



OHIO DEPARTMENT OF PUBLIC SAFETY

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Developing a Performance Improvement Program

# Emergency Medical Services

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## The Purpose of Performance Improvement

**O**hio Emergency Medical Service organizations must strive to maximize efficiency, effectiveness, promote excellence and personal accountability through peer review and continuous performance improvement.

Amended Substitute House Bill #138 requires EMS organizations to implement ongoing peer review and performance improvement programs to improve the availability and quality of EMS services.

In implementing these programs, EMS organization shall consider how to improve its ability to provide effective trauma care, particularly for pediatric and geriatric patients, and shall take into account the trauma care guidelines developed by the Ohio EMS Board.

### Performance Improvement

Information generated solely for use in a peer review or performance improvement program is not a public record, is not subject to discovery and shall not be introduced into evidence in a civil action.

### Definitions

Performance Improvement (PI):

The continuous study and improvement of process, system or organization.

Peer review:

A team process in which Emergency Medical Service providers continuously evaluate and improve their own patient care delivery system.

## Medical Direction

**M**edical Direction participation is essential and important for the program's success.

The Medical Director is responsible for program content and spearheads leadership for the performance improvement program. He or she also sets the direction for performance improvement by creating a strong patient focus.

In addition, the EMS Medical Director helps establish clear statements that define the organization's mission, values, objectives, and expectations.

## Intent

**T**he intent of any performance improvement program is to:

- ? Provide data and information, in a non-punitive manner, on how well the system and process works.
- ? Implement continuing education, training programs, and equipment needs based on outcome data from the peer review / performance improvement process.

Each Emergency Medical Services Organization will establish:

- ? Medical Direction oversight. Regional Physician Advisory Board (RPAB) oversight if medical direction unavailable.
- ? An ongoing peer review and continuous performance improvement program.
- ? Establish a structure and / or membership to implement the PI process.
- ? Establish performance indicators relevant to their system.
- ? Develop a feedback mechanism to the patient care providers.

## Implementation

**O**btain EMS Medical Direction or RPAB oversight.

- ? Ensure your system has current prehospital protocols. RPAB Guidelines are available to download from the Ohio Department of Public Safety; Emergency Medical Services web site if a system needs assistance with this process. ([www.ohiopublicsafety.com](http://www.ohiopublicsafety.com) and select Emergency Medical Services)
- ? Protocols set the standard of care by which prehospital care providers are evaluated.
- ? Develop a review process, a method to review runs.

### Suggestion for establishing a review process

#### Committee

- ? Develop a committee representative of the system. Example would be an ED physician as chairman, ED nursing representation, and a representative from each EMS service.
- ? The runs reviewed may depend on the system's run volume. In smaller systems, the committee may elect to review each run. Larger systems will need to select a specific topic, such as chest pain, and review only those runs or a percentage of those runs, depending upon volume.
- ? It is suggested that all systems review sentinel events. A sentinel event is defined as an unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof.

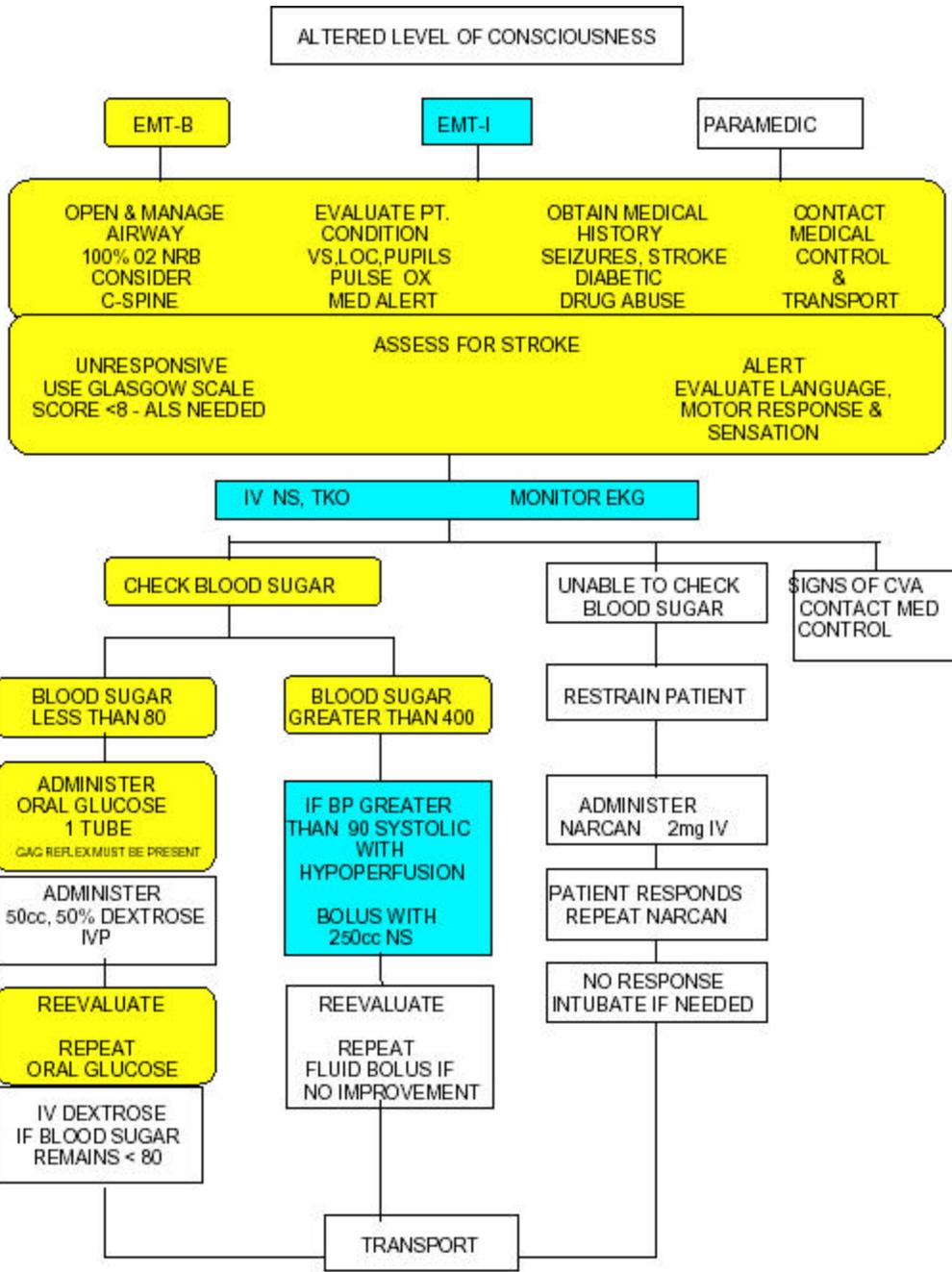
#### Performance Improvement Coordinator

- ? Some systems may elect to hire and/or appoint an individual to conduct performance improvement reviews and provide feedback to the providers.
- ? This individual may establish the same review system as a committee and review all runs, select runs, or percentages of runs.

## Suggested Sample Review Forms

**T**he following pages will show suggested forms for used in reviewing common patient complaints encountered by EMS providers.

- ? These forms will allow EMS organizations to begin the review process and evaluate their system's process and their providers' adherence to the established standard of care. (i.e., their protocols).
- ? It is suggested that one form be used to review each run. The reviewer will read the prehospital care report and determine if documentation reflects adherence to the items listed on the review form.
- ? Each review form reflects the protocols which are used to provide quality care to patients.



Run #: \_\_\_\_\_

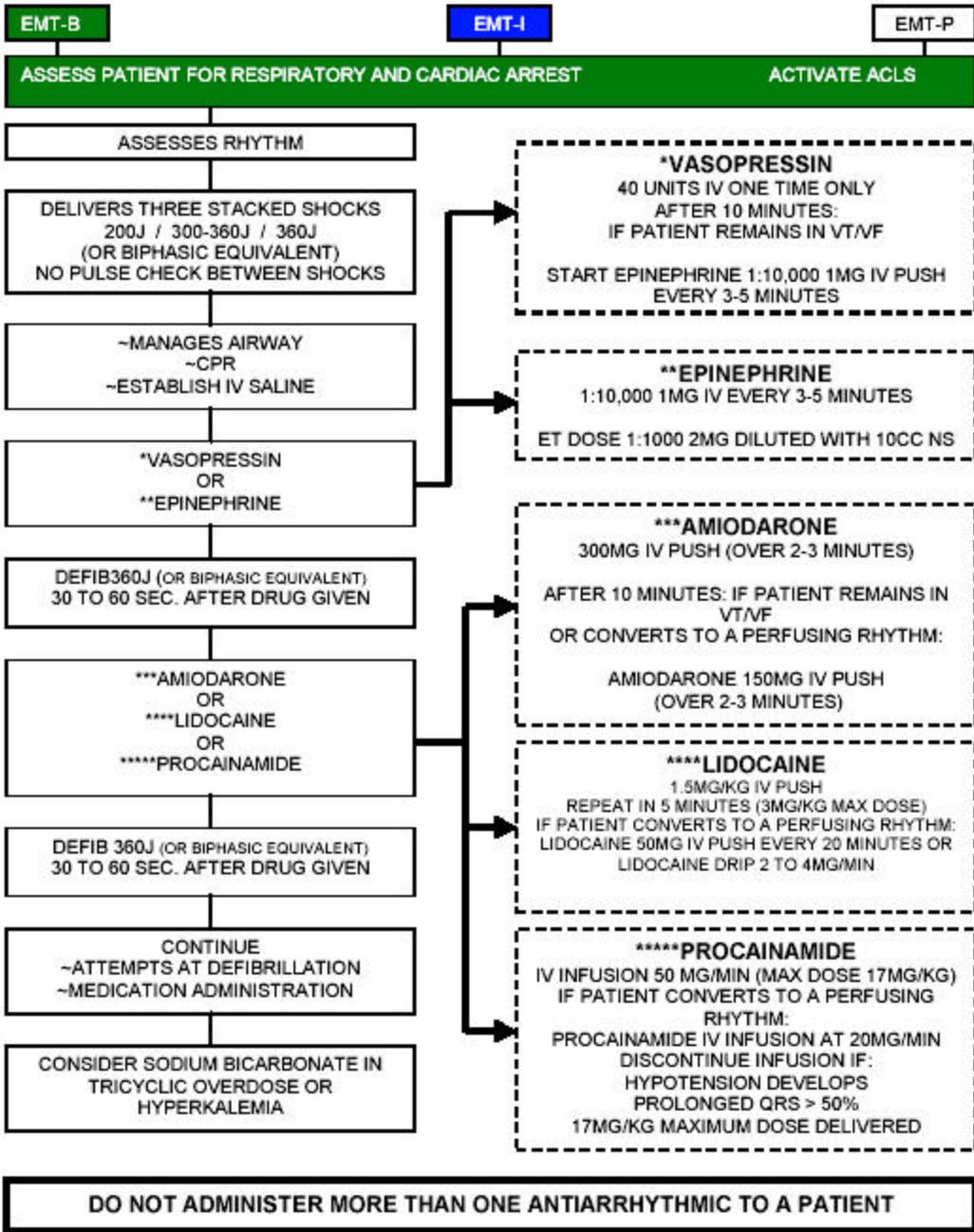
Squad #: \_\_\_\_\_

Emergency Medical Services  
Performance Improvement

**ALTERED MENTAL STATUS**

<b>INDICATOR</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>
1. ABC assessment done?			
2. ABC management documented?			
3. Oxygen administration appropriately?			
4. Patient assessment documented? a. AVPU? b. breath sounds? c. vital signs? d. skin color/condition? e. Capillary refill time?			
5. History obtained/documentated?			
6. Glasgow coma scale documented?			
7. Stroke assessment/Cincinnati Stroke Scale documented? a. facial droop? b. arm drift? c. speech?			
8. Blood glucose level checked?			
9. Blood glucose treated appropriately? a. >400 - administer 250cc fluid bolus? b. <80 - 50cc 50% dextrose or 1 mg glucagon?			
10. IV established?			
11. IV fluid administration documented?			
12. IV fluid administration appropriate?			
13. Cardiac monitor applied?			
14. Rhythm identified and documented?			
15. Narcan administered? a. administered appropriately?			
16. Medical direction contacted?			
17. Response to treatment(s) documented?			
18. Times documented?			
19. Other: _____ _____ _____			

**CARDIAC ARREST  
V-FIB / PULSELESS V-TACH**



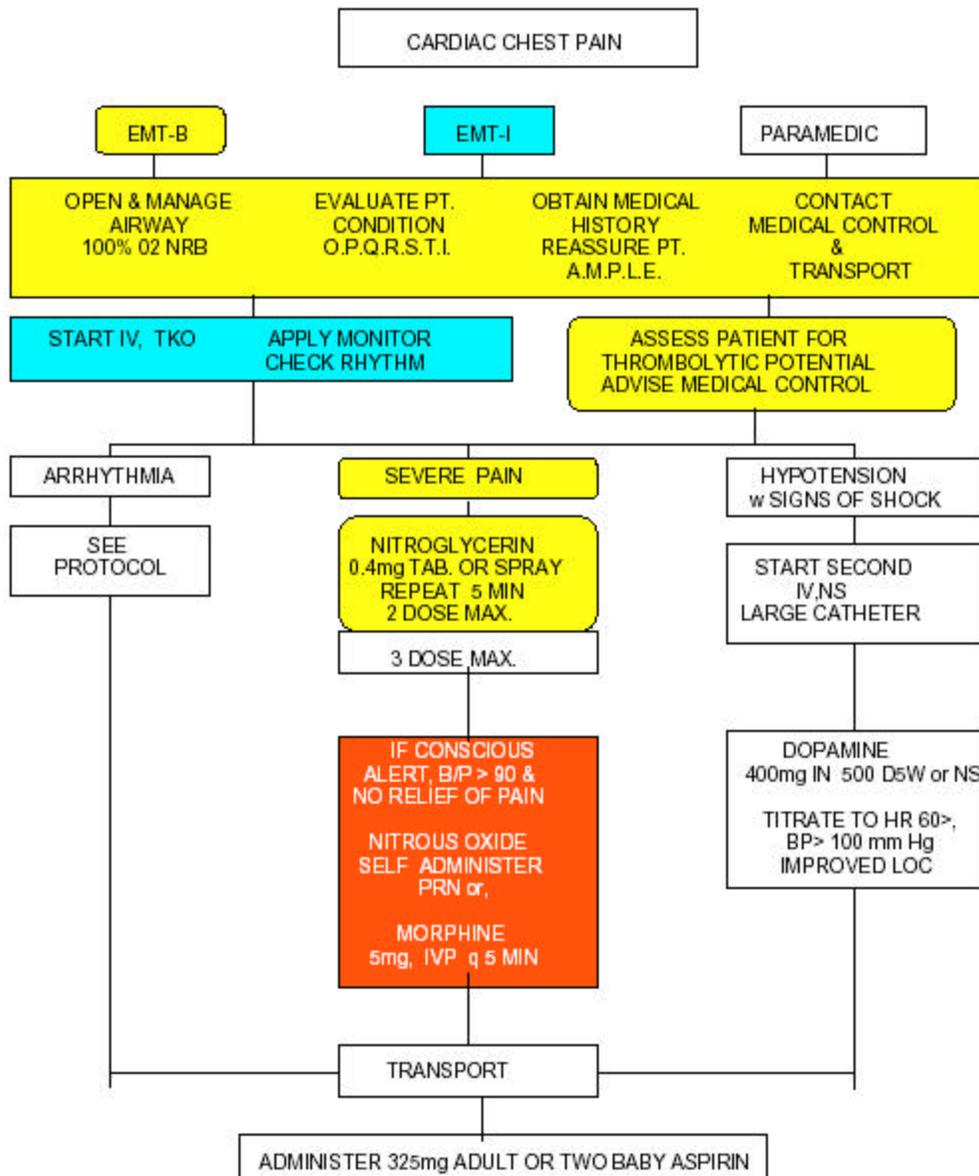
Run #: \_\_\_\_\_

Squad #: \_\_\_\_\_

Emergency Medical Services  
Performance Improvement

**CARDIAC ARREST (Circle Appropriate one: ADULT / PEDIATRICS)**

INDICATOR	YES	NO	NA
1. ABC assessment done?			
2. ABC management documented?			
3. CPR started? a. time started documented?			
4. Monitor/AED applied? a. delivers three stacked shocks, if indicated? (200J, 300J, 350J) b. continues CPR if shocks not indicated?			
5. Reassesses pulse?			
6. Manages airway? a. oral airway? b. EOA? c. ETT? d. Other: _____			
7. Oxygen administered appropriately?			
8. History obtained/documented (if able)?			
9. IV established?			
10. Rhythm(s) identified and documented?			
11. Rhythm(s) managed appropriately and medications administered appropriately?			
12. Other interventions performed appropriately and documented? (i.e., pacing) _____			
13. Medical direction contacted?			
14. Response to treatment(s) documented?			
15. Times documented?			
16. Other: _____ _____			



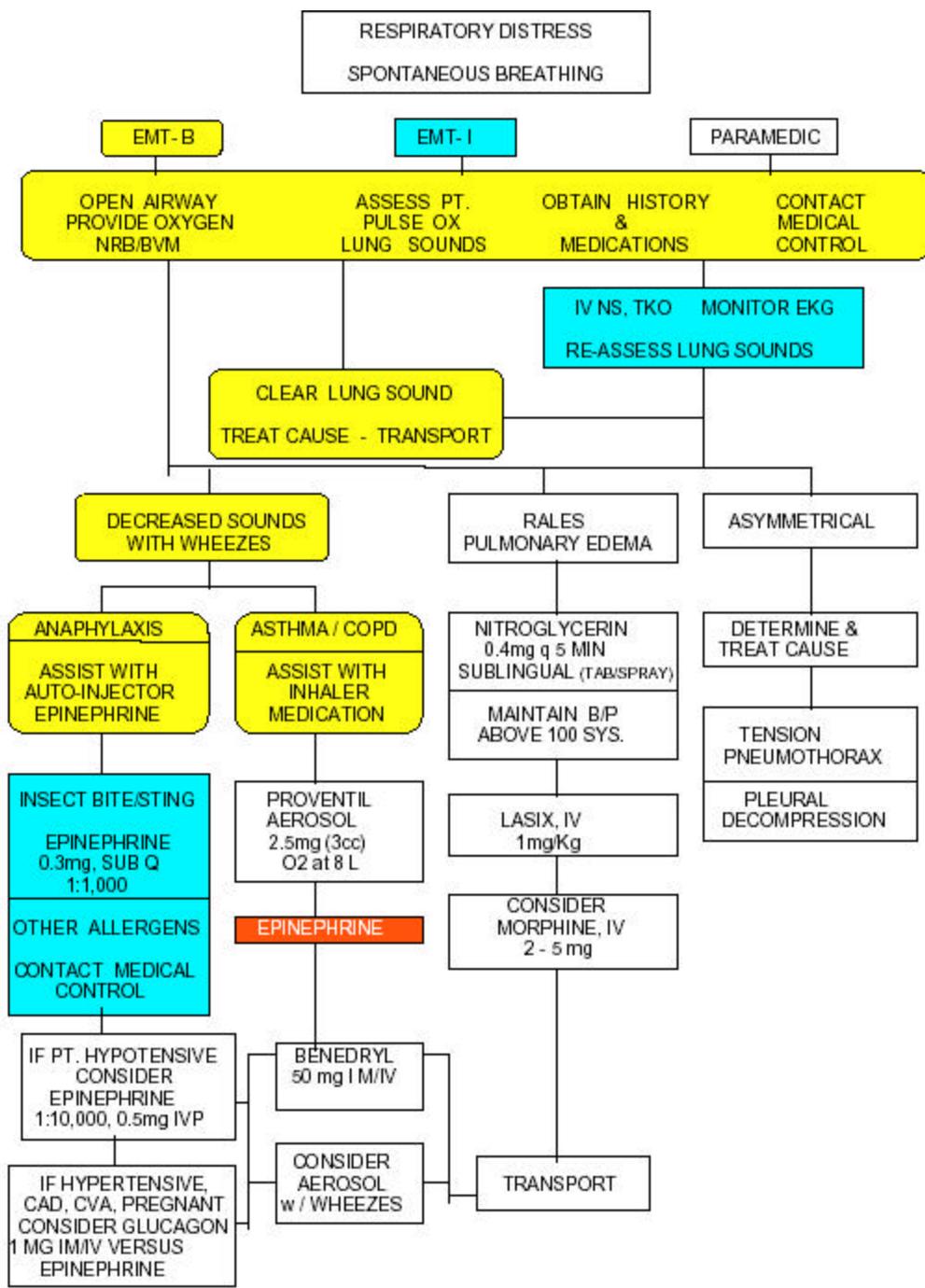
Run #: \_\_\_\_\_

Squad #: \_\_\_\_\_

Emergency Medical Services  
Performance Improvement

**CHEST PAIN**

<b>INDICATOR</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>
1. ABC assessment done?			
2. ABC management documented?			
3. Oxygen administration appropriately?			
4. Patient assessment documented? a. AVPU? b. breath sounds? c. vital signs? d. skin color/condition? e. Capillary refill time?			
5. History obtained/documentated?			
6. Assessed for thrombolytic potential? a. previous MI? b. age over 30? c. systolic pressure < 180 and diastolic < 110? d. persistent pain for 15 minutes or longer? e. lack of stroke, bleeding or CNS problem history? f. lack of trauma or surgery in last 2 weeks? g. no pregnancy?			
7. IV established?			
8. IV fluid administration documented?			
9. IV fluid administration appropriate?			
10. Cardiac monitor applied?			
11. Rhythm identified and documented?			
12. Rhythm managed appropriately?			
13. NTG administered? if not, rationale documented?			
14. ASA allergy checked and documented?			
15. ASA administered? if not, rationale documented?			
16. Medical direction contacted?			
17. Response to treatment(s) documented?			
18. Times documented?			
19. Other: _____ _____ _____			



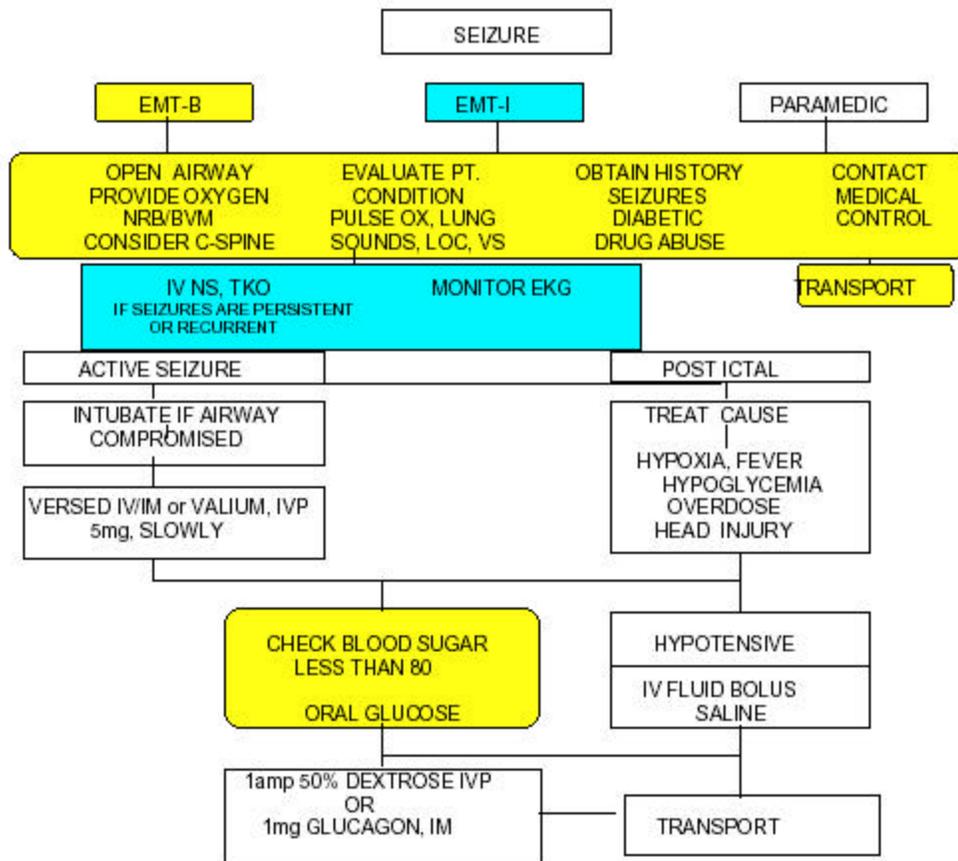
Run #: \_\_\_\_\_

Squad #: \_\_\_\_\_

Emergency Medical Services  
Continuous Performance Improvement

**RESPIRATORY DISTRESS**

INDICATOR	YES	NO	NA
1. ABC assessment done?			
2. ABC management documented?			
3. Oxygen administered appropriately?			
4. Patient assessment documented? a. AVPU? b. breath sounds? c. vital signs: d. skin color/condition? e. Capillary refill time?			
5. Work of breathing described? a. mild? b. moderate? c. severe? d. speaks in sentences? e. speaks in 3-4 words? f. speaks single word?			
6. History obtained/documentated?			
7. IV established?			
8. IV fluid administration documented?			
9. IV fluid administration appropriate?			
10. Suspected cause indicated? a. COPD/asthma? b. allergic reaction/anaphylaxis? c. obstructed airway? d. pulmonary edema? e. tension pneumothorax? f. other: _____?			
11. Pharmacological intervention(s) done? a. albuterol/Proventil? b. Lasix? c. epinephrine? d. NTG? e. Benadryl? f. morphine?			
12. Other interventions performed? _____			
13. Cardiac monitor applied?			
14. Rhythm identified and documented?			
15. Medical direction contacted?			
16. Response to treatment(s) documented?			
17. Times documented?			
18. Other: _____			



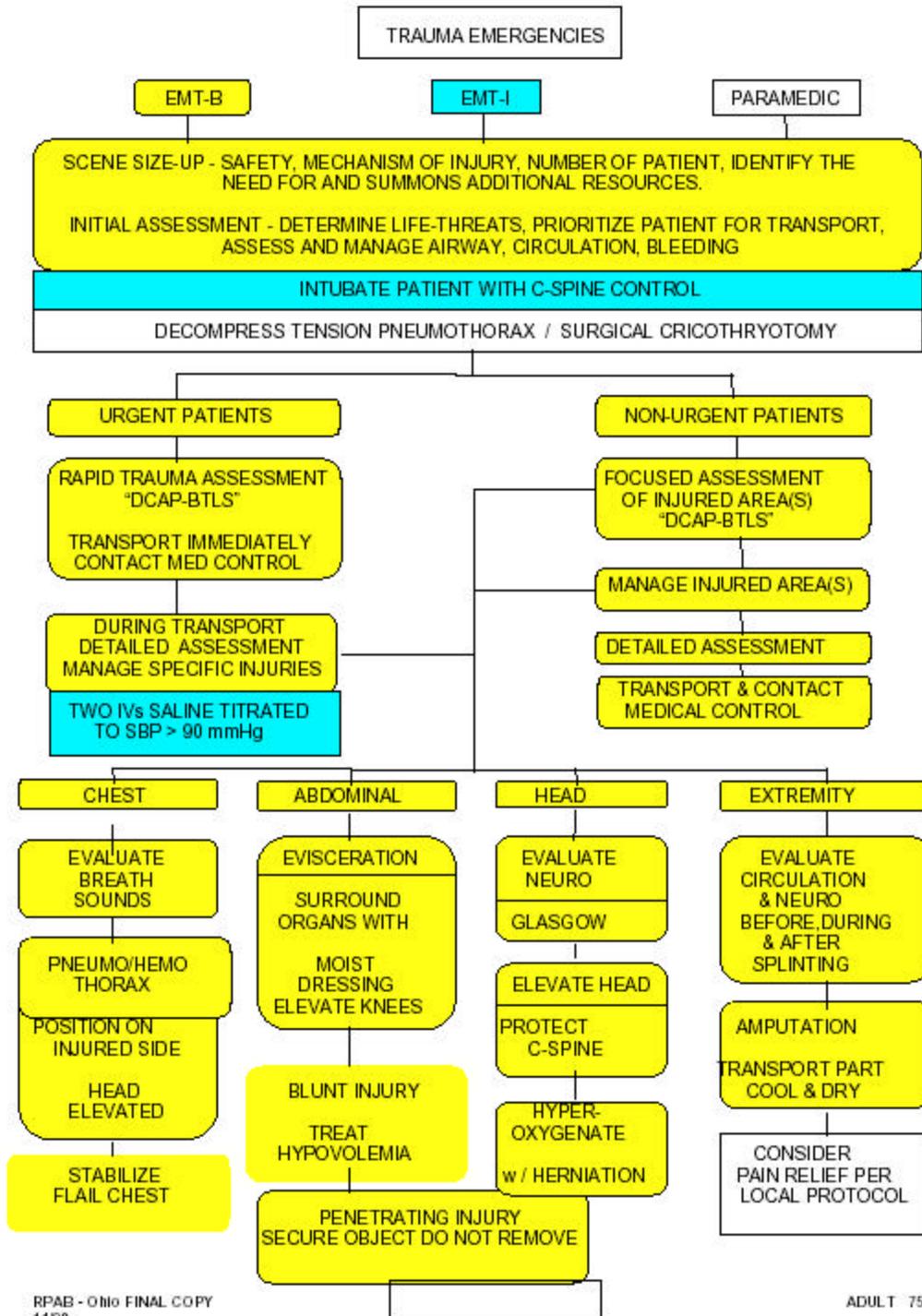
Run #: \_\_\_\_\_

Squad #: \_\_\_\_\_

Emergency Medical Services  
Performance Improvement

**SEIZURES**

<b>INDICATOR</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>
1. Airway managed and documented?			
2. Oxygen administered?			
3. Patient assessment documented? a. AVPU? b. breath sounds? c. vital signs? d. skin color/condition? e. Capillary refill time?			
4. Past medical history obtained/documented? (i.e., history of head trauma, diabetes, drugs, alcohol, stroke, heart disease?)			
5. Seizure history obtained and documented? a. Seizure history? b. Description of onset of seizure? c. Medications?			
6. IV established?			
7. IV fluid administration documented?			
8. Blood glucose level checked?			
9. Blood glucose treated appropriately? a. <80 - 50cc 50% dextrose or 1 mg glucagon?			
10. Cardiac monitor applied?			
11. Valium 5 mg. requested and/or administered if active seizures present?			
12. IV fluid bolus administered for hypotension?			
13. Medical direction contacted?			
14. Response to treatment(s) documented?			
15. Times documented?			
16. Other: _____ _____ _____			



Run #: \_\_\_\_\_

Squad #: \_\_\_\_\_

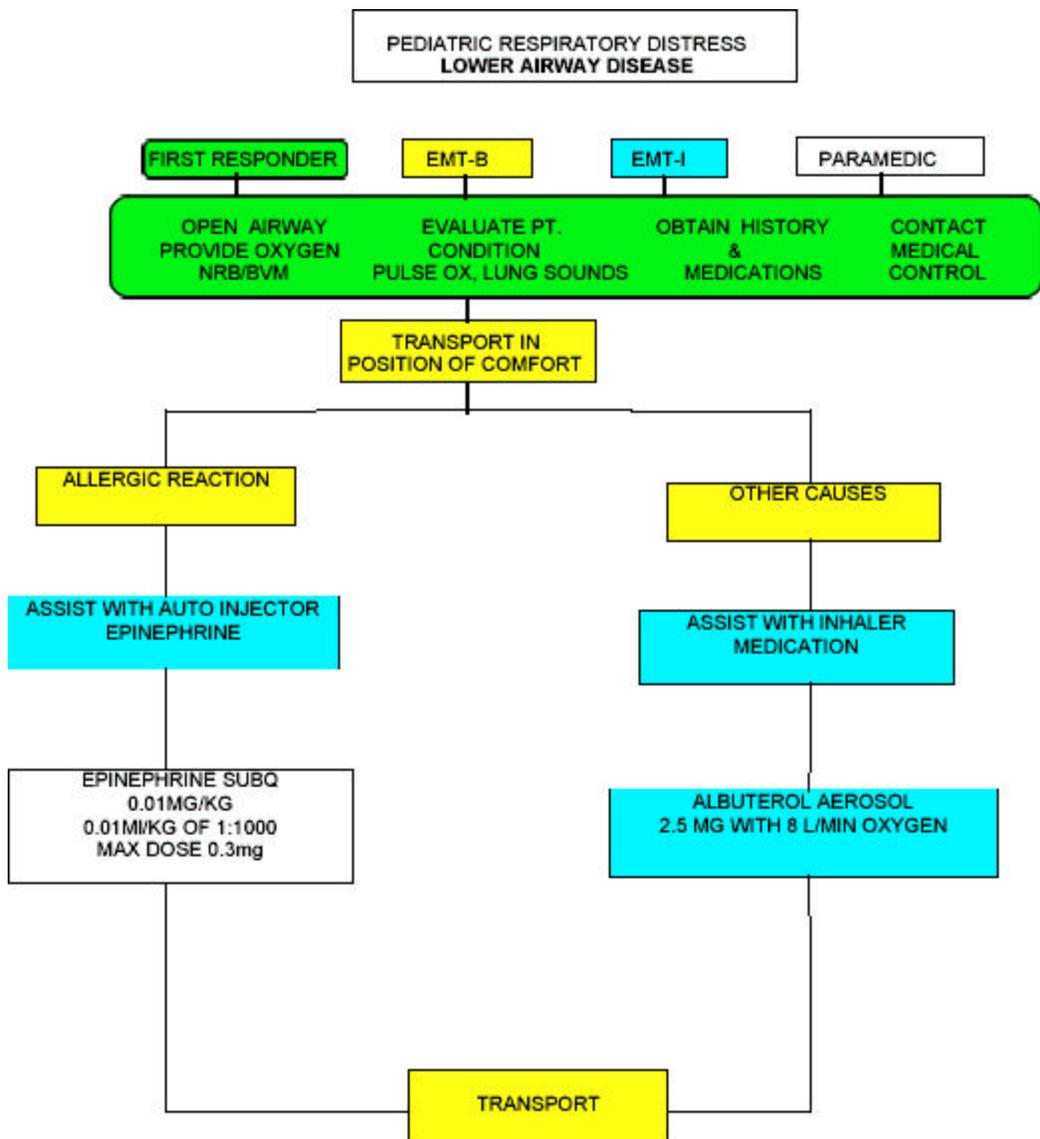
Emergency Medical Services  
Performance Improvement

**TRAUMA**

**Type of trauma:** \_\_\_\_\_

INDICATOR	YES	NO	NA
1. Mechanism of injury documented?			
2. Chief complaint/injures assessed/documented?			
3. ABC assessment done?			
4. ABC management documented?			
5. C-spine control documented?			
6. Location where injury occurred documented?			
7. Use or non-use of safety devices documented?			
8. Oxygen administered appropriately?			
9. Patient assessment documented? a. AVPU? b. breath sounds? c. vital signs? d. skin color/condition? e. Capillary refill time? f. motor, sensory, pulses?			
10. Injuries identified and documented?			
11. Injuries managed appropriately?			
12. IV(s) established?			
13. IV fluid administration documented?			
14. IV fluid administration appropriate?			
15. Glasgow Coma Scale documented?			
16. Reassessment documented?			
17. Response to treatment(s) documented?			
18. Medical Direction contacted?			
19. Times documented?			
20. Transport destination appropriate? _____			
21. Other: _____ _____ _____			





Run #: \_\_\_\_\_

Squad #: \_\_\_\_\_

Emergency Medical Services  
Performance Improvement

**PEDIATRIC RESPIRATORY DISTRESS**

<b>INDICATOR</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>
1. Airway managed/opened?			
2. Oxygen administered appropriately?			
3. Patient assessment documented? a. Vital signs (BP, P, R)? b. Breath sounds? c. Capillary refill time? d. AVPU? e. Skin color/condition?			
4. Distress/work of breathing described?			
5. Relevant history obtained/documentated?			
6. Drug therapy indicated and provided appropriately? a. Benadryl (1.0 mg/kg IV/IM) b. Epinephrine (auto injector or 0.01 mg/kg sub-q) c. Albuterol aerosol (2.5 mg)			
7. Other interventions indicated and performed appropriately? (i.e., FB visualization with laryngoscope, needle cricothyrotomy)			
8. Medical Direction contacted?			
9. Reassessment documented?			
10. Response to treatment documented?			
11. Position during transport documented?			

## Feedback Mechanism

**D**eveloping a feedback mechanism is an important process so that providers can see how the system and the process are working.

- ? The feedback mechanism selected must ensure that the confidentiality of both the provider and the patient are maintained.
- ? Various methods can be developed to provide this valuable information. One example would be the use of a newsletter providing pertinent PI information. A second example would be the use of run charts or graphs to depict the PI information. A sample of two of these methods follows.

Run #: \_\_\_\_\_

Squad #: \_\_\_\_\_

Emergency Medical Services  
Performance Improvement

**CHEST PAIN (20 runs reviewed)**

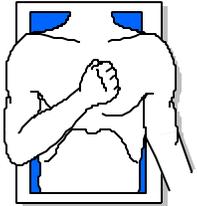
<b>INDICATOR</b>	<b>%YES</b>	<b>%NO</b>	<b>%NA</b>
1. ABC assessment done?	90	10	0
2. ABC management documented?	100	0	0
3. Oxygen administration appropriately?	100	0	0
4. Patient assessment documented? a. AVPU? b. breath sounds? c. vital signs? d. skin color/condition? e. Capillary refill time?	85	15	0
5. History obtained/documentated?	80	20	0
6. Assessed for thrombolytic potential? a. previous MI? b. age over 30? c. systolic pressure < 180 and diastolic < 110? d. persistent pain for 15 minutes or longer? e. lack of stroke, bleeding or CNS problem history? f. lack of trauma or surgery in last 2 weeks? g. no pregnancy?	30	70	0
7. IV established?	75	25	0
8. IV fluid administration documented?	50	50	0
9. IV fluid administration appropriate?	100	0	0
10. Cardiac monitor applied?	100	0	0
11. Rhythm identified and documented?	90	10	0
12. Rhythm managed appropriately?	90	10	0
13. NTG administered? if not, rationale documented?	80 0	20 100	0 0
14. ASA allergy checked and documented?	90	10	0
15. ASA administered? if not, rationale documented?	70 0	30 100	0 0
16. Medical direction contacted?	100	0	0
17. Response to treatment(s) documented?	69	45	0
18. Times documented?	100	0	0
19. Other: _____ _____	NA	NA	NA

# EMERGENCY MEDICAL SERVICES PERFORMANCE IMPROVEMENT



Emergency medical services providers in the State of Ohio strive everyday to deliver the highest standard of prehospital care to their residents.

December 2001



## Assessing Chest Pain Cardiac vs. Non-Cardiac

- ? Not all chest pain is cardiac in origin and EMS personnel must use the following to assist them in the proper assessment and treatment of their patients.
- ? EMS personnel must gather, evaluate, and synthesize a great deal of information in very little time.
- ? Patient assessment means conducting a problem-oriented evaluation of your patient and establishing priorities of care based on existing and potential threats to life.
- ? EMS personnel can then develop a field diagnosis or impression - a prehospital evaluation of the patient's condition and its causes.
- ? Making critical decisions requires critical judgment - the use of knowledge and experience to form an impression of the patient's problem and plan their treatment.

### ASSESSING CHEST PAIN

The **OPQRST** mnemonic may be used to recall pertinent questions to ask when obtaining a history from a patient experiencing chest pain.

1. **O**nset: "When did your symptoms begin?" "What were you doing when they began?" "Did your symptoms begin suddenly or gradually?"
2. **P**rovocation/Palliative: "Did anything bring on the pain?" "Does anything make the pain better or worse?" (Associated with respiration, movement)

3. **Q**uality: "How would you describe your discomfort?" (Pressure, pain, crushing, dull, burning, tearing, throbbing, squeezing, stabbing, vise-like)
4. **R**egion/Radiation/Referral: "Where is your discomfort?" (Ask the patient to point to it) "Does it go anywhere else?" (Neck, shoulders, arm, back)
5. **S**everity: "On a scale of 0 to 10, with 0 being no pain and 10 being the worst, what number would you assign your pain or discomfort?"
6. **T**iming: "Does your discomfort come and go or is it constant?"

### FEATURES THAT ARE ***NOT*** CHARACTERISTIC OF DISCOMFORT CAUSED BY MYOCARDIAL ISCHEMIA INCLUDE:

- ? Sharp of knife-like pain brought on by respiratory movements or cough.
- ? Primary or sole location of discomfort in the middle or lower abdominal region.
- ? Pain reproduced with movement or palpation of the chest wall or arms.
- ? Constant pain that lasts for many hours.
- ? Very brief episodes of pain that last a few seconds or less.
- ? Pain that radiates into lower extremities.

### CLINICAL PRESENTATION

- ? Chest discomfort suggestive of ischemia is present in 75% to 80% of patients with acute MI.

- ? Symptoms include: chest, epigastric, arm, and wrist or jaw discomfort with exertion or at rest. May be accompanied by unexplained nausea and vomiting, persistent shortness of breath caused by left ventricular failure, and unexplained weakness, dizziness, sweating, anxiety, lightheadedness or syncope, or a combination of these symptoms
- ? Discomfort is usually **NOT** sharp, worsened by deep inspiration, affected by moving muscles in the area where the discomfort is localized, or positional in nature.



## Full Arrests

- ? Twenty runs from January 2002 were reviewed. Most of the runs reviewed were well documented. The committee had a couple of suggestions to help further improve documentation of patient care delivered to cardiac arrested patient.
- ? Be sure to document airway management. Do not leave this open to incorrect interpretation. Be sure to include patient response.
- ? In cases of PEA, be sure to document the rhythm rate on the monitor. Atropine is only administered in those cases where the rate is slow (<60). It is important to document this as justification when atropine is either administered or withheld.

## Cardiac Arrests (20)

Indicator	% Yes	% No
ABC assessment done?	92	8
ABC management documented	91	9
CPR started?	83	0 NA=17
Monitor/AED applied and; - delivers shocks if indicated? - continues CPR if no shocks?	100	0
Reassesses pulse?	67	33
Manages airway? - oral airway - EOA - ETT - Other	83	17
O2 administered appropriately?	92	8
History obtained/documentated?	83	17
IV established?	92	8
Rhythms identified and documented?	100	0
Managed appropriately?	75	8 NA=17
Other interventions performed appropriately & documented? (i.e., external pacing)	34	8 NA=58
Medical direction contacted?	100	0
Response to treatment documented?	83	8.5 NA=8.5
Times documented?	92	8

NA=Not applicable

## Meeting Information

The next meeting is February 23, 2002.

Please plan to attend as we will be selecting the quality indicators for review for 2002.

## Continuing Education

- ? Education is an important component of the performance improvement process
- ? EMS continuing education is one method that can be utilized to correct areas of weakness identified by the peer review / performance improvement process.
- ? Continuing education helps to improve the EMS patient care delivery system.

## Re-Evaluation

- ? The peer review / performance improvement system should re-evaluate the selected indicators at a later time to assess if there has been documented improvement.
- ? If there is no improvement, the process should be readjusted in an effort to find an effective method. For example, re-evaluate the educational process, communication system, protocols.
- ? Peer review / performance improvement is a continuous process.