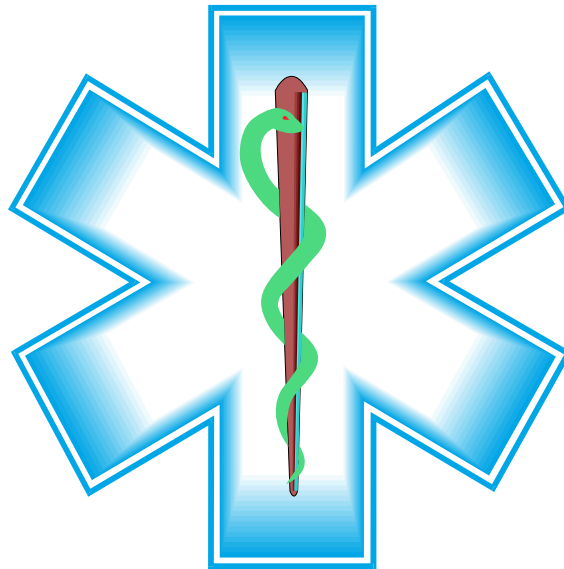

Tuolumne County
Emergency Medical Services Agency

2009 Annual Statistical Report



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INTRODUCTION

The 2009 Annual Statistical Report compiles and condenses an entire year's worth of data (call volume, response time and patient demographic information) about the Tuolumne County EMS system. The data included in this report is derived from pre-hospital patient care records (PCRs) completed by Tuolumne County Ambulance Service personnel.

Since July 1, 1993, Tuolumne County Ambulance has collected PCR data using the software program EMS DataPro™ (formerly the EMS Database System) provided for their use by the Tuolumne County EMS Agency. Once entered in EMS DataPro™, the data is submitted in an electronic format to the Tuolumne County EMS agency where the data is imported into a central version of EMS DataPro™. The EMS agency then validates the data.

In September 2000, Tuolumne County Ambulance, with the assistance of the EMS agency, initiated a program for completing PCRs using EMS Outfielder™ (a laptop based PCR data entry program developed by CompuCounsel, now called Inspironix, of Sacramento in conjunction with Manteca District Ambulance). EMS Outfielder™ has replaced hand-written PCR forms and billing tickets. EMS Outfielder™ provides immediate data availability for daily quality assurance/quality improvement reviews and imports patient billing information directly into the billing system used by Tuolumne County Ambulance.

The Tuolumne County Emergency Medical Services (EMS) System is comprised of four 9-1-1 answering points including Tuolumne County Sheriff's Dispatch, City of Sonora Police Department Dispatch, CHP Dispatch (located in Merced County) and Mariposa County Sheriff's Dispatch.

- Ambulance dispatching is provided by the Tuolumne County Sheriff's Dispatch Center.
- Basic life support (BLS) first response services are provided by Tuolumne County Fire Dept., Tuolumne City Fire Dist., Columbia College Fire Dept., Twain Harte Fire Dist., Columbia Fire Dist., Sonora City Fire Dept., Miwuk-Sugarpine Fire Dist., Tuolumne City Fire Dist., and the Groveland Fire Dist.
- U.S. Forest Service, Tuolumne County Sheriff's Search and Rescue, Don Pedro Recreation Agency, Dodge Ridge Ski Patrol provides specialized BLS response services.
- Tuolumne County Ambulance Service provides advanced life support (ALS) service. Mercy Medical Transport from Mariposa County provides the Lake Don Pedro area ALS Ambulance service.
- PHI provides air ambulance services with day-to-day mutual aid from the California Highway Patrol (CHP) Air Operations Division, Medi-Flight of Northern California, CALSTAR and R.E.A.C.H. Air Ambulance.

In June 2003, grant funds were made available to the Tuolumne County EMS Agency for the purpose of purchasing and installing EMSsystem™ communication software and related computer hardware for the emergency departments of Tuolumne General Hospital and Sonora Regional Medical Center and the EMS agency office. In early 2004, EMSsystem™ linked Tuolumne County's EMS system with the other ten (10) counties of OES Region IV, enabling Tuolumne General Hospital, as the county's Disaster Control Facility, to view real-time emergency department availability when determining patient disbursement during a multi-casualty incident (MCI).

In 2004, The Tuolumne County Emergency Medical Services System developed and implemented a Trauma Plan, in conjunction with Memorial Medical Center, Doctors Medical Center of Modesto, Mountain Valley EMS Agency, El Dorado County EMS Agency, Central California EMS Agency, Northern California EMS Agency, Sacramento County EMS Agency, and Santa Barbara County EMS Agency. The Trauma Plan provides a framework that assures that the citizens and visitors of Tuolumne County receive comprehensive prehospital and hospital trauma care. Tuolumne County relies on Trauma Centers throughout Northern California for in-hospital trauma care. Air Ambulances are used as the primary means of transportation for patients meeting Tuolumne County's major trauma patient criteria.

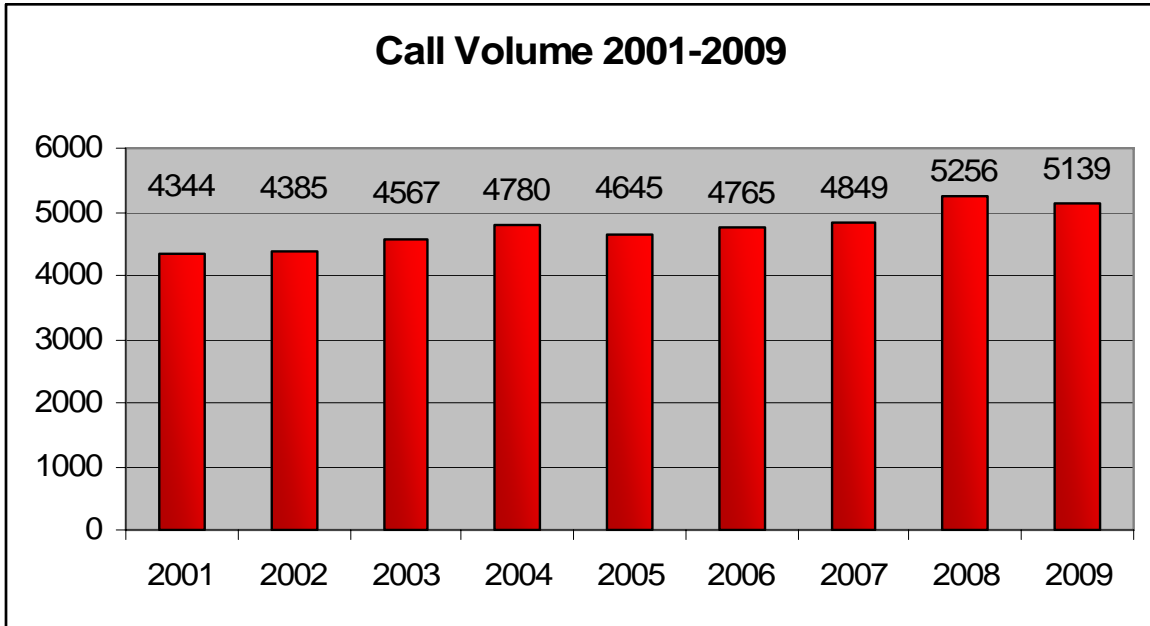
In July 2007, Tuolumne General Hospital closed leaving only one acute care hospital in Tuolumne County. Sonora Regional Medical Center assumed the duties of the county's Disaster Control Facility and Mountain Counties South Control Facility.

In 2008, EMSsystem was expanded to include data elements for the Department of Health and Human Services HAvBED (Hospital Available Beds for Emergencies and Disasters). This capability allows for accurate and consistent polling of hospital resources nationwide.

In June of 2009, Tuolumne County EMS Agency was instrumental in the development of the Central Regional Trauma Coordinating Committee (CRTCC), a twelve county regional committee. The purpose of the committee is to standardize and improve the provision of trauma care within the region. The CRTCC, working in coordination with four other Regional Trauma Coordinating Committees and the State EMS Authority to build a strong, cohesive statewide trauma system.

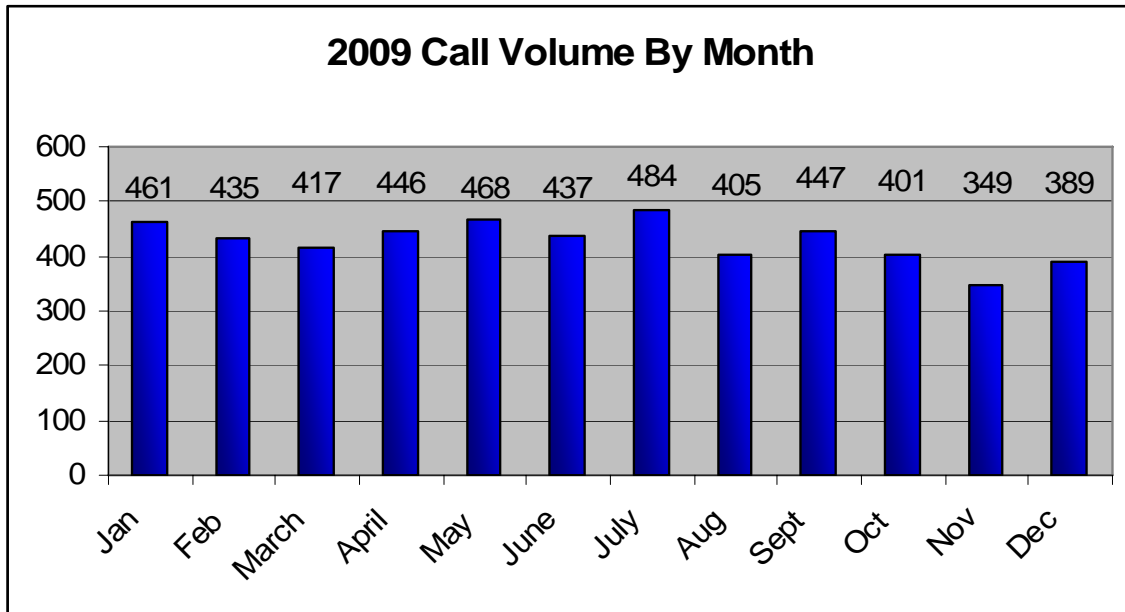
OVERVIEW OF CALL VOLUME

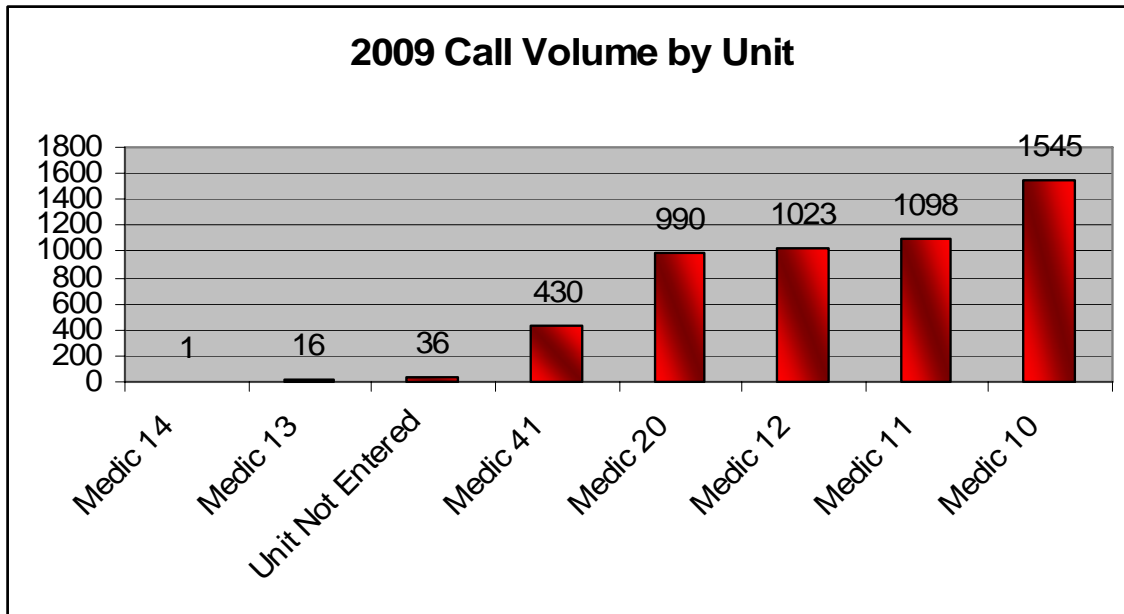
As illustrated in the graphs below, in 2009 there was a 3% decrease in calls for EMS services from 2008. Since 2001, there has been a 16% increase in the call volume. Unless otherwise specified EMS requests include both scene and transfer call types.



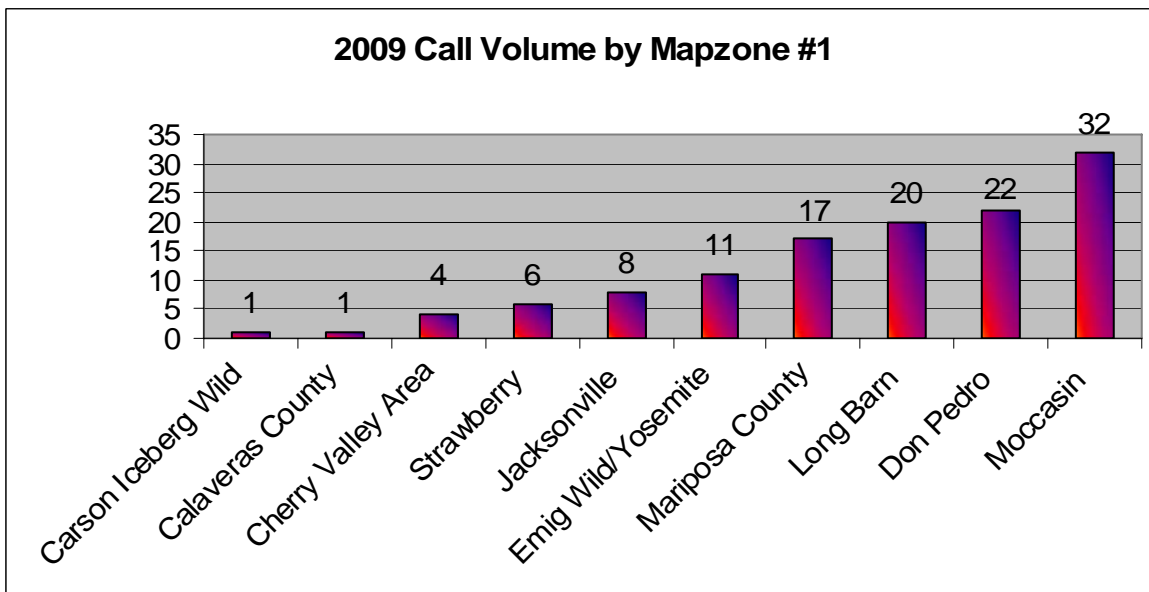
EMS Requests by Month

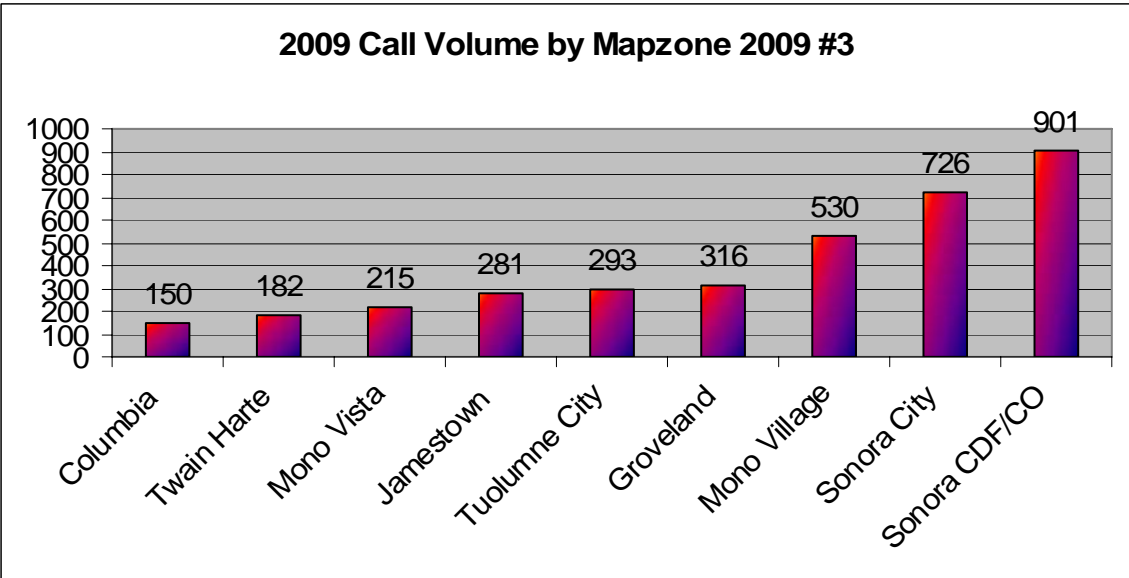
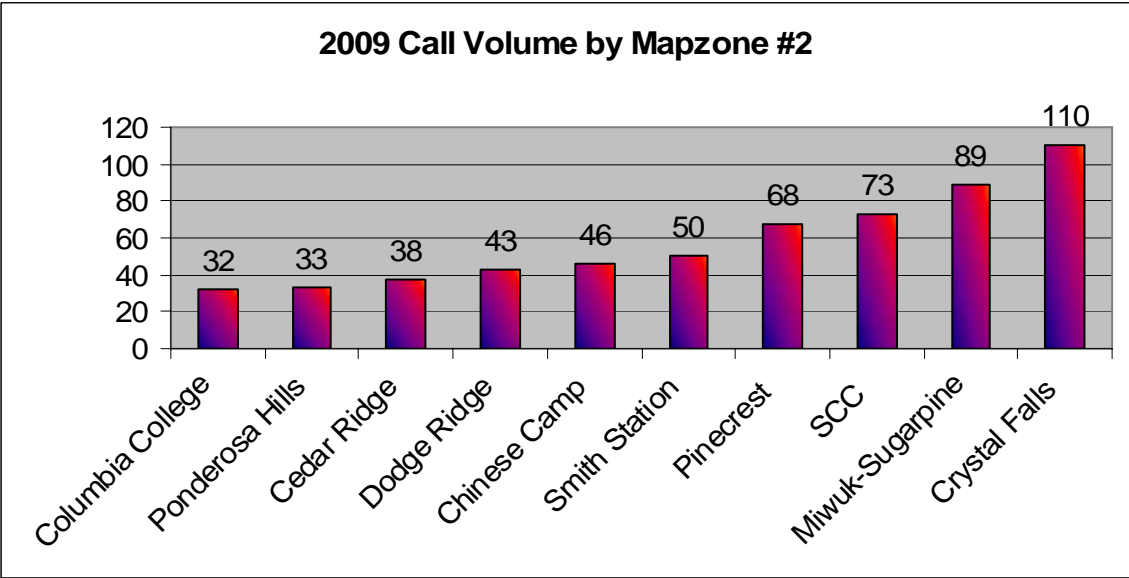
The summer months and December have traditionally been the busiest time for EMS in Tuolumne County. The summer months of 2009 experienced a significant decrease in call volume when compared to 2008; however, the call volume for September increased 224% over September of 2008.



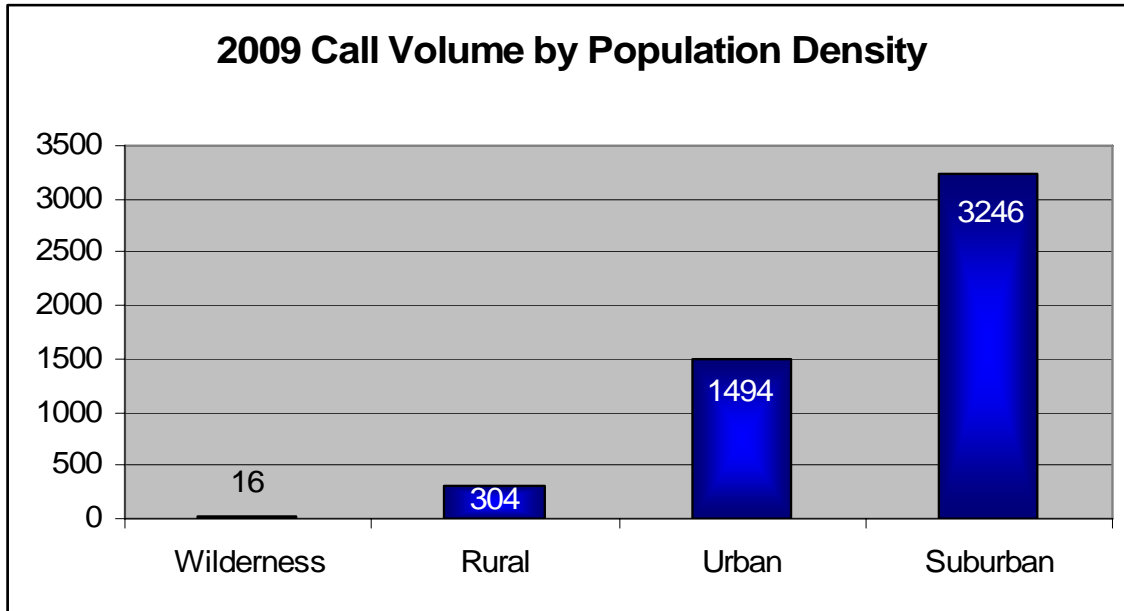


As illustrated below, Medics 10, 11 and 12 responded to the majority of all EMS requests. The Sonora area accounts for approximately 71% on the calls for ambulance service.



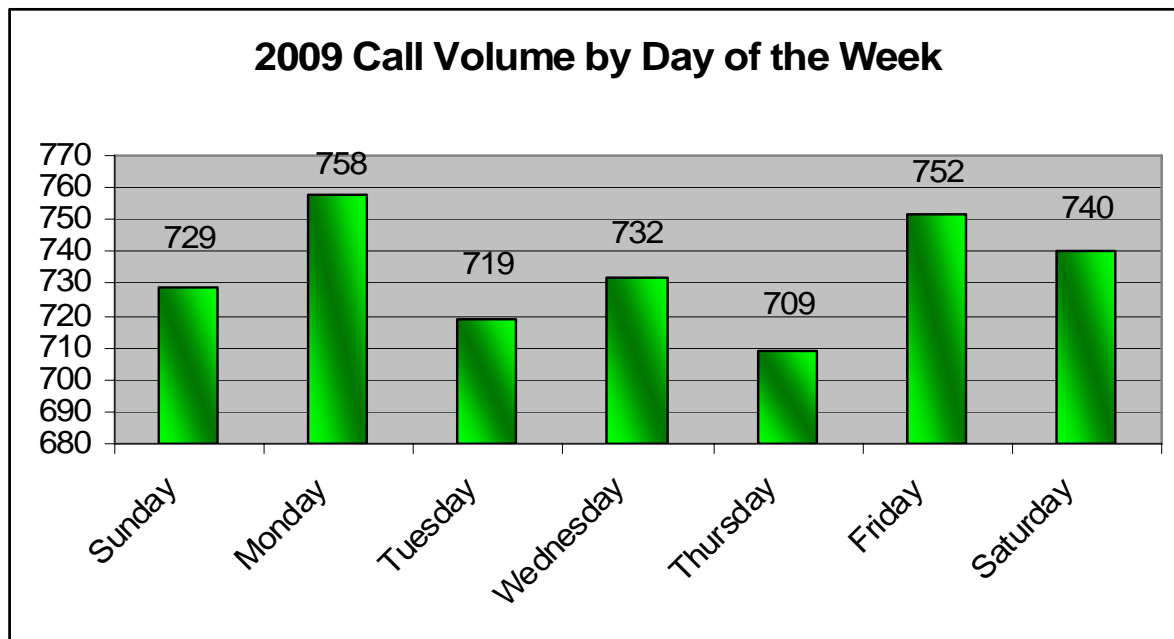


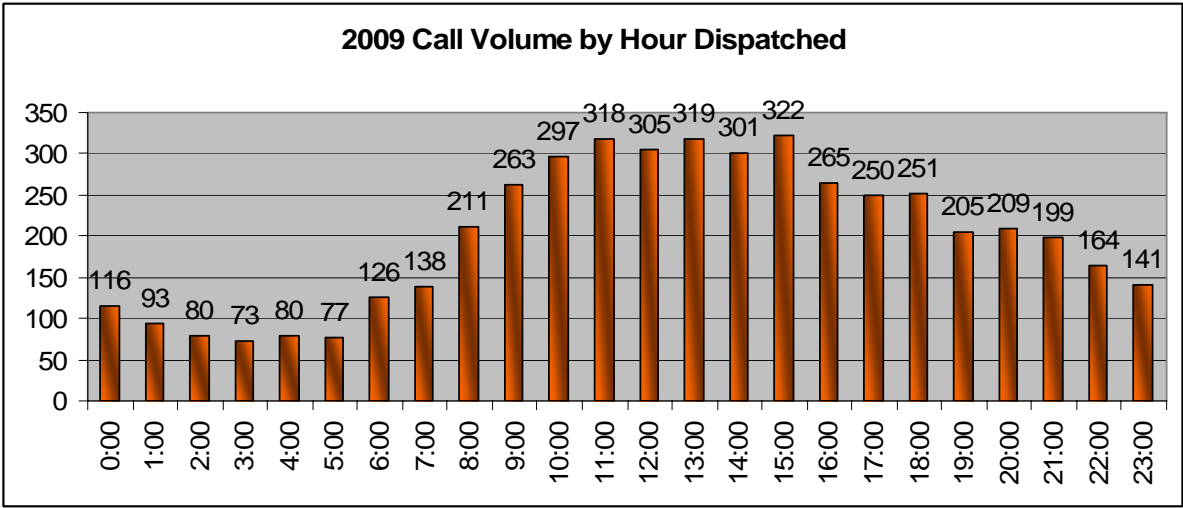
The breakdown of EMS requests by location reveals that the majority (63%) of requests occur in the suburban areas of Tuolumne County, where the majority of Tuolumne County residents live.



Call Volume 2009

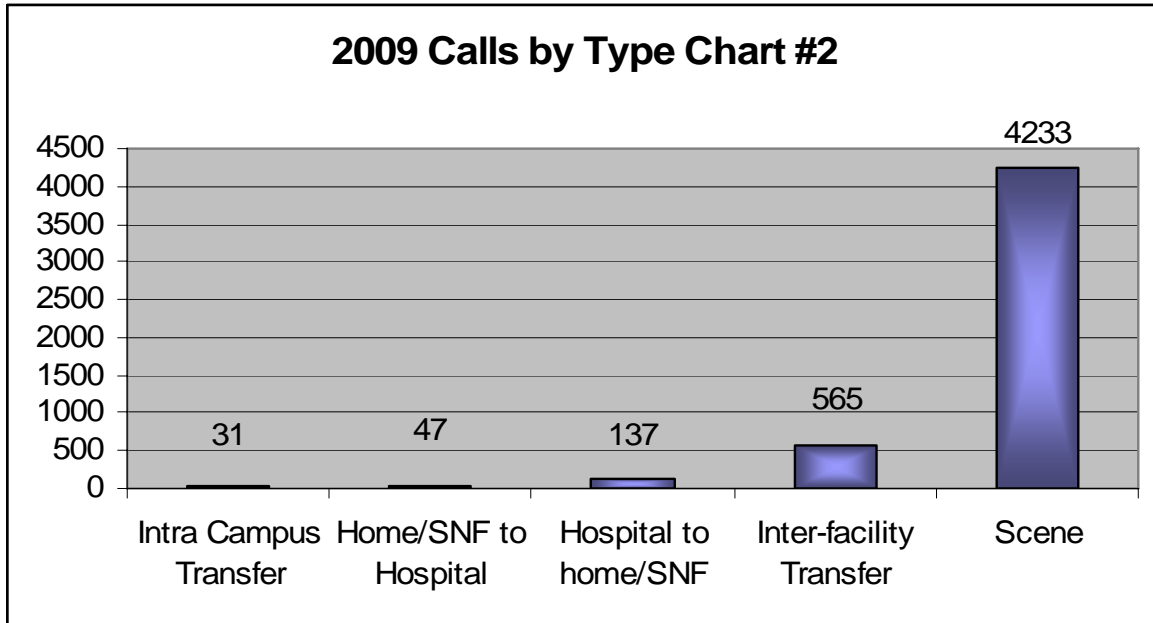
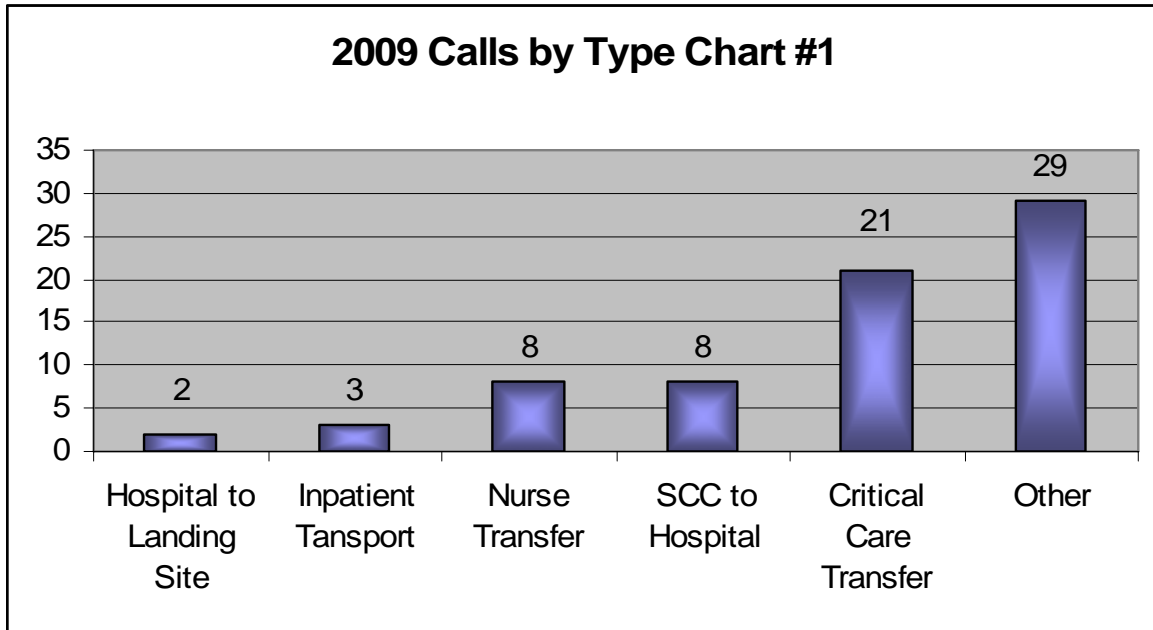
A breakdown of requests by day and time of day shows that call volumes may vary widely during the week.



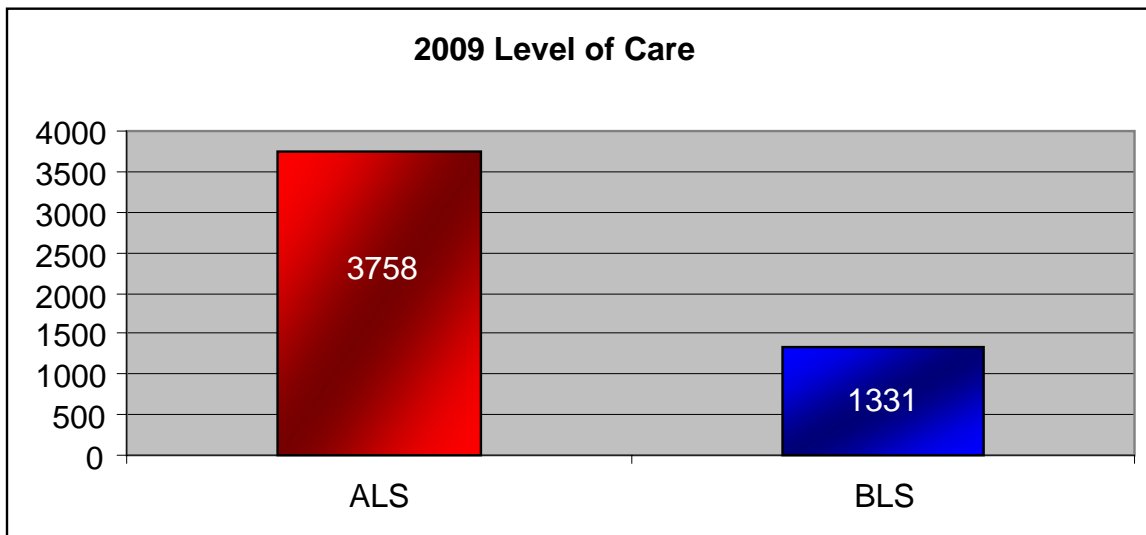


Calls by Type

In 2009, scene emergencies accounted for 83% of the total EMS requests for service. Transfers make up the remaining 17% of EMS requests for services. Transfers consist of ambulance interfacility transfers, air ambulance transfers from a hospital to a landing site, critical care transfers, transfers to and from a patient's home to a hospital, and transports for diagnostic service such as transporting a patient for an MRI.



74% of all requests resulted in the delivery of advanced life support (ALS) procedures and medications administered to the patient.



Response Times

The Emergency Medical Services Authority (EMSA) has established recommended guidelines for Code 3 response time standards to EMS requests, based on population density. The EMSA recommends that EMS responses meet these response time guidelines at least 90% of the time.

	BLS 1 st Response	BLS AED 1 st Response	ALS Amb
Urban	5 minutes	5 minutes	8 minutes
Suburban	15 minutes	ASAP	20 minutes
Rural	15 minutes	ASAP	20 minutes
Wilderness	ASAP	ASAP	ASAP

Urban = 101 to 500 people per square mile

Suburban = 51 to 100 people per square mile

Rural = 7 to 50 people per square mile

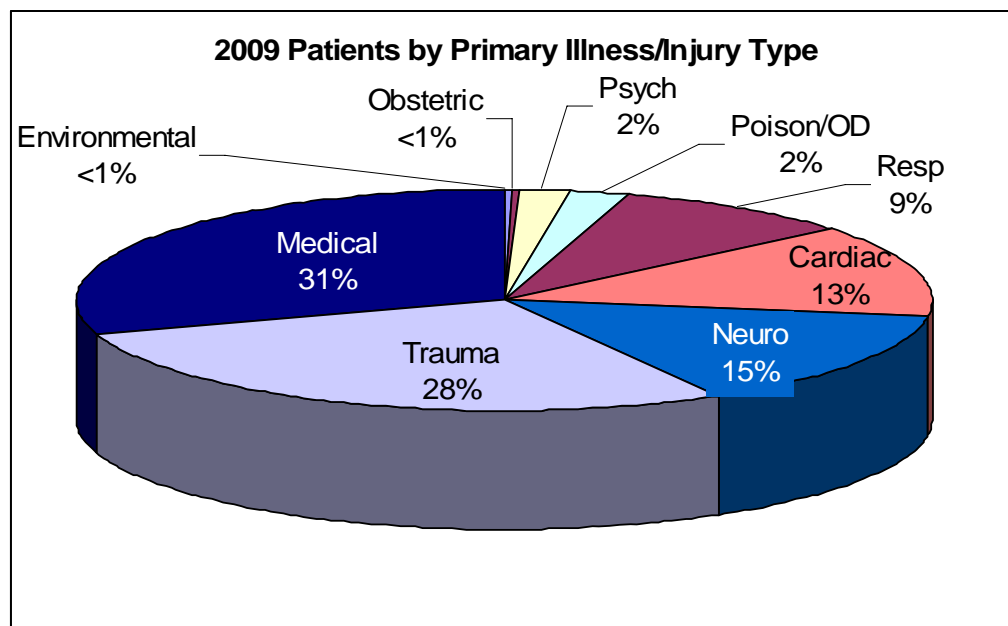
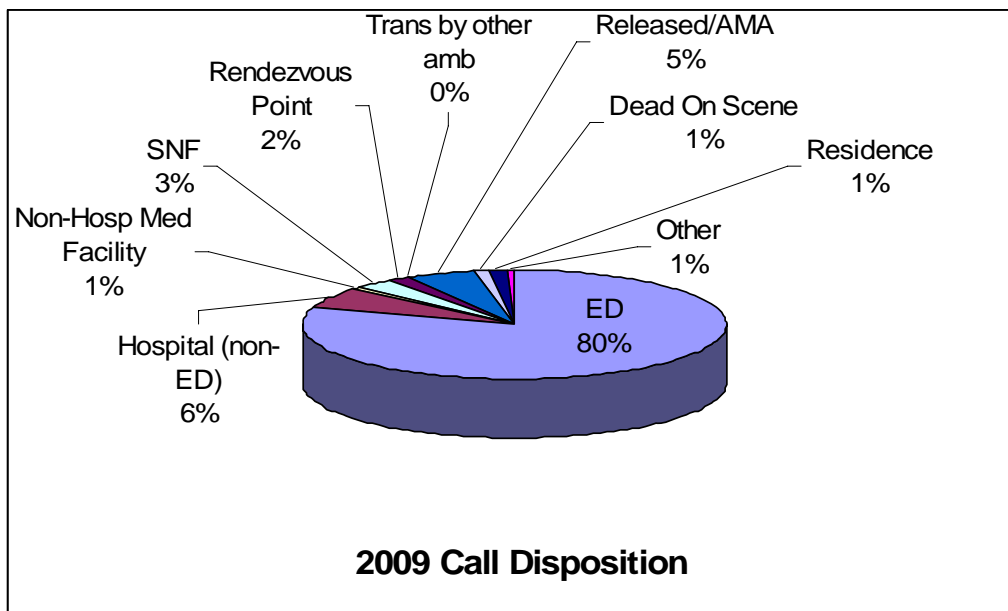
Wilderness = less than 7 people per square mile

	Urban	Suburban	Rural	Wilderness
Minimum:	0.00 minutes	0.00 minutes	2.00 minutes	22.00 minutes
Maximum:	20.00 minutes	72.00 minutes	79.00 minutes	69.00 minutes
Average:	6.34 minutes	10.97 minutes	26.56 minutes	45.85 minutes
90%ile:	10.00 minutes	17.00 minutes	40.00 minutes	69.00 minutes

PATIENT AND HOSPITAL DATA

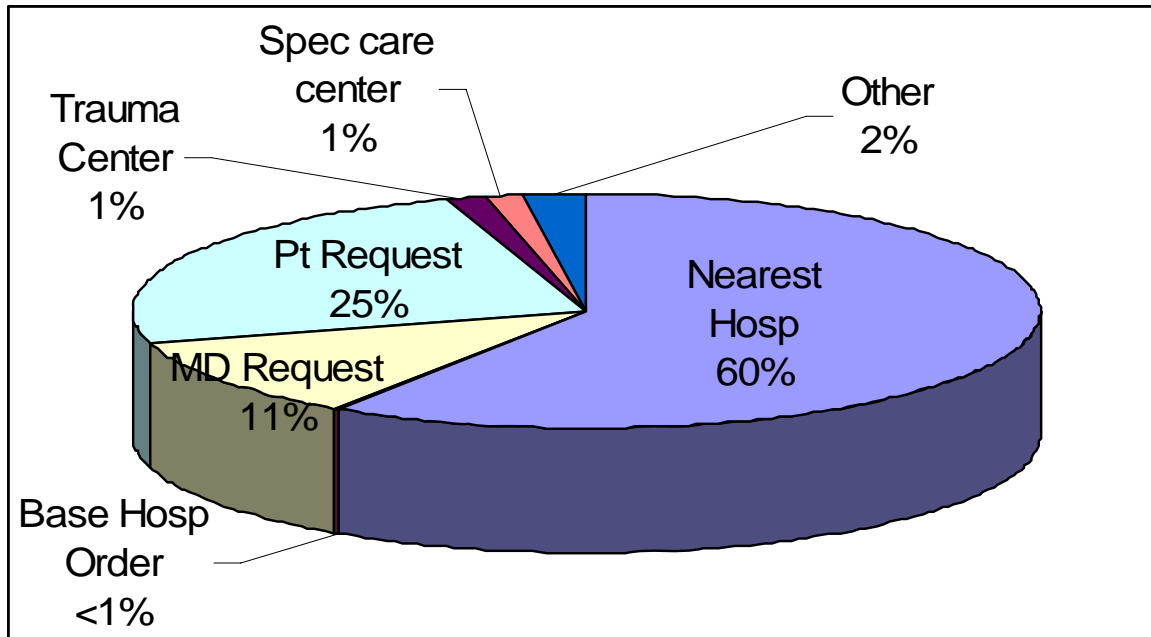
Call Disposition

The table below illustrates that 80% of all requests resulted in the patient being transported to an emergency department.



Poisoning/Overdose category does not differentiate between accidental and intentional ingestion or overdose. Nor does it differentiate between prescription and illicit drugs. Medication reactions and anaphylaxis are included in the Medical category.

As shown in the chart below, for those patients transported to a hospital, approximately 60% of all transports are made to the nearest hospital and 25% of the patients were transported to the hospital of the patient's or family's choice.

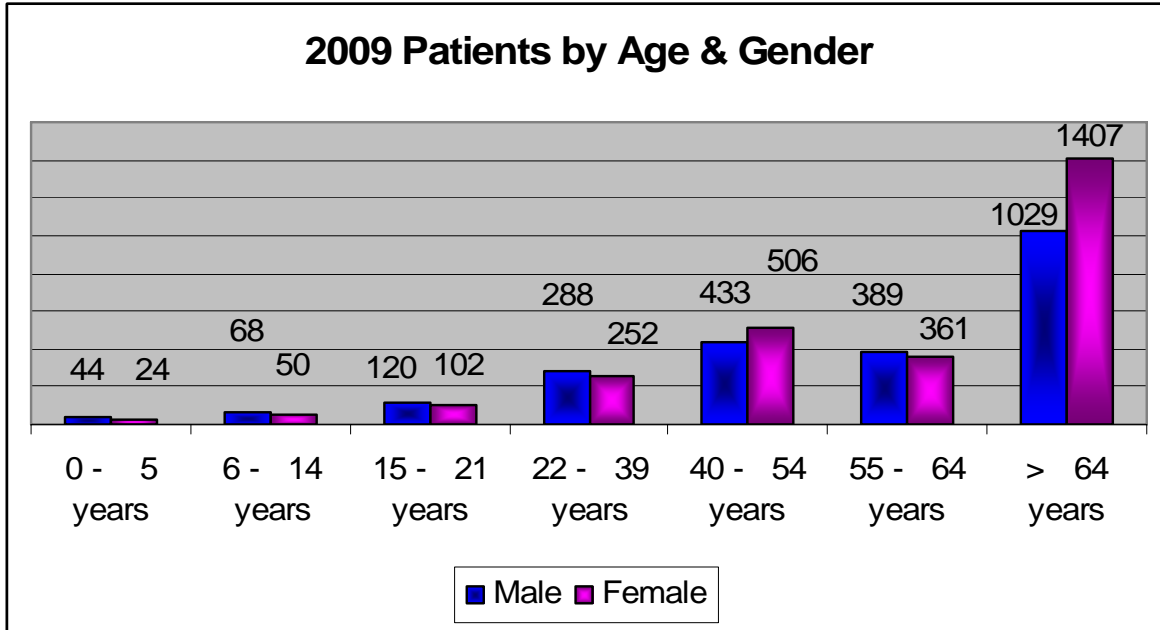


The chart below shows the patient distribution by receiving facilities, including transfers.

Mark Twain-St. Josephs	6
Fresno & Madera County Hospitals	10
U.C. Davis Medical Center	11
Other Sacramento County Hospitals	15
Other Hospital Not Listed	40
Other Stanislaus County Hospitals	41
San Joaquin County Hospitals	48
Bay Area Hospitals	77
Memorial Medical Center	120
Doctors Medical Center	211
Sonora Regional Medical Center	3945

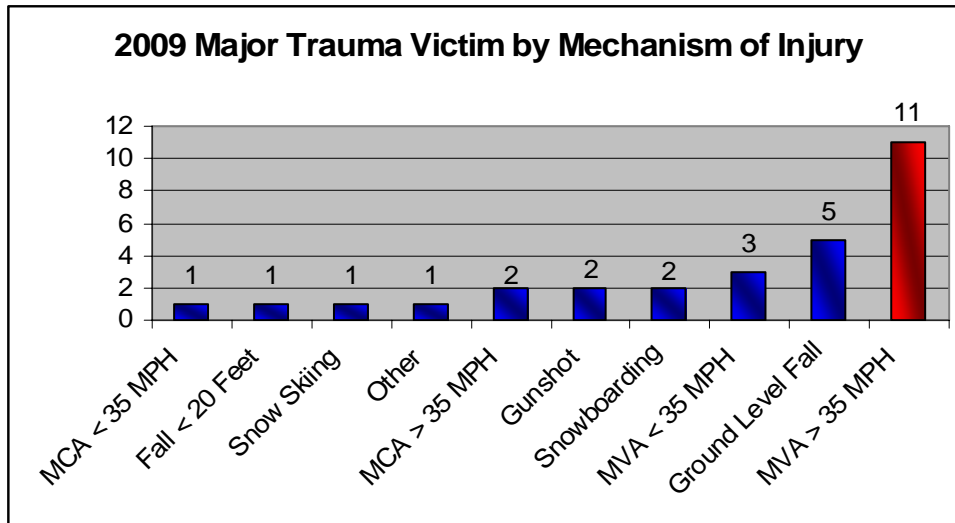
2009 EMS Demographics

Patients greater than 64 years of age account for 47% of ambulance patients. Males comprise 47% of ambulance patients and 53% are females. The average age of ambulance patients is 60 years old; males average 57 years old and females average 63 years old.



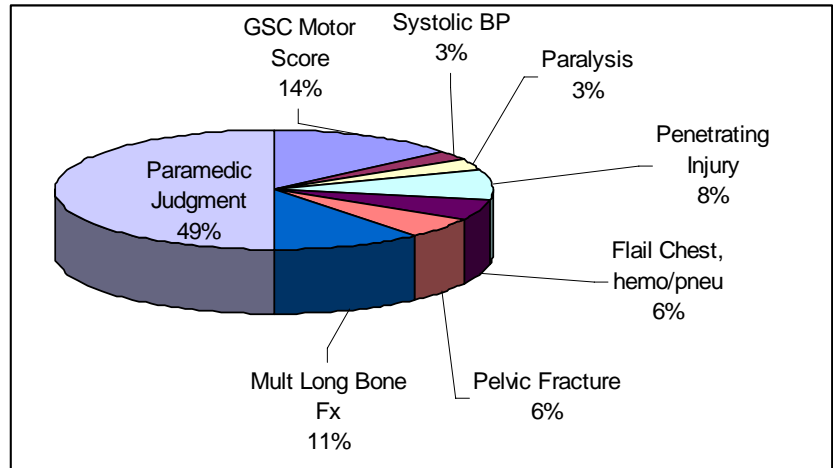
TRAUMA SYSTEM

The chart below shows the mechanism of injury for major trauma victims in Tuolumne County in 2007. Motor vehicle accidents are the greatest mechanism of injury for major trauma victims in Tuolumne County.



The Tuolumne County Trauma Plan has defined ten separate trauma triage criteria. The criteria are designed to categorize those trauma patients with an increased risk of mortality and morbidity due to their injuries. Paramedic judgment was the criteria used 49% of the time.

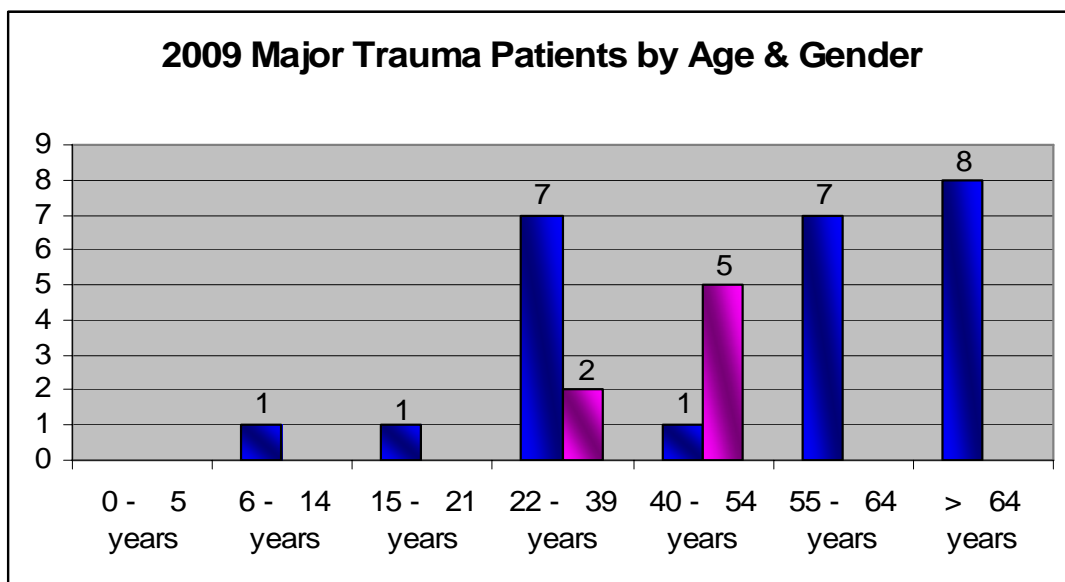
Triage Criteria	#
Systolic BP	1
Paralysis	1
Flail Chest, hemo/pneumothorax	2
Pelvic Fracture	2
Penetrating Injury	3
Multiple Long Bone Fractures	4
GSC Motor Score	5
Paramedic Judgment	18



The Tuolumne County Trauma Plan has identified three major trauma patient destinations.

1. Doctors Medical Center (adult)
2. Memorial Medical Center (adult)
3. U.C. Davis Medical Center (adult & pediatric)

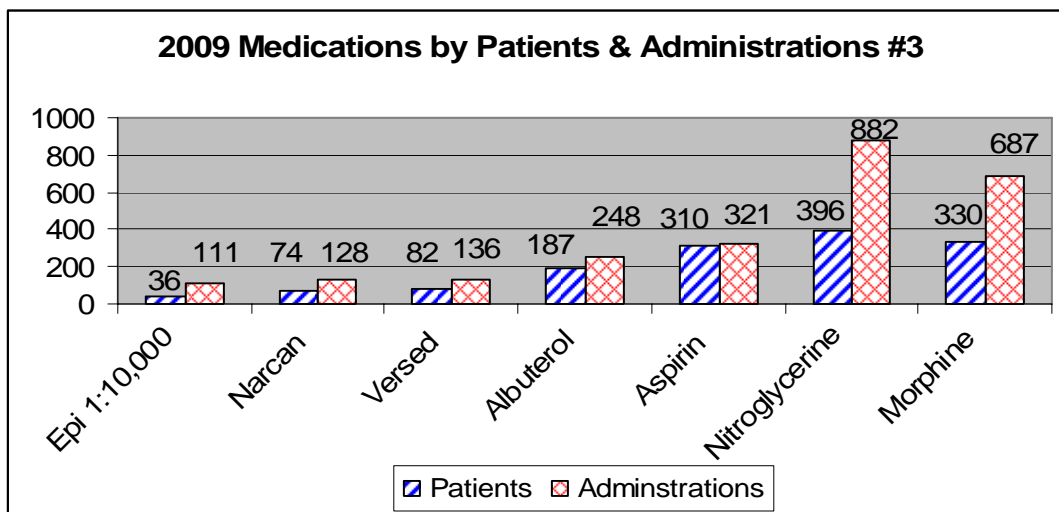
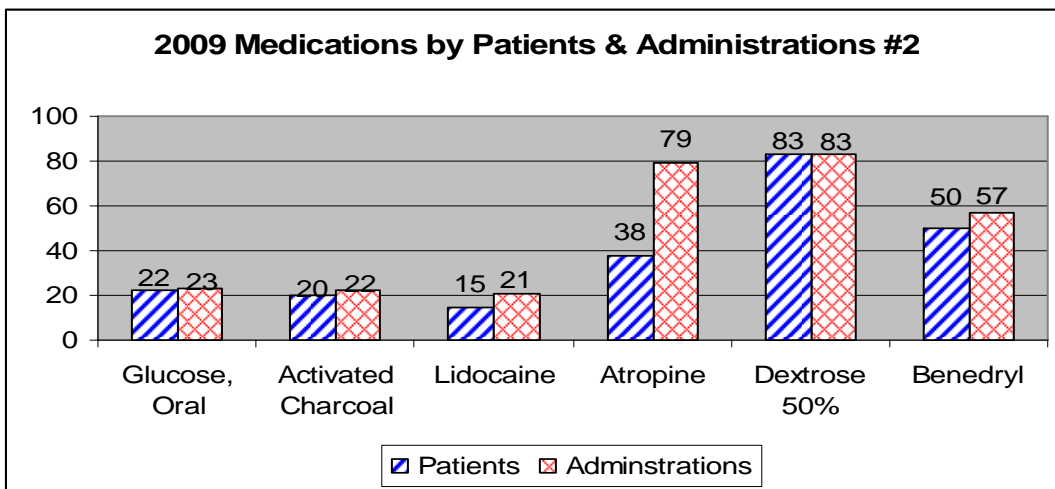
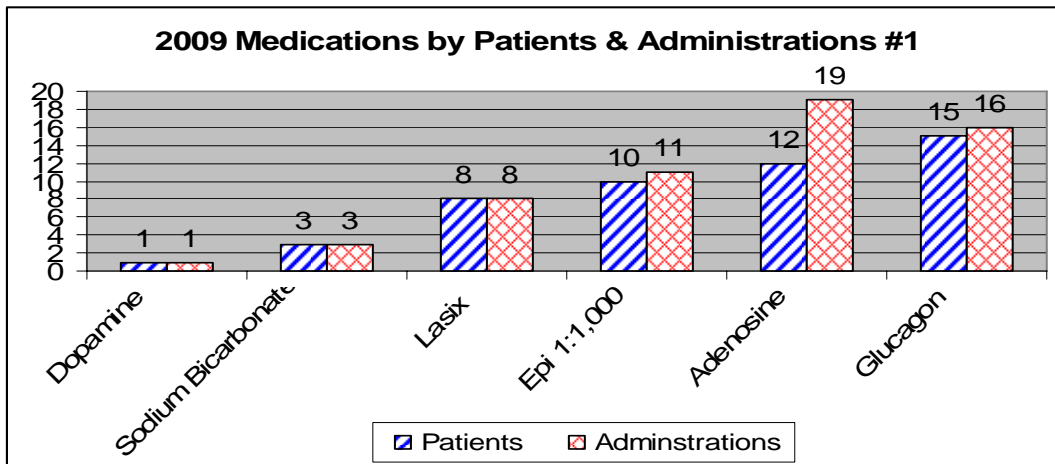
However, under some circumstances, major trauma patients may be taken to another Trauma Center, such as Sutter Roseville Medical Center, or other non-Trauma Center Hospital.



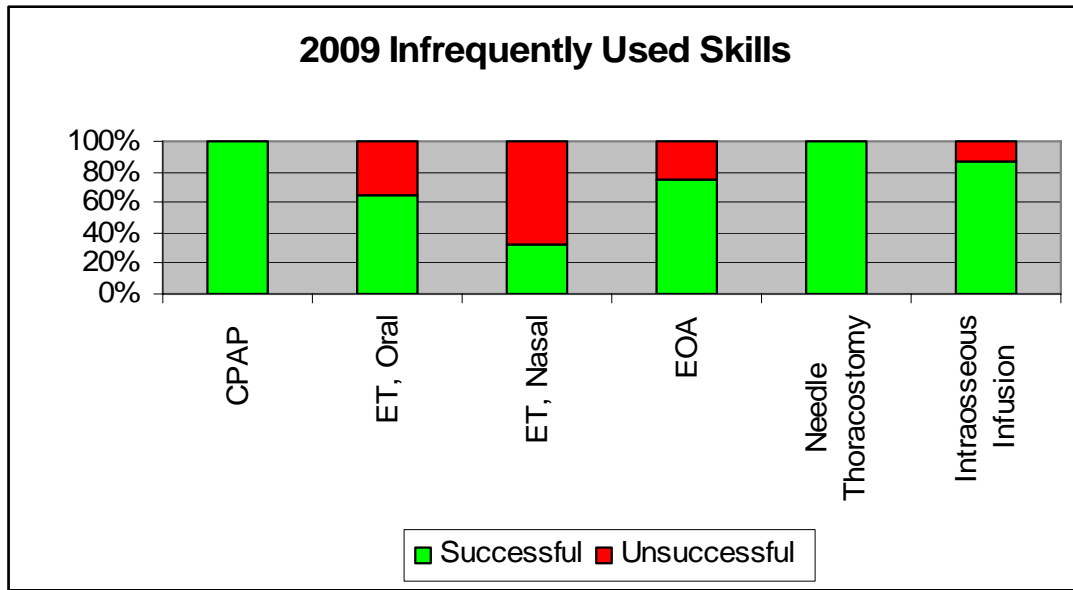
Males comprise 78% of all major trauma patients and lead all age groups except 40 to 54 years, where major injuries to women are five times higher than men of the same age.

ALS MEDICATIONS

The charts below represent the number of times a medication was administered and how many patients received the medication.



ALS INFREQUENTLY USED SKILLS



SUMMARY

I would like to thank Tuolumne County Ambulance Service, and Sonora Regional Medical Center for providing the data that made this report possible. I would also like to thank all of the First Response Agencies for the excellent service they provide to the County of Tuolumne.

The Tuolumne County EMS System remains a strong asset to the County and its citizens and visitors. The ten-year trend shows a general increase in calls for EMS service, particularly along the Highway 108 corridor.

The changing environment of the upcoming years will afford us many opportunities to improve the EMS System. The decreasing reimbursement for services rendered and increasing costs will provide many challenges to the County of Tuolumne, maintenance and expansion of the EMS system should be one of the top priorities of the County. The almost constant evolving science of prehospital medicine will require updating of treatment guidelines, training practices, and equipment.