



County of San Diego

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Medical Director's Update for Base Station Physicians Committee –October, 2004

San Diego County EMS:

Pacemaking: I have been asked to provide some guidance for the rate and mA settings when using external pacing. Below you will find the information: A review of the literature indicates that the mA's used for capture will be in the 70-150 range (determined by chest girth and musculature). The mA's should be high enough to attain consistent capture yet be at the lowest possible setting to maintain capture. The rate should be set to begin at 60-80 BPM and continued at a rate to maintain a BP >90.

There is some cautionary information in the literature about checking for a pulse once external pacing has been instituted as the sternocleidomastoid muscle can contract with pacing and one could mistake this as a pulse in the carotid area. Other sites should be considered to assess a pulse if one is unclear if this contraction is occurring.

Spinal Immobilization in football players: If there is the need to place a football player into spinal precautions for suspected cervical spine injury, and the patient is wearing both shoulder pads and a helmet, leave both in place and immobilize. Removal of either the helmet or shoulder pads will compromise the neutral position of the cervical spine that is typically maintained when both are being worn. If airway management is necessary, the helmet facemask can be easily cut away, giving access to the patient's face without putting the cervical spine at additional risk for movement.

Return to play post concussion: Some guidelines for return to play recommendations for athletes suffering concussions are attached at the end of this update. The source was from a local recent sports medicine conference.

EMS Games: Were a great success. We had 9 teams participate with this year's champions being the San Diego Medical Services Enterprise. Congratulations.

Annual Awards: The awards for paramedic and MICN of the year award were announced at the EMS Games. The MICN of the year was Patricia Crepeau and the paramedic of the year was Dan Saner. Please join me in honoring these individuals and thanking them for their dedication and hard work.

EMDAC & State EMS Commission

EMDAC and the EMS Commission met on September 21st and 22nd. Highlights include:

EMT, Paramedic, CE and CQI regulations were adopted at the meeting and went in to effect October 10th. We will be planning for a mid year update on some of the changes going through the established community input processes.

Discussion occurred on Orange County's progress in trying to bypass non-cath hospitals in patients with Acute MI. Their take-home pearl was to use the interpretation of the EKG, not a medic or MICN over-read.

There was a presentation on stroke centers, discussing primary stroke centers compared with comprehensive secondary stroke centers. Recommendations were to attempt to have a community maximize the number of primary stroke centers to best serve the population and to have a few comprehensive centers.

AB 1655 was passed which gives the EMS Authority the option to fine paramedics for transgressions, rather than suspend, revoke or remediate. A fine cannot be levied in addition to one of the other penalties.

AB 1898 was vetoed by the governor. This would have added an additional member to the EMS Commission. As the fate of the commission is unclear, the governor felt it was not appropriate to add another member at this time.

An additional field investigator has been added to the paramedic investigation staff which will hopefully assist in expediting review.

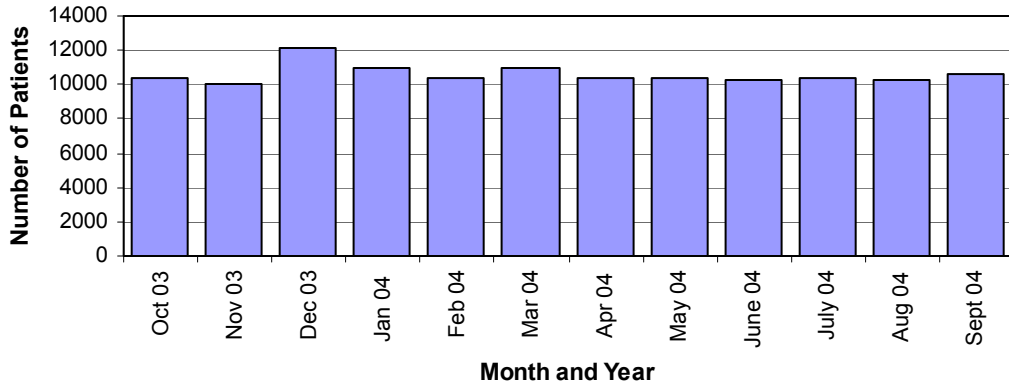
6500 schools will be receiving the school treatment guidelines. A large share of these guidelines were developed in San Diego County. Kudos.

Discussion on the California Performance Review (CPR) occurred. The final resting place of the EMS Authority is still up in the air. It will likely fall under Homeland Defense or Health and Human Services. There are still discussions and concerns being expressed.

MLK trauma center and on of the trauma centers in San Jose are scheduled to close.

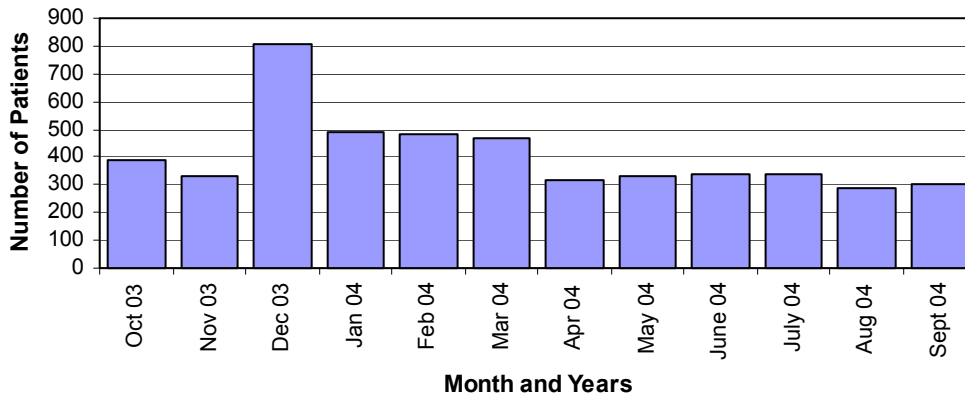
Below is the patient destination data in graphic form

**Number of ALS Transports, County of San Diego,
Oct 03 - Sept 04**



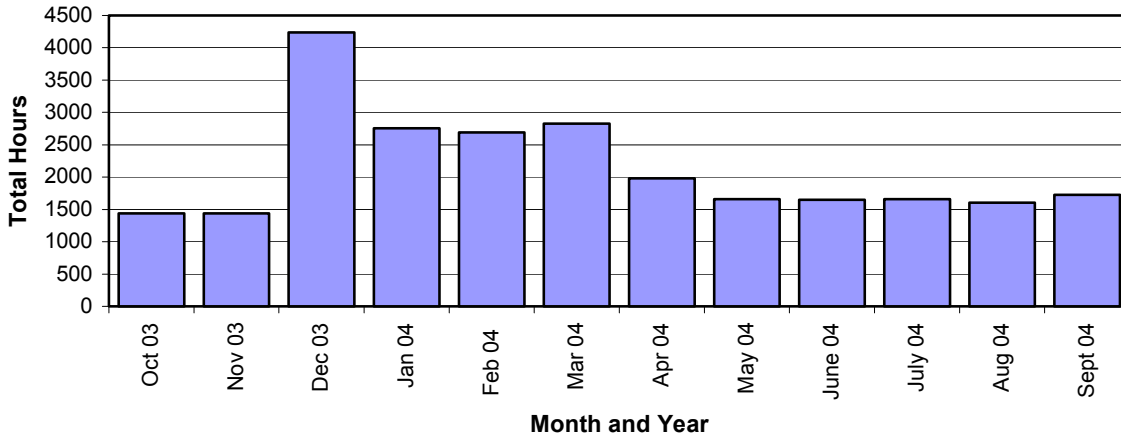
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Oct 2003 – Sept 2004

**Number of Patients who Bypassed the Requested Hospital,
County of San Diego, Oct 03 - Sept 04**



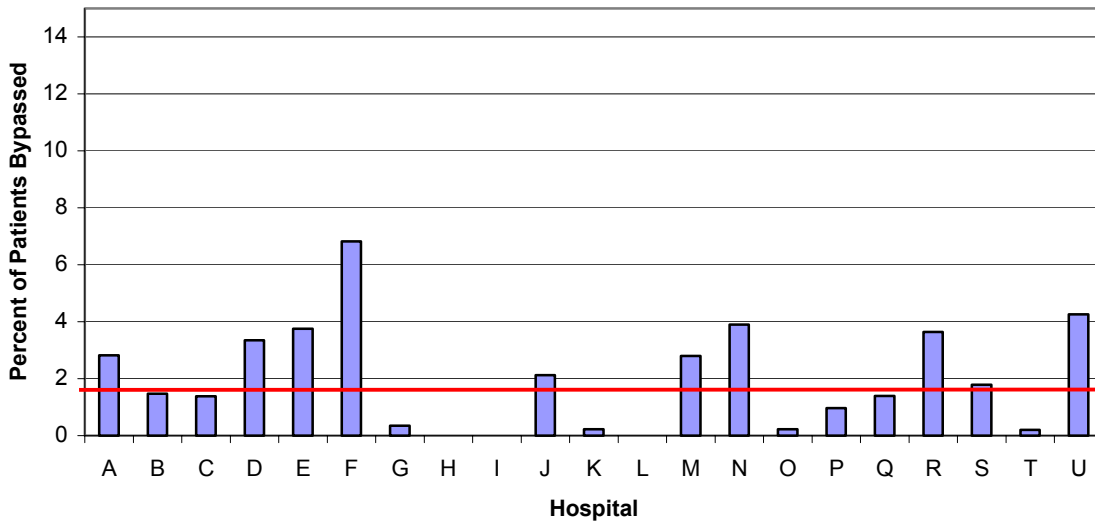
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Oct 2003 – Sept 2004

Total Hours on Emergency Department Bypass, County of San Diego, Oct 03 - Sept 04



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Oct 2003 – Sept 2004

Percent of Patients Bypassed per Hospital, Sept 2004



Note: The red line represents the mean value of percent of patients bypassed per hospital, Sept 2004

Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Sept 2004

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Features of Concussion Frequently Observed

1. Vacant stare (befuddled facial expression)
2. Delayed verbal and motor responses (slow to answer questions or follow instructions)
3. Confusion and inability to focus attention (easily distracted and unable to follow through with normal activities)
4. Disorientation (walking in the wrong direction; unaware of time, date and place)
5. Slurred or incoherent speech (making disjointed or incomprehensible statements)
6. Gross observable incoordination (stumbling, inability to walk tandem/straight line)
7. Emotions out of proportion to circumstances (distracted, crying for no apparent reason)
8. Memory deficits (exhibited by the athlete repeatedly asking the same question that has already been answered or inability to memorize and recall three of three words or three of three objects in five minutes)
9. Any period of loss of consciousness (paralytic coma, unresponsive to arousal)



Sideline Evaluation

Mental Status Testing

Orientation:	Time, place, person, and situation (circumstances of injury)
Concentration:	Digits backward (i.e. 3-1-7, 4-6-8-2, 5-3-0-7-4) Months of the year in reverse order
Memory:	Names of teams in prior contests Recall of three words and three objects at zero and five minutes Recent newsworthy events Details of the contest (plays, moves, strategies, etc.)

Exertional Provocative Tests

40 yard sprint
5 push-ups
5 sit-ups
5 knee-bends

Neurological Tests

Strength
Coordination
Sensation

Any appearance of associated symptoms is abnormal, e.g. headaches, dizziness, nausea, unsteadiness, photophobia, blurred or double vision, emotional lability, or mental status changes.

Grades of Concussion

<i>Grade 1</i>	<i>Grade 2</i>	<i>Grade 3</i>
<ol style="list-style-type: none">1. Transient confusion (inattention, inability to maintain a coherent stream of thought and carry out goal directed movements).2. No loss of consciousness.3. Concussion symptoms or mental status abnormalities on examination resolve in less than 15 minutes.	<ol style="list-style-type: none">1. Transient confusion.2. No loss of consciousness.3. Concussion symptoms or mental status abnormalities (including amnesia) on examination last more than 15 minutes.	<ol style="list-style-type: none">1. Any loss of consciousness.<ol style="list-style-type: none">a. Brief (seconds).b. Prolonged (minutes).

Management Recommendations

<i>Grade 1</i>	<i>Grade 2</i>	<i>Grade 3</i>
<ol style="list-style-type: none">1. Removal from the contest2. Examine immediately and at 5 minute intervals for the development of mental status abnormalities or post-concussive symptoms at rest and with exertion3. May return to contest if mental status abnormalities or post-concussive symptoms clear within 15 minutes	<ol style="list-style-type: none">1. Removal from the contest and disallow return that day2. Examine on-site frequently for signs of evolving intracranial pathology3. A trained person should reexamine the athlete the following day4. A physician should perform a neurologic examination to clear the athlete for return to play after one full asymptomatic week at rest and with exertion	<ol style="list-style-type: none">1. Transport the athlete from the field to the nearest emergency department by ambulance if still unconscious or if any worrisome signs are detected (with cervical spine immobilized, if indicated)2. A thorough neurologic evaluation should be performed emergently, including neuroimaging procedures if indicated3. Hospital admission is indicated if any signs of pathology are detected, or if the mental status of the athlete remains abnormal

When to Return to Play

Grade of concussion	Return to play only after being asymptomatic with normal neurologic assessment at rest and with exercise
Grade 1 Concussion	15 minutes or less
Multiple Grade 1 Concussions	1 week
Grade 2 Concussion	1 week
Multiple Grade 2 Concussions	2 weeks
Grade 3 Concussions - Brief loss of consciousness (seconds)	1 week
Grade 3 Concussions - Prolonged loss of consciousness (minutes)	2 weeks
Multiple Grade 3 Concussions	1 month or longer, based on the decision of the evaluating physician



For more information about the management of Concussion in Sports Public Education Campaign, please call the American Academy of Neurology at (612) 623-8115 or the Brain Injury Association at (202) 296-6443.

Quality Standards Subcommittee of the American Academy of Neurology. The Management of Concussion in Sports [practice parameter]. *Neurology* 1997; 48:581-585.

<http://w3.ouhsc.edu/emsc/Hot%20Topics/chi.htm>