

2009 Medical Director's Updates to BSPC

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NICK MACCHIONE, FACHE
DIRECTOR

WILMA J. WOOTEN, M.D., M.P.H.
PUBLIC HEALTH OFFICER

County of San Diego

HEALTH AND HUMAN SERVICES AGENCY

PUBLIC HEALTH SERVICES

1700 PACIFIC HIGHWAY, SAN DIEGO, CALIFORNIA 92101-2417
(619) 531-5800 FAX (619) 515-6707

Community Epidemiology
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Vital Records

Bruce E. Haynes, M.D.
Medical Director
Division of Emergency Medical Services
6255 Mission Gorge Road
San Diego, CA 92120-3599
(619) 285-6429 FAX:(619) 285-6531

Medical Director's Update for Base Station Physicians' Committee January, 2009

New Staff at EMS: Susan Smith, RN and LeAnne Lovett-Floom, RN joined EMS as Quality Assurance Specialists. Most of you know Susan has been active in the system for years in both hospital and field provider positions. She will work with base hospitals and quality issues. LeAnne has both hospital experience and experience doing CCTs. LeAnne is working in the disaster section handling hospital issues.

Congratulations to Sharp Memorial on moving into their new hospital, including a beautiful new emergency department.

Flu season: An upward blip in emergency department visits occurred about two weeks ago, accompanied by an increase in influenza isolates. Both have returned to lower levels now, but walk in patients appear to be keeping EDs busy. We hope it will be a light season, but that remains to be seen.

We still do not know how closely the vaccine will match disease in the community. One finding from the CDC is that many influenza isolates around the country are resistant to Tamiflu. The CDC says patients who have influenza, or have been exposed, should be treated with another agent in addition to Tamiflu, Rimantidine or Zanamivir. Remember that scrupulous hand washing can prevent illness. An alternative is use of an alcohol-based hand cleanser.

Capacity Plan: This year's capacity plan was distributed. Hospital personnel should review the plan. We would like to keep off load delays to a minimum once it gets busier. This may require additional equipment like gurneys, and more personnel to take over from field personnel. EMS hopes each hospital will involve the entire hospital finding solutions to crowding. We hope hospitals will implement the ACEP overcrowding guidelines, moving admitted patients out of the ED quickly, moving elective procedures later in the week from Monday, and facilitating earlier in-patient discharges (before noon). Peter Viccellio presented an abstract at the ACEP Scientific Assembly showing patients admitted to a hallway bed had lower mortality and fewer transfers to the ICU than standard bed admissions.

Our important goal should be to prevent significant off load delays.

Hospital Capacity Data (ED Admission Holds) Report: Admission hold data entry procedures were simplified. Please make sure these data points are entered twice each day.

POLST: The new POLST form was effective January 1. This form provides information on a patient's resuscitation decisions, along with instructions about the intensity of care preferred, separated into comfort care, limited interventions, and full treatment. For the hospital or nursing home there are instructions regarding artificial nutrition as well. Both field and hospital personnel should become familiar with the document. We are expected to honor the requests in the document, unless there is some change in the patient's status. It includes liability and licensure protection for honoring the instructions.

Protocol Updates: Are being presented to this month's BSPC meeting. We will be discussing intranasal and intraosseous administration of medications, and Zofran for nausea and vomiting. We will also review tourniquets, the role pediatric intubation, and the King perilyngeal airway.

In a follow up to last summer's update, a safety and injury profile of Taser-like weapons was just published on the Annals of Emergency Medicine website as an early publication. The authors concluded that among 1,201 patients over 36 months more than 99% of subjects do not experience significant injuries after weapon use, and neither of the two deaths were caused or contributed to by the electronic weapon.

Golden Guardian: The November exercise went well. The Medical Reserve Corps staffed surge capacity at hospitals and opened an Alternative Care Site successfully. The communications failure part of the drill forced us to rely on radios and amateur radio, but gave us opportunity to try different options. The state opened one of their 200 bed field hospitals in Riverside County.

AED regulations: The state issued revised regulations pertaining to automated external defibrillators.

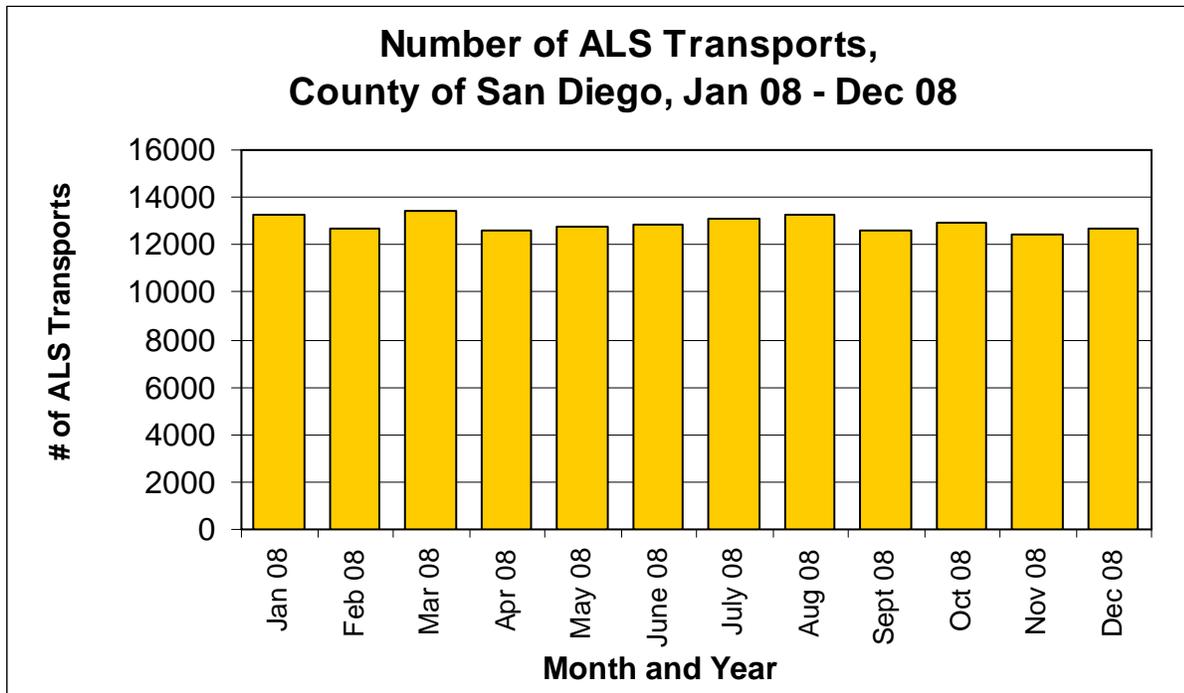
STEMI System: Door to balloon times remain superb. Outcome measures are within the range expected for excellent performance. False positive activations continue to occur. The most common causes are EKG mimics of STEMI such as atrial fibrillation/flutter, pacemakers, etc. Physician decisions to activate without a definitive EKG also occur. A recent study looked at administration of intravenous thrombolytics in cardiac arrest. Unfortunately, there was no benefit when evaluated against a number of outcomes including death (New England Journal of Medicine Dec 18, 2008).

CARES: Interest continues in establishing the CARES registry in the county. This cardiac arrest registry would allow us to track cardiac arrest outcomes, and evaluate potential improvements. There will be more on this as we move along this year. Prehospital agencies will be asked to enter certain data, as will hospitals be asked to enter a few, limited data points.

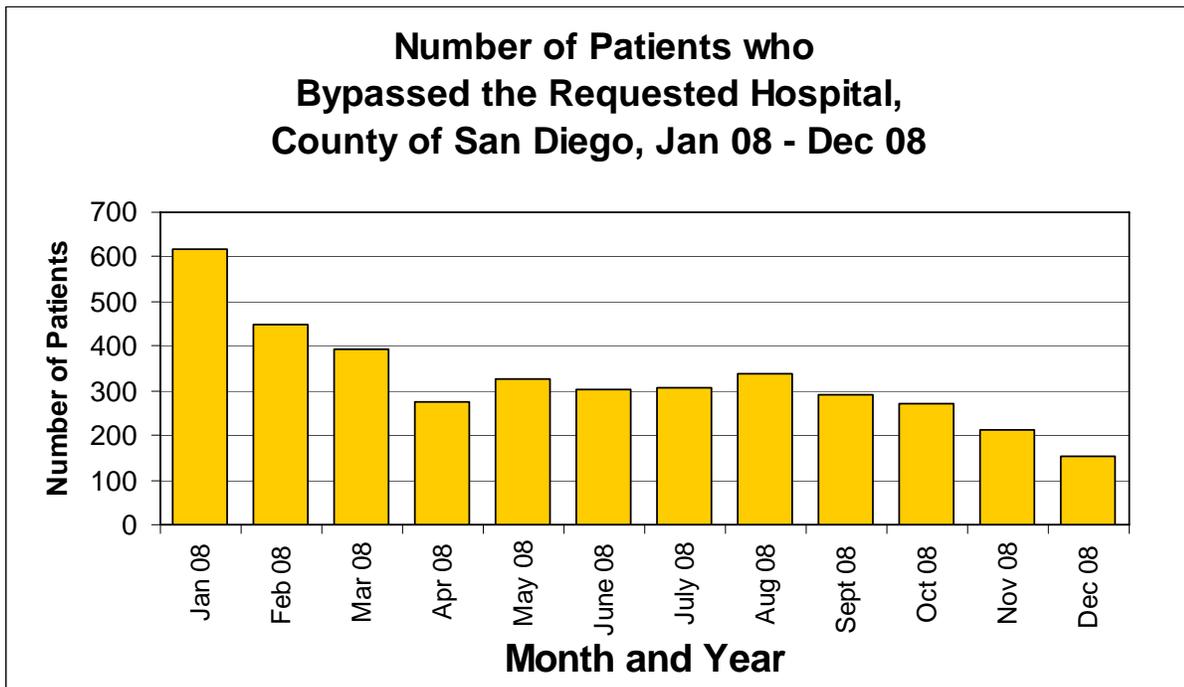
Stroke system: The process to identify those hospitals meeting the criteria to receive acute stroke patients with symptom onset in the previous three hours was sent to the hospitals. We anticipate receiving applications and completing the necessary reviews over the next two months.

Infectious Disease: CAL/OSHA released aerosol infectious disease guidelines. Providers should review these. The cooperation with the medical examiner's office on exposures is going well.

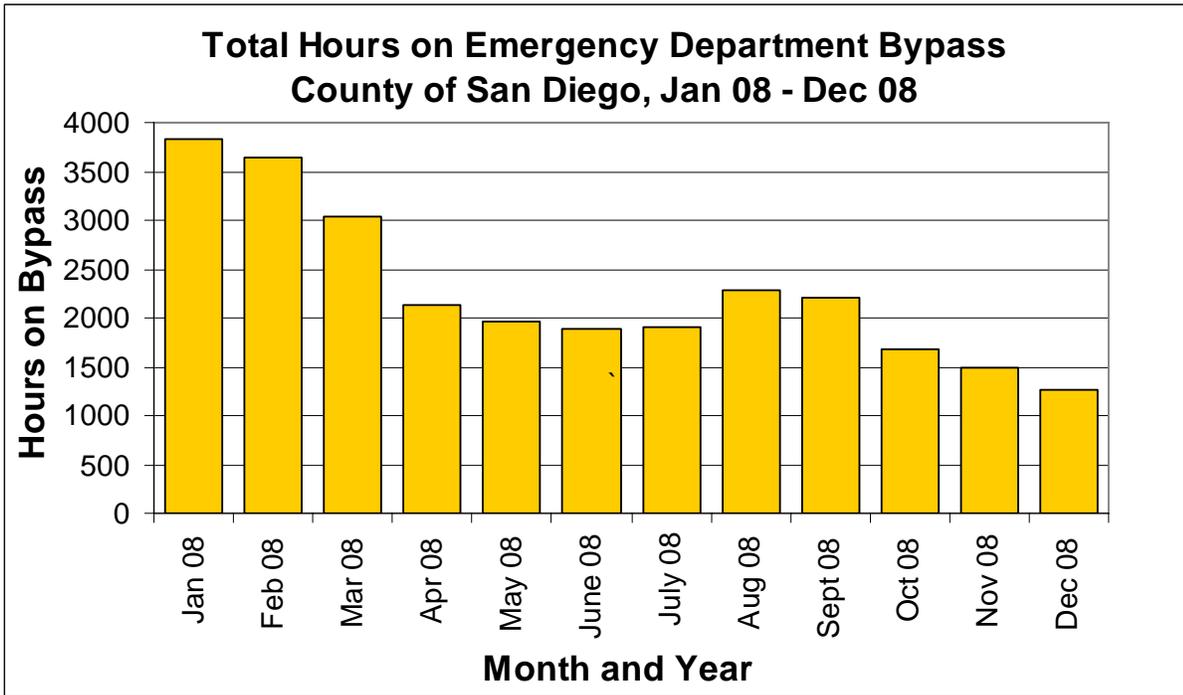
Below are the patient destination data in graphic form:



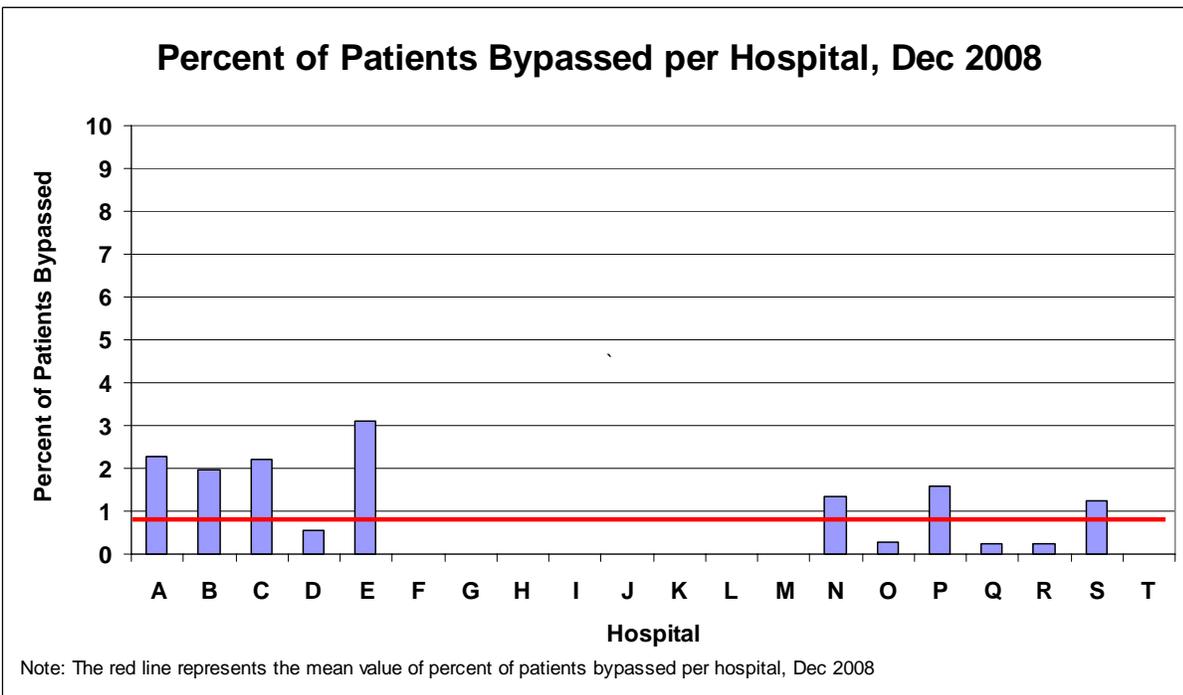
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2008 – Dec 2008 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



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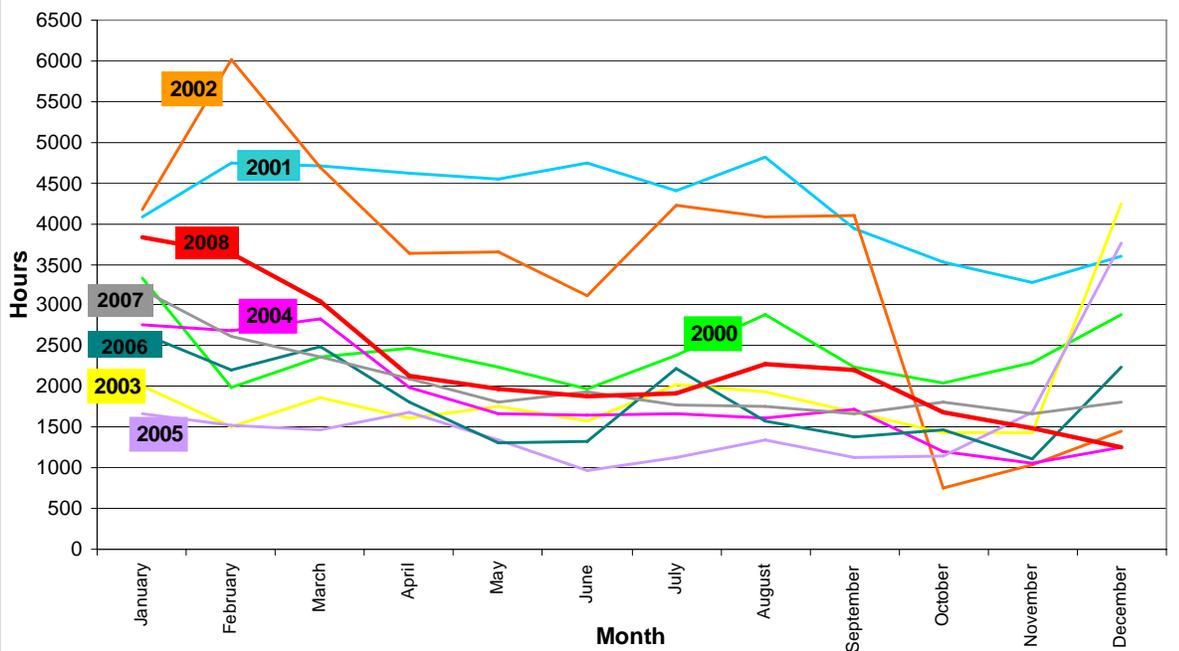


Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2008 – Dec 2008



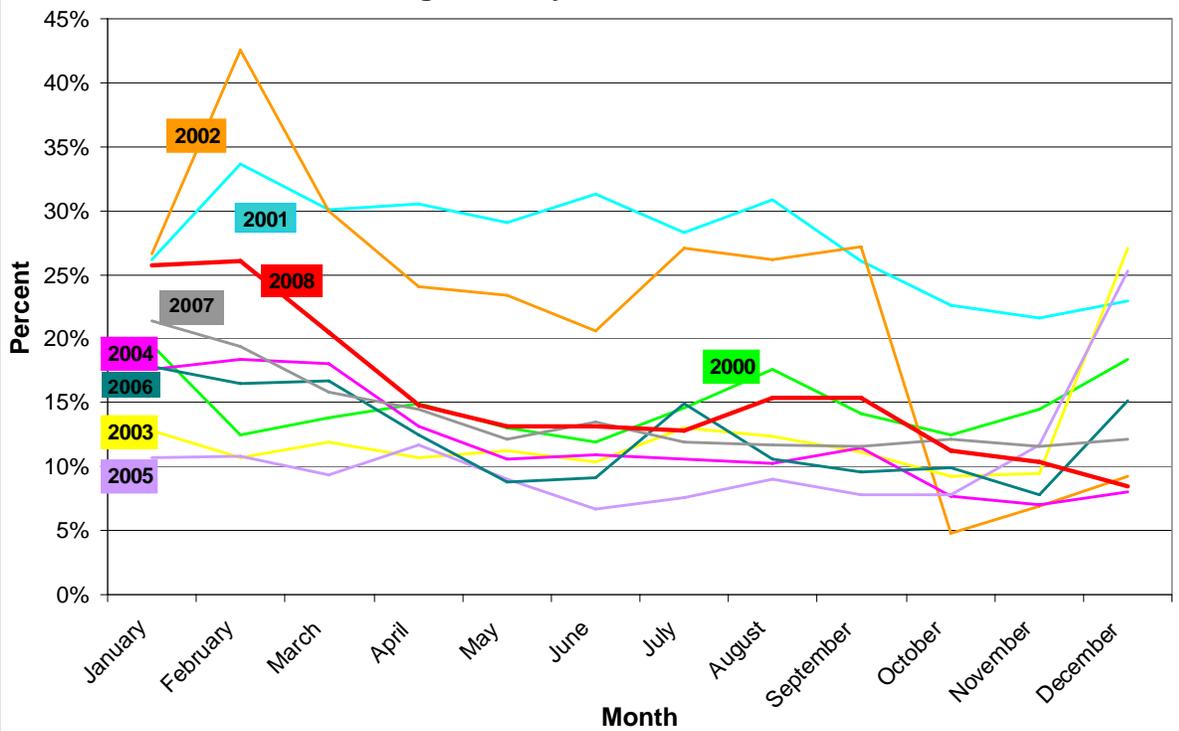
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Dec 2008 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other

Total Hours on ED Saturation by Month and Year, San Diego County, Jan 2000 - Dec 2008



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2000 – Dec 2008

Overall Percent Hours on ED Sat Per Month San Diego County, Jan 2000 - Dec 2008



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2000 – Dec 2008. Note: 2008 line extended to June due to chart formula, no data for this future date



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Medical Director's Update for Base Station Physicians' Committee February, 2009

Flu season: The flu season is mild to this point. There has been a recent increase in the number of influenza isolates, and flu may cause widespread outbreaks in March, but, again, things look good to this point. Bypass increased in January, but we are well below the levels of past crowded seasons (see data graphs below). We have had only sporadic reports of unusual off load delays, so thanks to all you in the hospitals for working on this issue.

ED Admission Hold Report: The new system for tracking patients awaiting an in-patient bed continues. The recording is improving and will help monitor one of the factors that leads to ED crowding and off load delays. Totals are entered in QCS for patients waiting two hours for a bed in three categories: ICU, telemetry, and floor beds. In addition, there is a space for patients awaiting psychiatric disposition. The bed entries are done twice a day, at 8 am and 8 pm. Entries for the AM data are running about 66% compliance, a little higher among the hospitals that have basic emergency facilities. The evening compliance is less—about 33%--and we hope to see both improve.

Telemetry: One thing we have noted is the large number of patients waiting for telemetry beds. We would suggest that hospitals work with their medical staff to clearly identify which patients would benefit from telemetry monitoring, and only hold those patients for a bed while in the ED.

Capacity Plan: While this has not been needed so far this season, the good work done on the new changes will help in the future. We will evaluate the plan and adjust it next summer as usual. Our important goal continues to be to prevent significant off load delays. There is still some interest in a "no diversion" trial, but no consensus has emerged.

Protocol Updates: The adult protocols were discussed at BSPC last month, and the pediatric protocol changes will be discussed today. Some of the highlights of the adult changes would be the addition of ondansetron (Zofran) for vomiting or severe nausea, use of naloxone and midazolam via the intranasal route of administration, adult IO, and elimination of lidocaine for persistent ventricular fibrillation (retention for post resuscitation use). Tourniquets would be added for mass casualty use at, for example, a bombing, or, as a physician deviation, for a non MCI patient. For pediatrics, intranasal drug administration would be added. BVM would become

the primary focus of airway management, with intubation reserved for cases in which BVM was not providing adequate ventilation and oxygenation.

Stroke system: Nine hospitals now have Primary Stroke Certification from the Joint Commission. Congratulations to Palomar Medical Center and Pomerado Hospital, our most recently certified facilities. Two additional facilities are scheduled or are submitting their applications to the Joint Commission. EMS is receiving applications for review of the remaining hospitals who wish to receive acute stroke patients. We hope the review process will take place in March.

POLST: The new POLST form was effective January 1. This document provides information on a patient's resuscitation decisions, along with instructions about the intensity of care preferred, separated into comfort care, limited interventions, and full treatment. For the hospital or nursing home there are instructions regarding artificial nutrition as well. Both field and hospital personnel should become familiar with the instrument. We are expected to honor the requests in the document, unless there is some change in the patient's status. It includes liability and licensure protection for honoring the instructions. Please review the letter and FAQs about POLST sent out in late December. It is on the Medical Director's website for San Diego EMS. There will be additional training as part of the Spring in-service.

CARES: The Hospital Council sent information on the CARES cardiac arrest registry program to all hospital CEOs. We will work with the hospitals and providers on developing implementation plans.

State Issues: The state has released the DNR guidelines for comments on changes following the implementation of the POLST program. In addition, changes in EMT and paramedic licensure, monitoring and discipline mean there will be changes to many of the state regulations over the next year and a half. This "2010" project by the state EMS Authority will be on-going for the next two years.

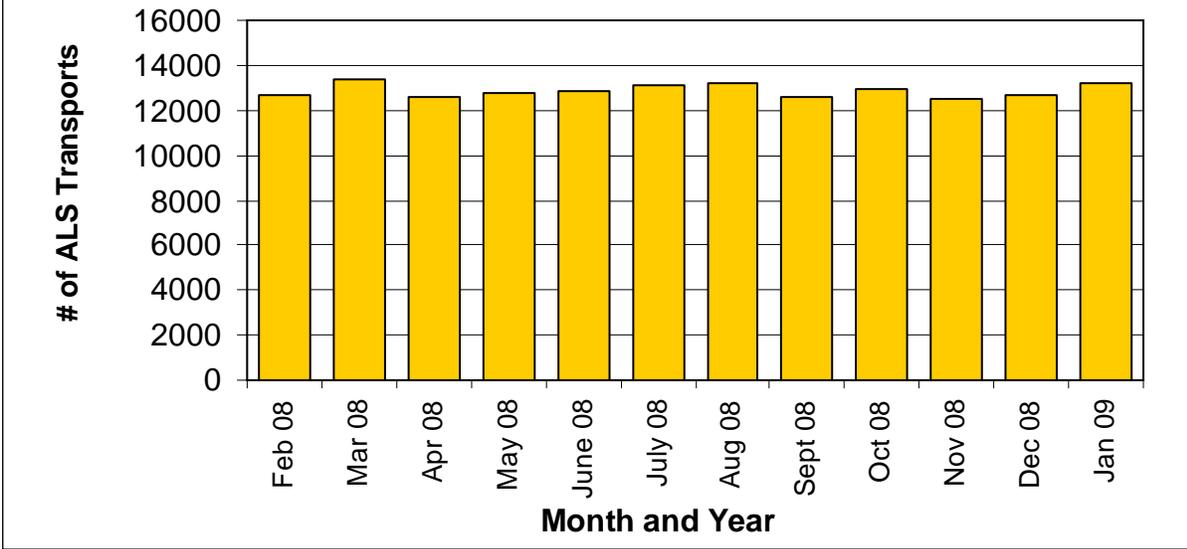
Advanced EMT (AEMT): Proposed new EMT-II regulations that would move the AEMT program from the EMT regulations to the EMT-II regulations are close to approval. This should allow us to start AEMT programs in several of the rural areas that have expressed interest.

Good Samaritan law: Two bills were introduced in the legislature to change the Good Samaritan law following the California Supreme Court decision limiting liability protection to actual medical interventions, not rescue actions. These bills would add rescue to the clearly protected activities.

Case Notes: Feedback from the field on CPAP use indicates that successful assistance depends on establishing a tight seal for the CPAP mask. This is achieved by careful fitting and placement to assure a tight seal.

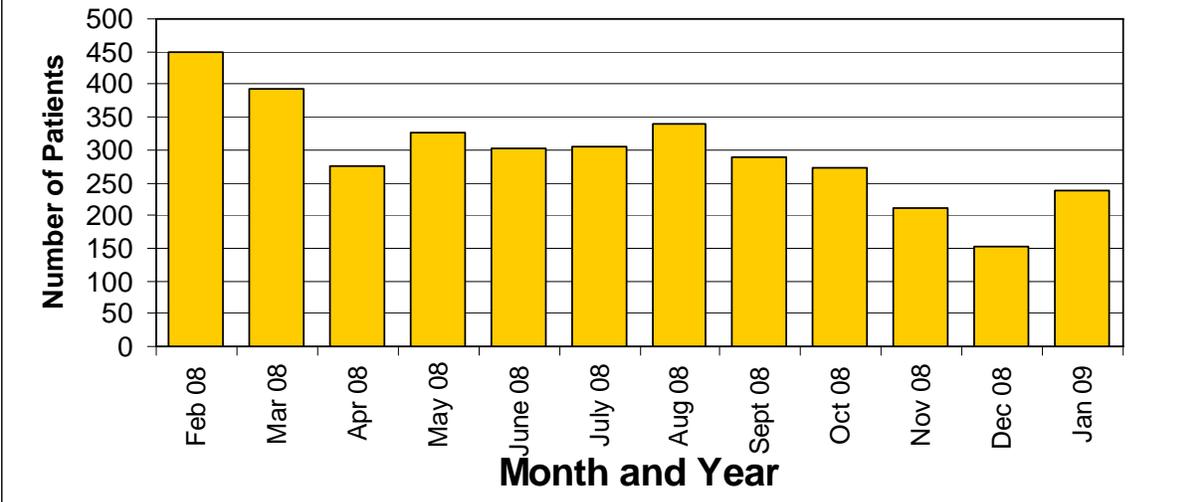
A 52 year old man was in a clinic for "water retention" and was hypoxic with pulse ox in 60% range on room air. Medics found pedal edema and JVD. Patient was described as having no meds and no history. What is your first med? In this case, as in many others, albuterol and Atrovent were the first medications given. After the above, he was given SO one sublingual NTG with an inch of paste, and subsequently one more NTG. It seems likely he had CHF, and he was treated for that. The bronchodilators likely reduced the amount of nitrates he received and delayed specific treatment. They could be added for severe wheezing unresponsive to nitrates. (Use would be more appropriate with history of COPD, airway disease, etc).

Number of ALS Transports, County of San Diego, Feb 08 - Jan 09

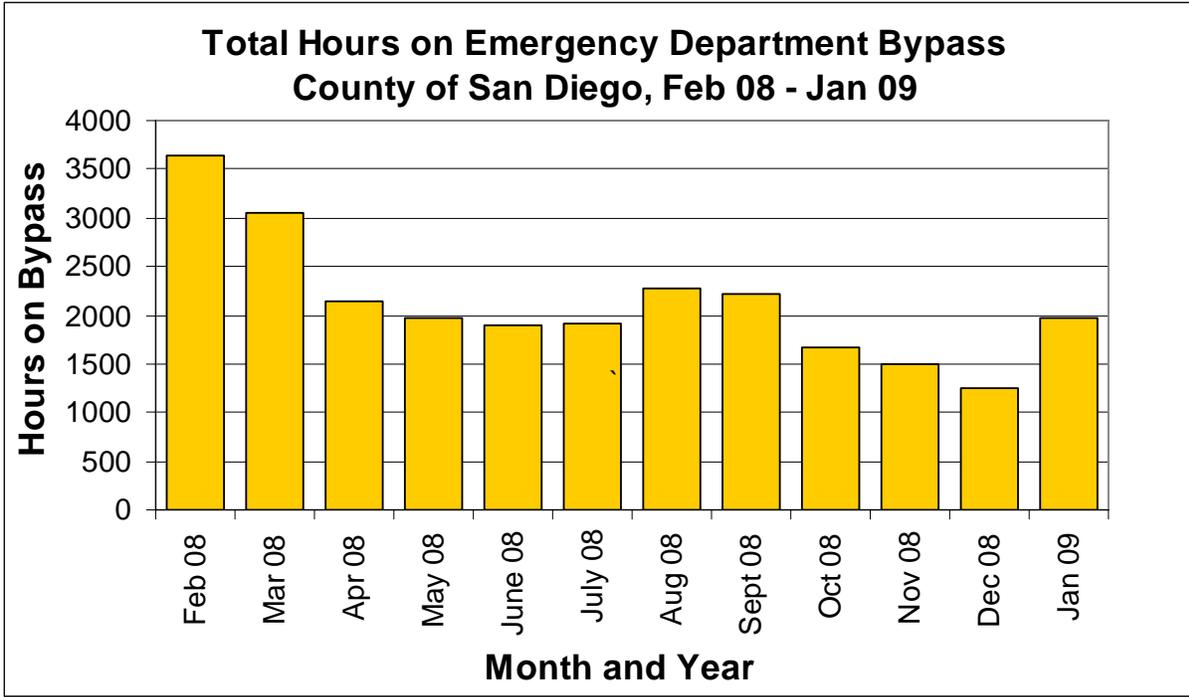


Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Feb 2008 – Jan 2009 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other

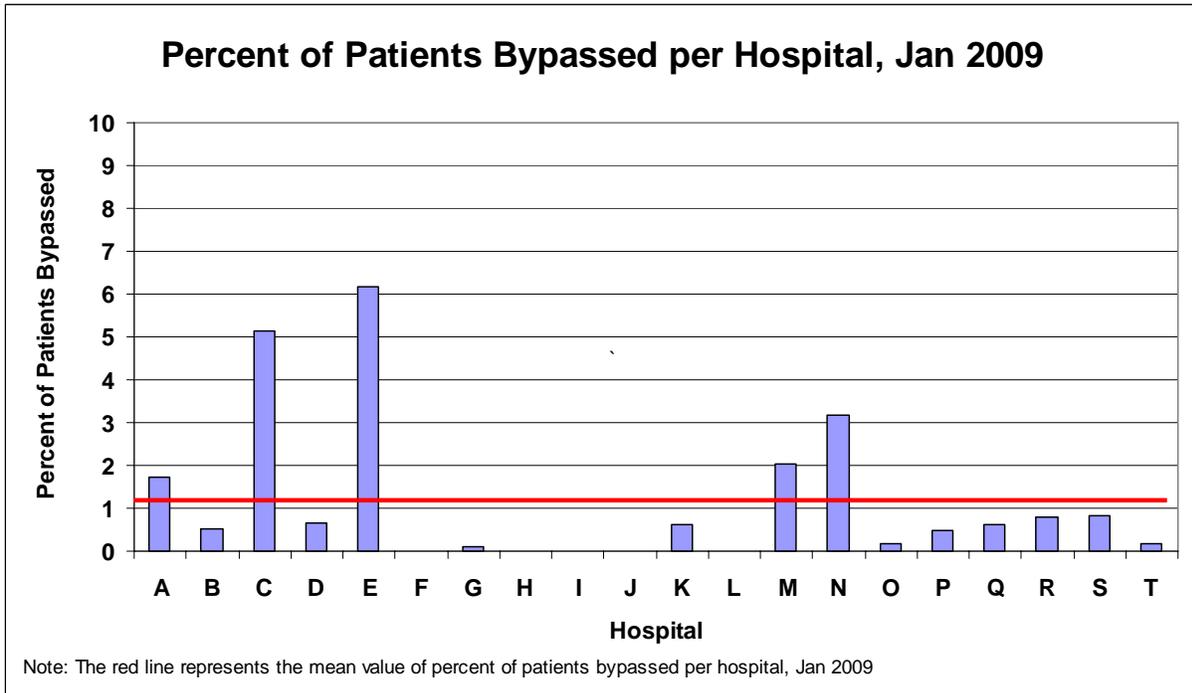
Number of Patients who Bypassed the Requested Hospital, County of San Diego, Feb 08 - Jan 09



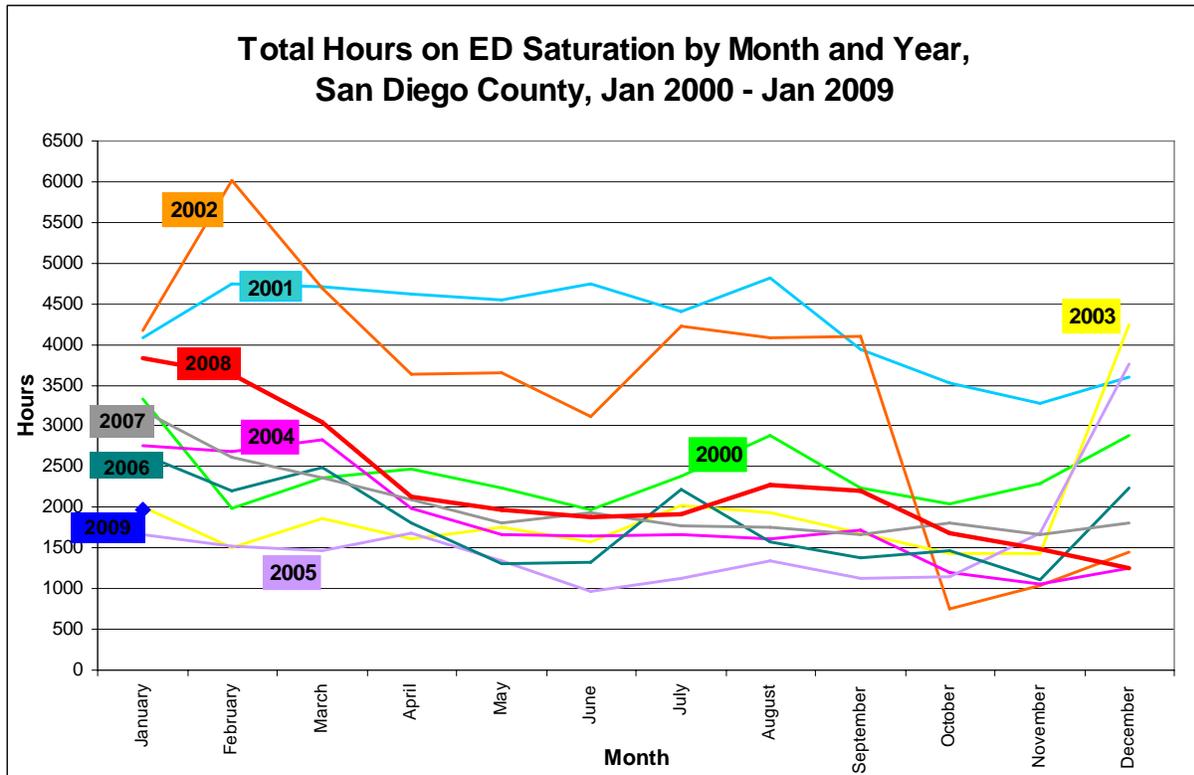
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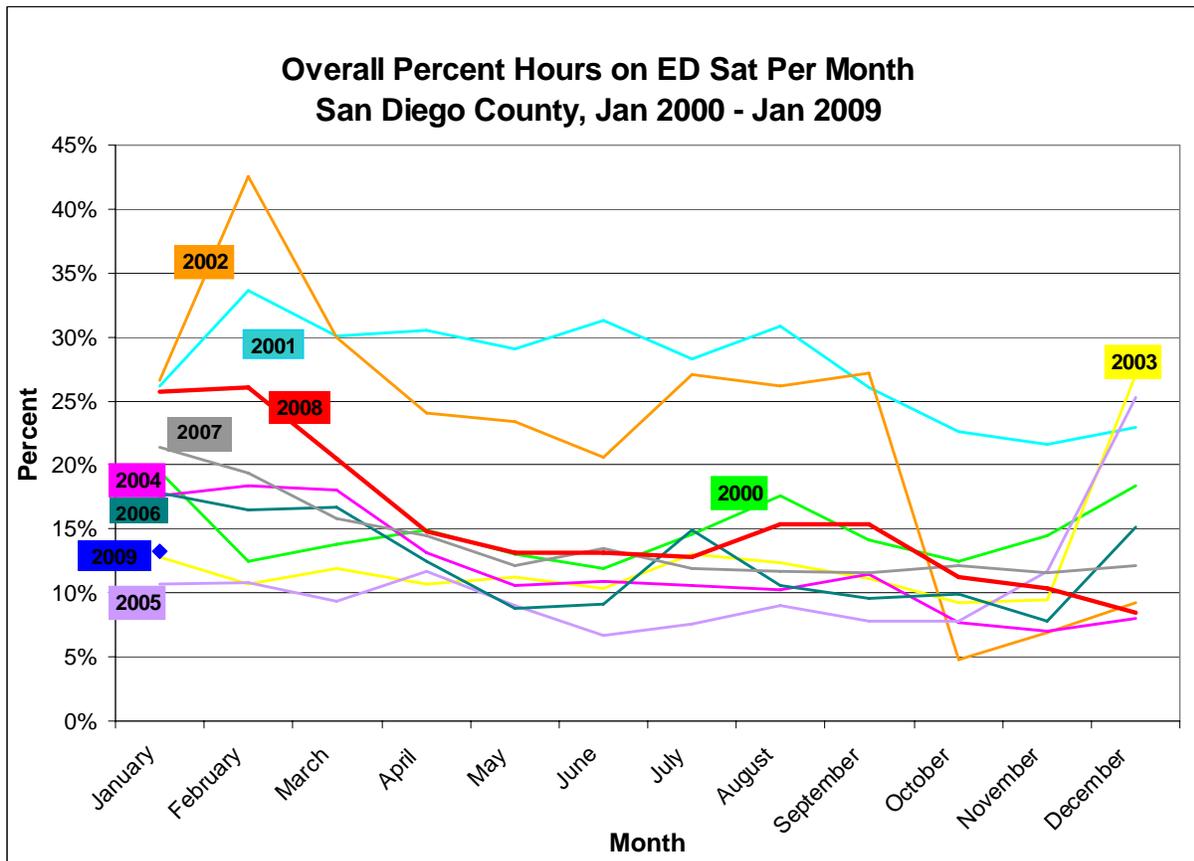
Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Feb 2008 – Jan 2009



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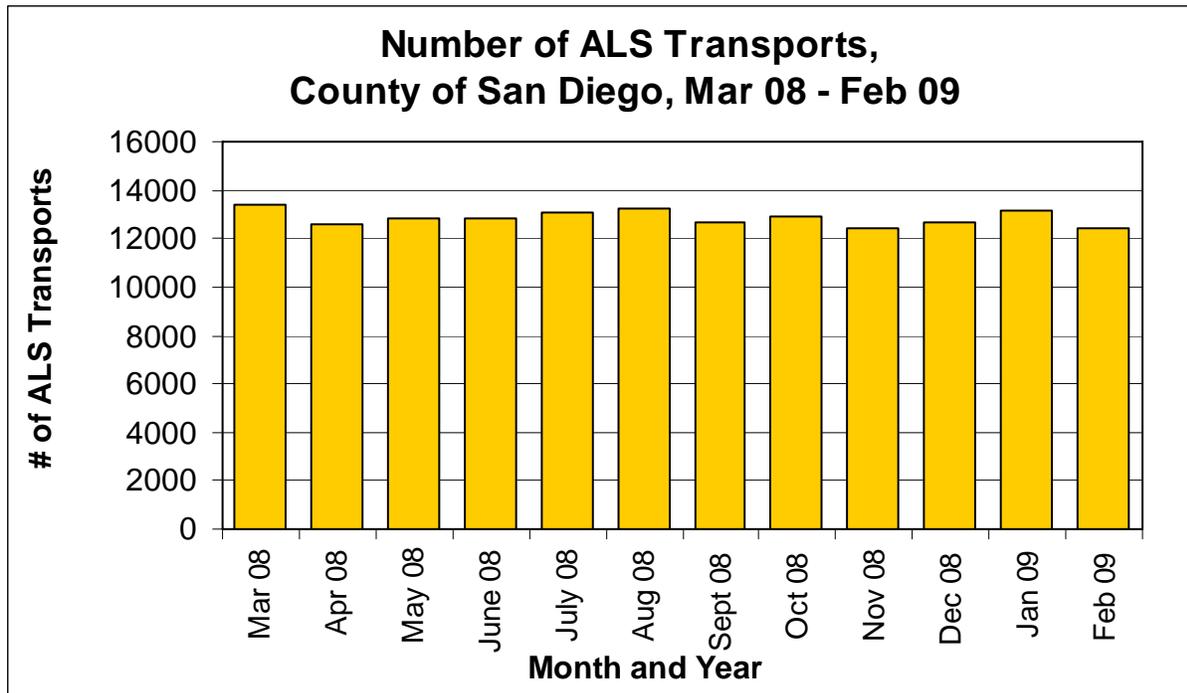


Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Jan 2000 –Jan 2009

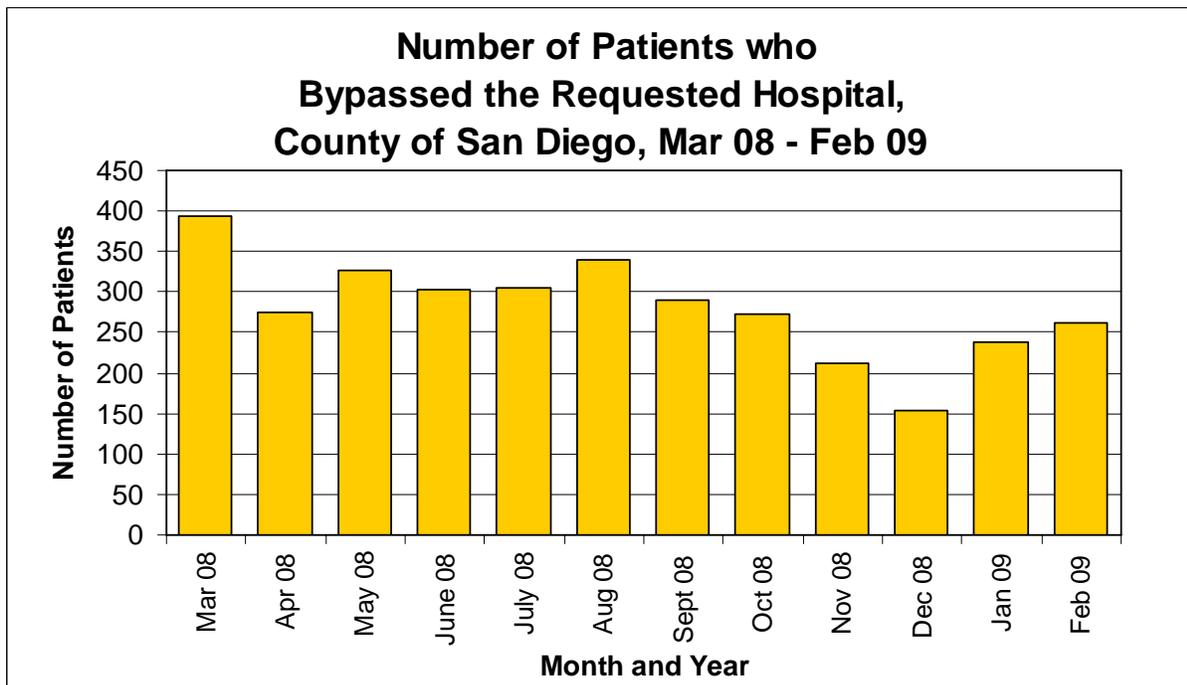


Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Jan 2000 – Jan 2009

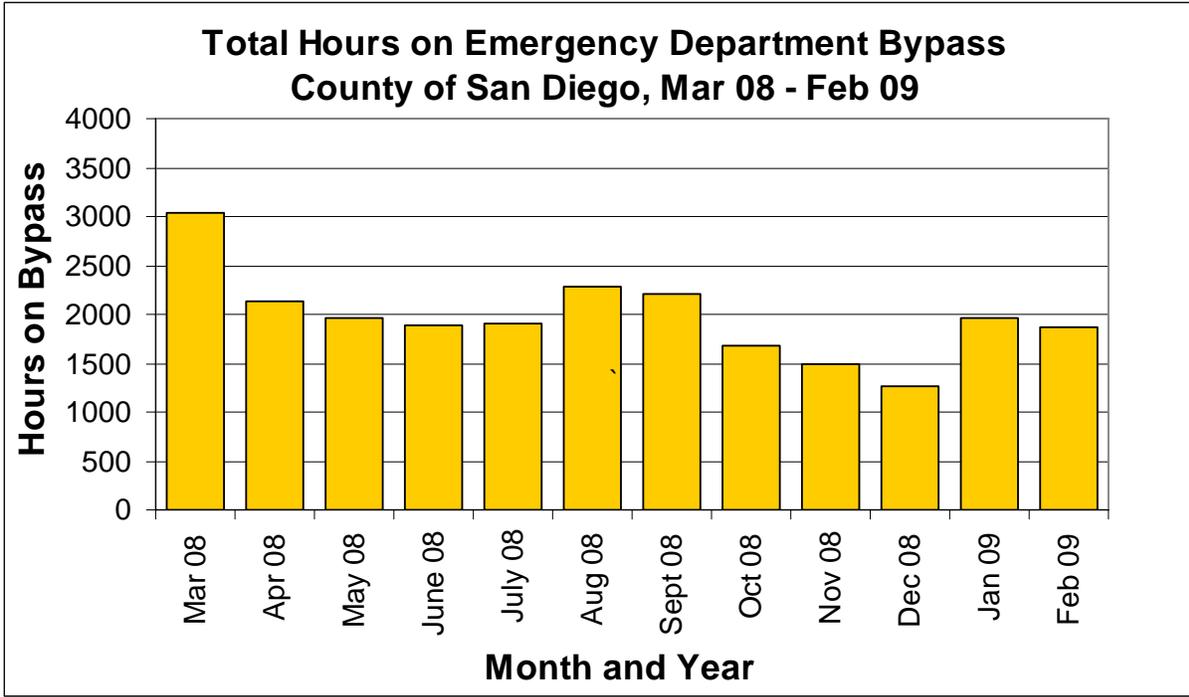
March 2009 Update - Below are the patient destination data in graphic form:



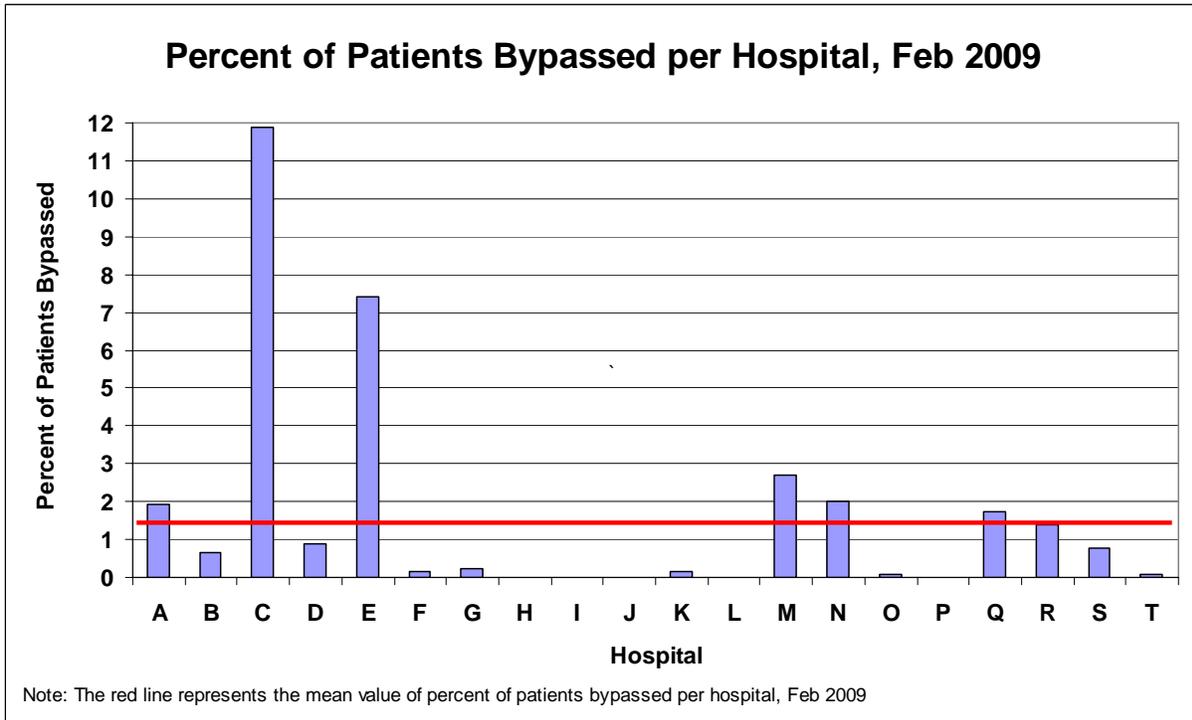
Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Mar 2008 – Feb 2009 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



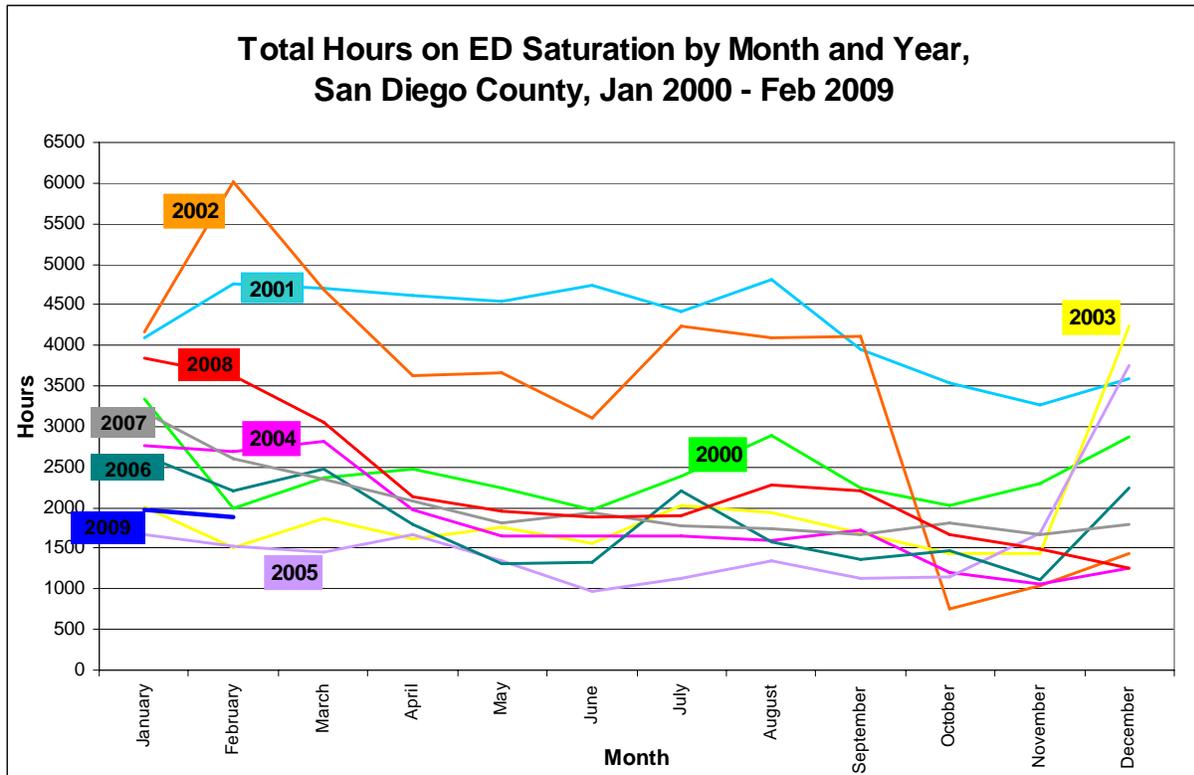
Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Mar 2008 – Feb 2009 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



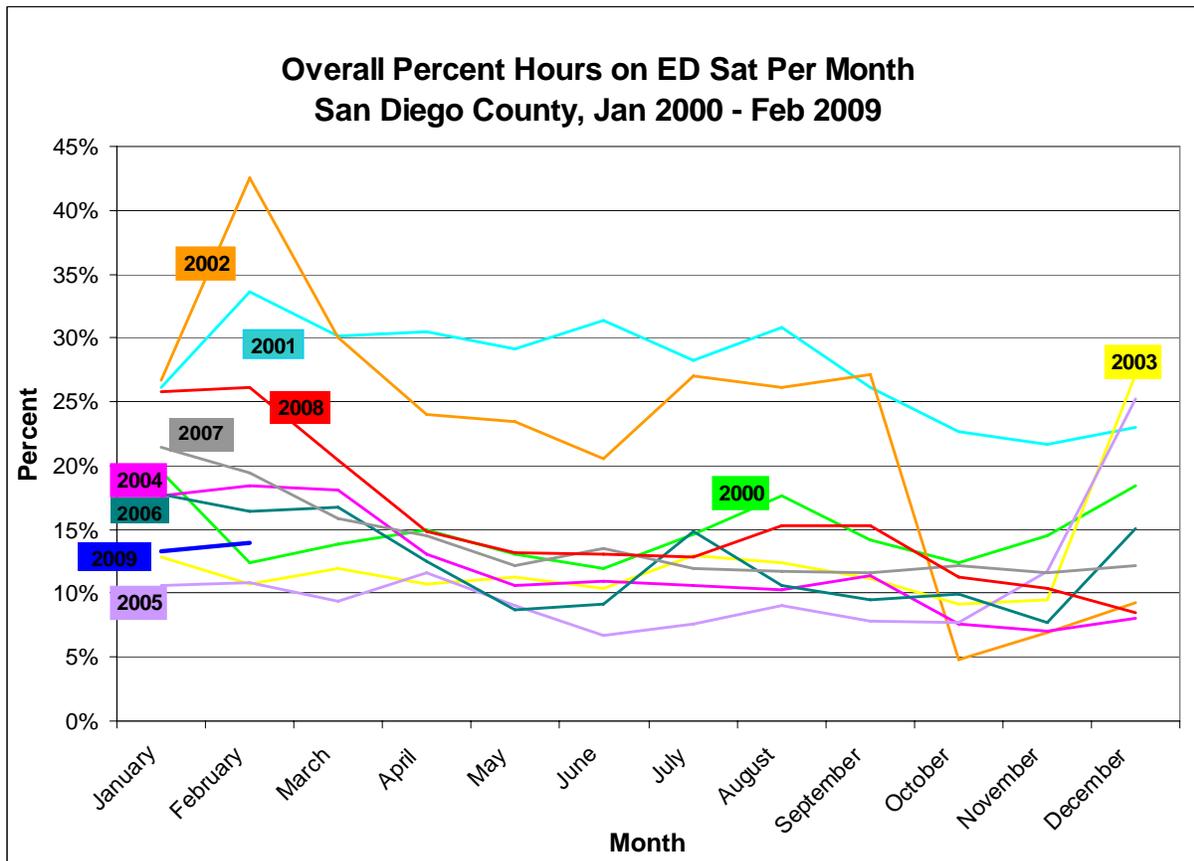
Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Mar 2008 – Feb 2009



Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Feb 2009
 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Jan 2000 –Feb 2009



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Medical Director's Update for Base Station Physicians' Committee April, 2009

Privacy laws impact patient followup

Two new California laws that took effect January 1 are making it more difficult to obtain patient follow-up or outcome information. EMS received several complaints that field providers are having difficulty getting follow-up information on their patients, such as diagnosis and outcome. The new laws resulted from the compromise of personal medical information of several prominent individuals.

The laws, AB 211 and SB 541 in last year's legislative session, strictly limit what information about a patient can be released. In general, information sharing is limited to those who have a need to know for patient care purposes. While there is an exemption for quality improvement follow-up, that may not cover individual provider desire for follow-up information on a specific patient.

Hospitals and other health providers are educating their personnel and this is now felt in the EMS system. The penalties for violating the provisions of these laws are severe with potentially substantial monetary fines up to \$250,000 and referral to a licensing agency for action against one's health provider license. It is understandable why there is concern and reluctance to share information.

Both the Fire EMS and CPAC committees have reviewed the issue and are formulating plans to respond. We have asked the Hospital Council to obtain additional legal information about the new laws, and help us look for ways to address this. We will keep you posted as we work through this process.

Sexual assault evidence

The county Sexual Assault Response Team committee wants to improve the preservation of evidence in sexual assault victims before they arrive for the forensic examination. They feel improvements could be made and we will arrange for an update from the committee. In the meantime, pointers are applicable to the field, and especially to the emergency department.

Sexual assault should be reported as soon as possible to the police agency where the crime is alleged to have occurred. HIPAA concerns are not an issue when a crime is being reported. Hospitals may have to collect some specimens and otherwise protect evidence. A woman who voids should not wipe herself and should not wash her hands or any other part of her body. The specimen should be collected and saved to send to the SART examination. Clothing should not be changed. If clothing must be changed, it can be removed on exam bed paper and then rolled up and secured to protect trace evidence. Most women will not require a speculum examination. Do provide complete information on hospital treatments on a follow-up form to go with the patient for the forensic examination. Give Td if indicated.

A more complete set of advice will be sent out by the committee, but feel free to call EMS and ask for Ruth Duke, RN, for questions on the team, or for referral to SART committee members for more information.

MRSA on stethoscopes

A recent report found a high prevalence of MRSA on the stethoscopes of EMS personnel bringing patients to the ED. The study, from New Brunswick, New Jersey, took swabs off the diaphragm of the providers' stethoscopes and cultured them for MRSA. They found 16 of 50 (32%) of stethoscope cultures grew MRSA. They also gathered information on the estimated time since the stethoscope was last cleaned, and demonstrated a correlation between a positive MRSA culture and a longer time since the last cleaning. One-third of the EMS providers could not estimate the last time they cleaned their stethoscope.

The authors recommended that stethoscopes be cleaned with alcohol or another disinfectant between each patient, and they provided alcohol wipes at the entrance to the ED. This is a valuable reminder of the importance of avoiding cross contamination of patients to try and reduce the amount of MRSA and similar pathogens. (Merlin et al, "Prevalence of Methicillin-Resistant Staphylococcus aureus on the Stethoscopes of Emergency Medical Services Providers," Prehospital Emergency Care, January/March 2009).

Flu season

The flu season was mild this year, and isolates of true influenza have dropped dramatically. The amount of Influenza-Like Illness reported from emergency departments is the lowest in several years. Despite that, the system reports being quite busy the last few weeks.

We would like to thank the hospitals for their continued support of the ED Admission Hold Report and encourage them to continue to enter that data twice a day. Continued attention to avoiding off-load delays during busy times is important for the system, and thank-you for those efforts as well.

Protocol Updates

Training to accompany the protocol changes is under development. A recent change is the addition of oral ondansetron in the form of oral dissolving tablets. This will allow administration of the antiemetic without starting an IV. We expect approval of ondansetron as optional paramedic scope rather than as a trial study. For questions about equipment please contact Susan Smith, RN, at EMS.

POLST

Remember the new POLST form was effective January 1st. There will be more training on this during the in-service and separate training is available. For information call Rebecca Pate, RN, at EMS.

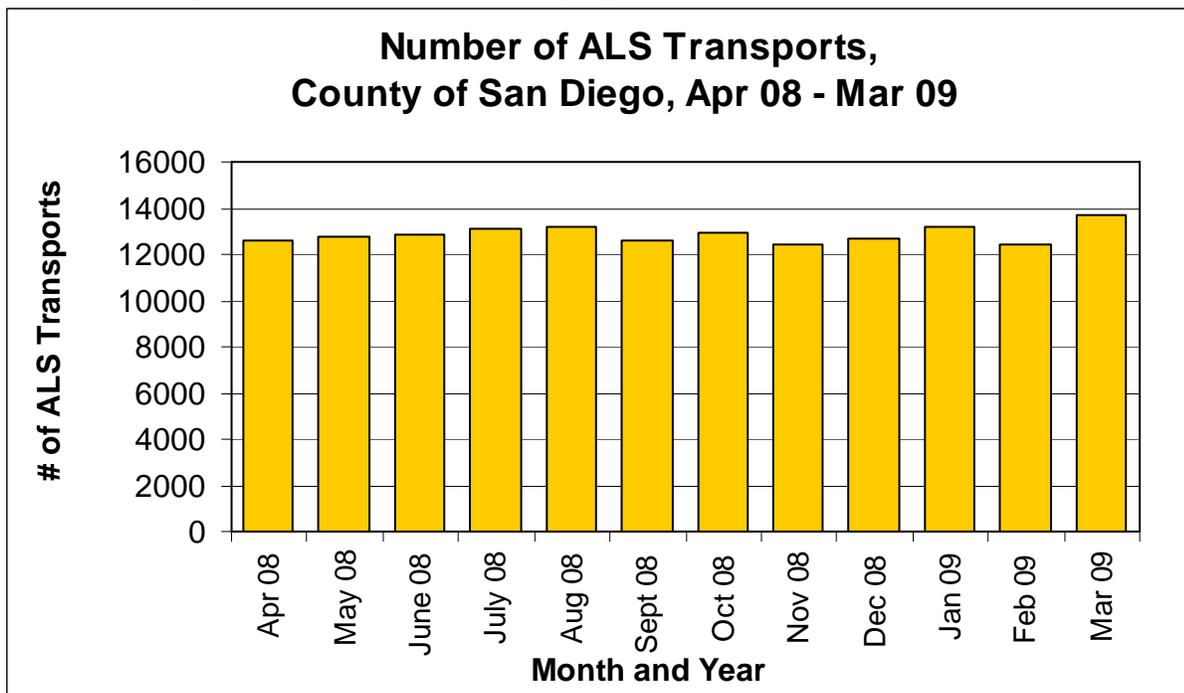
State issues

The state is embarking on the so-called “2010” project to comply with new legislation that outlines procedures for EMT certification and disciplinary procedures. Part of this will be a statewide EMT registry. Licensing fees unfortunately will increase as a result, with portions remitted to the state for the registry and other funds.

Advanced EMT (AEMT)

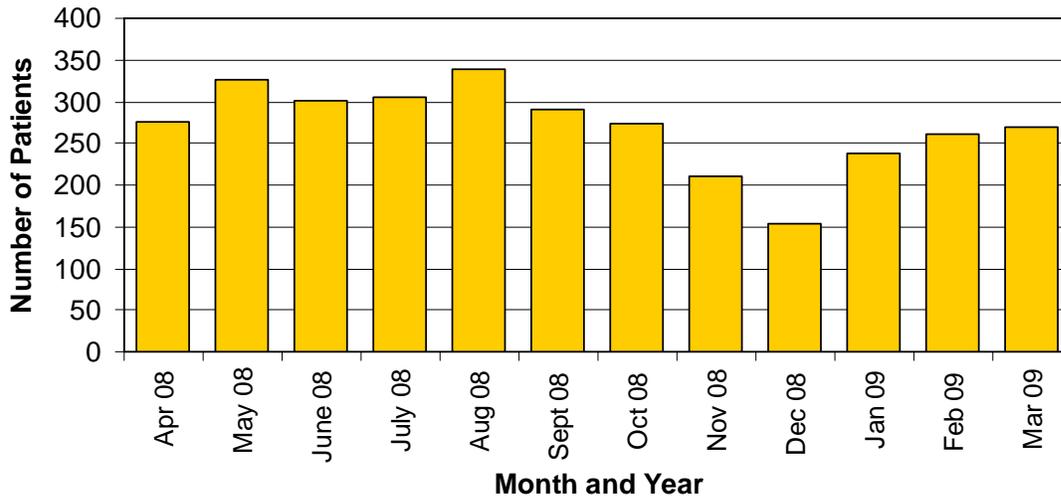
The proposed new EMT-II regulations that would move the AEMT program from the EMT regulations to the EMT-II regulations were rejected at the state. State EMSA should be able to fix this easily and re-issue the regulations in the near future. We have decided, however, to implement this program through the EMT regulations instead of waiting for the EMT II regulations. This will allow us to start AEMT programs in several of the rural areas that have expressed interest.

Below are the patient destination data in graphic form:



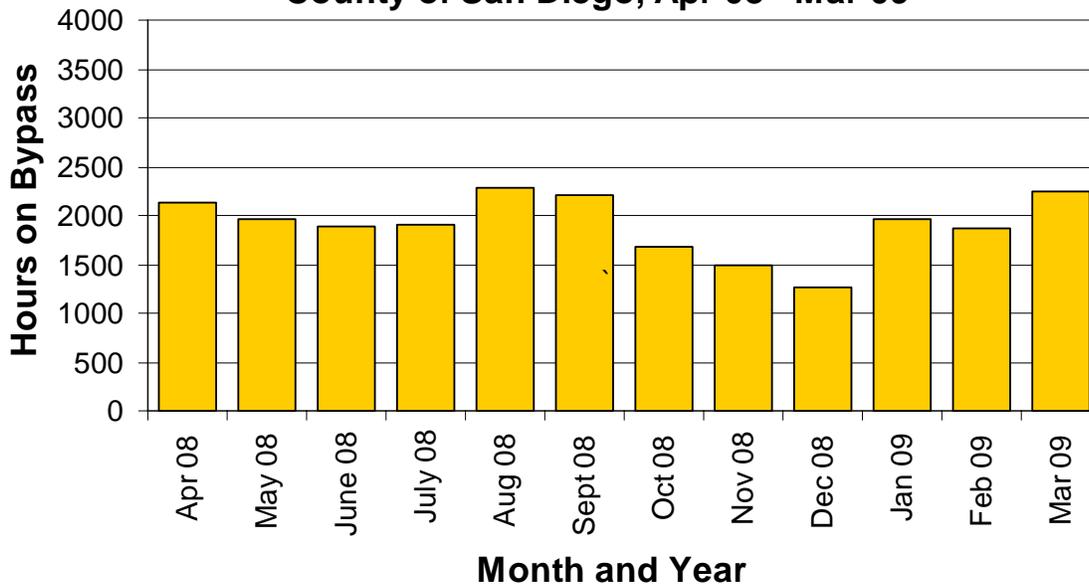
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Apr 2008 – Mar 2009 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other

Number of Patients who Bypassed the Requested Hospital, County of San Diego, Apr 08 - Mar 09



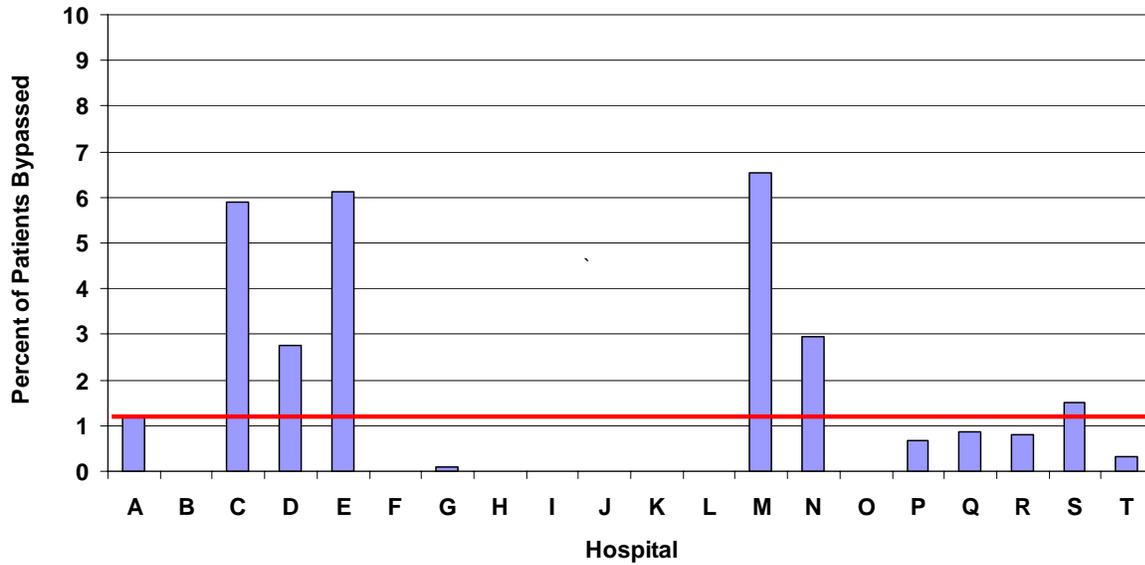
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Total Hours on Emergency Department Bypass County of San Diego, Apr 08 - Mar 09



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Apr 2008 – Mar 2009

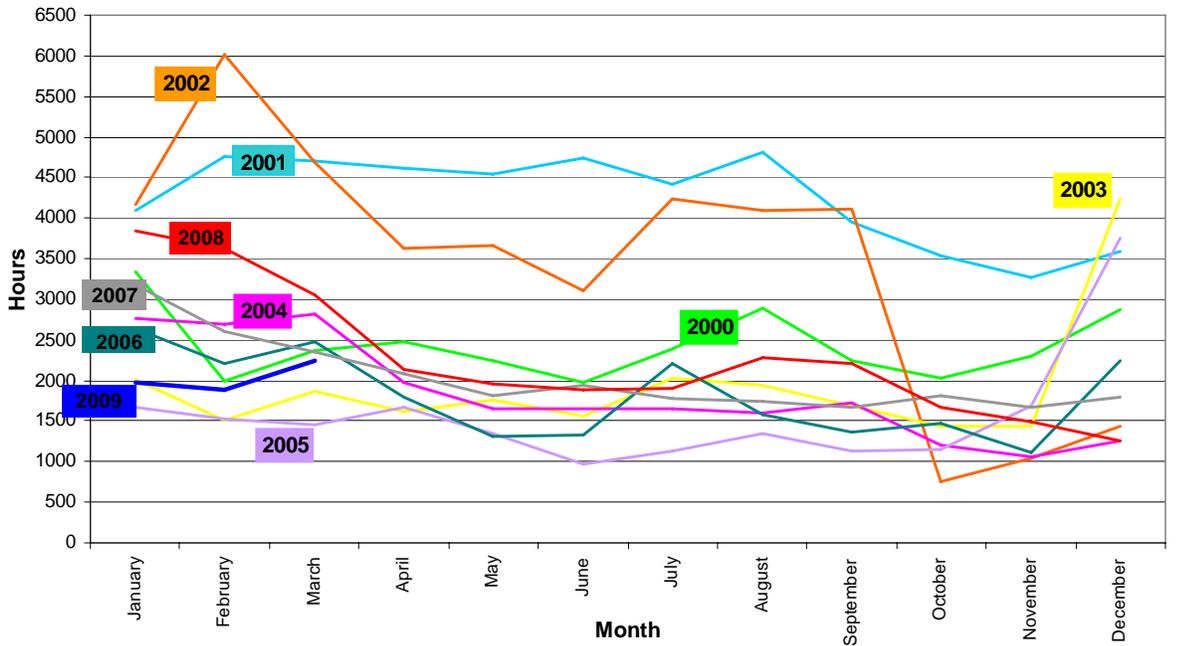
Percent of Patients Bypassed per Hospital, March 2009



Note: The red line represents the mean value of percent of patients bypassed per hospital, Mar 2009

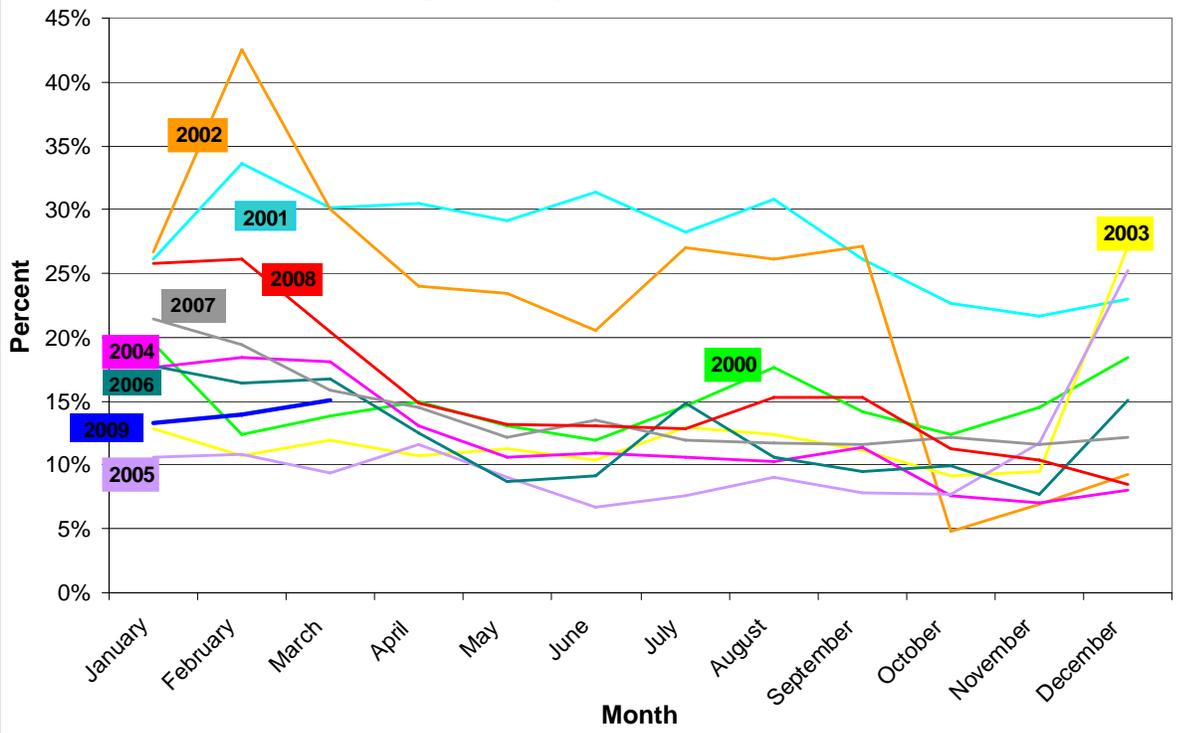
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Mar 2009 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other

Total Hours on ED Saturation by Month and Year, San Diego County, Jan 2000 - Mar 2009



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2000 – Mar 2009

Overall Percent Hours on ED Sat Per Month San Diego County, Jan 2000 - Mar 2009



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2000 – Mar 2009.



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Medical Director's Update for Base Station Physicians' Committee May, 2009

In last month's Medical Director's Update I observed that the flu season was mild this year. This unraveled right after your last meeting. On the evening of April 21st the first cases of swine flu (N1H1) in Imperial and San Diego Counties were announced. With that announcement to the EMS community, we included the initial recommendations for personal protective equipment, and references to CDC information.

A week later after the initial experience with the virus and epidemiologic reports, a number of federal and state guidelines were issued. Just in time training was released by EMS to provide a background on the swine influenza (N1H1) and recommendations on how to avoid contracting it. In addition to these PPE recommendations, treatment protocols were changed for influenza like illness (ILI) patients to minimize possible exposure to the virus. These changes included minimizing deep suctioning to only when necessary, eliminating CPAP for ILI patients and eliminating nebulized bronchodilator treatments as well for ILI patients. The field was advised to only intubate ILI patients if mask ventilation or the Combitube were not possible or effective. Epinephrine injections were reduced to moderate to severe distress as an indication to substitute for nebulized treatments. Decontamination instructions were included as well. Several days later it was decided to add ondansetron to the treatment protocols before the official start on July 1st and to issue just in time training for that as well. While influenza is not typically transmitted through gastrointestinal secretions such as emesis, there was a 31% incidence of vomiting among patients with swine flu and the CDC had issued a caution about unknown routes of transmission.

Pre-arrival dispatch questions were added to try and identify patients with influenza like illness so that arriving crews could be notified to don their PPE before getting within six feet of the patient or sending one person in to get the initial history. This is consistent with some of the previous planning for pandemic influenza. EMS performed a survey of N95 availability and bolstered supplies of providers where needed. N95 masks were distributed to hospitals, pre-hospital providers and others.

Surveillance of the EMS system was an important part of the monitoring and was moved to daily surveillance reports from the normal weekly reports. Some of these were chief complaints among patients transported by ALS units out of the QCS system. This showed that time overlying the onset of the flu was a busy time but that there was not an increase in flu-like complaints. Respiratory disease in particular was lower than normal. Surveillance of county emergency departments showed that usage was normal until some of the heaviest publicity about the swine flu epidemic on about April 27th when the number of emergency department visits went up substantially, especially among patients with respiratory or fever complaints or respiratory with fever complaints. This lasted several days and then returned to baseline and the most likely explanation appeared to be that more patients were seeking care due to concerns about the swine flu than who actually had serious illness. To this point, the admission rate of swine flu patients is higher than that of the seasonal influenza but this is most likely due to a reporting artifact where testing is done especially heavily among those patients who have been hospitalized.

The Medical Operations Center went from Level 1 to Level 2 activation. It was in a supportive role of communicable disease and epidemiology, especially in the logistics area. Prescribing guidelines were developed by Public Health to identify those patients at highest priority for treatment with Tamiflu. Tamiflu supplies were obtained from state and federal sources and the distribution plan led to the allocation of these supplies to hospitals, the community clinic system, and university health centers. Later, EMS developed a pharmacy distribution plan so that physicians not affiliated with a hospital or caring for hospitalized patients would be able to prescribe Tamiflu and patients could pick it up from one of about twenty-six identified pharmacies across the county.

The 211 call system was activated to answer callers' questions and to provide needed information about the swine flu. It was recommended those individuals who became ill during the flu epidemic should remain off work for seven days after the onset of their illness or one day beyond the resolution of their symptoms. This is important to prevent field health care workers from infecting patients or their fellow workers. We did have two cases of possible exposure that received expedited testing for swine flu. One was a paramedic who performed an intubation without an N95 mask and other high level protection because of an unknown history at the time. The other was an EMT who became ill after transporting a patient with the swine flu infection, became ill with flu-like symptoms and returned to work too early. Neither the paramedic nor the EMT ended up contracting swine flu.

The recommendations for PPE will be changed in the near future. The level of PPE will be reduced closer to that used for seasonal flu, with a higher level for aerosol generating procedures.

County EMS has done considerable amount of pandemic influenza planning for a number of years now and that preparation paid off in terms of planning and familiarity with how to operate during such an event. We will keep you posted regarding H1N1 influenza

Protocol Update

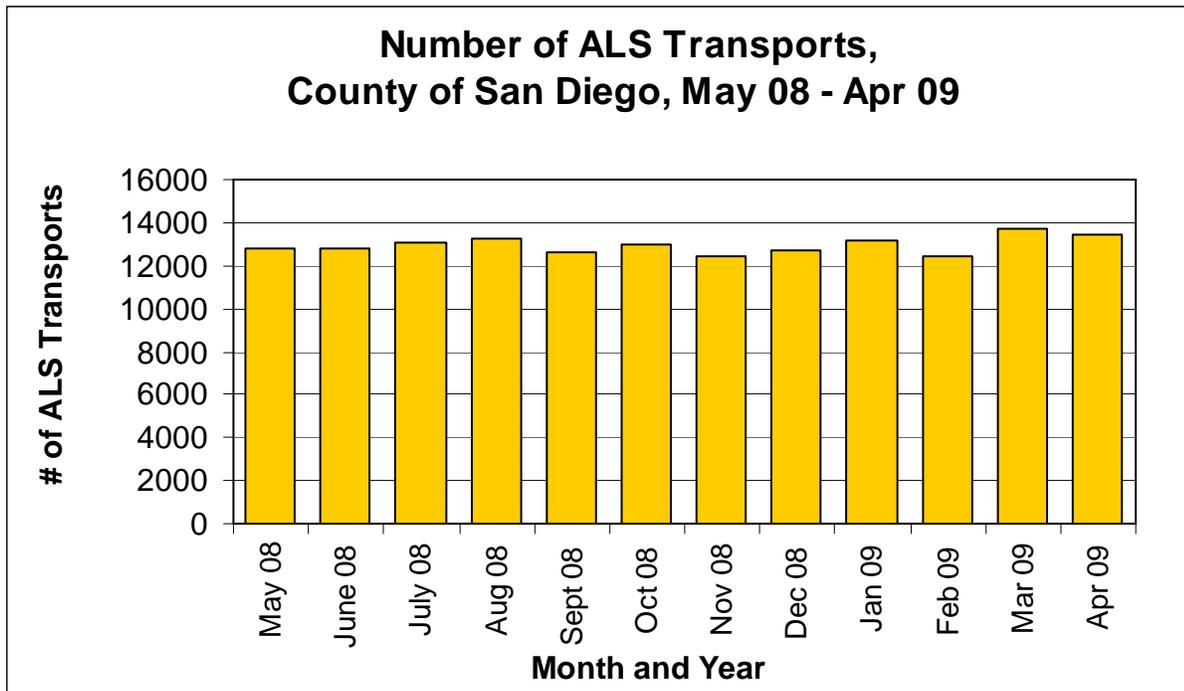
The training for the new protocols is finished and being distributed.

EMT Optional Scope (Advanced EMT)

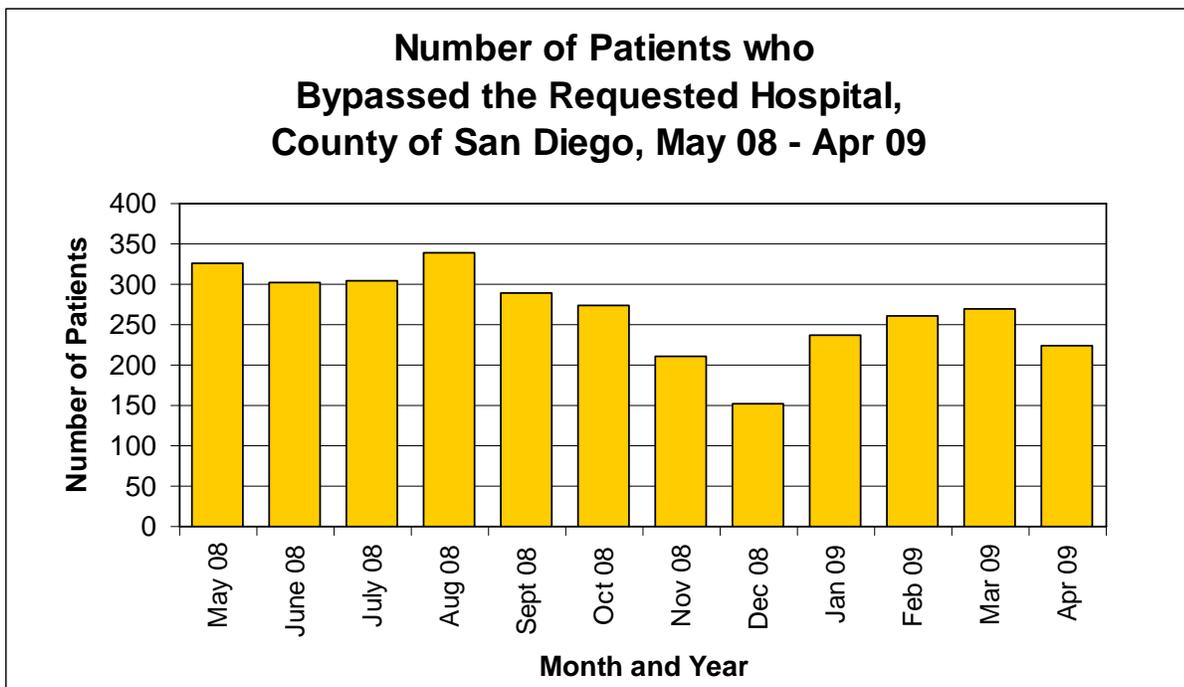
EMCC approved the optional scope EMT program at their last meeting. This program adds seven medications to the EMT scope of practice. It is designed to bring the basic, important ALS interventions to rural areas via first response EMTs with the enhanced scope of practice. We will be taking

applications from training programs. Priority for student enrollments will be those who deliver care to rural or remote areas. In addition, students will require the sponsorship by an ALS or BLS agency.

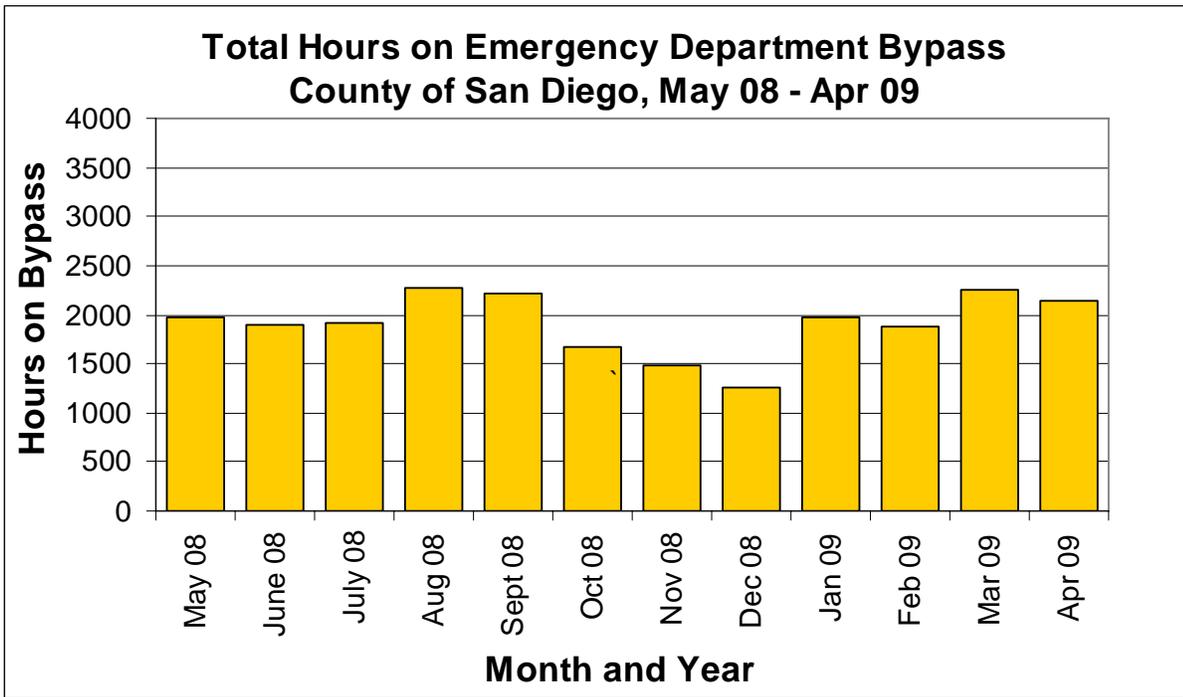
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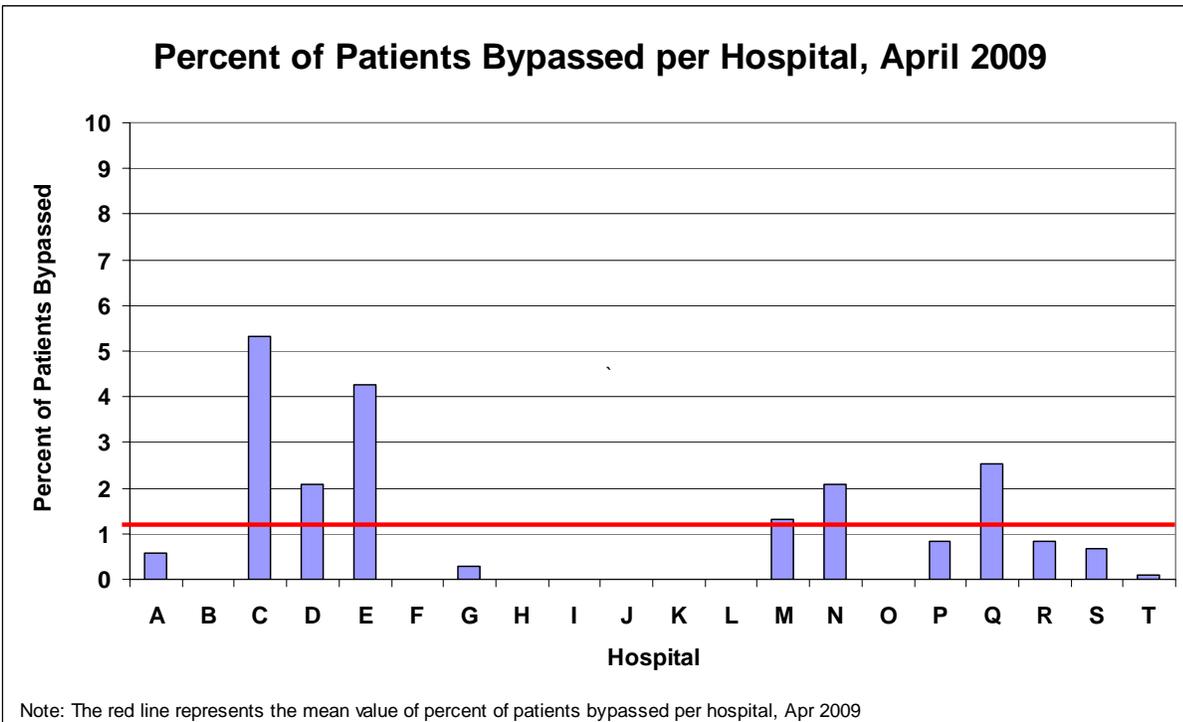
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, May 2008 – Apr 2009 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, May 2008 – Apr 2009 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other

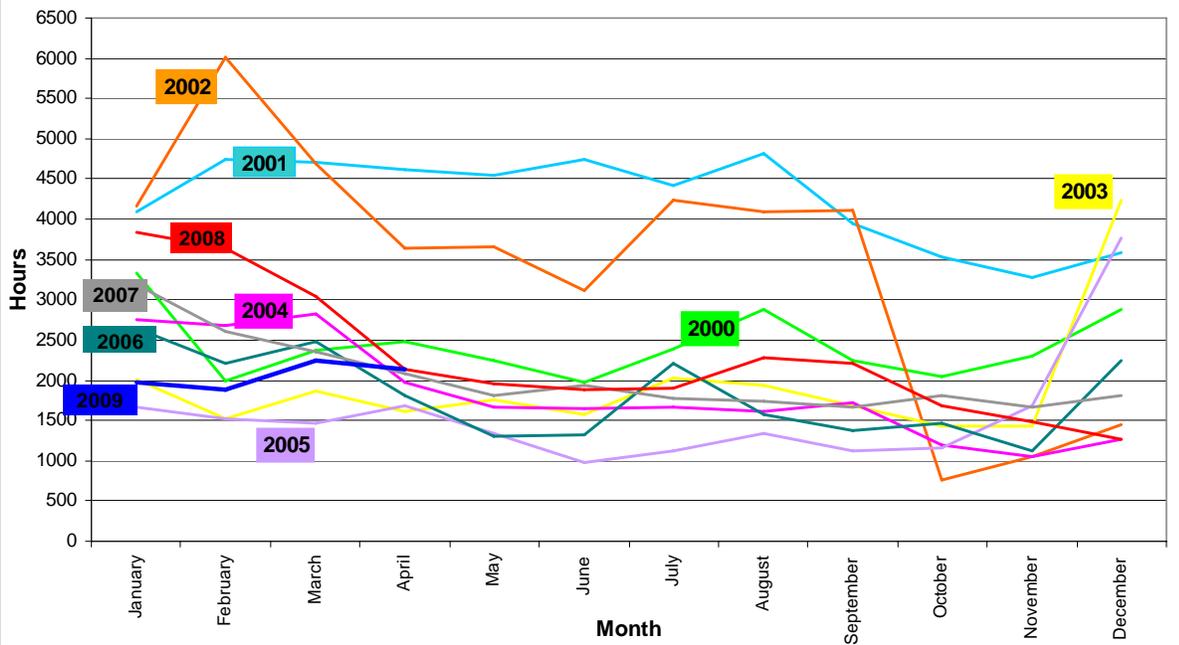


Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, May 2008 – Apr 2009



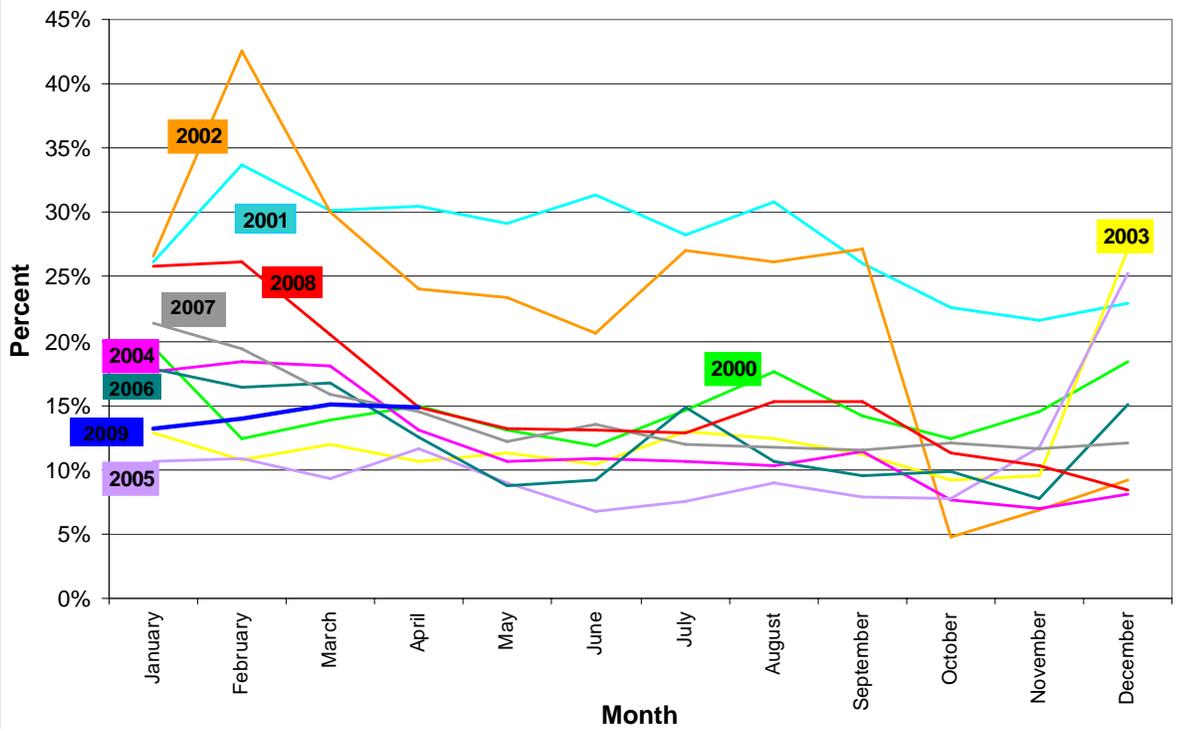
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Apr 2009 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other

Total Hours on ED Saturation by Month and Year, San Diego County, Jan 2000 - Apr 2009



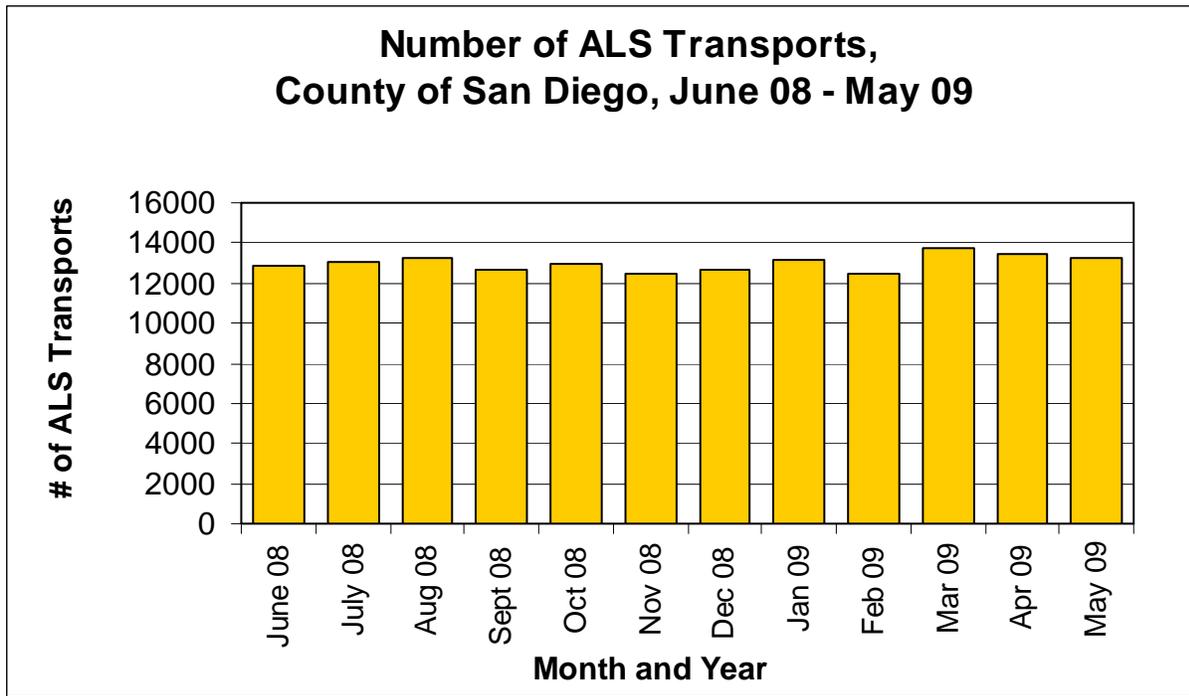
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2000 – Apr 2009

Overall Percent Hours on ED Sat Per Month San Diego County, Jan 2000 - Apr 2009

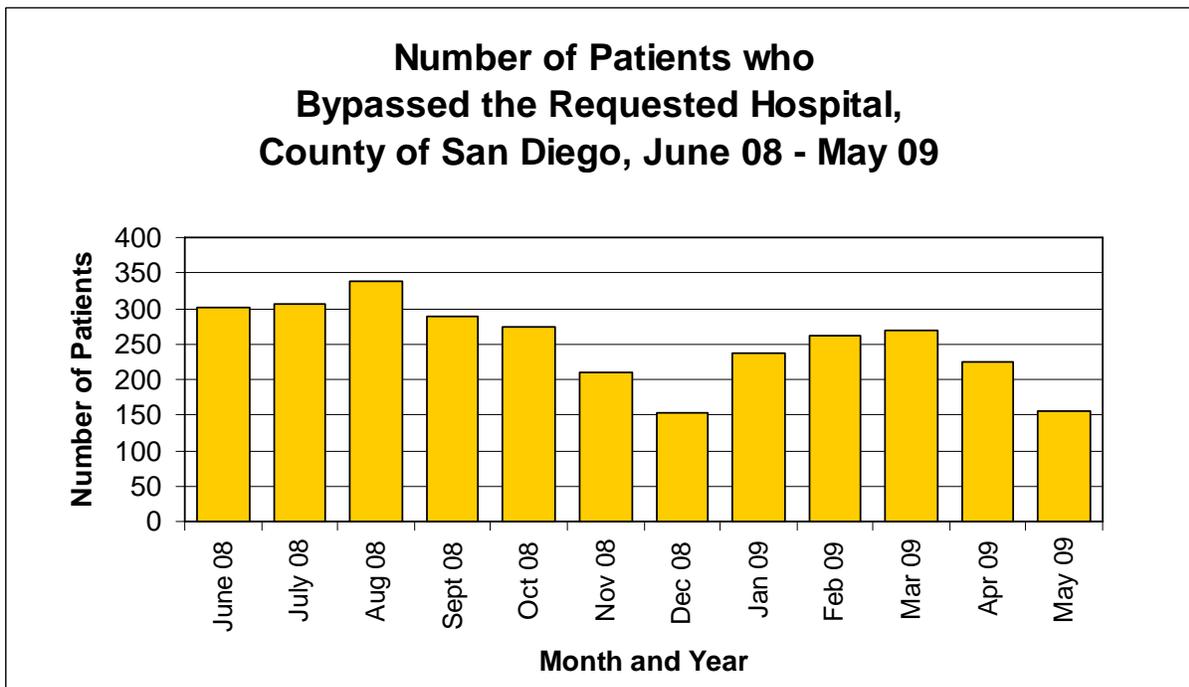


Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2000 – Apr 2009.

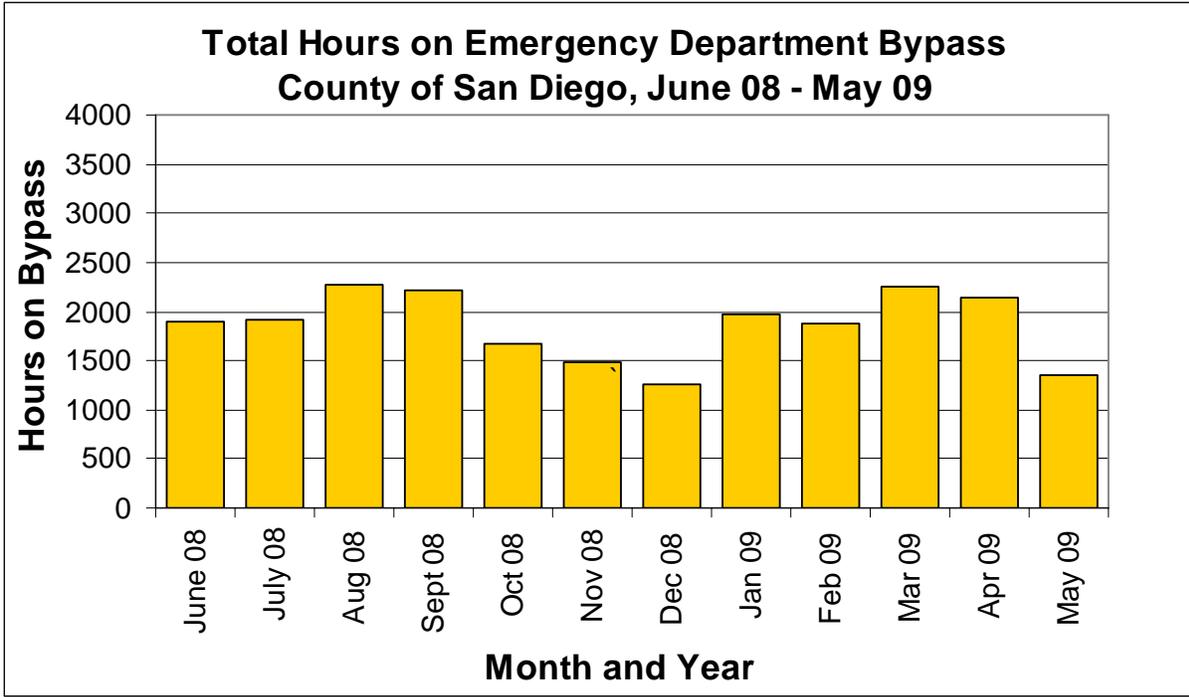
June 2009 Update - Below are the patient destination data in graphic form:



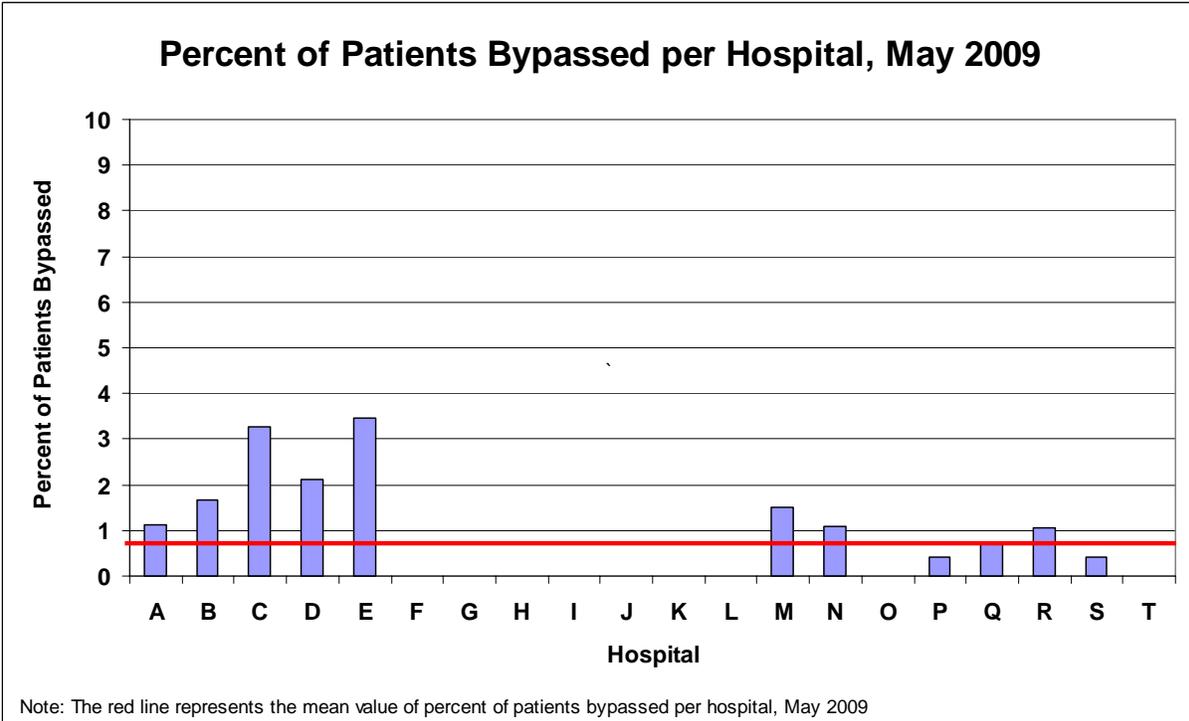
Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, June 2008 – May 2009 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



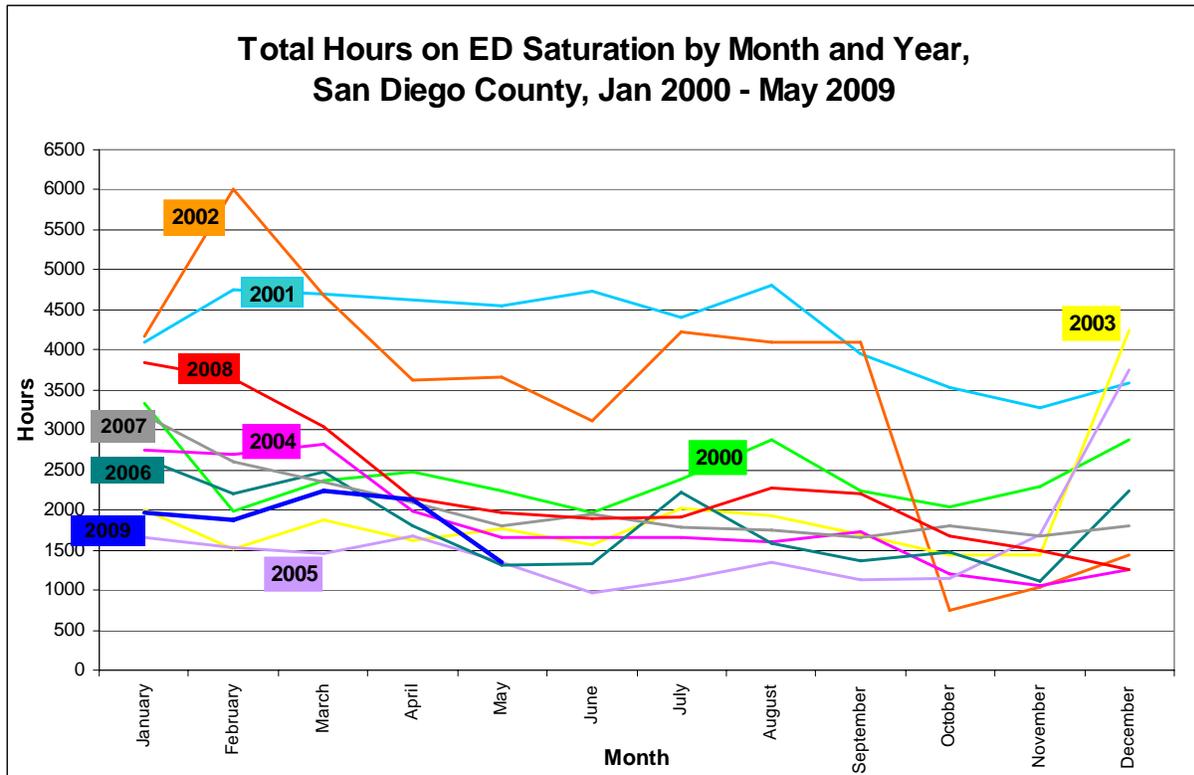
Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, June 2008 – May 2009 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



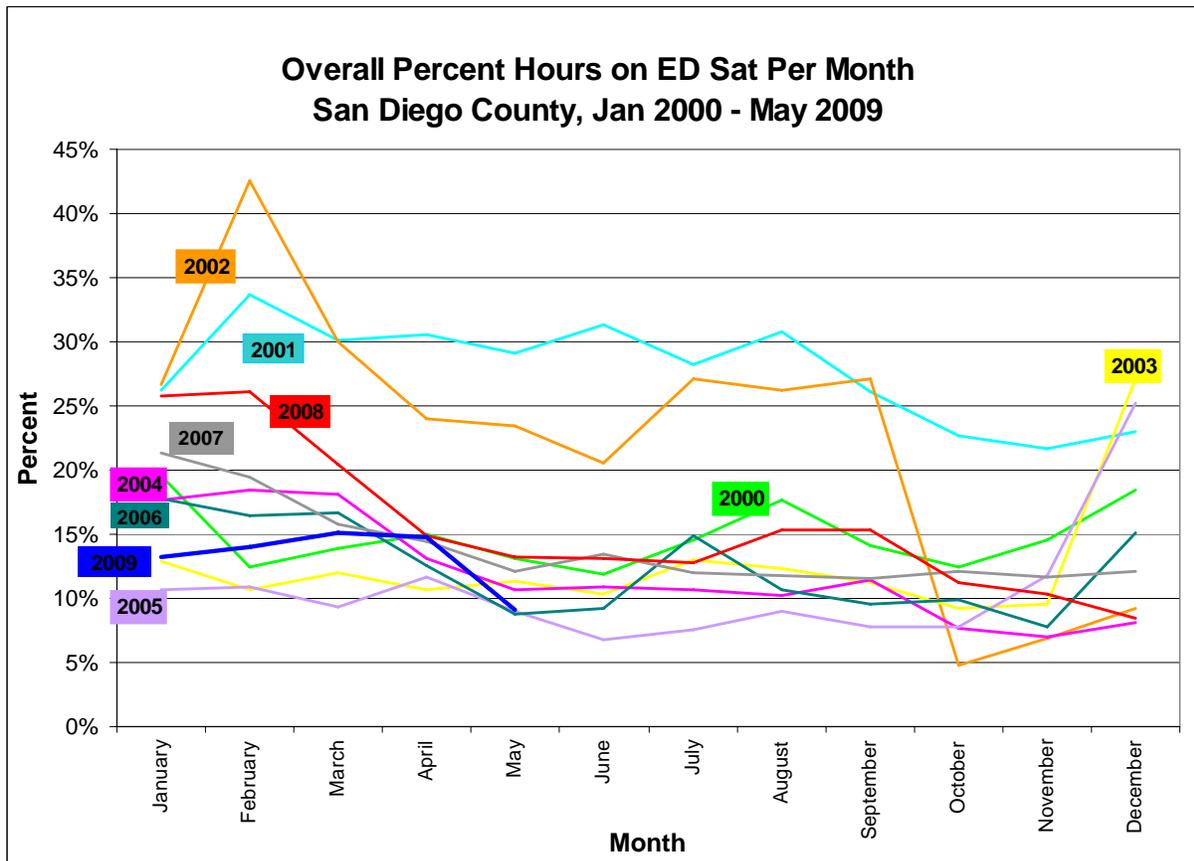
Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, June 2008 – May 2009



Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, May 2009
 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Jan 2000 – May 2009



Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Jan 2000 – May 2009



NICK MACCHIONE, FACHE
DIRECTOR

WILMA J. WOOTEN, M.D., M.P.H.
PUBLIC HEALTH OFFICER

County of San Diego

HEALTH AND HUMAN SERVICES AGENCY

PUBLIC HEALTH SERVICES

1700 PACIFIC HIGHWAY, SAN DIEGO, CALIFORNIA 92101-2417
(619) 531-5800 FAX (619) 515-6707

Community Epidemiology
Emergency & Disaster Medical Services
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Bruce E. Haynes, M.D.
Medical Director
Division of Emergency Medical Services
6255 Mission Gorge Road
San Diego, CA 92120-3599
(619) 285-6429 FAX:(619) 285-6531

Medical Director's Update for Base Station Physicians' Committee July, 2009

Flu season: The H1N1 virus is still circulating in the community, and has become the predominant influenza virus. We have no way of knowing whether the virus will continue to be similar to other flu viruses in how ill it makes patients, or whether it will become more virulent. A vaccine is in preparation and should be ready for the fall. We will keep you informed about vaccination plans. A great deal of preparedness is occurring to be ready for the fall flu season. Public Health held a debriefing for the H1N1 outbreak to gather information and suggestions from the community about any beneficial changes in response plans. These are being developed now.

Field personnel should continue to use their routine PPE for patient contacts, but move up to an N-95 mask, eye shield if needed, and gown if they must perform an "aerosol generating" procedure such as aerosol medications, intubation, tracheal suctioning, etc. The definition of Influenza like Illness is a person who has been evaluated by a healthcare provider and determined to have influenza-like illness (fever >100°F and cough or sore throat) with no other known or likely etiology. Obviously, in the field we must rely on the symptoms, before the healthcare provider examination. We will keep you posted about the influenza pandemic as details emerge.

Capacity Plan: The Capacity Task Force met to examine the Capacity Plan for this year. The committee reviewed a report on use of First Watch to determine the incidence and duration of off load delays. There was considerable interest in First Watch as a tool to prevent off load delays and the resulting adverse effects on system capacity. The Task Force is reviewing a cost analysis of use.

ED Admission Hold Report: The new system for tracking patients awaiting an in-patient bed continues. The recording is improving and will help monitor one of the factors that leads to ED crowding and off load delays. Totals are entered in QCS for patients waiting two hours for a bed in three categories: ICU, telemetry, and medical/surgical beds. In addition, there is a space for patients awaiting psychiatric disposition. The bed entries are done twice a day, at 8 am and 8 pm. Entries for the AM data are running about 66% compliance, a little higher among the hospitals that have basic emergency facilities. The evening compliance is less—about 33%—and we hope to see both improve.

Telemetry: One thing we have noted is the large number of patients waiting for telemetry beds. We would suggest that hospitals work with their medical staff to clearly identify which patients would benefit from telemetry monitoring, and only hold those patients for a bed while in the ED.

Protocol Updates: The updates were effective on July 1. Major ALS changes include adult IO, ondansetron for nausea and vomiting, and the King airway. Also, intranasal midazolam and naloxone administration. Tourniquets were added for uncontrolled extremity hemorrhage, especially in the setting of a bombing explosion with multiple casualties and limited immediate personnel. BVM is emphasized as the best ventilation technique for children.

Use of IO for trauma and fluid administration should not lead to extended on-scene times. The goal for injured patients who are hypotensive is to get off scene in 10 minutes or less. The penetrating trauma patient who is hypotensive should be moved immediately with procedures done en-route. “Medical” type resuscitation with medications and fluids followed by transport will not help the patient.

Spinal immobilization or collar use will be seen in patients to stabilize the neck and prevent movement of the endotracheal tube. In such cases, field personnel should make clear to hospital staff that the collar is there for the ET tube, and there was no injury.

Stroke system: A total of 15 hospitals qualified to receive acute stroke patients as of July 1. Naval Medical Center San Diego will likely be added to the system in the near future. Our congratulations and thanks to the facilities now serving stroke patients. This will optimize the use of current treatments such as thrombolysis, and coordinated care in the hospital in-patient setting.

Triage criteria are assessment with the prehospital stroke scale for symptom onset in the previous 3 hours. Age under 45 years, a seizure at the onset, confinement to a wheelchair all make an acute stroke less likely. The Base may stretch the 3 hour limit to 3½ hours based on recent information that intravenous thrombolytics are safe up to 4½ hours. The goal still is to administer the medication as quickly as possible if indicated.

POLST: The new POLST form was added to the state Do-not-Resuscitate guidelines at the last meeting of the state EMS Commission. A copy of the revised document is available on the EMSA website, www.emsa.ca.gov. The POLST document provides information on a patient’s resuscitation choices, along with instructions about the intensity of care preferred, separated into comfort care, limited interventions, and full treatment. For the hospital or nursing home there are instructions regarding artificial nutrition as well. Both field and hospital personnel should become familiar with the instrument. Prehospital providers are expected to honor the requests in the document, unless there is some change in the patient’s status. The POLST legislation includes liability and licensure protection for honoring the instructions. More information is available on the Medical Director’s website for San Diego EMS.

State Issues: Changes in EMT and paramedic licensure, monitoring and discipline mean there will be changes to many of the state regulations over the next year and a half. This “2010” project by the state EMS Authority will be on-going for the next two years.

EMT Optional Skills: We expect training programs to start training courses in the relatively near future. We will keep you posted about this.

Good Samaritan law: The liability protection bills introduced in the legislature to change the Good Samaritan law following the California Supreme Court decision limiting liability protection to actual

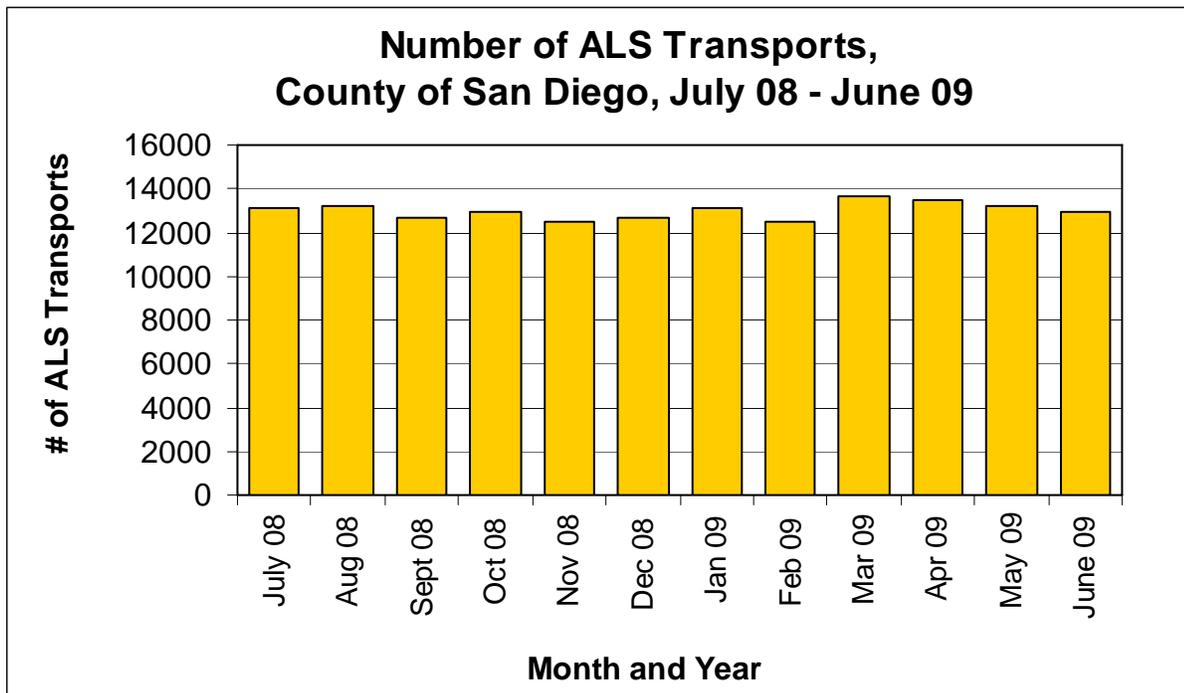
medical interventions, not rescue actions. These bills originally added rescue to the clearly protected activities. AB 90 still would cover rescue actions, but has not advanced in the state assembly. The second bill, SB 39, would have done the same thing, but has been amended to cover liability protection in disasters. It is unclear whether the legislature will add liability protection for rescue actions by Good Samaritans.

Ankylosing Spondylitis: The need for spinal stabilization adapted to the needs of the patient with ankylosing spondylitis were addressed in Pearls from PAC in 2000. These include the danger of attempting to force the patient into a supine position on a backboard, and the need for padding. A new video is available that provides information on ankylosing spondylitis and recommendations for assessment and spinal stabilization. It is available at:

http://www.spondylitis.org/physician_resources/ems_video.aspx

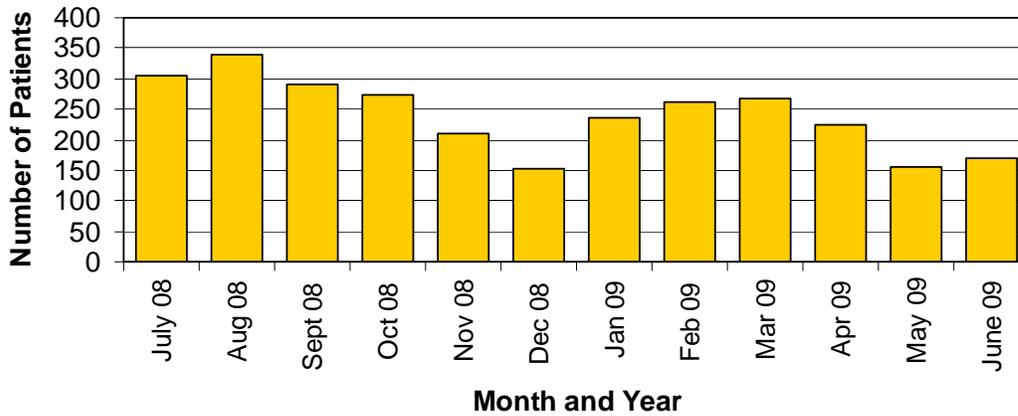
Snakebite: Snake season is underway. Several reminders based on recent experience will be helpful. One, never take a rattlesnake (or other venomous snake) to the hospital even if it's dead. No good will result. Also, despite the swelling and pain with snakebite, use of ice is not recommended and may increase the amount of tissue damage. The best treatment is immobilization of the extremity, possibly mildly elevated, pain relief, and transport for hospital treatment with antivenin.

Below are the patient destination data in graphic form:



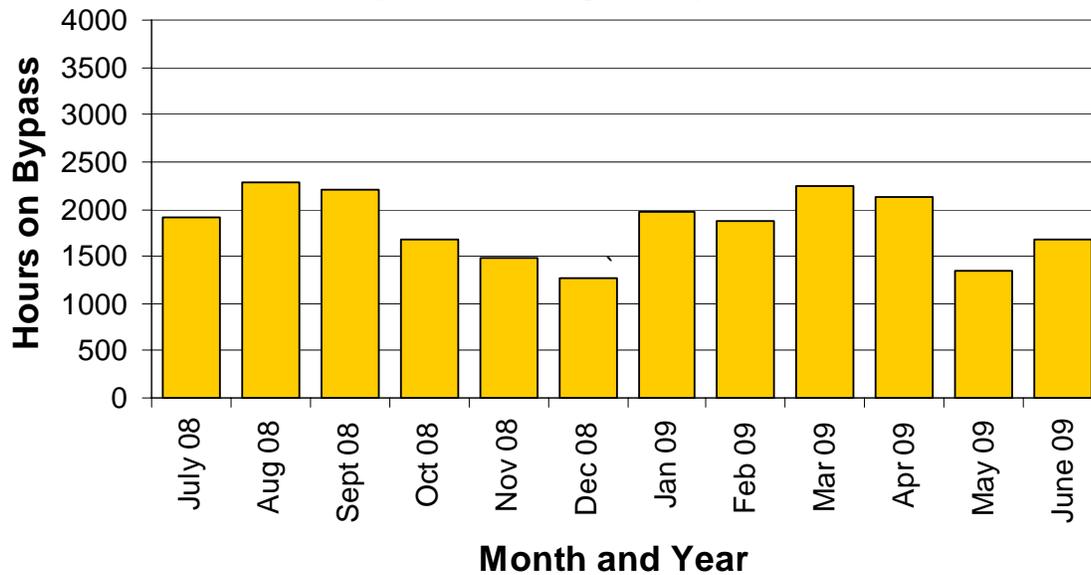
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jul 2009 – Jun 2009 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other

Number of Patients who Bypassed the Requested Hospital, County of San Diego, July 08 - June 09



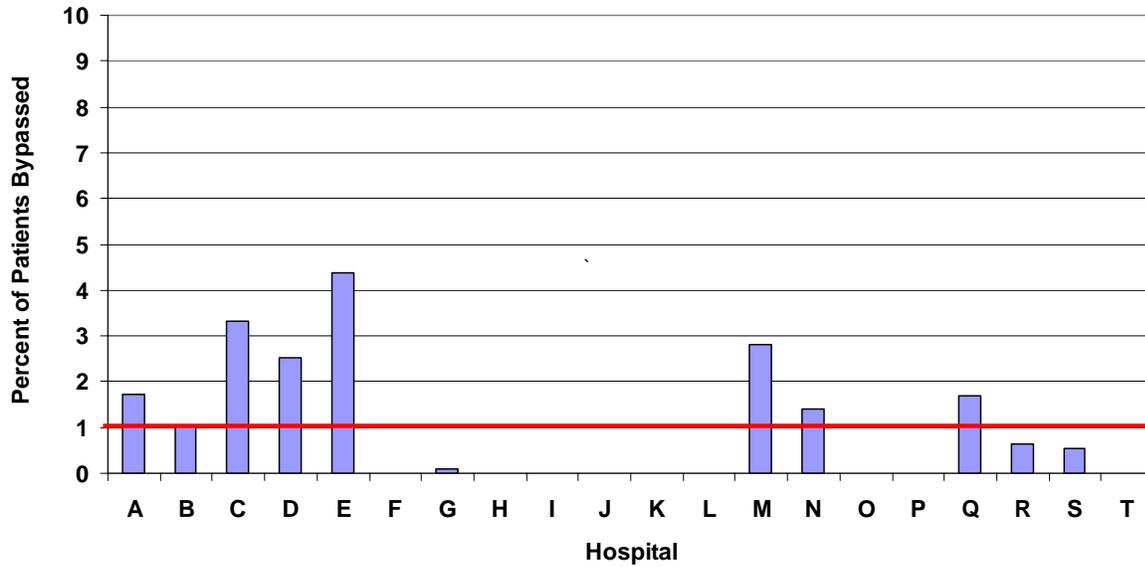
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jul 2009 – Jun 2009 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other

Total Hours on Emergency Department Bypass County of San Diego, July 08 - June 09



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jul 2009 – Jun 2009

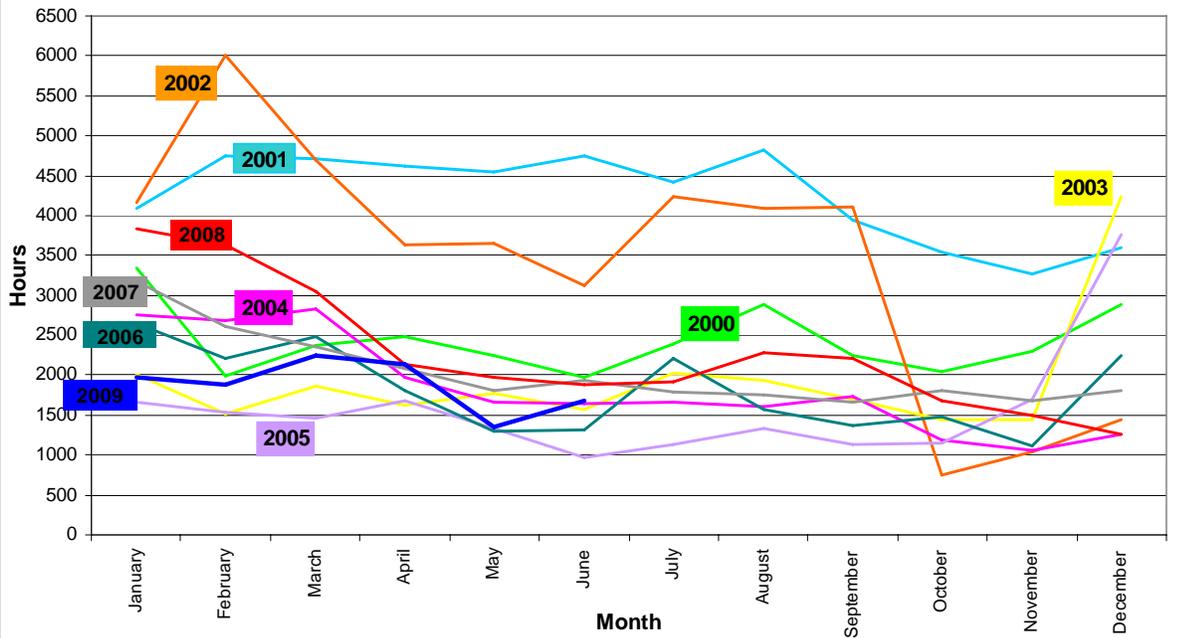
Percent of Patients Bypassed per Hospital, June 2009



Note: The red line represents the mean value of percent of patients bypassed per hospital, July 2009

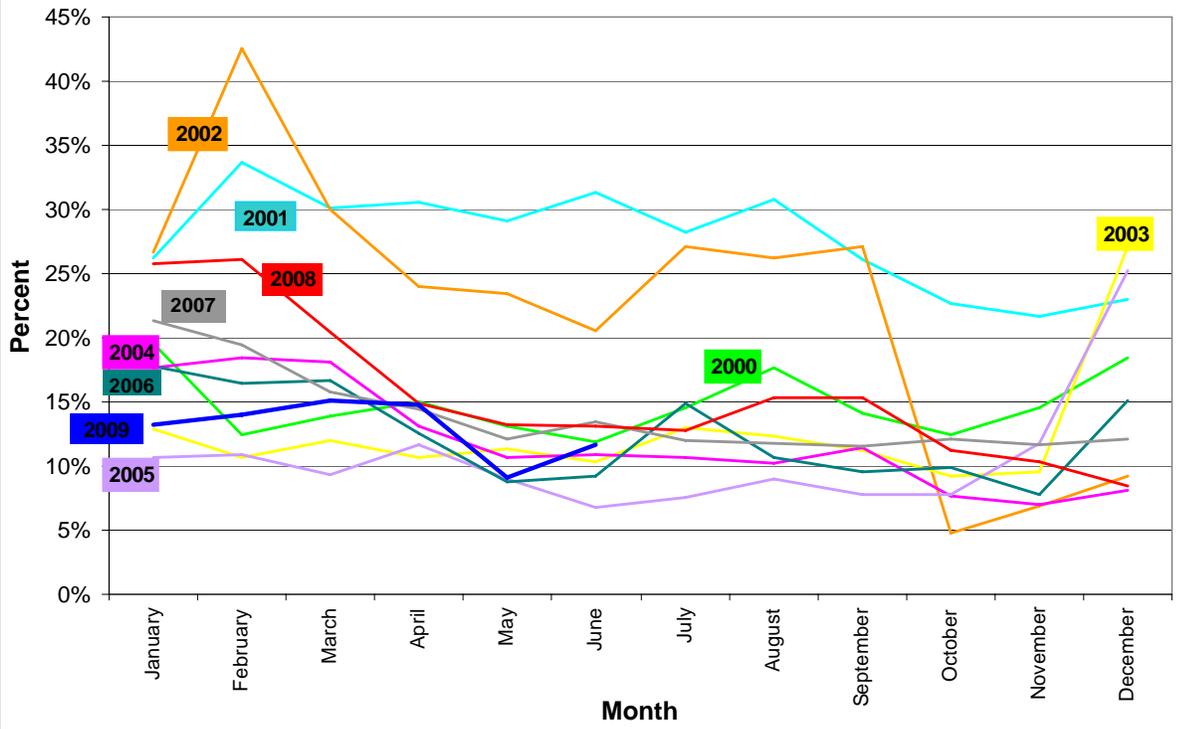
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jun 2009 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other

Total Hours on ED Saturation by Month and Year, San Diego County, Jan 2000 - June 2009



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2000 – Jun 2009

Overall Percent Hours on ED Sat Per Month San Diego County, Jan 2000 - June 2009



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Jan 2000 – Jun 2009. Note: 2008 line extended to June due to chart formula, no data for this future date.



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PUBLIC HEALTH SERVICES

1700 PACIFIC HIGHWAY, SAN DIEGO, CALIFORNIA 92101-2417
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Bruce E. Haynes, M.D.
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Medical Director's Update for Base Station Physicians' Committee September, 2009

Flu season: As of our September BSPPC meeting 21 San Diego residents have died from the Pandemic H1N1 2009 virus. The virus is still active in the community. While testing is now limited to hospitalized and fatal cases, our case count is 1,179 with 262 hospitalized cases. The average age of cases is 25 years, with a range from 4 months to 89 years. The average age of hospitalized cases is 34 years, and fatal cases 46 years of age. We are now heading toward our usual influenza season. In the southern hemisphere where the flu season is just ending, reports indicate the pandemic virus has not mutated into a more virulent form and is genetically similar to the virus here.

California has changed the case definition of a suspected pandemic influenza case to "any patient less than 60 years of age with a fever ($>37.8^{\circ}\text{C}$ or 100°F) and new onset of cough," or a patient a healthcare provider believes, based on the patient's history and illness, to have a high likelihood of being infected with pandemic flu. This change limits the age and eliminates the sore throat. This definition will be used to decide in which patients personal protective equipment must be used. It reflects the small number of cases in those who are older.

We have gotten some good news on a pandemic virus vaccine. Last week two early publications posted on the New England Journal of Medicine website showed good immune response to a single dose of pandemic influenza vaccine. The US National Institutes of Health research is said to mirror this finding. This means it is more likely that the pandemic flu vaccine will require only one injection rather than two, simplifying the vaccine campaign.

Healthcare workers are high priority for influenza vaccine, both to prevent them from becoming ill, and to prevent transmission to patients. Seasonal influenza vaccine is beginning to come in now, and hospital and field personnel should be vaccinated. Priorities have been set for initial administration of pandemic flu vaccine when it becomes available. Healthcare workers are again high priority. Providers should work with their usual vaccine provider to obtain the pandemic flu vaccine. We are obtaining permission from the state for paramedics to administer influenza vaccine this season. This may be helpful for some providers.

Measures to prevent the spread of flu are important. Stay away from those who are ill to the extent possible. Frequent hand washing is important, with use of alcohol based cleansers in the field if there is no evidence of gross contamination on the hands. Cover coughs and sneezes in the crook of your arm or with a tissue that is discarded. Try to avoid touching your face, mouth, etc to avoid transmitting the virus. You should stay home if ill. It is recommended that healthcare workers ill with influenza like illness stay off work for 7 days from symptom onset or until the resolution of symptoms, whichever is longer. Providers need to have staffing plans to continue service with some employees ill.

Controversy remains on the level of PPE needed to examine and treat patients with influenza like illness. There are conflicting recommendations from multiple sources, but for the time being, we will adopt the Cal/OSHA standard. Cal/OSHA has established a standard of aerosol level PPE for suspected pandemic flu patients (which means all patients with influenza like illness at this time). This means aerosol level protection with N-95 mask, eye shield protection, and gown in addition to gloves for healthcare workers providing patient care who are in “close contact” with the patient. Close contact has meant six feet in the past, but is not currently defined by the Institute of Medicine. This is the protection level we have been using for aerosol generating procedures. Those in the driver’s compartment should close partitions to the patient care area, and ensure good ventilation. PPE recommendations, similar to other recommendations, are in a state of flux and may be changed. In this case, the Director of the Centers for Disease Control and Prevention (CDC) may recommend a different, less strict, standard for this flu season. It is unclear if Cal/OSHA would adopt that standard for this year, but we will keep you posted.

Recommendations for post exposure prophylaxis have changed as well. For healthcare workers with an unprotected exposure to pandemic flu virus, it is recommended that only those at high risk of complications if they get the flu are treated with prophylactic medication. An exposed worker would monitor themselves for symptoms of illness and fever for seven days after exposure. Prophylaxis with oseltamivir (Tamiflu) would be recommended only for high risk features such as pregnancy or conditions resulting in immunosuppression such as asthma/COPD, heart disease (except hypertension), diabetes, transplant recipients, kidney, liver, blood, neuromuscular or other diseases.

Public Health is holding Sector meetings with various groups in the county to review the current situation with pandemic flu and how plans will affect them.

Capacity Plan: The Capacity Task Force reviewed the Capacity Plan at the end of August. Some attention was focused on the First Watch monitoring system that tells how many transports are headed to each ED, and gives the time from arrival at the ED until ready for service. This may be a valuable insight into off load times, and provide information that may help correct prolonged off load delays when they occur. The committee added some surveillance activities to the plan, as well more actions at Level IV—the high level activation for extremely high volumes that might be seen in a severe flu season.

Surge Tents, equipment: State Licensing and Certification now allows hospitals to use surge tents and equipment as part of program flexibility without a local declaration of emergency. L&C requires the hospital to notify them with the reason, provision for staffing, and the expected length of time the tent will be used. They also must be notified when the tent is no longer in use. Contact the local L&C office for more details.

Stroke system and new time limit: A total of 15 hospitals qualified to receive acute stroke patients as of July 1. Naval Medical Center San Diego will likely be added to the system in the future.

Triage criteria in the treatment guidelines are assessment with the prehospital stroke scale for symptom onset in the previous 3 hours. The most recent recommendations for use of intravenous tPA say use within 4 1/2 hours of symptom onset is safe. As a result, the Base Hospital may stretch the 3 hour limit to 3 1/2 or 4 hours. The goal still is to administer the medication as quickly as possible if indicated.

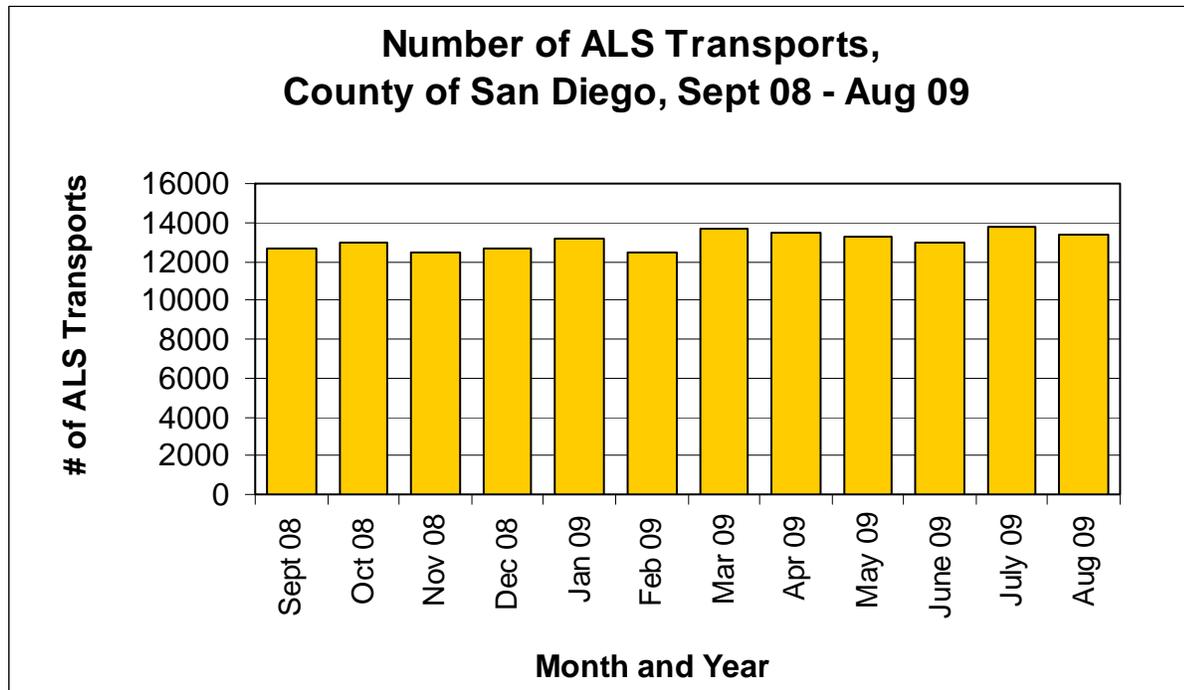
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EMT Optional Skills: These are now approved. One training program has been approved. The skills include glucose testing and seven basic medications.

State Issues: Changes in EMT and paramedic licensure, monitoring and discipline mean there will be changes to many of the state regulations over the next year and a half. This "2010" project by the state EMS Authority will be on-going for the next two years.

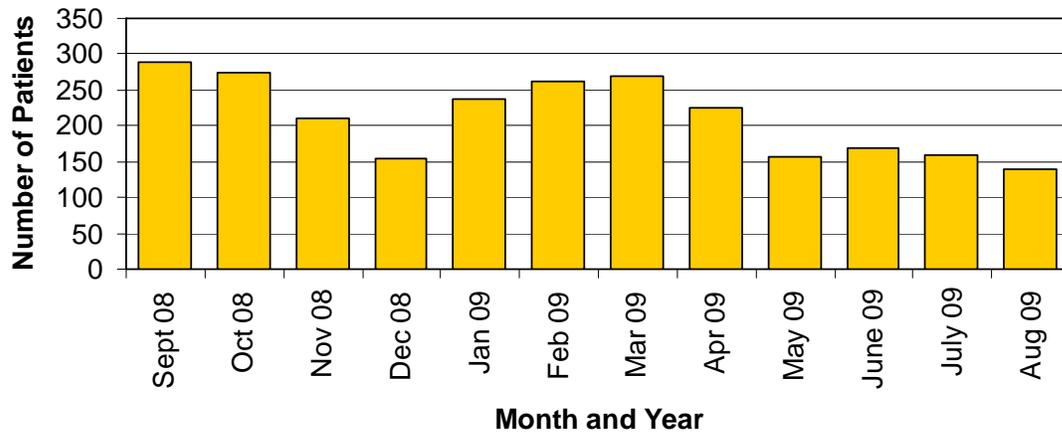
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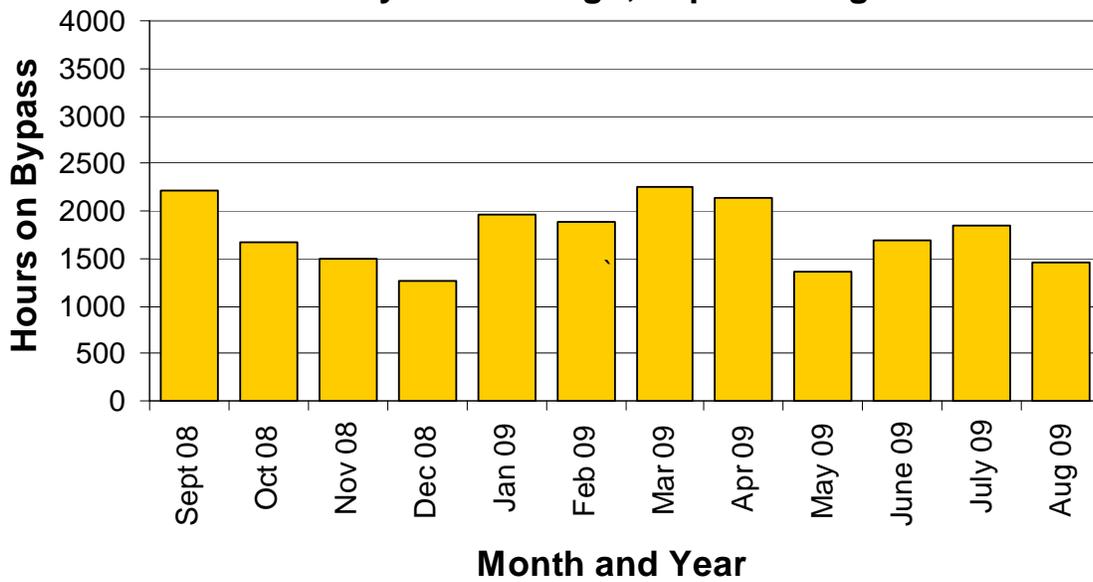
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Number of Patients who Bypassed the Requested Hospital, County of San Diego, Sept 08 - Aug 09



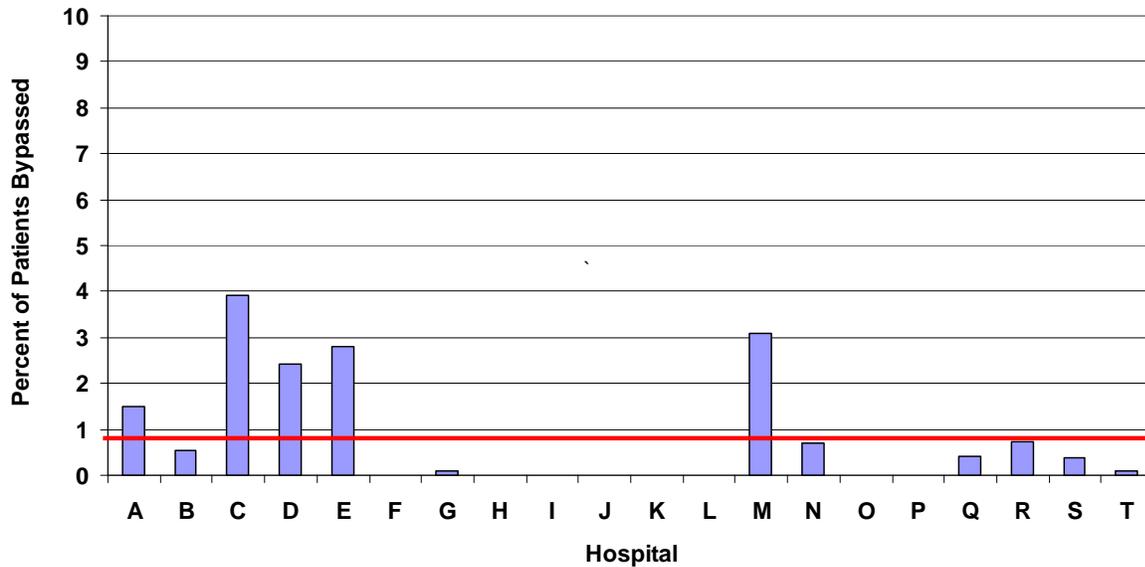
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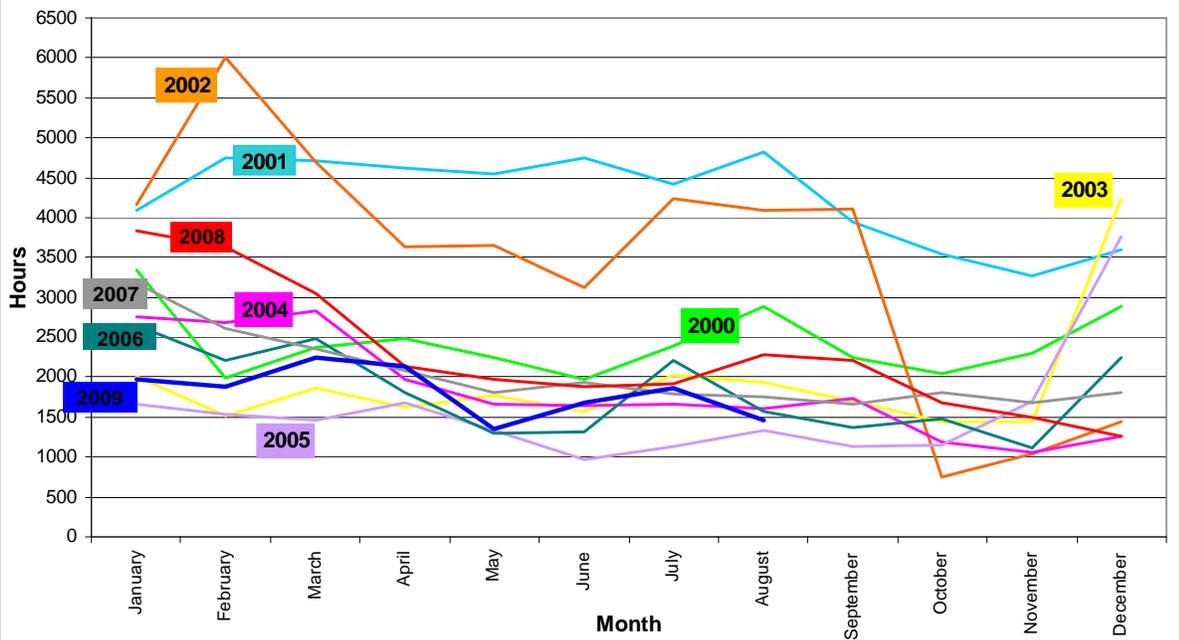
Percent of Patients Bypassed per Hospital, Aug 2009



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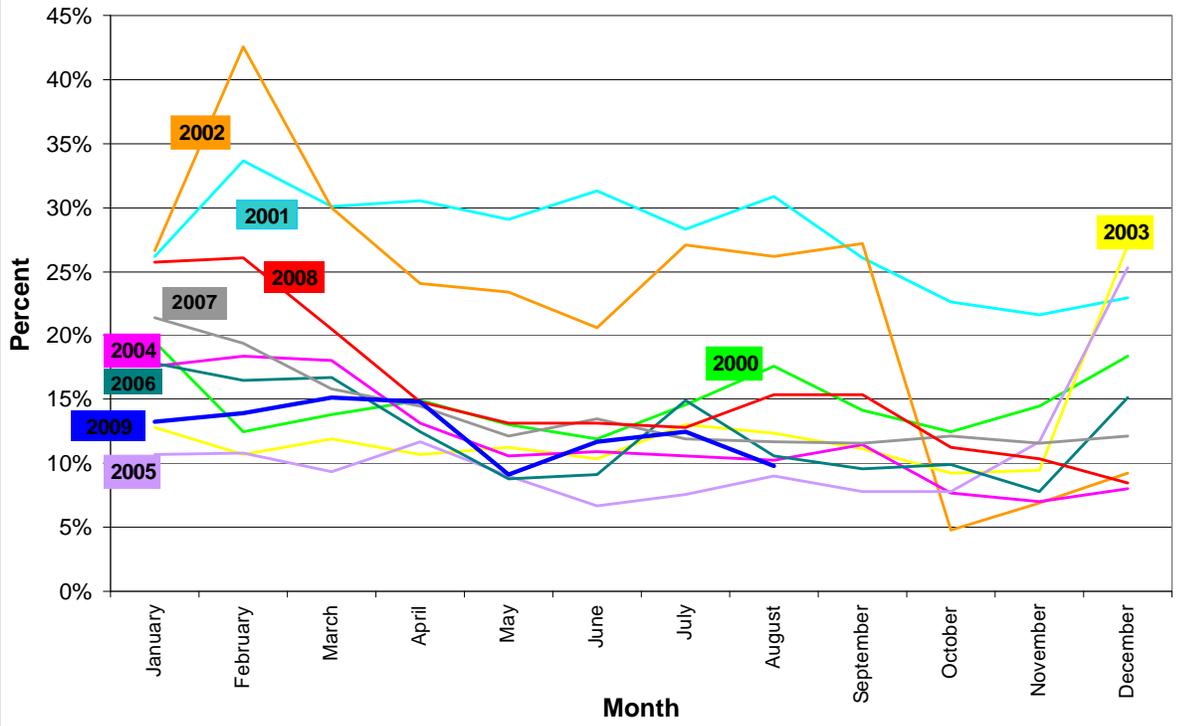
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County of San Diego

HEALTH AND HUMAN SERVICES AGENCY

PUBLIC HEALTH SERVICES

1700 PACIFIC HIGHWAY, SAN DIEGO, CALIFORNIA 92101-2417
(619) 531-5800 FAX (619) 515-6707

Community Epidemiology
Emergency & Disaster Medical Services
HIV, STD and Hepatitis
Immunization
Maternal, Child and Family Health Services
Public Health Laboratory
PH Nursing/Border Health
TB Control & Refugee Health
Vital Records

Bruce E. Haynes, M.D.
Medical Director
Division of Emergency Medical Services
6255 Mission Gorge Road
San Diego, CA 92120-3599
(619) 285-6429 FAX:(619) 285-6531

Medical Director's Update for Base Station Physicians' Committee November, 2009

Flu season: Visits for Influenza-related chief complaints rose substantially at surveillance emergency departments starting mid-September, leveling off only in the last several weeks. The total number of visits were variable, but not up like flu visits. While visits are moderating, admissions are holding steady. Visits are higher among the younger group affected by the flu, 0-14 years and the broader group of 25-64 year olds. ED visits for the percent of flu-related visits by age group show the 0-14 year and 15-24 year olds with the highest percent.

The ED visits reflect an increase in the number of prehospital cases which started increasing about 50 days ago and are now above normal for most days. For the 10 days before November 9, 9/10 days were above upper limits. As of November 14, 597 patients have been hospitalized, with 34 resident deaths and 4 non-resident deaths. The average age of cases is 26 years, with a range from 2 weeks to 93 years. The average age of hospitalized cases is 31 years, and fatal cases 45 years of age. Hospitalized cases never dropped to zero after the peak in mid-July, so the pandemic flu remained with us.

State public health published an article about factors associated with death or hospitalization due to Pandemic flu in the November 4, 2009 issue of JAMA. Risk factors for seasonal flu complications existed in 68% of pandemic flu patients, infiltrates were seen in 66% of those with radiographs, and 31% required intensive care. Rapid antigen tests were falsely negative in 34%, and secondary bacterial infection was found in 4%. In these patients between April and August 2009, 21% received no antiviral treatment. Overall fatality rate was 11%, and was highest in those 50 years of age and older. The most common causes of death were viral pneumonia and acute respiratory distress syndrome. (Louie et al JAMA. 2009;302:1896-1902).

The county's first delivery of pandemic influenza vaccine was distributed largely to private providers to use in children. A substantial second delivery arrived suddenly about two weeks ago. Public Health and EMS worked hard to get this out as quickly as possible. Most was given to the hospitals for use on staff and patients. A second group was EMS personnel—first responders and transport agencies. Most of these personnel have had an opportunity to be vaccinated at this point. Several groups continue to receive vaccine through Points of Distribution or small teams going to central points in the departments' areas. Another segment of vaccine was used for Public Health Centers, and community clinics to

vaccinate the high priority groups such as pregnant women, caretakers of young child, and children and young adults. 57,000 persons have been vaccinated in the Public Health Centers so far.

EMS provided staff for the Department Operations Center for public health which was open for two weeks. Other staff coordinated logistics, including vaccine distribution, vaccination clinics, obtaining supplies and equipment to make the vaccinations possible. A great job was performed by EMS staff during this vaccination push. Our thanks to all of them.

A number of the private providers who signed up to receive vaccine are beginning to receive it, but it is hard to predict when, and how much, vaccine will arrive.

As mentioned before, measures to prevent the spread of flu are important. Stay away from those who are ill to the extent possible. Frequent hand washing is important, with use of alcohol based sanitizers in the field if there is no evidence of gross contamination on the hands. Cover coughs and sneezes in the crook of your arm or with a tissue that is discarded. Try to avoid touching your face, mouth, etc to avoid transmitting the virus. You should stay home if ill. It is recommended that healthcare workers ill with influenza-like illness stay off work for 1 day after resolution of fever without fever reducing medicines. The CDC reduced this from the previously longer recommendation. Review the most recent EMS guidelines for PPE and employ that when seeing patients with Influenza-like illness.

Capacity Plan: The Capacity Task Force finished review of the Health Services Capacity Plan which has been distributed widely in the system. Changes included monitoring of staff illness levels, and several other new recommendations. We would ask that you review the capacity plan to be able to implement the provisions when necessary.

Remember that an important part of our diversion plan is that hospitals take their own patients, even when they are on diversion for ED sat. This is important to maintain system integrity. Also, when it is quite busy hospitals will have to take patients sent to them by base MICNS. These patients should not be refused.

Surge Tents, equipment: State Licensing and Certification now allows hospitals to use surge tents and equipment as part of program flexibility without a local declaration of emergency. L&C requires the hospital to notify them with the reason, provision for staffing, and the expected length of time the tent will be used. They also must be notified when the tent is no longer in use. ED staff should work closely with their hospital disaster personnel to meet requirements and establish any tents effectively. Tents may be used for waiting rooms, to conduct triage, provide basic first aid, and appropriate outpatient therapy. Contact your disaster planner for more details.

Versed Audit: Initial audits show a substantial increase in the use of midazolam since it was added for a broader range of patient conditions. The largest increase is in the Psychiatric/Behavioral assessment, followed by another substantial increase in the alcohol/substance abuse assessment. Other areas have seen an increase as well.

Midazolam use is reserved for patients with severe agitation only. These patients should represent a risk of injury or harm to themselves or to patient care personnel. They should be patients who cannot be "redirected" or controlled with less invasive techniques. In one sense midazolam is a chemical restraint and its use should always be weighed carefully and considered in the patient's best interest. This is an important tool we want to maintain for the treatment of life threatening conditions such as agitated or

excited delirium. Use in patients with alcohol and other depressants must be thought about carefully, lower doses considered, and the patient observed carefully.

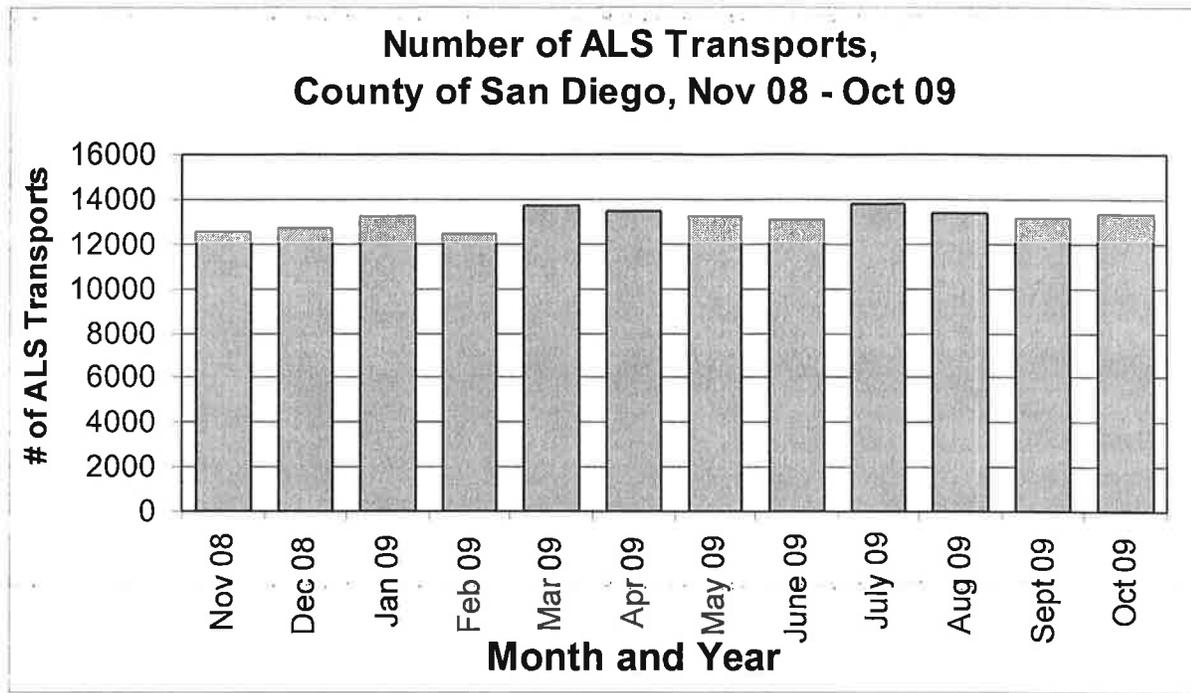
Pearls from PAC: Please review these after PAC meetings when they become available. They contain valuable information about improving our care. Each month's Pearls now will frequently have a note about great care delivered.

CMH and Medical Clearance: One note from the September Pearls concerned the need for a medical clearance on patients going to the county Psychiatric Hospital (formerly CMH). These patients need a careful evaluation for medical illnesses and injuries, and especially for intoxication from an ingestion of medications. The history is often deceiving, and it may be difficult to obtain an accurate history in all patients. Err on the side of caution and make sure the patient gets a medical clearance at the nearest emergency room before transfer to CMH. Since the medical evaluation is a precursor to the psychiatric evaluation, the patient should go to the nearest ED.

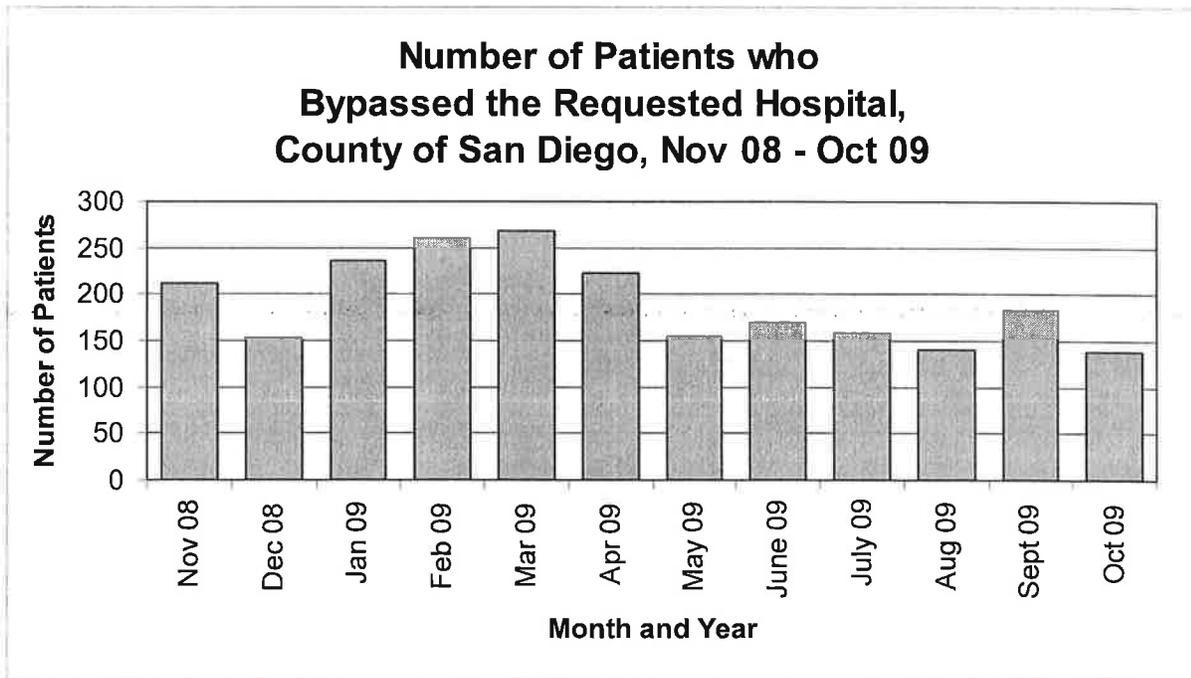
Medication errors: Another focus of the Pearls was medication errors. Examples of a number of recent med errors are in the Pearl. The lesson is to always go through the established checks for medication administration, including the Triple Check and the Five Rights. In some cases we may have to look at better engineering controls and drug box layout with separation of medications like epinephrine which can cause severe adverse events if used incorrectly. Communication between team members and verbalizing medications are important controls.

Rescuer Liability Law Passed: Most of the bills introduced in the legislature to regain protection for rescue during accidents, as compared to medical care, failed in the legislative session. One, however, did end up passing, AB 83. This new law doesn't provide the same level of protection for Good Samaritans as the previous law, but does establish a gross negligence standard of protection for public rescuers who perform medical, nonmedical care or assistance at the scene of an emergency. The protection for nonmedical care was added to the section protecting emergency personnel.

Below are the patient destination data in graphic form:

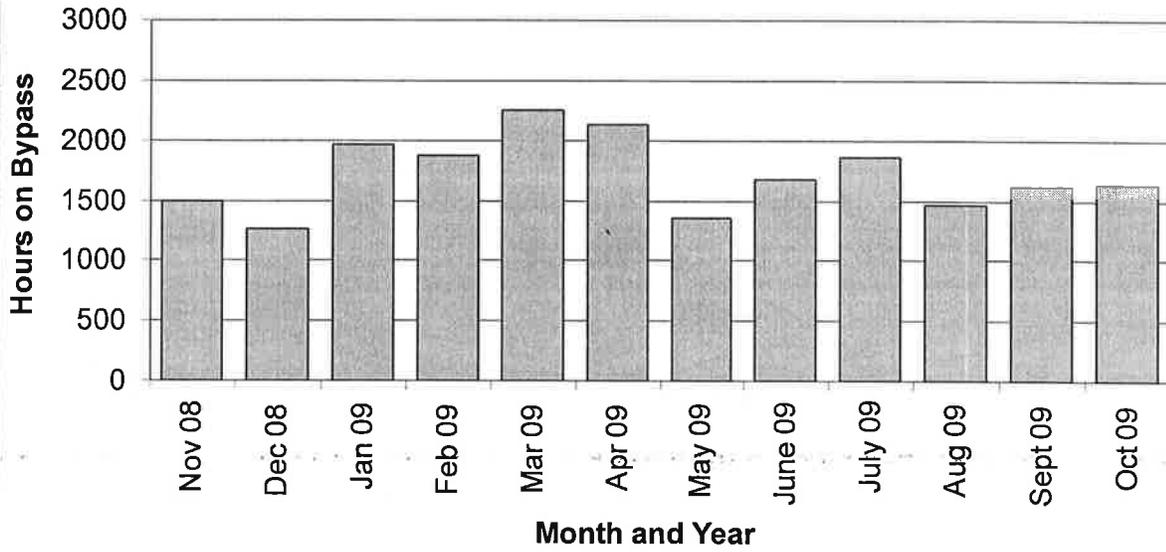


Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Nov 2008 – Oct 2009. Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



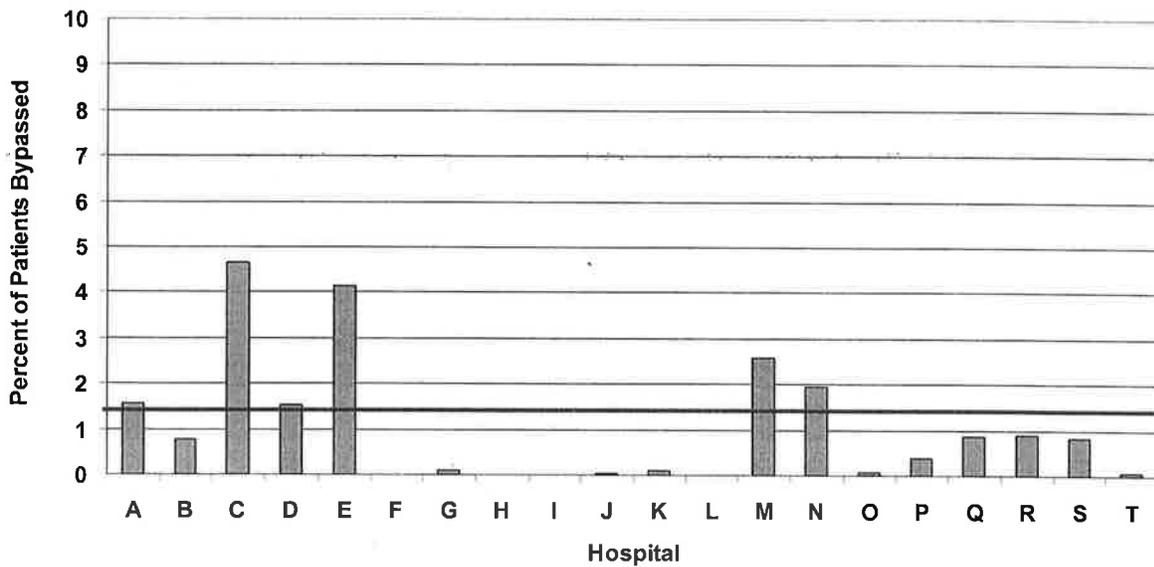
Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Nov 2008 – Oct 2009. Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other

Total Hours on Emergency Department Bypass County of San Diego, Nov 08 - Oct 09



Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Nov 2008 – Oct 2009.

Percent of Patients Bypassed per Hospital, Oct 2009



Note: The red line represents the mean value of percent of patients bypassed per hospital, Oct 2009

Source: County of San Diego, Health and Human Services Agency, Division of Emergency Medical Services, MICN Records, Oct 2009. Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other