Inservice Review Prehospital and Behavioral Health

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1

Which Federal agency takes the lead in EMS curriculum development

1. Department of Health and Human Services
2. Department of Homeland Security
3. Department of Transportation
4. National Highway Traffic safety Administration
5. Veterans Administration

2

- Answer: 3 The DOT provides the curriculum template. Bledsoe, B Paramedic Care Principles and Practice, Vol 1, Brady 2000 xix-xxi.

3

Historical Development

- 1966 National Highway Safety Act
  - DOT funding for ambulances
  - Outlined communication
  - Provided for training
- EMS act 1973

4

The components of EMS systems were defined by which federal law.

1. Comprehensive Omnibus Budget Reconciliation Act
2. Emergency Medicine and Treatment of Active Labor Act
3. Emergency Medical Service Systems Act
4. Trauma Care Systems Planning and Development Act
5. McCain – Fiengold Bill

5

- Answer: 3. EMSSA 1973. Medical Direction of Emergency Medical Services, ACEP, Dallas 2000.

6

Modern EMS Development

- 1973 Public Law 93-154 defined 15 elements of EMS

7

The greatest safety threat to EMS personnel is:

1. Blood body fluid exposure
2. Downed powerlines
3. Lacerations from sharp objects
4. Traffic related accidents
5. Vehicle explosions

8

- Answer: 4. Traffic related incidents cause the largest number of EMS related deaths. Bledsoe, B Paramedic Care Principles and Practice, Vol 5, Brady 2000 396-399.

9

EMS medical directors are physicians that provide direct and indirect medical control of patient care activities in the prehospital setting. Which of the following is not an element of indirect medical control?

1. Development of EMT patient care guidelines and protocols
2. Development of emergency medical dispatcher (EMD) patient care guidelines and protocols
3. On-line radio or telephone communication with the EMTs on the scene or during transport of a patient
4. Participation in the EMS system quality management and quality assurance program
5. Participation in the EMT training program

10

- Answer: 3. EMS medical direction consists of direct (on-line) and indirect (off-line) medical control and oversight.. Blackewell T. EMS: Overview and ground transport. In Rosen P: Emergency medicine concepts and clinical practice, ed 6, St. Louis, 2006, Mosby. Page

11

Medical Control

- The direction of EMS operations
  - Online
  - Offline
- Medical director of service has final responsibility

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Medical Control

- Online
  - Giving orders over radio
  - Being on scene
  - Often impractical
  - Always needs to be available

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Medical Control

- Physician on scene
  - Proof of licensure
  - Radio medical control still responsible
  - May need to accompany
  - Should ask what s/he can do

14

Medical Control

- Offline
  - Developing standing orders
  - Protocols
  - Training
  - Continuous quality improvement

15

EMT's are dispatched to a scene. The 911 call by the wife reports her husband acting strangely and being very ill. On arrival EMT's find the man belligerent and refusing to go to the hospital. The appropriate action for the EMTs is.

1. Contact Medical Control with their findings
2. EMT's should determine the patients competence and transport patient if they deem him incompetent
3. Have patient sign an AMA form and not transport
4. . Not transport and advise the wife to call the police
5. Transport the patient to the hospital.

16

- Answer: 1. This is a case for online medical control to assist the EMTs and protect them medico legally. Bledsoe, B Paramedic Care Principles and Practice, Vol 2, Brady 2016 122.

17

Controlling Violent Situations

- When a psychiatric patient refuses care in the prehospital setting, EMS personnel should consult with medical direction
  - The decision to restrain, treat, or release the patient is a medical direction decision
- If violent behavior must be contained, "reasonable force" to restrain the patient should be used as humanely as possible
  - In most cases, the restraint duty (if necessary) should be given to law enforcement personnel
  - Sedation if available

18

The "Chain of Survival" for cardiac arrest includes all of the following except?

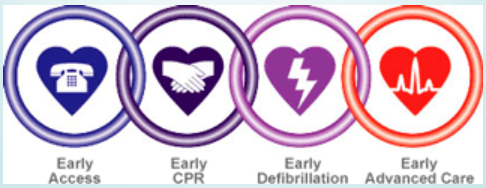
1. Early access
2. Early CPR
3. Early Defibrillation
4. Early Advanced Life Support
5. Early admission to an ICU bed

19

Answer: e. AHA 2020 ACLS

20

Cardiac Care - Chain of Survival



Advanced Care Destinations

21

EMTALA provides all of the following guidelines regarding transfers except

1. The patient must be examined prior to transfer
2. The patient must consent to the transfer
3. The transfer must be medically indicated
4. Patients who remain unstable may not be transferred even if the benefits outweigh the risks

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Answer : 4 EMTALA

If an emergency medical condition exists, the hospital must:

• Provide treatment until the patient is stabilized.

• Then transfer the patient to a medical facility that is better able to provide the necessary treatment.

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Requirements of Transferring Hospital

- Provide medical treatment, if possible, to minimize the risk of transfer,
- Obtain patient's consent for transfer,
- Provide signed certificate of transfer,
- Assure that the transfer takes place with qualified personnel and equipment,
- Send copies of medical records related to the emergency condition.

Ethics Resource Center
American Medical Association

24

Obligations of Receiving Hospital

- Have available space and qualified personnel
- Agree to accept transfer of the patient and to provide appropriate medical treatment.
- Regional referral centers and hospitals with specialized capabilities cannot refuse to accept an appropriate transfer if they have the capacity.

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Transfer of Non-stabilized Patients

Non-stabilized patients may be transferred ONLY IF:

- The patient (or someone acting on the patient's behalf) requests a transfer in writing after being informed of the risks involved and the hospital's duty to treat under EMTALA, or
- A physician certifies that the medical benefits expected from transfer outweigh the risks involved in the transfer.

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Liabilities Under EMTALA

There are 2 courses of action for violations of EMTALA:

- Private civil suits against the hospital (but not the physician).
- HHS penalty fines against hospital, physician, or both.

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Responsibility

- Transferring Physician
- What about "transfer teams"
- Medical Control Protocols

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Violations of EMTALA can result in:

1. Civil Monetary penalties
2. Terminations or suspensions of Medicare provider agreements
3. Civil action
4. All of the above

29

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30

EMTALA Applies to:

1. Free standing clinics
2. Hospitals with Medicare participation agreements
3. Nursing Homes
4. All of the Above

31

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32

The most common crew configuration among helicopter aeromedical programs in the United States is:

1. Nurse/Nurse
2. Nurse/Paramedic
3. Physician/Nurse
4. Physician/Paramedic
5. Respiratory Therapist/Nurse

33

- Answer: 2. All of the providers listed participate in air medical transport and there is wide variation in crew configuration. The combination of a nurse and paramedic, however, is the most common. Stone CK and Thomas SH: Air Medical Transport, in Tintinalli JE, Kelen GD and Stapczynski JS (eds): Emergency Medicine A Comprehensive Study Guide, ed 5, New York: McGraw-Hill, 2000:11.

34

Prior to evacuating a critically patient by air you should do all of the following except:

1. Add extra air to the IV bags
2. Be sure all line are secure.
3. Check that the helicopter landing area is clear
4. Replace the air in ET tube cuff with water
5. Understand the radio procedures to contact the air medical service.

35

- Answer: 1. Any air has the potential to expand during air medical transport. Bledsoe, B Paramedic Care Principles and Practice, Vol 5, Brady 2000 334.
- Rodenberg H and Blumen RJ, Air Medical Transport in Emergency Medicine Concepts and Clinical Practice Vol 3 6th edition Mosby 2006 2994.

36

Aeromedical Transport History

- First evacuation 1870 by balloon
- Occasional use during WWI
- 1.4 million air evacuated during WWII
- Korean War
  - 11 dedicated medevac helicopters
  - 17,700 patients transported
- Vietnam War - 900,000 evacs

37

Aeromedical Transport History

- Civilian
  - 1969 U of MD/MSP - first program
  - 1972 Denver starts hospital based program
  - Today over 200 programs

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Aeromedical Transport

- Air ambulance - primary response
  - Useful in area with long transport times
  - Controversial
- Interfacility transport
  - Common after initial stabilization
  - Some fixed wing transport

39

Aeromedical Transport Problems

- Change in air pressure
  - Gases expand
  - Potential for hypoxia
- Safety issues

40

Factors in choosing air ambulance transport over ground transport include all of the following except.

1. Geographic terrain
2. Lack of any advanced ground transport provider
3. Patient insurance status
4. Traffic congestion
5. Transport time to definitive care.

41

- Answer: 3. The T's Time. Traffic, Terrain, Training are all factors in making a ground vs. air decision. Bledsoe, B Paramedic Care Principles and Practice, Vol 5, Brady 2000 330.
- Rodenberg H and Blumen RJ, Air Medical Transport in Emergency Medicine Concepts and Clinical Practice Vol 3 6th edition Mosby 2006 2994.

42

All of the following are true about the incident commander (IC) except.

1. Located uphill and upwind of the incident.
2. Organizes the operation of the mass casualty scene
3. Provides medical oversight.
4. Typically chosen from fire or police personnel.
5. Works closely with the EMS branch director.

43

- Answer: 3. The IC does not provide direct medical oversight, but overall command.
- Schultz CH, Koenig KL, Noji EK Disaster Preparedness in Rosen's Emergency Medicine Concepts and Clinical Practice Vol 3 6th edition Mosby 2006 3010 – 3021.
- Sutingco, N The incident command system In Disaster Medicine, Ciottone et al Eds. Mosby 2006 208

44

What is not a component of mass triage.

1. Blood pressure
2. Mental Status
3. Pulse
4. Respiratory status

45

- Answer: 1. Schultz CH, Koenig KL, Noji EK Disaster Preparedness in Rosen's Emergency Medicine Concepts and Clinical Practice Vol 3 6th edition Mosby 2006 3010 – 3021.

46

What is Triage?

- French verb "trier" = to sort
- Assign priorities when resources limited
- Do the greatest good for the greatest number

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Source: DoD Photo Library, Public Domain

47

What's Unique About Mass Triage?

- Number of patients
- Infrastructure limitations
  - Limited providers
  - Limited equipment
  - Limited transport capabilities
  - Hospital resources overwhelmed
- Scene hazards
  - Threats to providers
  - Decontamination issues
- Multiple agencies responding

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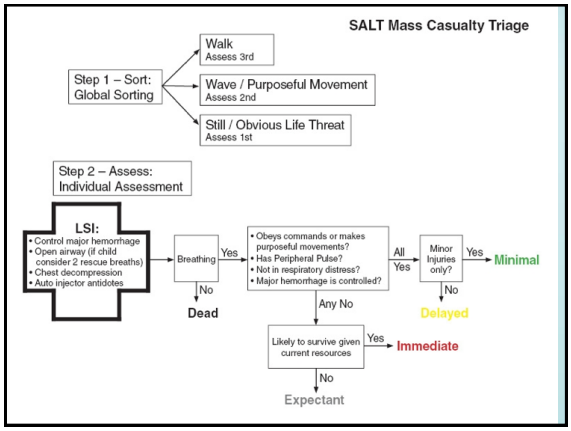
48

SALT Triage

- Simple
- Easy to remember
- Groups large numbers of patients together quickly
- Applies rapid life-saving interventions early

49

49



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S.A.L.T. Triage Categories

- Immediate
- Delayed
- Minimal
- Expectant
- Dead

51

51

Immediate

- Serious injuries
- Immediately life threatening problems
- High potential for survival.
- Examples
  - Tension pneumothorax
  - Nerve agent exposed patient
    - severe shortness of breath or seizures

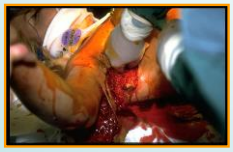

Photo Source: www.oswaltx.nsw.gov.au Public Domain

52

52

Delayed

- Serious injuries
  - require care but management can be delayed without increasing morbidity or mortality.
- Examples
  - Long bone fractures
    - neuro-vascular intact
    - 40% BSA exposure to Mustard

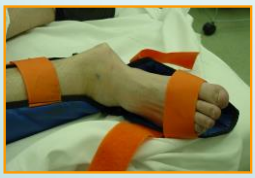

Photo Source: Phillip L. Coule, MD

53

53

Minimal

- Injuries- require minor care or no care without adverse affect.
- Examples
  - Abrasions
  - Minor lacerations
  - Nerve agent exposure with mild rhinorrhea

Photo source: Phillip L. Coule, MD

54

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Expectant

- Important for preservation of resources
- DOES NOT MEAN DEAD!
- Should receive comfort care or resuscitation when resources are available
- Serious injuries
  - very poor survivability even with maximal care in the hospital or pre-hospital setting.
- Examples
  - 90% BSA burn
  - Multiple trauma with exposed brain matter
  - Severe traumatic brain injury with herniation

55

55

Dead Patients

- Tag dead patients to prevent re-triage
- Do not move
  - Except to obtain access to live patients
  - Avoid destruction of evidence

56

56

You are triaging a large number of patients at a Mass Casualty Incident and encounter a patient who appears apenic and unconscious. Using SALT triage you should:

1. Check for a pulse.
2. Open the airway and assess for breathing.
3. Tag the patient black
4. Tag the patient green
5. Tag the patient red

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58

- Answer: 2. Open the airway and check for breathing is a step in the airway assessment for start triage. If the patient was breathing you would go on to the next step, circulation. If no breathing, black tag and go on to the next patient. Schultz CH, Koenig KL, Noji EK Disaster Preparedness in Rosen's Emergency Medicine Concepts and Clinical Practice Vol 3 6th edition Mosby 2006 3010 – 3021.

59

Response personnel arrive to find many unresponsive victims who were all attending a meeting in a school cafeteria. They should first:

1. Call for the Hazardous Materials Team
2. Evacuate the victims
3. Identify the potential cause of the victims condition.
4. Protect themselves from exposure
5. Treat the victims.

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61

- Answer: 4. Schultz CH, Koenig KL, Noji EK Disaster Preparedness in Rosen's Emergency Medicine Concepts and Clinical Practice Vol 3 6th edition Mosby 2006 3010 – 3021.

62

Behavioral Health

- Competence
- Legal issues
- Consent
- Common Behavioral Health diagnosis

63

All of the following regarding consent are true except:

1. It may be written verbal or implied
2. It may only be given by a patient who is alert and mentally competent
3. Consent for a competent patient may be obtained from the patient's family
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65

Which of the following minors may not consent for treatment?

1. Minors requesting treatment for life threatening conditions that require immediate care.
2. Minors requesting treatment for venereal disease or drug abuse
3. Emancipated minors
4. Minors requesting treatment for minor injury
5. None, all minors must have parent's consent prior to screening exam.

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Cognitive Disorders

- May have an organic etiology (e.g., a disease process) or be a result of physical or chemical injury (e.g., trauma, drug abuse)
  - All cognitive disorders result in a disturbance of cognitive functioning, which may manifest as delirium or dementia

68

You are assessing a patient for a mood or thought disorder, which of the following favors an organic etiology?

1. Abnormal vital signs
2. Age < 40
3. Auditory Hallucinations
4. Well Oriented

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70

Functional vs Organic

- Age 15-40
- Gradual Onset
- Oriented
- Flat affect
- Normal Exam
- Auditory Hallucinations

- Age <12 or > 50
- Acute onset
- Disoriented
- Visual, Tactile, Oflactory Hallucinations
- Abnormal Vitals
- Pupil changes

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Delirium

- Medical till proven otherwise
- An abrupt disorientation of time and place, usually with illusions and hallucinations
- Abnormal vitals
- High mortality
- Must work up

72

Dementia

- A clinical state characterized by loss of function in multiple cognitive domains
  - A slow, progressive loss of awareness for time and place, usually with an inability to learn new things or remember recent events
  - delirium is "new" with a rapid onset; dementia is progressive
  - A HISTORY of the event from a rational witness (e.g., friend or family member) is the best source of information
- If a rational witness is not available, the patient should be treated for delirium that may be a life-threatening emergency

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Schizophrenia

- Schizophrenia is a group of disorders
- Characterized by recurrent episodes of psychotic behavior that may include abnormalities of:
  - Thought process
  - Thought content (delusions)
  - Perception (auditory hallucinations are common)
  - Judgment

74

When dealing with a patient who seems paranoid your should not?

1. Clearly identify yourself and express your intent to provide help
2. Exhibit an attitude that is friendly, yet somewhat distant and neutral
3. Speak with family members or bystanders in hushed or secretive tones
4. Use tact and firmness in persuading the patient to be treated
5. Remember that paranoid reactions can lead to violent behavior

75

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Anxiety Disorders

- A certain amount of anxiety is useful and necessary in adapting constructively to stress
  - A patient who suffers from an anxiety disorder displays a persistent, fearful feeling that cannot be consciously related to reality
- Severe anxiety disorders may manifest in a panic disorder ("panic attack")
- Panic attacks may mimic many medical emergencies, including PSVT, Hyperthyroidism and myocardial infarction

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Phobia

- A type of anxiety disorder
- Phobic patients transfer anxiety to a situation or object as an irrational, intense fear
  - Patients generally recognize that their fear is unreasonable, but they cannot prevent the phobia

78

Depression

- An impairment of normal functioning
  - One of the most prevalent major psychiatric conditions
  - Decreased appetite
  - Sleep disorders
  - Loss of energy, interest and attention
- Suicide risk - 15 % in lifetime

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Bipolar Disorder

- Bipolar disorder is a biphasic emotional disorder in which depressive and manic episodes alternate
- Onset in 3rd decade
- Genetic predisposition
- May have psychotic features
- Lithium still common - check levels

80

Suicide and Suicide Threats

- Females attempt more often
- Males succeed
- Familial
- Risks
  - Depression, psychosis, substance abuse, no social support, living alone, newly on antidepressants
  - Widowed men - Highest success
  - More common in spring

81

Substance Use Disorders

- Psychiatric illness and behavioral issues are often a result of substance use:
  - Narcotics and opiates
  - Sedative-hypnotics
  - Stimulants (e.g., cocaine)
  - Phencyclidine (PCP)
  - Hallucinogens
  - Tricyclic antidepressants
  - Drugs abused for sexual purposes/sexual gratification
  - Alcohol
- Think underlying disorders

82

Somatoform Disorders

- Diagnosis of exclusion
- A group of conditions in which there are physical symptoms for which no physical cause can be found
- Two of the most common disorders in this group are:
  - Somatization disorder
  - Conversion disorder
- Both are associated with anxiety, depression, and threats of suicide
- Acute Treatment - Anxiolytics

83

Factitious Disorders

- A group of disorders in which symptoms mimic a true illness but actually have been invented and are under the control of the patient to receive attention
  - The most common disorder in this group is Munchausen's syndrome
  - Munchausen's syndrome by proxy
    - Biological mom with health care background

84

Eating Disorders

- The two most common eating disorders considered a form of psychiatric illness are:
  - Anorexia nervosa
  - Bulimia nervosa
- Both disorders can result in starvation and can be fatal
  - They are best managed with supervision and regulation of eating habits, psychotherapy, and sometimes, antidepressants
  - Most patients require hospitalization TREAT MEDICALLY

85

What factors that may help determine the potential for a violent episode?

1. Past history
2. Posture
3. Vocal activity
4. Physical activity
5. All of the above

86

Assessing the Potentially Violent Patient

- All of the above
- Factors that may help determine the potential for a violent episode
  - Past history – Has the patient exhibited hostile, aggressive, or violent behavior?
  - Posture – Is the patient sitting or standing? Does the patient appear to be tense or rigid?
  - Vocal activity – Is the patient's speech loud, obscene, or erratic, indicating emotional distress?
  - Physical activity – Is the patient pacing or agitated or displaying protection of physical boundaries?

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Controlling Violent Situations

- Severely disturbed patients who pose a threat to themselves or others may need to be restrained, transported, and hospitalized against their will
  - Each state has a statute covering the criteria for involuntary commitment
  - Be familiar with all applicable laws
- The premise on which most state laws are based suggests that one person may restrain another to protect life or prevent injury

88

Restraint Guidelines

- If the patient is homicidal, do not attempt restraint without assistance
- Remember that the patient may not be responsible for his or her actions
- Plan your restraining action to include a back-up plan in case the initial action fails
- Be sure that adequate help is available
- Restraint is just a bridge to sedation

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Personal Safety

- When possible, remain at a safe distance from the patient
- Do not allow the patient to block your exit
- Keep large furniture between you and the patient
- Do not allow a single provider to remain alone with the patient
- Avoid threatening statements

90

The CAGE questions are used to identify ED patients at risk for which condition?

1. Alcohol Abuse
2. Bipolar Disorder
3. Major Depression
4. Suicide risk

91

The CAGE questions are used to identify ED patients at risk for which condition?

1. Alcohol Abuse

   Cut Down

   Annoyed by Criticism

   Guilty feeling

   Eye opener

92

Alcohol Use Disorder

- Incidence
- Morbidity/mortality
- Alcohol UD is a disorder characterized by chronic, excessive consumption of alcohol that results in injury to health or in inadequate social function and the development of withdrawal symptoms when the patient stops drinking suddenly
- Causative factors
- Stages of alcohol dependence

93

Ethanol

- Active ingredient in all alcoholic beverages
- A colorless, flammable liquid produced from the fermentation of carbohydrates by yeast
- All alcoholic drinks are rated based on their ethanol percentage
  - The alcohol content of beer and wine is measured as a percentage by weight or volume
  - Distilled liquors are subjected to a rating process called proof
- Metabolism

94

Medical Consequences of Chronic Alcohol Ingestion

- Neurological disorders
- Nutritional deficiencies
- Fluid and electrolyte imbalances
- GI disorders
- Cardiac and skeletal muscle myopathy
- Immune suppression
- Trauma

95

Minor Reactions

- Begin about 6 to 8 hours after cessation or reduction of alcohol intake
- Symptoms peak within 24 to 36 hours and may persist for 10 to 14 days
  - When alcohol withdrawal is confined to minor reactions, the prognosis for full recovery is excellent with appropriate management
- Tremor

96

Hallucinations

- Usually occur 24 to 36 hours after cessation of alcohol
  - Disorders of perception are common and may vary from auditory and visual illusions to frank hallucinations, which can produce agitation, fear, and panic
  - Patient may show signs of suicidal and homicidal tendencies and minor reactions may be more pronounced
- Prognosis is the same as for minor reactions with appropriate management

97

Alcohol Withdrawal Seizures

- Also called "rum fits"
- Usually occur 7 to 48 hours after ethanol cessation, with a peak incidence between 13 and 24 hours
  - Seizures may occur singly or in groups of two to six
  - Are most often grand mal and of short duration (status seizures are rare)
- Signs and symptoms
- No role for Chronic anti convulsant

98

Delirium Tremens (DTs)

- The most dramatic and serious form of alcohol withdrawal
- Usually occurs 72 to 96 hours after cessation of alcohol but may be delayed up to 14 days
- Increasing HR, BP, agitation followed by Delirium
- Librium, Benzo, Phenobarbital for management

99

SUMMARY

- Answer the question asked
- EMS questions - at least 5
- Admin - at least 4
- Psych - often scattered with other questions default on working up for medical conditions.

100

There are dilemmas in life:

101