. Acts on CNS to depress subcortical areas, mid-brain and ascending reticular activating system in the brain.

Onset and Duration

Onset: 10 minutes
Peak Effect: 30-45 minutes
Duration: Variable (generally 12-24 hours)

Adult Dosage: 2-5 mg IV/IM

Pediatric Dosage: Not Recommended

Indications
Adult behavioral emergency, agitated, and aggressive patients who present a danger to themselves or to others and who cannot be safely managed otherwise.

Contraindications
Known hypersensitivity to medication or similar; children; Parkinson's disease; CNS depression; suspected head injury

Adverse Reactions
Extrapyramidal symptoms (**dystonic reaction**); restlessness, spasms; Parkinson-like symptoms; drooling; hypotension; orthostatic hypotension; nausea; vomiting; blurred vision

Drug Interactions
Enhanced CNS depression and hypotension in combination with alcohol, and antagonizes amphetamines and epinephrine. Other CNS depressants may potentiate effects.

Special Considerations
Violent patients should be physically restrained while the medication is administered; May mask subsequent evaluation. Pregnancy Safety not established. Treat hypotension secondary to Haloperidol with fluids.

How Supplied 1 ml vial, 5 mg/ml

HYDROCORTISONE SODIUM SUCCINATE (Solu-Cortef)

Class
Corticosteroid

Description
Reduces inflammation by multiple mechanisms. It replaces the steroids that are lacking in adrenal insufficiency.

Onset & Duration

Onset: IV – 1 hour
Duration: IV 8-12 hours

Adult Dosage: 4 mg/kg slow IV Bolus/ IM

Pediatric Dosage: 2 mg/kg bolus IV/ IM, not to exceed 100 mg, if available

Indications
Adrenal insufficiency

Contraindications
Known hypersensitivity; systemic fungal infections; premature infants

Adverse Reactions
Headache; vertigo; CHF; hypertension; fluid retention; nausea

Drug Interactions
Incompatible with Heparin and Metaraminol.

How Supplied
Parenteral for IV injection – 100, 200 or 500 mg powder in vials (requires reconstitution with solution provided)

Special Considerations
Pregnancy Class C; Exceeding max dosage of 100-500 mg may be acceptable in emergency situations.

NOTES:

Dosage Forms and Packaging:
Store at controlled room temperature (59° to 86° F). Requires reconstitution with solution provided.

HYDROXOCOBALAMIN (Cyanokit)

Class
Cyanide antidote

Description
Hydroxylated active forms of vitamin B 12. One molecule binds with cyanide to form cyanocobalamin (vitamin B12) which is then excreted through the renal system.

Onset & Duration

Onset: IV – 1 to 3 minutes

Adult Dosage: IVP 5 grams/ 200 ml NS in 15 minutes (15 ml/min). Maximum total dose of 10 grams.

Pediatric Dosage: 70 mg/kg over 15 minutes

Indications
Known or suspected cyanide poisoning

Contraindications
No specific contraindications known.

Adverse Reactions
Transient elevation in blood pressure, temporary red discoloration of skin and urine.

Drug Interactions
Incompatible with any other medications.

How Supplied
Single kit with two (2) 250 ml glass vials, each containing 2.5 gm per vial, two (2) sterile transfer spikes, one (1) IV infusion set, and one (1) quick use reference guide.

Special Considerations
Must be administered in a dedicated IV.

IBUPROFEN (Motrin, Advil)

Class
Non-steroidal anti-inflammatory (NSAID)

Description
Ibuprofen works by reducing hormones that cause inflammation and pain in the body. Ibuprofen is used to reduce fever and treat pain or inflammation caused by many conditions such as headache, toothache, back pain, arthritis, menstrual cramps, or minor injury. Ibuprofen is used in adults and children who are at least 6 months old.

Onset: 15-30 minutes
Duration: dose dependent, 400 mg lasts approx. 6 hours

Indications
Relief of pain.

Contraindications
Hypersensitivity to NSAIDs, patients with a current or recent stomach ulcer, patients with congestive heart failure.

Adverse Reactions
Ibuprofen can increase your risk of fatal heart attack or stroke. Ibuprofen may also cause stomach or intestinal bleeding, which can be fatal. These conditions can occur without warning while you are using this medicine, especially in older adults.

Drug Interactions
There are few in the prehospital setting.

How Supplied
In a liquid suspension of 100 mg/5 mL for PO administration.

Special Considerations
Use caution in patients with heart disease, high blood pressure, high cholesterol, diabetes, smoking history, a history of heart attack, stroke, or blood clot, stomach ulcers or bleeding, liver or kidney disease, asthma, or in patients who take aspirin to prevent heart attack or stroke. Do not use this medicine just before or after heart bypass surgery (coronary artery bypass graft, or CABG). Taking an NSAID during the last 20 weeks of pregnancy can cause serious heart or kidney problems in the fetus and possible pregnancy complications. Do not give ibuprofen to a child younger than 6 months old.

IPRATROPIUM BROMIDE (Atrovent)

Class
Anticholinergic

Description
Ipratropium is an anticholinergic (parasympatholytic) bronchodilator that is chemically related to atropine.

Onset & Duration

Onset: Varied
Duration: Varied

Adult Dosage: Unit Dose

Pediatric Dosage: 0.5 mg – unit dose

Indications
Bronchial asthma, reversible bronchospasm associated with chronic bronchitis and COPD.

Contraindications
Ipratropium should not be used in patients with hypersensitivity to the medication. It is not indicated for use in the treatment of acute bronchospasm where rapid response is required. Ipratropium should be used with caution for patients with history of narrow-angle glaucoma, epigastric disease, or hypersensitivity to the medication.

Adverse Reactions
Ipratropium can cause palpitations, anxiety, dizziness, headache, nervousness, rash, nausea, vomiting, dry mouth, bronchospasm, bronchitis and allergic reaction.

Drug Interactions
There are few in the prehospital setting.

How Supplied
Ipratropium is supplied in unit dose vials containing 500 micrograms (0.02% inhalation solution) diluted in 2.5 ml saline.

KETAMINE HYDROCHLORIDE

Class
Dissociative Anesthetic; Mild Hallucinogenic

Description
Nonbarbiturate, dissociative anesthetic (NDMA receptor antagonist), but at higher doses may bind to opiate/opioid receptors.

Onset & Duration

Onset:	IV – 15 to 30 seconds	IM – 1 to 3 minutes
Duration:	IV – 10 to 15 minutes	IM – 15 to 25 minutes

Indications
Severe pain; induction and maintenance of anesthesia/sedation; chemical sedation in excited delirium

Contraindications
Hypersensitivity; patients with significant hypertension where a significant elevation in blood pressure would constitute a serious hazard

Adverse Reactions
Respiratory depression or laryngospasm especially following rapid administration, vomiting, elevation in heart rate and blood pressure, however hypotension and bradycardia have also been noted.

Drug Interactions
Prolonged sedation if administered with narcotics.

Dosage
5 mL multi-dose vial contains 100 mg/mL
Ketamine is dosed on ideal body weight.

Pain Management
0.1 to 0.2 mg/kg IV/IO max 20mg. 0.4 mg/kg IM/IN max 40 mg.

Sedation/Induction
1 to 2 mg/kg IV/IO

Agitation
Up to 2 mg/kg IV/IO or up to 4 mg/kg IM

KETROLAC TROMETHAMINE (Toradol)

Class
Non-Steroidal Anti-Inflammatory Drug (NSAID)

Description
Inhibits the production of prostaglandins in inflamed tissue, which decreases the responsiveness of pain receptors.

Onset & Duration

Onset: IV/IM – Following IM or IV injection, the onset of analgesia occurs in about 30 minutes, with a peak effect around 1-2 hours.

Duration: IV/IM – of 4-6 hours

Adult Dosage: 30 mg IV over 15 seconds.
60 mg IM slowly and deeply into muscle.

Pediatric Dosage: Not recommended for use in pediatric population.

Indications
Short-term management of moderately to severe acute pain.

Contraindications
It should not be administered to patients who report allergies to the drug or allergies aspirin or the nonsteroidal anti-inflammatory drugs. Patients with a history of peptic ulcer disease or GI bleed, patients with renal insufficiency, hypovolemic patients, pregnancy (third trimester), nursing mothers, stroke or suspected stroke or head trauma, need for major surgery in the immediate or near future.

Adverse Reactions
Headache; drowsiness; dizziness; abdominal pain; dyspepsia; nausea and vomiting; diarrhea

Drug Interactions
Ketorolac, when administered with other NSAIDS (including ASA), can worsen the side effects associated with the use of drugs in this class.

How Supplied
Parenteral for IV/IM injection – 30 mg/ml vial
15 mg/ml vial

Special Considerations
Older than 65 years of age, renal impairment, or weight less than 50 kg (110 lbs);
Pregnancy class C; class D in third trimester.

NOTES: **Dosage Forms and Packaging:** Store at controlled room temperature (59° to 86° F). Protect from light.

LIDOCAINE

Class
Antidysrhythmic

Description
Lidocaine is a local surface or block anesthetic, used as a precursor to medical procedures. Blunts cough reflex in cases of RSI on patients with increased intracranial pressure (ICP).

Onset & Duration:

Onset: 30-90 seconds **Duration**: 2-4 hours

Adult Dosage:
For pre-intubation with suspected increased ICP: 1.0-1.5 mg/kg IV bolus; Maximum individual dose 100 mg
For topical anesthetic: 20-40 mg of 2% (preservative free) lidocaine at injection site.

Pediatric Dosage: Not recommended for use in the pediatric population.

Indications:
Anesthetic for IO insertion on conscious patients. Select cases of Rapid Sequence Induction (RSI).

Contraindications
Hypersensitivity; Stokes-Adams syndrome; Second or third degree heart block in the absence of an artificial pacemaker

Adverse Reactions
Lightheadedness; confusion; blurred vision; hypotension; cardiovascular collapse; bradycardia; CNS depression (altered level of consciousness, irritability, muscle twitching, seizures) with high doses

Drug Interactions
Metabolic clearance of lidocaine may be decreased in patients taking beta-adrenergic blockers or in patients with liver dysfunction; Apnea induced with succinylcholine may be prolonged with large doses of lidocaine; Cardiac depression may occur if lidocaine is given concomitantly with IV phenytoin; Additive neurological effects may occur with procainamide.

Special Considerations
Pregnancy safety: Category B; Therapeutic plasma levels of lidocaine between 2-6 mcg/ml suppresses ventricular dysrhythmias. A 75-100 mg bolus maintains adequate blood levels for only 20 minutes; If bradycardia occurs in conjunction with PVCs, always treat the bradycardia first with atropine, epinephrine, and/or dopamine; Exceedingly high doses of lidocaine can result in coma or death; Avoid lidocaine for reperfusion dysrhythmias after thrombolytic therapy.

How Supplied

Prefilled Syringes:	100 mg in 5 ml of solution
	1 and 2 g additive syringes
Ampules:	100 mg in 5 ml of solution
	1 and 2 g vials in 30 ml of solution
	5 ml containing 100 mg/ml

MAGNESIUM SULFATE

Class Electrolyte, CNS depressant

Description
Magnesium sulfate reduces striated muscle contractions and blocks peripheral neuromuscular transmission by reducing acetylcholine released at the myoneural junction. In emergency care, magnesium sulfate is used to manage seizures associated with toxemia of pregnancy. Other uses include uterine relaxation (to inhibit contractions of premature labor), as a bronchodilator after beta-agonist and anticholinergic agents have been used, replacement therapy for magnesium deficiency, as a cathartic to reduce the absorption of poisons from the GI tract, and in the initial therapy for convulsions. Magnesium sulfate is gaining popularity as an initial treatment in the management of various dysrhythmias, particularly torsades de pointes, and dysrhythmias secondary to a tricyclic antidepressant overdose or digitalis toxicity. The drug is also considered as a class IIa agent (probably helpful) for refractory ventricular fibrillation and ventricular tachycardia after administration of lidocaine or bretylium doses.

Onset & Duration:

Onset: Immediate **Duration**: 3-4 hours

Adult Dosage: Pre-eclampsia: 1-4 g IV/IO. Torsades: VT without pulse: 2 g / 10cc IV/IO/EJ; VT w/ pulse: 1 g / 100 cc/ 10 minutes. Asthma: 2 g / 100 cc/ 10 minutes.

Pediatric Dosage: (Maximum dose 2 g) Torsades: VT without pulse: 25 – 50 mg/kg IV/IO Bolus; VT w/ pulse: 25-50 mg/10-20 minutes.

Indications
Seizures of eclampsia (toxemia of pregnancy); Torsades de Pointes

Contraindications Heart Block

Adverse Reactions
Diaphoresis; facial flushing; hypotension; depressed reflexes; hypothermia; reduced heart rate; circulatory collapse; respiratory depression

Drug Interactions
CNS depressant effects may be enhanced if the patient is taking other CNS depressants. Serious changes in cardiac function may occur with cardiac glycosides.

Special Considerations
Pregnancy safety: Magnesium sulfate is administered to treat toxemia of pregnancy. It is recommended that the drug not be administered in the 2 hours before delivery, if possible. IV calcium gluconate or calcium chloride should be available as an antagonist to magnesium if needed; Convulsions may occur up to 48 hours after delivery, necessitating continued therapy. The "cure" for toxemia is delivery of the baby; Magnesium must be used with caution in patients with renal failure, since it is cleared by the kidneys and can reach toxic levels easily in those patients; Prophylactic administration of magnesium sulfate for patients with acute myocardial infarction should be considered.

How Supplied 5 and 10 ml of a 10% solution in prefilled syringe

MARK I AUTO-INJECTOR

Class
Nerve Agent/Organophosphate Antidote

Description
Auto-injector containing 2 sequentially-numbered auto-injectors. **#1** contains 2 mg of atropine sulfate and **#2** contains 600 mg Pralidoxime Chloride. Medications must be given in numerical order.

Onset & Duration
Onset: IM – Highly dependent on exposure route, duration, and underlying patient condition.
Duration: IM – Highly dependent on exposure route, duration, and underlying patient condition.

Indications
Signs/symptoms that include salivation, lacrimation, urination, defecation, GI discomfort, emesis, miosis, altered mental status, and/or seizure following exposure to nerve agent or organophosphate-based pesticide/insecticide.

Contraindications
There are no known contraindications in an emergency.

Adverse Reactions
Additional atropine maybe needed to halt secretions, highly dependent on exposure route, duration, and underlying patient condition.

Drug Interactions
No known drug interactions in an emergency.

Special Considerations
Medical Control Physician or designated EMS Field Physician must authorize the use of antidote for a patient, or in the case of a mass intoxication setting, the scene. In MCI scene, independent patient orders are not needed once the release of nerve agent antidote is made by a physician.

Adult Dosage:
1 Mark I Kit for mild/moderate symptoms, 3 Mark I Kits for severe symptoms. Additional atropine may be needed until secretions dry. Pralidoxime is given to a maximum individual dose of 1.8 grams (3 doses).

Pediatric Dosage:
Weight-based per the Broselow Pediatric Antidote for Chemical Emergencies Tape.

***NOTE*: Mark I Kits are being replaced in the industry, per manufacturing processes, by Duo-Dote kits. Mark I kits and Duo-dotes are essentially interchangeable.**

METOPROLOL TARTRATE (Lopressor)

Class
Selective Beta-Blocker

Description
Metoprolol affects beta-1 adrenoreceptors, mainly located in cardiac muscle. At higher doses it also inhibits beta-2 adrenoreceptors, chiefly located in the bronchial and vascular musculature. Effects of Metoprolol included slowing of the sinus rate and decreasing AV nodal conduction resulting in reduction of heart rate and cardiac output, reduction of systolic blood pressure, reduction of reflex orthostatic tachycardia, and inhibition of catecholamine-induced tachycardia.

Onset & Duration

Onset: IV – 10 to 20 minutes
Duration: IV – 4 to 8 hours

Adult Dosage: 5 mg Slow IVP (monitor BP, Pulse and EKG) Every 5 minutes to maximum of 15 mg.

Pediatric Dosage: Not Applicable

Indications
Rapid ventricular rates associated with atrial fibrillation and atrial flutter. Used after adenosine to treat refractory PSVT in patients with narrow QRS complex and adequate blood pressure

Contraindications
Metoprolol is contraindicated in sinus bradycardia, heart block, cardiogenic shock, systolic blood pressure < 100 mmHg, or signs of CHF or COPD.

Adverse Reactions
Hypotension; bradycardia; CHF; shortness of breath; wheezing; nausea and vomiting; gastric pain; confusion; drowsiness; rash; tinnitus

Drug Interactions
In hypertension and angina patients with CHF controlled by digitalis and diuretics, Metoprolol should be administered with extreme caution since beta blockade caries the potential of further decreasing myocardial contractility and precipitating more severe failure.

How Supplied
Parenteral for IV injection in 1.0 mg/ml and 5 ml vials

Special Considerations
Patient with Bronchospastic Disease, Diabetes and Hypoglycemia, or Thyrotoxicosis should in general not receive beta blockers.

MIDAZOLAM HYDROCHLORIDE (Versed)

Class Benzodiazepine

Description
Reversibly interacts with gamma-amino butyric acid (GABA) receptors in the CNS causing sedative, amnesic, anxiolytic, hypnotic effects and anticonvulsant activity.

Onset & Duration

Onset: IV/IM/IN – 1-3 minutes, dose dependent.
Duration: IV/IM/IN – 2-6 hours, dose dependent

Indications
Sedation; prevent shivering; seizure; agitation and medical procedures (e.g. cardioversion, RSI)

Contraindications
Acute narrow-angle glaucoma; shock; coma; alcohol intoxication; overdose; depressed vital signs

Adverse Reactions
Headache; respiratory depression; apnea; hypotension; nausea and vomiting; hiccups; pain at the injection site

Drug Interactions
Should not be used in patients who have taken central nervous system depressants.

How Supplied
1 mg/mL and 5 mg/mL vials and Tubex syringes

Special Considerations
Requires continuous monitoring of respiratory and cardiac function. Pregnancy Class D.

Adult Dosage: (Maximum 0.1 mg/kg)

Seizure – up to 2.5 mg IVP or 5.0 mg IM/IN
Agitation – up to 2.5 mg IVP or 5.0 mg IM/IN
RSI – up to 5.0 mg IVP
Cardioversion – up to 5.0 mg IV/IM or 10mg IM/IN

Pediatric Dosage: Maximum (under age 6 – 6 mg; over age 6 – 10 mg) 0.1 mg/kg IM/IN, per Pediatric Dosing Tape/Chart

Dosage Forms and Packaging:
Store at controlled room temperature (59° to 86° F). Protect from light.

MORPHINE SULFATE

Class
Opioid analgesic

Description
Morphine sulfate is a natural opium alkaloid that increases peripheral venous capacitance and decreases venous return ("chemical phlebotomy"). It promotes analgesia, euphoria, and respiratory and physical depression. Secondary pharmacological effects of morphine include depressed responsiveness of alpha-adrenergic receptors (producing peripheral vasodilation) and baroreceptor inhibition. In addition, because morphine decreases both preload and afterload, it may decrease myocardial oxygen demand. Morphine sulfate is a schedule II drug.

Onset & Duration

Onset: Immediate **Duration**: 2-7 hours

Adult Dosage: Up to 10 mg IV/IM

Pediatric Dosage: Weight based Pediatric Tape/Chart 0.1 mg/kg IM/IO (maximum 10 mg.)

Indications
Chest pain associated with myocardial infarction; Moderate to severe acute and chronic pain; Should be used with caution in chronic pain syndromes; Pulmonary edema, with or without associated pain.

Contraindications
Hypersensitivity; Diarrhea caused by poisoning; Hypovolemia; Hypotension; Head injury or undiagnosed abdominal pain; Patients who have taken MAO inhibitors within 14 days.

Adverse Reactions
Hypotension; nausea and vomiting; tachycardia or bradycardia; palpitations; syncope; facial flushing; respiratory depression; euphoria; bronchospasm; dry mouth; allergic reaction

Drug Interactions
CNS depressants may potentiate effects of morphine (respiratory depression, hypotension, and sedation); Chlorpromazine may potentiate analgesia; MAO inhibitors may cause paradoxical excitation.

Special Considerations
Pregnancy safety: Category C; Narcotics rapidly cross the placenta. Safety in neonates has not been established; Use with caution in older adults, those with asthma, and those susceptible to CNS depression; May worsen bradycardia or heart block in inferior myocardial infarction (vagotonic effect); Naloxone and resuscitation equipment should be readily available.

How Supplied
Morphine is supplied in tablets, suppositories, and solution; In emergency care, morphine sulfate is usually administered IV; Parenteral preparations are available in many strengths; A common preparation is 10 mg in 1 ml of solution, ampules, and Tubex syringes.

NALOXONE (Narcan)

Class
Synthetic opioid antagonist

Description
Naloxone is a competitive narcotic antagonist used in the management and reversal of overdoses caused by narcotics and synthetic narcotic agents. Unlike other narcotic antagonists, which do not completely inhibit the analgesic properties of opiates, naloxone antagonizes all actions of morphine.

Onset & Duration

Onset: Within 2 minutes, patient dependent
Duration: 30-60 minutes, patient dependent

Adult Dosage: 0.4-2 mg IV/IM; 2 mg IN (Can give up to 10 mg over time period of less than 10 minutes. Should be administered 1 mg in each nare.)

Pediatric Dosage: 0.1 mg/kg IV/IO; May repeat up to 2 mg total dose.

Indications
For the complete or partial reversal of CNS and respiratory depression induced by opioids: Narcotic agonist: morphine sulfate, heroin, hydromorphone (dilaudid), methadone, meperidine (Demerol), paregoric, fentanyl citrate (sublimaze), oxycodone (percodan), codeine, propoxyphene (Darvon); Narcotic agonist and antagonist: butorphanol tartrate (stadol), pentazocine (talwin), nalbuphine (nubain); Decreased level of consciousness; Coma of unknown origin.

Contraindications
Hypersensitivity; Use with caution in narcotic-dependent patients who may experience withdrawal syndrome (including neonates of narcotic-dependent mothers).

Adverse Reactions
Tachycardia; hypertension; dysrhythmias; nausea and vomiting; diaphoresis

Drug Interactions
Is incompatible with bisulfite and with alkaline solutions.

How Supplied
0.02 mg/ml (neonate), 0.4 mg/ml, 1 mg/ml

Special Considerations
Pregnancy safety: Category B; May not reverse hypotension; Caution should be exercised when administering naloxone to narcotic addicts (may precipitate withdrawal with hypertension, tachycardia, and violent behavior).

NITROGLYCERINE

Class
Vasodilator

Description
It was originally believed that nitrates and nitrites dilated coronary blood vessels, thereby increasing blood flow to the heart. It is now believed that atherosclerosis limits coronary dilation and that the benefits of nitrates and nitrites result from dilation of arterioles and veins in the periphery. The resulting reduction in preload and to a lesser extent in afterload decreases the work load of the heart and lowers myocardial oxygen demand. Nitroglycerin is very lipid soluble and is thought to enter the body from the GI tract through the lymphatics rather than the portal blood.

Onset & Duration

Onset: 1-3 minutes
Duration: 20-30 minutes

Adult Dosage: 0.4 mg SL every 5 minutes for a maximum of 3 doses.

Pediatric Dosage: Medication not recommended for use in pediatrics.

Indications
Ischemic Chest Pain; hypertension; congestive heart failure

Contraindications
Hypersensitivity; pericardial tamponade; restrictive cardiomyopathy; constructive pericarditis

Adverse Reactions
Transient headache; postural syncope; reflex tachycardia; hypotension; nausea and vomiting; allergic reaction; muscle twitching; diaphoresis

Drug Interactions
Other vasodilators may have additive hypotensive effects.

How Supplied

Tablets (sublingual): 0.15 mg (1/400gr), 0.3 mg (1/200gr), 0.4 mg (1/150gr), 0.6 mg (1/100gr)
Aerosol (translingual): 0.4 mg metered dose; Parenteral: 0.5 mg/ml, 0.8 mg/ml, 5.0 mg/ml
Tablets (sustained release): 2.6 mg, 6.5 mg, 9 mg: Capsules (sustained release): 6.5 mg, 9 mg
Topical: 2% ointment

Special Considerations
Pregnancy safety: Category C; Susceptibility to hypotension in older adults increases; Nitroglycerine decomposes when exposed to light or heat; Must be kept in airtight containers; Active ingredients of nitroglycerine “stings” when administered sublingually.

NITROUS OXIDE

Class
Analgesic Gas

Description

Nitrous Oxide is a blended mixture of 50% nitrous and 50% oxygen. Nitrous Oxide is a CNS depressant with analgesic properties, and must be self-administered by a patient.

Onset & Duration:

Onset: Immediate
Duration: Only as long as patient is inhaling gas.

Adult Dosage: Self-dosing inhalation, PRN

Pediatric Dosage: Same as adult.

Indications
Pain Management

Contraindications
Nitrous Oxide should not be used by any patient who cannot comprehend verbal instructions or who is intoxicated with alcohol or other drugs. Nitrous Oxide should not be administered to a patient with an altered mental status that may be due to a head injury, or to any patient with COPD, where the high concentration of oxygen (50%) may result in respiratory depression. Nitrous Oxide may result in pneumothorax in patients with COPD as a result of increased diffusion into closed spaces, i.e. blebs. Nitrous Oxide should not be administered to patients with abdominal pain, abdominal distention, or to patients with suspected chest injury. Nitrous Oxide may decrease cardiac output. Nitrous Oxide should not be administered to any female patient who is in the first trimester of pregnancy. Nitrous Oxide should not be used in patients with a hypersensitivity to the medication.

Adverse Reactions
Nitrous Oxide can cause dizziness, lightheadedness, altered mental status, hallucinations, nausea and vomiting.

Drug Interactions
Nitrous Oxide can potentiate the effects of other CNS depressants such as narcotics, sedatives, hypnotics and alcohol.

How Supplied
Nitrous Oxide is supplied in a compressed gas cylinder system where both gasses are fed into a blender that delivers the fixed 50% 50% mixture. The blender is designed to shut off if the oxygen cylinder becomes depleted.

NOREPINEPHRINE (Levophed)

Class
Sympathomimetic

Description
Alpha-adrenergic: Peripheral vasoconstriction
Beta-adrenergic: Inotropic agent and coronary artery vasodilation

Onset & Duration

Onset: Rapid
Duration: Diminishes 1 to 2 minutes after IV cessation

Adult Dose
ROSC/Medical Shock: 0.1 to 0.5 mcg/kg/min if SBP < 90 mmHg

Pediatric Dose
0.05 to 0.5 mcg/kg/minute as determined by Medical Control

Indications
Shock/Hypoperfusion

Contraindications
Hypovolemic Shock

Adverse Reactions
Tissue necrosis upon extravasation; reflex bradycardia

Drug Interactions

How Supplied
4 mg/4 mL 1 mg/mL

ONDANSETRON HYDROCHLORIDE (Zofran)

Class
Serotonin receptor antagonist; Antiemetic

Description
Blocks action of serotonin, which is a natural substance that causes nausea and vomiting.

Onset & Duration

Onset: IV/IM – 30 minutes
Duration: IV/IM – 3-6 hours

Adult Dosage: 4 mg IV/IM; May be repeated 1 time to a maximum dose of 8 mg.

Pediatric Dosage: 40 kg or less: 0.1 mg/kg single dose IV/IM
Over 40 kg: 4 mg single dose IV/IM

Indications
For the prevention and control of nausea or vomiting.

Contraindications
Known allergy to Ondansetron or other 5-HT3 receptor antagonists, History of Long QT syndrome.

Adverse Reactions
Headache; abnormal ECG; prolonged QT interval; second-degree AV block; constipation; diarrhea

Drug Interactions
Not recommended if patient is taking Apomorphine, Mesoridazine, Pimozide, or Thioridazine.

How Supplied
Parenteral for IV/IM injection – 2 mg/mL vial

Special Considerations
Pregnancy class B

NOTES:

Brand Name: Zofran

Dosage Forms and Packaging:
Store at controlled room temperature (59° to 86° F). Protect from light.

ROCURONIUM (Zemuron)

Class
Neuromuscular Blocker

Description
Antagonizes motor endplate acetylcholine receptors (non-depolarizing neuromuscular blocker) (muscle paralysis).

Onset & Duration

Onset: IV – 1 minute
Peak Effect: 1-3 minutes
Duration: IV – 1-2 hours

Adult Dosage 1 mg/kg IV push

Pediatric Dosage: Not for use on pediatric patients.

Indications
Rapid-sequence intubation

Contraindications
A history of "Long QT Syndrome," problems with circulation, or if ever had an allergic reaction to another anesthetic medication. Inability to control airway or support ventilations.

Adverse Reactions
Apnea; respiratory depression; tachydysrhythmias; bronchospasm; nausea; vomiting
Decrease dose for patients with renal disease.

Drug Interactions
Use of inhalation anesthetics will enhance neuromuscular blockade.

How Supplied
Parenteral for IV injection – 10 mg/mL vials.

Special Considerations
FDA pregnancy category B. Fentanyl or Etomidate should be used in any conscious patient before undergoing neuromuscular blockade.

NOTES:
Dosage Forms and Packaging: Store at controlled room temperature (59° to 86° F).

SODIUM BICARBONATE

Class
Buffer

Description
Sodium Bicarbonate reacts with hydrogen ions to form water and carbon dioxide and therapy can act to buffer metabolic acidosis. Increasing the plasma concentration of bicarbonate causes blood pH to rise.

Onset & Duration:

Onset: 2-10 minutes **Duration**: 30-60 minutes

Adult Dosage: Cardiac Arrest: 1 mEq/kg (8.4%) IV/IO
Crush Injury: 50 mEq (8.4%) IV/IO over 5 minutes, every 30 minutes.

Pediatric Dosage:
Neonatal Resuscitation (less than 1 month of age) (4.2%) 1 mEq/kg Slow IV/IO

Indications
Known preexisting bicarbonate-responsive acidosis; Intubated patient with continued long arrest interval; Tricyclic antidepressant overdose; Alkalinization for treatment of specific intoxications; Hyperkalemia.

Contraindications
In patients with chloride loss from vomiting and GI suction, metabolic and respiratory alkalosis, hypocalcemia, hypokalemia

Adverse Reactions
Metabolic acidosis; hypoxia; rise in intracellular PC02 and increased tissue acidosis; electrolyte imbalance (tetany); seizures; tissue sloughing at injection site

Drug Interactions
May precipitate in calcium solutions; Alkalinization of urine may increase half-lives of certain drugs; Vasopressors may be deactivated.

How Supplied

Tablets: 300 mg, 325 mg, 600 mg, 625 mg
Injection: 4% (2.4 mEq/5 ml), 4.2% (5 mEq/10 ml), 5% (297.5 mEq/500 ml), 7.5% (8.92 mEq/10 ml and 44.6 mEq/50 ml), 8.4% (10 mEq/10 ml and 50 mEq/50 ml)

Special Considerations
Pregnancy safety: Category C; When possible, blood gas analysis should guide bicarbonate administration; Bicarbonate administration produces carbon dioxide, which crosses cell membranes more rapidly than bicarbonate, potentially worsening intracellular acidosis; May increase edematous or sodium-retaining states; May worsen congestive heart failure.

SUCCINYLCHOLINE

Class
Neuromuscular blocker, depolarizing; muscle relaxant

Description
Ultra-short-acting depolarizing skeletal muscle relaxant that mimics acetylcholine as it binds with the cholinergic receptors on the motor end plate, producing a phase 1 block as manifested by fasciculations (muscle paralysis).

Onset & Duration

Onset: IV – 1 minute
Peak Effect: 1-3 minutes
Duration: IV – 5-10 minutes

Adult Dosage: 1.25 mg-1.75 mg/kg IV push
Pediatric Dosage: 2 mg/kg for infants; 1-1.5 mg/kg for children

Indications
Rapid-sequence intubation

Contraindications
Burns; malignant hyperthermia; penetrating eye injuries; acute narrow-angle glaucoma; inability to control airway or support ventilations

Adverse Reactions
Apnea; respiratory depression; bradydysrhythmia; tachydysrhythmias; salivation; rhabdomyolysis; malignant hyperthermia; hyperkalemia; post procedure muscle pain

Drug Interactions
Oxytocin, beta blockers, and organophosphates may potentiate effects.

How Supplied
Parenteral for IV injection – 20 mg/mL vials.

Special Considerations
Pregnancy class C; Neuromuscular blockade in 0.5 to 1 minute. IV administration in infants and children can potentially result in profound bradycardia. Fentanyl or Etomidate should be used in any conscious patient before undergoing neuromuscular blockade.

NOTES:

Dosage Forms and Packaging: Store at controlled room temperature (59° to 86° F).

VECURONIUM BROMIDE (Norcuron)

Class
Neuromuscular Blocker

Description
Antagonizes motor endplate acetylcholine receptors (non-depolarizing neuromuscular blocker) (muscle paralysis).

Onset & Duration

Onset: IV – 1 minute
Peak Effect: 1-3 minutes
Duration: IV – 45-90 minutes

Adult Dosage 0.1 mg/kg IV push
Pediatric Dosage: 0.1-0.3 mg/kg IV/IO

Indications
Rapid-sequence intubation

Contraindications
Acute narrow-angle glaucoma; penetrating eye injuries; myasthenia gravis; hepatic or renal failure; allergic reaction to another anesthetic medication; inability to control airway or support ventilations

Adverse Reactions
Apnea; respiratory depression; tachydysrhythmias; bronchospasm; excessive salivation

Drug Interactions
Use of inhalation anesthetics will enhance neuromuscular blockade.

How Supplied
10 and 20 mg powder (requires reconstitution before administration)

Special Considerations