

Summary of 2019 Protocol Changes				
PROTOCOL TITLE	PAGE #	LINE #	ORIGINAL TEXT	NEW TEXT
General Information: Important Numbers	4	10 a) and b)	New entries	10: Tissue Donation
Health Care Facility Codes	5 and 6	341	City Hospital, Martinsburg WV	Maryland Donor Referral Line Living Legacy and Washington Regional Transplant Community
Health Care Facility Codes	7	444	Holy Cross Germantown Hospital	Renamed Berkeley Medical Center, Martinsburg WV and moved to pg. 5
Specialty Referral Centers	14		New Primary Stroke Facility	Holy Cross Germantown Hospital
Specialty Referral Centers	15-1		New entries	Maryland Emerging Infectious Disease (EID) Treatment and Assessment Hospitals
General Patient Care: Treatment Protocol	35-1	4, e)	When appropriate, family members should remain with pediatric patients	A parent/guardian/care taker may remain with a pediatric patient during transport, but must be secured in a separate vehicle restraint system at all times during transport.
General Patient Care	36 - 40	G, Communications		Numerous revisions
Treatment protocol: Adult	61			Complete revision of algorithm
Tachycardia				Removed
Treatment protocol: Cardiac Arrest	63 and 63-1	e)(3)(c) and k)(3)(c)	Patients who have not yet reached their 18th birthday	VFIB/PEA AND EIC02 equal to or greater than 15 mmHg
Termination of Resuscitation Algorithm	72			
Treatment Protocol: Pronouncement of Death in the Field	73	3, e)	Notify law enforcement and follow local jurisdictional policies or, if death is pronounced during transport, deliver patient to emergency department and follow hospital policies.	Notify law enforcement and follow local jurisdictional policies. If deceased patient is a tissue/organ donor and law enforcement has released the body to the family, please assist the family in calling either 800-923-1133 or (for Charles, Montgomery and Prince George's counties) 703-641-0100. If death is pronounced during transport, deliver patient to the hospital and follow hospital policies.
Treatment Protocol: EMS	74 and 75	4.a) and 5.a)(7), 5.b)(6), and 5.b)(7)		Added Physician Assistant
DNR/MOLST				
Treatment Protocol: EMS DNR/MOLST	75		An authorized decision-maker, other than the patient, cannot revoke an EMS/DNR Order orally. Because of the difficulty in identifying authorized decisionmakers in emergent situations, it is incumbent upon an authorized decisionmaker who has authority to revoke an EMS/DNR Order to either void or withhold all EMS/DNR Order devices if they wish resuscitation for the patient. If there is any confusion, the EMS provider should contact a Base Station for medical consult.	An authorized decision-maker, other than the patient, cannot revoke an EMS/DNR Order orally. Because of the difficulty in identifying authorized decisionmakers in emergent situations, it is incumbent upon an authorized decisionmaker who has authority to revoke an EMS/DNR Order to either void or withhold all EMS/DNR Order devices if they wish resuscitation for the patient. If there is any confusion, the EMS provider should contact a Base Station for medical consult.
Treatment Protocol: EMS DNR/MOLST	79 and 80	f) Option B (MOLST B)		Numerous revisions
Treatment Protocol: EMS DNR/MOLST	84	EMS/DNR Order Presented:	6. Oral DNR Order from other on-site physician or nurse practitioner	6. Oral DNR Order from other on-site physician, physician assistant, or nurse practitioner
Treatment Protocol: Pain Management	132 and 133	(3)	(a) Morphine (b) Fentanyl	(a) Fentanyl (b) Morphine. Preferred route of administration listed is IN.
Treatment Protocol: Sepsis Adult	147 and 148	2.b) New entries 3.c) Added sentence	Added sentence	(7) Post-operative (8) Currently on antibiotics (9) Asplenic (10) Left ventricular assist device 3.c) Accurately document start time of IV fluid initiation. Accurately document start time of IV fluid administration.
Treatment Protocol: Sepsis Pediatric	150	c)		
Treatment Protocol: Stroke	152 and 153	1, through 3.b)		Numerous revisions
Treatment Protocol: Stroke	155	Algorithm		Complete revision of algorithm
Treatment Protocol: Trauma Arrest	173	Alert	New entry	ALERT: EPINEPHRINE IS CONTRAINDICATED IN THE TREATMENT OF TRAUMATIC CARDIAC ARREST FOR ADULT PATIENTS. Added PP to EMR permissions
Procedures, Medical Devices and Medications for EMS and Commercial Services	183	Pelvic Binder		
Procedures, Medical Devices and Medications for EMS and Commercial Services	184	Diltiazem	CRT-(I) MC PM MC	CRT(I) MC/SO PM MC/SO
Procedures, Medical Devices and Medications for EMS and Commercial Services	184		New entry	Ketamine EMR -- EMT -- CRT-(I) SO/MC PM SO/MC/PP
Procedures, Medical Devices and Medications for EMS and Commercial Services	185		New entry	Verapamil (Jurisdictional option only when approved by the State EMS Medical Director)
ALS Pharmacology: Diltiazem	215	d)(1) and h)(1)(b)	d)(1) Hypotension below 90 mmHg, second or third degree heart block, hypersensitivity to the drug h)(1)(b) For patients older than 50 years of age or borderline blood pressure, consider initial bolus 5-10 mg administered IV over 2 minutes	d) (1) Hypotension below 100 mmHg, second or third degree heart block, hypersensitivity to the drug h) (1) (b) For patients older than 50 years of age or borderline blood pressure, known renal failure or CHF, consider initial bolus 5-10 mg administered IV over 2 minutes Medical Consultation requirement removed for ADULT patients only.
ALS Pharmacology: Dopamine Hydrochloride (Intropin)	219	g)(1)	For IV infusion use only	For IV/IO infusion only. The preferred route of administration is IV.





The Maryland  
**Medical Protocols**  
for Emergency Medical Services Providers

Effective July 1, 2019

**Maryland Institute for  
Emergency Medical Services Systems**



The complete “Maryland Medical Protocols for  
Emergency Medical Services Providers”  
is also available on the Internet at  
[www.MIEMSS.org](http://www.MIEMSS.org).

Protocols are occasionally amended during the year.  
Please check the MIEMSS website to be sure you have  
the most up-to-date version.

The edition date appears on the lower  
portion of the page.

This text was produced from materials from the Division of State Documents (DSD), Office of the Secretary of  
State, State of Maryland. Only text obtained directly from the DSD is enforceable under Maryland law.  
For copies of the official text, call the DSD at 1-800-633-9657.

## To All Health Care Providers in the State of Maryland:

Re: 2019 revisions, updates, and additions to *The Maryland Medical Protocols for EMS Providers*

EMS providers will be able to download the full document from the MIEMSS website at [www.miemss.org](http://www.miemss.org), and will be receiving a single copy of the 2019 pocket protocols.

The EMS Board has approved these protocols for implementation on July 1, 2019. Prior to July 1, all EMS providers must complete the Maryland EMS Update 2019 that will highlight the new material. Visit the Online Training Center at [www.emsonlinetraining.org](http://www.emsonlinetraining.org) for more information.

Some major protocol additions, deletions, and changes have been made this year. The spreadsheet of these changes is for reference only, and the information located in the full protocol book is the official medical reference for EMS providers.

### Protocol Changes:

- **Adult Tachycardia:** The algorithm has been significantly revised, including the removal of medical consultation prior to the administration of diltiazem and the addition of blood pressure parameters.
- **DNR/MOLST:** The list of acceptable procedures for DNR and MOLST B patients has been expanded to include the use of Magill forceps for obstructed airways and capnography.
- **Fentanyl:** The use of fentanyl has moved to the general patient care section and morphine has moved to an optional supplemental protocol. The preferred route of administration for fentanyl will be intranasal.
- **Needle Decompression:** The flutter valve will be an optional piece of equipment. The preferred location for needle decompression will be moved from the mid-clavicular line to the mid-axillary line.
- **Medical Consultation Requirement:** Changes have been made to the consult requirement for Priority 2 patients. The decision of hospital notification versus medical consultation will be based on the need for procedures or medication that require physician approval.
- **Stroke:** The last known well time window has been changed from 3.5 hours to 20 hours. EMS providers will also be required to relay the last known well time to the hospital with the Stroke Alert, which aligns the Maryland Medical Protocols with the latest science regarding care for stroke patients. A new prehospital stroke assessment for the detection of posterior circulation stroke has been added, which employs the BE-FAST mnemonic.
- **Tissue Donation:** Contact information for Living Legacy and Washington Regional Transplant Community has been added for reference.
- **Trauma Arrest:** The use of epinephrine for ADULT patients in traumatic arrest has been discontinued.

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## TABLE OF CONTENTS

<b>I. GENERAL INFORMATION</b> .....	1
A. General Provisions .....	1
B. Important Numbers ( <b>NEW '19</b> ).....	3
C. Health Care Facility Codes .....	5
D. Maryland Trauma and Specialty Referral Centers.....	13
E. Protocol Key .....	16
F. Protocol Usage Flow Diagram .....	17
G. Protocol Variation Procedure.....	18
H. Inability to Carry Out Physician Order .....	19
I. Physician Orders for Extraordinary Care .....	20
J. Quality Review Procedure for Pilot Programs .....	22
K. Proposed Protocol Submission Request Policy.....	23
L. Proposed Protocol Submission Template .....	25
M. Protocol Concept/Sponsor Request .....	26
<b>II. GENERAL PATIENT CARE (NEW '19)</b> .....	27
Age-Related Normal Vital Signs .....	31-1
<b>III. TREATMENT PROTOCOLS</b> .....	41
<b>Abuse/Neglect</b>	
A. Abuse/Neglect .....	41
<b>Altered Mental Status</b>	
B. Altered Mental Status: Seizures .....	43
C. Altered Mental Status: Unresponsive Person .....	46
<b>Apparent Life-Threatening Event (ALTE)</b>	
D. Apparent Life-Threatening Event (ALTE) .....	48
<b>Behavioral Emergencies</b>	
E. Behavioral Emergencies.....	49
<b>Cardiac Emergencies</b>	
F. Non-Arrest Cardiac Guidelines .....	51
Universal Algorithm for Adult Emergency Cardiac Care for BLS .....	52
Universal Algorithm for Adult Emergency Cardiac Care for ALS .....	53
Universal Algorithm for Pediatric Emergency Cardiac Care for BLS .....	54
Universal Algorithm for Pediatric Emergency Cardiac Care for ALS .....	55
G. Bradycardia.....	56
Adult Bradycardia Algorithm .....	57
Pediatric Bradycardia Algorithm.....	58
H. Tachycardia .....	59
Adult Tachycardia Algorithm ( <b>NEW '19</b> ) .....	61
Pediatric Tachycardia Algorithm .....	62

## TABLE OF CONTENTS

I. Cardiac Arrest .....	63
Adult Asystole Algorithm .....	64
Pediatric Cardiac Arrest Algorithm .....	65
Pulseless Electrical Activity (PEA) Algorithm .....	66
VF Pulseless VT Algorithm .....	67
J. Return of Spontaneous Circulation (ROSC) .....	68
K. Termination of Resuscitation .....	70
Termination of Resuscitation Algorithm .....	72
L. Pronouncement of Death in the Field .....	73
M. EMS DNR/MOLST ( <b>NEW '19</b> ) .....	74
N. EMS DNR Flowchart.....	84
O. Chest Pain/Acute Coronary Syndrome.....	85
P. Hyperkalemia: Renal Dialysis/Failure or Crush Syndrome.....	87
Q. Implantable Cardioverter Defibrillator (ICD) Malfunction .....	89
R. ST Elevation Myocardial Infarction (STEMI).....	91
S. Sudden Infant Death Syndrome (SIDS).....	94
<b>Environmental Emergencies</b>	
T. Cold Emergencies (Frostbite) .....	95
U. Cold Emergencies (Hypothermia).....	97
V. Depressurization.....	99
W. Hazardous Materials Exposure.....	100
X. Heat-Related Emergencies.....	102
Y. Near-Drowning.....	103
Z. Overpressurization.....	104
<b>Nausea and Vomiting</b>	
AA. Nausea and Vomiting .....	107
<b>Non-Traumatic Shock</b>	
BB. Non-Traumatic Shock: Hypoperfusion .....	108
<b>Obstetrical/Gynecological Emergencies</b>	
CC. Childbirth Algorithm .....	110
DD. Newly Born .....	112
Universal Algorithm for Newly Born for BLS .....	112
Universal Algorithm for Newly Born for ALS .....	113
APGAR Chart.....	114
EE. Vaginal Bleeding .....	115
<b>Overdose/Poisoning</b>	
FF. Carbon Monoxide/Smoke Inhalation .....	115-1
GG. Absorption .....	116
HH. Ingestion .....	118
II. Inhalation.....	121
JJ. Injection.....	123
KK. Stimulant Toxicity .....	125
LL. Excited Delirium Syndrome (ExDS) .....	127
<b>Pain Management</b>	
MM. Pain Management ( <b>NEW '19</b> ) .....	130



## TABLE OF CONTENTS

<b>Respiratory Distress</b>	
NN.	Allergic Reaction..... 134
OO.	Anaphylaxis..... 137
PP.	Asthma/COPD ..... 139
QQ.	Croup ..... 141
RR.	Pulmonary Edema/Congestive Heart Failure..... 142
	Universal Algorithm for Pediatric Respiratory Distress for BLS ..... 145
	Universal Algorithm for Pediatric Respiratory Distress for ALS ..... 146
<b>Sepsis</b>	
SS.	Sepsis Adult..... 147
TT.	Sepsis Pediatric ..... 149
<b>Stroke</b>	
UU.	Stroke: Neurological Emergencies ( <b>NEW '19</b> )..... 152
	EMS Stroke Algorithm ( <b>NEW '19</b> ) ..... 155
<b>Syncope</b>	
UU2.	Syncope ..... 155-1
<b>Trauma</b>	
VV.	Burns..... 156
	Rule of Nines ..... 158
WW.	Eye Trauma ..... 159
XX.	Hand/Upper/Lower Extremity Trauma ..... 161
YY.	Multiple/Severe Trauma..... 163
	Glasgow Coma Scale ..... 165
ZZ.	Sexual Assault ..... 166
AAA.	Spinal Protection..... 167
	Spinal Protection Algorithm ..... 171-1
BBB.	Trauma Arrest ( <b>NEW '19</b> ) ..... 172
CCC.	Trauma Decision Tree ..... 174
<b>IV. APPENDICES</b>	..... 175
A.	Glossary..... 175
B.	Procedures, Medical Devices, and Medications for EMS and Commercial Services..... 182
C.	BLS Pharmacology
	1. Acetaminophen ..... 187
	2. Activated Charcoal (Without Sorbitol) ..... 188
	3. Albuterol ..... 189
	4. Aspirin ..... 190
	5. Epinephrine (1:1,000)..... 191
	6. Epinephrine Auto-Injector..... 192
	7. Naloxone Public Safety and EMR ..... 193
	8. Nitroglycerin ..... 195
	9. Oral Glucose ..... 196
	10. Oxygen ..... 197

## TABLE OF CONTENTS

D.	ALS Pharmacology	
	1. Acetaminophen .....	199
	2. Activated Charcoal (Without Sorbitol) .....	200
	3. Adenosine .....	201
	4. Albuterol .....	202
	5. Amiodarone .....	204
	6. Aspirin .....	206
	7. Atropine Sulfate.....	207
	8. Atrovent.....	209
	9. Calcium Chloride.....	211
	10. Dexamethasone .....	212
	11. Dextrose.....	213
	12. Diazepam .....	214
	13. Diltiazem .....	215
	14. Diphenhydramine Hydrochloride.....	217
	15. Dopamine Hydrochloride.....	218
	16. Epinephrine .....	220
	17. Fentanyl .....	223
	18. Glucagon.....	225
	19. Haloperidol (Haldol) .....	226
	20. Ketamine .....	227-1
	21. Lactated Ringer's .....	228
	22. Lidocaine.....	229
	23. Magnesium Sulfate .....	231
	24. Midazolam.....	233
	25. Morphine Sulfate .....	236
	26. Naloxone .....	238
	27. Nitroglycerin .....	239
	28. Nitroglycerin Paste .....	241
	29. Ondansetron .....	242
	30. Oxygen.....	243
	31. Sodium Bicarbonate.....	244
	32. Verapamil .....	246

## TABLE OF CONTENTS

E. Procedures	
1. Accessing Central Venous Catheters and Devices.....	247
<b>Airway Management Procedures (2–13)</b>	
2. Bag-Valve-Mask Ventilation .....	250
3. Continuous Positive Airway Pressure (CPAP) .....	252
4. Laryngeal Tube Airway Device (KING LTS-D™) .....	253
5. Gastric Tube.....	254
6. Nasotracheal Intubation .....	255
7. Needle Decompression Thoracostomy (NDT) ( <b>NEW '19</b> ).....	257
8. Obstructed Airway Foreign Body Removal: Direct Laryngoscopy .....	258
9. Orotracheal Intubation.....	259
10. Tracheostomy Change.....	262
11. Tracheostomy Suctioning.....	264
12. Ventilatory Difficulty Secondary to Bucking or Combativeness.....	265
13. Ventilatory Management.....	266
<b>Electrical Therapy Procedures (14–17)</b>	
14. Automated External Defibrillation .....	269
15. Cardioversion.....	271
16. Defibrillation .....	273
17. External Transcutaneous Cardiac Pacing.....	274
<b>Other Procedures</b>	
18. Go-Team Activation.....	276
19. External Jugular Intravenous Access .....	278
20. Glucometer Protocol.....	279
21. High Performance CPR .....	281
22. Intraosseous Infusion .....	285
23. Intravenous Maintenance Therapy for EMT.....	287
24. Medevac Utilization .....	290
25. Patient-Initiated Refusal of EMS .....	296
26. Peripheral Intravenous Access for CRT-(I) and Paramedic, and IV Access Option for EMT Approved by EMS Operational Program.....	302
27. Physical and Chemical Restraints.....	304
28. Neuroprotective Induced Hypothermia .....	307
29. 12-Lead Electrocardiogram.....	309
30. Acupressure for Nausea.....	310
31. Multiple Casualty Incident/Unusual Event.....	311
32. Potentially Volatile Environment with Life-Sustaining Interventions.....	314
33. Emerging Infectious Disease (EID) .....	320

## TABLE OF CONTENTS

### ***Interfacility***

F. Lidocaine Infusion for Interfacility Transport .....	325
G. Morphine Sulfate Infusion for Interfacility Transport .....	326

### ***Pilot Programs***

H. Adult Rapid Sequence Intubation .....	327
1. RSI Pilot Program .....	327
2. Ventilatory Difficulty Secondary to Bucking or Combativeness in Intubated Patients .....	329
3. Protocol for Cricothyroidotomy (Surgical and Needle) .....	331
4. RSI Quality Assurance Process .....	333
I. Pediatric Rapid Sequence Intubation .....	334
1. RSI Pilot Program .....	334
2. Ventilatory Difficulty Secondary to Bucking or Combativeness in Intubated Patients .....	336
3. Protocol for Cricothyroidotomy (Surgical and Needle) .....	338
4. RSI Quality Assurance Process .....	339
J. Rapid Sequence Intubation Pharmacology .....	340
1. Etomidate .....	340
2. Ketamine .....	341
3. Midazolam .....	342
4. Succinylcholine .....	343
5. Vecuronium .....	344
K. Tactical EMS .....	345
L. Transport to Freestanding Emergency Medical Facility at Bulle Rock .....	348
M. On-Scene Protocol and Alternative Dispatch Protocol .....	350
N. Video Laryngoscopy for Orotracheal Intubation .....	353
O. Transport to Freestanding Emergency Medical Facility (Base Station or Non-Base Station) .....	355
P. Adult Surgical Cricothyroidotomy .....	356
Q. Intentionally Omitted	
R. Vascular Doppler Device .....	361
S. Prehospital Ultrasound .....	362
T. Stabilization Center .....	364
U. Stroke Patient Process, Sinai Hospital, Baltimore City Fire Department .....	365
V. Alternative Destination Program .....	366
W. Naloxone “Leave Behind” Protocol .....	366-10
X. Minor Definitive Care, Baltimore City Fire Department .....	366-11

## TABLE OF CONTENTS

<b>V. JURISDICTIONAL OPTIONAL SUPPLEMENTAL PROGRAMS/PROTOCOLS</b> .....	367
A. Cyanide Poisoning .....	367
B. Glycoprotein IIb/IIIa Antagonist Infusions .....	371
Glycoprotein IIb/IIIa Antagonist.....	372
C. Intranasal Naloxone for Commercial Service BLS Providers .....	373
D. Heparin Infusion for Interfacility Transport.....	379
Heparin .....	380
E. Laryngeal Mask Airway with Design to Facilitate Hospital Endotracheal Intubation .....	381
F. Bi-Level Positive Airway Pressure (BiPAP) .....	383
G. BLS Glucometer.....	384
H. Antimicrobial Infusion for Interfacility Transport .....	385
I. MARK I / DuoDote Kits (Atropine and 2-PAM Auto-injectors).....	387
J. Specialty Care Paramedic .....	391
K. Mechanical CPR .....	395
L. Pelvic Stabilization Binder Device .....	397
M. Transport of Acute Ventilated Interfacility Patients .....	412
N. Transport of Chronic and Scene Ventilated Patients .....	414
O. EMT Acquisition of 12-Lead Electrocardiography.....	417
P. Wilderness Emergency Medical Services Protocols .....	418
Q. Maryland Vaccination and Testing Program.....	443
R. Mobile Integrated Community Health Program ( <b>NEW '19</b> ) .....	446-1
<b>VI. RESEARCH PROTOCOLS</b> .....	450-1
A. Intentionally Omitted	
B. LAMS Stroke Research Protocol .....	450-1
C. Pediatric Destination Decision Tree (PDTree) .....	450-4
<b>VII. WEAPONS OF MASS DESTRUCTION SUPPLEMENT</b> .....	451

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## **B. IMPORTANT NUMBERS**

- |  |        |                       |
|--|--------|-----------------------|
| 1. Commercial Ambulance Licensing and Regulation   | Office | <b>(410) 706-8511</b> |
|  | Fax    | <b>(410) 706-8552</b> |
| 2. Critical Incident Stress Management   |        | <b>(800) 648-3001</b> |
| 3. Office of Licensure and Certification   | Office | <b>(800) 762-7157</b> |
|  | Fax    | <b>(410) 706-2367</b> |
| 4. Regional Programs   |        |                       |
| a) Region I (Allegany and Garrett Counties)  | Office | <b>(301) 895-5934</b> |
|  | Fax    | <b>(301) 687-0129</b> |
| b) Region II (Washington and Frederick Counties)   | Office | <b>(301) 791-2366</b> |
|  | Fax    | <b>(301) 791-9231</b> |
| c) Region III (Baltimore City, Anne Arundel,<br>Baltimore, Carroll, Harford, and Howard Counties)                        | Office | <b>(410) 706-3996</b> |
|  | Fax    | <b>(410) 706-8530</b> |
| d) Region IV (Caroline, Cecil, Dorchester, Kent,<br>Queen Anne's, Somerset, Talbot, Wicomico,<br>and Worcester Counties) | Office | <b>(410) 822-1799</b> |
|  | Fax    | <b>(410) 822-0861</b> |
| e) Region V (Calvert, Charles, Montgomery,<br>Prince George's, and St. Mary's Counties)                                  | Office | <b>(301) 474-1485</b> |
|  | Fax    | <b>(301) 513-5941</b> |
| 5. State EMS Medical Director  | Office | <b>(410) 706-0880</b> |
|  | Fax    | <b>(410) 706-0853</b> |
| 6. SYSCOM (Administrative)   |        | <b>(800) 648-3001</b> |
| 7. EMRC  |        |                       |
| a) Consult Line (Region I)   |        | <b>(301) 722-0494</b> |
| b) Consult Line (Region III)   |        | <b>(800) 492-3805</b> |
| c) Consult Line (Region IV)  |        | <b>(877) 963-6963</b> |
| d) Consult Line (Region V)   |        | <b>(877) 840-4245</b> |

## IMPORTANT NUMBERS (Continued)



POISON INFORMATION CENTER RECOMMENDATIONS SHOULD BE SOLICITED IN CONJUNCTION WITH MEDICAL CONSULTATION, BUT MEDICATION ORDERS CAN ONLY BE ACCEPTED FROM AN APPROVED BASE STATION.

8. Poison Control Centers
  - a) Maryland Poison Center/University of Maryland School of Pharmacy, Baltimore **(800) 222-1222**
  - b) National Capital Poison Center, Washington, DC **(800) 222-1222**
9. In-Patient Hospice Facilities
  - a) Gilchrist Center–Towson **(443) 849-8200**
  - b) Gilchrist Center Baltimore–Joseph Richey House **(410) 523-2150**
  - c) Stella Maris Hospice **(410) 560-9695**
10. Tissue Donation **(NEW '19)**
  - a) Maryland Donor Referral Line Living Legacy (Majority of Maryland) **800-923-1133**
  - b) Washington Regional Transplant Community (Charles, Montgomery, and Prince George's counties) **703-641-0100**



## C. HEALTH CARE FACILITY CODES

Code	Health Care Facility Name
345	10th Street Medical Center, Ocean City
346	26th Street Medical Center, Ocean City
379	63rd Street Medical Center, Ocean City
380	75th Street Medical Center, Ocean City
527	Adventist Behavioral Health, Rockville
384	Adventist Healthcare Germantown Emergency
529	Adventist Rehabilitation Hospital, Rockville
492	Alleghany General Hospital, Alleghany, PA
397	Altoona Rehabilitation Hospital, PA
231	Andrew Rader Clinic, VA
221	Anne Arundel Medical Center (Base Station, Cardiac Interventional, Primary Stroke)
550	Annie M. Warner Hospital, PA
381	Atlantic General Hospital (Base Station, Primary Stroke)
590	Baltimore City Public Service Infirmiry
222	Baltimore Washington Medical Center (UM) (Base Station, Cardiac Interventional, Primary Stroke)
567	Bashline Memorial Osteopathic Hospital, PA
350	Bayhealth Kent General, DE (Cardiac Interventional)
359	Bayhealth Medical Center, Milford Hospital, DE
234	Beebe Medical Center Millville Center, DE
358	Beebe Medical Center Sussex County, DE
341	Berkeley Medical Center, Martinsburg, WV (formerly City Hospital) <b>(NEW '19)</b>
208	Bon Secours Hospital
353	Bowie Health Center
235	Brooke Lane Psychiatric Center
236	Brunswick Medical Center
553	Bryn Mawr Hospital
752	Bryn Mawr Rehabilitation Hospital
771	Calvert County Nursing Home Center
266	CalvertHealth Medical Center (Base Station, Primary Stroke)
554	Carlisle Regional Medical Center, PA
219	Carroll Hospital Center (Base Station, Cardiac Interventional, Primary Stroke)
276	Chambersburg Hospital, PA
291	Charles Regional (UM)
284	Charlestown Area Medical Center, WV
241	Chemtrec Chemical Manufacturers Association Chemical Transportation Emergency Center, DC
296	Chestertown (UMSRH) (Base Station)
243	Chestnut Lodge Hospital

<b>Code</b>	<b>Health Care Facility Name</b>
225	Children's Hospital and Center for Reconstructive Surgery, Baltimore
756	Children's Hospital of Philadelphia, PA
317	Children's National Health System, DC (Neonatal, Pediatric Base Station, Pediatric Burn, Pediatric Trauma)
304	Christiana Hospital (CCHS), DE (Cardiac Interventional)
757	Cooper Trauma Center, NJ
293	Deer's Head Hospital Center
256	DeWitt Army Hospital, VA
342	District of Columbia General Hospital, DC (Neonatal)
329	Doctor's Community Hospital (Base Station, Primary Stroke)
257	Dominion Hospital, VA
294	Dorchester (UMSRH)
310	Dover U.S. Air Force Clinic, DE
491	Eastern Neurological Rehabilitation Hospital
331	Eastern Shore State Hospital
297	Easton (UMSRH) (Base Station, Primary Stroke, Cardiac Interventional)
258	Finan Center
279	Fort Detrick Medical Center
522	Fort Washington Hospital
203	Franklin Square (MedStar) (Base Station, Cardiac Interventional, Primary Stroke)
239	Frederick Memorial Hospital (Base Station, Cardiac Interventional, Perinatal, Primary Stroke)
286	Fulton County Medical Center, PA
322	Garrett Regional Medical Center (WVU) (Base Station)
580	Geisinger Medical Center, PA
335	George Washington University Hospital, DC
337	Georgetown University (MedStar), DC
240	Gettysburg Hospital, PA
759	Gladys Spellman Specialty Hospital and Nursing Center
226	Good Samaritan Hospital (MedStar) (Base Station, Primary Stroke)
559	Grant Memorial Hospital, WV
217	Greater Baltimore Medical Center (Base Station, Primary Stroke, Neonatal)
316	Greater Southeast Community Hospital, DC
348	Groupe Memorial Hospital
363	Hadley Memorial Hospital, DC
560	Hagerstown State Hospital
561	Hampshire Memorial Hospital, WV
242	Hanover Hospital, PA
211	Harbor Hospital (MedStar) (Base Station, Primary Stroke)

<b>Code</b>	<b>Health Care Facility Name</b>
220	Harford Memorial Hospital (UMUCH) (Base Station, Primary Stroke)
562	Harryon State Hospital
399	HealthSouth Chesapeake Rehabilitation Center
490	HealthSouth Rehabilitation Hospital, Altoona, PA
398	HealthSouth Rehabilitation Hospital, Mechanicsburg , PA
267	Highland State Health Facility Psychiatric Unit
444	Holy Cross Germantown Hospital (Primary Stroke) <b>(NEW '19)</b>
244	Holy Cross Hospital (Base Station, Cardiac Interventional, Primary Stroke)
450	Hospice of Baltimore, Gilchrist Center, Towson
223	Howard County General Hospital (JHM) (Base Station, Cardiac Interventional, Primary Stroke)
270	Howard University Hospital, DC
268	HSC Pediatric Center, DC
230	Inova Alexandria Hospital, VA
340	Inova Fair Oaks Hospital, VA
305	Inova Fairfax Hospital, VA
326	Inova Loudoun Hospital, VA
287	Inova Mount Vernon Hospital, VA
349	Isle of Wight Medical Center
273	Jefferson Memorial Hospital, Arlington, VA
314	Jefferson Memorial Hospital, Ranson, WV
360	Jennersville Regional Hospital
201	Johns Hopkins Bayview (Adult Burn, Adult Trauma, Base Station, Cardiac Interventional, Neonatal, Perinatal, Comprehensive Stroke)
766	Johns Hopkins Bayview Medical Center Transitional Care Unit
761	Johns Hopkins Comprehensive Geriatric Center
204	Johns Hopkins Hospital Adult (Adult Trauma, Base Station, Cardiac Intervention, Eye Trauma, Comprehensive Stroke)
706	Johns Hopkins Hospital Inpatient Rehabilitation Center
704	Johns Hopkins Pediatric (Pediatric Base Station, Pediatric Burn, Pediatric Trauma)
451	Joseph Richey Hospice - Joseph Richey House - Baltimore (Gilchrist Hospice Care)
461	J.W. Ruby Memorial Hospital, Morgantown, WV
274	Kennedy-Krieger Institute
277	Keswick Multi-Care Center
262	Kimbrough Ambulatory Care Center, Fort Meade
563	King's Daughters Hospital, WV
259	Kirk U.S. Army Health Clinic, Aberdeen
403	Lancaster General Hospital, PA
564	Lancaster Osteopathic Health Foundation, PA
352	Laurel Regional Hospital (Base Station)
773	Laurel Regional Hospital–Rehabilitation

<b>Code</b>	<b>Health Care Facility Name</b>
565	Leesburg Hospital, VA
278	Levindale Hebrew Geriatric Center and Hospital
205	Liberty Medical Center Psychiatric Center
255	Lincoln Memorial Hospital
354	Malcolm Grow U.S. Air Force Medical Center
280	Mary Washington Hospital, VA
281	Maryland Penitentiary Hospital
300	Maryland Poison Information Center at UMAB
285	Masonic Eastern Star Home, DC
566	McConnellsburg Hospital
332	McCready Memorial Hospital (Base Station)
339	McGuire Veterans Administration Medical Center, VA
774	Medlink Hospital of Capitol Hill, DC
327	MedStar Washington Hospital Center, DC (Adult Trauma, Burn, Cardiac Interventional)
404	Memorial Hospital, PA
207	Mercy Medical Center (Base Station, Neonatal, Perinatal, Primary Stroke)
389	Meritus Medical Center (Adult Trauma, Base Station, Cardiac Interventional, Primary Stroke)
799	Meritus Medical Center, Comprehensive Inpatient Rehabilitation Services
499	Meritus Medical Center, Psychiatric Unit
798	Meritus Medical Center, Skilled Nursing Facility
206	Midtown (UM) (Base Station, Primary Stroke)
271	Monongalia General Hospital, WV
228	Montebello Center - Baltimore
264	Montgomery Medical Center (MedStar) (Base Station, Primary Stroke)
292	Mount Washington Pediatric Hospital
400	Myersdale Medical Center, PA
351	Nanticoke Memorial Hospital, DE (Cardiac Interventional)
295	National Capital Poison Center, Washington, DC
334	National Hospital for Orthopedics and Rehabilitation, VA
308	National Institute of Mental Health
356	National Institutes of Health Clinical Center
309	National Rehabilitation (MedStar) at Irving Street, Washington, DC
751	Nemours/Alfred I. DuPont Hospital for Children
307	Newark Emergency Center, Newark, DE
568	Newark Hospital, NJ
762	Newmedico Rehabilitation
753	Northampton-Accomac Memorial Hospital
313	Northeast Georgetown Medical Center
315	Northern Virginia Doctor's Hospital, VA

## D. MARYLAND TRAUMA AND SPECIALTY REFERRAL CENTERS

### Trauma Centers (Adult)

#### **Primary Adult Resource Center**

- R Adams Cowley Shock Trauma Center (UM), Baltimore

#### **Level I Trauma Center**

- The Johns Hopkins Hospital Adult Trauma Center, Baltimore

#### **Level II Trauma Centers**

- Johns Hopkins Bayview Medical Center, Baltimore
- Prince George's Hospital Center (UM), Cheverly
- Sinai Hospital
- Suburban Hospital (JHM), Bethesda

#### **Level III Trauma Centers**

- Meritus Medical Center, Hagerstown
- Peninsula Regional Medical Center, Salisbury
- Western Maryland Regional Medical Center, Cumberland

#### **Out-of-State Centers**

- Christiana Care Health System, Wilmington, DE
- MedStar Washington Hospital Center, Washington, DC

### Specialty Referral Centers

#### **Eye Trauma**

- Wilmer Eye Institute/The Johns Hopkins Hospital, Baltimore

#### **Hand/Upper Extremity Trauma**

- The Curtis National Hand Center for Treatment of the Hand and Upper Extremity/  
Union Memorial Hospital (MedStar), Baltimore

#### **Hyperbaric Medicine**

- Center for Hyperbaric Medicine/R Adams Cowley Shock Trauma Center (UM),  
Baltimore

#### **Neurotrauma (Head and Spinal Cord Injuries)**

- Neurotrauma Center/R Adams Cowley Shock Trauma Center (UM), Baltimore

#### **Pediatric Trauma**

- Johns Hopkins Children's Center, Baltimore
- Children's National Medical Center, Washington, DC

#### **Burns**

- Adult Burn Center/Johns Hopkins Bayview Medical Center, Baltimore
- Adult Burn Center/MedStar Washington Hospital Center, Washington, DC
- Pediatric Burn Center/Johns Hopkins Children's Center, Baltimore
- Pediatric Burn Center/Children's National Medical Center, Washington, DC

## MARYLAND TRAUMA AND SPECIALTY REFERRAL CENTERS (Continued)

### Specialty Referral Centers

#### ***Perinatal Referral Centers***

- Anne Arundel Medical Center, Annapolis
- Franklin Square Medical Center (MedStar), Baltimore
- Frederick Memorial Hospital, Frederick
- Greater Baltimore Medical Center, Towson
- Holy Cross Hospital, Silver Spring
- Howard County General Hospital (JHM), Columbia
- Johns Hopkins Bayview Medical Center, Baltimore
- Mercy Medical Center, Baltimore
- Prince George's Hospital Center (UM), Cheverly
- Saint Agnes Hospital, Baltimore
- Saint Joseph Medical Center (UM), Baltimore
- Shady Grove Adventist Hospital, Gaithersburg
- Sinai Hospital of Baltimore
- The Johns Hopkins Hospital, Baltimore
- University of Maryland Medical Center, Baltimore

#### ***Primary Stroke***

- Anne Arundel Medical Center, Annapolis
- Atlantic General Hospital, Berlin
- Baltimore Washington Medical Center (UM), Glen Burnie
- CalvertHealth Medical Center, Prince Frederick
- Carroll Hospital Center, Westminster
- Charles Regional Medical Center (UM), La Plata
- Doctor's Community Hospital, Lanham
- Franklin Square Medical Center (MedStar), Baltimore
- Frederick Memorial Hospital, Frederick
- Good Samaritan Hospital (MedStar), Baltimore
- Greater Baltimore Medical Center, Baltimore
- Harbor Hospital (MedStar), Baltimore
- Harford Memorial Hospital (UMUCH), Havre De Grace
- Holy Cross Hospital, Germantown **(NEW '19)**
- Holy Cross Hospital, Silver Spring
- Howard County General Hospital (JHM), Columbia
- Mercy Medical Center, Baltimore
- Meritus Medical Center, Hagerstown
- Midtown Campus (UM), Baltimore
- Montgomery Medical Center (MedStar), Olney
- Northwest Hospital, Baltimore
- Peninsula Regional Medical Center, Salisbury
- Prince George's Hospital Center (UM), Cheverly
- Saint Agnes Hospital, Baltimore
- Saint Joseph Medical Center (UM), Baltimore
- Saint Mary's Hospital (MedStar), Leonardtown
- Shady Grove Adventist Hospital, Rockville
- Shore Medical Center at Easton (UMSRH)

## MARYLAND TRAUMA AND SPECIALTY REFERRAL CENTERS (Continued)

### ***Primary Stroke (Continued)***

- Sinai Hospital of Baltimore
- Southern Maryland Hospital (MedStar), Clinton
- Suburban Hospital (JHM), Bethesda
- Union Hospital of Cecil County, Elkton
- Union Memorial Hospital (MedStar), Baltimore
- Upper Chesapeake Medical Center (UMUCH), Bel Air
- Washington Adventist Hospital, Takoma Park
- Western Maryland Regional Medical Center, Cumberland

### ***Comprehensive Stroke***

- Johns Hopkins Bayview Medical Center, Baltimore
- The Johns Hopkins Hospital, Baltimore
- University of Maryland Medical Center, Baltimore

### ***Cardiac Interventional***

- Anne Arundel Medical Center, Annapolis
- Baltimore Washington Medical Center (UM), Glen Burnie
- Bayhealth Kent General, Dover, DE
- Carroll Hospital Center, Westminster
- Christiana Care Health System, Newark, DE
- Franklin Square Medical Center (MedStar), Baltimore
- Frederick Memorial Hospital, Frederick
- Holy Cross Hospital, Silver Spring
- Howard County General Hospital (JHM), Columbia
- Johns Hopkins Bayview Medical Center, Baltimore
- MedStar Washington Hospital Center, Washington, DC
- Meritus Medical Center, Hagerstown
- Nanticoke Memorial Hospital, Seaford, DE
- Peninsula Regional Medical Center, Salisbury
- Prince George's Hospital Center (UM), Cheverly
- Saint Agnes Hospital, Baltimore
- Saint Joseph Medical Center (UM), Baltimore
- Shady Grove Adventist Hospital, Rockville
- Shore Medical Center at Easton (UM)
- Sinai Hospital of Baltimore
- Southern Maryland Hospital (MedStar), Clinton
- Suburban Hospital (JHM), Bethesda
- The Johns Hopkins Hospital, Baltimore
- Union Memorial Hospital (MedStar), Baltimore
- University of Maryland Medical Center, Baltimore
- Upper Chesapeake Medical Center (UMUCH), Bel Air
- Washington Adventist Hospital, Takoma Park
- Western Maryland Regional Medical Center, Cumberland

## MARYLAND TRAUMA AND SPECIALTY REFERRAL CENTERS (Continued)

### ***Maryland Sexual Assault Forensic Examination (SAFE) Hospitals***

SAFE hospital programs recognized by the Maryland Coalition Against Sexual Assault (MCASA)

- Anne Arundel Medical Center (Adult)
- Atlantic General Hospital (Pediatric and Adult)
- Baltimore Washington Medical Center (UM) (Pediatric and Adult)
- Calvert Memorial Hospital (Adult)
- Carroll Hospital Center (Pediatric and Adult)
- Charles Regional Medical Center (UM) (Pediatric and Adult)
- Chestertown Medical Center (UMSRH) (Adult)
- Dorchester Medical Center (UMSRH) (Pediatric and Adult)
- Easton Medical Center (UMSRH) (Pediatric and Adult)
- Franklin Square Medical Center (MedStar) (Pediatric)
- Frederick Memorial Hospital (Pediatric and Adult)
- Garrett Regional Medical Center (WVU) (Pediatric and Adult)
- Greater Baltimore Medical Center (Adult)
- Harford Memorial Hospital (UMUCH) (Pediatric and Adult)
- Howard County General Hospital (JHM) (Pediatric and Adult)
- Mercy Medical Center (Adult)
- Meritus Medical Center (Pediatric and Adult)
- Peninsula Regional Medical Center (Pediatric and Adult)
- Prince George's Hospital Center (UM) (Pediatric and Adult)
- Saint Mary's Hospital (MedStar) (Pediatric and Adult)
- Shady Grove Adventist Hospital (Pediatric and Adult)
- Union Hospital of Cecil County (Adult)
- University of Maryland Medical Center (Pediatric)
- Western Maryland Regional Medical Center (Pediatric and Adult)

### **(NEW '19)**

### ***Maryland Emerging Infectious Disease (EID) Treatment and Assessment Hospitals***

EID hospitals are reviewed, approved, and recognized as such by the Maryland Department of Health Infectious Disease Epidemiology and Outbreak Response Bureau.

### ***Maryland Primary Ebola/Special Pathogen Treatment Hospital***

- The Johns Hopkins Hospital

### ***Maryland Alternate Ebola/Special Pathogen Treatment Hospital***


- University of Maryland Medical Center

### ***Maryland Ebola/Special Pathogen Assessment Hospitals***

- Anne Arundel Medical Center
- Frederick Memorial Hospital
- Holy Cross Hospital
- MedStar Southern Maryland Hospital Center
- Peninsula Regional Medical Center



## E. HISTORY AND PHYSICAL EXAMINATION/ASSESSMENT

1. Conduct a Focused Examination/Detailed Examination/Ongoing Assessment.
2. Collect and transport documentation related to patient's history (example: Emergency Information Form, Medic Alert, EMS DNR/MOLST, or jurisdictional form).
3. Providers should obtain and document a contact telephone number for one or more individuals who have details about the patient's medical history so that the physician may obtain and validate additional patient information.
4.  Obtain an EKG when appropriate.



ALL HEALTH CARE PROVIDERS ARE OBLIGATED BY LAW TO REPORT CASES OF SUSPECTED CHILD OR VULNERABLE ADULT ABUSE AND/OR NEGLECT TO EITHER THE LOCAL POLICE OR ADULT/CHILD PROTECTIVE SERVICE AGENCIES. DO NOT INITIATE REPORT IN FRONT OF THE PATIENT, PARENT, OR CAREGIVER (MD CODE, FAMILY LAW, § 5-704). UNDER MARYLAND LAW, EMS PROVIDERS ARE PROTECTED FROM LIABILITY IF THEY MAKE A REPORT OF CHILD/VULNERABLE ADULT ABUSE AND NEGLECT IN GOOD FAITH (COURTS AND JUDICIAL PROCEEDINGS ARTICLE § 5-620).

## F. TREATMENT PROTOCOLS

1. Refer to **ALL** appropriate protocols.
2. Patients who have had an impaled conducted electrical weapon used on them will be transported to the nearest appropriate facility without dart removal (exception: Tactical EMS). ANY conducted electrical weapon dart impalement to the head, neck, hands, feet, or genitalia must be stabilized in place and evaluated by a physician. An assessment must be conducted to determine if the patient meets Excited Delirium Syndrome.
3. Providers may assist the patient or primary caregiver in administering the patient's prescribed rescue medication.
  - a) BLS providers may assist with the administration of the patient's fast-acting bronchodilator MDI and sublingual nitroglycerin.
  - b) ALS providers may administer the patient's prescribed benzodiazepine for seizures, Factor VIII or IX for Hemophilia A or B, or reestablish IV access for continuation of an existing vasoactive medication.
  - c) Providers should obtain on-line medical direction to administer other prescribed rescue medications not specifically mentioned in *The Maryland Medical Protocols for EMS Providers* (e.g., hydrocortisone (Solucortef) for adrenal insufficiency). The rescue medication must be provided by the patient or caregiver and the label must have the patient's name and the amount of medication to be given.



DO NOT ADMINISTER ORAL MEDICATIONS (EXCEPT GLUCOSE PASTE) TO PATIENTS WITH AN ALTERED MENTAL STATUS.



4. For pediatric patients

- a) Pediatric section of the treatment protocol will be used for children who have **not** reached their 15<sup>th</sup> birthday (trauma) or their 18<sup>th</sup> birthday (medical), except as otherwise stated in the treatment protocol.
- b) Medication dosing
  - (1) Pediatric doses apply to patients weighing less than 50 kg.
  - (2) For pediatric patients equal to or greater than 50 kg, utilize adult dosing.
- c) The developmental age of the infant/child must be considered in the communication and evaluation for treatment.

Destination consideration:  
For those patients who are 18 years of age or older who receive specialized care at a pediatric facility, consider medical consultation with a Pediatric Base Station for patient destination.
- d) Infants and children must be properly restrained prior to and during transport.
- e) A parent/guardian/care taker may remain with a pediatric patient during transport, but must be secured in a separate vehicle restraint system at all times during transport. **(NEW '19)**

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## G. COMMUNICATIONS (NEW '19)

1. Communications with and through EMRC/SYSCOM are recorded. In addition, as part of the quality assurance and quality improvement process, communications with hospitals are frequently recorded. Therefore, you should assume that all your communications among EMS providers, hospitals, public safety communications centers, and EMRC/SYSCOM are being recorded.



ANY PATIENT WHOM THE PROVIDER IDENTIFIES AS MEETING ANY “SPECIALTY” ALERT (E.G., TRAUMA, STEMI ALERT, STROKE ALERT, SEPSIS ALERT) REQUIRES A HOSPITAL NOTIFICATION, AND WHEN INDICATED BY PRIORITY OR NEED FOR INTERVENTION WILL HAVE ONLINE MEDICAL CONSULTATION THROUGH EMRC ON A RECORDED LINE (RADIO OR PHONE).

2. All **Priority 1** patients require online medical consultation through EMRC on a recorded line (radio or phone).
3. All **Priority 2 patients who need further therapeutic intervention(s)** that require on-line medical consultation approval shall perform on-line medical consultation through EMRC on a recorded line (radio or phone).
4. For **Priority 2 patients who have persistent symptoms but who do not need therapeutic intervention(s)** requiring on-line medical consultation approval, providers shall notify the receiving facility with an “information only call” through EMRC on a recorded line (radio or phone).
5. For **Priority 2 patients whose symptoms have resolved** and **Priority 3 patients** whose vital signs are within normal limits, notification may be made through EMRC on a recorded line (radio or phone) or through an EOC/EMS communication system in accordance with the standard operating procedures of the local jurisdiction.



ONLINE MEDICAL CONSULTATION MAY BE OBTAINED AT ANY TIME FOR ANY PATIENT, IF DESIRED BY THE PREHOSPITAL EMS PROVIDER. PEDIATRIC AND SPECIALTY CONSULTATION IS ENCOURAGED FOR TRAUMA AND MEDICAL PATIENTS. CONSULTATION WITH PEDIATRIC AND SPECIALTY CENTERS SHALL OCCUR SIMULTANEOUSLY WITH A BASE STATION CONSULT.

6. If medical consultation is genuinely unavailable, or if the time necessary to initiate consultation significantly compromises patient care, the provider shall proceed with additional protocol directed care, so long as transport will not be significantly delayed. “Exceptional Call” must be indicated on the Patient Care Report (PCR).
7. Core essentials for communications:
  - a) Assigned patient priority (1 to 4)
  - b) Age
  - c) Chief complaint
  - d) Provider impression
  - e) Pertinent patient signs and symptoms (e.g., HR, RR, BP, Pulse Ox, and GCS) (be specific—do not use within normal limits or stable in description)
  - f) Pertinent physician findings
  - g) ETA

In addition, for specialty center patients:

**Trauma**

- h) Patient Trauma Decision Tree Category (Alpha, Bravo, Charlie, Delta)
- i) Number of victims if more than one
- j) Describe mechanism

**Stroke**

- k) Last known well time
- l) Specific neurological findings (sensory, motor, cognitive)
- m) Upon positive assessment using the Cincinnati Stroke Scale, a STROKE alert shall be made and the LAMS score will be included in the consult.

**STEMI**

- n) 12-Lead interpretation
- o) Duration of symptoms



CONSIDER ACTIVATION OF THE GO-TEAM FOR SERIOUSLY INJURED PATIENTS WHO REQUIRE A PROLONGED EXTRICATION AND WHO MEET THE INDICATIONS FOR GO-TEAM ACTIVATION.

- 8. Mass Casualty Incident (MCI) Communications
  - a) When a local jurisdiction declares an MCI, it is extremely important to maximize patient care resources and reserve EMS communications for emergent situations. Except for extraordinary care interventions, EMS providers may perform all skills and administer medications within protocol during a declared MCI. When the MCI condition is instituted, the Exceptional Call box must be checked on the PCR.
  - b) During an MCI, the EMS Officer-in-Charge (OIC) shall designate an EMS Communicator who shall establish appropriate communications.
  - c) Reference the Multiple Casualty Incident/Unusual Incident Protocol.

**H. REASSESSMENT**

- 1. Reassess unstable patients frequently (recommended every 5 minutes).
- 2. Reassess stable patients at a minimum of every 15 minutes.
- 3. Reassess patients being discharged to home or long-term care at the beginning and end of the transport or more frequently, at the provider's discretion.

## I. DISPOSITION

### 1. Destination

- a) Priority 1 patients shall be triaged according to Maryland Medical Protocols to the closest appropriate hospital-based emergency department, designated trauma, or designated specialty referral center. Critically unstable patients in need of immediate life-saving interventions that cannot be provided in the field shall, with the approval of EMS system medical consultation, be diverted to the closest facility (including freestanding emergency medical facility) capable of immediately providing those interventions.
- b) Priority 2 patients shall be triaged according to the Maryland Medical Protocols to the closest appropriate hospital-based emergency department, designated trauma or designated specialty referral center unless otherwise directed by EMS system medical consultation. Stable Priority 2 patients may be referred to a freestanding emergency medical facility.
- c) Stable Priority 3 or 4 patients who do not need a time-critical intervention may be transported to the local emergency department or freestanding emergency medical facility.
- d) Patients Under Investigation (PUI) for an Emerging Infectious Disease (EID) at a residence should be transported directly to an Assessment Hospital unless total transport time is no longer than 45 minutes greater than transport to the nearest Frontline Hospital ED. If transport time is longer than 45 minutes greater than transport to the nearest Frontline Hospital ED, the patient must be transported to the closest appropriate Frontline hospital. Priority 1 and Priority 2 patients with unresolved symptoms that cannot be managed outside the hospital should be taken to the closest Frontline Hospital. Receiving hospital notification of all suspected PUI patients should be done as early as possible to allow for hospital staff to prepare. Helicopter transport is NOT indicated for the PUI patient.
- e) For Priority 2 and Priority 3 patients not meeting a specialty center destination care protocol, the EMS provider should ask if the patient has had a hospital admission (inpatient service) within the last 30 days. If the answer is yes, the EMS provider should transport (repatriate) the patient to that hospital as long as that hospital is not more than 15 additional minutes further than nearest hospital (or greater if allowed for by the EMS Operational Program).

### 2. Mode of transport (air, land, water)

- a) Medevac patients with indications for specialty referral center should be flown to the appropriate type of specialty center if not more than 10–15 minutes further than the closest trauma center. (Patients with an airway, breathing, or circulatory status who would be jeopardized by going an additional 10–15 minutes should go to the closest trauma center.)
- b) Consider utilization of a helicopter when the patient's condition warrants transport to a trauma or specialty referral center and the use of a helicopter would result in a clinically significant reduction in time compared with driving to a trauma/specialty center.



ALL REQUESTS FOR SCENE HELICOPTER TRANSPORTS SHALL BE MADE THROUGH SYSCOM. FOR TRAUMA DECISION TREE CATEGORY CHARLIE OR DELTA, RECEIVING TRAUMA CENTER MEDICAL CONSULTATION IS REQUIRED WHEN CONSIDERING WHETHER HELICOPTER TRANSPORT IS OF CLINICAL BENEFIT.

- c) If the time of arrival at the trauma or specialty referral center via ground unit is less than 30 minutes, there will generally not be a benefit in using the helicopter, especially for Trauma Decision Tree categories Charlie and Delta.
- d) Refer to the Trauma Decision Tree when considering use of aeromedical transport. Provide SYSCOM with the patient's category (Alpha, Bravo, Charlie, or Delta).
- e) On-line medical direction should be obtained from the local trauma center and the specialty referral center when transport to the specialty center would require more than 10–15 minutes additional transport time.
  - (1) Pediatric Trauma Patients: Indications as per the pediatric section of the Trauma Protocols.
  - (2) Spinal Trauma Patients: Indications as per Spinal Protection Protocol.
  - (3) Burn Patients: Indications as per Burn Protocol. Special note: Isolated burn patients without airway injury or other associated trauma should normally be flown to a burn center, regardless of the location of the closest trauma center.
  - (4) Hand Injury Patients: Indications as per Hand Trauma Protocol. Special note: Medevac patients with appropriate indications for hand center referral should normally be flown to the hand center, regardless of the location of the closest trauma center.

### 3. Status

Evaluate the need for emergent versus non-emergent transportation.



DO NOT WAIT ON-SCENE FOR ADVANCED LIFE SUPPORT. ATTEMPT TO RENDEZVOUS EN ROUTE TO THE HOSPITAL.

## **J. TRANSFER OF CARE/RENDEZVOUS AND TRANSITION OF PATIENT CARE ALS TO BLS**

The ALS provider-patient relationship is established when the ALS provider initiates patient assessment and

1. ALS medication(s)\* is/are administered or
2. ALS procedure(s)\* is/are performed or
3. Upon ALS provider assessment of the patient there is potential risk of deterioration.

\* Based on the medication or procedure as listed in the protocol pages 182–185

ALS providers may only terminate their EMS provider-patient relationship when they are assured that the patient will continue to receive care at the same or greater levels, or when they have documented with on-line medical direction that the patient's condition has improved and that patient care may be transferred safely to an EMS provider with a lower scope of practice.

**BLS providers have the right to decline the transition of patient care. When consensus between the providers cannot be gained, ALS shall get on-line medical direction.**

Providers will relay assessment findings and treatment provided to the individual(s) assuming responsibility for the patient(s).

## **K. DOCUMENTATION**

A Patient Care Report (PCR) will be completed and delivered to the receiving facility as soon as possible, ideally upon transfer of care. If this is not immediately possible, providers must provide documentation of the patient's prehospital care on a template and in a format provided or approved by MIEMSS for inclusion in the patient care record before leaving the receiving facility, then deliver the completed PCR within 24 hours after dispatch, in compliance with COMAR 30.03.04.04.

Only the unit that pronounces death will select the "Dead on Scene" option in the PCR (eMEDS®) and thus all other units will report "Operational Support Only." If no interventions are performed, the highest level EMS provider on scene will pronounce death and document "Dead on Scene." If BLS care was rendered by a BLS unit and then termination of resuscitation and pronouncement of death occurred, the BLS unit will select "Dead at Scene with BLS Intervention" option on the eMEDS® PCR. If ALS care was rendered by an ALS unit and then termination of resuscitation and pronouncement of death occurred, the ALS unit will select "Dead at Scene with ALS Intervention" option on the eMEDS® PCR.

## **L. CONFIDENTIALITY**

Patient confidentiality must be maintained at all times.

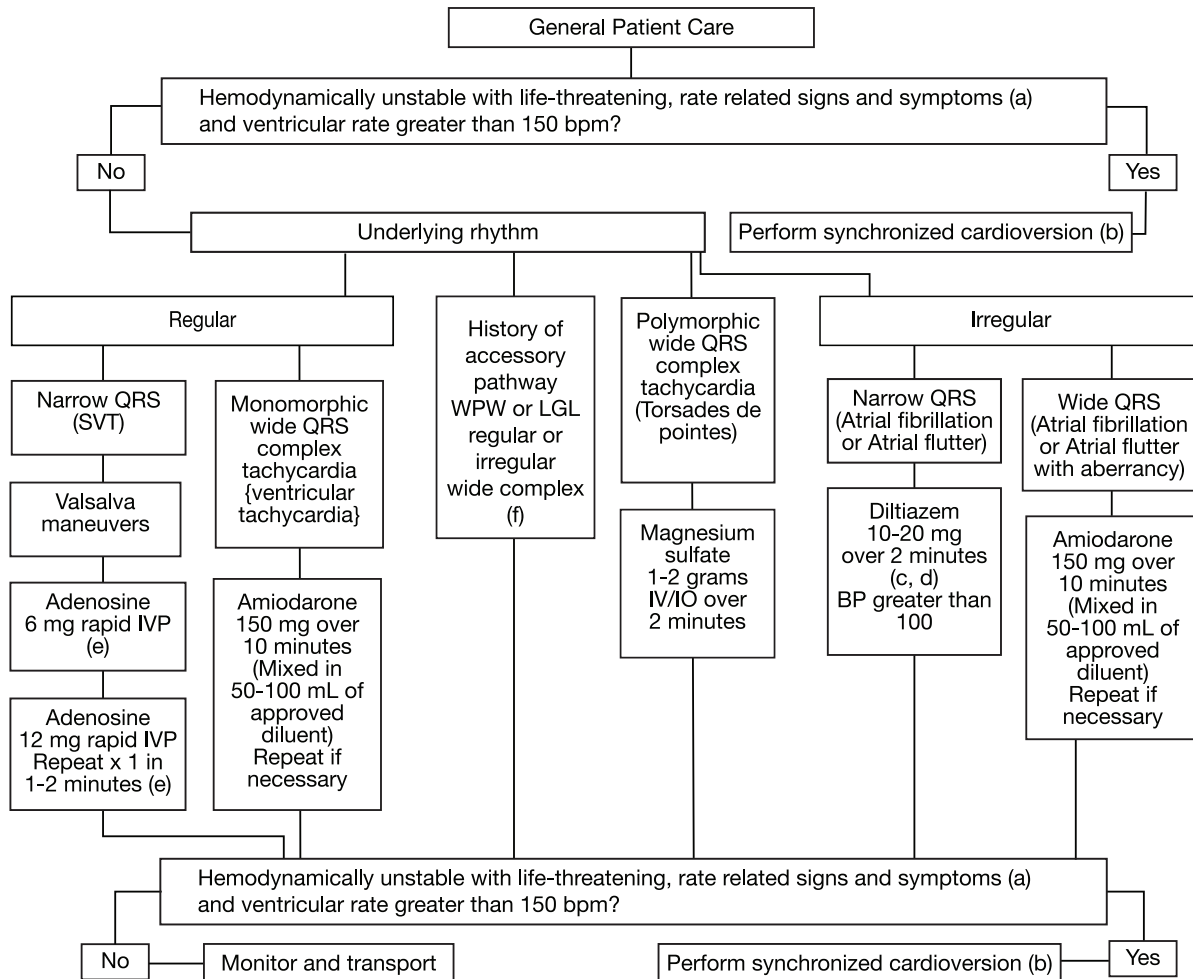
## **M. PROFESSIONAL CONDUCT**

All patients should be treated with dignity and respect in a calm and reassuring manner.





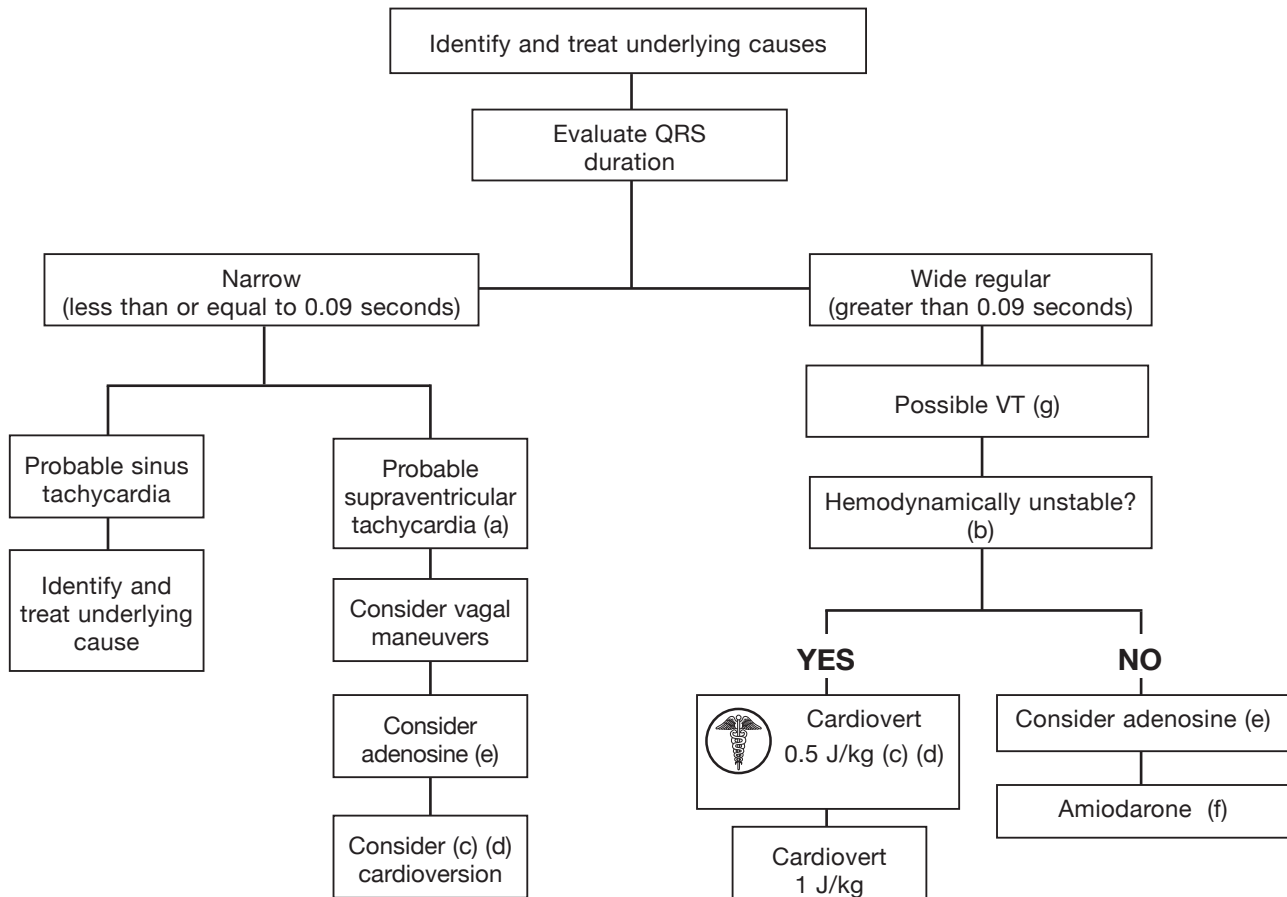
5.

**ADULT TACHYCARDIA ALGORITHM (NEW '19)**

- (a) - Signs and symptoms related to tachycardia: hypotension, acutely altered mental status, signs of shock, ischemic chest discomfort/AMI, or acute heart failure
- (b) - Consider sedation (midazolam). However, overall patient status, including BP, may affect ability to administer sedative.
- (c) - Consider calcium chloride 500 mg IVP for hypotension induced by diltiazem.
- (d) - If rate does not slow in 15 minutes, administer a second dose of diltiazem (15 –25 mg over 2 minutes).
- (e) - Be prepared for up to 40 seconds of asystole.
- (f) - These rhythms include Wolff-Parkinson White (WPW) syndrome, Lown–Ganong–Levine syndrome (LGL), and Mahaim type.



## 6. PEDIATRIC TACHYCARDIA ALGORITHM (If less than 1 hour old, refer to the Newly Born Protocol)




(a) - Ventricular Heart Rates in excess of: Infant 220 bpm or Pediatric 180 bpm

(b) - Hemodynamically unstable is defined as a systolic blood pressure less than 60 in neonates (patients from birth to 28 days old), less than 70 in infants (patients less than 1 year of age), less than  $[70 + (2 \times \text{years}) = \text{systolic BP}]$  for patients greater than 1 year of age, altered mental status with hypoperfusion evidenced by delayed capillary refill, pallor, or peripheral cyanosis.

(c) - If calculated joules setting is lower than cardioversion device is able to deliver, use the lowest joules setting possible or obtain medical consultation.

(d) -  Considering sedation (midazolam with medical consultation). However, overall patient status, including BP, may affect ability to administer sedative.

(e) - Adenosine: 0.1 mg/kg rapid IV/IO, maximum 6 mg. Second and third doses 0.2 mg/kg rapid IV/IO, maximum single dose 12 mg. Be prepared for up to 40 seconds of asystole. (Contraindicated in polymorphic or irregular wide complex tachycardia)

(f) -  Amiodarone: 5 mg/kg IV/IO over 20 minutes (mixed in 50 - 100 mL of approved diluent). Obtain 12-lead EKG prior to administration of amiodarone.

(g) If torsades de pointes, administer magnesium sulfate (25 mg/kg IV/IO to a maximum of 2 grams over 2 minutes).

## I. CARDIAC EMERGENCIES: CARDIAC ARREST

1. Initiate General Patient Care.

2. Presentation

Patient must be unconscious, apneic, and pulseless.

3.  Treatment

- a) Perform high quality uninterrupted chest compressions as soon as possible and until defibrillator available.
- b) Apply AED as soon as available.
- c) Follow machine prompts regarding rhythm analyses and shocks.
- d) Limit breaks in compressions to rhythm analysis periods and during shocks; perform compressions while defibrillator is charging.



ALS PROVIDERS WITH A COMBINATION AED/MANUAL DEFIBRILLATOR SHOULD USE IT IN THE MANUAL MODE TO MINIMIZE BREAKS IN COMPRESSIONS CAUSED BY AED ANALYSIS.

e) **On-scene resuscitation:** patients who are found in arrest or who arrest prior to transport and are **attended to by BLS providers must only be resuscitated in place** (with minimal movement, no attempts at patient loading, and no attempts at transport) until the following have been accomplished:

(1) **Medical Etiologies**

(a) The patient has received a minimum of five two-minute cycles of rhythm interpretation and chest compressions.

(2) **Trauma Etiologies**

(a) Penetrating trauma patients should receive the indicated reversible causes treatments listed in section BBB–Trauma Protocol: Trauma Arrest, lines a) through h) of Treatment, while loading and preparing for immediate transport.

(b) Blunt trauma patients should receive all indicated reversible causes treatments listed in section BBB–Trauma Protocol: Trauma Arrest, lines a) through h) of Treatment, while on scene before termination of resuscitation or transport if ROSC is achieved.

(3) **Exemptions** from on-scene resuscitation (**NEW '19**):

(a) Where physical barriers prevent resuscitation

(b) Where providers are in danger

(c) Pregnant patients

(d) Patients in cardiac arrest thought to be secondary to hypothermia or submersion

f) **Following the initial on-scene resuscitation above,** providers may choose to continue the on-scene resuscitation until termination of resuscitation or to transport the patient at any time. Providers should ensure the following prior to transport:

(1) Mechanical CPR (mCPR) in place (if available)

## I. CARDIAC EMERGENCIES: CARDIAC ARREST (Continued)



HIGH-QUALITY CONTINUOUS CHEST COMPRESSIONS WITH FREQUENT PROVIDER ROTATION IS AN ESSENTIAL COMPONENT IN THE SUCCESSFUL RESUSCITATION OF THE CARDIAC ARREST PATIENT. THIS MAY BE ACCOMPLISHED ENTIRELY WITH MANUAL COMPRESSIONS, OR INITIALLY WITH MANUAL AND THEN MECHANICAL COMPRESSIONS, IN ACCORDANCE WITH THE OPTIONAL MECHANICAL CPR (MCPR) PROTOCOL. THE USE OF MCPR IS CONTRAINDICATED IN PATIENTS WHO HAVE NOT YET REACHED THEIR 13<sup>TH</sup> BIRTHDAY.



- 
- g) Assess for shockable rhythm at next appropriate interval and treat appropriately.
  - h) Minimize peri-shock pauses of compressions to less than 10 seconds.
  - i) Any interruption of chest compressions, at any time for any reason, should last no more than 10 seconds
  - j) 10-second interruptions should coincide with two-minute cycles of chest compressions
  - k) **On-scene resuscitation:** patients who are found in arrest or who arrest prior to transport and are **attended to by ALS providers must remain in place** (with minimal movement, no attempts at patient loading, and no attempts at transport) until the following have been accomplished:
    - (1) **Medical Etiologies**
      - (a) The patient has received three doses of epinephrine, regardless of algorithm being followed
    - (2) **Trauma Etiologies**
      - (a) Penetrating trauma patients should receive the indicated reversible causes treatments listed in section BBB–Trauma Protocol: Trauma Arrest, lines a) through h) of Treatment, while loading and preparing for immediate transport
      - (b) Blunt trauma patients should receive all indicated reversible causes treatments listed in section BBB–Trauma Protocol: Trauma Arrest, lines a) through h) of Treatment, while on scene before termination of resuscitation or transport if ROSC is achieved.
    - (3) **Exemptions** from on-scene resuscitation:
      - (a) Where physical barriers prevent resuscitation
      - (b) Where providers are in danger
      - (c) Pregnant patients
      - (d) Patients in cardiac arrest thought to be secondary to hypothermia or submersion
  - l) **Following the initial on-scene resuscitation above,** providers may choose to continue the on-scene resuscitation until termination of resuscitation or to transport the patient at any time. Providers should ensure the following prior to transport:
    - (1) Mechanical CPR (mCPR) in place (if available)
    - (2) Placement of an airway that facilitates ventilation during transport by a restrained provider
  - m) Identify rhythm and treat according to appropriate algorithm.
  - n) When the patient's condition changes, indicating the transition to a new treatment algorithm, the new treatment shall take into account prior therapy (e.g., previously administered medications).
  - o) If ROSC, refer to ROSC Protocol.
  - p) Consider Termination of Resuscitation when appropriate.

## K. TERMINATION OF RESUSCITATION (Medical and Traumatic) (Continued)

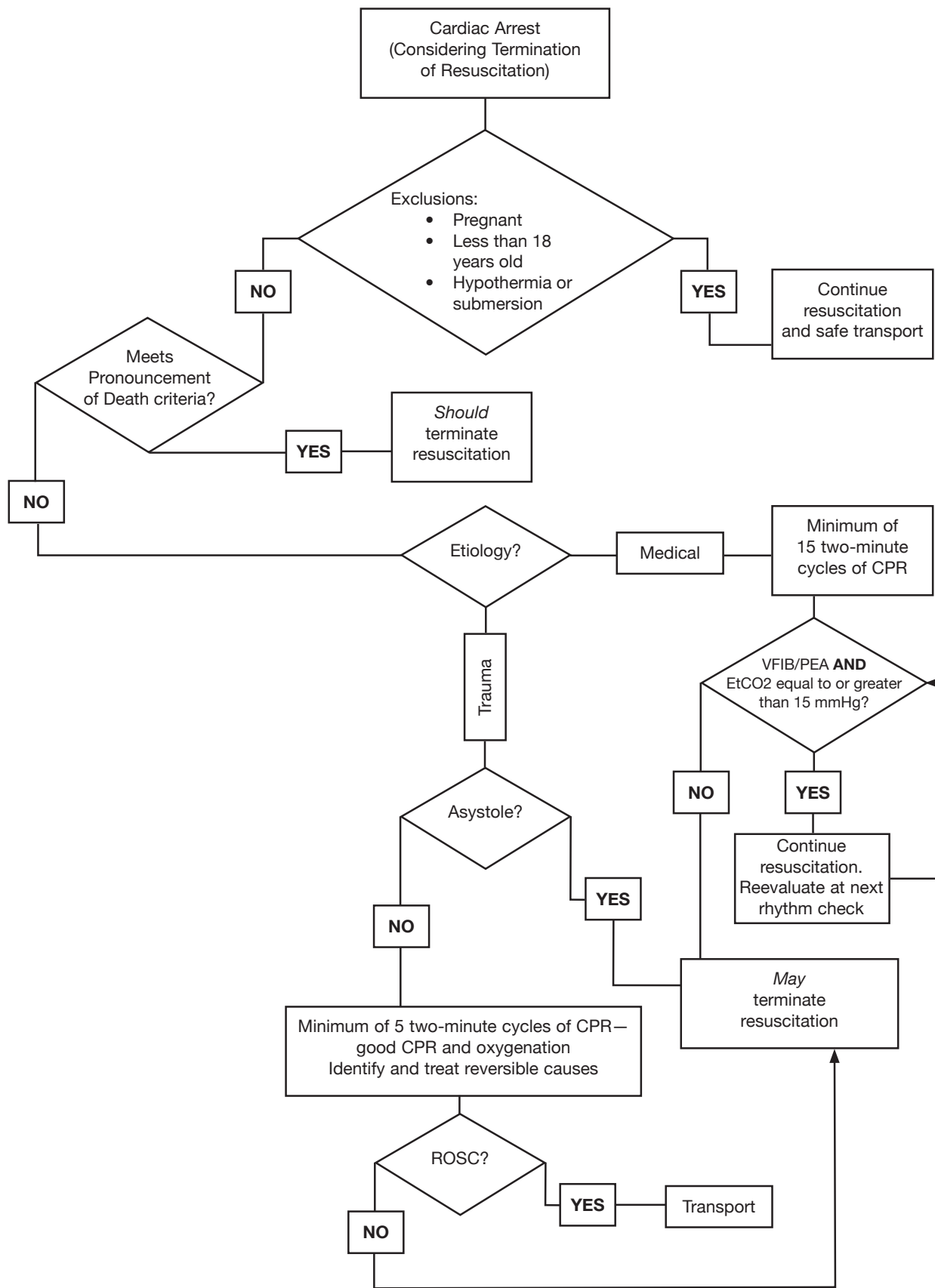
- d) Cardiac arrest (traumatic etiology)
  - (2) EMS providers may terminate resuscitation regardless of total resuscitation time if:
    - (a) The patient presents in asystole OR
    - (b) The patient's cardiac rhythm changes to asystole during the resuscitation
  - (3) EMS providers may terminate resuscitation following five two-minute cycles of CPR according to the Trauma Protocol: Trauma Arrest Protocol for a patient who remains in PEA or VF



ASYSTOLE AND RESUSCITATIONS LASTING LONGER THAN 10 MINUTES ARE INDEPENDENT PREDICTORS OF MORTALITY IN THE TRAUMA PATIENT. TREATMENT OF THE TRAUMA ARREST PATIENT SHOULD FOCUS ON IDENTIFYING AND TREATING REVERSIBLE CAUSES DURING THAT NARROW RESUSCITATIVE WINDOW. TOR AND TRANSPORT DECISIONS SHOULD ONLY BE MADE AFTER ADMINISTERING TIME-SENSITIVE AND APPROPRIATE THERAPIES.

- e) Pronouncement of Death in the Field Protocol.

## TERMINATION OF RESUSCITATION ALGORITHM



## L. PRONOUNCEMENT OF DEATH IN THE FIELD

### 1. PURPOSE



This protocol is designed to guide the EMS provider in pronouncing death in the field.

Health General Article §5-202 provides that:

- a) An individual is dead if, based on ordinary standards of medical practice, the individual has sustained either:
  - (1) Irreversible cessation of circulatory and respiratory functions; or
  - (2) Irreversible cessation of all functions of the entire brain, including the brain stem.

### 2. INDICATIONS

EMS providers may pronounce the death of a patient when one or more of the following criteria has been met.

- a) Decapitation
- b) Rigor mortis
- c) Decomposition
- d) Dependent lividity
- e)  Pulseless, apneic patient in a multi-casualty incident where system resources are required for the stabilization of living patients
- f)  Pulseless, apneic patient with an injury not compatible with life (with the exception of an obviously pregnant female where resuscitation attempts should be initiated and the patient transported to the nearest appropriate facility)
- g) The EMS provider has terminated resuscitation per the Termination of Resuscitation Protocol.

### 3. PROCEDURE

- a) Confirm that the patient is unresponsive, pulseless, and apneic.
- b) The patient who meets criteria in 2.e may be “black” tagged during triage (by a BLS or ALS provider), but asystole must be confirmed by ALS provider before a formal pronouncement of death.
- c) The patient who meets criteria in 2.f must be confirmed to be in asystole by ALS provider before a formal pronouncement of death. If the condition of the remains precludes obtaining a cardiac rhythm to confirm asystole (e.g., incineration, severe disruption of the torso, etc.), this must be documented on the patient care report.
- d) Document the exact time and location of the pronouncement of death.
- e) Notify law enforcement and follow local jurisdictional policies. If deceased patient is a tissue/organ donor and law enforcement has released the body to the family, please assist the family in calling either 800-923-1133 or (for Charles, Montgomery and Prince George’s counties) 703-641-0100. If death is pronounced during transport, deliver patient to the hospital and follow hospital policies. **(NEW '19)**

## M. EMS DNR/MOLST



AS OF JANUARY 1, 2002, A COPY OF THE MARYLAND EMS DNR ORDER FORM CAN BE ACCEPTED IN LIEU OF THE ORIGINAL.

AS OF OCTOBER 1, 2011, THE MARYLAND MOLST FORM CAN BE ACCEPTED IN LIEU OF THE MARYLAND EMS/DNR FORM.

1. PREFACE EMS/DNR Order or MOLST forms, bracelets, and necklaces will recognize three patient options for care prior to arrest:
  - a) **Option A (ALS) (MOLST A1)**—Maximal (Restorative) Care (with intubation) Before Arrest, then DNR
  - b) **Option A (DNI) (MOLST A2)**—Comprehensive Efforts to Prevent Arrest But Do Not Intubate, then DNR
  - c) **Option B (BLS) (MOLST B)**—Limited (Palliative) Care Only Before Arrest, then DNR
2. VALID EMS/DNR or MOLST BRACELET WITH INSERT or AUTHORIZED METAL EMBLEM HAS THE SAME EFFECT AS THE FORM.
  - a) Typically only one EMS/DNR device is needed to initiate the EMS/DNR Protocol.
  - b) EMS providers should only request a second instrument (e.g., a bracelet when a form has already been presented) if there is reason to question the validity of the first produced notification device.
3. RECIPROCITY
  - a) A standardized EMS/DNR Order from another state may be honored.
  - b) Out-of-state EMS/DNR Orders shall be followed to the full extent that is permissible by the Maryland Medical Protocols for Emergency Medical Services Providers. If there is misunderstanding with family members or others present at the scene or if there are other concerns about following the out of state EMS/DNR Order, contact online medical direction for assistance.
4. ORAL EMS/DNR ORDERS
  - a) EMS providers may follow an oral EMS/DNR Order directly from a Maryland-licensed physician (MD or DO), physician assistant, or nurse practitioner who is physically present “on-site.” EMS shall not accept orders from private physician attendings, physician assistant, or nurse practitioner by telephone.
  - b) **EMS providers may follow an oral EMS/DNR Order from a Maryland-licensed physician “on-line” via the EMS Communications System (e.g., radio or telephone consult that is routed through a public service access point (PSAP) for audio recording).**
5. ACCEPTABLE AND UNACCEPTABLE EMS/DNR ORDERS
  - a) The following are acceptable for implementing the EMS/DNR Protocol:
    - (1) Original Maryland EMS/DNR Order Form
    - (2) Copy of the Maryland EMS/DNR Order Form (including an electronic copy on a computer or device for patient care decisions. The sending facility is required to provide a copy of the EMS/DNR Order or MOLST to the transport crew (listed in the instructions of the MOLST form and COMAR 10.01.21.03)).



## M. EMS DNR/MOLST (Continued)

- (3) Other State EMS/DNR Order Form
  - (4) Maryland EMS/DNR Bracelet Insert
  - (5) Medic Alert DNR Bracelet or Necklace
  - (6) Oral DNR Order from EMS System Medical Consultation
  - (7) Oral DNR Order from other on-site physician, physician assistant, or nurse practitioner
  - (8) Maryland MOLST Form
  - (9) Maryland MOLST Bracelet
  - b) The following **are not** acceptable for implementing the EMS/DNR Protocol:
    - (1) Advance directives without an EMS/DNR Order
    - (2) Facility-specific DNR orders
    - (3) Notes in medical records
    - (4) Prescription pad orders
    - (5) DNR stickers
    - (6) An oral request from someone other than a physician, physician assistant, or nurse practitioner
    - (7) An oral order from an attending physician, physician assistant, or nurse practitioner who is not on site
    - (8) Any other device or instrument not listed above as acceptable
6. VALIDITY OF EARLIER VERSIONS OF EMS/DNR ORDERS
- a) Older versions of EMS/DNR Orders — i.e., initial version (1995 and first revision, 4/1/96) — **continue to be valid and need not be updated** unless the patient or authorized decision maker wishes to take advantage of new features available in the newer forms.
  - b) EMS providers should treat older versions of EMS/DNR order (pre 7/1/98) as “Option B (BLS) - Limited (Palliative) Care Only Before Arrest, Then DNR.”
7. REVOCATION OF AN EMS/DNR ORDER
- a) An EMS/DNR Order may be revoked at any time by:
    - (1) Physical cancellation or destruction of all EMS/DNR Order devices; or
    - (2) An oral statement by the patient made directly to emergency medical services personnel requesting only palliative care or resuscitation. If the patient revokes an EMS/DNR order orally, the EMS/DNR Order notification devices do not need to be destroyed. EMS providers should thoroughly document the circumstances of the revocation. An oral revocation by a patient is only good for the single response or transport for which it was issued.
  - b) An authorized decision-maker, other than the patient, cannot revoke an EMS/DNR Order orally. Because of the difficulty in identifying authorized decision-makers in emergent situations, it is incumbent upon an authorized decision-maker who has authority to revoke an EMS/DNR Order to either void or withhold all EMS/DNR Order devices if they wish resuscitation for the patient. If there is any confusion, the EMS provider should contact a Base Station for medical consult. **(NEW '19)**

## **M. EMS DNR/MOLST (Continued)**


- c) Section 5-610 of the Health Care Decision Act (Health General Article, Annotated Code of Maryland) makes willful concealment, cancellation, defacement, obliteration, or damage of an advance directive (including EMS/DNR Orders), without the patient's or authorized decision maker's consent, a misdemeanor subject to a fine not exceeding \$10,000, imprisonment not exceeding one year, or both.
8. ANTICIPATED LOCATIONS FOR EMS/DNR ORDER FORMS:  
EMS personnel shall be directed to look for an EMS/DNR Order in the following places:
- a) About a patient's wrist, hung from a necklace, or safety-pinned to a patient's clothing.
  - b) At medical facilities, in the patient's chart.
  - c) In residences and domicile facilities, by the bedside, behind the patient's bedroom door, or on the refrigerator door.
  - d) In schools and educational institutions, in the nurse's office, health room, or with the student's attendant caregiver/aide.
  - e) Family or caregivers will be expected to retrieve the original EMS/DNR Order prior to the ambulance's arrival.
9. IDENTIFICATION OF PATIENT
- a) If the patient is able, the patient can self-identify during the initial assessment.
  - b) If the patient is unable to communicate, then family, caregivers, or bystanders can identify the patient for EMS providers.
  - c) If an EMS/DNR vinyl bracelet with insert or metal emblem (bracelet or necklace) is attached to a patient (on wrist, pendant from neck, pinned to clothing, etc.) the patient's identity can be reasonably assumed by EMS providers.
  - d) If an EMS/DNR vinyl bracelet insert or metal emblem (bracelet or necklace) is found detached from the patient, EMS personnel must treat it as an EMS/DNR Order form and identify the subject of the EMS/DNR Order as the patient. A valid bracelet insert alone, without the vinyl bracelet, is a valid EMS/DNR Order so long as EMS providers confirm the patient's identity.
  - e) If EMS personnel are unable to ascertain with reasonable certainty, when required to do so, that the subject of the EMS/DNR Order is the patient, they may resuscitate the patient.
10. HEALTH PROVIDER/EMS PERSONNEL IMMUNITY
- a) General immunity provisions, such as Good Samaritan immunity for volunteers and sovereign immunity for government employees, may apply under specific circumstances.

## M. EMS DNR/MOLST (Continued)

- (3) If, despite these efforts, the patient becomes pulseless or stops breathing spontaneously, EMS providers shall then withhold or withdraw cardiopulmonary resuscitation (including, but not limited to, CPR, cardiac pacing, defibrillation), withdrawal of active ventilatory assistance upon cardiac arrest, and withholding or withdrawal of drug therapy (e.g., chemical resuscitation).
- e) **OPTION A (DNI) (MOLST A2) – COMPREHENSIVE EFFORTS TO PREVENT ARREST BUT DO NOT INTUBATE, THEN DNR**
- (1) Option A (DNI) is exactly the same as Option A, which may include limited ventilatory support by CPAP or BiPAP, but Do Not Intubate.
  - (2) Therefore, inappropriate care for “Option A (DNI) – Comprehensive Efforts to Prevent Arrest but Do Not Intubate, then DNR” would be nasal or oral intubation.



IF MAXIMAL CARE IS SELECTED AND THE PATIENT’S CONDITION REQUIRES ALS, AN ALS UNIT SHOULD BE REQUESTED IF FEASIBLE GIVEN THE LOCATION OF THE INCIDENT RELATIVE TO THE NEAREST APPROPRIATE FACILITY, THE AVAILABILITY OF AN ALS UNIT, AND ITS ABILITY TO ARRIVE OR RENDEZVOUS IN A MEDICALLY APPROPRIATE PERIOD OF TIME.

- f) **OPTION B (MOLST B)– PALLIATIVE CARE PROTOCOL (NEW ’19)**
- (1) Supportive Care for Control of Signs and Symptoms
    - (a) Respiratory distress
      - (i) Open the airway using noninvasive means (e.g., chin lift, jaw thrust, finger sweep, nasopharyngeal airway, oropharyngeal airway, Heimlich maneuver, or laryngoscopy with Magill forceps for suspected airway obstruction, **but no cricothyroidotomy and no tracheostomy**).
      - (ii) Administer O<sub>2</sub> as follows:
        - a. If the patient is not on a ventilator and would benefit from oxygen therapy, provide passive oxygen via nasal cannula or non-rebreather mask (but no positive pressure oxygen via ambu bag, demand valve, or ventilator). If available, pulse oximetry and waveform capnography may be used.
        - b. If the patient is found on an outpatient ventilator and is not in cardiac arrest, maintain ventilatory support during transport to the hospital.
        - c.  If the patient is found on an outpatient ventilator and is in cardiac arrest, contact on-line medical direction to consult about disconnecting the ventilator.
      - (iii) Maintain an open airway by noninvasive means (e.g., chin lift, jaw thrust, finger sweep, nasopharyngeal airway, oropharyngeal airway, and Heimlich maneuver or laryngoscopy with Magill forceps for suspected airway obstruction, **but no cricothyroidotomy and no tracheostomy**).
      - (iv) Suction as necessary.
      - (v) Position for comfort.

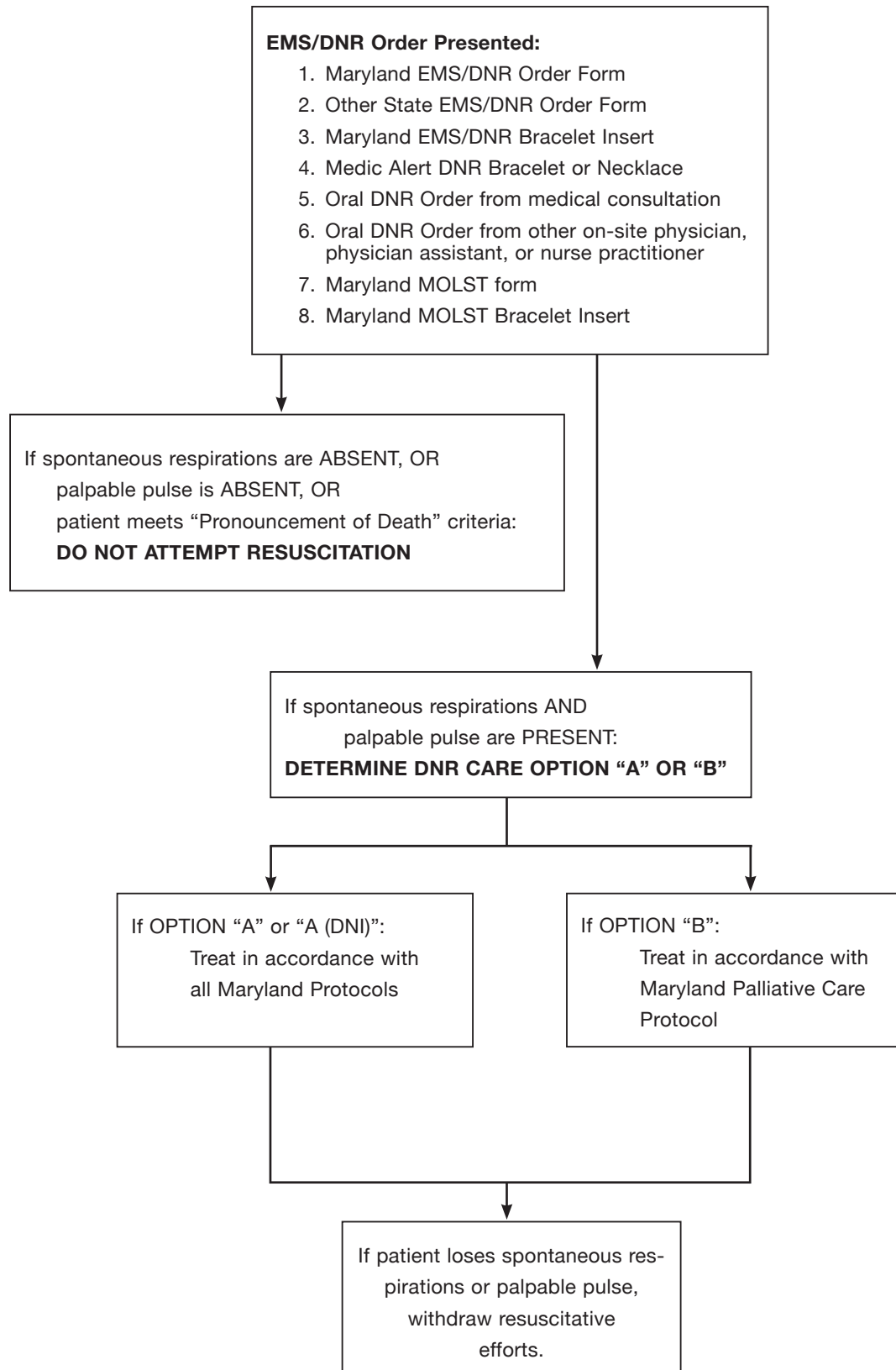
## M. EMS DNR/MOLST (Continued)

- (b) External bleeding
  - (i) Standard treatment (direct pressure with dressing, tourniquet)
  - (ii) No IVs
- (c) Immobilize fractures using skills and devices that minimize pain.
- (d) Uncontrolled pain or other symptoms (e.g., severe nausea)
  - (i) Allow patient, family, or health care providers (other than the prehospital provider) to administer patient's prescribed medications. Such health care providers administering medication will not have to accompany the patient to the hospital. Any medications administered by the patient, family or healthcare providers must be documented in the patient care report (PCR).
  - (ii) Patient controlled analgesia (PCA) systems for pain medication delivery and other patient-controlled medication (PCM) systems shall be left in place in DNR patients and monitored to the extent possible according to the provider's level of certification or licensure.
  - (iii) For the patient with significant pain and/or pain with a prolonged transport, the pain management protocol may be initiated.
- (e) Existing IV lines may be in place and shall be monitored to the extent possible according to the provider's level of certification and licensure.
- (2) Inappropriate Care for a Palliative Care Patient
  - (a) Cardiac monitoring, including 12-lead EKG, pacing, cardioversion, and defibrillation
  - (b) Initiation of IV therapy (except for medications listed in the pain management protocol administration for pain control as in 1 (d) (iii))
  - (c) EMS-initiated medications (except oxygen, and medications listed in the pain management protocol as in 1 (d) (iii))
  - (d) CPR
  - (e) Intubation (alternative airway device, endotracheal, nasotracheal, or gastric tube)
  - (f) Active ventilatory assistance, unless on an outpatient ventilator
- g) TRANSPORT
  - (1) Upon request of the patient, family, or caregivers and in lieu of transport to a hospital-based emergency department, EMS providers may transport Option B EMS/DNR patients who require transportation for pain control or symptom management or respite care to a specified inpatient hospice facility.
  - (2) A current list of those facilities is available from the MIEMSS Program Development Office 410-706-4367 (4DNR). The receiving status of a particular facility can be ascertained from EMRC (24 hours a day) by EMS radio, EMSTEL, or red phone, or by calling 800-492-3805.

## M. EMS DNR/MOLST (Continued)

- (5) If a copy of the EMS/DNR Order or MOLST form is available to EMS providers, it should be attached to the official copy of the patient care report that is retained by the EMS service.
  - (6) A vinyl bracelet with insert or metal emblem (bracelet or necklace) shall be left where found on the patient. Bracelets or metal emblems shall not be removed without the permission of the patient or the patient's authorized decision maker and, when possible, shall be returned with the patient to the sending facility.
- j) PATIENT DISPOSITION IF NOT TRANSPORTED
- If the EMS/DNR Protocol is implemented and the patient is not transported because the patient arrested at the response site, EMS personnel shall:
- (1) Follow local operational procedures for handling deceased patients.
  - (2) Do **not** remove an EMS/DNR vinyl bracelet or metal emblem (bracelet or necklace) from the deceased patient.
  - (3) Law enforcement personnel or a representative of the medical examiner's office needs to be notified only in the case of sudden or unanticipated death that occurs:
    - (a) By violence
    - (b) By suicide
    - (c) As a result of an accident
    - (d) Suddenly, if the deceased was in apparent good health, or
    - (e) In any suspicious or unusual manner.

## N. EMS DNR Flowchart



## MM. PAIN MANAGEMENT (Continued)

- b) Allow patient to remain in position of comfort unless contraindicated.
- c) Monitor airway and vitals signs every 5 minutes for unstable patients.
- d) Mild pain



- (1) Indications for pain management
  - (a) Isolated musculoskeletal injuries such as sprains and strains
  - (b) Pain related to childhood illnesses such as headache, ear infection, and pharyngitis
- (2) Contraindications for pain management with acetaminophen
  - (a) Head injury
  - (b) Hypotension
  - (c) Administration of acetaminophen or medications containing acetaminophen within the previous four hours
  - (d) Inability to swallow or take medications by mouth
  - (e) Respiratory distress
  - (f) Persistent vomiting
  - (g) Known or suspected liver disease
  - (h) Allergy to acetaminophen
- (3) Administer acetaminophen to patients ages 2 years and above judged to be in mild to moderate discomfort. (2–5 on FACES scale) by child or parent.
  - (a) Standard unit dosing of liquid preparation:
    - (i) Less than 2 years of age: Not indicated
    - (ii) 2–4 years: Unit dose 160 mg/5 mL
    - (iii) 5–12 years: TWO unit doses of 160 mg/5 mL each for a total of 320 mg/10 mL
    - (iv) 13 years and older: FOUR unit doses of 160 mg/5 mL each for a total of 640 mg/20 mL OR in a form of 325 mg pill or tablet X 2 for a total of 650 mg with sips of water as tolerated by the patient.




ADMINISTRATION OF ACETAMINOPHEN FOR MILD TO MODERATE PAIN DOES NOT ELIMINATE THE NEED FOR TRANSPORT OF THE PATIENT TO THE HOSPITAL TO RECEIVE A COMPREHENSIVE EVALUATION OF THE CAUSE OF THEIR PAIN AND APPROPRIATE DEFINITIVE TREATMENT.




- 
- e) Moderate to severe pain
    - (1) Indications for pain management
      - (a) The patient reports moderate to severe pain.
      - (b) In the provider's judgment, the patient will benefit from treatment with an analgesic, including patients who are MOLST and/or EMS/DNR patients or being pre-medicated for a procedure .

## MM. PAIN MANAGEMENT (Continued)

- (2) Contraindications for pain management
  - (a) Hypersensitivity or known allergy to the medication (morphine or fentanyl)
  - (b) Uncorrected respiratory distress or hypoxemia refractory to supplemental oxygen
  - (c) Uncorrected hypotension, defined as a persistent systolic pressure less than 90 mmHg
- (3) Administer agent (**NEW '19**)
  - (a) Fentanyl IN preferred IV/IO/IM
    - (i) Administer 1 mcg/kg to a maximum initial dose of 200 mcg (For IN route, dosing may be limited due to volume limitations - administration of max 1mL per nare).
    - (ii) Reassess in 5–10 minutes. If pain remains moderate to severe, then administer a second dose of fentanyl 1 mcg/kg to a maximum dose of 200 mcg.
    - (iii)  Obtain on-line medical direction for additional doses, if required.

**OR**

- (b) Morphine IV/IM
  - (i) Administer 0.1 mg/kg maximum single dose of 20 mg.
  - (ii) Reassess in 5–10 minutes. If pain remains moderate to severe, then administer a second dose of morphine 0.05 mg/kg to a maximum additional dose of 10 mg.
  - (iii)  Obtain on-line medical direction for additional doses, if required.

**OR**


- (c) Ketamine IV/IO/IN/IM



INDICATED FOR MUSCULOSKELETAL EXTREMITY/BACK PAIN. NOT FOR CHEST PAIN, ABDOMINAL/FLANK PAIN, OR HEADACHE.

- (i) Administer 0.2 mg/kg IV/IO over 1–2 minutes. Maximum single dose 20 mg.
  - a. Reassess in 5–10 minutes. If pain remains moderate to severe, then administer a second dose of ketamine 0.2 mg/kg IV/IO over 1–2 minutes. Maximum single dose 20 mg.
  - b. If IV unavailable, administer 0.5 mg/kg IN/IM (If delivery device is available; divide administration of the dose equally between the nares to a maximum of 1 mL per nare).
  - c. Reassess in 15 minutes. If pain remains moderate to severe, then administer a second dose of ketamine 0.5 mg/kg IN/IM.




- 
- (d) Fentanyl IN. If IN route not accessible, IV/IO/IM
    - (i) Administer 1 mcg/kg to a maximum initial dose of 200 mcg (For IN route, dosing may be limited due to volume limitations - administration of max 1mL per nare).
    - (ii) Reassess in 5–10 minutes. If pain remains moderate to severe, then administer a second dose of fentanyl 1 mcg/kg to a maximum dose of 200 mcg.
    - (iii)  Obtain on-line medical direction for additional doses, if required.

**OR**



## MM. PAIN MANAGEMENT (Continued)

- (e) Morphine IV/IM
  - (i) Administer 0.1 mg/kg maximum single dose of 20 mg.
  - (ii) Reassess in 5–10 minutes. If pain remains moderate to severe, then administer a second dose of morphine 0.05 mg/kg to a maximum additional dose of 10 mg.
  - (iii)  Obtain on-line medical direction for additional doses, if required.
- OR**
- (f) Ketamine IV/IO/IN/IM



INDICATED FOR MUSCULOSKELETAL EXTREMITY/BACK PAIN. NOT FOR CHEST PAIN, ABDOMINAL/FLANK PAIN, OR HEADACHE.

- (i) Administer 0.2 mg/kg IV/IO over 1–2 minutes. Maximum single dose 20 mg.
  - a. Reassess in 5–10 minutes. If pain remains moderate to severe, then administer a second dose of ketamine 0.2 mg/kg IV/IO over 1–2 minutes. Maximum single dose 20 mg.
  - b. If IV unavailable, administer 0.5 mg/kg IN/IM (If delivery device is available; divide administration of the dose equally between the nares to a maximum of 1 mL per nare).
  - c. Reassess in 15 minutes. If pain remains moderate to severe, then administer a second dose of ketamine 0.5 mg/kg IN/IM



CHEST PAIN THAT IS THOUGHT TO BE DUE TO ACUTE CORONARY SYNDROME SHOULD INITIALLY BE MANAGED WITH NITROGLYCERIN. IF PAIN REMAINS REFRACTORY TO NITROGLYCERIN, CONSIDER THE USE OF OPIOID ANALGESIA. AVOID OPIOIDS FOR PATIENTS WITH SUSPECTED EXACERBATION OF CONGESTIVE HEART FAILURE.

USE OPIOID ANALGESIA WITH CAUTION IN THE MANAGEMENT OF THE MULTIPLE TRAUMA PATIENT. OBSERVE FOR EVIDENCE OF HYPOTENSION AND CORRECT AS NEEDED WITH FLUID BOLUSES. REASSESS VITAL SIGNS AFTER ADMINISTRATION OF THE MEDICATION.

USE ANALGESIA WITH CAUTION IN THE MANAGEMENT OF PATIENTS WITH ALTERED MENTAL STATUS. OBSERVE FOR RESPIRATORY DEPRESSION AND TAKE STEPS AS NEEDED TO ENSURE A STABLE AIRWAY.

- (4) Repeat. Measure level of pain and monitor the patient's level of pain during subsequent treatment and transport.




PATIENTS RECEIVING A NEW OPIOID (EITHER WITHIN 1 HOUR OR GREATER THAN 1 DOSE WITHIN ANY TIME FRAME) FROM ALS OR BY THE SENDING FACILITY MUST BE TRANSPORTED BY ALS.

- 4. Continue General Patient Care.



## NN. ALLERGIC REACTION

1. Initiate General Patient Care.
2. Presentation
  - a) An allergic reaction is an exaggerated response of the body's immune system to any substance.
  - b) Allergic reactions may range from mild to severe life-threatening anaphylactic reactions.
    - (1) **MILD:** Local swelling and itching at the site
    - (2) **MODERATE:** Hives and/or mild wheezing
    - (3) **SEVERE:** Diffuse wheezing, pharyngeal swelling, dyspnea, hypoperfusion, abnormal skin color, stridor, and/or loss of peripheral pulses



3. Treatment
  - a) Assist patient experiencing moderate symptoms or mild symptoms with a history of life-threatening allergic reaction with the patient's prescribed or EMS service's epinephrine auto-injector or manual (1:1,000) 0.5 mg in 0.5 mL IM or patient's prescribed fast-acting bronchodilator.
  - b) Albuterol inhaler (2 puffs) may be repeated once within 30 minutes.
  - c)  Consider additional doses of epinephrine (1:1,000) 0.5 mg in 0.5 mL IM or prescribed fast-acting bronchodilator.



- 
- d) Moderate Distress  
Administer epinephrine 1:1,000.  
0.5 mg in 0.5 mL  
May repeat every 5 minutes for total of 3 doses for severe reactions.  
 Additional doses of epinephrine require medical consultation.
    - (1) Establish IV access with LR; administer 20 mL/kg bolus.  
Titrate to a systolic pressure of 100 mmHg.
    - (2) Administer diphenhydramine.  
50 mg SLOW IVP or IM  
 Additional doses of diphenhydramine require medical consultation.
    - (3) Administer a combination of albuterol/Atrovent via nebulizer.  
Albuterol 2.5 mg and Atrovent 500 **mcg**
    - (4) If further treatments are indicated, an additional albuterol-only nebulizer may be given.

## SS. SEPSIS: ADULT

1. Initiate General Patient Care
2. Presentation (**NEW '19**)
  - a) Infection can cause a systemic response resulting in fever, altered mental status, shock including or excluding hypotension, and death. Early recognition and treatment with aggressive fluids, when not contraindicated, and early hospital notification may improve survival rates and patient outcomes.
  - b) The following patient populations are considered especially high risk for sepsis and should have their temperature measured:
    - (1) Altered mental status
    - (2) Patients in long term care facilities (nursing home)
    - (3) Indwelling catheters
    - (4) Oncology patients
    - (5) Solid organ transplant
    - (6) Bed ridden
    - (7) Post-operative
    - (8) Currently on antibiotics
    - (9) Asplenic
    - (10) Left ventricular assist device
  - c) For an adult patient, 18 years of age and older, to qualify for this protocol, they must have a suspected source of infection AND also present with at least two of the following criteria:
    - (1) Temp greater than 100.4°F (38°C) or less than 95.9°F (35.5°C)
    - (2) HR greater than 100 bpm
    - (3) RR greater than 25 (or EtCO<sub>2</sub> less than or equal to 32 mmHg)
    - (4) Hypotension (systolic BP less than 90 mmHg)
    - (5) Point of care lactate reading greater than or equal to 4 mmol/L (if available)
  - d) Patients with hypotension or altered mental status should be considered to have septic shock and treated and transported rapidly. Patients may be treated under this protocol if they do not meet the above criteria with medical consultation.



IF PATIENT MEETS ABOVE SEPSIS CRITERIA, THIS PATIENT IS A PRIORITY 1 OR 2 PATIENT AND REQUIRES NOTIFICATION OF THE NEAREST APPROPRIATE FACILITY AS SOON AS POSSIBLE TO ALLOW FOR HOSPITAL PREPARATION. DURING THE CONSULTATION WITH THE RECEIVING FACILITY, THE PROVIDER SHALL USE THE VERBIAGE, "SEPSIS ALERT" AS THE UNIVERSAL METHOD OF NOTIFYING THE FACILITY THAT THE PATIENT MEETS THE SEPSIS INCLUSION CRITERIA



3. Treatment
  - a) Place patient in position of comfort, or supine if hypotension is present.
  - b) Carefully monitor airway and respiratory status, manage as required using the appropriate respiratory distress protocol (especially for patients with suspected pneumonia).


## SS. SEPSIS: ADULT (Continued)



- c) Initiate large bore IV. If large bore IV not available, consider a second peripheral IV with the intention of not causing delay in transport and reserve the use of IO for priority 1 patient. If transport time is greater than 20 minutes and IV access is unsuccessful, consider placement of an IO (especially for septic shock). Consider performing a blood draw if time permits. Accurately document start time of IV fluid initiation. **(NEW '19)**
- d) If lungs are clear, and patient does not have a history of CHF or end stage renal failure, provide 2 L of LR wide open. Reassess every 500 mL for shortness of breath, blood pressure, and SpO<sub>2</sub> saturation changes.  
**OR**
- e) If patient is fluid sensitive (i.e., has a history CHF, pulmonary edema, or end stage renal disease) infuse 250 mL and carefully monitor and reassess. Repeat 250 mL once if no worsening of respiratory status is noted to a max of 500 mL (consultation may be obtained to provide more fluid).
- f) If available, perform point of care lactate testing (Jurisdictional Pilot Program only).




FLUID LIMITS OR DOSES MAY BE MODIFIED WITH CONSULTATION.

- g) Place patient on cardiac monitor and perform 12-lead (do not delay IV therapy or fluid bolus).
- h)  If hypotension persists after 2 L of LR are provided, consider an additional 2 L of LR (up to a maximum of 30 mL/kg total, including the first 2 L bolus) and/or dopamine 2–20 **mcg**/kg/min (paramedic only). Titrate to a Mean Arterial Pressure of 65 mmHg or systolic BP of 90 mmHg.

4. Continue General Patient Care.

## TT. SEPSIS: PEDIATRIC



1. Initiate General Patient Care
2. Presentation
  - a) Infection can cause a systemic response resulting in fever, altered mental status, shock including or excluding hypotension, and death. Early recognition and treatment with aggressive fluids, when not contraindicated, and early hospital notification may improve survival rates and patient outcomes.
  - b) The pediatric septic patient may be difficult to identify due to a poor history or providers may have difficulty identifying an obvious source of infection, as many pediatric sepsis patients are very young children or infants.
  - c) The following pediatric patients are at greater risk for sepsis and should have their temperature measured:
    - (1) Altered mental status
    - (2) Asplenia (spleen removed from treatment of trauma or illness)
    - (3) Bone marrow or solid organ transplant
    - (4) Cancer patients
    - (5) Cerebral Palsy
    - (6) Sickle Cell Disease
    - (7) Central or indwelling catheters
    - (8) Immunodeficiency or immunosuppression
    - (9) Bed ridden
    - (10) Severe mental delay
  - d) For a pediatric patient, who has not reached their 18<sup>th</sup> birthday, to qualify for this protocol, they must have a known or suspected infection AND also present with at least three of the Pediatric Sepsis Rule-In Criteria by Age.
  - e)  A patient not meeting three or more Pediatric Sepsis Rule-In Criteria by Age may be treated under this protocol with Pediatric Base Station approval if sepsis is suspected by the prehospital provider.



### ALERT ALTERED MENTAL STATUS REQUIRES GLUCOSE CHECK.

- f) Patients who meet the sepsis rule-in criteria and have at least one of the High risk Sepsis Rule-In Criteria by Age (shaded) should receive aggressive standing order fluid therapy. Other patients meeting the pediatric sepsis rule-in criteria but not having one of the high risk signs may be treated only after contacting a Pediatric Base Station for medical consultation.

## TT. SEPSIS: PEDIATRIC (Continued)

Pediatric Sepsis Rule-In Criteria by Age						
Suspected or known infection plus three criteria						
	Less than 28 days	1-12 months	1 year but less than 2 years	2-4 years	5-12 years	13-17 years
Heart Rate (sustained)	greater than 205 bpm	greater than 205 bpm	greater than 190 bpm	greater than 140 bpm	greater than 140 bpm	greater than 100 bpm
Respiratory Rate	greater than 60 rpm	greater than 60 rpm	greater than 40 rpm	greater than 40 rpm	greater than 34 rpm	greater than 25 rpm
Temp	greater than 38.0 C° or greater than 100.4 F°					
Cap Refill/Skin	Delayed (greater than 3 seconds), mottled					
Systolic BP (mmHg)	less than 60	less than 70	(less than 70+ (age x2))	(less than 70+ (age x2))	(less than 70+ (age x2))	less than 90
Mental Status	Unresponsive, confused, inappropriate, lethargic					
High Risk Condition	Cancer, Asplenia, Sickle Cell Disease, bone marrow or solid organ transplant, central or indwelling line/catheter, immunodeficiency or immunosuppression					
Meeting any of these criteria indicates standing order initiation of a fluid bolus.						



IF A PEDIATRIC PATIENT MEETS THE ABOVE **PEDIATRIC SEPSIS RULE-IN CRITERIA BY AGE**, THIS PATIENT IS A PRIORITY 1 OR 2 PATIENT AND REQUIRES NOTIFICATION AS “SEPSIS ALERT” TO THE NEAREST APPROPRIATE FACILITY PRIOR TO ARRIVAL.



IF A PEDIATRIC PATIENT MEETS ANY OF THE **SEPSIS RULE-IN PLUS ONE OR MORE OF THE SHADED AREAS IN THE CHART**, CONSULTATION WITH A DESIGNATED PEDIATRIC BASE STATION IS REQUIRED AND SHOULD BE COMBINED WITH LOCAL BASE STATION CONSULTATION.

### 3. Treatment




- a) Carefully monitor airway and respiratory status. Manage as required using the appropriate respiratory distress protocol (especially for patients with suspected pneumonia).



- b) Place patient on cardiac monitor.
- c) If patient meets the pediatric sepsis rule-in criteria and meets one of the high risk criteria (shaded), initiate IV/IO access and provide a 20 mL/kg bolus of LR IV/IO over 5–20 min.  
Maximum single dose of 2L.  
Accurately document start time of IV fluid initiation. **(NEW '19)**
- d) Monitor closely for signs of respiratory distress, rales or delayed capillary refill (greater than 2 seconds). If respiratory status deteriorates rapidly, stop bolus and obtain medical consultation.


- e) For volume-sensitive children administer initial fluid bolus of 10 mL/kg LR IV/IO (max of 250 mL). (Volume-sensitive children are children who need smaller fluid bolus volumes due to special needs including neonates (birth to 28 days), congenital heart diseases, chronic lung disease, or chronic renal failure.)

**TT. SEPSIS: PEDIATRIC (Continued)**

- f)  **If patient's vital signs do not improve after 20 mL/kg fluid**, consider additional 20 mL/kg LR boluses (up to a max of 60 mL/kg total, including first bolus, in one hour).



FLUID LIMITS OR DOSES MAY BE MODIFIED WITH CONSULTATION.

- g)  Dopamine 2–20 **mcg**/kg/min IV/IO. Titrate to age-specific vital signs.
- h) Consider initiation of a second IV. Initiation of second IV shall not delay transport.
- i) Patients with fever or known or suspected infection and hypotension or altered mental status should be considered to have septic shock and treated and transported rapidly.

4. Continue General Patient Care.

## UU. STROKE: NEUROLOGICAL EMERGENCIES (NEW '19)

1. Initiate General Patient Care.

2. Presentation

Patient may present with numbness or weakness (often on one side only), difficulty speaking, sudden onset of dizziness or loss of balance, blurred vision (including intermittent loss of vision in one or both eyes, which may have resolved upon arrival of EMS), or a severe, unexplained headache. May be accompanied by seizures or altered mental status.

### The Cincinnati Prehospital Stroke Scale

(Kothari R, et al. Acad Emerg Med 1997; 4:9866-990.)

**Facial Droop** (have patient show teeth or smile):

- Normal – both sides of face move equally
- Abnormal – one side of face does not move as well as the other side

**Arm Drift** (patient closes eyes and holds both arms straight out for 10 seconds):

- Normal – both arms move the same or both arms do not move at all (other findings, such as strength of grip, may be helpful)
- Abnormal – one arm does not move or one arm drifts down compared with the other

**Abnormal Speech** (have the patient say “you can’t teach an old dog new tricks”):

- Normal – patient uses correct words with no slurring
- Abnormal – patient slurs words, uses the wrong words, or is unable to speak

### Posterior Cerebellar Assessment

Balance and eyes: patient complains of sudden onset of loss of balance or dizziness, or has sudden vision loss (including intermittent loss of or blurred vision) indicates a stroke affecting the posterior cerebellar circulation.

If Posterior Cerebellar Assessment OR Cincinnati Prehospital Stroke Scale is positive, perform the Los Angeles Motor Scale (LAMS). Relay LAMS score to the receiving hospital during Stroke Alert notification.

### The Los Angeles Motor Scale (LAMS)

Facial droop	
Absent	0
Present	1
Arm drift	
Absent	0
Drifts down	1
Falls rapidly	2
Grip strength	
Normal	0
Weak grip	1
No grip	2



## UU. STROKE: NEUROLOGICAL EMERGENCIES (Continued)



3. Treatment
  - a) Position patient with head elevated at 30 degrees.
  - b) If the patient has a positive Posterior Cerebellar Assessment OR Cincinnati Pre-hospital Stroke Scale AND can be delivered to the hospital **within 20 hours** of when patient was last known well, transport the patient to the closest Designated Acute Stroke Ready, Primary, or Comprehensive Stroke Center. If there is not one within 30 minutes, then go to the nearest hospital.




IF PATIENT MEETS ABOVE STROKE CRITERIA, THIS PATIENT IS A PRIORITY 1 PATIENT AND REQUIRES NOTIFICATION OF THE NEAREST DESIGNATED ACUTE STROKE READY, PRIMARY, OR COMPREHENSIVE STROKE CENTER AS SOON AS POSSIBLE TO ALLOW HOSPITAL PREPARATION. DURING THE CONSULTATION WITH THE RECEIVING FACILITY, THE PROVIDER SHALL USE THE VERBIAGE, "STROKE ALERT WITH A LAST KNOWN WELL TIME OF XX:XX" AS THE UNIVERSAL METHOD OF NOTIFYING THE FACILITY THAT THE PATIENT MEETS THE STROKE INCLUSION CRITERIA.

PROVIDERS SHOULD OBTAIN AND DOCUMENT A CONTACT TELEPHONE NUMBER FOR ONE OR MORE INDIVIDUALS WHO HAVE DETAILS ABOUT THE PATIENT'S MEDICAL HISTORY SO THAT THE PHYSICIAN MAY OBTAIN AND VALIDATE ADDITIONAL PATIENT INFORMATION

WHILE STROKES DURING PREGNANCY OR SHORTLY AFTER GIVING BIRTH ARE RARE, THERE HAS BEEN A SIGNIFICANT RISE REPORTED IN THE LITERATURE. MOTHERS-TO-BE AND POSTPARTUM MOTHERS HAVE AN INCREASED RISK.



- 
- c) Use glucometer and treat if glucose less than 70 mg/dl.
  - d) Establish IV access with LR.
  - e)  If the patient is hypotensive, obtain medical consultation.
  - f) Consider obtaining blood sample using closed system.
  - g) Do not treat hypertension in the field.



THE CAUSES OF STROKES IN CHILDREN ARE DIFFERENT FROM ADULTS. WHILE STROKES ARE UNCOMMON IN CHILDREN, THEY DO OCCUR AND ARE MOST OFTEN CAUSED BY ONE OF THE FOLLOWING CONDITIONS: CONGENITAL HEART DEFECTS, INFECTIONS (INCLUDING CHICKEN POX, MENINGITIS, OR ENCEPHALITIS), BRAIN INJURY, OR BLOOD DISORDERS (SUCH AS SICKLE CELL DISEASE). STROKES IN CHILDREN ARE MOST OFTEN SEEN IN INFANTS BUT DO OCCUR IN CHILDREN OF ANY AGE.


CHILDREN WITH STROKE SYMPTOMS WHO HAVE NOT REACHED THEIR 18<sup>TH</sup> BIRTHDAY SHALL BE TREATED UNDER THE PEDIATRIC PROTOCOL. CONSULT WITH A LOCAL BASE STATION AND A PEDIATRIC BASE STATION TO ARRANGE TRANSPORT TO A MARYLAND PEDIATRIC TRAUMA CENTER

## UU. STROKE: NEUROLOGICAL EMERGENCIES (Continued)



h) Administer oxygen at 2–6 liters via nasal cannula (unless hypoxic or in respiratory distress).

i) Position patient with head elevated at 30 degrees.

j)  If a child presents with a SUSPECTED stroke (e.g., sickle cell patient), consult with the nearest Pediatric Base Station and local Base Station. Providers should obtain and document a contact telephone number for one or more individuals who have details about the patient's medical history so that the physician may obtain and validate additional patient information.



k) Use glucometer and treat accordingly.  
(See Section IV, Glucometer Protocol.)

l) Establish IV access with LR.

m)  If the patient is hypotensive, obtain medical consultation.

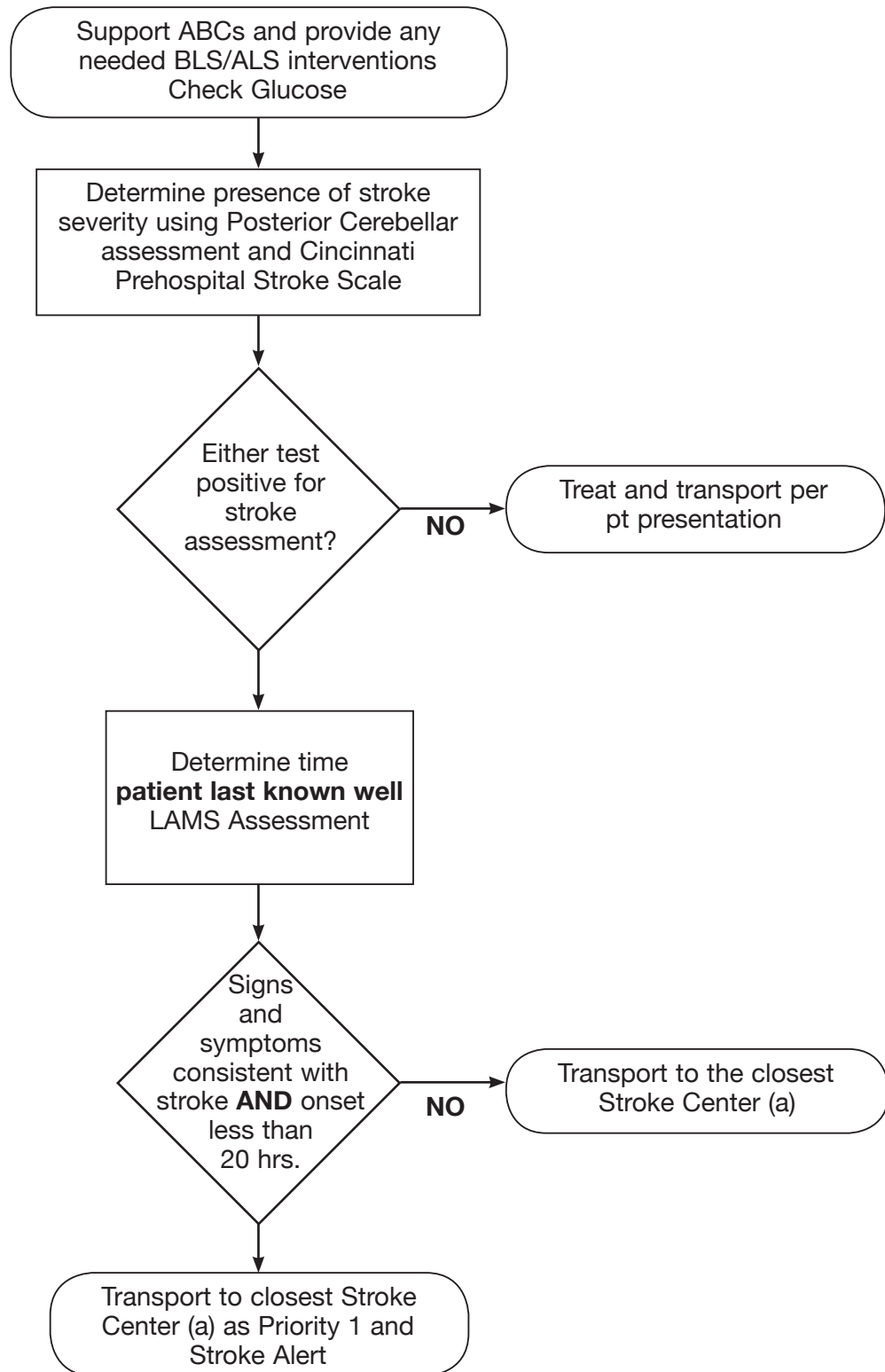
n) Consider obtaining blood sample using closed system.

o) Do not treat hypertension in the field.

4. Continue General Patient Care.

## UU. STROKE: NEUROLOGICAL EMERGENCIES (Continued)

### EMS STROKE ALGORITHM (NEW '19)



(a) Designated Acute Stroke Ready, Primary, or Comprehensive Stroke Center

## UU2. SYNCOPE

1. Initiate General Patient Care.

2. Presentation

A patient of greater than 24 months of age who has had a loss of consciousness associated with an inability to maintain postural tone. The episode may spontaneously and completely resolve without medical intervention. **For children less than 24 months of age, refer to ALTE Protocol.**

3. Treatment



- a) Place patient in position of comfort.
- b) Perform Cincinnati Stroke Scale. If any segment is positive, go to Stroke: Neurological Emergencies Protocol.



- 
- c) Place patient on cardiac monitor.
  - d) Obtain 12-lead EKG.



HISTORY, PHYSICAL EXAMINATION, AND 12-LEAD EKG SHOULD ALL BE USED TO DETERMINE THE PATIENT'S RISK OF AN ADVERSE OUTCOME. PATIENTS WITH HISTORY OR EVIDENCE OF HEART FAILURE, STRUCTURAL CARDIAC ANOMALY, AND/OR ABNORMAL FINDING ON EKG ARE AT HIGHER RISK FOR ADVERSE OUTCOMES.

- e) Establish IV access.
- f) Use glucometer and treat accordingly.
- g) Administer 20mL/kg bolus of LR to treat systolic blood pressure persistently less than 90 mmHg.



- 
- h) Place patient in position of comfort.



- 
- i) Place patient on cardiac monitor.
  - j) Obtain 12-lead EKG for patients 13 years of age and older, or have not returned to baseline, or high risk factors as listed in the ALERT.



SYNCOPE IN CHILDREN CAN SOMETIMES BE ASSOCIATED WITH SERIOUS MEDICAL CONDITIONS. PATIENTS WITH HISTORY OR EVIDENCE OF HEART FAILURE, STRUCTURAL CARDIAC ANOMALY, AND/OR ABNORMAL FINDING ON EKG ARE AT HIGHER RISK FOR ADVERSE OUTCOMES.

- k) Establish IV access, if appropriate.
- l) Use glucometer and treat appropriately.
- m) Administer 20mL/kg bolus of LR to treat age-defined hypotension..

4. Continue General Patient Care

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## BBB. TRAUMA PROTOCOL: TRAUMA ARREST

1. Initiate General Patient Care.

2. Presentation

Early cardiac arrest secondary to trauma is usually due to severe hypoxia, neurologic injury, or massive hemorrhage. The patient is unresponsive, pulseless, and apneic.



3. Treatment

- a) Rapid assessment and extrication
- b) Determine if patient meets the criteria for termination of resuscitation for a patient in traumatic arrest. If patient meets criteria, discontinue resuscitation. If criteria are not met, continue resuscitation.
- c) Perform spinal immobilization for blunt trauma patients only. Patients with isolated penetrating trauma should not have spinal immobilization performed. If mechanism includes both blunt and penetrating trauma, perform spinal immobilization.
- d) CPR with high-quality chest compressions and minimal interruptions.
- e) Consider AED if arrest is believed to be medical in nature and the patient meets the criteria.
- f) Treat reversible causes of traumatic arrest.
  - (1) Open airway and ensure adequate ventilation, insert necessary adjunct; consider the need for advanced airway earlier in the resuscitation of the trauma arrest patient.
  - (2) Seal open chest wounds with occlusive dressings.
  - (3) Control life-threatening external hemorrhage.



PENETRATING TRAUMA PATIENTS HAVE AN IMPROVED CHANCE OF SURVIVAL WITH THE IMMEDIATE APPLICATION OF HEMORRHAGE CONTROL AND ALS BILATERAL NEEDLE DECOMPRESSIONS WHILE PREPARING AND LOADING THE PATIENT FOR IMMEDIATE TRANSPORT. IF THE PENETRATING TRAUMA PATIENT IS FOUND IN A RHYTHM OTHER THAN ASYSTOLE, AND THE TRAUMA CENTER IS WITHIN 15 MINUTES, COMPLETE THE TREATMENTS FOR REVERSIBLE CONDITIONS AND TRANSPORT THE PATIENT. IF TRANSPORT TIME EXCEEDS 15 MINUTES, GO TO LOCAL EMERGENCY DEPARTMENT OR FREESTANDING EMERGENCY MEDICAL FACILITY. BLUNT TRAUMA ARREST SHOULD HAVE ALL THE REVERSIBLE CAUSES OF ARREST PERFORMED ON SCENE BEFORE TERMINATION OF RESUSCITATION OR TRANSPORT IF ROSC IS ACHIEVED.



- 
- g) Establish IV/IO access with LR. Begin rapid administration of 20 mL/kg bolus of LR IV/IO.
  - h) Treat reversible causes of traumatic arrest.
    - (1) Open airway and ensure adequate ventilation, insert necessary adjunct; consider the need for advanced airway earlier in the resuscitation of the trauma arrest patient.
    - (2) Seal open chest wounds with occlusive dressings.
    - (3) Control life-threatening external hemorrhage.
    - (4) Bilateral Needle Decompression Thoracostomy. Catheters should not be removed once placed.

## BBB. TRAUMA PROTOCOL: TRAUMA ARREST (Continued)

- (5) Establish IV/IO access with LR. Begin rapid administration of 20 mL/kg bolus of LR IV/IO.
- (6) Identify rhythm and refer to appropriate algorithm.



EPINEPHRINE IS CONTRAINDICATED IN THE TREATMENT OF TRAUMATIC CARDIAC ARREST FOR ADULT PATIENTS. **(NEW '19)**



- 
- i) Rapid assessment and extrication
  - j) Perform spinal immobilization for blunt trauma patients only. Patients with isolated penetrating trauma should not have spinal immobilization performed. If mechanism includes both blunt and penetrating trauma, perform spinal immobilization.
  - k) CPR
  - l) Consider AED if arrest is believed to be medical in nature. (See Section IV, AED.)



A PATIENT IN CARDIOPULMONARY ARREST SECONDARY TO TRAUMA SHOULD BE TAKEN TO THE NEAREST APPROPRIATE PEDIATRIC TRAUMA CENTER. CONSIDERATION SHOULD BE GIVEN TO TRANSPORTING THE PATIENT TO THE NEAREST EMERGENCY DEPARTMENT OR ADULT TRAUMA CENTER IF THE PEDIATRIC TRAUMA CENTER IS MORE THAN 10 MINUTES ADDITIONAL TRANSPORT TIME!



- 
- m) Establish IV/IO access with LR.
  - n) If age-related vital signs and patient's condition indicate hypoperfusion, administer initial fluid bolus of 20 mL/kg LR IV/IO. If patient's condition does not improve, administer the second bolus of fluid at 20 mL/kg LR IV/IO.
  - o) If traumatic arrest is suspected due to multi-system blunt trauma, or due to penetrating neck, chest, or abdominal trauma, bilateral needle decompressions should be performed. Once manufacture assembled pneumothorax kit catheters are placed, **do not remove.**
4. Continue General Patient Care.

# CCC. TRAUMA DECISION TREE

## Measure vital signs and level of consciousness and assess for major injury

### Category Alpha

<input type="checkbox"/> GCS less than or equal to 13
<input type="checkbox"/> Systolic BP less than 90 mmHg (Adult) less than 60 mmHg (Peds)
<input type="checkbox"/> Respiratory rate less than 10 or greater than 29 (less than 20 in infant age less than one year) or need for ventilatory support

**YES**

Transport to trauma center or specialty center per protocol; alert trauma team; consider helicopter transport if quicker and of clinical benefit (refer to GPC Section I).

**NO**

Assess for other injuries.

### Category Bravo

<input type="checkbox"/> 2 or more proximal long-bone fractures	<input type="checkbox"/> Crushed, degloved, mangled, or pulseless extremity	<input type="checkbox"/> Pelvic fracture
<input type="checkbox"/> Amputation proximal to wrist or ankle	<input type="checkbox"/> Open or depressed skull fracture	<input type="checkbox"/> Paralysis (spine)
<input type="checkbox"/> Chest wall instability or deformity (e.g., flail chest)	<input type="checkbox"/> Penetrating injuries to head, neck, torso, or extremities proximal to elbow and knee	

**YES**

Transport to trauma center or specialty center per protocol; alert trauma team; consider helicopter transport if quicker and of clinical benefit (refer to GPC Section I).

**NO**

Evaluate for evidence of mechanism of injury and high-energy impact.

### Category Charlie

<input type="checkbox"/> High Risk Auto Crash <ul style="list-style-type: none"> <li>Intrusion (including roof) greater than 12 in. occupant site; greater than 18 in. any site</li> <li>Ejection (partial or complete) from vehicle</li> <li>Death in same passenger compartment</li> <li>Vehicle telemetry data consistent with high risk of injury</li> </ul>	<ul style="list-style-type: none"> <li>Rollover without restraint</li> <li>Auto v. pedestrian/bicyclist thrown, run over, or with significant (greater than 20 mph) impact</li> <li>Motorcycle crash greater than 20 mph</li> </ul>
<input type="checkbox"/> Falls <ul style="list-style-type: none"> <li>Adult: greater than 20 feet (one story is equal to 10 feet)</li> <li>Pediatric: greater than 10 feet or 3 times the child's height</li> </ul>	<input type="checkbox"/> Exposure to blast or explosion

**YES**

Transport to Trauma Center; alert trauma team. Patients within a **30-minute drive time** of the closest appropriate trauma/specialty center shall go by ground unless there are extenuating circumstances. Receiving Trauma Center medical consultation required when considering whether helicopter transport is of clinical benefit (refer to GPC Section I).

**NO**

Evaluate for other considerations.

### Category Delta

<input type="checkbox"/> Older adults <ul style="list-style-type: none"> <li>Risk of injury/death increases after age 55</li> <li>SBP less than 110 may indicate shock after age 65</li> <li>Low-impact mechanisms (e.g., ground-level falls) may result in severe injury</li> </ul>	<input type="checkbox"/> Burns <ul style="list-style-type: none"> <li>Without trauma mechanism, triage to Burn Center</li> <li>With trauma mechanism, triage to Trauma Center</li> </ul>
<input type="checkbox"/> Children (Should be triaged to Pediatric Trauma Center)	<input type="checkbox"/> Pregnancy greater than 20 weeks <input type="checkbox"/> EMS provider judgment <input type="checkbox"/> Anticoagulants and bleeding disorders (Patients with head injury are at high risk for rapid deterioration)

**YES**

Consider medical direction and transport to trauma center. Patients within a **30-minute drive time** of the closest appropriate trauma/specialty center shall go by ground unless there are extenuating circumstances. Receiving Trauma Center medical consultation required when considering whether helicopter transport is of clinical benefit (refer to GPC Section I).

**NO**

Transport according to protocol.



**B. PROCEDURES, MEDICAL DEVICES, AND MEDICATIONS FOR EMS AND COMMERCIAL SERVICES (Continued)**

<b>PROCEDURE</b>	<b>EMR</b>	<b>EMT</b>	<b>CRT-(I)</b>	<b>PM</b>
<b>VALSALVA MANEUVER</b>	-	-	SO	SO
Apnea Monitors	-	SO	SO	SO
Arterial Lines and Cardiac Sheaths	-	-	-	-
Chemotherapy Administration/Drip	-	-	-	-
Chest tubes with Chest Drainage System	-	-	-	-
Chest tubes with Heimlich Valve	-	-	SO	SO
Colostomy Bag	-	SO	SO	SO
External Orthopedic Fixators	-	SO	SO	SO
Foley Catheter	-	SO	SO	SO
Foley Catheter with Irrigation	-	SO	SO	SO
Gastrostomy and Jejunal Feeding Tubes (Non-infusing)	-	SO	SO	SO
HALO Cervical Immobilization	-	SO	SO	SO
IABP InterAortic Balloon Pump	-	-	-	-
Ileostomy Tube (Non-infusing)	-	SO	SO	SO
iStat	-	-	-	REA
<b>PICC</b> —peripherally inserted central catheter or <b>CVA</b> —central venous access line, capped only	-	SO	SO	SO
<b>PICC</b> —peripherally inserted central catheter or <b>CVA</b> —central venous access line, subclavian/femoral or internal jugular may be monitored if fluid/medication being administered meets protocol. The ALS provider may access the line in a life-threatening emergency.	-	-	SO	SO
Intraventricular/Intracranial Monitor	-	-	-	-
Left Ventricular Assist Device (LVAD) Scene (BLS & ALS)	-	SO	SO	SO
Left Ventricular Assist Device (LVAD) Interfacility	-	-	-	-
Nasogastric and Orogastic Tubes (Existing, Non-infusing, or Capped)	-	SO	SO	SO
Nephrostomy Tubes	-	SO	SO	SO
Peak Expiratory Flow Meter	-	-	SO	SO
Pelvic Binder Device ( <b>NEW '19</b> )	PP	PP	PP	PP
Portable Outpatient Fixed Medication Pump/PCA Pump	-	SO	SO	SO
Peritoneal Dialysis (Non-active, Capped)	-	SO	SO	SO
Physical Restraint	-	SO	SO	SO
Sengstaken-Blakemore Tube	-	-	-	-
Suprapubic Catheter	-	SO	SO	SO
Surgical Drains	-	SO	SO	SO
Swan-Ganz	-	-	-	-
Tracheostomy (Existing)	-	SO	SO	SO
Transtracheal O <sub>2</sub> (Outpatient/Existing)	-	SO	SO	SO
Transvenous Pacemaker (Temporary Transvenous)	-	-	-	-
Ventilators (Acute, Chronic, Scene)	-	-	-	OSP
Ventricular Peritoneal Shunt	-	SO	SO	SO
Wound Vacuum Device	-	SO	SO	SO

**SO** Standing Order  
**OSP** Optional Supplemental Program

**MC** Medical Consultation Required  
**PP** Pilot Program **REA** Research

**B. PROCEDURES, MEDICAL DEVICES, AND MEDICATIONS FOR EMS AND COMMERCIAL SERVICES (Continued)**

<b>MEDICATIONS</b>	<b>EMR</b>	<b>EMT</b>	<b>CRT-(I)</b>	<b>PM</b>
Acetaminophen	-	SO	SO	SO
Activated Charcoal (Without Sorbitol)	-	MC	MC	MC
Adenosine	-	-	SO	SO
Albuterol/Fast-acting Bronchodilator MDI (patient's prescribed)	-	SO/MC	SO/MC	SO/MC
Albuterol Sulfate Nebulizer	-	-	SO/MC	SO/MC
Amiodarone	-	-	SO/MC	SO/MC
Antimicrobial (Pre-established interfacility only)	-	-	-	OSP
Aspirin	-	SO	SO	SO
Atropine Sulfate	-	-	SO/MC	SO/MC
Atrovent	-	-	SO	SO
Calcium Chloride (10% Solution)	-	-	SO	SO
Dexamethasone	-	-	SO	SO
Dextrose	-	-	SO	SO
Diazepam	-	-	MC	SO/MC
Diltiazem	-	SO/MC	SO/MC	SO/MC
Diluent D5W, NS, LR	-	-	SO	SO
Diphenhydramine Hydrochloride	-	-	SO/MC	SO/MC
Dopamine Hydrochloride	-	-	MC	MC
Epinephrine Auto-Injector	OSP	SO/MC	SO	SO
Epinephrine Nebulizer	-	-	MC	MC
Epinephrine (1:1,000) Vial or Syringe	-	OSP	SO	SO
Epinephrine 1:10,000	-	-	SO	SO
Etomidate (Amidate)	-	-	-	PP
Fentanyl	-	-	OSP	OSP
Glucagon	-	-	SO/MC	SO/MC
Glycoprotein IIb/IIIa	-	-	-	OSP
Haldol	-	-	SO	SO
Hemophilia Blood Factor (VIII or IX)	-	-	SO	SO
Heparin (Interfacility transport only)	-	-	-	OSP
Hydroxocobalamin	-	-	OSP	OSP
Ketamine	-	-	SO/MC	SO/MC/PP
Lidocaine	-	-	SO	SO
Magnesium Sulfate	-	-	SO/MC	SO/MC
MARK I/DuoDote (Atropine & 2 PAM)	OSP	OSP	OSP	OSP
Midazolam (Versed)	-	-	SO/MC	SO/MC
Morphine Sulfate	-	-	SO/MC	SO/MC
Morphine Sulfate (Infusion)	-	-	-	MC
Naloxone (IN) Public Safety	SO	SO	SO	SO
Naloxone (IV, IM, ET)	-	-	SO	SO
Nitroglycerin Paste	-	-	SO	SO

**SO** Standing Order

**OSP** Optional Supplemental Program

**MC** Medical Consultation Required

**PP** Pilot Program **REA** Research

**B. PROCEDURES, MEDICAL DEVICES, AND MEDICATIONS FOR EMS AND COMMERCIAL SERVICES (Continued)**

<b>MEDICATIONS</b>	<b>EMR</b>	<b>EMT</b>	<b>CRT-(I)</b>	<b>PM</b>
Nitroglycerin (tablet /spray) (patient's prescribed)	-	SO	SO	SO
Nitroglycerin (tablet/spray)	-	-	SO	SO
Ondansetron	-	-	SO/MC	SO/MC
Oral Glucose	-	SO	SO	SO
Oxygen	SO	SO	SO	SO
Peripheral Parenteral Nutrition (PPN) or Total Parenteral Nutrition (TPN) non-medicated	-	SO	SO	SO
Purified Protein Derivative (Public Safety Personnel only)	-	-	-	OSP
Sodium Bicarbonate	-	-	MC	MC
Sodium Bicarbonate (Infusion)	-	-	MC	MC
Succinylcholine (Anectine)	-	-	-	PP
Vaccines (Hepatitis and Influenza) (Public Safety Personnel only)	-	-	-	OSP
Vecuronium (Norcuron)	-	-	-	PP
Verapamil ( <b>NEW '19</b> ) Jurisdictional option only when approved by the State EMS Medical Director	-	-	MC	MC

**SO** Standing Order

**OSP** Optional Supplemental Program

**MC** Medical Consultation Required

**PP** Pilot Program

**REA** Research

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## 9. CALCIUM CHLORIDE (10% SOLUTION)

### a) Pharmacology

- (1) Increase cardiac contractile state and ventricular automaticity
- (2) Is useful in reversing cardiac arrhythmias due to hyperkalemia (often seen in renal dialysis patients)

### b) Pharmacokinetics

Rapid onset of action with IV administration

### c) Indications

- (1) Hyperkalemia
- (2) Hypocalcemia
- (3) To treat adverse effects caused by calcium channel blocker overdose
- (4) Hypotension secondary to diltiazem administration
- (5) Respiratory depression, decreased reflexes, flaccid paralysis, and apnea following magnesium sulfate administration

### d) Contraindications

- (1) Not indicated in cardiac arrest except when hyperkalemia, hypocalcemia, or calcium channel toxicity is highly suspected
- (2) Patient currently taking digoxin with suspected calcium channel blocker overdose

### e) Adverse Effects

- (1) Bradycardia may occur with rapid injection.
- (2) Syncope, cardiac arrest, arrhythmia, bradycardia

### f) Precautions

- (1) Use with caution on patients taking digitalis, as calcium may increase ventricular irritability and precipitate digitalis toxicity.
- (2) If given with sodium bicarbonate, calcium will precipitate.
- (3) Calcium salts may produce coronary and cerebral artery spasm.

### g) Dosage

- (1) Adult: Administer 0.5–1 gram SLOW IVP over 10 minutes.  
Maximum dose 1 gram  
Administer 500 mg SLOW IVP for: hypotension following diltiazem administration.  
Respiratory depression, decreased reflexes, flaccid paralysis, and apnea following magnesium sulfate administration
- (2) Pediatric: Administer 20 mg/kg (0.2 mL/kg) SLOW IVP/IO (50 mg/min)  
Maximum dose 1 gram



## 10. DEXAMETHASONE

### a) Indications

- (1) Moderate to severe asthma exacerbation
- (2) Croup
- (3) Anaphylaxis (**NEW '19**)

### b) Adverse Effects

- (1) Headache
- (2) Edema
- (3) Vertigo
- (4) Fluid retention
- (5) Adrenal insufficiency and immunosuppression with long-term use
- (6) HTN
- (7) CHF
- (8) Nausea and vomiting
- (9) Dyspepsia
- (10) Anaphylaxis

### c) Precautions

- (1) Caution with diabetes
- (2) Known TB
- (3) Osteoporosis
- (4) Hepatic impairment
- (5) CHF
- (6) Seizure disorder

### d) Contraindications

- (1) Hypersensitivity to drug
- (2) Known systemic fungal infection
- (3) Premature infants

### e) Dosage (IV solution used for PO administration)

- (1) Adult: 10 mg IV (preferred, if established) or PO
- (2) Pediatric:
  - (a) Asthma: 0.5 mg/kg PO (preferred) or IV to a maximum of 10 mg
  - (b) Croup: 0.5 mg/kg PO/IM/IV to a maximum of 10 mg



### 13. DILTIAZEM (CARDIZEM)

**a) Class**

Calcium channel blocker

**b) Actions**

- (1) Inhibits the movement of calcium ions across cardiac muscle cells
- (2) Decreases conduction velocity and ventricular rate

**c) Indications**

Symptomatic atrial fibrillation and atrial flutter

**d) Contraindications**

- (1) Hypotension below 100 mmHg, second or third degree heart block, hypersensitivity to the drug (**NEW '19**)
- (2) Patients less than 18 years of age

**e) Precautions**

Use cautiously in patients with renal failure or congestive heart failure.

**f) Side effects**

- (1) Headache
- (2) Nausea
- (3) Vomiting
- (4) Bradycardia
- (5) Hypotension

**g) Significant interactions**

Congestive heart failure may result if used along with beta blockers.

**h) Dosage (NEW '19)**

(1) Adult

(a) 0.25 mg/kg (maximum dose 20 mg) by IV bolus administered SLOW IV over 2 minutes; if response is not adequate, repeat in 15 minutes with a dosage of 0.35 mg/kg (maximum dose 25 mg) over 2 minutes.

(b) For patients older than 50 years of age, borderline blood pressure, known renal failure, or CHF, consider initial bolus 5–10 mg administered IV over 2 minutes.

(2)  Pediatric:

Contraindicated for patients less than 18 years of age. If needed, consult Pediatric Base Station.



**i) Overdose or Toxicity Presentation**

Generally consists of exaggeration of side effects, including severe hypotension and symptomatic bradycardia

**j) Treatment of Overdose or Other Adverse Reactions**

- (1) Give general supportive measures, monitor vitals, administer oxygen.
- (2) Hypotension: Consider calcium chloride 500 mg SLOW IVP and IV fluid bolus with LR; evaluate legs.
- (3) Bradycardia: Consider atropine (0.5 to 1 mg); if necessary, consider pacing.





**e) Adverse Effects**

- (1) Anginal pain
- (2) Tachydysrhythmias
- (3) Nausea and vomiting
- (4) Hypertension
- (5) Undesirable degree of vasoconstriction

**f) Precautions**

- (1) Extravasation should be reported to the hospital staff on arrival.
- (2) Patients receiving monoamine oxidase (MAO) inhibitors are extremely sensitive to the effects of dopamine and should receive a much lower dosage than is usually given.
- (3) Patients with pheochromocytoma are extremely sensitive to dopamine and may develop profound hypertension in response to minimal doses.

**g)  Dosage**

- (1) For IV/IO infusion only. The preferred route of administration is IV.
- (2) In general, the infusion rate is adjusted to blood pressure and clinical response.
- (3) Adult: Administer 2–20 **mcg**/kg/min IV drip titrated to BP of 100 systolic or medical consultation selected BP; initial infusion rate 2–5 **mcg**/kg/min
- (4) Pediatric: Administer 2–20 **mcg**/kg/min IV drip titrated age specific BP or medical consultation selected BP; initial infusion rate is 2 **mcg**/kg/min



## 16. EPINEPHRINE 1:10,000/1:1,000

### a) Pharmacology

- (1) The administration of epinephrine causes increases in:
  - (a) Systemic vascular resistance
  - (b) Systemic arterial pressure
  - (c) Heart rate (positive chronotropic effect)
  - (d) Contractile state (positive inotropic effect)
  - (e) Myocardial oxygen requirement
  - (f) Cardiac automaticity
  - (g) AV conduction (positive dromotropic effect)
- (2) Causes bronchial dilation by smooth muscle relaxation

### b) Pharmacokinetics

- (1) IV administered epinephrine has an extremely rapid onset of action.
- (2) Is rapidly inactivated by the liver
- (3) Subcutaneous administration of epinephrine results in slower absorption due to local vasoconstriction.
- (4) Local massage will hasten absorption.
- (5) Topically applied nebulizer within the respiratory tract, epinephrine has vasoconstrictor properties that result in reduction of mucosal and submucosal edema. It also has bronchodilator properties that reduce airway smooth muscle spasms.

### c) Indications

- (1) Medical cardiac arrest and pediatric traumatic arrest (**NEW '19**)
- (2) Moderate to severe allergic reaction/anaphylaxis
- (3) IV epinephrine should be reserved for cardiac arrest patients and for impending cardiac arrest due to anaphylactic shock.
- (4) Bronchial asthma
- (5) Respiratory stridor (suspected croup)
- (6) Dopamine replacement indications for epinephrine drip (Jurisdiction option only when approved by the State EMS Director) (**NEW '19**)

### d) Contraindications

- (1) Hypertension
- (2) Preexisting tachydysrhythmias with a pulse (ventricular and supraventricular)
- (3) Use with pregnant women should be avoided whenever possible.
- (4) Traumatic cardiac arrest in adult patients (**NEW '19**)

### e) Adverse Effects

- (1) Tachydysrhythmias (supraventricular and ventricular)
- (2) Hypertension
- (3) May induce early labor in pregnant women



- (4) Headache
- (5) Nervousness
- (6) Decreased level of consciousness
- (7) Rebound edema may occur 20–30 minutes after administration to croup patients.


**f) Precautions**

- (1) Do not mix with sodium bicarbonate as this deactivates epinephrine.
- (2) Epinephrine causes a dramatic increase in myocardial oxygen consumption.
- (3) Its use in the setting of an acute MI should be restricted to cardiac arrest.
- (4) IVP epinephrine (1:1,000) should not be administered to any patient with a pulse.

**g) Dosage**




- (1) Cardiac Arrest
  - (a) Adult:
    - (i) Administer 1 mg (1:10,000) IVP/IO every 3–5 minutes
  - (b) Pediatric:
    - (i) Administer 0.01 mg/kg (0.1 mL/kg) of 1:10,000 IVP/IO; repeat every 3–5 minutes
    - (ii) ET: 0.1 mg/kg of 1:1,000, diluted with 5 mL of LR; repeat every 3–5 minutes
  - (c) Neonate:
    - (i) Administer 0.01 mg/kg (0.1 mL/kg) of 1:10,000 IVP/IO; repeat every 5 minutes
    - (ii) ET: 0.03 mg/kg of 1:10,000, diluted with 1 mL of LR
- (2) Bradycardia
  - (a) Adult: not indicated
  - (b) Pediatric:
    - (i) Administer 0.01 mg/kg (0.1 mL/kg) of the 1:10,000 IVP/IO; repeat every 3–5 minutes
    - (ii) ET: 0.1 mg/kg of 1:1,000, diluted with 5 mL of LR; repeat every 3–5 minutes
  - (c) Neonate:
    - (i) Administer 0.01 mg/kg (0.1 mL/kg) of 1:10,000 IVP/IO; repeat every 3–5 minutes
    - (ii) ET: 0.03 mg/kg of 1:10,000, diluted with 1 mL of LR



- (3) Allergic Reaction/Anaphylaxis/Asthma
- (a) FOR ANAPHYLAXIS (ADULT ONLY)  
For patients who are in extremis with severe hypotension or impending respiratory failure, consider initiating an epinephrine drip after having administered 3 doses of IM epinephrine.
- (i) Mix 1 mg of epinephrine (either 1:1,000 or 1:10,000) in a 1 liter bag of LR IV/IO. Initiate an infusion with a wide open macro drip titrating to a systolic pressure of greater than 90 mmHg. When drip administered, this will be reported as an exceptional call.
- (b) Epinephrine: 1:1,000
- (i) Less than 5 years of age: administer 0.15 mg in 0.15 mL IM
- (ii) 5 years and greater: administer 0.5 mg in 0.5 mL IM
- (4) Croup
- (a) Adult: not indicated
- (b) Pediatric
- (i) Administer 2.5 mL of epinephrine 1:1,000 via nebulizer.
-  If patient does not improve, administer a second dose of 2.5 mL of epinephrine 1:1,000 via nebulizer.



ALL PATIENTS WHO RECEIVE NEBULIZED EPINEPHRINE MUST BE TRANSPORTED BY AN ALS UNIT TO AN APPROPRIATE FACILITY.

- (5) As replacement for dopamine with the following dosing by indication
- (a)  Cardiogenic (post-ROSC or acute heart failure)
- (i) Adult: 0.05 – 0.3 mcg/kg/min.
- (ii) Pediatric: 0.05 – 0.3 mcg/kg/min.
- (b)  Sepsis
- (i) Adult: 0.05 – 0.3 mcg/kg/min.
- (ii) Pediatric: 0.05 – 0.3 mcg/kg/min.
- (c)  Hypovolemic shock (after sufficient volume replacement)
- (i) Adult: 0.05 – 0.3 mcg/kg/min.
- (ii) Pediatric: 0.05 – 0.3 mcg/kg/min.
- (d) Anaphylaxis
- (i) Adult: 0.5 mcg/kg/min.
- (ii) Pediatric: 0.5 mcg/kg/min



## 17. FENTANYL

*(Required unless Morphine OSP approved)*

### Pharmacology

- (1) Synthetic opioid binds with opiate receptors in the CNS, altering both perception and emotional response to pain.
- (2) Fentanyl is significantly more potent than morphine. 100 mcg of fentanyl is equivalent to 10 mg of morphine.

#### a) Pharmacokinetics

Onset of action is 2–3 minutes after IV dose and effects last 30 minutes to 1 hour.

#### b) Indications

- (1) The patient reports moderate to severe pain.
- (2) In the provider's judgment the patient will benefit from treatment with an opioid analgesic, including patients who are MOLST and/or EMS/DNR patients or being pre-medicated for a procedure.

#### c) Contraindications

- (1) Hypersensitivity or known allergy to fentanyl
- (2) Uncorrected respiratory distress or hypoxemia refractory to supplemental oxygen
- (3) Uncorrected hypotension, defined as a persistent systolic pressure less than 90 mmHg.

#### d) Adverse Effects

- (1) Respiratory depression/arrest
- (2) Altered mental status
- (3) Increased vagal tone due to suppression of sympathetic pathways (slowed heart rate)
- (4) Constricted pupils (pinpoint)
- (5) Increased cerebral blood flow

#### e) Precautions


- (1) Naloxone reverses all effects.
- (2) To reduce the risk of chest wall rigidity (especially in children), fentanyl should be administered slowly and titrated to effect.
- (3) Vital signs should be monitored frequently.
- (4) Hypotension is a greater possibility in volume-depleted patients.
- (5) Elderly patients and those with impaired renal function may be more sensitive to the medication's effects.

#### f) Dosage (NEW '19)

- (1) Adult: Fentanyl IN preferred IV/IO/IM
  - (a) Administer 1 mcg/kg to a maximum initial dose of 200 mcg (For IN route, dosing may be limited due to volume limitations - administration of max 1mL per nare).
  - (b) Reassess in 5–10 minutes. If pain remains moderate to severe, then administer a second dose of fentanyl 1 mcg/kg to a maximum dose of 200 mcg.

- (c) Obtain on-line medical direction for additional doses, if required.



- 
- (2) Pediatric: Fentanyl IN. If IN route not accessible, IV/IO/IM
- (a) Administer 1 mcg/kg to a maximum initial dose of 200 mcg (For IN route, dosing may be limited due to volume limitations - administration of max 1mL per nare).
  - (b) Reassess in 5–10 minutes. If pain remains moderate to severe, then administer a second dose of fentanyl 1 mcg/kg to a maximum dose of 200 mcg.
  - (c)  Obtain on-line medical direction for additional doses, if required.



## 24. MIDAZOLAM (VERSED)

### a) Pharmacology

- (1) Sedative
- (2) Hypnotic
- (3) Anticonvulsant

### b) Pharmacokinetics

- (1) A short-acting benzodiazepine with strong hypnotic, anticonvulsant activity, and amnesic properties
- (2) Onset of action is extremely rapid following IV administration; approximately 1.5 minutes, and for IM approximately 15 minutes.
- (3) Duration of effect is 1–4 hours with half-life of 1.5 to 3 hours in healthy adult.

### c) Indications

- (1) Sustained and/or recurrent seizures
- (2) Precardioversion to reduce anxiety
- (3) Awake patient requiring transcutaneous pacing (TCP)
- (4) Nasal Tracheal Intubation
- (5) Implanted Cardioverter Defibrillator (ICD) Malfunction
- (6) Nerve/organophosphate exposure
- (7) Bucking Endotracheal Intubated patient
- (8) Chemical Restraint
- (9) Moderate to severe stimulant toxicity
- (10) Excited Delirium Syndrome

### d) Contraindications

- (1) Hypotension (See below for ET bucking)
- (2) Known hypersensitivity to midazolam


### e) Adverse Effects

- (1) Respiratory depression or apnea
- (2) Hypotension

### f) Precautions

- (1) The effects of midazolam can be accentuated and significantly potentiated by CNS depressants, such as opioids or alcohol.
- (2) Midazolam is five times as potent per milligram as diazepam and there is an increased risk of respiratory depression.






- g)**  **Dosage** (paramedic and CRT-I) may perform without consult for patients with active seizures.)

All indications in c) above, except for Bucking Endotracheal Intubated patient, Chemical Restraint, and Excited Delirium Syndrome

(1) Adult:



REDUCE THE BELOW IV/IO/IN/IM BY 50% FOR PATIENTS 69 YEARS OR OLDER.

- (a) 0.1 mg/kg in 2 mg increments SLOW IVP over 1–2 minutes per increment with maximum single dose 5 mg.
- (b) If IV unavailable, 5 mg IN/IM may be administered.  
IN administration max 1 mL per nare
- (c)  Additional doses up to a maximum total dose 10 mg require medical consultation for all providers.  
For seizures lasting greater than 10 minutes (status), consider IO administration of midazolam.
- (d) If suspected severe nerve agent exposure, providers may administer midazolam 5 mg IM without medical consultation.
- (2) Pediatric:
- (a) 0.1 mg/kg in 2 mg increments. SLOW IVP over 1–2 minutes per increment to a maximum single dose of 5 mg.
- (b) If IV unavailable, 0.2 mg/kg IN/IM  
IN administration max 1 mL per nare  
Maximum total dose 5 mg
- (c)  Additional doses up to a maximum total dose 5 mg require medical consultation for all providers.  
For life-threatening conditions, consider IO administration of midazolam.
- (d) If suspected severe nerve agent exposure, providers may administer midazolam as above without medical consultation.
- (3) Chemical Restraint
- (a) Patient 18–69 years: midazolam 5 mg IM/IV  
Patient greater than 69 years: midazolam 2.5 mg IM/IV  
 Repeat doses may be given with medical direction
- (b) Pediatric: Not indicated





(4) Bucking Endotracheal Intubated patient

- (a) Adult: Administer 0.05 mg/kg SLOW IVP over 1–2 minutes, while maintaining systolic BP greater than 90 mmHg. STOP ONCE BUCKING HAS RESOLVED AND VENTILATION IS RELAXED. Maximum single dose is 5 mg.



Additional doses require medical consultation.

- (b) Pediatric: Administer 0.05 mg/kg SLOW IVP over 1–2 minutes, while maintaining systolic BP greater than 60 in neonates, 70 in infants,  $[70 + (2 \times \text{years}) = \text{systolic BP}]$  for patients greater than 1 year of age. Maximum total dose 5 mg.



ADMINISTER UP TO 0.05 MG/KG IV WHEN TREATING ENDOTRACHEAL TUBE BUCKING, STOPPING ONCE BUCKING HAS RESOLVED AND VENTILATION IS RELAXED.

(5) Excited Delirium Syndrome (ExDS)

- (a) If severe agitation persists after second dose of IV/IO ketamine, consider midazolam 2.5 mg IV/IO.
- (b) If IV/IO unavailable:
- (i) If severe agitation persists after IM ketamine dose, administer midazolam 5 mg IM.



(c) Patients aged 13 to not yet reached their 18<sup>th</sup> birthday:

- (i) If severe agitation persists after second dose of IV/IO ketamine, consider midazolam 0.1 mg/kg SLOW IVP/IO over 1–2 minutes. Maximum single dose 2.5 mg.
- (ii) If IV/IO unavailable:
- a. If severe agitation persists after IM ketamine dose, administer midazolam 2.5 mg IM.



## 25. MORPHINE SULFATE

*(Optional Supplemental Protocol, which allows for jurisdictional selection of both fentanyl and morphine OR replacement of fentanyl by morphine as the opioid of choice)*

### Pharmacology

- (1) Decreases pain perception and anxiety
- (2) Relaxes respiratory effort
- (3) Causes peripheral dilation, which decreases preload
- (4) Decreases left ventricular afterload

### a) Pharmacokinetics

- (1) Binds with opiate receptors in the CNS, altering both perception and emotional response to pain
- (2) Onset of action is in less than 5 minutes after IV dose and effects last 4–5 hours.
- (3) Causes peripheral arterial and venous vasodilation

### b) Indications

- (1) The patient reports moderate to severe pain.
- (2) In the provider's judgment the patient will benefit from treatment with an opioid analgesic, including patients who are MOLST and/or EMS/DNR patients or being pre-medicated for a procedure.
- (3) Pulmonary Edema/Congestive Heart Failure (Pediatric only)

### c) Contraindications

- (1) Hypersensitivity or known allergy to morphine
- (2) Uncorrected respiratory distress or hypoxemia refractory to supplemental oxygen
- (3) Uncorrected hypotension, defined as a persistent systolic pressure less than 90 mmHg

### d) Adverse Effects



- (1) Respiratory depression/arrest
- (2) Altered mental status (decreased level of consciousness)
- (3) Increased vagal tone due to suppression of sympathetic pathways (slowed heart rate)
- (4) Nausea and vomiting
- (5) Constricted pupils (pinpoint)
- (6) Increased cerebral blood flow



**e) Precautions**

- (1) Naloxone reverses all effects.
- (2) Should be administered slowly and titrated to effect.
- (3) Vital signs should be monitored frequently.
- (4) Hypotension is a greater possibility in volume-depleted patients.

**f) Dosage**

- (1) Adult: IV/IM
  - (a) Administer 0.1 mg/kg to a maximum initial dose of 20 mg.
  - (b) Reassess in 5–10 minutes. If pain remains moderate to severe, then administer a second dose of morphine 0.05 mg/kg to a maximum additional dose of 10 mg.
  - (c)  Obtain on-line medical direction for additional doses, if required.
- (2) Pediatric: IV/IM
  - (a) Administer 0.1 mg/kg to a maximum initial dose of 20 mg.
  - (b) Reassess in 5–10 minutes. If pain remains moderate to severe, then administer a second dose of morphine 0.05 mg/kg to a maximum additional dose of 10 mg.
  - (c)  Obtain on-line medical direction for additional doses, if required.
- (3) Pediatric Pulmonary Edema/CHF
  - (a) 0.1 mg/kg SLOW IVP/IO/IM (1–2 mg/min).  
Maximum dose 5 mg.



## 26. NALOXONE (NARCAN)

### a) Pharmacology

Reverses all effects due to opioid (morphine-like) agents. This drug will reverse the respiratory depression and all central and peripheral nervous system effects.

### b) Pharmacokinetics

- (1) Onset of action is within a few minutes if administered IVP and within 5 minutes if administered IN.
- (2) Intramuscular and pediatric/neonatal endotracheal administration results in a slower onset of action.
- (3) Patients responding to naloxone may require additional doses and transportation to the hospital since most opioids last longer than naloxone.
- (4) Has no effect in the absence of opioids

### c) Indications

To reverse respiratory depression induced by opioids

### d) Contraindications

Patients under 28 days of age.

### e) Adverse Effects

Opioid withdrawal

### f) Precautions

- (1) Naloxone may induce opioid withdrawal in patients who are physically dependent.
- (2) Certain drugs may require much higher doses of naloxone for reversal than are currently used.
- (3) Should be administered and titrated so respiratory efforts return, but not intended to restore full consciousness

### g) Dosage

- (1) Adult: Administer 0.4–2 mg IVP/IO (titrated)/IM/IN (if delivery device is available, divide administration of the dose equally between the nares to a maximum of 1 mL per nare); **OR** administer 4 mg/0.1 mL IN in one nare. Repeat as necessary to maintain respiratory activity.
- (2) Pediatric: Administer 0.1 mg/kg IVP/IO (titrated)IM/IN (if delivery device is available, divide administration of the dose equally between the nares to a maximum of 1 mL per nare); **OR** administer 4 mg/0.1 mL IN in one nare. May be repeated as necessary to maintain respiratory activity. ET dose: 0.2–0.25 mg/kg



(4) Hyperkalemia

(Reserve for patients with suspected CRUSH SYNDROME or patients with functional kidneys by history.)



FLUSH IV WITH 5 ML OF LR BETWEEN CALCIUM AND BICARBONATE ADMINISTRATION.

(a) Adult:



Consider sodium bicarbonate 50 mEq SLOW over 5 minutes and then initiate drip of sodium bicarbonate 100 mEq in 1,000 mL LR to run over 30–60 minutes.

(b) Pediatric:



Consider sodium bicarbonate 1 mEq/kg IV over 5 minutes. For patients less than 1 year of age, must be diluted 1:1 with LR.

(5) IV drip for diuresis prior to receiving IV contrast dye:

Continue the sodium bicarbonate drip at the rate ordered by the sending physician. Document the base solution and the amount of sodium bicarbonate that was added to the solution and the total volume infused.

Do not administer IVP medications through the same IV line as the bicarbonate drip unless compatibility has been established. Flush the line well before and after giving any IVP medication.



### 32. VERAPAMIL (Isoptin) (CRT-I & Paramedic only)

Jurisdictional option only when approved by the State EMS Medical Director.  
Administration of verapamil requires medical consultation.

#### a) Pharmacology

Calcium channel blocker

#### b) Pharmacokinetics

- (1) Inhibits the movement of calcium ions across cardiac muscle cells
- (2) Decreases conduction velocity and ventricular rate

#### c) Indications

- (1) Narrow complex symptomatic atrial fibrillation or atrial flutter

#### d) Contraindications

- (1) Hypotension below 90 mmHg, second or third degree heart block, hypersensitivity to the drug
- (2) Patient with history of Wolf-Parkinson-White syndrome
- (3) Ventricular tachycardia
- (4) Patients less than 18 years of age

#### e) Precautions

Use cautiously in patients with renal failure, congestive heart failure or on beta blockers.

#### f) Adverse Effects

- (1) Hypotension (see Treatment of Overdose or Other Adverse Reactions)
- (2) Bradycardia
- (3) Vomiting
- (4) Nausea
- (5) Headache

#### g) Significant Interactions

Congestive heart failure may result if used along with beta blockers.

#### h) Dosage

- (1) Adult:
  - a) 2.5–10 mg slow IV over 2 minutes; if response is not adequate, repeat in 15 minutes with a dosage of 2.5–10 mg slow IV over 2 minutes with medical consultation.
- (2) Pediatric:

Contraindicated for patients less than 18 years of age.



## **7. AIRWAY MANAGEMENT: NEEDLE DECOMPRESSION THORACOSTOMY (NDT) (NEW '19)**

### **a) PURPOSE**

Needle Decompression Thoracostomy is the procedure of introducing a needle/catheter with a minimum length of 3.25 inches and a minimum diameter of 14 gauge (with optional add-on flutter valve attached) into the pleural space of the chest to provide temporary relief for the patient suffering from a tension pneumothorax.

### **b) INDICATIONS**

- (1) Patients who are assessed to have a life-threatening tension pneumothorax in extremis with absent lung sounds AND clear evidence of hemodynamic compromise to include hypotension (SBP < 100 mmHg), and/or arrest
- (2) If traumatic arrest is suspected due to multi-system blunt trauma, or due to penetrating neck, chest, or abdominal trauma, bilateral needle decompression should be performed. Once catheters are placed, **do not remove**.
- (3) Allowable site:
  - (a) Fifth intercostal space, anterior axillary line (5AAL)
  - (b) If 5AAL site is not available: second intercostal space anterior midclavicular line (2MCL)

### **c) CONTRAINDICATIONS**

Patients whose tension pneumothorax can be relieved by the removal of an occlusive dressing from an open chest wound

### **d) POTENTIAL ADVERSE EFFECTS/COMPLICATIONS**

- (1) Intercostal vascular or nerve injury
- (2) Pneumo/hemothorax
- (3) Direct damage to the lung
- (4) Pericardial/cardiac injury
- (5) Infection

### **e) PRECAUTIONS**

- (1) Reassessment of catheter patency
- (2) Second decompression may need to be performed if reaccumulation, catheter occlusion, or dislocation is evident.



## **8. OBSTRUCTED AIRWAY FOREIGN BODY REMOVAL: DIRECT LARYNGOSCOPY**

### **a) PURPOSE**

The attempted correction of a foreign-body airway obstruction through direct laryngoscopy should be accomplished only by a Maryland licensed CRT-(I) or paramedic. This is accomplished after the ALS provider has determined (by noting repeated unsuccessful attempts at dislodging the object by applying the standard basic method of foreign body removal by BLS providers or the ALS provider) that the object cannot be dislodged by these means. The patient must be unconscious and supine before this method is attempted.

### **b) INDICATIONS**

Patient must be unconscious due to foreign body upper airway obstruction that has not resolved with standard basic methods for foreign body removal.

### **c) CONTRAINDICATIONS**

None

### **d) POTENTIAL ADVERSE EFFECTS/COMPLICATIONS**

Trauma to the oral pharynx, vocal cords, esophagus, or trachea

### **e) PRECAUTIONS**

It is important to distinguish the foreign body from portions of the patient's anatomy.



## 14. ELECTRICAL THERAPY: AUTOMATED EXTERNAL DEFIBRILLATION (AED)



### a) INDICATIONS

Sudden cardiac arrest (patients with no pulse and not breathing).

Neonate (1 hour to 28 days of life) to less than 1 year of age	Manual defibrillator preferred. (If unavailable, an AED with pediatric capability is preferred over an adult AED.)
1 year of age to 8 years of age	AED with pediatric capability, using the pediatric capability, is preferred over an adult AED.
Child 8 years of age or greater	Adult AED

### b) CONTRAINDICATIONS

Patient exhibiting signs of life

Newly born patients (up to one hour after birth)



USE OF THE AED IN THE MANUAL MODE IS RESERVED FOR ALS.

### c) POTENTIAL ADVERSE EFFECTS/COMPLICATIONS

- (1) Burns to skin
- (2) Deactivation of patient's implanted pacemaker
- (3) Injury to patient, self, and/or bystanders

### d) PRECAUTIONS

- (1) Make sure the patient and the environment are dry.
- (2) Avoid placing pads over cardiac pacemakers/defibrillators or nitroglycerin patches.
- (3) DO NOT touch the patient while the AED is analyzing the patient or discharging energy.
- (4) ENSURE that no one is touching the patient when the shock button is pushed.
- (5) Never defibrillate while moving the patient or when in a moving ambulance.

### e) PROCEDURE

- (1) Initiate analysis of rhythm.
- (2) If shock is indicated:
  - (a) Ensure all individuals are clear of the patient.
  - (b) Initiate shock to the patient.
  - (c) Immediately perform 5 cycles of CPR between shocks, then initiate analysis of rhythm.
  - (d) If patient remains pulseless, continue this cycle of CPR and shocks until the AED prompt states "no shock advised," or ROSC is achieved or ALS arrives or the patient is transported or the Termination of Resuscitation Protocol is initiated.

- (3) If shock is not indicated and the patient remains in cardiac arrest:
  - (a) Perform 5 cycles of CPR.
  - (b) Initiate analysis of rhythm.
  - (c) If shock is indicated, see “If shock is indicated” section above.
  - (d) If shock is not indicated, continue CPR until ALS arrives or ROSC is achieved or the patient is transported or the Termination of Resuscitation protocol is initiated.
- (4) If shock is not indicated and patient regains pulse, treat per Return of Spontaneous Circulation (ROSC) protocol.

**f) SPECIFIC DOCUMENTATION**

- (1) Document the number of analyses and shocks delivered, times of assessments and treatments, and the patient’s response to shocks/CPR. Specify the type of AED, location of AED, bystander and provider contact, and the triggering event.
- (2) If using an AED with EKG strip recorder, generate 2 recordings.
- (3) Give one to the ALS provider or hospital and attach the other to your patient care report.
- (4) Record the name of the contact for accessing AED data download summary.
- (5) Consider bringing the AED to the hospital for downloading.



## 20. GLUCOMETER PROTOCOL

### a) PURPOSE

The glucometer should be utilized by ALS providers to determine the blood glucose level in an attempt to determine the etiology of the patient's condition and provide treatment tailored to the needs of the patient.

### b) INDICATIONS

The glucometer should be utilized for any patient presenting with an altered mental status, seizure activity, or unresponsiveness, stroke, combative, suspected cyanide poisoning, reported history of high or low blood sugar, and pediatric bradycardia or cardiac arrest.



IN ADDITION FOR PEDIATRIC PATIENTS: DIZZINESS, SYNCOPAL EPISODES, VOMITING IN KNOWN DIABETIC, OR ALCOHOL INGESTION

### c) TREATMENT

#### (1) ADULT

- (a) If blood glucose is less than 70 mg/dL administer 10% dextrose in 50 mL (5 gram) boluses, one minute apart, to a maximum of 250 mL OR 25 grams of 50% dextrose IVP, until:
  - (i) the patient has a return to normal mental status, and;
  - (ii) the patient's blood glucose is at least 90 mg/dl or
  - (iii) if, following 250 mL of 10% dextrose or 25 grams of 50% dextrose, patient has persistently altered mental status and blood glucose less than 90 mg/dl, repeat dosing regimen in (a).
- (b) If unable to initiate an IV and blood glucose is less than 70 mg/dL, administer glucagon 1 mg IM/IN.



IF, 20 MINUTES AFTER IM/IN GLUCAGON ADMINISTRATION, THE PATIENT HAS PERSISTENTLY ALTERED MENTAL STATUS **AND** BLOOD GLUCOSE LESS THAN 90 MG/DL, CONSIDER IO ADMINISTRATION OF 10% **OR D50W** DEXTROSE CONSISTENT WITH THE DOSING REGIMEN OUTLINED IN (a).

- (c) If blood glucose is greater than 300 mg/dl, administer 10 mL/kg LR bolus unless rales, wheezing, pedal edema, or history of renal failure or CHF is present.



(2) PEDIATRIC

**Patient less than 28 days** - if blood glucose is less than 40 mg/dL administer 2 mL/kg of 10% dextrose IV/IO.

**D10W is prepared by mixing one part of D50W with four parts LR.**

Recheck glucose after first dose.



If blood glucose is less than 40 mg/dL, obtain medical consultation to administer second dose of D10W.

**Patient 28 days or greater until the 18th birthday** - if blood glucose is less than 70 mg/dL, administer 2–4 mL/kg of 10% dextrose IV/IO to a maximum of 25 grams.

Recheck glucose after first dose.



If blood glucose is less than 70 mg/dL, obtain medical consultation to administer second dose of D10W.

(i) If unable to start IV and blood glucose is less than 70 mg/dL, administer glucagon IM/IN:

5 years of age up to patient's 18<sup>th</sup> birthday: 1 mg

28 days–4 years of age: 0.5 mg

- c) Each patient's assessment shall include:
  - (1) Visual assessment - injuries, responsiveness, level of consciousness, orientation, respiratory distress, gait, skin color, diaphoresis
  - (2) Primary survey - airway, breathing, circulation, and disability
  - (3) Vital signs - pulse, blood pressure, respiratory rate and effort, pulse oximeter when available
  - (4) Secondary survey - directed by the chief complaint
    - (a) Medical calls - exam of lungs, heart, abdomen, and extremities. Blood glucose testing for patients with Diabetes Mellitus. Neurological exam for altered consciousness, syncope, or possible stroke.
    - (b) Trauma calls - for patients meeting criteria in the Maryland Medical Protocols Trauma Decision Tree recommending transport to a Trauma Center: exam of neck and spine, neurological exam, palpation and auscultation of affected body regions (chest, abdomen, pelvis, extremities).
  - (5) Capability to make medical decisions (complete questions 1 through 4 on the Patient-Initiated Refusal of EMS form):
    - (a) Disorientation to person, place, time, situation
    - (b) Evidence of altered level of consciousness resulting from head trauma, medical illness, intoxication, or other cause
    - (c) Evidence of impaired judgment from alcohol or drug ingestion
    - (d) Language communication barriers were removed by assuring "language line" translation when indicated
    - (e) The patient understands the nature of the illness
- d) Following the assessment, complete items 5 through 9 on the Patient-Initiated Refusal of EMS Form, noting the presence of conditions that may place the patient at higher risk of hidden illness/injury or of worse potential outcome.

## Management

- (1) Patients at the scene of an emergency who meet criteria to allow self-determination shall be allowed to make decisions regarding their medical care, including refusal of evaluation, treatment, or transport. These criteria include:
  - (a) Medical capacity to make decisions - the ability to understand and discuss and understanding of the nature and consequences of the medical care decision
  - (b) Adult (18 years of age or greater)
  - (c) Those patients who have not reached their 18<sup>th</sup> birthday and are:
    - (i) Married, **OR**
    - (ii) Parent of a child, **OR**
    - (iii) Requesting:
      - a. Treatment for drug abuse or for alcoholism,
      - b. Treatment for STI or for contraception,
      - c. Treatment of injuries from alleged rape or sexual offense, **OR**

- (iv) Living separate and apart from the minor's parent, parents, or guardian, whether with or without consent of the minor's parent, parents, or guardian, and is self-supporting, regardless of the source of the minor's income.
  - (d) A patient who has been evaluated by EMS providers as having 'no' answers to questions 1, 2, 3a, 3b, and 4 on the Patient-Initiated Refusal of EMS form shall be considered to be medically capable to make decisions regarding their own care.
  - (e) Patients with 'no' answers to questions 1, 2, 3a, 3b, and 4 on the Patient-Initiated Refusal of EMS form but one or more 'yes' answers to questions 5 through 8 (medical conditions) have a higher risk of medical illness. The EMS provider should consider consulting medical direction if the patient does not wish transport. The purpose of the consultation is to obtain a "second opinion" with the goal of helping the patient realize the seriousness of their condition and accept transportation.
  - (f) If the EMS provider is unsure whether the patient has adequate ability to make medical decisions, they should seek medical consultation.
  - (g) At any time the EMS provider identifies patient conditions that indicate that the patient should be transported to a hospital, and the patient is refusing transport, then the provider should seek medical consultation.
- (2) Any person at the scene of an emergency requesting an EMS response, or for whom an EMS response was requested, and who is evaluated to have any one of the following conditions, shall be considered incapable of making medical decisions regarding care and shall be transported, with law enforcement involvement, to the closest appropriate medical facility for further evaluation:
- (a) Continued altered mental status from any cause including altered vital signs, influence of drugs and/or alcohol, metabolic causes (CNS or hypoglycemia), head trauma, or dementia
  - (b) Attempted suicide, danger to self or others, or verbalizing suicidal intent
  - (c) Acting in an irrational manner, to the extent that a reasonable person would believe that the medical capacity to make decisions is impaired
  - (d) Judgment impaired by severe illness or injury to the extent that a reasonable and medically capable person would seek further medical care
  - (e) On an Emergency Petition
- (3) Further care should be provided according to Maryland Medical Protocols, "III E. Behavioral Emergencies" or other protocol sections as appropriate, based on patient's condition.
- e) Base Station Hospital Physician Consultation

Patient refusals are one of the highest risk encounters in clinical EMS. Careful assessment, patient counseling, and appropriate base hospital physician consultation can decrease non-transport of high-risk refusals. Patients who meet any of the following criteria require Base Station hospital physician consultation:

- (1) The provider is unsure if the patient is medically capable of refusing transport.
- (2) The provider disagrees with the patient's decision to refuse transport due to unstable vital signs, clinical factors uncovered by the assessment, or the provider's judgment that the patient may have a poor outcome if not transported.
- (3) The patient was involved in any mechanism included in the Trauma Decision Tree of the Maryland Medical Protocols that would recommend transportation to a Trauma Center.
- (4) Minor patients: No parent, guardian, or authorized decision maker is available or the provider disagrees with decision made by the parent, guardian, or authorized decision maker.

For patients with significant past medical history, consider consultation with the specialty center that follows the patient if possible.

Patients who do not meet the criteria above but have one or more positive answers to questions 6 through 10 on the Patient-Initiated Refusal of EMS form may have a higher risk of illness. In these situations, providers shall consult with the Base Station hospital physician.

f) Documentation

- (1) Complete Section One of the Patient-Initiated Refusal of EMS form, documenting the patient's medical decision-making capability and any "At-Risk" criteria.
- (2) Complete Section Two, which documents provider assessment and actions.
- (3) Following patient counseling and Base Station hospital consultation, when indicated, complete Section Three: Initial Disposition, Interventions, and Final Disposition.
- (4) Have the patient and witness sign the refusal statement as determined by your jurisdiction.
- (5) Document your assessment, the care provided, elements of the refusal, medical decision-making capability, and "At-Risk" criteria on the jurisdiction's documentation (Medical Incident Report, MAIS form, or jurisdictional equivalent.)
- (6) Submit copies of the Patient-Initiated Refusal of EMS form and the documentation form to the EMS Supervisor.
- (7) If the patient/authorized decision maker refuses to sign the refusal statement:
  - (a) Contact a supervisor.
  - (b) Explain the need for a signature and again attempt to have the patient sign the refusal statement.
  - (c) If not already done, have a witness sign the refusal statement.
  - (d) Transmit the patient's unwillingness to sign the refusal statement on a recorded channel and document all steps taken to convince patient to sign.

### Section One:

When encountering a patient who is attempting to refuse EMS treatment or transport, assess their condition and record whether the patient screening reveals any lack of medical decision-making capability (1, 2, 3a, 3b, and 4) or high risk criteria (5–8):

Medical Capacity	1. Disoriented to:	Person?	<input type="checkbox"/> yes	<input type="checkbox"/> no
		Place?	<input type="checkbox"/> yes	<input type="checkbox"/> no
		Time?	<input type="checkbox"/> yes	<input type="checkbox"/> no
		Situation?	<input type="checkbox"/> yes	<input type="checkbox"/> no
	2. Altered level of consciousness?		<input type="checkbox"/> yes	<input type="checkbox"/> no
	3. Alcohol or drug ingestion by history or exam with:			
	a. Slurred speech?		<input type="checkbox"/> yes	<input type="checkbox"/> no
	b. Unsteady gait?		<input type="checkbox"/> yes	<input type="checkbox"/> no
	4. Patient does not understand the nature of illness and potential for bad outcome?		<input type="checkbox"/> yes	<input type="checkbox"/> no
	4A. <b>Judgment impaired by</b> severe illness or injury? <b>(NEW '19)</b>		<input type="checkbox"/> yes	<input type="checkbox"/> no
At Risk Criteria	5. Abnormal vital signs		If yes, transport	
	<b>For Adults</b>			
	Pulse greater than 120 or less than 60?		<input type="checkbox"/> yes	<input type="checkbox"/> no
	Systolic BP less than 90?		<input type="checkbox"/> yes	<input type="checkbox"/> no
	Respirations greater than 30 or less than 10?		<input type="checkbox"/> yes	<input type="checkbox"/> no
	<b>For minor/pediatric patients</b>			
	Age inappropriate HR or		<input type="checkbox"/> yes	<input type="checkbox"/> no
	Age inappropriate RR or		<input type="checkbox"/> yes	<input type="checkbox"/> no
	Age inappropriate BP		<input type="checkbox"/> yes	<input type="checkbox"/> no
	6. Serious chief complaint (chest pain, SOB, syncope)		<input type="checkbox"/> yes	<input type="checkbox"/> no
7. Head Injury with history of loss of consciousness?		<input type="checkbox"/> yes	<input type="checkbox"/> no	
8. Significant MOI or high suspicion of injury		<input type="checkbox"/> yes	<input type="checkbox"/> no	
9. For minor/pediatric patients: ALTE, significant past medical history, or suspected intentional injury		If yes, consult		
10. Provider impression is that the patient requires hospital evaluation		<input type="checkbox"/> yes	<input type="checkbox"/> no	

### Section Two:

For providers: Following your evaluation, document information and care below:

1. Did you perform an assessment (including exam) on this patient?  yes  no  
**If yes to #1, skip to #3**
2. If unable to examine, did you attempt vital signs?  yes  no
3. Did you attempt to convince the patient or guardian to accept transport?  yes  no
4. Did you contact medical direction for patient still refusing service?  yes  no



**PILOT PROGRAM  
TACTICAL EMERGENCY MEDICAL SERVICES PROTOCOL**

- (3) Ophthalmologicals
  - (a) Proparacaine or Tetracaine (Alcaine) ophthalmic**
  - (b) Fluorescein stain (and blue light)**
  - (c) Eye irrigation solution**
  - (d) Erythromycin ophthalmic ointment**
  - (e) pH paper**
- (4) Antimicrobials/antiviral (agent-specific training)
  - (a) Ciprofloxacin (following exposure or prophylaxis)**
  - (b) Triple Antibiotic Ointment (Bacitracin/Polymyxin/Neomycin)**
  - (c) Amoxicillin/Clavulanic acid (Augmentin)
  - (d) Cefazolin (Ancef) (PO or IV) (for trauma applications when transport delayed)
  - (e) Clindamycin (Cleocin)
  - (f) Trimethoprim/Sulfamethoxazole (Bactrim)
  - (g) Azithromycin (Zithromax)
  - (h) Doxycycline
  - (i) Mupirocin topical ointment (Bactroban)
  - (j) Emtricitabine and tenofovir (Truvada) (high-risk post-exposure management)
- (5) Steroids
  - (a) Prednisone (PO)**
  - (b) Dexamethasone (Decadron) (IV/IM and/or PO)
- (6) Analgesics/Anesthetics
  - (a) Acetaminophen (PO)**
  - (b) Ibuprofen (Motrin/Advil)**
  - (c) Naproxen (Aleve/Naprosyn) (PO)**
  - (d) Tramadol (Ultram) (PO)**
  - (e) Ketamine**
  - (f) Naloxone (Narcan) (IN and/or IV)**
  - (g) Lidocaine (transdermal for muscular relief, or IM/SQ for stapling as temporizing measure only, alternate dosing regimen)
  - (h) Fentanyl Transmucosal (PO)
  - (i) Clove oil (for topical dental analgesia)
  - (j) Ketorolac (Toradol) (injectable)
- (7) Sleep/Wake
  - (a) Caffeine (No-Doz)**
  - (b) Zaleplon (Sonata) (sleeper)
  - (c) Modafinil (Provigil)
- (8) Wound Management
  - (a) Cyanoacrylate tissue adhesive (Dermabond)**
  - (b) Topical hemostatic agent**
  - (c) Steri-strips**
  - (d) Staples
- (9) ACLS/Resuscitation
  - (a) Albuterol MDI**

**PILOT PROGRAM  
TACTICAL EMERGENCY MEDICAL SERVICES PROTOCOL**

(10) Anti-hypoglycemics

**(a) Oral glucose**

(11) Additional Medications for Tactical EMS: The following is a list of medications from the Maryland Medical Protocols that is strongly encouraged to be readily accessible to complement the Tactical Medic's Formulary.

Aspirin (EMT, ALS).....	Non-Operational
Atropine Multi-Dose (ALS) .....	Non-Operational
Dexamethasone (ALS) .....	Operational
Dextrose (ALS) .....	Non-Operational
Epinephrine 1:1,000, (EMT, ALS) .....	Non-Operational
Haldol (ALS) .....	Non-Operational
Morphine or Fentanyl for injection (ALS).....	Non-Operational
Midazolam (ALS) .....	Non-Operational
Nitroglycerin (ALS) .....	Non-Operational



**OPERATIONAL:** THE MEDICATION MAY BE GIVEN TO A LAW ENFORCEMENT MEMBER WHO MAY CONTINUE TO PERFORM THEIR ASSIGNED DUTIES.

**NON-OPERATIONAL:** ONCE THE MEDICATION HAS BEEN ADMINISTERED, THE LAW ENFORCEMENT MEMBER IS REMOVED FROM THEIR ASSIGNED DUTIES SINCE THE MEDICATION OR THE ASSOCIATED MEDICAL/TRAUMATIC COMPLAINT FOR WHICH THE MEDICATION IS INDICATED MAY IMPAIR THEIR ABILITY TO PERFORM CRITICAL LAW ENFORCEMENT TASKS AND DUTIES.

b) Tactical EMS Medical Formulary

(1) Antihistamines/Decongestants

**(a) Pseudoephedrine (Sudafed)**

- (i) AVAILABILITY.....30 mg or 60 mg tablets (OTC)
- (ii) ACTION.....Decongestant
- (iii) INDICATIONS.....Nasal congestion; rhinorrhea
- (iv) CONTRAINDICATIONS.....Known hypersensitivity;  
hypertension
- (v) PRECAUTIONS.....
- (vi) OPERATIONAL STATUS? .....Operational
- (vii) SIDE EFFECTS.....Insomnia
- (viii) INTERACTIONS.....
- (ix) DOSAGE.....30–60mg, every 4–6 hours,  
as needed

**(b) Cetirizine (Zyrtec)**

- (i) AVAILABILITY.....10 mg tablet
- (ii) ACTION.....Non-sedating antihistamine
- (iii) INDICATIONS.....Allergic symptoms
- (iv) CONTRAINDICATIONS.....Known hypersensitivity
- (v) PRECAUTIONS.....Hypertension; liver/kidney dx
- (vi) OPERATIONAL STATUS?.....Operational
- (vii) SIDE EFFECTS.....Dry mouth, urinary retention
- (viii) INTERACTIONS.....
- (ix) DOSAGE.....10 mg/once daily

## **U. STROKE PATIENT ONLINE NEUROLOGIST CONSULT PROCESS**

### **1. PURPOSE**

Reduce the amount time from medical recognition of stroke symptoms to advanced treatment at a stroke center, thus reducing the “first medical/EMS contact to needle time,” which has been shown to improve the outcome for stroke patients. In an effort to improve on the current Maryland EMS stroke system of care, the on-call 24/7 stroke neurologist for the receiving hospital will be patched into the EMS-to-base station consult, thus allowing the stroke neurologist to hear the EMS report and receive a family member’s contact information from the EMS provider. Upon the conclusion of the EMS consult and while the EMS unit is transporting, the stroke neurologist will call the family member to gather important medical information that would normally take valuable minutes at the hospital.

Prior to submission of the pilot protocol application to the state EMS medical director, jurisdictions must obtain the following:

- a) Verification that MIEMSS and EMRC/SYSCOM is able to facilitate the logistics required to assure proper communication among EMS providers, the receiving facility, and the on-call stroke neurologist
- b) Agreement with a MIEMSS-designated primary stroke center (herein “approved primary stroke center”)

### **2. INDICATIONS**

- a) Adult patient who presents with stroke symptoms and meets the requirements for a STROKE Alert.
    - (1) Positive Cincinnati Stroke Scale
    - (2) Last known well time of less than 20 hours
- AND**
- b) Based on geography, the intended destination is the approved primary stroke center that maintains an agreement with the EMS jurisdiction per 1. b), above.

### **3. CONTRAINDICATIONS**

- a) Patients who have not yet reached their 18th birthday
- b) Patients outside of the catchment area of the approved primary stroke center

### **4. PROCEDURE**

- a) No change in current EMS dispatch process with ALS
- b) No change to current EMS initial assessment (vital signs, physical assessment, and application of Stroke: Neurological Emergency Protocol to include “last known well time”) and treatment as directed by the *Maryland Medical Protocols for EMS Providers*.
- c) EMS provider will ask the patient’s family, if present, for a telephone number, which will be relayed to the stroke neurologist during the EMS consult.

**PILOT RESEARCH PROTOCOLS  
STROKE PATIENT ONLINE NEUROLOGIST CONSULT PROCESS**

- d) For patients meeting “STROKE Alert” criteria who are to be transported to the approved primary stroke center, EMS will call EMRC and state “UNIT NUMBER WITH STROKE ALERT FOR (name of approved primary stroke center) HOSPITAL.” EMRC will patch that call to the approved primary stroke center and simultaneously link the 24/7 cell phone maintained by the on-call stroke neurologist. The stroke neurologist will then listen to the EMS-to-base station (approved primary stroke center) consult.
- e) Patient will be transported to the approved primary stroke center, and the standard hospital stroke/brain attack process will be followed.
- f) During the transport, the stroke neurologist will call a member of the patient’s family on the telephone number obtained per 4. c) above to gather important medical information in an effort to reduce “first medical/EMS contact to needle time.”

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**PILOT PROGRAM  
ALTERNATIVE DESTINATION PROGRAM**

**V. ALTERNATIVE DESTINATION PROGRAM**

**1. PURPOSE**

To provide quality care in a more timely fashion, with potential for cost savings for patients, and a rapid return to service for EMS units. This program may also allow patients to receive care within their HMO services, where their medical records and physicians are readily available.

Any Maryland EMS Operational Program (EMSOP) may establish an alternative destination program tailored to the needs of its community, if the program meets all the requirements set forth in this protocol. Montgomery County Fire and Rescue Services (MCFRS) conducted a pilot alternative destination program in FY 2017, which is detailed below beginning with “b) Start Point.”

a) Background

- (1) Emergency departments across the country spend a disproportionate share of staff and financial resources providing non-urgent care to patients who often would have been better served in a primary care setting. According to a 2010 study by the RAND Corporation, between 14% and 27% of all ED visits are for non-urgent care and could take place in a different setting, such as a doctor's office, after-hours clinic, or retail clinic with a potential cost savings of \$4.4 billion annually. A 2010 study published in the Annals of Emergency Medicine found that frequent users comprise 4.5% to 8.0% of all ED patients, yet account for 21% to 28% of all visits.
- (2) Montgomery County Alternative Destination Pilot Program
  - (a) In 2014 MCFRS received 80,000 EMS calls and performed 65,000 transports. Of the 65,000 transports, 60% were BLS (low-acuity) and 40% were ALS. The EMS growth rate is unsustainable. At current rates, MCFRS would need to add an ambulance each year to service the needs of residents in the county. In an effort to encourage appropriate use of 9-1-1 services and disposition to an emergency department, and to better serve the state under the new Medicare All Payer System (waiver), Holy Cross Health, Kaiser Permanente, and MCFRS piloted the alternative destination program (ADP) protocol to optimize EMS resource use and assure appropriate patient care.
  - (b) Through a joint release, all entities involved provided a general notice to the population being serviced under the pilot for Phase 2.
  - (c) Montgomery County identified a highly-qualified “pilot triage expert” to consistently apply the Provider Quick Form, consent the patient, and make the destination determination. The designated expert was a state-certified EMT for Montgomery County who also is a registered nurse, and who was previously an ALS provider. Using a highly-qualified pilot triage expert not only reduces risks to the patient, but also requires special skills that are not necessarily applicable to all EMTs across Maryland.
  - (d) The objective of this quality improvement pilot was to assess the accuracy and safety of triaging dispatch-identified “IAED Alpha determinate code” BLS patients to either Holy Cross Hospital Express Care (co-located with Holy Cross’s emergency department) or Kaiser Permanente’s Clinical Diagnostic Unit (CDU) by applying the Provider Quick Form.

**PILOT PROGRAM  
Minor Definitive Care Now, Baltimore City Fire Department**

**X. MINOR DEFINITIVE CARE NOW, BALTIMORE CITY FIRE DEPARTMENT (NEW '19)**

**Note: This document does not contain all of the material approved by the EMS Board. For the entire text of the protocol, contact the Office of the Medical Director**

**1. PURPOSE**

The objective of this pilot program is to assess the impact, accuracy and safety of providing low-acuity patients, identified as Alpha patients by IAED criteria (Basic Life Support), with immediate on-scene care by a two-person team composed of a BCFD Minor Definitive Care Now (MDCN) paramedic provider, and one of the following Advanced Level Providers (ALP): a UMMC Nurse Practitioner (NP), a Maryland-licensed physician affiliated with UMMC with board certification in emergency medicine ("Physician"), or UMMC Physician Assistant (PA). This will be referred to as the MDCN Team.

**2. INDICATIONS**

- a) Low-acuity patients, identified by the IAED™ MPDS® protocol as an 'Alpha determinant code Basic Life Support,' who meet additional criteria outlined in the MDCN protocol below; AND
- b) Patients with an incident address that falls within the geographic boundaries of the UMMC, Midtown Campus or Bon Secours catchment areas; AND
- c) Patients who consent to participate in the MDCN Pilot Program.

**3. CONTRAINDICATIONS**

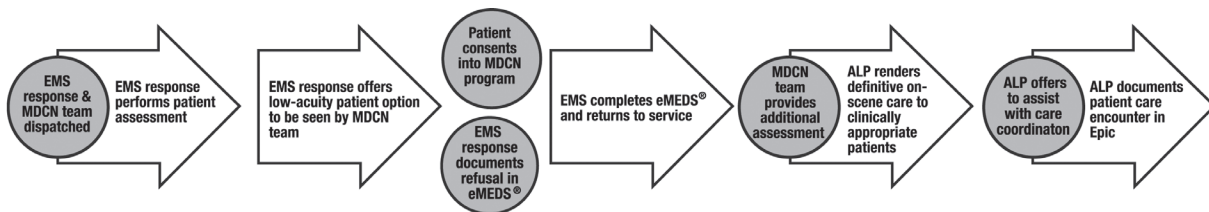
- a) Patients who decline enrollment in MDCN Pilot Program;
- b) Patients who are deemed clinically inappropriate for on-scene treatment by the MDCN Team following assessment;
- c) Individuals who refuse participation by revoking written consent, verbal refusal of care at time of visit;
- d) Patients who possess a language or communication barrier that inhibits the MDCN Team's ability to appropriately address the patient's needs at the scene;
- e) Patients who are not able to or lack the capacity to understand the informed consent process; and
- f) Patients who have not yet reached their 18<sup>th</sup> birthday.

**4. GENERAL PROCEDURES**

- a) When a 911 call response for EMS service is dispatched, the MDCN Team will respond to the scene concurrently with the typical BCFD EMS response unit to Alpha-level calls within the UMMC, Midtown Campus and Bon Secours patient catchment areas.
- b) If a patient refuses EMS care and transport, a patient refusal form and eMEDS should be completed per MIEMSS Protocols while on scene.
- c) If the patient is determined to be a low acuity candidate for MDCN program (as defined in Section VI below), the BCFD EMS response personnel will offer the patient the option to be seen by the MDCN Team.
- d) The MDCN Team will request patient consent (see MDCN Consent Form) to provide minor definitive treatment on scene.

**PILOT PROGRAM**  
**Minor Definitive Care Now, Baltimore City Fire Department**

- e) Once consent is provided, patient information, including information collected by the EMS response personnel can be shared with the ALP.
- f) The EMS response personnel will return to service. If the MDCN Team determines that the patient needs to be transported and the patient decides they want to be transported, or if for any reason, the patient decides they want to be transported, the MDCN Paramedic will radio PSAP for an EMS transport unit. After requesting the unit, the BCFD MDCN Paramedic will perform any advanced life support skills, as defined by the MIEMSS Protocols for EMS Providers, to provide all necessary care within their scope of practice, until additional EMS providers arrive on scene and assume patient care and transport to the closest appropriate hospital. Any care rendered under the MIEMSS Protocols will be documented in eMEDS.
- g) The MDCN Team performs any additional assessment and if indicated, the ALP will render treatment (see 12. Formulary, below). The MDCN Paramedic may assist with patient assessment (e.g., vital signs, pulse oximetry), the ALP will provide treatment associated with the MDCN Pilot Program.
- h) The ALP may also offer to assist patients with setting up clinic appointments. The Operations Center, located at UMMC, may call and connect patients to appropriate care, either inside or outside of the University of Maryland Medical System (UMMS), depending on need, preference, and insurance status of the patient.
- i) The MDCN Team documents the patient care encounter in the UMMC electronic health record system (“Epic”). If at any time during the encounter the patient refuses further assessment or treatment, the refusal must be documented in Epic.



- j) The UMMC ALP and BCFD MDCN Paramedic providers will be restricted to their respective scopes of practice set by the Maryland Board of Nursing, Maryland Board of Physicians and MIEMSS.

**5. ADVANCED LEVEL PRACTITIONER PROCEDURES**

- a) This protocol may only be used by the Advanced Level Practitioner (ALP).
- b) MDCN Paramedics will follow MIEMSS Protocols for EMS Providers.
- c) Under the MDCN Pilot Program, all eligible patients will be offered the choice to “opt in” to receive on-scene definitive care. Participation in this pilot program is voluntary and will require patients to provide signed, informed consent. The on-scene treatment provided by the ALP will be in accordance with the medication and procedure list detailed in 12. Formulary and 13. Supply List, below.
- d) Inclusion Criteria: the patient must provide consent and must not have any of the following exclusion criteria:



**PILOT PROGRAM**  
**Minor Definitive Care Now, Baltimore City Fire Department**

- (1) A chief complaint consistent with evaluation that would indicate a need for the capabilities of a full service ED
    - (a) High risk chief complaints are currently defined as dyspnea, altered mental status, syncope, chest pain, focal neurological deficits, unexplained back or abdominal pain, seizures, and sepsis (see vital sign criteria listed in 8. Medical Consultation, below).
  - (2) Physical findings consistent with time-dependent needs for emergent assessment or stabilization
    - (a) Signs on exams that indicate a threat to airway, breathing, circulation, circulation to an extremity, disability (deficit) or deformity, as well as severe tenderness (as indicated by an assessment of airway, breathing, circulation, disability, exposure (ABCDE), etc.).
  - (3) Reasonably foreseeable signs or suspicion of any deterioration of condition (e.g. airway, breathing, hemodynamic or neurologic compromise)
  - (4) Any requirement for any advance life support (ALS) monitoring or ALS interventions
- e) In order to include the patient in the MDCN Pilot Program, the MDCN Team will obtain a complete set of vital signs, medical history, and the ALP will obtain a signed MDCN Pilot Program Consent Form.
- f) If the patient is stable and deemed by the ALP to meet the criteria of the MDCN protocol, and has an injury or disease process, which can be safely treated on scene:
- (1) The consenting patient will receive definitive on-scene care by the ALP member of the MDCN Team.
  - (2) If the patient refuses to participate in the MDCN Pilot Program, the patient's condition deteriorates, or while on scene the patient changes their mind and declines to participate, the patient will be taken to the closest appropriate ED via ambulance. See 4. General Procedures above for response steps.
- g) The MDCN Team will provide discharge instructions for each patient who participates in the MDCN Pilot Program.
- h) In the event that the MDCN Team evaluates the consented patient and recommends ED transfer but the patient refuses, see 4. General Procedures for appropriate actions.

**6. MEDICATION MANAGEMENT**

- The ALP is authorized to manage drugs and devices under the following protocols:
- a) The management of drugs or devices includes evaluating, initiating, altering, discontinuing, furnishing and ordering of prescriptive and over-the-counter medications.
  - b) Medication evaluation includes assessment of:
    - (1) Other medications being taken
    - (2) Prior medications used for current condition
    - (3) Medication allergies and contraindications, including appropriate labs and exams

**PILOT PROGRAM**  
**Minor Definitive Care Now, Baltimore City Fire Department**

- c) The drug or device is appropriate to the condition being treated, and:
  - (1) Accepted dosages per references.
  - (2) Generic medications are ordered if appropriate.
- d) A plan for follow-up is written in the patient's chart and provided to the patient.
- e) The prescription must be written in patient's Epic chart including name of drug, strength, instructions and quantity, and signature of the ALP.

**7. DISPENSING MEDICATIONS**

The ALP may dispense prescription drugs and devices, under the following protocols:

- a) They have current prescriptive authority, including Maryland CDS registrations.
- b) All drugs and devices ordered are limited to the Formulary, OR are per the recommendations in the Resources listed in this document.
- c) The drugs and devices ordered are consistent with the ALP's educational preparation or for which clinical competency has been established and maintained.
- d) The drug or device ordered is appropriate to the condition being treated.
- e) Patient education is given regarding the drug or device.
- f) The name, title, and licensing number of the ALP is written on the transmittal order.
- g) A physician affiliated with the MDCN Pilot Program is available during hours of operation for in person or telephone medical consultation.
- h) The drug or device utilizes required pharmacy containers and labeling.
- i) All appropriate record keeping practices of the dispensary are performed.
- j) All other applicable Standardized Procedures in this document are followed during health care management.
- k) All General Policies regarding Review, Approval, Setting, Education, Evaluation, Patient Records, Supervision and Consultation in these Standardized Procedures are in force.

**8. MEDICAL CONSULTATION**

While it is the intent of MDCN Pilot Program to respond to low-acuity calls, if immediate patient deterioration should occur, EMS transport resources shall be utilized.

*MDCN Medical Director notification and/or emergent ALS transport to the closest appropriate ED with the following being examples of patients and scenarios that shall generate ALS transport:*

- a) Acute myocardial infarction (AMI) or symptoms consistent with AMI
- b) Acute central nervous system or focal neurologic deficits
- c) Severe CHF
- d) Severe respiratory distress
- e) O<sub>2</sub> Saturation < 90% on room air, if acute
- f) Hypotension
- g) Acute altered mental status, unless intoxicated
- h) Adult heart rate > = 140
- i) Emergency hypotension
- j) Moderate to severe CHF

**PILOT PROGRAM**  
**Minor Definitive Care Now, Baltimore City Fire Department**

- k) SBP  $\geq$  240 or DBP  $\geq$  140 at presentation (asymptomatic) with preexisting hypertension history
- l) Adult heart rate  $\geq$  110 at time of disposition
- m) The MDCN Team responds in  $<$  14 days for same acute complaint \*Does not apply to chronic recurrent complaints unless there is a change in the complaint\*
- n) Elevated BP or heart rate in pregnancy or  $\leq$  6 weeks post-partum
- o) Pregnancy complications
- p) Chest pain (potentially consistent with angina or angina equivalent symptoms)
  - (1) Nonspecific chest pain age  $\geq$  30 with history of:
    - Hypertension
    - Diabetes
    - Smoking
    - Coronary artery disease
    - Hyperlipidemia
    - Family history of coronary artery disease by age of 60; ORNonspecific chest pain age  $\geq$  50 without risk factors
    - Abdominal pain
    - Requiring analgesicNonspecific chest pain age  $\geq$  70
    - Diabetic
    - Uncertain diagnosis
  - (2) Lab Criteria:
    - D-Stick –low less than 70 or greater than 300
    - O2 Sat 2% less than chronic levels
  - (3) Vital sign and age consult criteria
    - Heart rate/minute
      - Adult heart rate  $\geq$  110
    - Hypertension
      - Adult asymptomatic hypertension of SBP  $>$  220 or DBP  $>$  120 at time of disposition with history of hypertension
      - Adult asymptomatic SBP  $>$  195 or DBP  $>$  115 at disposition without history of hypertension

**9. DOCUMENTATION AND DATA COLLECTION**

The MDCN Paramedic will document signed patient initiated refusals in eMEDS®. The MDCN ALP will document patient assessment and care data in UMMC's electronic health record system ("Epic"). If emergent management and transport is required, the MDCN ALP will document the time and reason of 911 system activation in the Epic System note. The MDCN Paramedic will document patient information in eMEDS® per MIEMSS protocol.

**10. QUALITY ASSURANCE/QUALITY IMPROVEMENT**

The MDCN Pilot Program is operating under the medical direction of the Jurisdictional Deputy Medical Director, upon the designation by and under the supervision and direction of the Jurisdictional Medical Director, who will ensure that triage protocols are safe and effective for each patient who participates in the MDCN

**PILOT PROGRAM**  
**Minor Definitive Care Now, Baltimore City Fire Department**

Pilot Program. The Jurisdictional Deputy Medical Director and BCFD Deputy Chief of EMS, will provide oversight for adherence to pilot protocols, communication and training. The MDCN QA/QI committee (MDCN QA/QI) will meet or hold weekly teleconferences during the duration of the MDCN Pilot Program to review cases, discuss emergent trends, ensure that pilot protocols are not leading to suboptimal triage and identify areas for improvement. Any time there is an unscheduled reentry of a MDCN patient into emergency health care system, within 72 hours of receiving on scene care, this will trigger an automatic review. The MDCN QA/QI will report MDCN Pilot Program metrics to the State EMS Medical Director on a quarterly basis.

- a) The internal quality improvement process will be managed by BCFD Office of QA/QI MDCN QA/QI Committee.
- b) Pilot Metrics: key metrics include, but are not limited to, the following:
  - (1) Number and type of upgrades from on-scene care through the MDCN Pilot Program to 911 emergency transport (with information on specific signs/symptoms, presentation, type of treatment rendered, and final diagnosis)
  - (2) Number of patients that qualified for MDCN Pilot Program, the number of patients that qualified and consented to receive MDCN services, the number of patients that qualified and refused to receive in MDCN services (including reason for refusal if available)
  - (3) Time from when EMS transport units and suppression units are first notified until back in service (Total call duration time – Cycle Time) for MDCN calls
  - (4) Time from when MDCN units consent until back in service (Total call duration time – Cycle Time) for MDCN calls
  - (5) Listing of the ALP diagnosis, treatment interventions, disposition and destination/referral and re-entry into the health care system (associated with original EMS complaint) within 72 hours.
  - (6) Patient satisfaction survey results:
    - (i) Was patient satisfied with the choice to receive services through MDCN Pilot Program? (Y/N)
    - (ii) How does the patient rate the MDCN Pilot Program on a scale of 1-5 with 1 being the lowest and 5 being the highest
    - (iii) Did the patient experience any complications associated with the care received through the MDCN Pilot Program? In the event a patient reports a complication, the Ops Center will offer to assist the patient in coordinating appropriate follow-up care.
    - (iv) Did the patient have any complaints with the care the patient received from the MDCN Pilot Program?
    - (v) Did the patient report satisfaction with the care received from MDCN Pilot Program?
    - (vi) Did the patient report re-entry into the health care system?
    - (vii) Did the patient have additional unscheduled re-entry into the health care system (associated with original EMS complaint) within 72 hours?
    - (viii) What are the pre-implementation performance measures (above) for the units in the MDCN Pilot Program area?

**PILOT PROGRAM**  
**Minor Definitive Care Now, Baltimore City Fire Department**

- (ix) Any untoward events or formal patient complaints with detailed explanation
- (x) Any deviation or challenges of the ALP's implementation of the MDCN protocol
- (xi) Average Midtown, UMMC ED and Bon Secours wait time changes related to implementation of the MDCN Pilot Program.

**11. FORMULARY**

- Acetaminophen 500MG
- Amoxicillin 500MG
- Amoxil/Clav 875MG
- Antipyrine & Benc OTIC 10ML 5.4%-1.4%
- Azithromycin 250MG 1X6 tab single card
- Bacitracin
- Benzonatate 100MG
- Cephalexin 500MG
- Cyclobenzaprine HCL 10MG
- Cerumenex ear drops
- Diphenhydramine 25MG
- Diphenhydramine Spray (topical)
- Doxycycline 100MG
- Erythromycin optho ointment .5%
- Famotidine 20MG
- Ibuprofen 600MG
- Ketorolac (intramuscular)
- Levofloxacin
- Lidocaine INJ 1%
- Lidocaine VISC 2%
- Loratadine 10MG
- Meloxicam 7.5MG
- Ondansetron 4MG ODT
- Penicillin VK 500MG
- Piperocaine (ophthalmic)
- Polymyxin B (topical)
- Prednisone 10MG
- Promethazine 25MG
- Silver sulfadiazine cream
- Tramadol HCL 50MG
- Triamcinolone cream 0.1% 15GM
- Ventolin HFA 90 MCG 8 GM/60 inhaler
- TDAP INJ

**12. SUPPLY LIST**

In addition to the full BCFD Advance Life Support equipment, the following supplies will be added:

- Syringes and needles for local irrigation and wound infiltration
- Irrigation splash guard

**PILOT PROGRAM  
Minor Definitive Care Now, Baltimore City Fire Department**

- Glucometer
- Single-use medical procedure trays and kits
- Eye Shield
- Ear syringes
- Ear wicks
- Ear wax removers
- Alligator forceps
- Clinical swabs, applicators, specimen collectors, sponges, pads, tongue depressors, wooden spoons, cotton balls, or cotton rolls
- Antiseptic wipes
- Splints
- Crutches
- Orthopedic supports, braces, wraps, shoes, boots, or pads
- Medical bandages, gauze, dressings, tape, swabs, sponges, and burn dressings
- Surgical sutures and staples; and removal kits
- Tourniquet
- Thermometer
- Clinical basin
- Medical bags for medical supplies and equipment; including pre-packed bags
- Medical linens (e.g., blankets, sheets, pillow cases, towels, washcloths, drapes, covers)
- Stool, stand
- Privacy screen
- Adhesive tape
- Spirometer
- Disposable nitrile gloves
- Eyechart
- Sharps container
- Waste bin
- Headlamp
- Saline for irrigation
- Oto/ophthalmoscope
- Scalpels
- Stitch/staple removal set
- Iodoform packing - 1/4 inch x 5 yards
- Dermabond
- Irrigation splash field
- Fluorescein eye
- Woods Lamp

**PILOT PROGRAM  
Minor Definitive Care Now, Baltimore City Fire Department**

**MINOR DEFINITIVE CARE NOW, BALTIMORE CITY FIRE DEPARTMENT CONSENT FORM**



**Informed Consent for  
Minor Definitive Care Now**

The Baltimore City Fire Department (“BCFD”) and the University of Maryland Medical Center (“UMMC”) are collaborating to offer you the opportunity to participate in the Minor Definitive Care Now (“MDCN”) Program. If you are receiving this Consent form, it means that the EMS team has determined you might benefit from the MDCN Program. The MDCN Team consists of either a UMMC Nurse Practitioner, UMMC Physician Assistant or UMMC Physician (a “UMMC Provider”), and a BCFD Paramedic. The MDCN Team can provide on-site minor care to you.

**Please read this Consent carefully. Ask questions about anything that is not clear at any time.**

- Receiving a medical assessment and care from the MDCN Team is completely voluntary – your choice.
- If you decide to receive a medical assessment and care from the MDCN Team, you can still stop at any time.
- No one can promise that the additional medical assessment and care will help you.
- Treatment provided on an emergency basis is not intended to be comprehensive in scope and it may be necessary for you to seek care from another physician for further diagnosis and continuation of treatment.
- Do not consent unless all of your questions are answered.

This Consent will:

- Describe the medical assessment and types of minor care that can be provided, including what services and benefits may be available to you as a participant;
- Describe how your personal health information will be treated as a participant in the Program; and
- Describe whether receiving medical assessment and care could involve any cost to you.

**The Program.** The MDCN Program is a community-based, cost-effective health care solution designed to provide effective and efficient care outside of the hospital.

**Goals.** A goal of the MDCN Program is to improve minor definitive care in the out-of-hospital setting, specifically for patients like you, with minor conditions.

Receiving a medical assessment and treatment requires your agreement. A UMMC Provider and BCFD Paramedic will perform additional medical assessment and discuss the findings before asking you whether you want treatment. They will also discuss your medications, physical, social and mental health history and answer any related questions. You will not be charged for the minor care provided onsite by the MDNC Team. The services of the BCFD EMS for transportation should you decide to go to a hospital, any other services provided by the BCFD EMS or to you at a hospital or as the result of a referral to another health care provider; however, may be billed to you and/or your insurance provider.

**Primary Care Provider.** Receiving medical assessment and treatment for minor care is not a substitute for seeing your primary care provider (PCP) for regular appointments. If you do not have a regular PCP, we can find one for you. This intervention is not meant to take the place of the care you receive from any other provider, including your regular PCP.

**PILOT PROGRAM  
Minor Definitive Care Now, Baltimore City Fire Department**

**Photography and/or Video Record.** Your UMMC Provider may need to photograph and/or record you to document a medical condition and/or help with the diagnosis and/or treatment of a condition. Photographs and/or recordings taken for these clinical reasons do not require your written permission.

**Your Health Information.** The UMMC Provider and BCFD Paramedic providing medical assessment and care to you will maintain the privacy of your health care information in compliance with Maryland and federal laws and regulations.

**Questions.** If you have any questions at any time, you can call: (410) 328-4321

**Consent to Participate.** BY SIGNING THIS CONSENT BELOW, YOU ARE CONFIRMING THAT YOU HAVE VOLUNTARILY CHOSEN TO RECEIVE MEDICAL ASSESSMENT AND CARE FROM THE MDCN TEAM PROVIDERS DESCRIBED ABOVE AND THAT YOU HAVE READ THIS CONSENT AND FULLY UNDERSTAND IT.

IN CONSIDERATION FOR RECEIVING MEDICAL ASSESSMENT AND CARE FROM THE MDCN TEAM DESCRIBED ABOVE, YOU HEREBY WAIVE ANY CLAIM OR CAUSE OF ACTION OF ANY NATURE THAT YOU HAVE, OR MAY HAVE IN THE FUTURE, AGAINST ANY AND ALL INDIVIDUALS OR ORGANIZATIONAL PARTICIPANTS IN THE MINOR DEFINITIVE CARE NOW PROGRAM, INCLUDING BUT NOT LIMITED TO THE UNIVERSITY OF MARYLAND MEDICAL SYSTEM CORPORATION AND ITS AFFILIATES, AND THE MAYOR AND CITY COUNCIL OF BALTIMORE, ITS BALTIMORE CITY FIRE DEPARTMENT AND ITS OFFICERS, AGENTS OR EMPLOYEES; AND FURTHER, YOU AGREE TO RELEASE AND HOLD HARMLESS ANY AND ALL MEMBERS OF THE PROGRAM TEAM FROM AND AGAINST ALL DAMAGES OF ANY KIND, TO PERSONS OR PROPERTY, GROWING OUT OF OR RESULTING FROM THE MEDICAL ASSESSMENT AND CARE.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Print Name: \_\_\_\_\_

Street Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Daytime Phone: \_\_\_\_\_ Evening Phone: \_\_\_\_\_

**Person Obtaining Consent.** By signing below, I confirm that I have explained this form to the above-named participant and answered all of the participant's questions to the best of my ability.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Print Name: \_\_\_\_\_ Time: \_\_\_\_\_



**OPTIONAL SUPPLEMENTAL PROGRAM  
AIRWAY MANAGEMENT  
PARAMEDIC ONLY**



**F. AIRWAY MANAGEMENT: BI-LEVEL POSITIVE AIRWAY PRESSURE (BiPAP)**

**1. INDICATIONS (NEW '19)**

- a) Transport of a patient with established/chronic respiratory distress or failure due to cardiogenic pulmonary edema or COPD/asthma in which the patient demonstrates spontaneous respirations and a patent, self-maintained airway
- b) No increase in pressure settings or oxygen requirement of the current BiPAP device within 48 hours of the transfer. Otherwise, the patient shall be transferred by an SCT team.
- c) Patients who are 13 years of age or older. If less than 13 yoa, patient shall be transported by SCT.
- d) Exception: A CRT-I or EMT may transport all age patients chronically on BiPAP who are going for routine transport. A patient-provided attendant who can manage the patient's own BiPAP must be present on the transport.

**2. CONTRAINDICATIONS**

- a) Circumstances in which endotracheal intubation or a surgical airway is preferred or necessary to secure a patent airway
- b) Circumstances in which the patient is being transferred for treatment of acute respiratory distress

**3. PROCEDURE**

- a) Assure patent airway.
- b) Perform appropriate patient assessment, including obtaining vital signs, pulse oximeter (SpO<sub>2</sub>) reading, and cardiac rhythm.
- c) Apply BiPAP device per manufacturer's instructions.
- d) Program the device to match the settings of the BiPAP machine that the patient is currently using.
- e) Assess the patient after placing the BiPAP device selected for transfer. If respiratory distress occurs, support the patient with a BVM until facility personnel reestablish therapy with original BiPAP device.
- f) Continuously reassess the patient.
- g) Monitor continuous pulse oximetry.
- h) Monitor continuous EtCO<sub>2</sub> with nasal prongs.
- i) Follow the appropriate set of standing orders for continued treatment.
- j) Confirm the availability of a BiPAP device at the destination facility.



FOR CIRCUMSTANCES IN WHICH THE PATIENT DOES NOT IMPROVE OR CONTINUES TO DETERIORATE DESPITE BIPAP AND/OR MEDICATIVE THERAPY, TERMINATE BIPAP ADMINISTRATION AND PERFORM BVM VENTILATION AND ENDOTRACHEAL INTUBATION IF NECESSARY.

BIPAP MAY BE CONSIDERED FOR NON-CARDIOGENIC PULMONARY EDEMA.

**OPTIONAL SUPPLEMENTAL PROGRAM  
BLS GLUCOMETER PROTOCOL  
EMT ONLY**

**G. BLS GLUCOMETER PROTOCOL  
(EMT ONLY)**

**a) PURPOSE**

The glucometer should be utilized by BLS providers to determine the blood glucose level in an attempt to determine the etiology of the patient's condition and provide treatment tailored to the needs of the patient before ALS intervention can be made.

**b) INDICATIONS**

The glucometer should be utilized for any patient presenting with an altered mental status, seizure activity, unresponsiveness, stroke, combative, suspected cyanide poisoning, reported history of high or low blood sugar, and pediatric bradycardia or cardiac arrest.

**c) TREATMENT**

Utilize the glucometer to determine the patient's blood glucose level. If the glucose level is less than 70 mg/dl:

- (1) ADULT: Administer glucose paste (10–15 grams) between the gum and cheek. Consider single additional dose of glucose paste if not improved after 10 minutes.
- (2) PEDIATRIC: Administer glucose paste (10–15 grams) between the gum and cheek; this may be accomplished through several small administrations. Consider single additional dose of glucose paste if not improved after 10 minutes.



IF THE GLUCOSE LEVEL IS GREATER THAN 100 MG/DL, DO NOT ADMINISTER GLUCOSE PASTE.

**OPTIONAL SUPPLEMENTAL PROGRAM  
WILDERNESS EMS**

- b) As there is limited utility for a ground ambulance in the wilderness environment, the wilderness EMS jurisdiction need not be required to have a primary transport vehicle in order to be recognized as a wilderness EMS jurisdiction. However, since the patient will likely eventually need transport to definitive care by ground and/or air ambulance, the wilderness EMS jurisdiction needs to have a plan for transportation once the patient(s) is out of the wilderness environment. Thus, there must be readily available and functioning communication methods between the wilderness EMS jurisdiction and the local EMS jurisdiction. Further, in order to facilitate timely and appropriate post-wilderness care, if the WEMS program is not a section of a previously established public safety EMS transporting jurisdiction, the wilderness EMS jurisdiction must notify the jurisdiction that will be responsible for ground or air transport as soon as the need for transport has been confirmed. Ideally this communication should occur through direct communication with the transporting jurisdiction's emergency communication center rather than simply dialing 9-1-1.

**C. SCOPE OF PRACTICE**

1. Provision of medical care in the wilderness environment is unique in that delays of care due to the remoteness of the environment may be detrimental to the patient. In order to address the unique needs and specialized skills required to manage a patient in the wilderness, these protocols and the training required to utilize these protocols will serve to define the scope of practice of the WEMS provider. Therefore, THE TERM PROVIDER IS GENERIC AND DOES NOT IMPLY A SPECIFIC LEVEL OF MEDICAL TRAINING. THE WILDERNESS PROVIDER MAY BE TRAINED TO ANY LEVEL AND COULD BE A PHYSICIAN, PARAMEDIC, CARDIAC RESCUE TECHNICIAN, EMT, OR WILDERNESS EMERGENCY MEDICAL RESPONDER.
2. In order for the EMS provider to use these wilderness EMS protocols there must be a need demonstrated in which it is documented that without these protocols:
  - a) It would not be possible to safely extricate the patient from the environment  
or
  - b) There is a high risk of the patient or other public safety personnel incurring permanent disability or death  
without the use of the WEMS Protocols

**D. TRANSFER OF CARE**

1. Care is transferred from the WEMS provider to the transporting EMS provider at the point at which the patient is either:
  - a) No longer in the wilderness environment, or
  - b) The wilderness EMS provider has formally transferred care to the transporting provider.
2. There may be times in which the WEMS provider's expertise is needed after transfer of care to the transporting jurisdiction. If this is the case:
  - a) The highest trained WEMS provider shall ride to the hospital with the patient.
  - b) Conflicts shall be resolved by contacting the medical director for the WEMS jurisdiction and then the local EMS Base Station medical control.

**OPTIONAL SUPPLEMENTAL PROGRAM  
WILDERNESS EMS**

**E. DOCUMENTATION/QUALITY IMPROVEMENT**

1. At the completion of the rescue, the WEMS providers must fill out a patient chart in compliance with the MIEMSS charting system.
2. A brief written report shall be provided to the transporting agency with the following information:
  - a) Patient name, age, gender
  - b) Pertinent history of the case
  - c) Vital signs and other pertinent physical findings
  - d) Care rendered
3. WEMS providers must demonstrate proficiency to the WEMS Medical Director on an annual basis via skills testing and/or documentation of the utilization of skills in the field. This may be demonstrated through regular field training exercises.
4. Review of each call:
  - a) Upon completion of the WEMS event, notification of the utilization of the WEMS Protocols will be made to the appropriate EMS supervisor.
  - b) The WEMS Medical Director will review 100% of WEMS calls as soon as is reasonably possible. Ideally this should be done within 48 hours of the event.
  - c) The WEMS program will maintain a detailed WEMS database and will provide an annual report to the State EMS Medical Director.

**TREATMENT PROTOCOLS**

The wilderness EMS provider shall have responsibilities for part or all of these protocols, summarized as follows, based on BLS or ALS level of certification/licensure:

<b>Intervention</b>	<b>BLS</b>	<b>ALS</b>
Provision of access to medications: Ibuprofen, Acetaminophen, Oral electrolytes, Calcium Carbonate tablets (e.g. Tums), ranitidine, diphenhydramine, epinephrine, aspirin, albuterol, ondansetron ODT	•	•
Administration of medications in Protocol, not listed above		•
Hemorrhage control with hemostatic agent and tourniquet	•	•
King Airway	•	•
Surgical Cricothyroidotomy		• (Paramedic only)
Wound closure with steri-strips or other tissue tape	•	•
Wound closure with tissue adhesive		•
Pelvic Binder	•	•

**OPTIONAL SUPPLEMENTAL PROGRAM  
MOBILE INTEGRATED COMMUNITY HEALTH PROGRAM**

**R. MOBILE INTEGRATED COMMUNITY HEALTH PROGRAM**

**1. PURPOSE**

The purpose of this pilot protocol is to establish guidelines for the Mobile Integrated Community Health Pilot Program (MICHPP). The MICHPP is part of a jurisdictional/commercial or regional oversight committee. The oversight committee has, at a minimum, representatives from a Jurisdictional/Commercial EMS Operational Program (EMS Medical Director and EMS Operations), local health department, and local/regional hospital system(s). The EMSOP oversight committee must conduct a community gap/needs assessment to identify frequent utilizers of 9-1-1 services.

This program is established to identify individuals who frequently utilize 9-1-1 for non-life-threatening or medical reasons, and to assist in linking them with community resources and unexplored medical/social programs that will most appropriately meet their needs. The MICHPP team consists of a nurse practitioner/registered nurse and experienced Paramedic. The uniformed MICHPP Paramedic may perform an abuse/neglect evaluation, conduct a home safety check, perform vital sign acquisition (i.e., temperature, pulse, RR, BP, pulse oximetry) for the nurse practitioner/registered nurse (NP/RN), and document findings jointly with the NP/RN. The NP/RN will perform the individual assessment, medication reconciliation/compliance, make referrals, interface with the primary health care professional/physician, and make recommendations to the patient.

**2. INDICATIONS**

Individuals who may qualify for a home visit by the MICHPP team include:

- a) Patients who have called 9-1-1 for any medically-related reason five times in any six-month interval (individual's consent required) or
- b) Patients who are referred to the MICHPP by other allied health professionals or EMS providers (individual's consent required)

**3. PRECAUTIONS**

Upon initiation of the home visit, if any individual were to exhibit any signs or symptoms that would require transport to an emergency department, the MICHPP team will contact the county dispatch center who will be directed to generate an emergent response for that individual.

The MICHPP Paramedic will perform all assessments and care based on current Maryland Medical Protocols for EMS Providers until the appropriate EMS resource's arrival; care may then be transferred to that EMS unit. The NP/RN cannot direct the Paramedic to perform any skill or medical intervention that is not within his or her scope of practice nor provide "Medical Consultation" as referenced in the Maryland Medical Protocols for EMS Providers.

**4. CONTRAINDICATIONS**

Individuals who will not qualify for this program include:

- a) Individuals already receiving care from a patient-centered medical home (PCMH) or who have already established individual home health care or use a visiting nurse agency

**OPTIONAL SUPPLEMENTAL PROGRAM  
MOBILE INTEGRATED COMMUNITY HEALTH PROGRAM**

- b) Individuals who refuse participation by revoking written consent, verbal refusal of care at time of visit, or integration into programs as in 4. a) above
- c) Patients who have not reached their 18<sup>th</sup> birthday

**5. PROCEDURE**

After an individual has consented to be included in this program, a scheduled home visit will be performed as follows:

- a) Uniformed Paramedic will:
  - (1) Provide a recognized uniformed presence for individual reassurance and familiarity.
  - (2) Assess the individual's home.
    - (a) Assess for signs of neglect or abuse.
    - (b) Assess for safety issues (e.g., slip/fall risk, smoke detector, fire, exposed electrical).
  - (3) Obtain basic vital signs.
    - (a) Heart rate
    - (b) Blood pressure
    - (c) Pulse oximetry
    - (d) Respiratory quality and rate
    - (e) Temperature
    - (f) Weight



PARAMEDIC WILL NOT BE PERFORMING BLOOD DRAWS (WITH THE EXCEPTION OF BLOOD GLUCOSE), MEDICATION ADMINISTRATION, OR ALS INTERVENTIONS UNLESS AN IMMEDIATE LIFE-THREATENING CONDITION HAS BEEN IDENTIFIED AND THE 9-1-1 CENTER HAS BEEN NOTIFIED AND AN EMS RESPONSE INITIATED.

- b) NP/RN will
  - (1) Evaluate for any immediate life-threatening condition.
  - (2) Assess for signs of neglect or abuse.
  - (3) Review vital signs.
  - (4) Obtain and review the individual's past medical history.
  - (5) Determine the individual's family and social history.
  - (6) Review medication.
  - (7) Review behavioral health.
  - (8) Conduct a basic physical assessment including a focused review of systems.
  - (9) Make appropriate health professional contacts, medication modifications education, and referrals

**6. MEDICAL CONSULTATION as defined in *The Maryland Medical Protocols for EMS Providers***

- a) Obtained through Jurisdictional/Commercial EMS Medical Director or designated Base Station
- b) Paramedics cannot accept orders from primary care physicians on the phone or on-scene unless individual has an immediate life-threatening condition and the physician is going to the hospital with individual on EMS unit.

**OPTIONAL SUPPLEMENTAL PROGRAM  
MOBILE INTEGRATED COMMUNITY HEALTH PROGRAM**

**7. DOCUMENTATION AND DATA COLLECTION**

- a) All data (by Paramedic/NP/RN) will be collected in a patient care record that will have a data set that will meet the required QA/QI performance measure of section 8 of this protocol.
- b) The MICH program will establish policies and procedures for sharing of protected health information across allied health, social services, and community organizations, with resources available for patients.
- c) In the event that an immediate life-threatening condition is identified and the MICHPP Paramedic initiated EMS care:
  - (1) The MICHPP Paramedic shall complete an entire eMEDS® report (or Commercial EMSOP equivalent) documenting care provided.
  - (2) The NP/RN will complete the MICH patient care report documenting the activation of an EMS response due to immediate life-threatening condition and NP/RN individual care provided.

**8. QUALITY ASSURANCE/QUALITY IMPROVEMENT**

- a) All calls will be reviewed by an EMSOP QA Committee consisting of Nursing, EMS, Administrative, and EMS Medical Director.
- b) Data reports will be generated monthly (for the first year, and then quarterly) to the Office of the State EMS Medical Director and to the Oversight Committee.
- c) The MICH metrics for reporting are as follows:
  - (1) The number of patients that qualified, and the number that have consented and enrolled in the MICHPP and the number that refused (ideally with the reason for refusal)
  - (2) The number and frequency of EMS transports and encounters for the recruited MICH patients (trending the access of health care services) for both pre- and post- enrollment of the patient into the MICHPP
  - (3) Aggregate summary of patient satisfaction survey (completed upon conclusion of each visit)
  - (4) Patient Quality of Life survey scores for both pre- and post- enrollment of the patient into the MICHPP (CDC HRQOL- 4, below)
  - (5) Any problems identified in complying with or applying the pilot program by the NP, RN, or Paramedic
  - (6) Any untoward events or formal patient complaints with detailed explanation
  - (7) Any increase of the number and percent of patients utilizing a primary care provider (PCP) (if none upon enrollment)
  - (8) Number of referrals to additional allied health, social services, or programs that the MICHPP determines as beneficial per patient and recruited patient compliance
  - (9) Number and percent of medication inventories conducted with issues identified and communicated to PCP
  - (10) Monthly run chart reporting and/or pre-post emergency department intervention comparison
  - (11) Where possible, cost expenditures and cost savings (part of quarterly and annual reporting)
  - (12) Number and percent of safety-related interventions (physical environment assessment tool and Hendrich fall risk assessment tool)

OPTIONAL SUPPLEMENTAL PROGRAM  
MOBILE INTEGRATED COMMUNITY HEALTH PROGRAM

**Healthy Days Core Module (CDC HRQOL- 4)**  
**(The numbers behind answers are for coding purposes.)**

1. Would you say that in general your health is:

Please Read

- |              |   |
|--------------|---|
| a. Excellent | 1 |
| b. Very good | 2 |
| c. Good      | 3 |
| d. Fair      |   |
| or           | 4 |
| e. Poor      | 5 |

Do not read these responses

- |                     |   |
|---------------------|---|
| Don't know/Not sure | 7 |
| Refused             | 9 |

2. Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?

- |                     |    |
|---------------------|----|
| a. Number of Days   | -- |
| b. None             | 88 |
| Don't know/Not sure | 77 |
| Refused             | 99 |

3. Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?

- |                     |   |
|---------------------|---|
| a. Number of Days   | --  |
| b. None             | 88 (If both Q2 and Q3 = "None," skip next question) |
| Don't know/Not sure | 77  |
| Refused             | 99  |

4. During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?

- |                     |    |
|---------------------|----|
| a. Number of Days   | -- |
| b. None             | 88 |
| Don't know/Not sure | 77 |
| Refused             | 99 |



**OPTIONAL SUPPLEMENTAL PROGRAM  
MOBILE INTEGRATED COMMUNITY HEALTH PROGRAM**

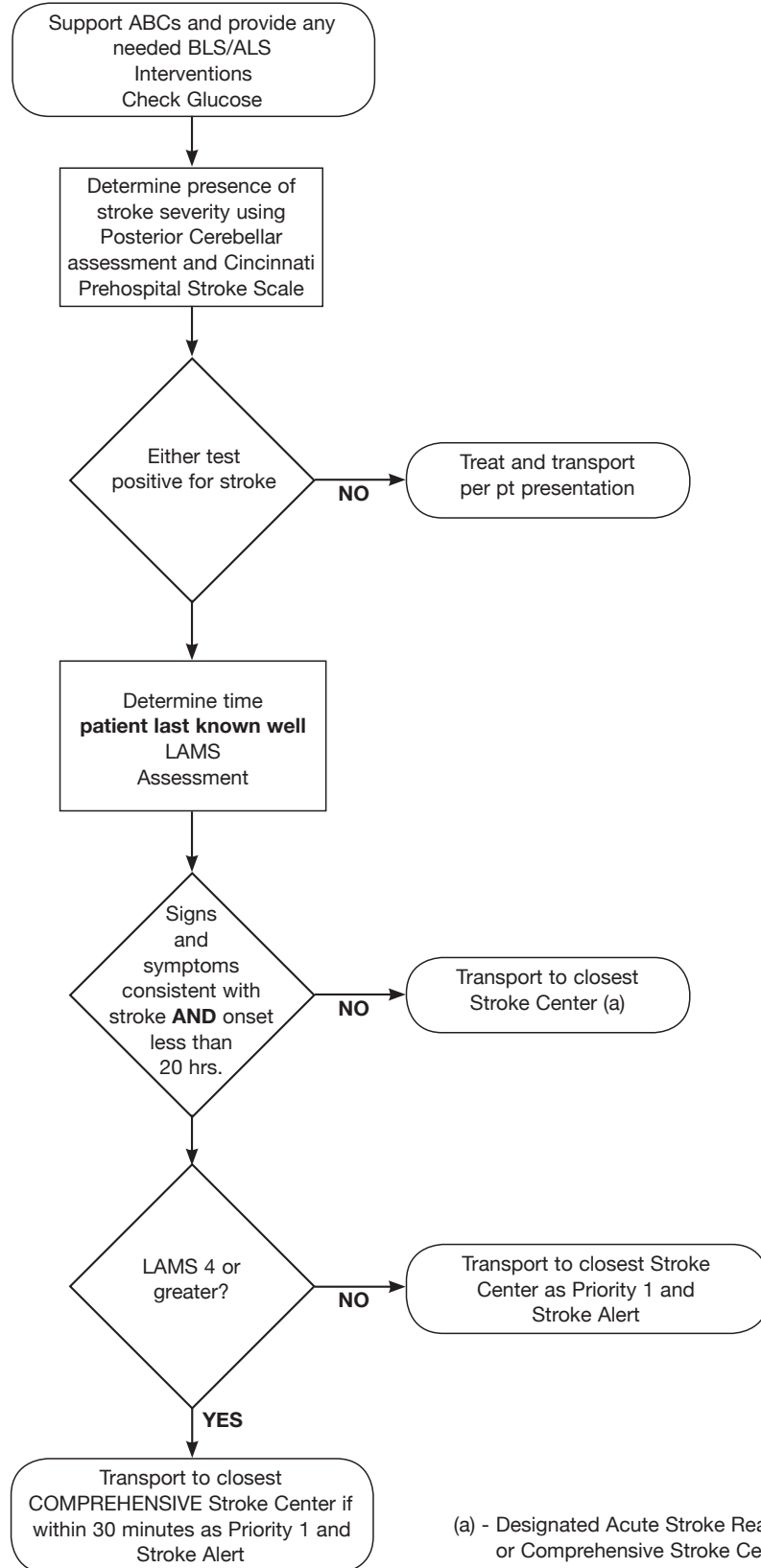
<b>Hendrich II Fall Risk Model™</b>			
Confusion Disorientation Impulsivity		4	
Symptomatic Depression		2	
Altered Elimination		1	
Dizziness Vertigo		1	
Male Gender		1	
Any Administered Antiepileptics		2	
Any Administered Benzodiazepines		1	
<b>Get Up &amp; Go Test</b>			
Able to rise in a single movement – No loss of balance with steps		0	
Pushes up, successful in one attempt		1	
Multiple attempts, but successful		3	
Unable to rise without assistance during test (OR if a medical order states the same and/or complete bed rest is ordered) *If unable to assess, document this on the patient chart with the date and time		4	
<b>A Score of 5 or Greater = High Risk</b>		<b>Total Score</b>	
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LAMS STROKE  
RESEARCH PROTOCOL

B. LAMS Stroke Research Protocol (NEW '19)

EMS STROKE ALGORITHM



**BALTIMORE CITY LAMS  
RESEARCH PROTOCOL**

1. Initiate General Patient Care.
2. Presentation  
Patient may present with numbness or weakness (often on one side only), difficulty speaking, sudden onset of dizziness or loss of balance, blurred vision (including intermittent loss of vision in one or both eyes, which may have resolved upon arrival of EMS), or a severe, unexplained headache. May be accompanied by seizures or altered mental status.
3. Treatment
  - a) Position patient with head elevated at 30 degrees.
  - b) If the patient has a positive Posterior Cerebellar Assessment OR Cincinnati Stroke Scale AND can be delivered to the hospital within 20 hours\* of when patient was last known well, transport the patient to the closest Designated Acute Stroke Ready, Primary, or Comprehensive Stroke Center. If this adult patient also has a LAMS score of 4 or greater, they are to be transported to a Comprehensive Stroke Center or the endovascular capable Sinai Hospital. If there is not one within 30 minutes, then go to the closest Designated Acute Stroke Ready or Primary Stroke Center if within 30 minutes.

**The Cincinnati Prehospital Stroke Scale**

(Kothari R, et al. Acad Emerg Med 1997; 4:9866-990.)

**Facial Droop** (have patient show teeth or smile):

- Normal – both sides of face move equally
- Abnormal – one side of face does not move as well as the other side

**Arm Drift** (patient closes eyes and holds both arms straight out for 10 seconds):

- Normal – both arms move the same or both arms do not move at all (other findings, such as strength of grip, may be helpful)
- Abnormal – one arm does not move or one arm drifts down compared with the other

**Abnormal Speech** (have the patient say “you can’t teach an old dog new tricks”):

- Normal – patient uses correct words with no slurring
- Abnormal – patient slurs words, uses the wrong words, or is unable to speak

Posterior Cerebellar assessment: Balance and Eyes: patient complains of sudden onset of loss of balance or dizziness, or has sudden vision loss (including intermittent loss of or blurred vision) indicates a stroke affecting the posterior cerebellar circulation.

If Posterior Cerebellar assessment OR Cincinnati Prehospital Stroke Scale is positive, perform the Los Angeles Motor Scale (LAMS). Relay LAMS score to the receiving hospital during Stroke Alert notification.

**BALTIMORE CITY LAMS  
RESEARCH PROTOCOL**

The Los Angeles Motor Scale (LAMS)	
Facial droop	
Absent	0
Present	1
Arm drift	
Absent	0
Drifts down	1
Falls rapidly	2
Grip strength	
Normal	0
Weak grip	1
No grip	2



IF PATIENT MEETS ABOVE STROKE CRITERIA, THIS PATIENT IS A PRIORITY 1 PATIENT AND REQUIRES NOTIFICATION OF THE NEAREST DESIGNATED ACUTE STROKE READY, PRIMARY, OR COMPREHENSIVE STROKE CENTER AS SOON AS POSSIBLE TO ALLOW HOSPITAL PREPARATION. DURING THE CONSULTATION WITH THE RECEIVING FACILITY, THE PROVIDER SHALL USE THE VERBIAGE, "STROKE ALERT WITH A LAST KNOWN WELL TIME OF XX:XX" AS THE UNIVERSAL METHOD OF NOTIFYING THE FACILITY THAT THE PATIENT MEETS THE STROKE INCLUSION CRITERIA.

PROVIDERS SHOULD OBTAIN AND DOCUMENT A CONTACT TELEPHONE NUMBER FOR ONE OR MORE INDIVIDUALS WHO HAVE DETAILS ABOUT THE PATIENT'S MEDICAL HISTORY SO THAT THE PHYSICIAN MAY OBTAIN AND VALIDATE ADDITIONAL PATIENT INFORMATION.

WHILE STROKES DURING PREGNANCY OR SHORTLY AFTER GIVING BIRTH ARE RARE, THERE HAS BEEN A SIGNIFICANT RISE REPORTED IN THE LITERATURE. MOTHERS-TO-BE AND POSTPARTUM MOTHERS HAVE AN INCREASED RISK.

- c) Use glucometer and treat if glucose less than 70 mg/dl.
  - d) Establish IV access with LR.
  - e) If the patient is hypotensive, obtain medical consultation.
  - f) Consider obtaining blood sample using closed system.
  - g) Do not treat hypertension in the field.
4. Continue General Patient Care.

## C. PEDIATRIC DESTINATION DECISION TREE (PDTree)

### 1. PURPOSE

This evidence-based decision support tool is designed to assist providers in choosing the facility type most likely to deliver definitive care for pediatric patients requiring transport. This represents an ideal destination choice. Destination selection for any individual patient will include other factors, including transport time, unit availability, and patient/family requests.

### 2. INDICATIONS

Current Maryland Medical Protocols for EMS Providers (MMP) should take precedence. The PDTree should be applied to patients considered “pediatric” ages by the MMP. For medical pediatric patients, this is birth up to the 18th birthday. For trauma patients, the PDTree may be used for patients from birth up to the 15th birthday. For this research protocol, both trauma and medical pediatric patients will be called “child.”

### 3. CONTRAINDICATIONS

- a) Pregnant patients
- b) Newly born infants should be transported (with their mother) to the closest appropriate facility able to receive the post-partum mother.

### 4. DEFINITIONS

- a) Pediatric Base Stations currently designated by MIEMSS include Johns Hopkins Hospital Children’s Center and Children’s National Medical Center. These Pediatric Base Stations may be consulted at any time by any Maryland EMS provider for on-line medical direction and assistance with destination decision-making.
- b) Specialty or Trauma Center is defined by current MIEMSS facility designations for Trauma, Eye, Burn, and Pediatric Specialty Centers.
- c) Medical Home is defined as the ED/hospital where the patient has their medical records and has established care by specific physicians to address the patient’s unique needs. Existing MMP suggests that EMS providers should transport (repatriate) the patient to that hospital as long as that hospital is not more than 15 additional minutes further than nearest hospital (or greater if allowed for by the EMS Operational Program).
- d) Comprehensive Pediatric Center is defined as a hospital ED with pediatric ICU on-site.
- e) Regional Pediatric Care Center is defined as a hospital ED with inpatient pediatric services and/or a designated pediatric ED staffed by pediatric specialty trained physicians 24/7 or a Freestanding Emergency Medical Facility (FEMF) with designated pediatric ED staffed by pediatric specialty trained physicians 24/7.
- f) Nearest Appropriate Facility is defined as the closest hospital ED or FEMF that is available as an EMS transport destination.
- g) Feasibility of transport to the suggested destination type is left to the discretion of the EMS Operational Program.

### 5. PEDIATRIC DESTINATION DECISION TREE (See page 450-5)



CHILDREN WHO ARE IN CARDIAC ARREST, OR IF A PATENT AIRWAY CANNOT BE ESTABLISHED, MUST BE TRANSPORTED TO THE NEAREST APPROPRIATE HOSPITAL-BASED EMERGENCY DEPARTMENT OR DESIGNATED FREESTANDING EMERGENCY MEDICAL FACILITY.

**CLINICAL  
TREATMENT  
GUIDELINES**

**FOR**

**WEAPONS OF MASS  
DESTRUCTION**

(Based on 1996 Olympic Protocols)

Revised February 2, 2000

## Guideline Development and Use

Guidelines are systematically developed statements to assist health care providers and patients with decisions about appropriate care/treatment for specific clinical conditions. This supplement was developed by a multidisciplinary panel of health care providers and other experts in consultation with the Department of Health and Human Services.

This supplement is organized to provide a fact sheet on the individual chemical or biological agent, followed by a treatment protocol. The pediatric protocol sections for the chemical agents are located immediately following the chemical agents and before the biological agents. EMS providers may implement these protocols (1) with medical consultation for chemical agent exposure patients and/or (2) in the jurisdictional declared mass casualty incident biological event where antidotes or antibiotics are available.

The guidelines reflect the state of knowledge, current at the time of publication, on effective and appropriate care. Health care providers and patients are encouraged to use the information provided in this clinical practice guideline. The recommendations may not be appropriate for use in all circumstances. Decisions to adopt any particular recommendation must be made by the care provider in light of the available resources and circumstances presented by individual patients.