MAINE EMS 2019 PROTOCOL LESSON PLAN

	GOLD SECTION	
SLIDE #	***LESSON***	***NOTES***
1	1. Title slide	
2	2. Allergy/Anaphylaxis #1 a. EMT/AEMT i. Epi concentration notation changed throughout the protocols 1. This was done to reduce medication errors and confusion regarding the concentrations ii. Peds Epi dosing moved from PINK 1. < 25 kg- 0.15 mg IM 2. > 25 KG- 0.3 mg IM iii. NEW Hospital "H" 1. Notify OLMC for impending arrival of critical patient	
3	b. Paramedic i. Item #14C 1. Racemic Epi added as an Tx option for consideration by the paramedic versus a. Albuterol 2.5 mg/3 mL 2. Nebulized a. Mix 0.5 mL of a 2.25% solution into 2.5 mL of NS	
4	ii. Item #15- Epi IV infusion 1. Titrate to desired effect a. Consideration of improvement/resolution of respiratory symptoms b. Systolic BP- >90 mmHg; AND/OR c. MAP > 65 mmHg 2. REQUIRES OLMC 3. Epi drip MUST be on a pump	
5	3. Coma (Decreased Level of Consciousness) a. EMT i. Reminder for scene safety 1. Environment may be reason for decreased level of consciousness: a. Toxic environment/IDLH b. HAZMAT b. AEMT/Paramedic i. "Differential Dx of Coma" table added 1. AEIOUTIPS	
6	4. Diabetic/Hypoglycemic Emergencies #1 a. Assessment and Tx moved from PINK b. AEMT i. Table for dosing D_{10} IV for peds has been added 1. Weight/ Volume to be infused	

7	5. Seizure #1 a. Paramedic i. Item #9- Guidance on administration of midazolam 1. Verbiage changed to clarify definition of status epilepticus 2. Helps to avoid confusion when it's not readily apparent whether or not the patient is in "status"	
8	ii. Item #9 a/b/c 4. Peds midazolam dosing moved from PINK 5. DOSING ON SLIDE a. IM- 0.2 mg/kg; MAX 10 mg b. IV/IO- 0.1 mg/kg; MAX 5 mg c. REPEAT dosing i. IM- 0.6 mg/kg MAX CUMULATIVE 20 mg ii. IV- 0.3 mg/kg; MAX RCUMULATIVE 15 mg	
9	6. Seizure #2 a. PEARL i. NEW note regarding first dose midazolam 1. Should be given IM unless an IV has already been started. Do not delay Tx to start an IV"	
10	7. Stroke #1 c. Stroke Screening Criteria/Tools i. (EMT/AEMT/Paramedic) ii. Tx window from known time of onset of signs/symptoms has INCREASED to 24 hours[1] iii. If patient screens POSITIVE on Cincinnati Prehospital Stroke Scale, proceed to: 1. (NEW) FAST-ED screening tool for Large Vessel Occlusion (LVO)	*1. While patients may not be in the window for tPA, they MAY still fall in the window for endovascular therapy for Large Vessel Occlusion (LVO)*
11	8. Stroke #2- Large Vessel Occlusion Screening a. EMT/AEMT/Paramedic b. MDPB thanks Dr. Jane Morris, of the Maine Stroke Alliance, for her collaboration on this protocol c. This is a new tool for screening patients for LVO. iv. Pt's with LVO may benefit from advanced neurological intervention procedures *v. Requires individual/local level education and practice to gain proficiency* d. Uses FAST-ED screening table e. Positive screening may result in diversion to a facility capable of neurological intervention procedures vi. Comprehensive Stroke Center or Thrombectomy Capable Center vii. SEE "DESTINATION SUPPORT GUIDANCE" table on slide	*Like GCS and Cincinnati Scale, this will require training- including practical-- best done at service or individual level*

12	f. FAST-ED Table slide viii. This scale is for use of all EMT/AEMT/Paramedics	*All should practice the steps and scoring of this scale*
13	g. DESTINATION SUPPORT GUIDANCE Table ix. Important Steps: 1. If the patient has a. Positive Cincinnati Pre-Hospital Stroke screen **AND** b. Positive FAST-ED. **THEN** c. Screens POSITIVE for any of the 3 tPA questions **OR** d. Patient is more than 3 hours from last known well – 2. **They MAY be candidates for thrombectomy** *(even if they don't qualify for tPA)*. In those cases, if the additional transport time is less than 30 minutes to a comprehensive stroke center or a thrombectomy capable stroke center – consider transport to one of these facilities. 3. If the patient has NO contraindications to tPA (i.e. no to each of the 3 tPA questions) AND time from LKW is less than 3 hours, they are considered candidates for tPA and should be transported to the nearest hospital, which may, in some settings, be a center also capable of endovascular procedures.	*REFER TO THE DESTINATION GUIDANCE TABLE ON THE SLIDE*
14	9. Stroke #3 a. EMT- NEW practice step for MAINE i. EMT's can now call "code stroke" ii. This may be a new practice step for many EMTs in Maine and *may be a significant culture change for many* 1. Senior EMT's who have always known this to be an ALS skill *2. ALS PROVIDERS* 3. Volunteers 4. Low-call volume areas iii. Getting comfortable with doing this and developing proficiency will require practical training at the local service levels iv. It will also require support from their local ALS providers 1. Practical scenario training 2. Coaching and mentoring v. Terminology and procedures may vary with hospitals and regions	
15	b. PEARLS i. Addition of LVO note	

	4. tPA and endovascular therapies should be performed as rapidly as possible	
16	10. Acute Stroke #4- Stroke Checklist- this is the checklist itself a. There is an addition of items that add specific examples to amplify the questions in the checklist	
17	11. Medical Shock #1 a. Physical assessment tools and patient history should be used for identification of medical shock. b. Reminder that hypoperfusion can come from various causes i. Hemorrhagic ii. Cardiogenic iii. Anaphylactic iv. Hypovolemic c. Initial fluid bolus for severe sepsis in adults should be UP TO 30 ml/kg for all medical shock EXCEPT Cardiogenic d. Cardiogenic shock should be assessed thoroughly prior to fluid bolus e. Pediatric resuscitation remains at 20 mL/kg boluses – repeating twice (for total of 60 mL/kg). f. POC Serum Lactate has been removed	
18	12. Medical Shock #2 a. Paramedic i. Item #8- Adrenal insufficiency 1. Peds dosing for dexamethasone moved from PINK section a. 0.06 mg/kg **IV/IO/IM**; MAX 10 mg b. Sepsis PEARL i. Use lactated ringers for fluid bolus when possible 1. Current evidence there may be benefit from using Ringers in critically ill patients with shock. ii. Administering NOREPInephrine IV 1. Due to known severe vasoconstriction and subsequent tissue necrosis with NOREPInephrine extravasation, ensure IV line flushes easily and that there is NO extravasation	
19	13. Medical Shock #3 a. NEW Pediatric **PEARL**- Presence of shock i. Shock well established before the appearance of classic signs and symptoms ii. Consider that sepsis may be present early in certain high-risk settings/situations b. Table- aid for use in identifying sepsis in pediatric patients i. Lists vital sign limits in the table, and describes other signs and symptoms which may be present	
20	14. Medical Shock #4 a. Pediatric **PEARL**- Hypoglycemia and shock i. Many pediatric patients are also hypoglycemic* ii. In pt's under 6 y/o, consider IO placement after single unsuccessful IV attempt	

	1. Timely IV placement in this age group is shown to be difficult iii. Cardiogenic Shock 1. Peds pt's should receive boluses 10 mL/kg with frequent reassessment for tolerance and need for additional fluids (or improvement).	
21	15. Nausea and Vomiting a. EMT i. Manage airway and refer to BLUE 3 as appropriate b. AEMT i. NEW- Ondansetron 1. Dosing: 4 mg ODT PO x1 a. Contraindication- Hx prolonged QT syndrome *	***Prolonged QT syndrome:** The AEMT is **NOT** expected to interpret 12-lead ECG's and Dx this issue. It is expected that the Provider will find this issue in the patient's history.*
22	2. This is an expanded scope of practice for the MAINE AEMT. Service level and individual education and scenario practice will be needed to gain and maintain provider competency. Suggested topics* include: a. Ondansetron pharmacology b. Indications/contraindications c. Duration of effect d. Dosing e. Skills practice in scenario	**Topic suggestions are offered for local/regional instructor benefit and should not be interpreted as MEMS mandated course content.*
23	c. Paramedic x. Ondansetron dosing moved from PINK 1. Age greater than 4 y/o: 4 mg PO x 1 2. Age less than 4 y/o: 0.1 mg/kg I**V/IM**; MAX dose is 4 mg d. Avoid IV unless fluid resuscitation is indicated e. PEARLS - Ondansetron and Prolonged QT Syndrome xi. Many medications can cause Prolonged QT syndrome. 1. Antiarrhythmics 2. Antimicrobials 3. Antidepressants 4. Antipsychotics **5. METHADONE** xii. There is a website link in the PEARL which takes providers to an information page where they can find info about these meds.	
24	Questions???	*INSTRUCTORS; please make an effort to collect student questions for the forthcoming FAQ*
END OF GOLD SECTION		