2007 Medical Director's Updates to BSPC

- **January 2007 Update**
- **February 2007 Update**
- **April 2007 Update**
- **June 2007 Update**
- **July 2007 Update**
- **September 2007 Update**

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Medical Director's Update for Base Station Physicians' Committee
January, 2007

San Diego County EMS:

Alvarado Hospital: The sale is complete. The ED is open, and the hospital and medical staff are reported happy with the transition.

Paradise Valley: A separate group is trying to make an offer on the hospital, but it is unclear whether it will be considered by Adventist Health. There will be a hearing by the Attorney General on January 25th, to gather information and community opinion on the proposed sale.

STEMI Update: The system went into effect this morning at 7 a.m. We are evaluating options for an EKG transmission system. Remember that a negative EKG should not affect treatment and monitoring. A summary letter sent on December 28th addressed operational issues.

Infectious Disease Exposures: Field providers report difficulty obtaining followup on some perceived exposures, some due to lack of clarity about contact or lack of coverage at the hospital. EMS will evaluate the information and see what is needed. Hospitals should review their response procedures for exposure of field personnel.

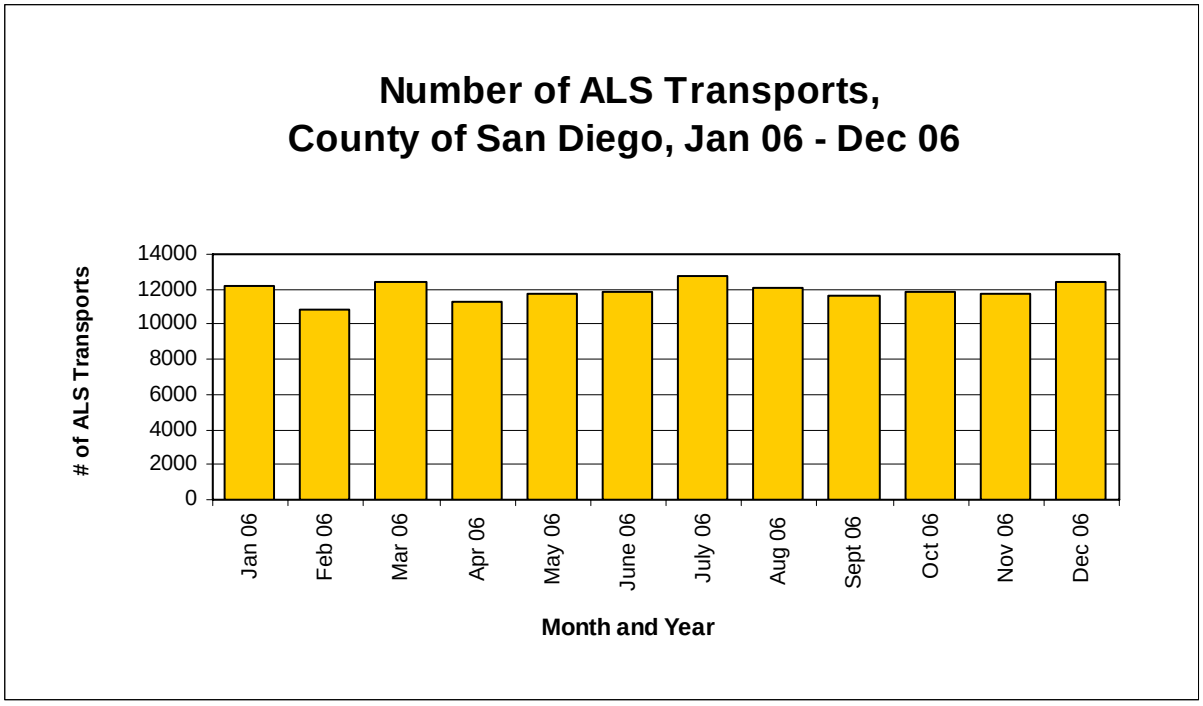
Norovirus: A note was sent out on norovirus with information about exposures, clinical symptoms, personal protective equipment and decontamination. This appears to be the cause for gastroenteritis outbreaks around the country. In San Diego there has been an uptick in gastroenteritis recently.

Flu season: A light season so far with mostly Influenza A.

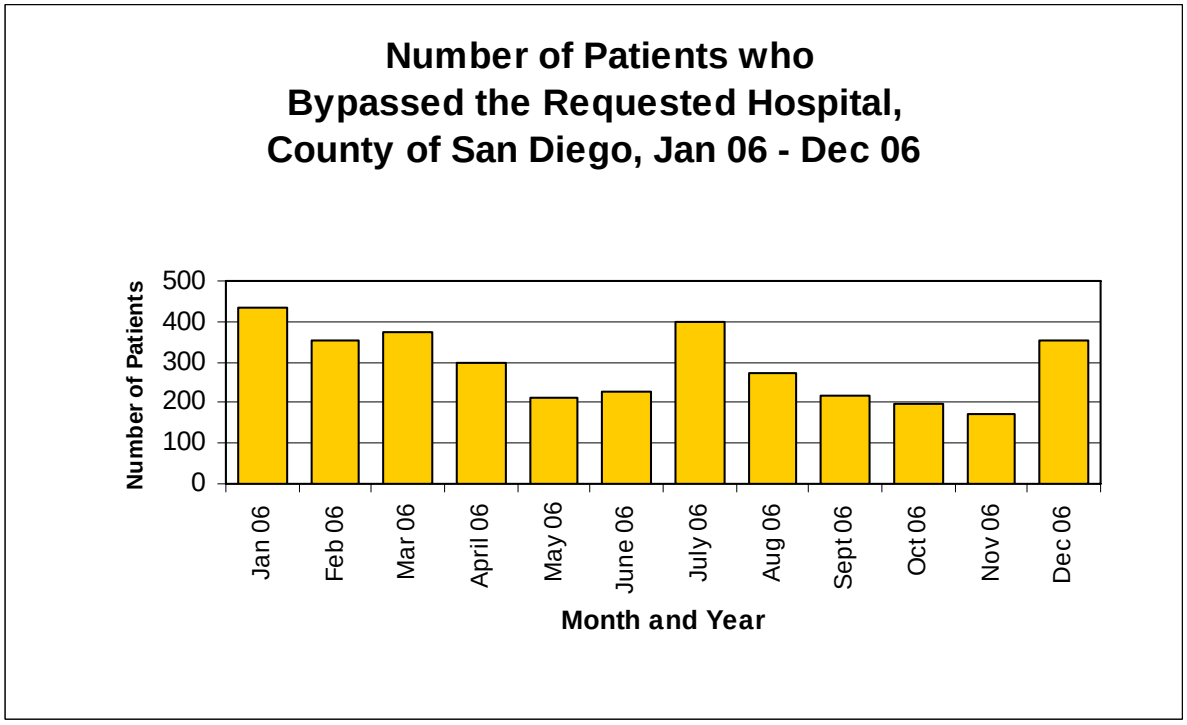
Capacity Study: The December hospital capacity report showed 43% of possible data reported. Several hospitals reported higher times holding patients for admission.

Protocol Revisions: Presented to BSPC today.

Below are the patient destination data in graphic form:



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2006 – Dec 2006 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



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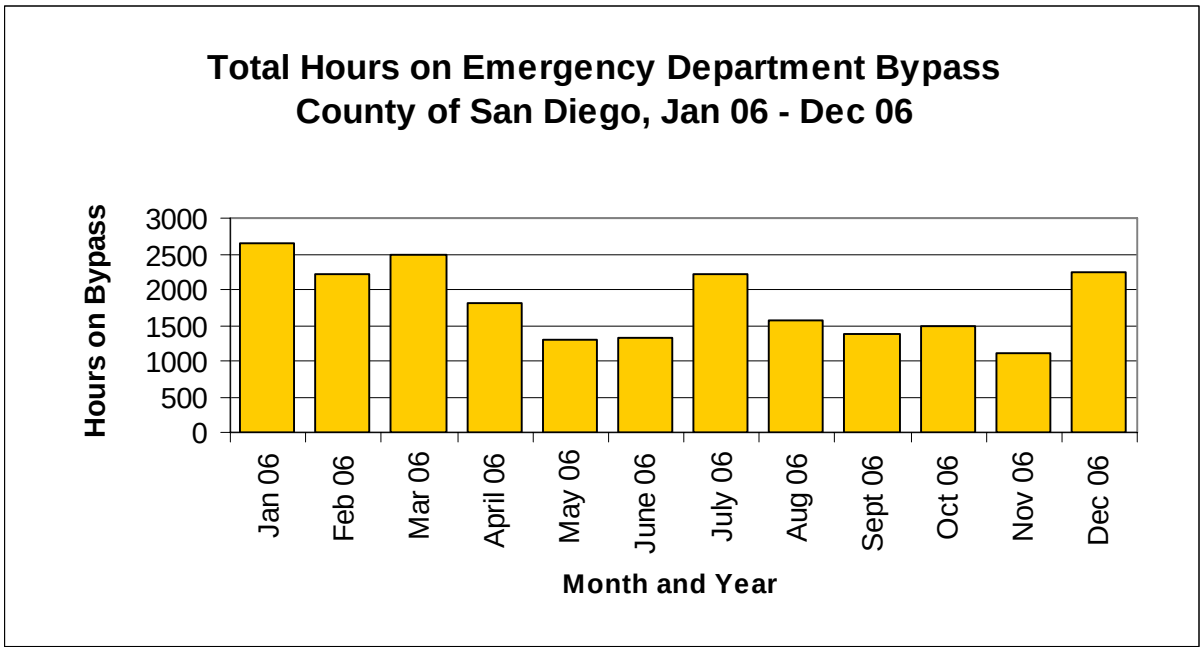

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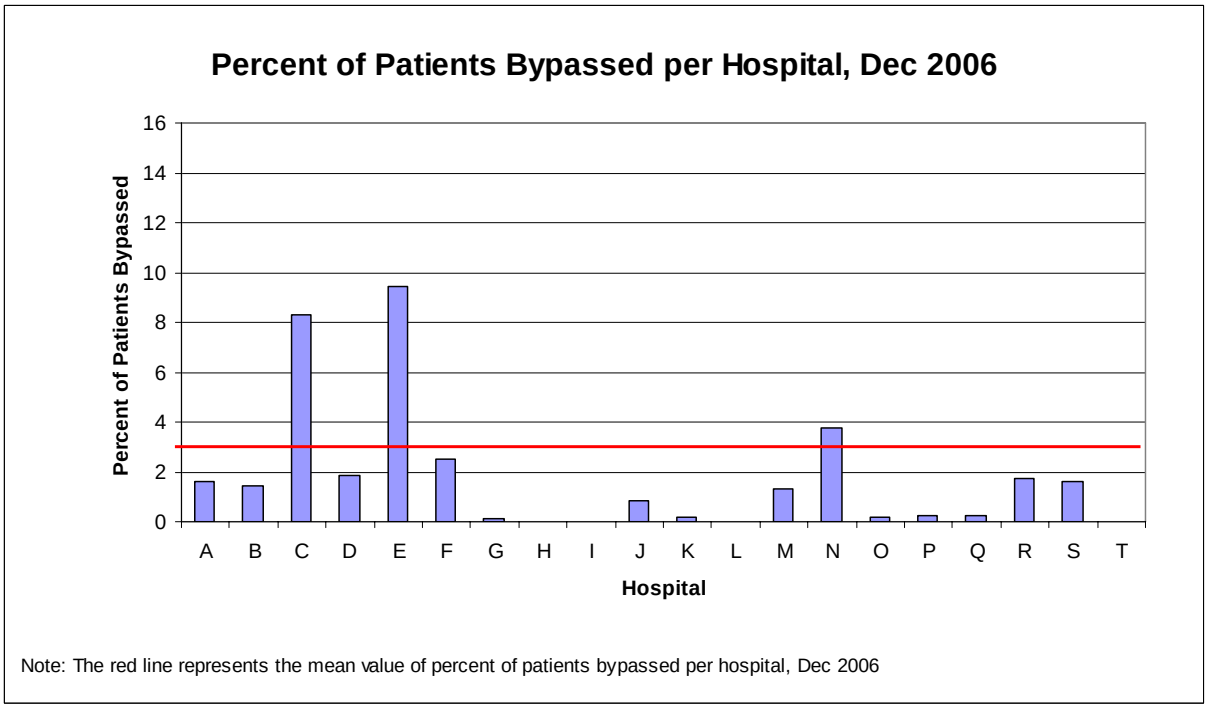

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Medical Director's Update for Base Station Physicians' Committee
February, 2007

San Diego County EMS:

Paradise Valley: We are awaiting word on new ownership. The Attorney General's decision is extended to February 26, 2007.

STEMI Update: The system is functioning well. Patients are being identified and DTB times are excellent for field-identified patients. One concern is over-triage with diversion of patients without STEMI on field EKG. Also, some false positives occurred, especially in low probability cases like syncope. We will have some data for your next meeting.

Infectious Disease Exposures: EMS is collecting information on hospital contacts for exposure follow-ups. We also will look at current system for effectiveness.

Flu season: Hospital visits for ILI are lower than past years. Influenza isolates fell off last week. Although, see bypass data below.

Capacity Study: The January hospital capacity report showed 50% of possible data reported. Several hospitals reported higher times holding patients for admission.

Protocol Revisions: New changes presented to BSPC today.

Safety Net: HHS is convening a health care safety net roundtable and work groups to look at funding, advocacy, South County, and care coordination issues.

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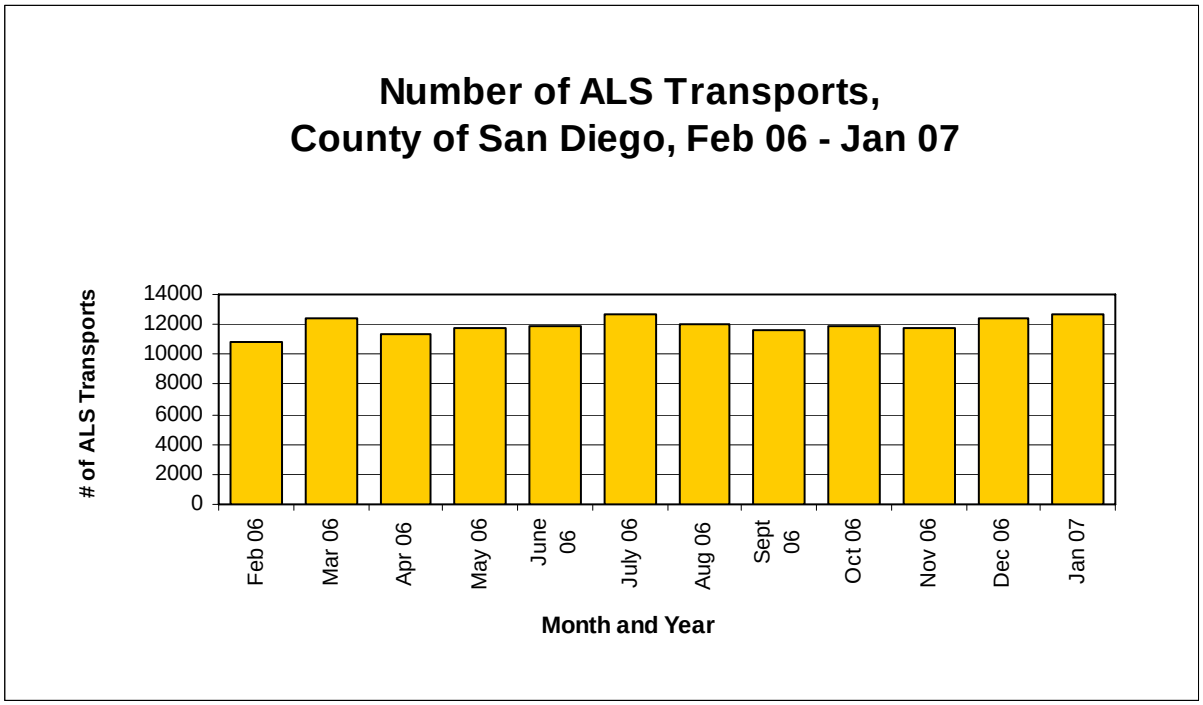

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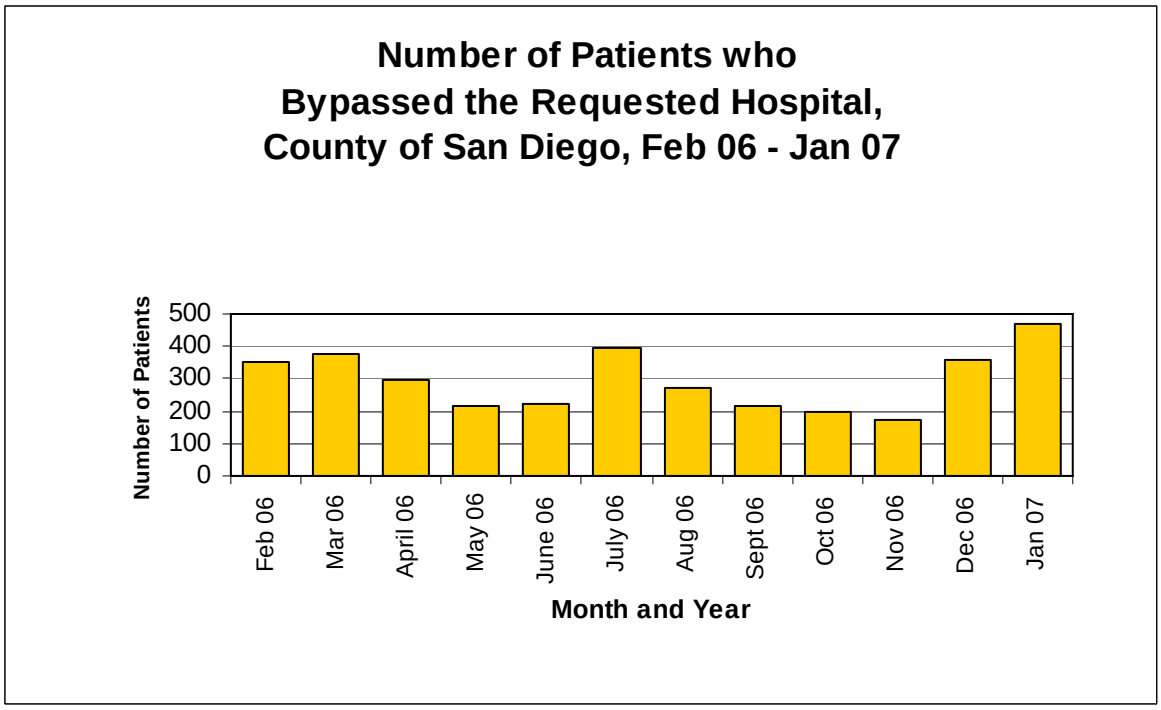

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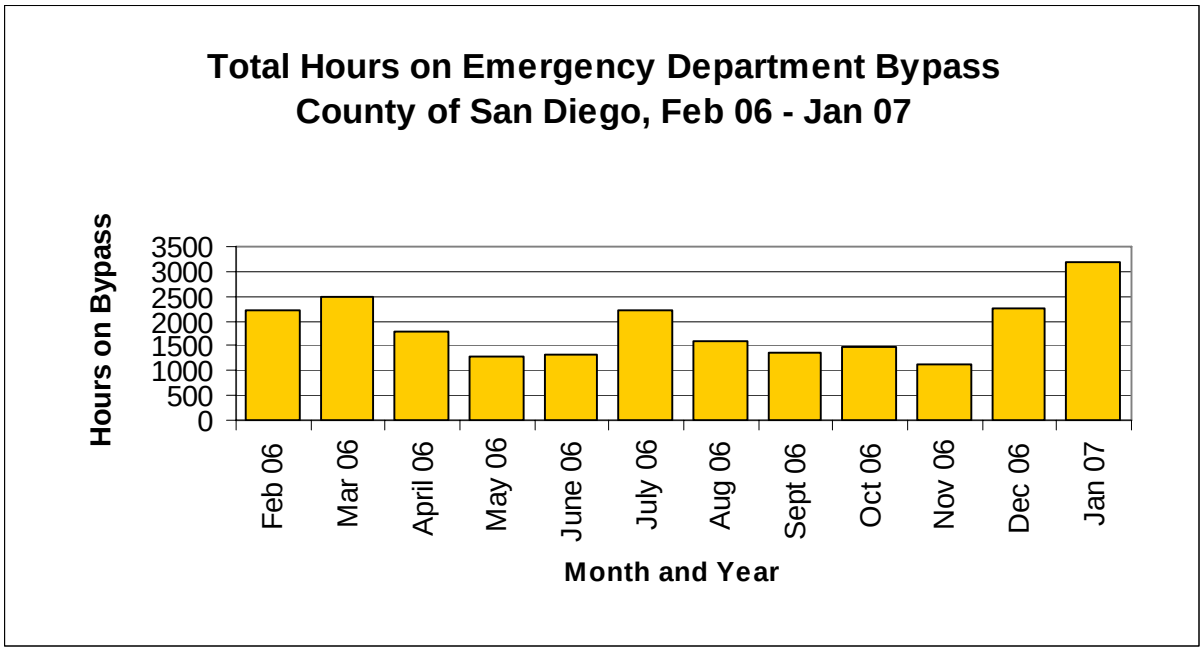

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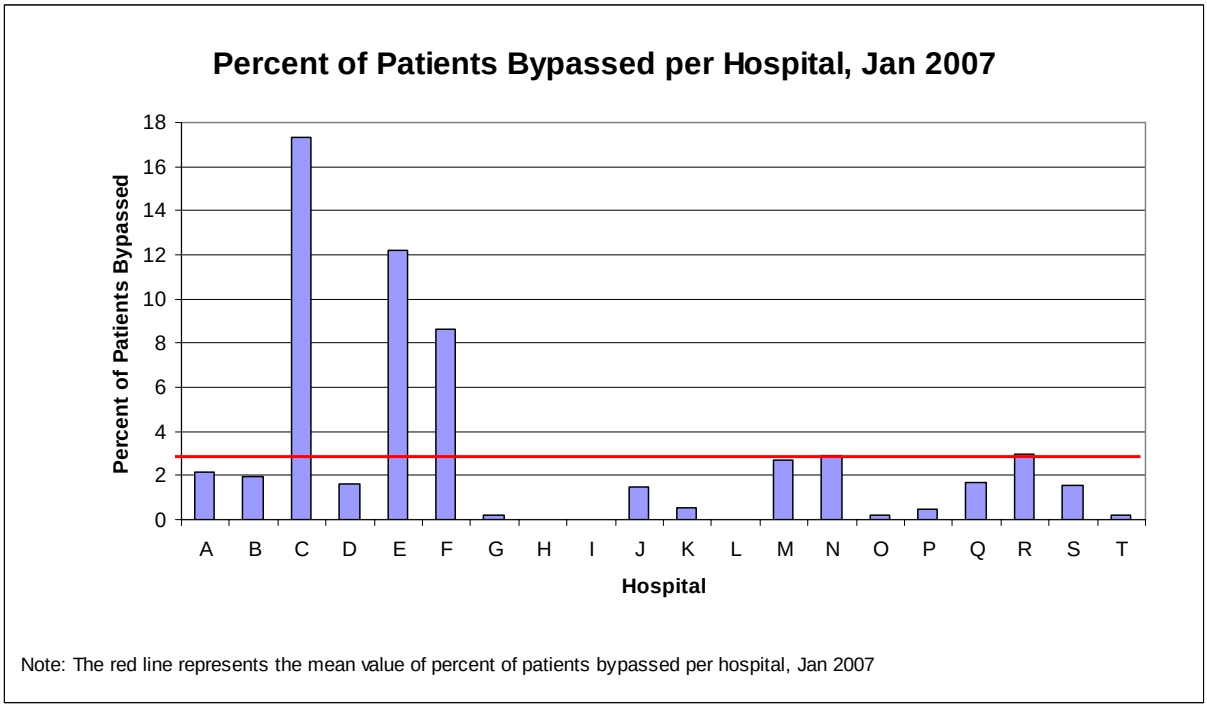

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Medical Director's Update for Base Station Physicians' Committee
April, 2007

San Diego County EMS:

Paradise Valley: EMS met with ED staff recently. The hospital continues to work on their certification issues with CMMS.

STEMI Update: A preliminary look at 2007 data shows good door-to-balloon times that meet expectations. Full first quarter data is due soon, and will help with analysis. Base hospital decisions on triage are still considered (over) triage at CAC.

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Safety Net: HHS health care safety net work groups continue to meet on funding, advocacy, South County, and care coordination issues.

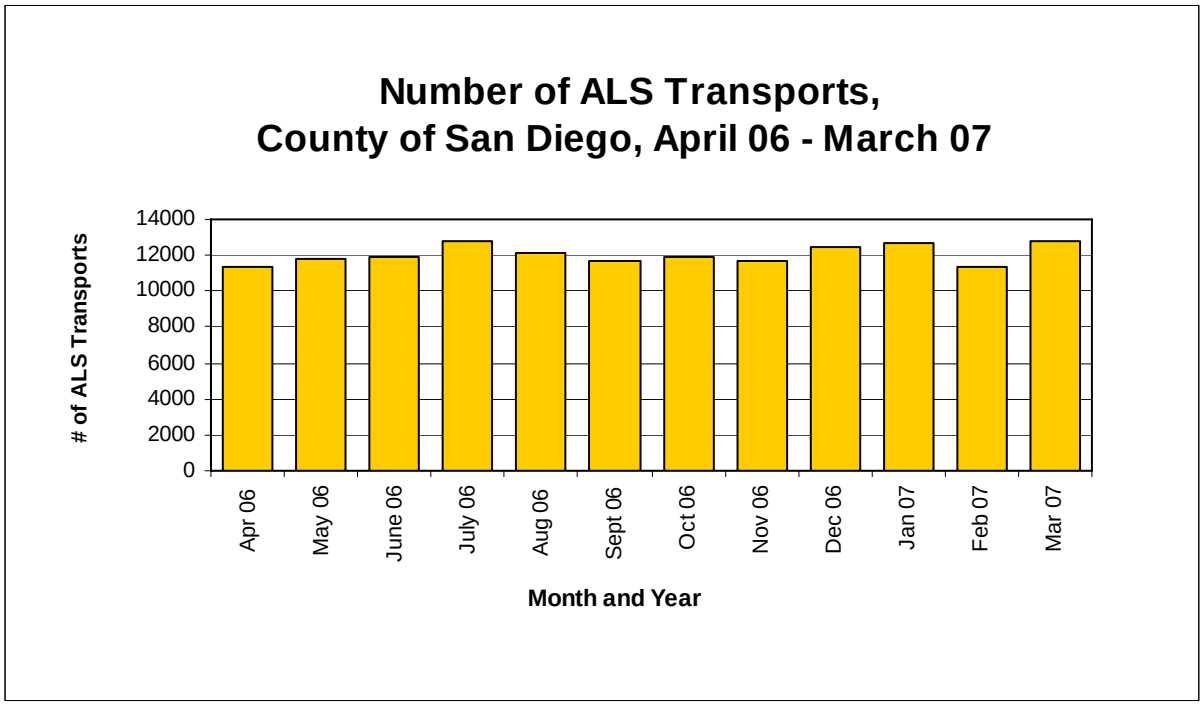
Drills: The SONGS exercise is tomorrow. The NDMS drill will be in May.

Infectious Disease Exposures: Please review your procedures to assure rapid evaluation of potential exposures, especially those which require prophylaxis.

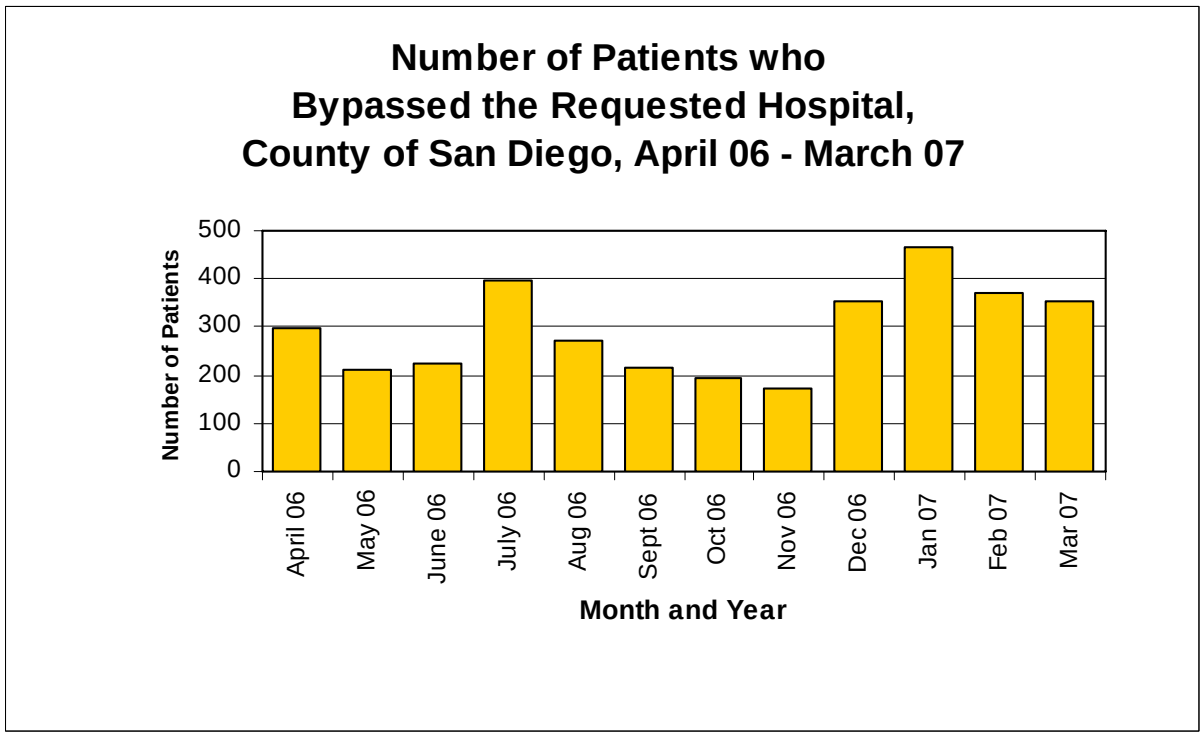
Law enforcement clearances: EMOC sent out a letter regarding rapid evaluations of custody patients so officers do not have to wait for long periods. In addition, SDPD will begin to take detainees needing clearance to closest emergency department, rather than concentrating on a small number of facilities.

Capacity Study: The March hospital capacity report showed 38% of possible data reported. There is some discussion about looking at different data points.

Below are the patient destination data in graphic form:



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Apr 2006 – Mar 2007 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



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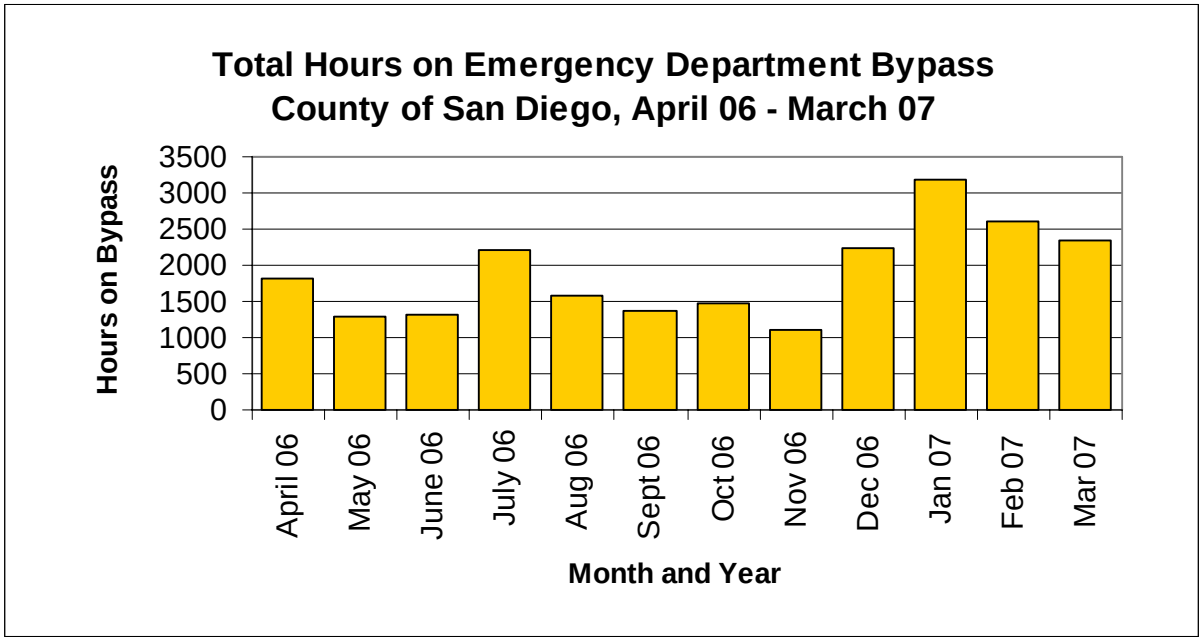

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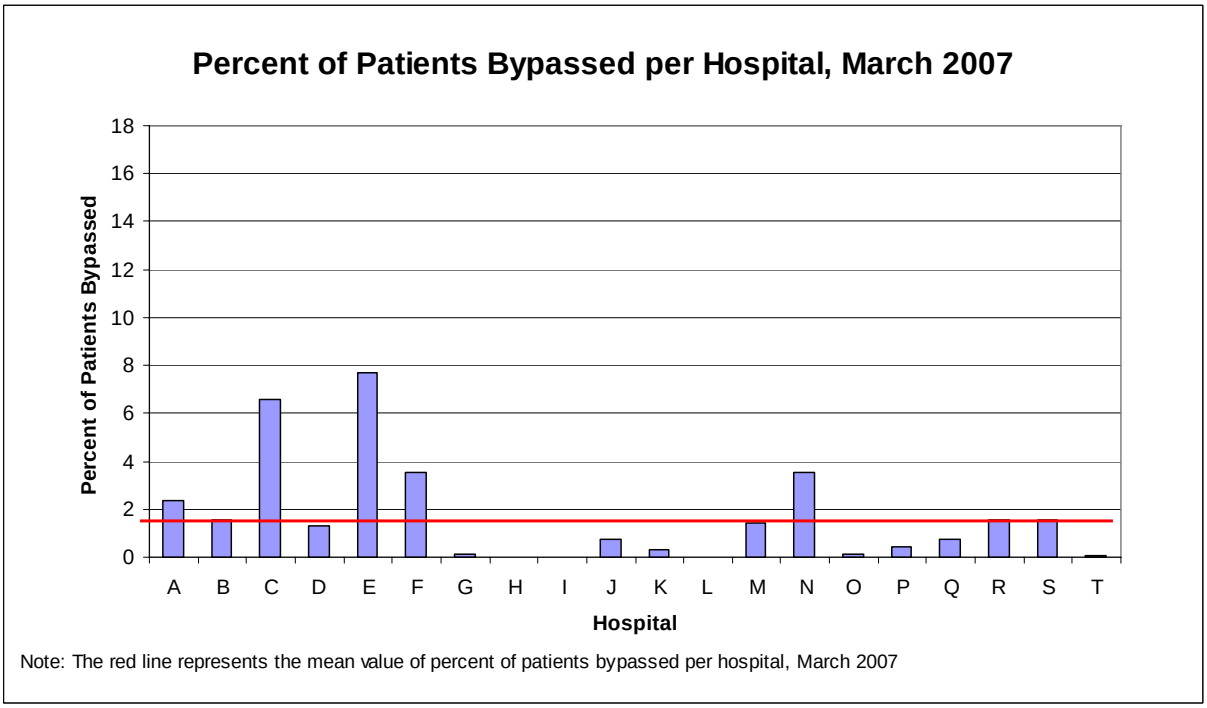

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Medical Director's Update for Base Station Physicians' Committee
June, 2007

San Diego County EMS:

EMS: Marcy Metz is the interim EMS Chief. Marcy needs no introduction and we are enthused to have her in this role. Carmel Angelo left EMS to assume the position of Director of Health and Human Services for Mendocino County. We wish her well and thanks for all her hard work over the last several years on behalf of the EMS system. A recruitment will be held for the permanent chief. There are other openings at EMS if you are interested.

PPRs for Hospitals: The trauma surgeons have asked that a PPR be available in the hospital for every patient. This is important. Despite an excellent turnover report to hospital staff, the potential for major problems arises when something is recorded on the PPR and not addressed by the physician. Issues that seemed straightforward at turnover can be less clear even a short time later, and nurses and physicians will want to consult the PPR. Also, consultants see patients later after they are admitted and these physicians need the PPR to understand what happened in the field. Field personnel frequently believe the hospital doesn't value their information enough. This is a situation where hospital personnel truly need and want written information. Thanks for making this happen.

New Protocols: These will take effect in July. Rebecca Pate or I would glad to answer any questions about the protocols.

Nitrates in CHF: Sequential administration of nitrates is effective, and blood levels of nitrates may approach those achieved by IV administration. The key is to continue administration in a patient who needs additional treatment and maintains an adequate blood pressure. It is better to treat with multiple individual doses rather than relying on nitropaste.

STEMI Update: Door-to-balloon times continue to look good and the system is meeting expectations to this point, with about 80% within 90 minutes. We hope to get out a first quarter report in the near future.

We continue to see some overtriage and unnecessary activations that may be avoidable. A recent report from Los Angeles outlined their experience with the predictive value of field EKGs. They point out that overuse of field ECGs in low risk populations increases the number of false positive ECGs. There is also a deterioration of specificity due to artifact that is machine specific. They reported the positive predictive value (PPV) of field ECGs was 66%. If the patient had chest pain the PPV was 74%. The PPV of the field ECG without a complaint of chest pain was 25%.

We are performing large numbers of ECGs on patients without chest pain and should be careful to think about who really needs one. An ECG is not part of some "routine" workup. The patient with an atypical presentation found to have a STEMI upon arrival at the hospital can receive a thrombolytic or be transferred.

If the ECG has artifact and doesn't look clean in all leads, the base should be told. If a known cause of a false positive ECG is present, that should be reported as well. Paced rhythms and left bundle branch block clearly are usually false positive. Atrial flutter or rapid atrial fibrillation, left ventricular hypertrophy, bundle branch blocks should be reported. Patients who do not have Acute MI on their tracing should not be triaged as a STEMI patient. Patients who have Acute MI on the ECG interpretation, but have a reason for a false positive may be triaged to an SRC in some cases, but the SRC need not activate the team, allowing the ED physician to decide if activation is needed immediately after arrival.

Another issue, although less pressing, is the common report of ST elevation on the monitor interpretation in QCS patient care records. This is the reading from lead II monitoring, not the 12-lead. ST elevation is recorded frequently. Almost always, the 12-lead performed does not show a STEMI. These are erroneous and ST elevation virtually never should be recorded on the lead II interpretation; that is intended for rhythm interpretation. The reason monitors show ST elevation when it doesn't exist is due to the frequency response characteristics of monitors compared to 12-leads. For a review of the issue, look back to the September 1997 issue of JEMS (author S. O'Grady).

Taser issues: EMS is looking at this. Taser discharges by themselves are not considered to be dangerous. Patients with agitated delirium, who frequently have taken stimulants, are at risk of sudden death. Hyperthermia is a sign of high risk for death. If a patient with agitated delirium needs to be restrained, it should be done, if possible, without pressure on the chest or abdomen that impairs ventilation. The patient needs to be observed carefully and have ventilation and circulation quickly supported as needed. A base deviation for sedation with midazolam will be indicated in some cases.

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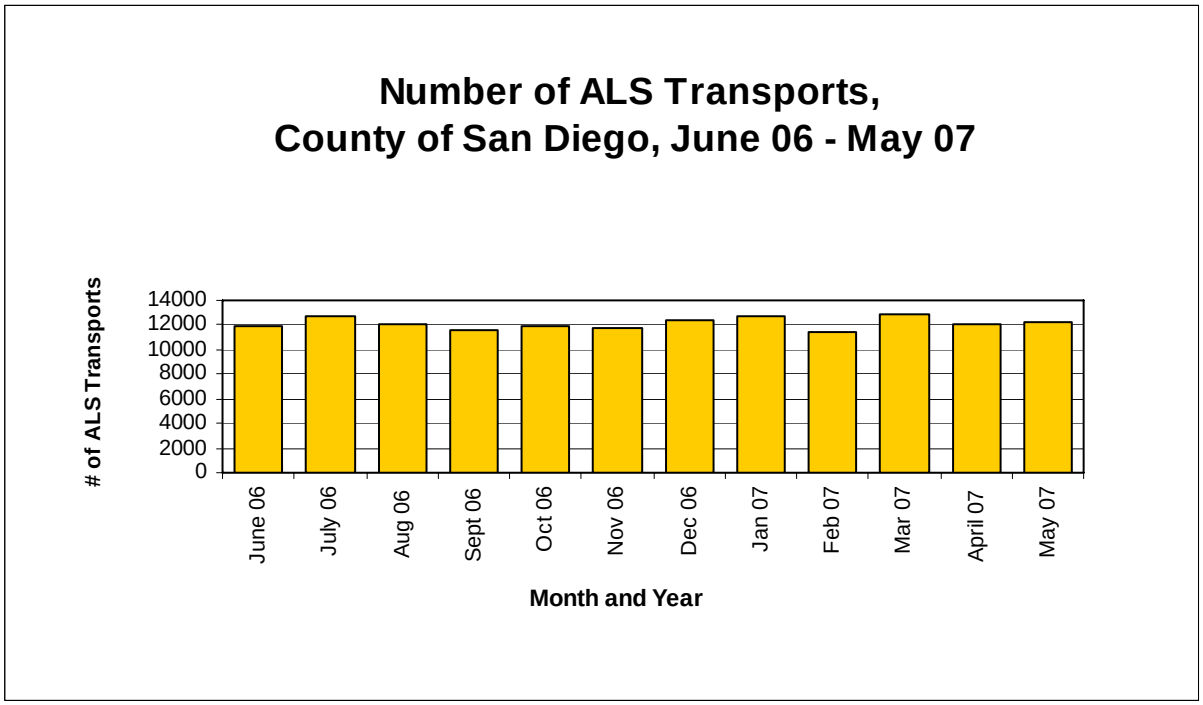

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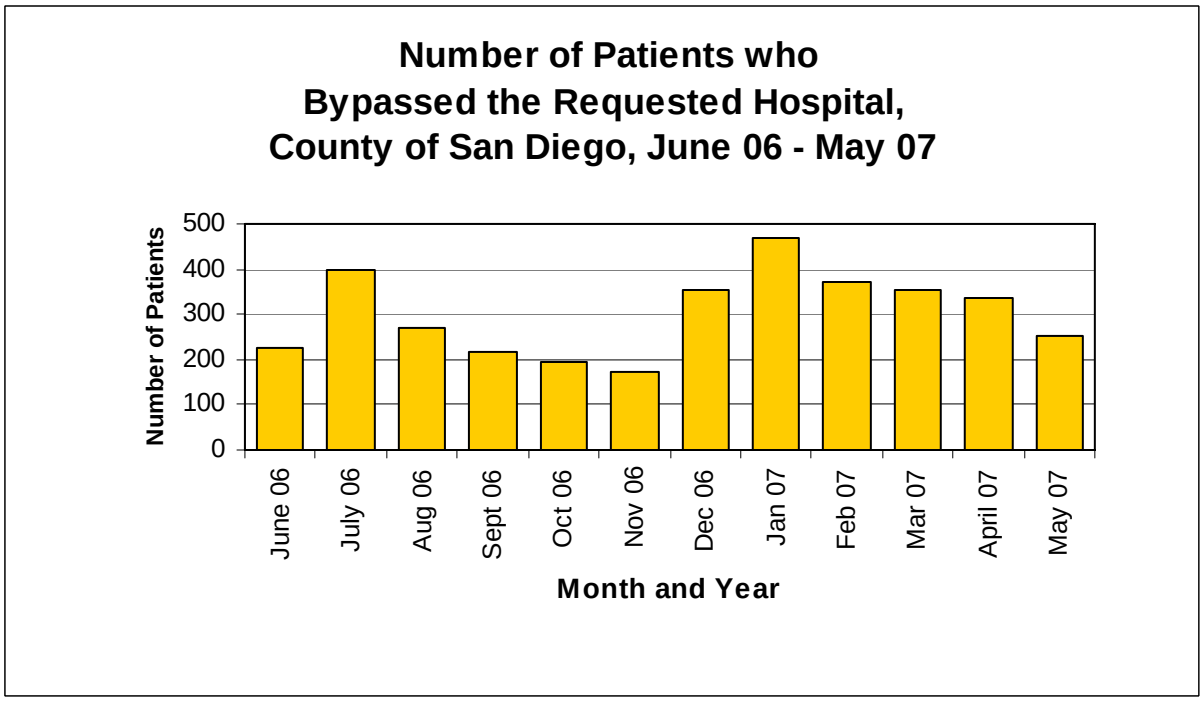

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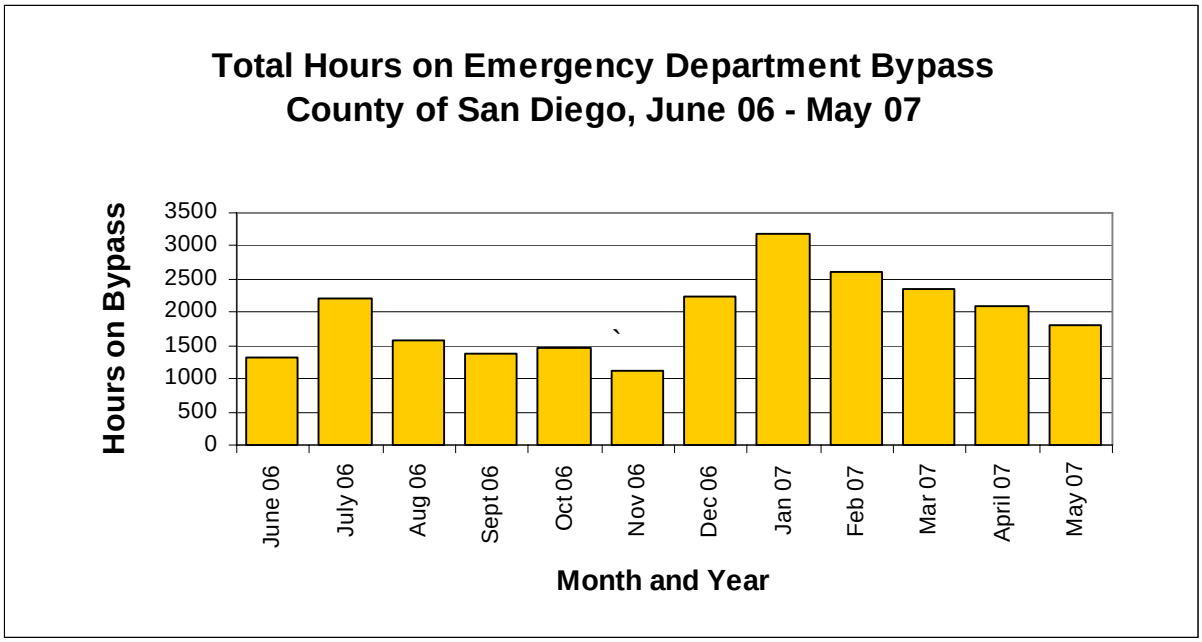

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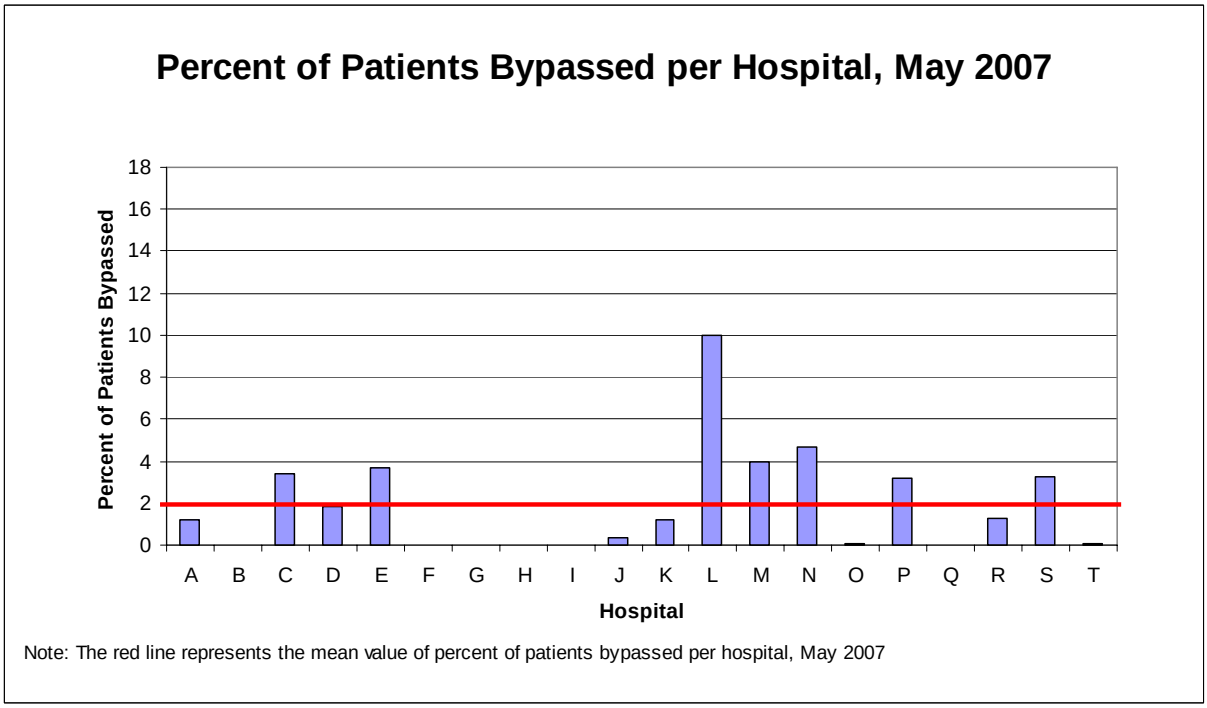

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Medical Director's Update for Base Station Physicians' Committee
July, 2007

STEMI Update: First quarter data (January 16—March 31, 2007) confirm the success of the STEMI receiving system achieving great door-to-balloon times. There were 147 emergency 911 patients, of whom 122 (83%) went to the cardiac catheterization lab. Out of those, 79 had a PCI performed (65% of patients getting a catheterization, or 54% of 911 identified patients). The median door-to-balloon time (DTB) for patients getting a PCI was 67 minutes. This is much faster than DTB times reported before the system. Fast DTB times will translate into better outcomes for patients. The percentage of patients with a DTB time at 90 minutes or less was 81% overall. Everyone in the system should be proud of these numbers and the impact they have on patients.

Several suggestions were made at the last Cardiac Advisory Committee for improvements in the system. These include making sure a PPR and a copy of the 12-lead are left in the ED. The 12-lead should be marked with the patient's name or the run number. MICNs should be certain to document requested and nearest hospital if the closest STEMI receiving center is bypassed. There was also discussion about false positive EKGs and ways to reduce unnecessary activations.

We are looking for ways to reduce the number of overtriages resulting in unnecessary cath lab activations. This will involve high quality EKGs and appreciation and communication of any STEMI mimics such as a pacemaker, bundle branch block, atrial flutter or fibrillation, etc. Also, communicating to the SRC the reason the EKG was performed. Syncope seems to be a frequent setting in which field EKGs are false positive.

Heat Injury: EMS is part of a Health and Human Services Agency response group to prevent heat injury. We monitor the heat index throughout the summer. The heat index is a calculation based on temperature and humidity that indicates higher risk of heat injury, especially among those more at risk including the elderly and very young. At preset levels, there is public notification and those

without air conditioning are advised to use public cooling centers such as libraries, or other locations such as shopping centers, etc. The heat "burden" is cumulative, so a break from high heat is beneficial in reducing the chances of heat injury.

Encourage those who might be adversely affected by high heat to take advantage of cooling centers. Neighbors and family should be aware of elderly who might be at risk and make sure someone checks on them regularly to see if they need assistance.

Proposed Stroke Triage Protocol: EMS will present a draft triage protocol for acute stroke patients to BSPC today. The protocol will outline resources the hospital should have to receive acute stroke patients within two hours of symptom onset. We will keep you posted as this is discussed.

New Protocols: These are now in effect. Please let the Base or EMS know about any suggestions or comments.

Tourniquets: Tourniquets long were considered dangerous and inappropriate for field use. This is being examined again given the increased use in battlefields today. BSPC and MAC will look at this issue to see if we should consider tourniquet use in some settings. One might be a mass casualty event such as a bombing.

Agitated Delirium/Restraint: Patients with agitated delirium are at risk of sudden death. These patients frequently have taken stimulants, and may be restrained. If a patient with agitated delirium needs to be restrained, it should be done, if possible, with the patient on their back to avoid pressure on their chest or abdomen that impairs ventilation. The patient needs to be observed carefully and have ventilation and circulation quickly supported as needed. A base deviation for sedation with midazolam will be indicated in some cases. Hyperthermia is a sign of high risk for death and should be reported to the Base if noted.

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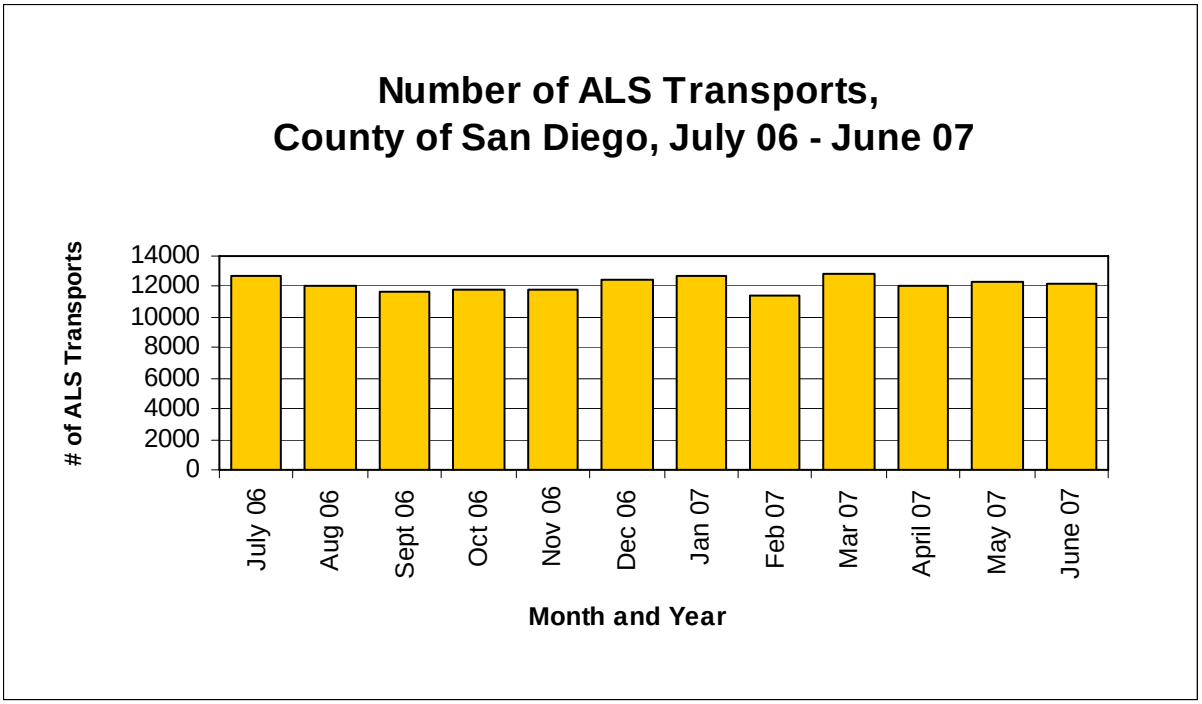

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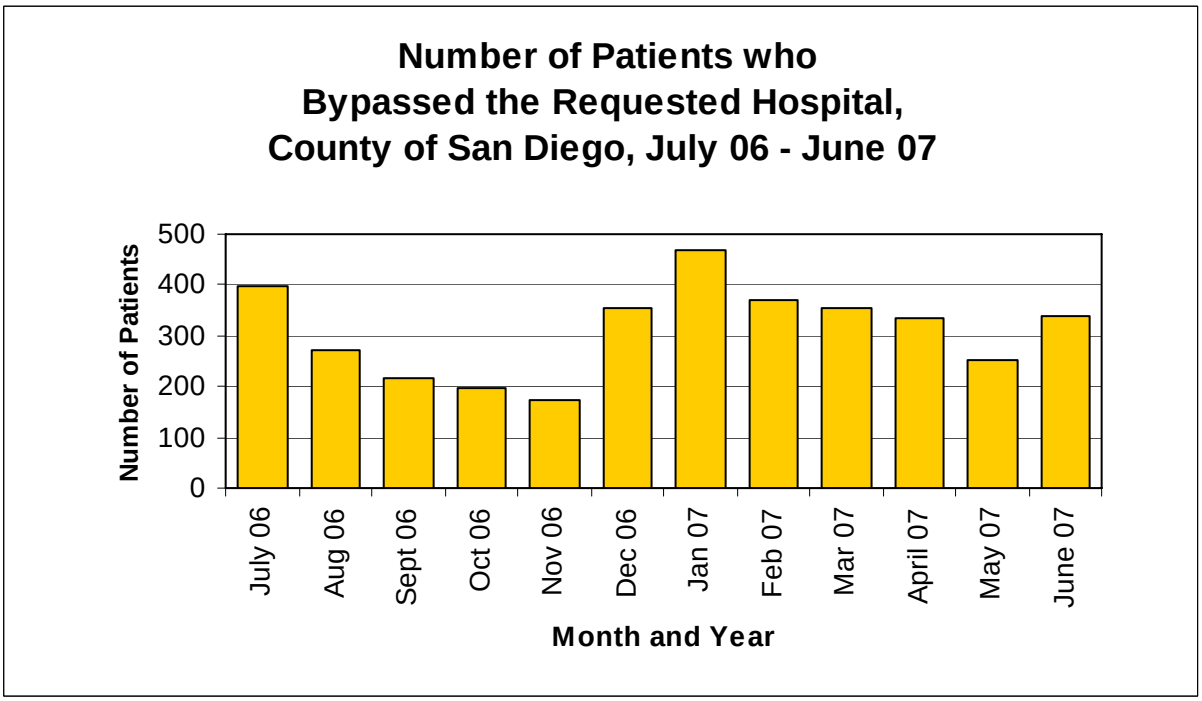

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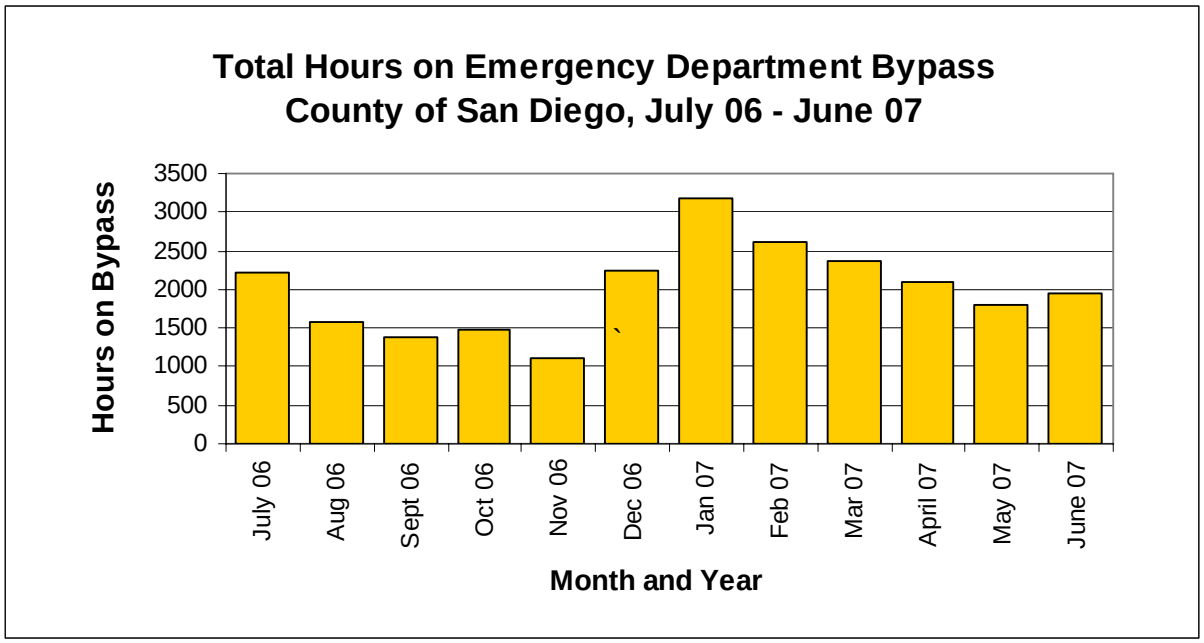

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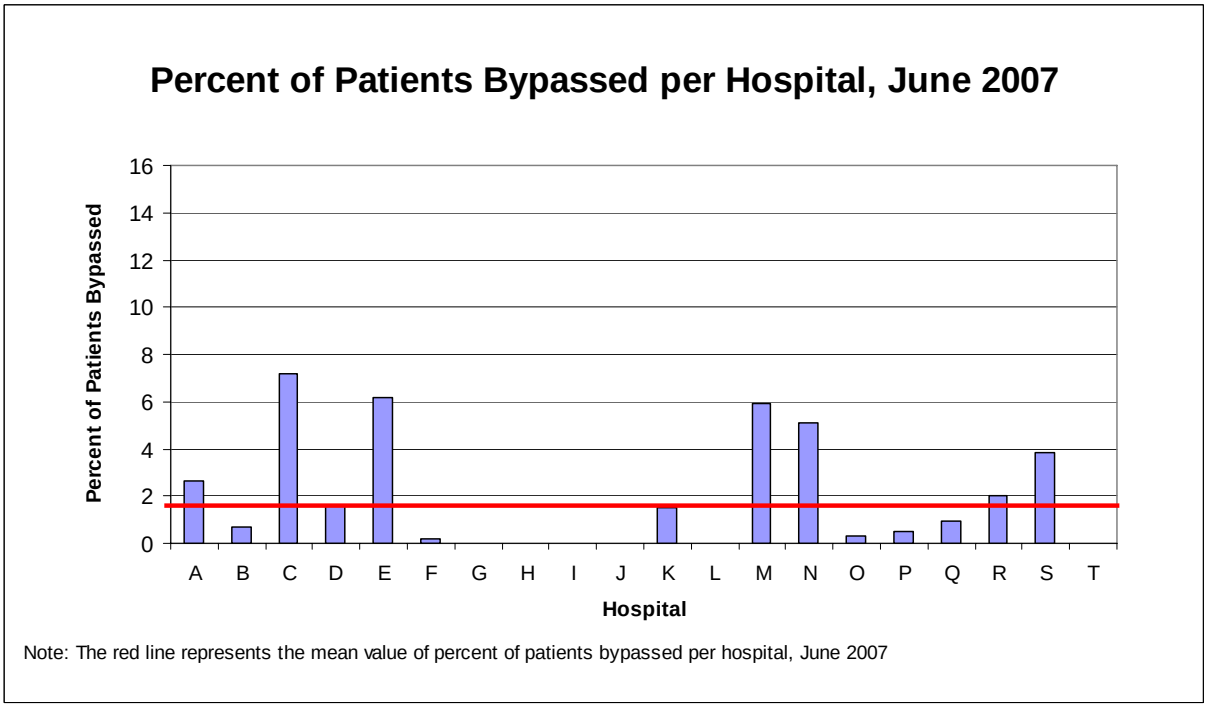

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Medical Director's Update for Base Station Physicians' Committee
September, 2007

New EMS Staff: Diane Royer, RN, joins EMS and will be responsible for facilities: Base Hospitals, cardiac receiving centers and similar areas. She is originally from Indiana where she worked as a field EMT and advanced EMT while going to nursing school. Her nursing focus has been in the emergency department, with experience at a trauma center in another county, and with the cardiac catheterization laboratory. Join us in welcoming Diane.

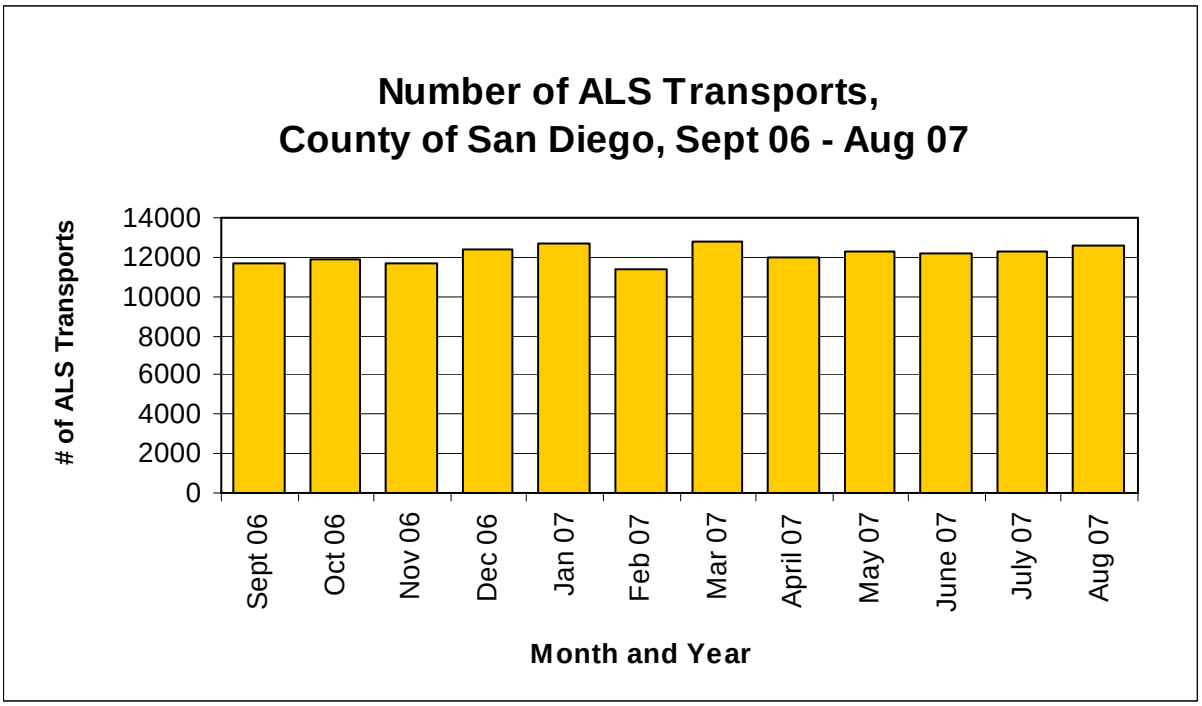
Overcrowding Summit: The EMOC overcrowding summit takes place October 2, 2007 from 7:45 am until 12 noon. It will be at Sharp Spectrum. Speakers will address the EMS Fund, overcrowding, solutions, and other valuable information. Speakers include Mike Williams of the Abaris Group, Dr. Cesar Aristeiguieta the state EMS director, Carla Schneider from Hoag Hospital, and others. San Diego hospitals will have a chance to share issues and solutions. RSVPs to Dareen Nasser at Dnasser@sdcms.org.

STEMI Update: Second quarter data reinforce the excellent door-to-balloon times achieved in the STEMI receiving system. While the complete data are not yet available, the median DTB time appears to be about 60 minutes. Everyone in the system should be proud of these numbers and the impact they have on patients.

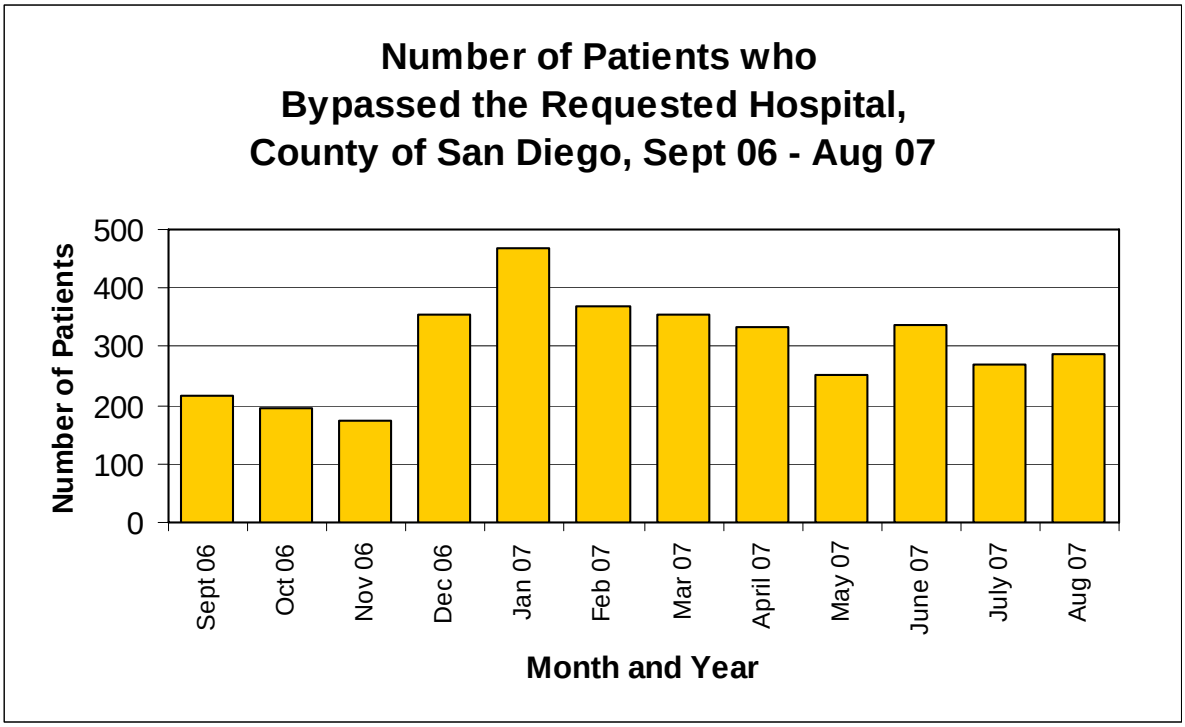
AB 941: This bill was introduced at the end of the legislative session to change EMT licensing and discipline. It has not been signed by the Governor to this point, so we do not know if it will take effect. If it does, however, it has an urgency provision so it is effective immediately. The bill establishes a statewide EMT certification registry, subject to funding; makes providers responsible for EMT discipline, and changes some of the grounds for discipline in the law. We will keep you updated.

Proposed Stroke Triage Protocol: The proposed protocol for acute stroke patients was approved by prehospital EMCC yesterday and is considered by BSPC today. The protocol outlines resources and procedures the hospital should have to receive acute stroke patients within two hours of symptom onset. We will keep you posted as this is discussed. Please remember to report or log at the base acute strokes with symptom onset within two hours in its own assessment category in QCS.

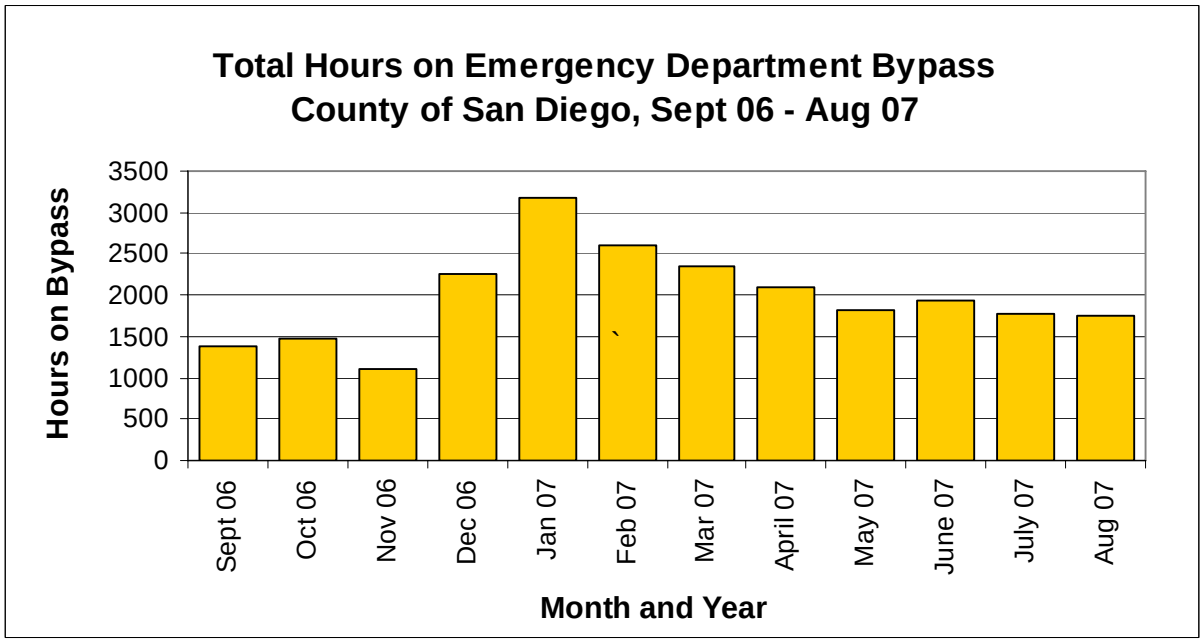
Below are the patient destination data in graphic form:



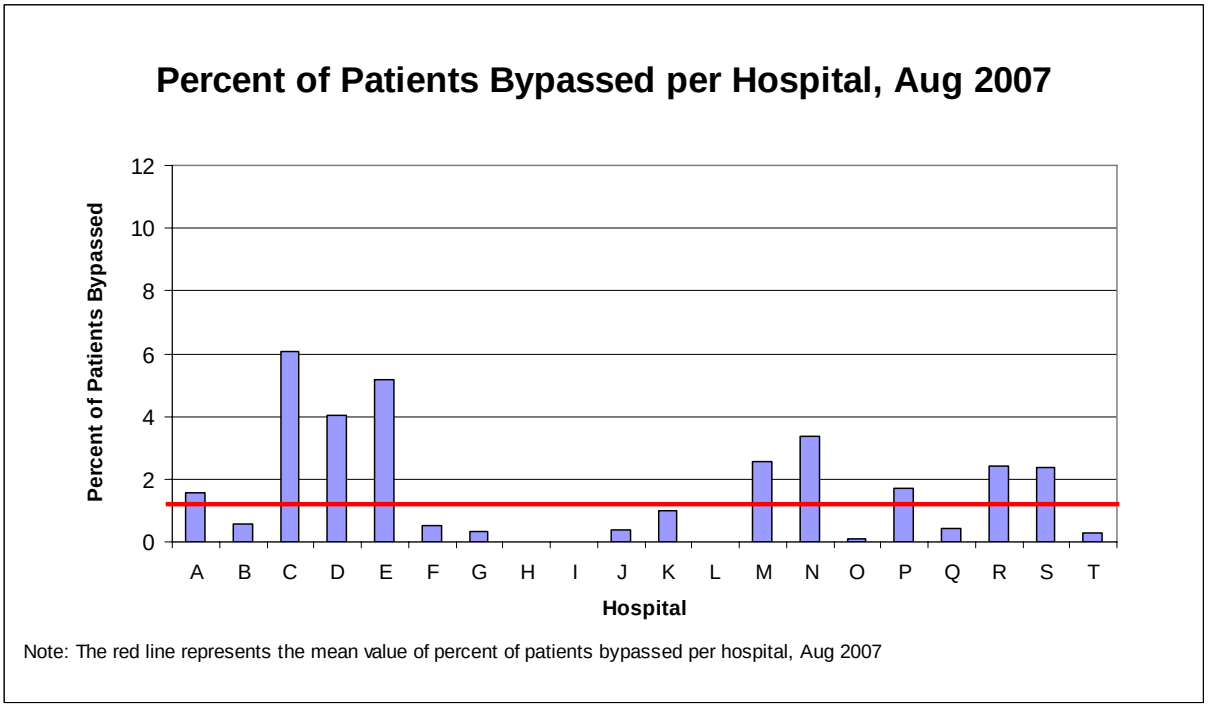
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Sep 2006 – Aug 2007 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Sep 2006 – Aug 2007 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Sep 2006 – Aug 2007



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Aug 2007 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other