THE REGIONAL EMERGENCY MEDICAL SERVICES COUNCIL OF NEW YORK CITY, INC.

Regional Emergency Medical Advisory Committee

Minutes

November 14, 2017

The Regional Emergency Medical Advisory Committee (REMAC) of New York City met on Tuesday, November 14, 2017 at the Offices of the Regional EMS Council, 475 Riverside Drive, New York City. This meeting can be viewed via webcast at www.nycremsco.org.

Members		***Present***	***Absent***
Burn Surgeon (1)	Robert J. Winchell, MD	√	
Downstate New York Ambulance Association			
Ambulance Service Medical Director (1)	**Josef Schenker, MD, Chair**	√	
Emergency Medical Technicians (Basic/Paramedic) (2)	Michael Vatch, EMTP Robert Ackerman, Alt		√
	Vacant vacant, alt		
EMS Community Emergency Department			
Medical Directors (3)	Nikolaos Alexandrou, MD	√	
	Christopher Graziano, MD	√	
	Vacant		
Nurses (2)	Eric Cohen, RN		√
	Mimi Langsam, RN		√
Administrators (2)	Kevin Munjal, MD	√	
	Cindy Baseluos, MD	√	
FDNY EMS			
Commissioner or Non-Physician Designee	Vacant		
Medical Director (3)	Dario Gonzalez, MD	√	
	Glenn Asaeda, MD	√	
	Bradley Kaufman, MD, 2nd Vice Chair	√	
Online Medical Control Physicians (2)	Doug Isaacs, MD		√
	Nathan Reisman, MD	√	
Emergency Medical Technicians (Basic/Paramedic) (2)	Telina Lloyd, EMTP	√	
	Joshua Bucklan, RN, EMTP		√
Greater New York Hospital Association			
President or Non-Physician Designee (1)	Alison Burke		√
Emergency Physician (1)	Jeffrey Rabrich, MD, 1st Vice Chair	√	
Ambulance Service Medical Director (1)	Heidi Cordi, MD		√

On Line Medical Control Physicians (2)	Lewis Marshall, JD, MD		√
	Michael Redlener, MD Michael Hilton, MD, alternate	√	
Emergency Department Administrator (2)	Vacant		
	Pamela Lai, MD	√	
Emergency Medical Technicians (Basic/Paramedic) (2)	Dominick Battinelli, EMTP	√	
	Scott Chiang, EMTP	√	
Medical Society of New York Physician (1)	Peter Wyer, MD	√	
Medical Standards Committee			
ALS Physician (1)	Paul Barbara, MD	√	
BLS Physician (1)	David Ben-Eli, MD	√	
New York City Department of Health & Mental Hygiene-Emergency Preparedness Program Physician (1)	Celia Quinn, MD, MPH Timothy Styles, MD, MPH, alternate		√
New York City Health & Hospitals Corporation Physician (1)	Vacant		√
New York City Police Department Physician (1)	Charles Martinez, MD	√	
NYS Volunteer Ambulance & Rescue Association/District 4 & 18			
Ambulance Service Medical Director (1)	Joseph Bove, MD	√	
Emergency Medical Technicians (Basic/Paramedic) (2)	Martin Grillo, EMTP	√	
	Vacant		√
Pediatric Emergency Medicine Physician (1)	Matthew Harris, MD	√	
	Stephen Blumberg, MD, alternate		
Psychiatric Emergency Medicine Physician (1)	William Fisher, MD	√	
Regional EMS Council NYC Physician (1)	Robert Crupi, MD	√	
Training & Education Committee Physician (1)	Jessica van Voorhees, MD	√	
Trauma Surgeon (1)	Arthur Cooper, MD	√	
	Gary Marshall, MD, alternate		
Non-Voting Members			
At Large	Yedidyah Langsam, PhD, EMTP	√	
At Large	Anthony Shallash, MD	√	
Public	Christopher Sorrentino, RN		√

STAFF: Nancy Benedetto, Executive Director Administration
Marie Diglio, Executive Director Operations
Joseph Raneri, Disaster Preparedness Coordinator

GUESTS: James Booth, FDNY EMS, Chief of Operations
Anthony Napoli, FDNY EMS, Deputy Assistant Chief
Ronald Simon, MD, RTAC-NYC
Matt Friedman, MD, Maimonides Medical Center
Cherisse Berry, MD, Bellevue Hospital
Patrick Pickering, AMR
Scott Mulligan, AMR

Dr. Josef Schenker, Chair, called the meeting to order. For the purposes of web casting, a roll call was performed. A quorum was present.

The Minutes of the September 12, 2017 REMAC Meeting were unanimously approved. There was no October 17, 2017 meeting due to lack of quorum.

Voting Requirements. A quorum is based on the number of voting seats – whether they are filled or vacant. Currently, REMAC has 30 voting seats, so when voting, a majority of members must vote in the affirmative to pass any motion. That means, 16 votes in the affirmative are needed to pass any motion.

CORRESPONDENCE REPORT

The Offices of the Council received the following correspondence:

- Membership:
  - Doug Issacs, MD, nominates Cherisse Berry, MD, Assistant Professor of Surgery, Department of Surgery, NYU School of Medicine, as a replacement for Dr. Gary Marshall, alternate Trauma Surgeon seat. A CV was submitted.

    This discussion was tabled pending review of REMAC Bylaws.

- From NYS DOH:
  - Public Notice from New York State Department of Health, Bureau of EMS, Operations Unit, to be read into the REMAC Minutes of the following enforcement actions:

Provider /Agency Name	EMT / Agency #	Penalty	Violation	County of Residence
Gregory Monsky	387165	Certification REVOKED	Part 800 16(a)(8)*	Shirley

Vincent Ilardi	364843	Certification REVOKED	Part 800 16(a)(8)*	Holtsville

*800.16 SUSPENSION OR REVOCATION OF CERTIFICATION

(a) Any certification issued pursuant to this Part or Article 30 of the Public Health Law may be suspended for a fixed period, revoked or annulled, and the certificate holder may be censured, reprimanded, or fined in accordance with section 12 of the Public Health Law, after a hearing conducted pursuant to section 12-a of the Public Health Law, if the department finds that the certificate holder:

(8) has responded to a call, provided patient care, or driven an ambulance or other emergency medical response vehicle while under the influence of alcohol or any other drug or substance which has affected the certificate holder's physical coordination or intellectual functions;

- ALS Upgrade Application from American Medical Response NY, LLC (0408) – Approved.
- Letter from Bellevue Hospital Department of Surgery regarding trauma notifications

There was a heated discussion regarding this letter. Trauma notification data continues to be reviewed. Trauma notifications are not part of the MCI System developed by GNYHA and FDNY. How notifications were made and received were discussed. Dr. Kaufman reported that EMD now has a permanent Notification Desk. Protocols need to be updated to include notification criteria/guidelines. Dr. Schenker recommended QA evaluation of notification data. This is a global issue. A TAG was formed: Doug Isaacs and Michael Redlener agreed to participate. This was requested for the January 2018 meeting.

Transport of trauma patient in cardiac arrest was discussed. REBOA (Resuscitative Endovascular Balloon Occlusion of the Aorta) was discussed. Dr. Winchell asked how EMTs/Medics determine traumatic arrest. He stated it should be based on EKG, not inability to palpate a pulse. Dr. Gonzalez stated trauma is a BLS call-type. EKGs are not part of trauma assessment in field. The recommendation was to transport to Trauma Centers. There was mention of blunt versus penetrating trauma. Blunt trauma should be terminated in field. Penetrating trauma with manageable/unmanageable airway was referred to Protocol Committee.

- Letter from Ridgewood VAC Medical Director, Lewis Bass, stating the agency will be performing blood glucometry

The Office of the Council sent the following correspondence:

- The following were sent, at a minimum to Medical Standards and REMAC members:

- Agendas, Minutes and associated attachments for the meeting.
- STAC & NYS DOH Pediatric Transportation Guidelines

➢ ***The STAC/NYS DOH Pediatric Guidelines were discussed. Time parameters for transport of trauma patients discussed. Notification system also discussed. The current ACS verification processed has expanded trauma center and especially, pediatric trauma center presence in NYC region. Arthur Cooper, MD, motioned to make the following change to the STAC pediatric transport guidelines: Bullet #1, "Pediatric trauma patients must be transported from the field to a Level I or II Pediatric Trauma Center if they meet CDC field triage guidelines and are able to arrive within ~~60 minutes of injury~~ 30 minutes from the time of transport. The motion was seconded by Bradley Kaufman, MD. This was discussed. If approved this recommendation must be submitted to STAC. Even unstable pediatric patients must go to pediatric trauma centers. A strong educational component is needed when this change is issued. A roll-call vote was take; outcome as follows: 24 in favor, 0 opposed, 0 abstentions. The motion carried.***

- REMAC Advisories: (Also sent to all EMS Agencies in NYC and posted to REMSCO website)
  - 2017-11 REMAC Advisory BLS Altered Mental Status 411 Protocol Revision
  - 2017-12 REMAC Advisory CPAP Appendix Revision
  - OLD – 2011-01 REMAC Advisory Adrenal Hyperplasia (re-issued)

SUBCOMMITTEE REPORTS

Medical Standards (David Ben-Eli, MD, Chair)

New Paramedic Exam questions continue to be developed. Exam outcome data is being collected.

The following protocol revisions/clarifications are recommended for approval:

1) **Diazepam Shortage**: Revisions were made to the following affected protocols and in the GOP for Prehospital Sedation (Cardioversion, Pacing and ET), and are recommended to be approved as EMERGENCY CHANGES due to severe diazepam shortage:
   i) 513 Seizures
   ii) 521 Head Injury
   iii) 530 Excited Delirium
   iv) 557 Pediatric Seizures

   A roll-call vote was taken, as follows: 21 in favor, 0 opposed, 0 abstentions. The

motion carried. Revised protocols are attached.

2) Clarifications:
   a) Protocol 528 Burns, clarify fluid administration
   b) 530 Excited Delirium, Glucose wording in NOTE had BLS wording and was changed to ALS wording.
   c) 550 Pediatric Respiratory Arrest, step 4, grammatical correction.

A roll-call vote was taken, as follows: 20 in favor, 0 opposed, 0 abstentions (*one member was out of the room*). The motion carried. Revised protocols are attached.

3) Dextrose Shortage: 503B PEA/Asystole, language changed to with-hold dextrose while dextrose shortage is in effect

A roll-call vote was taken, as follows: 20 in favor, 0 opposed, 0 abstentions (*one member was out of the room*). The motion carried. Revised protocols are attached.

4) REMAC Advisory 2009-02 prohibits the use of hemostatic dressings. Recommended that REMAC revokes 2009-02 and allows use of hemostatic dressing for both BLS and ALS providers. Once approved, a new advisory that supersedes 2009-02, will be created to include the use of hemostatic dressing for both BLS and ALS providers. The Advisory will be presented to REMAC when completed.

Approved unanimously by REMAC. Old Advisory will be rescinded and new advisory issued.

The next Medical Standards meeting will be held on January 23, 2018.

REGIONAL COUNCIL UPDATE

The Regional Emergency Medical Services Council of New York City met on September 19, 2017 and October 24, 2017. The following is a summary:

Citywide Planning Initiatives

- REMSCO continues to participate in various citywide planning initiatives including the NY Health Coalition, Brooklyn Health Coalition, NYCEM Transportation Plan Workgroup and NYS DOH HEC Application Workgroup.
- REMSCO also participants in the NYC Rx Stat meetings with HIDTA and the NYC Opioid Prevention Taskforce, providing monthly data on Naloxone usage amongst non-FDNY EMS units.
- NYC REMSCO has transitioned to a new mass notification system called Rapid Notify.
    - New system sends out messaging via email, phone and text.
    - FDNY has also been trained in use of the system for its 911 notifications.

- Agencies will be able to reply to notification emails and texts.

Intranasal Naloxone

- REMSCO has available for distribution the new Nasal Spray Naloxone administration kit. This spray delivers a single 4mg/ml dose of Naloxone utilizing a single stage nasal spray.

- The REMAC approved this unit as an option for agency usage at the discretion of the agency's Medical Director. Agencies wanting Narcan must submit a letter from their medical director to Nancy Benedetto at nbenedetto@nycremsco.org.

Equipment Distribution

- In support of the REMAC decision to allow blood glucometry at the BLS level, REMSCO procured blood glucometers for all non-municipal EMS agencies within the region. This equipment was distributed in August with over 1,300 units being distributed. In addition, the Council also distributed pulse oximeters for Volunteer Agencies and 911 participating units. Any agency that has not received their equipment should contact the offices of the Council.

No New Applications for Determination of Need received.

Three applications for Transfer of Operating Authority were approved:

- First Response Ambulance, Inc. (0668) to Ambulnz NY3, LLC.
- Coling Medical Transport, Inc. (0608) to Rapid EMS, LLC
- American Medical Response of New York, LLC (0405) to Air Medical Group Holdings, Inc.

Training & Education Committee is being reformed. Membership will represent all sectors. Our primary goal is to create educational enhancements.

The Nominating Committee is accepting nominations to fill vacant At Large seats. Elections should take place in November 2017.

The next meeting of the Regional EMS Council of NYC will be held on Tuesday, November 28, 2017

JOINT REMSCO/REMAC QA COMMITTEE UPDATE *(JOSEPH SCHENKER, MD, CHAIR)*

The Joint Regional Emergency Medical Services Council/Regional Emergency Medical Advisory Committee (REMAC) Quality Improvement Committee met on Wednesday, November 8, 2017. The following is a meeting summary:

Naloxone Study: Discussion tabled until the next meeting. Nancy Benedetto is currently attending a High Intensity Drug Trafficking Area program (HIDTA) meeting in

Atlanta. Additional information should be available for the next QA Meeting. Drs. Redlener and Lai should be able to share naloxone survey questions developed.

Midazolam Study: The REMSCO webpage is still not ready. Dr. Redlener will review data elements requested for survey and will write a cover letter for this study questionnaire to be sent out.

Safety Study: An initial report and timeline was submitted and approved. The TAG may work with the IRB at Mount Sinai.

Mobile Stroke Unit QA: FDNY has been collecting outcome data search. A report is anticipated.

With regards to Stroke patients who have intercranial bleeds, members are discussing how is the appropriate receiving center determined? What center type is correct for an ICB?

Development of QA for OLMC facilities: It was decided to form a smaller working group to go over all written rules on OLMC physicians and facilities. The working group recommended that REMAC define roles for possible "REMAC Field Physician", and redefine telemetry vs OLMC. QA shall evaluate policies and standards. QA should ensure quality of OLMC facilities and courses.

The next QA meeting will be held on Wednesday, December 6, 2017 at 5:00 pm at the Regional EMS Council of NYC, 475 Riverside Drive, Manhattan, Orthodox Room, Ground Floor.

STATE EMS COUNCIL/SEMAC UPDATE *(Yedidyah Langsam, PhD)*

The State EMS Council/SEMAC meeting was held on January 9 & 10, 2018, in Albany. The following is a summary:

SEMAC

1. New BLS Protocols will be ready for distribution and review in January 2018. NYC REMAC should provide input.
2. FDNY Hazmat Protocols were discussed – no comment
3. Demonstration project for manual defibrillation by BLS submitted by AMR.
    a. Written document will be sent out for discussion at the next meeting.

1. Opioids Epidemic was discussed
    a. Discussion was held regarding the 2mg to >4mg change in naloxone dosage.
        i. There was a discussion that fentanyl requires a greater dose of naloxone than heroin/morphine
        ii. Question: should there be a maximum dose?
        iii. Should protocols change?
        iv. Should prior administration by non-EMS be taken into account? Important that this be noted in PCR.

v. NYS DOH is now paying the co-payment portion of Narcan for patients who have insurance.

SEMSCO

1. Possibility of a state-wide medical director
2. 44 systems in NYS are Trauma Centers; 39 have been verified

Systems Committee

1. Change minimum age of EMT from 18 to 17.

Medical Standards

1. BLS Protocols
    a. Discussion of CPR in back of ambulance. Is it safe? Should crews stay on scene? Should a time limit be placed for staying on scene? Termination guidelines?
    b. Medical Directives: This to be consistent with American Health Care Act. Legal will be consulted.
    c. Anaphylaxis: allow CFRs & EMTs the same treatment modalities.
    d. Cold Emergencies
        i. Should BLS rewarm a frozen extremity.
        ii. Remove entire protocol?
    e. Stroke
        i. Questions regarding definition of 'wake up stroke' vs 'Last known well time'
        ii. Which is important?
        iii. Clinical window?
        iv. Emphasize what should be documented and reported to hospital
    f. Glucometry remains 'if available'.
    g. Keeping equipment warm is responsibly of ambulance unit/agency.
    h. Spinal Immobilization: Flow chart vs listing as with other protocols
    i. Child birth for CFRs?
    j. Resource Prescribed Medication Assistance: move up EPIC, ASD, naloxone to CFR
    k. RMA
        i. Are these minimum standards? Regional protocols?
        ii. Age? Remove upper age limit. Change lower to 6.
        iii. Should CFRs cancel an ambulance?
    l. Cardiac Emergencies: Allow CFR to give aspirin
    m. Asthma: Should EMTs give epinephrine without medical control?
    n. Resource Oxygen Administration: Limits?

UNFINISHED BUSINESS

No report.

NEW BUSINESS

Nancy Benedetto reported that the Regional EMS Council, Inc., has been a Training Center for the American Heart Association since its inception in 1974. On October 6, 2017, we received an email from AHA stating all Heartsaver certification cards will be increased from $2.50 to $17.00 (our cost) effective immediately. Heartsaver classes are usually conducted for the non-professional. This outrageous increase has created huge concerns within the CPR community. She stated REMSCO Inc. is considering its own certification card for the non-professional. We have created similar certifications in the past; in 1998 when AEDs and PAD was first introduced into Public Health Law, we received approval from the State EMS Council to issue certifications. Similarly, we created, and REMAC and REMSCO approved our CPR Plus First Aid program. We use this program in training all NYPD recruits and it has been approved by NYS DOH for Camps and Bathing Facilities. To make this "new certification" work, we request approval from REMAC. The completed training program will be available for free on the REMSCO website. She asked if anyone had questions or comments. After discussion, REMAC voted unanimously to support this new training program.

No further discussion, the meeting adjourned at 7:00 pm. **The next meeting of the REMAC is scheduled for January 23, 2018.**

503-B

PULSELESS ELECTRICAL ACTIVITY (PEA)/ASYSTOLE

NOTE: Consider the possibility of conditions masquerading as PEA/Asystole which require immediate treatment.

1. Continue CPR with minimal interruption.
2. If a tension pneumothorax is suspected, perform Needle Decompression. (See Appendix O.)
3. Perform Advanced Airway Management.
4. Begin an IV/IO/ infusion of Normal Saline (0.9% NS) to keep vein open.
5. Administer Epinephrine 1 mg (10 ml of a 1:10,000 solution) IV/IO bolus.

   NOTE: A GLUCOMETER SHOULD BE USED TO DOCUMENT BLOOD GLUCOSE LEVEL PRIOR TO ADMINISTRATION OF DEXTROSE.

   IF THE GLUCOMETER READING IS ABOVE 60 MG/DL, DEXTROSE SHOULD BE WITHHELD.[1]
6. Administer up to 25 gm Dextrose, IV/IO bolus.
7. If there is no change in the rhythm within 3 – 5 minutes, administer Epinephrine 1 mg (10 ml of a 1:10,000 solution), IV/IO bolus, every 3 – 5 minutes.
8. If there is insufficient improvement in hemodynamic status, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: Administer Sodium Bicarbonate 44-88 mEq IV/IO bolus. Repeat doses of Sodium Bicarbonate 44 mEq, IV/IO bolus, may be given every 10 minutes.

OPTION B: In cases of hyperkalemia or Calcium Channel Blocker overdose administer Calcium Chloride ($CaCl_2$) 1 gm, SLOWLY, IV/IO bolus. Follow with a Normal Saline (0.9% NS) flush.

OPTION C: Begin rapid IV/IO infusion of Normal Saline (0.9% NS), up to three (3) liters.

OPTION D: Transportation Decision.

[1] **Due to drug shortage of Dextrose, a NOTE was added to ALS Protocol 503-B: Pulseless Electrical Activity (PEA)/Asystole to with-hold dextrose if BGL is above 60 mg/dl. The protocol will revert to original language after drug shortage is ended.**

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BURNS

(ADULT & PEDIATRIC PATIENTS)

1. Begin Basic Life Support Burns procedures.
2. If there is evidence of burns to the upper airway or upper airway compromise is anticipated, perform Advanced Airway Management[2].
3. For patients with electrical burns, begin Cardiac Monitoring, record and evaluate the EKG rhythm.
4. Begin Pulse Oximetry monitoring.
5. Begin an IV infusion of Normal Saline (0.9% NS) or Ringer's Lactate (RL) ~~up to 2 liters, via a macro-drip, if transport is delayed or extended~~:
   - ~~a. For adult patients: Begin rapid IV infusion of Normal Saline (0.9% NS) or Ringer's Lactate (RL) IV, up to a maximum of 1 liter.~~
   - ~~b. For pediatric patients: Begin rapid IV infusion of Normal Saline (0.9% NS) or Ringer's Lactate (RL), up to 20ml/kg (maximum of 1 liters).~~
   - **a. For adult patients:**
     1. **Administer up to 2 liters, via macro-drip.**
     2. **If transport is delayed or extended, administer an additional 1 liter. (Maximum 3 liters).**
   - **b. For pediatric patients:**
     1) **Administer 20ml/kg with a repeat of 20ml/kg (maximum of 2 liters) via macro-drip.**
     2) **If transport is delayed or extended, administer an additional 20 ml/kg. (Maximum total of 3 liters[3]).**

NOTE: ACCURATE DOCUMENTATION OF PRE-ARRIVAL FLUID ADMINISTRATION IS REQUIRED.

6. For patients who are experiencing severe pain

NOTE: FOR PATIENTS WITH BURNS INVOLVING THE FACE AND/OR AIRWAY, CONSULTATION WITH ON-LINE MEDICAL CONTROL IS REQUIRED PRIOR TO ADMINISTRATION OF ANALGESICS.

[2] *If the patient is alert prior to performing Advanced Airway Management, refer to Prehospital Sedation in General Operating Procedures. Prior permission from Medical Control Is Required.*

[3] *3 liters is a maximum. Fluids for pediatric patients are administered based on weight. Ex: if a child weights 50 kg and receives 3 boluses, that would equal 3 liters.*

a. Administer Morphine Sulfate, for patients with a systolic blood pressure greater than 110mmHg, 0.1mg/kg (not to exceed 5mg), IV/IO/IM. For continued pain, repeat dose of 0.1mg/kg (not to exceed 5mg) may be repeated five minutes following the initial dose. (Maximum total dose is 10mg.)

OR

b. Administer Fentanyl 1mcg/kg (maximum total dose is 100mcg.), IV/IO/IN/IM, if available.

NOTE: **If hypoventilation develops, administer Naloxone, titrate in increments of 0.5 mg up to response, up to 4 mg, IV/IO/IN/IM.**

MEDICAL CONTROL OPTIONS:

OPTION A: Transportation Decision.

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SEIZURES

For patients experiencing generalized seizures that are ongoing or recurring

1. Begin Basic Life Support Seizures procedure.
2. Begin Cardiac Monitoring, record and evaluate EKG rhythm.
3. Begin an IV infusion of Normal Saline (0.9% NS) to keep vein open.

   NOTE: **A GLUCOMETER SHOULD BE USED TO DOCUMENT BLOOD GLUCOSE LEVEL PRIOR TO ADMINISTRATION OF DEXTROSE.**

   IF THE GLUCOMETER READING IS ABOVE 60 MG/DL, DEXTROSE SHOULD BE WITHHELD.

   DIABETIC PATIENTS WITH A BLOOD GLUCOSE LEVEL READING BETWEEN 60-80 MAY STILL BE EXPERIENCING HYPOGLYCEMIA, AND IF THEY DISPLAY SUCH SIGNS AND SYMPTOMS SHOULD BE TREATED ACCORDINGLY.

4. Administer up to 25 gm Dextrose, IV/IO bolus.
5. In patients with diabetic histories where an IV route is unavailable, administer Glucagon 1 mg, IM or IN.
6. Administer Lorazepam 2 mg, IV bolus, or, if IV access is unavailable, IN or IM. A single repeat dose of Lorazepam 2 mg, may be given after 5 minutes for generalized seizures that are ongoing or recurring.

   OR

   Administer Diazepam 5 mg, IV bolus. A single repeat dose of Diazepam 5 mg, IV-bolus, may be given for generalized seizures that are ongoing or recurring. (Rate of administration may not exceed 5 mg/min.)

   OR

   Administer **Midazolam 5 mg, IV/IO, or** if IV/IO access is unavailable, 10 mg, IM or IN~~, if IV access is unavailable~~.

7. If seizure activity persists, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: Repeat Lorazepam 2 mg, IV-bolus, or, if IV access is unavailable, IN or IM.

OR

Repeat Diazepam 5 mg, IV-bolus. (Rate of administration may not exceed 5 mg/min.)

OR

Repeat Midazolam 10 mg, IN or IM, if IV access is unavailable.

OR

Repeat Midazolam 5 mg, IV/IO bolus.

OPTION B: Transportation Decision.

521

HEAD INJURIES

In patients with head trauma with a Glasgow Coma Scale (GCS) score of 13 or lower

1. Begin Basic Life Support Head and Spine Injuries procedures.
2. Perform Advanced Airway Management* in patients for whom the Glasgow Coma Scale score is less than 8 AND if less invasive methods of airway management are not effective.
3. Begin Cardiac Monitoring, record and evaluate EKG rhythm.
4. Begin an IV infusion of Normal Saline (0.9% NS) to keep vein open.
5. If a seizure is witnessed:
   a. Administer Lorazepam 2 mg, IV bolus, or, if IV access is unavailable, IN or IM. A single repeat dose of Lorazepam 2 mg, may be given after 5 minutes if seizure activity persists or recurs.

      OR

   b. Administer Diazepam 5 mg, IV bolus. A single repeat dose of Diazepam 5 mg, IV bolus, may be given if seizure activity persists or recurs. (Rate of administration may not exceed 5 mg/min.)

      OR

   c. Administer **Midazolam 5 mg, IV/IO, or** if IV/IO access is unavailable, 10 mg, IM or IN~~, if IV access is unavailable~~.
6. If the Glasgow Coma Scale (GCS) score is less than 8, and active seizures or one or more of the following signs of brain herniation are present, hyperventilate the patient to maintain a continuous end-tidal waveform capnography value between 30-35mmHg:
   a. Fixed or asymmetric pupils
   b. Abnormal flexion or extension (neurologic posturing)
   c. Hypertension and bradycardia (Cushing's Reflex)
   d. Intermittent apnea (periodic breathing)
   e. Further decrease in GCS score of 2 or more points (neurologic deterioration)
7. If seizure activity persists, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: Repeat Lorazepam 2 mg, IV bolus, or, if IV access is unavailable, IN or IM.

OR

Repeat Diazepam 5 mg, IV bolus. (Rate of administration may not exceed 5 mg/min.)

OR

Repeat **Midazolam 5 mg, IV/IO, or** if IV/IO access is unavailable, 10 mg, IM or IN~~, if IV access is unavailable~~.

OPTION B: Transportation Decision.

* *If the patient is alert prior to performing Advanced Airway Management, refer to Prehospital Sedation in General Operating Procedures. Prior permission from Medical Control is required.*

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EXCITED DELIRIUM

(ADULT PATIENTS ONLY)

1. Begin Basic Life Support procedures.
2. Prehospital Chemical Restraint Procedure: If patient continues to struggle while being physically restrained:
   a. Administer Midazolam, 10 mg, IM or IN.

   NOTE: If patient is agitated, the PREFERRED route of choice is IM. Once the patient is sedated, IV access should be established in the event additional sedation is necessary.
3. After adequate sedation, begin IV infusion of Normal Saline (0.9% NS) or Ringers' Lactate (RL) via a 14 to 20-gauge catheter, up to 1 liter, via a macro-drip.
4. Begin Cardiac Monitoring, record and evaluate EKG rhythm.
5. Begin pulse oximetry, and cardiac monitoring. Obtain Finger Stick Blood Glucose (FSBG) level.

   NOTE: A GLUCOMETER SHALL BE USED TO DOCUMENT BLOOD GLUCOSE LEVEL PRIOR TO ADMINISTRATION OF DEXTROSE.

   IF THE GLUCOMETER READING IS ABOVE 60 MG/DL, WITHHOLD TREATMENT FOR HYPOGLYCEMIA.

   DIABETIC PATIENTS WITH A BLOOD GLUCOSE LEVEL READING BETWEEN 60-80 MAY STILL BE EXPERIENCING HYPOGLYCEMIA, AND IF THEY DISPLAY SUCH SIGNS AND SYMPTOMS SHOULD BE TREATED ACCORDINGLY.
6. If the patient continues to struggle while being physically restrained after Standing Orders have been administered, contact medical control for implementation of one of the following MEDICAL CONTROL OPTIONS.

MEDICAL CONTROL OPTIONS:

Option	Class	Medication	Route	Dose
Option A	Dissociative Agents	Ketamine	IntraMUSCULAR	2-4 mg/kg
		Ketamine	IntraNASAL	1-2 mg/kg
Option B	IM Benzodiazepines	Midazolam	IntraMUSCULAR	10 mg
		Lorazepam	IntraMUSCULAR	4 mg
Option C		Diazepam	IV **/IO** bolus	5-10 mg

	IN or IV Benzodiazepines	Midazolam	**IV/IO bolus** IntraNASAL	5 mg
		Lorazepam	IV bolus IntraNASAL	2 mg

OPTION D: Transportation Decision.

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PEDIATRIC SEIZURES

For patients experiencing seizures that are ongoing or recurring

1. Begin Basic Life Support Seizures procedures.

NOTE: **A GLUCOMETER SHALL BE USED TO DOCUMENT BLOOD GLUCOSE LEVEL PRIOR TO ADMINISTRATION OF DEXTROSE.**

IF THE GLUCOMETER READING IS ABOVE 60 MG/DL, DEXTROSE SHOULD BE WITHHELD.

DIABETIC PATIENTS WITH A BLOOD GLUCOSE LEVEL READING BETWEEN 60-80 MAY STILL BE EXPERIENCING HYPOGLYCEMIA, AND IF THEY DISPLAY SUCH SIGNS AND SYMPTOMS SHOULD BE TREATED ACCORDINGLY.

2. Administer Glucagon 1 mg, IM or IN.
3. If patient is still seizing, administer Midazolam 0.2 mg/kg, IM or IN. IN is the preferred route of administration. (Maximum dose is 5 mg.)

NOTE: **THE MIDAZOLAM DOSAGE LISTED ON THE LENGTH BASED DOSING DEVICE FOR INDUCTION (Pre-Intubation) MAY NOT BE USED FOR SEIZURES.**

During transport, or if transport is delayed:

4. Begin an IV or IO infusion of Normal Saline (0.9% NS) to keep vein open. Attempt vascular access no more than twice.
5. Administer Dextrose 0.5 gm/kg, IV or IO bolus. Use 10% Dextrose in patients less or equal to one (1) month of age. Use 25% Dextrose in patients greater than one (1) month of age and less than 15 years of age. (Refer to Length Based Dosing Device)
6. If seizures persist, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: Administer Lorazepam 0.1 mg/kg, IV/IN or IO bolus, slowly, over 2 minutes. Repeat doses of Lorazepam 0.1 mg/kg, IV/IN or IO bolus, slowly, over 2 minutes, may be given if seizures persist. (Refer to Length Based Dosing Device)

OR

Administer Diazepam 0.2 mg/kg, IV or IO bolus, slowly, over 2 minutes. Repeat doses of Diazepam 0.2 mg/kg, IV or IO bolus, slowly, over 2 minutes, may be given if seizures persist. (Refer to Length Based Dosing Device)

OR

Administer Midazolam 0.2 mg/kg IV/IO bolus, slowly, over 2 minutes. Repeat doses of midazolam 0.2 mg/kg, IV/IO bolus, slowly, over 2 minutes may be given if seizures persist. (Refer to Length Based Dosing Device.)

OPTION B: If IV or IO access has not been established, repeat administration of Midazolam 0.2 mg/kg, IM or IN. IN is the preferred route of administration. (Maximum repeated dose is 5 mg.)

NOTE: Do not administer Lorazepam, Diazepam, or Midazolam if the seizures have stopped.

OPTION C: Transportation Decision.

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PEDIATRIC RESPIRATORY ARREST

For pediatric patients in actual or impending respiratory arrest, or who are unconscious and cannot be adequately ventilated:

Note: If overdose is suspected, refer to protocol 556 (Pediatric Altered Mental Status)

1. Begin Basic Life Support Pediatric Respiratory Distress/Failure procedures.

   Note: Do not hyper-extend the neck. If an obstructed airway is suspected, see protocol #551.

2. Perform Endotracheal Intubation, if less invasive methods of airway management are not effective.
3. If a tension pneumothorax is suspected, perform Needle Decompression, using an 18-20 gauge catheter. (See Appendix O.)

   Note: Tension pneumothorax in a child in respiratory arrest may develop after resuscitative efforts have begun.

During transport, or if transport is delayed:

4. **In patients two (2) years of age or older,** administer Naloxone, titrate in increments of 0.5 mg, IN/IM, up to response, up to 2 mg~~, in patients two (2) years of age or older~~. In patients less than two (2) years of age, titrate up to 1 mg. (Refer to Length Based Dosing Device). ~~If IV/IO access has not been established, administer Naloxone 0.5 mg up to response, up to 2 mg, IM or IN.~~
5. If abdominal distention occurs, pass a Nasogastric Tube. If unsuccessful, pass an Orogastric Tube.
6. If there is insufficient improvement in respiratory status, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

MEDICAL CONTROL OPTIONS:

OPTION A: Begin an IV or IO infusion of Normal Saline (0.9% NS) to keep vein open. Attempt vascular access no more than twice.

OPTION C: Transportation Decision.