



# EMS SYSTEM REPORT

JULY 1, 2012

ISSUE 1

## Message from the Director and Medical Director

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We are extremely happy to present the first systemwide Emergency Medical Services (EMS) System Data Report. The EMS Agency is charged with the coordination of the EMS System for Los Angeles County (LA Co), which is comprised of EMS Provider Agencies (fire departments, ambulance companies and the Sheriff's Department) and 9-1-1 receiving hospitals.



Cathy Chidester  
Director

The EMS Agency's role in coordination is to ensure that when a person calls 9-1-1 and requires emergency medical services, they will receive the same quality medical service and access to the appropriate hospital capable of meeting their medical needs regardless of where they are in the County, from the ocean to the desert. Because of LA Co's size, system coordination is a very complex task.

Since its inception in the 1970s, the EMS system has evolved to

address the major causes of death and disability by regionalizing trauma, cardiac, stroke, pediatric and disaster preparedness. With the support of the Board of Supervisors, the EMS Commission and our stakeholder organizations, LA Co is recognized as one of the leading EMS systems in the County. For years, we have been utilizing our data but have not taken the opportunity to publish a comprehensive summary for the com-

munity. Our current database contains over 12 million patient records and is one of the nation's largest repositories of EMS data.

The goals of this data report include:

**Goal 1** - Provide EMS data to our system participants, and in doing so encourage them to recognize the importance of their data in managing our system.

**Goal 2** - Highlight data gaps and its impact to our ability when making data driven decisions and the limitations for evaluating the quality of care rendered to our patients.

**Goal 3** - Demonstrate how the EMS system design parallels the healthcare needs of the community and addresses the leading causes of death and disability (heart attack, stroke and trauma) as reported by Public Health.

We hope this report will provide you with a basic understanding of our system. Future use of this data will help guide us as we continue to shape the system to meet the ever changing community needs. This can be done only through the cooperative efforts of system stakeholders and, timely and accurate data collection.



Dr. William Koenig  
Medical Director

## System Demographics

### 73 9-1-1 Receiving Hospitals

- 43 EDAP (Emergency Department Approved for Pediatrics)
- 6 Pediatric Medical Centers
- 6 Pediatric Trauma Centers
- 14 Trauma Centers
- 21 Paramedic Base Hospitals
- 31 STEMI Receiving Centers
- 30 Approved Stroke Centers
- 55 Perinatal Centers
- 40 Hospitals with Neonatal Intensive Care Unit
- 9 Sexual Assault Response Team Centers
- 13 Disaster Resource Centers

### EMS Provider Agencies

- 31 Public Safety EMS Provider Agency
- 27 Licensed Basic Life Support Ambulance Operators
- 18 Licensed Advanced Life Support Ambulance Operators
- 15 Licensed Critical Care Transport Ambulance Operators
- 6 Licensed Ambulette Operators

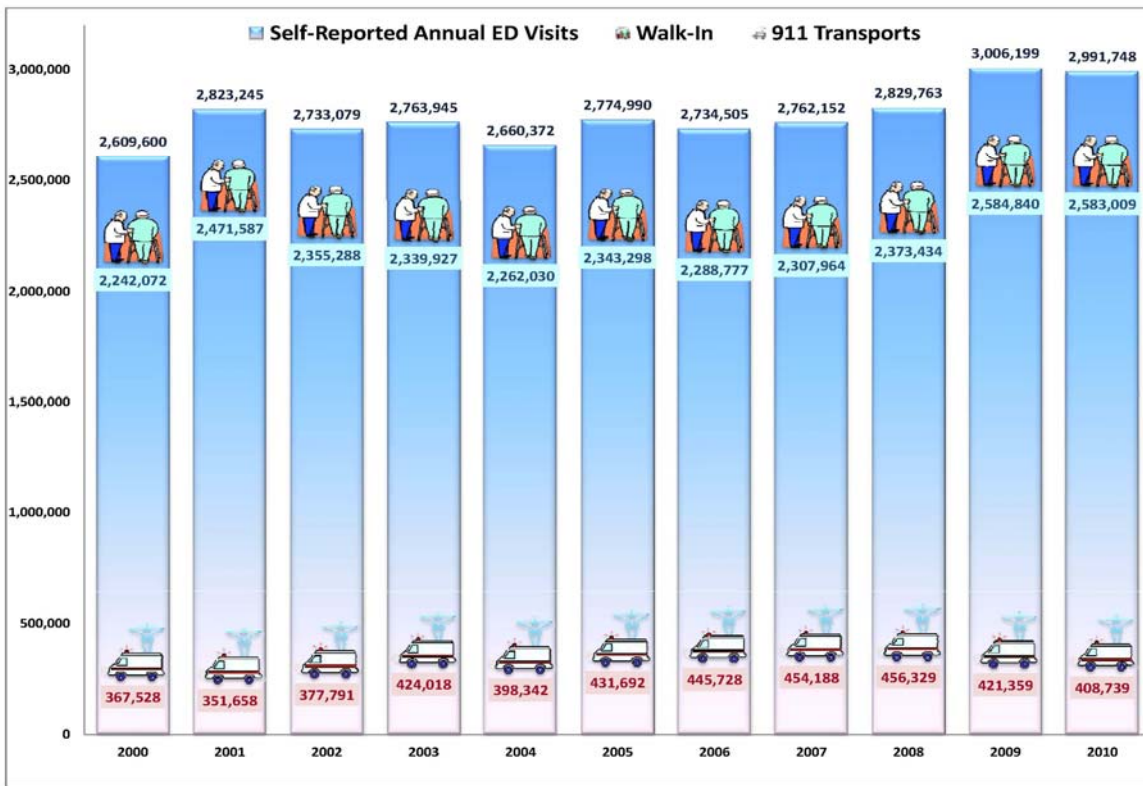
### EMS Practitioners

- 3,728 Accredited Paramedics
- 6,939 Certified EMTs by LA Co EMS Agency
- 799 Certified Mobile Intensive Care Nurses

### SPECIAL POINTS OF INTEREST:

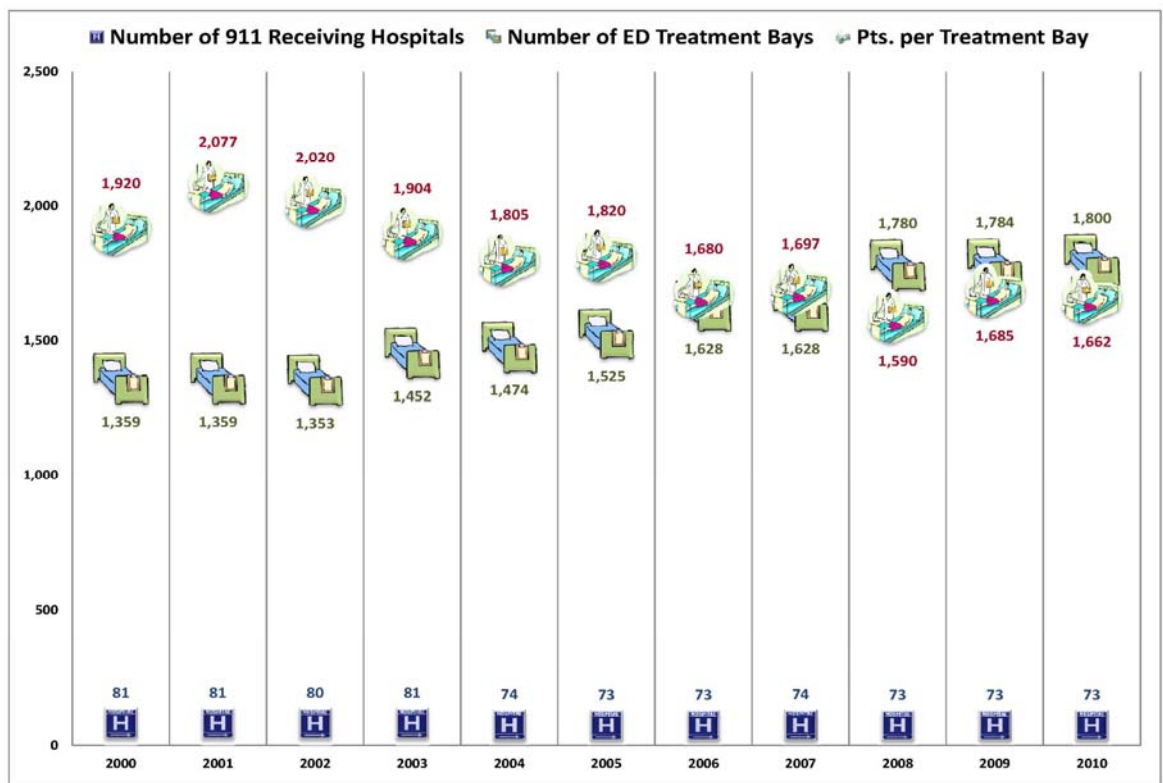
- Trauma system data facts are in pages 8-12
- STEMI program system wide information is detailed in pages 14-15

## Emergency Department Volume



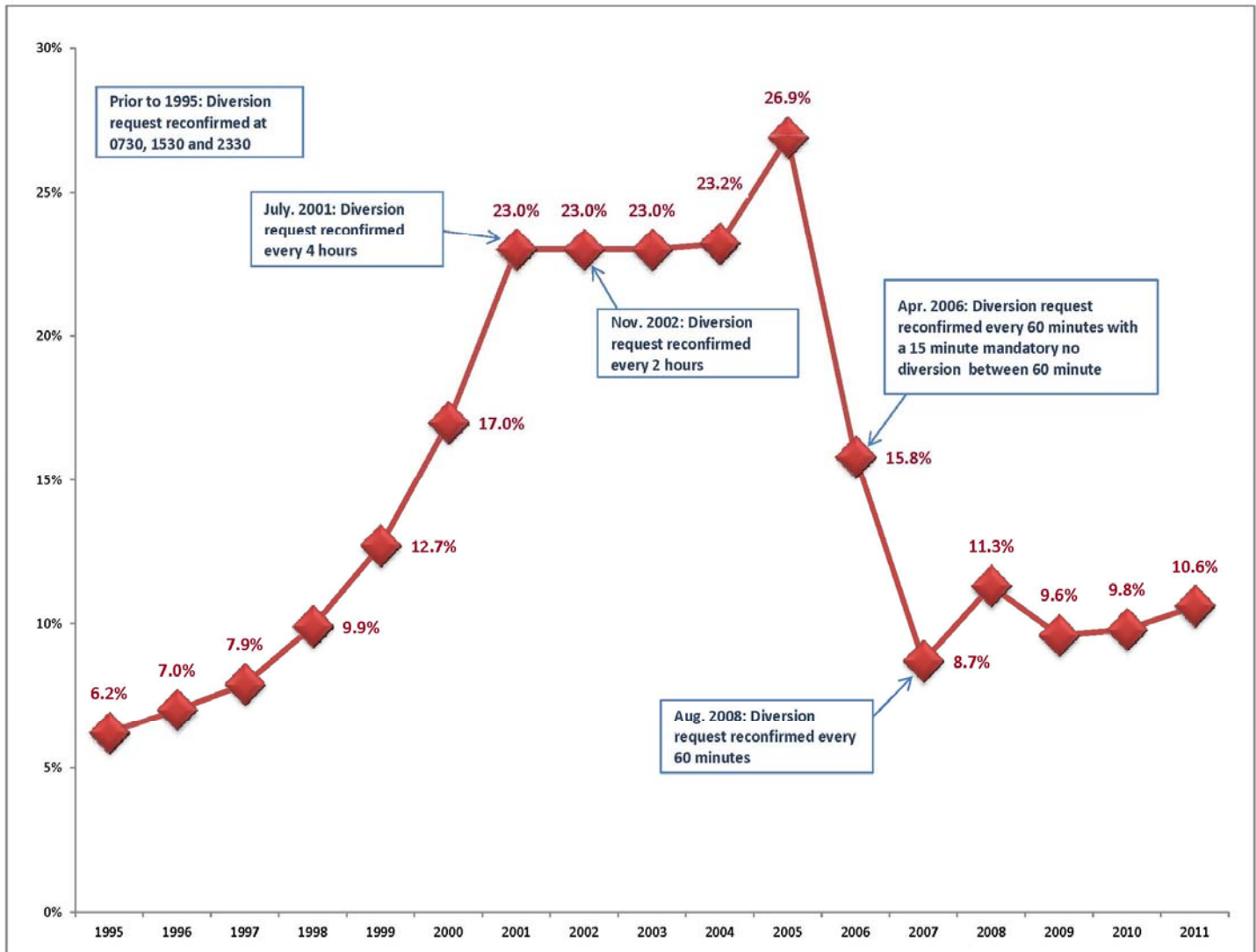
Systemwide, one out of every ten patients who visit the Emergency Department is transported via the 9-1-1 system.

## Patients per Treatment Bay



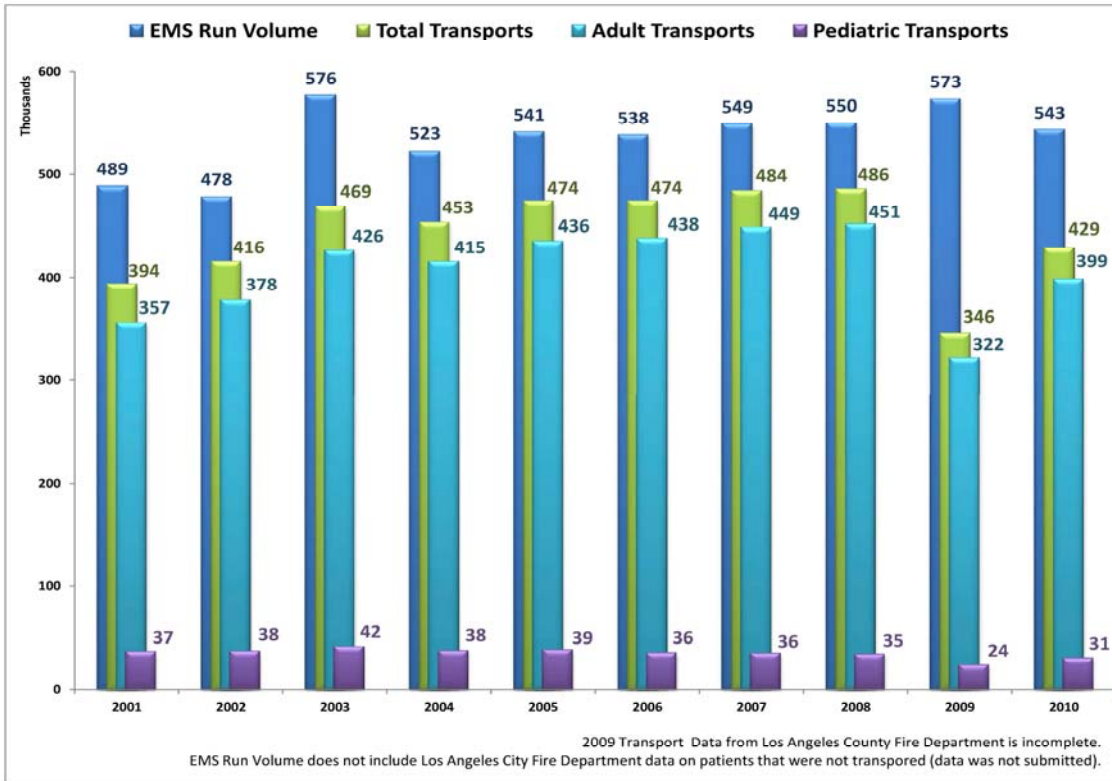
Although the number of hospitals decreased by 10% in the last decade, the number of treatment bays increased by 35%.

## Emergency Department Saturation



In the last 16 years, hospitals have requested diversion of paramedic units from a low of 1.5 hrs/day/hospital in 1995 to a high of 6.5 hrs/day/hospital in 2005. Although seasonal increases occur during the “flu” season, a significant overall increase in diversion hours was seen between the late 1990s and 2005. The Hospital Association of Southern California (Los Angeles Area) and the EMS Agency collaborated to revise the diversion policy in order to mitigate the increasing diversion problem. Diversion hours have stabilized in the last five years to an average of 2.4 hrs/day/hospital.

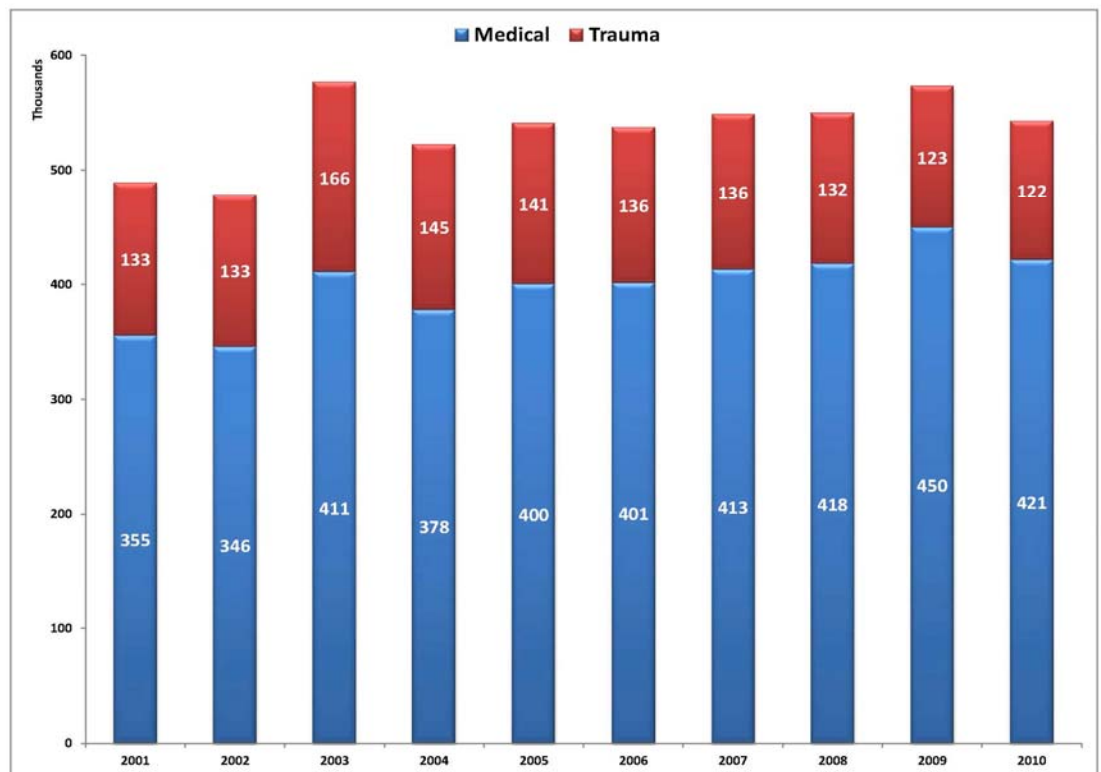
## EMS Run Volume



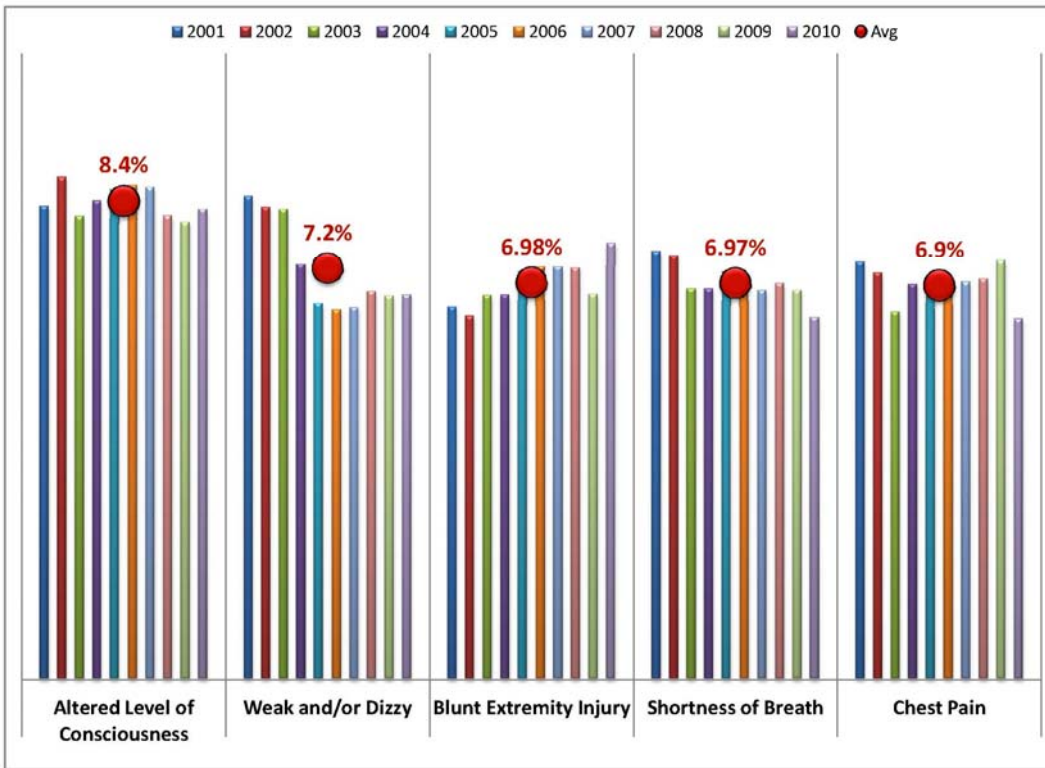
EMS responses that do not result in a transport include patients who refuse transport (AMA), dead-on-arrival (DOA), and pronounced dead in the field.

## EMS Transports

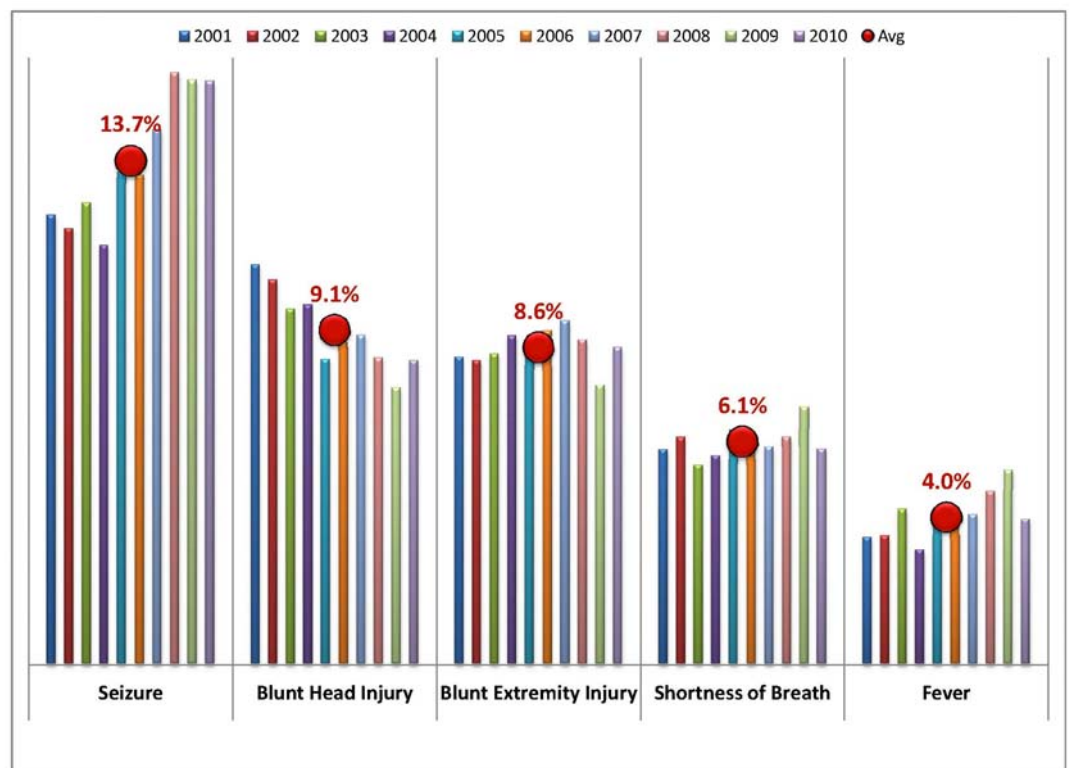
On average, 25% of EMS transports have a traumatic injury and 75% are related to medical illness.



## Most Prevalent Adult Chief Complaints

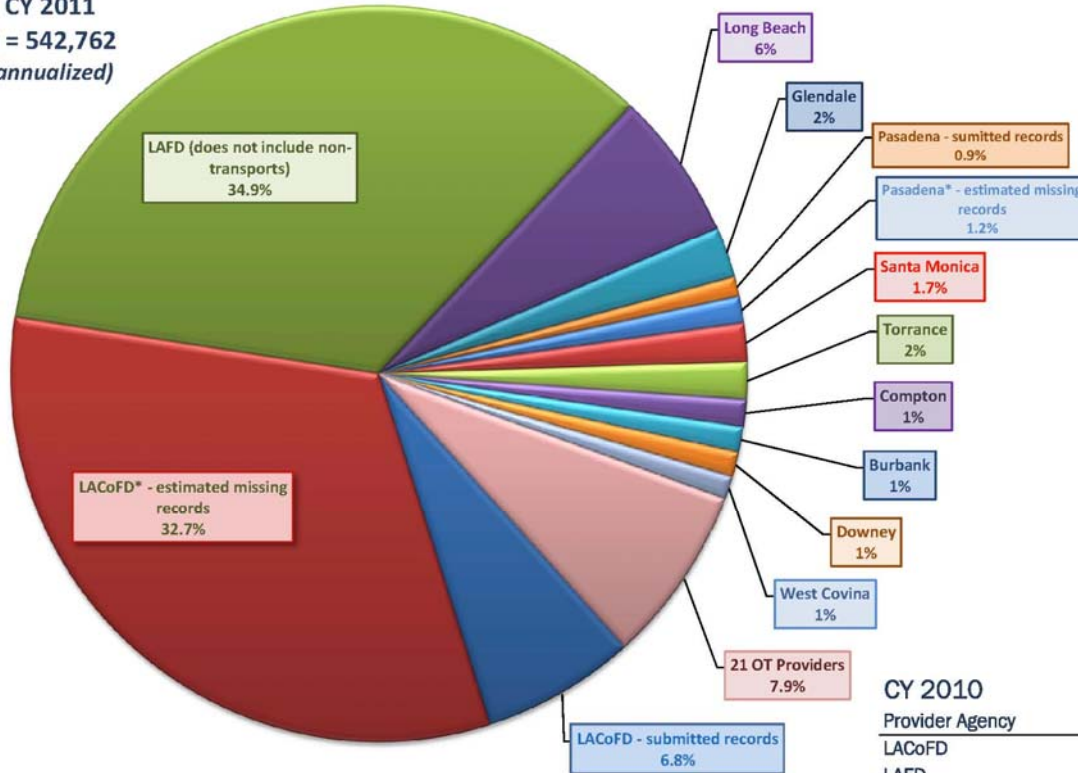


## Most Prevalent Pediatric Chief Complaints



## EMS Volume by Provider Agency

CY 2011  
n = 542,762  
(annualized)



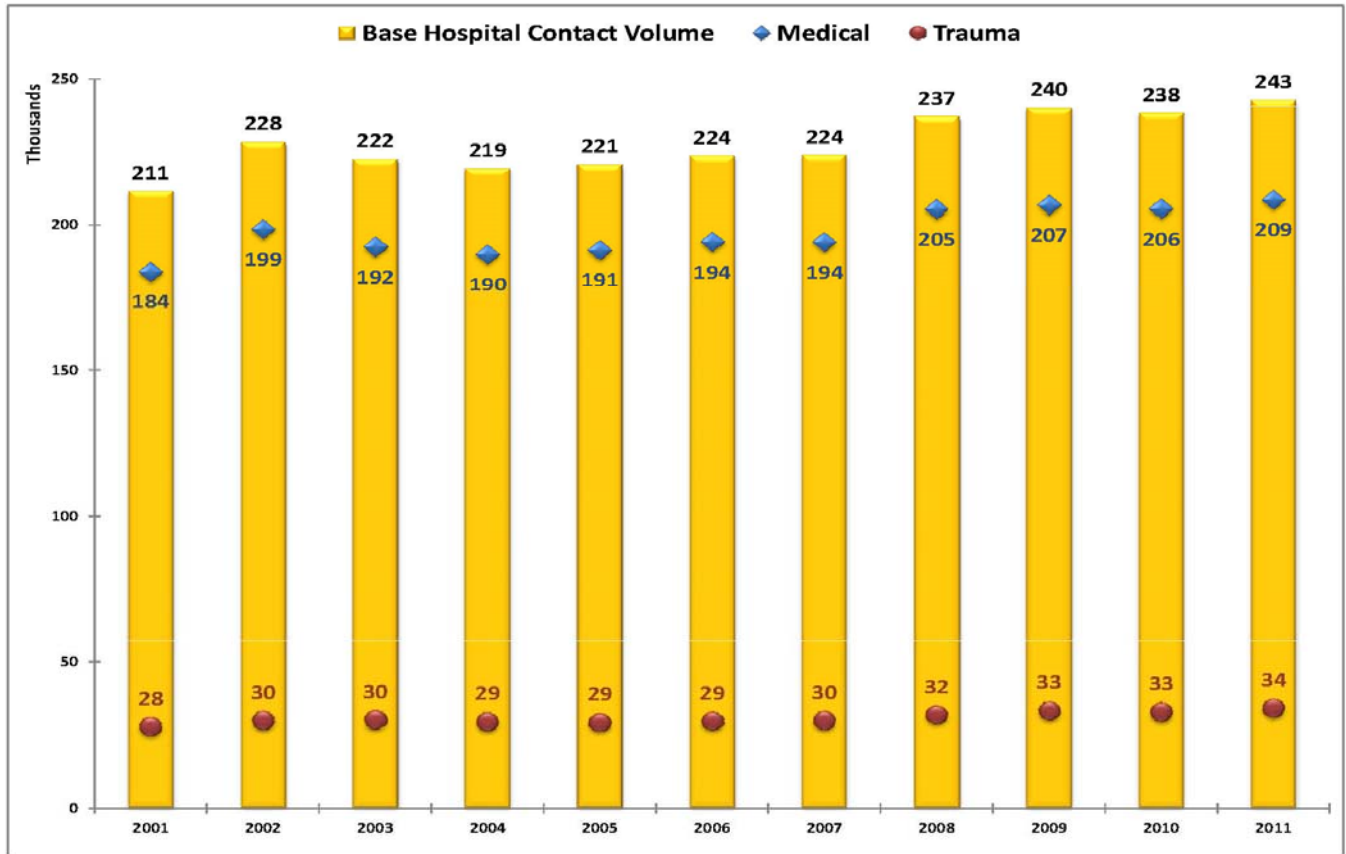
### CY 2010

Provider Agency	EMS Responses	%
LACoFD	213,785	40%
LAFD	188,888	35%
Long Beach	33,776	6%
Glendale	11,764	2.2%
Pasadena	11,125	2.1%
Santa Monica	8,945	1.7%
Torrance	8,681	1.6%
Compton	6,355	1.2%
Burbank	6,129	1.1%
Downey	6,013	1.1%
West Covina	5,449	1.0%
Alhambra	4,011	0.7%
Redondo Beach	3,661	0.7%
Culver City	3,626	0.7%
Montebello	3,580	0.7%
Beverly Hills	3,452	0.6%
Monterey Park	3,146	0.6%
Arcadia	3,061	0.6%
Monrovia	2,343	0.4%
La Verne	2,339	0.4%
Manhattan Beach	1,785	0.3%
San Gabriel	1,603	0.3%
Santa Fe Springs	1,532	0.3%
El Segundo	1,480	0.3%
South Pasadena	1,083	0.2%
Hermosa Beach	994	0.2%
San Marino	623	0.1%
Sierra Madre	562	0.1%
Vernon	548	0.1%
Avalon	268	0.05%
La Habra Heights	202	0.04%
LACo Sheriff's	85	0.02%
<b>Total</b>	<b>540,894</b>	

75% of all EMS responses are handled by the Los Angeles County Fire Department (LACoFD) and the Los Angeles Fire Department (LAFD).

LACoFD provides EMS services to the unincorporated areas of the county and to over 50 contracted cities.

## Base Hospital Volume



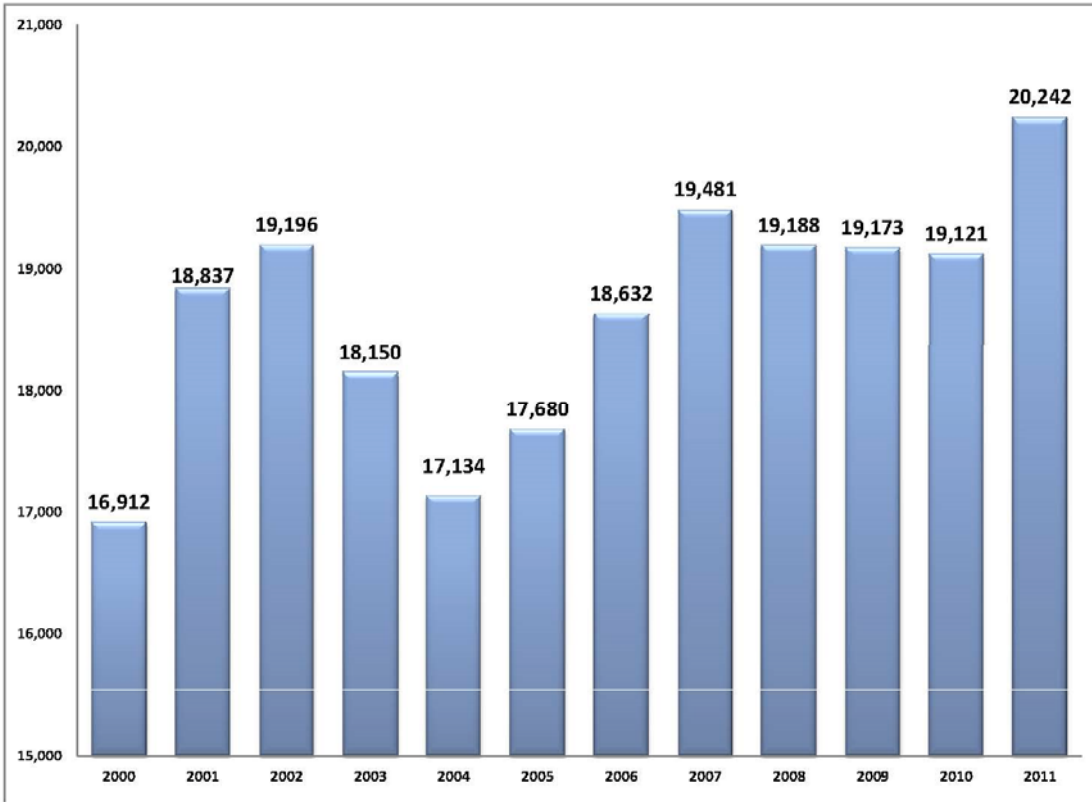
## Volume by Base Hospital

CY 2011

Base Hospital	Base Contacts	%
LAC+USC Medical Center	20,454	8%
Harbor/UCLA Medical Center	20,150	8%
California Hospital Medical Center	16,402	7%
St. Francis Medical Center	14,353	6%
Long Beach Memorial Medical Center	14,123	6%
Cedars Sinai Medical Center	13,770	6%
Antelope Valley Hospital	13,401	6%
Citrus Valley Med. Ctr., Queen of the Valley Campus	13,284	5%
Ronald Reagan UCLA Medical Center	12,966	5%
Huntington Memorial Hospital	11,402	5%
Northridge Hospital Medical Center	10,880	4%
Pomona Valley Hospital Medical Center	10,440	4%
Presbyterian Intercommunity Hospital	10,251	4%
St. Mary Medical Center	9,985	4%
Methodist Hospital of Southern California	9,396	4%
Providence St. Joseph Medical Center	8,913	4%
Providence Little Company of Mary Med. Ctr. Torrance	7,700	3%
Providence Holy Cross Medical Center	7,077	3%
Glendale Adventist Medical Center	6,957	3%
Henry Mayo Newhall Memorial Hospital	6,183	3%
Torrance Memorial Medical Center	4,548	2%
<b>Total</b>	<b>242,635</b>	

51% of EMS transports required on-line medical control from one of the designated paramedic Base Hospitals.

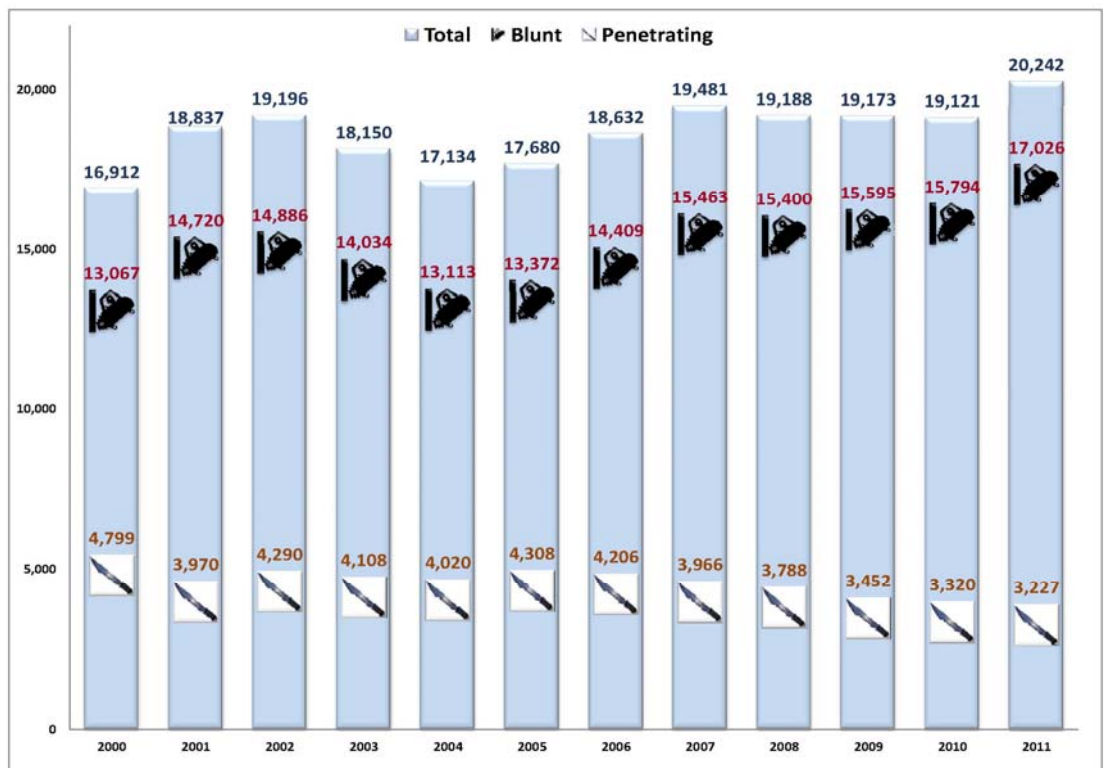
## Trauma Center Volume



Over the last decade, EMS transport of severely injured patients to Trauma Centers increased by almost 20%.

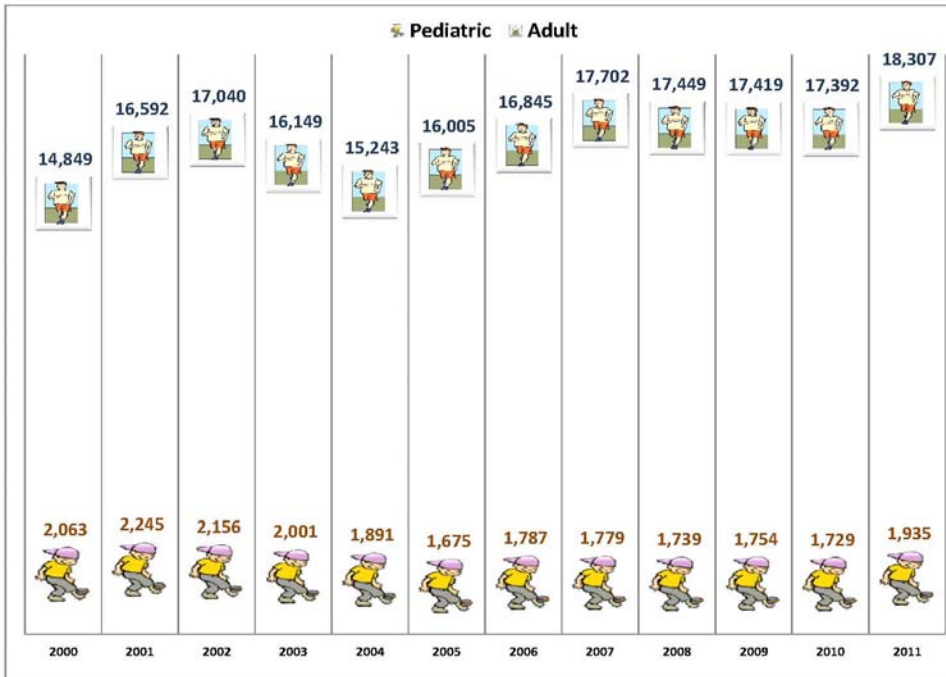
## Blunt vs Penetrating Injury

On average, 18% of traumatic injuries are penetrating. Data shows a decreasing trend in penetrating injuries and an increase in blunt injuries.





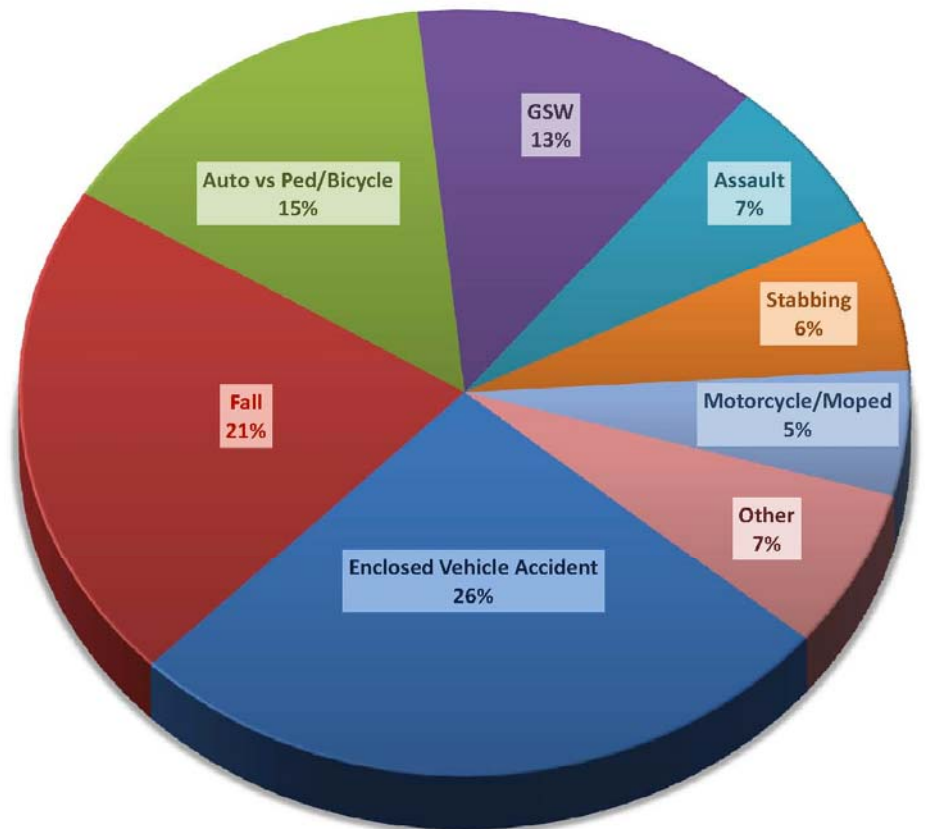
## Adult vs Pediatric Trauma



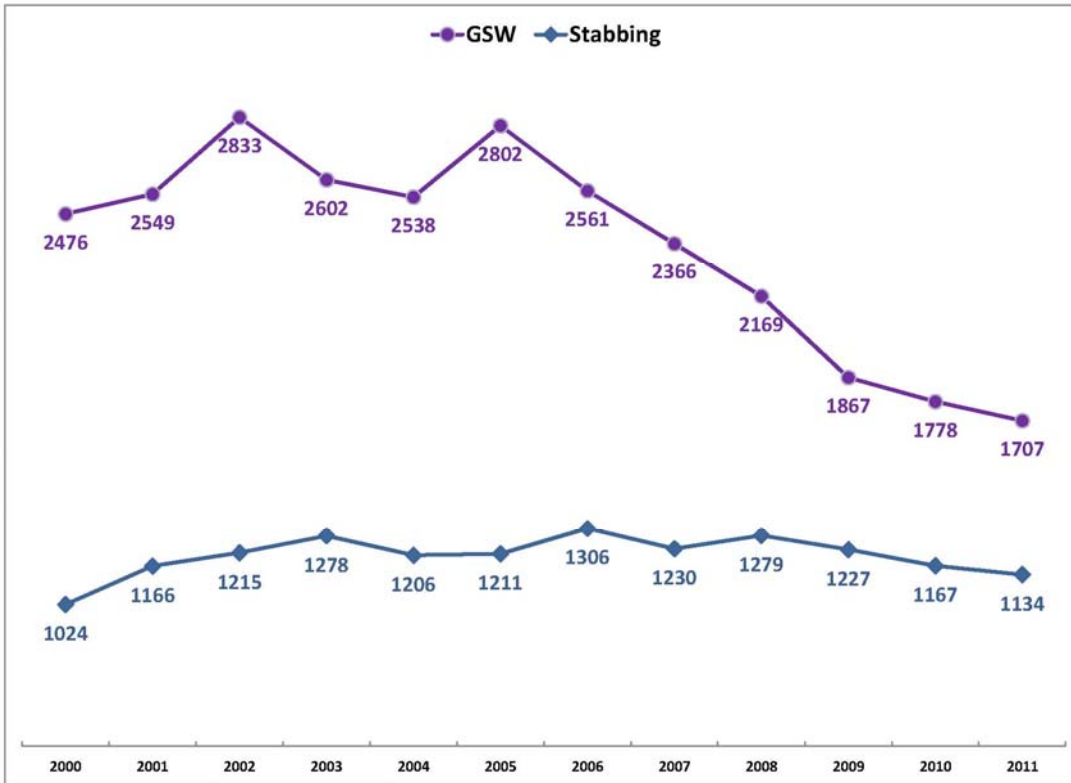
On average, 9% of patients that meet trauma center criteria or guidelines are children age 14 years or younger.

## Mechanisms of Injury

46% of traumatic injuries treated at trauma centers involved motorized vehicles.



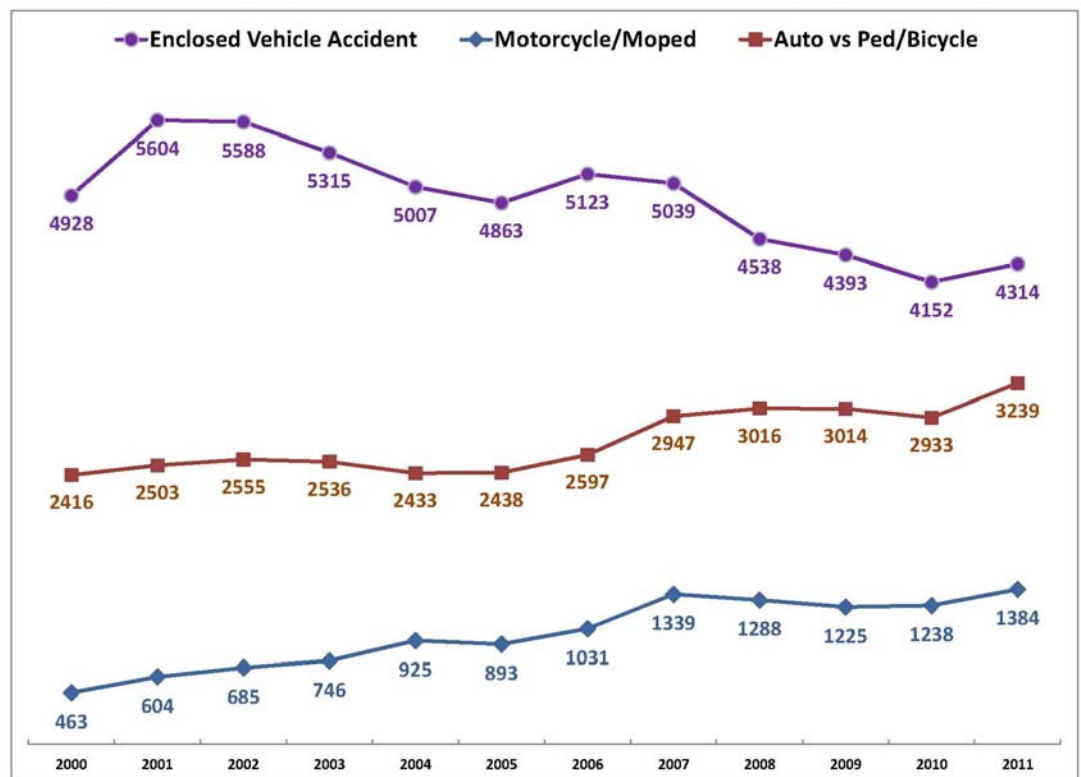
## Penetrating Injuries



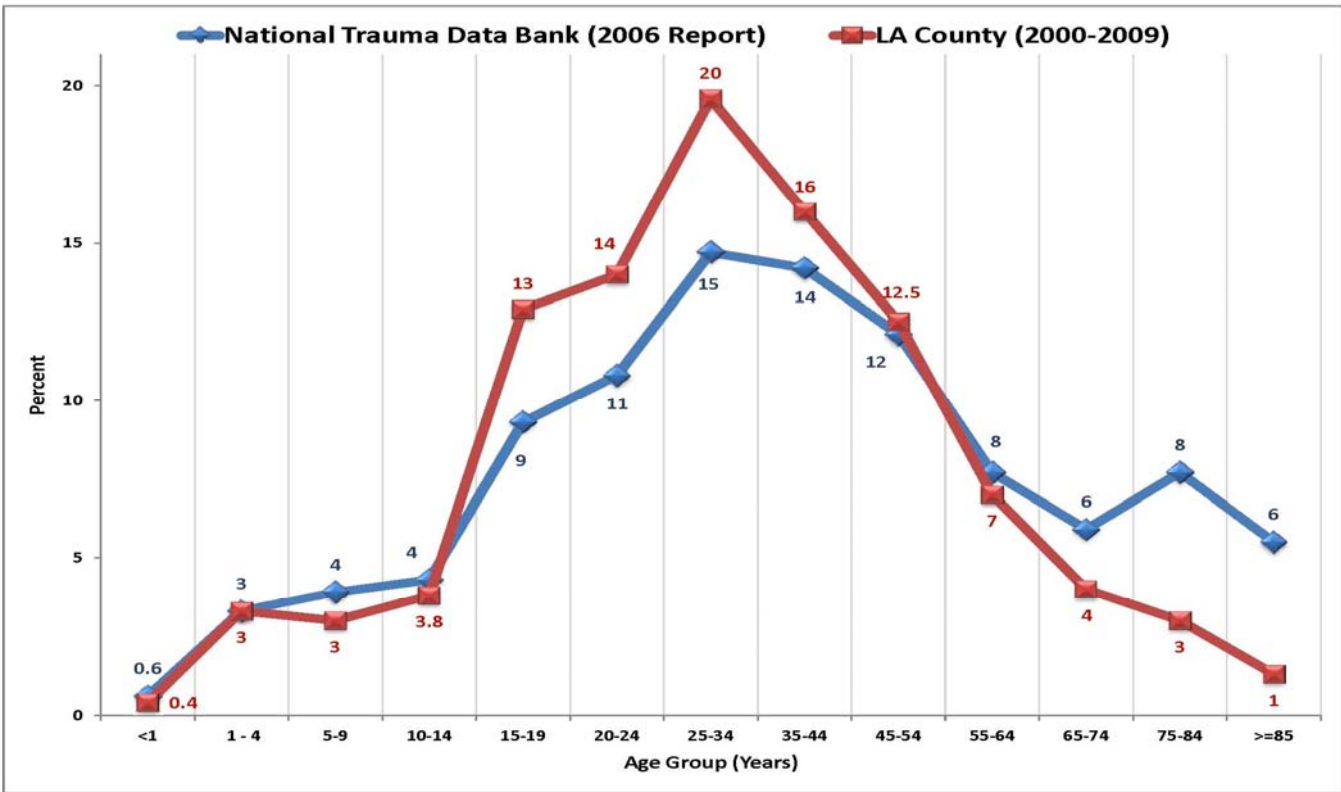
Gunshot wounds (GSW) have decreased an average of 7% per year; whereas stabbing incidents have increased slightly over the last decade.

## Injuries Involving Motorized Vehicles

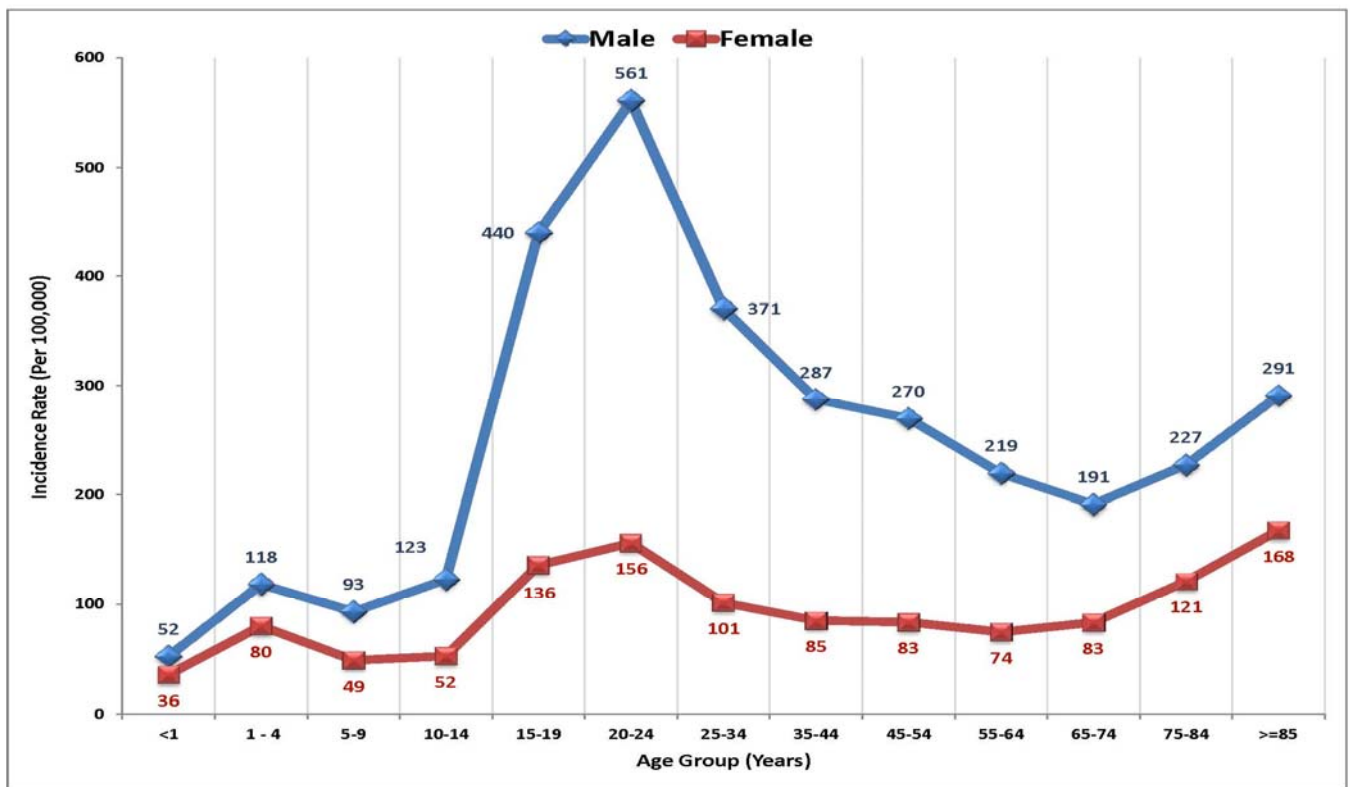
Enclosed motor vehicle accidents have decreased 20% in the last decade; whereas injury rate increased significantly in Motorcycle/Moped (>20%) and Auto vs Pedestrian/Bicycle (>100%) accidents.



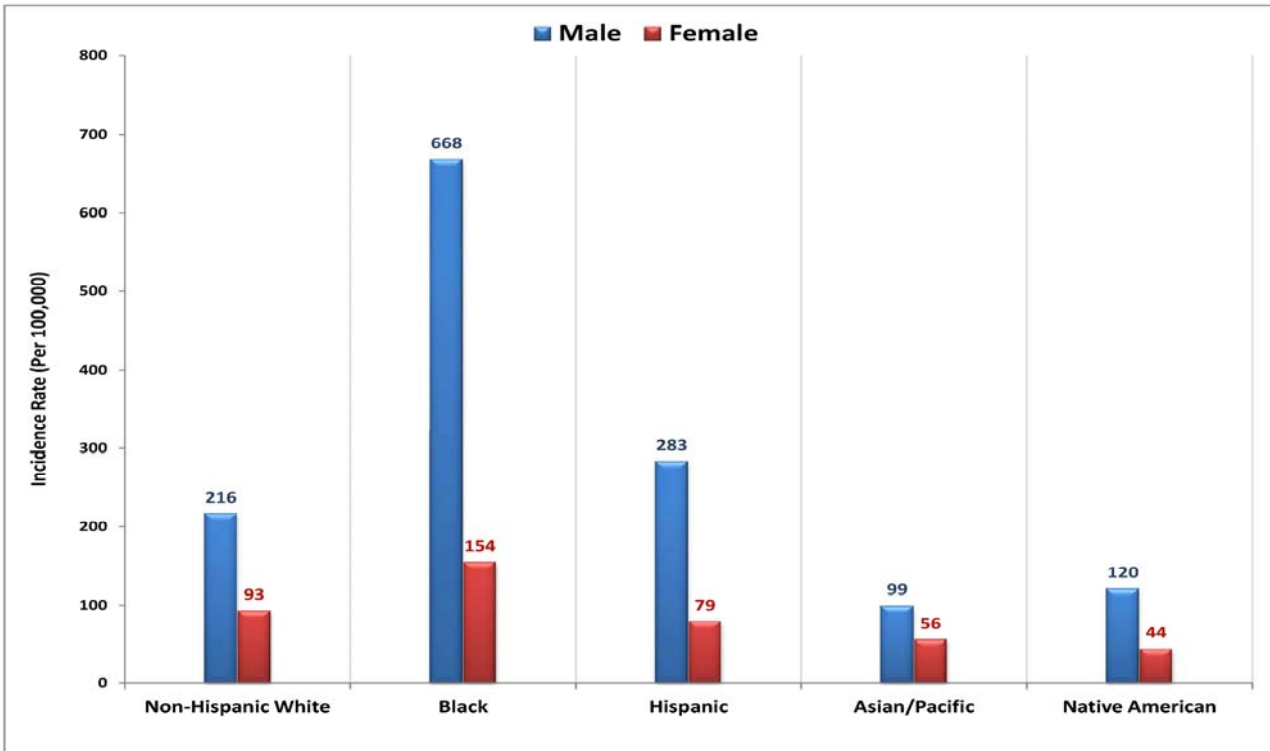
### Trauma Injuries by Age Group



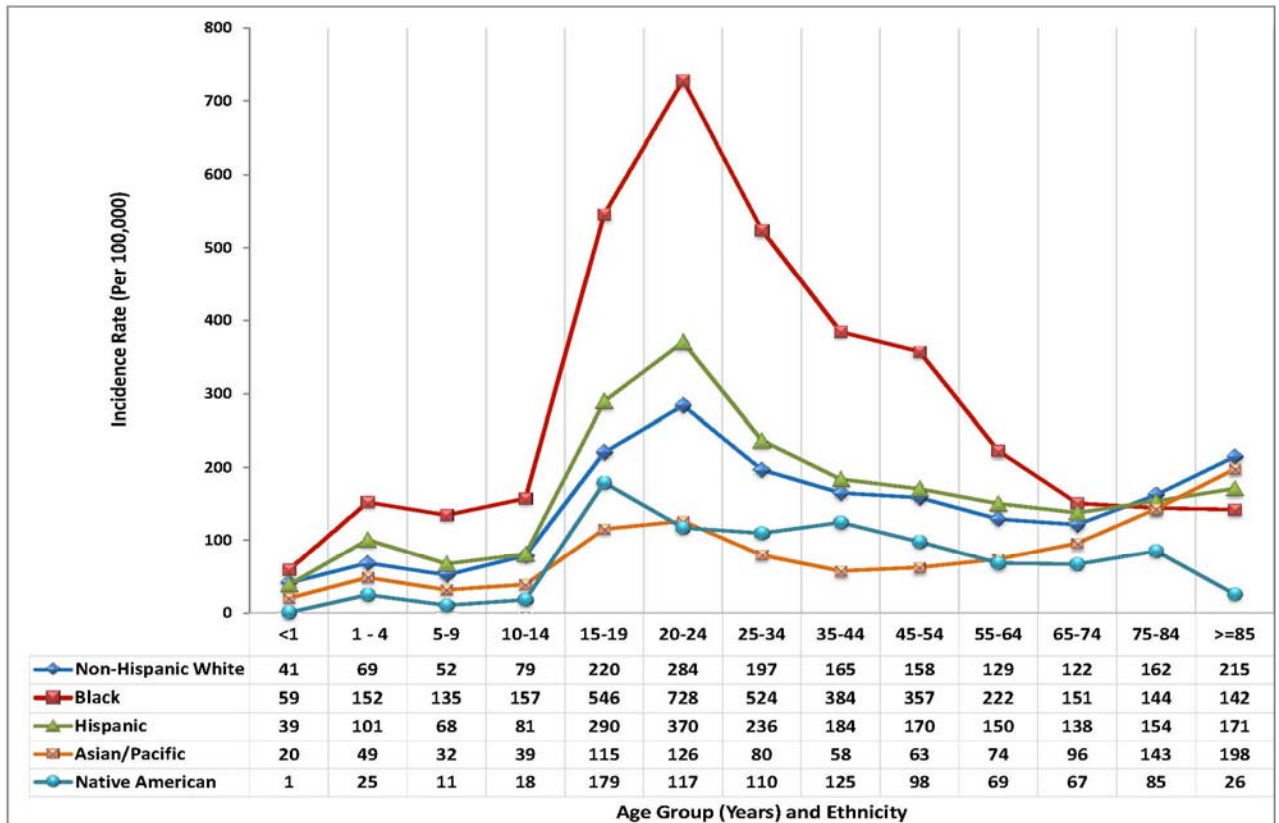
### Trauma Incidence by Gender and Age Group



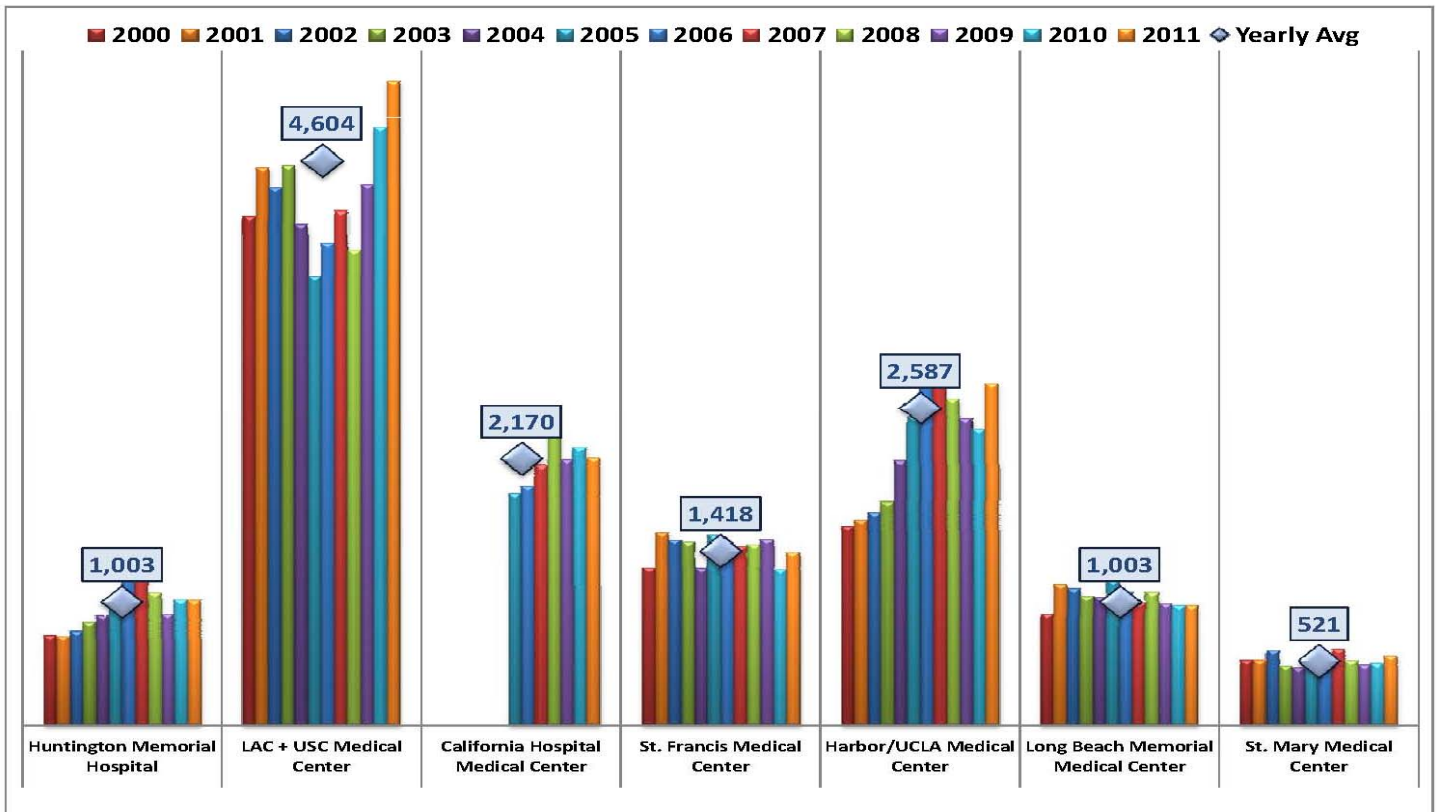
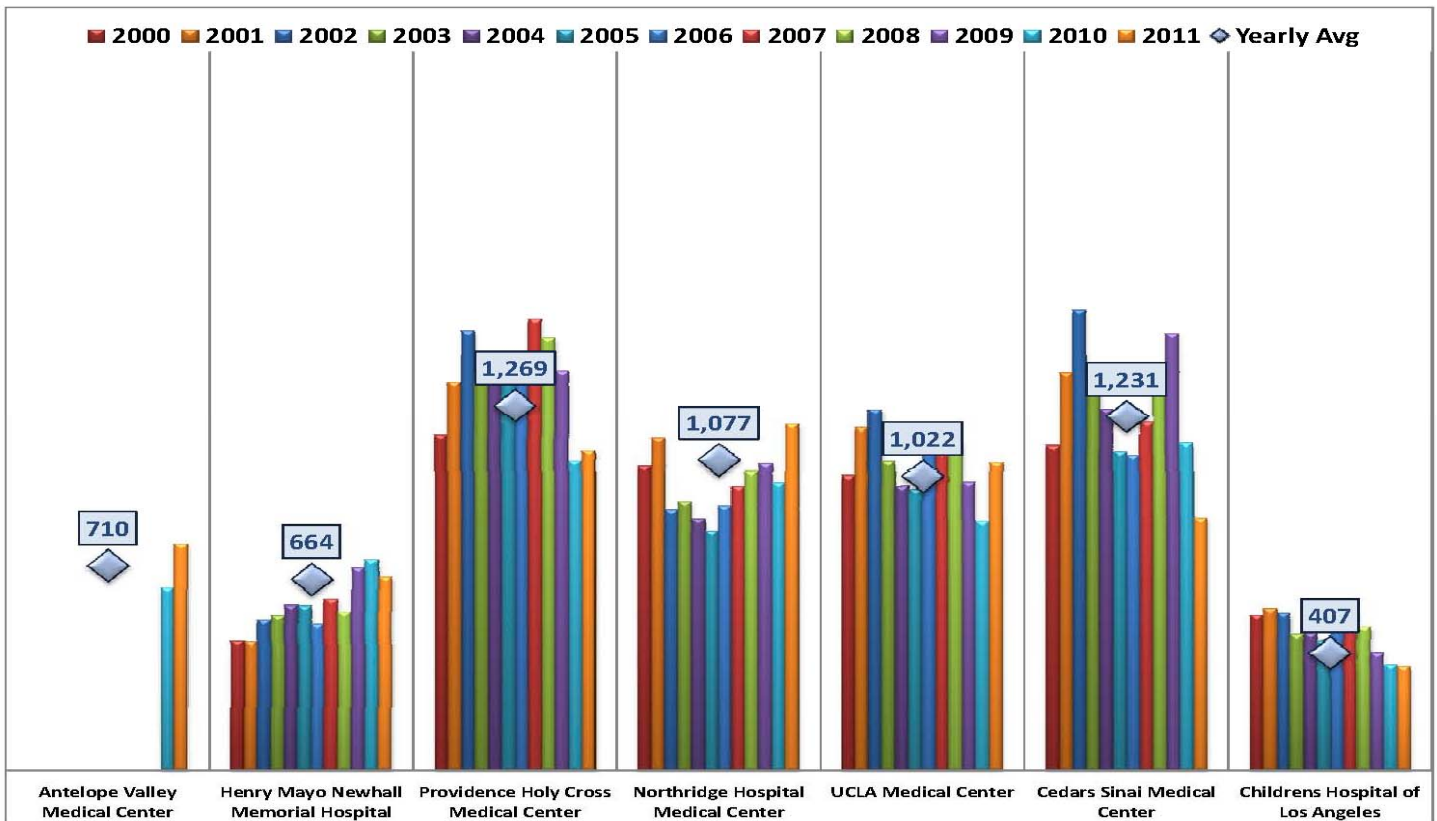
## Trauma Incidence by Gender and Ethnicity



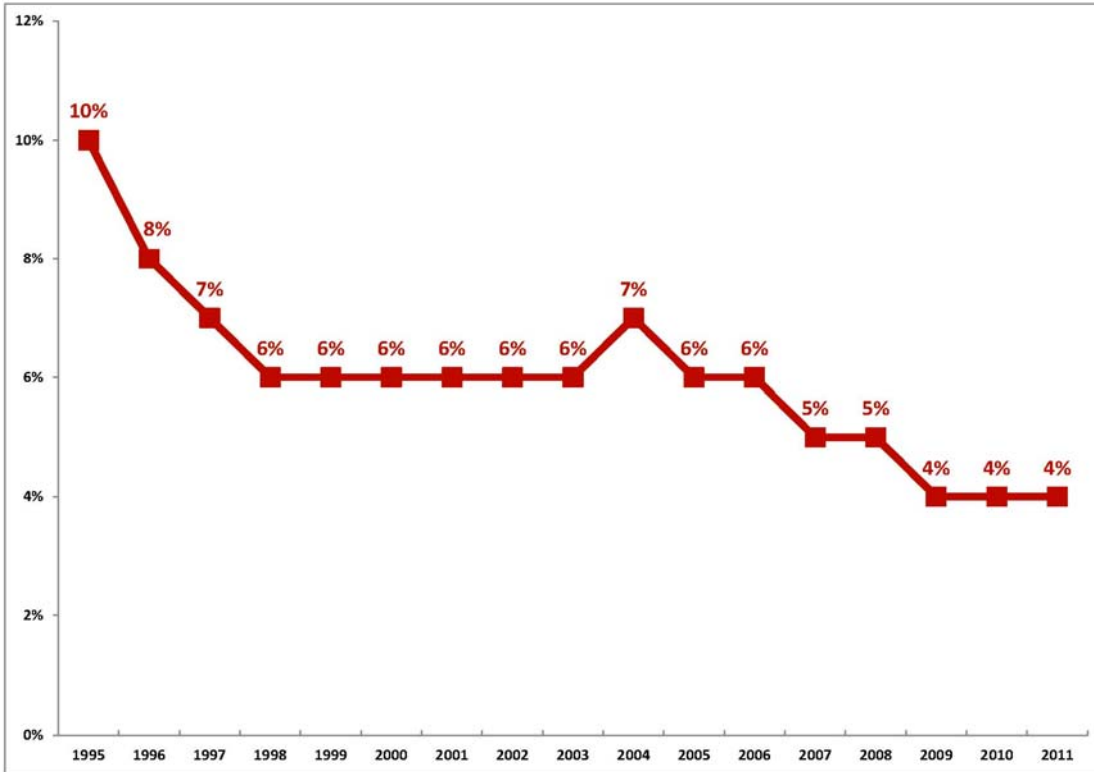
## Trauma Incidence by Age Group and Ethnicity



## Trauma Volume by Trauma Center



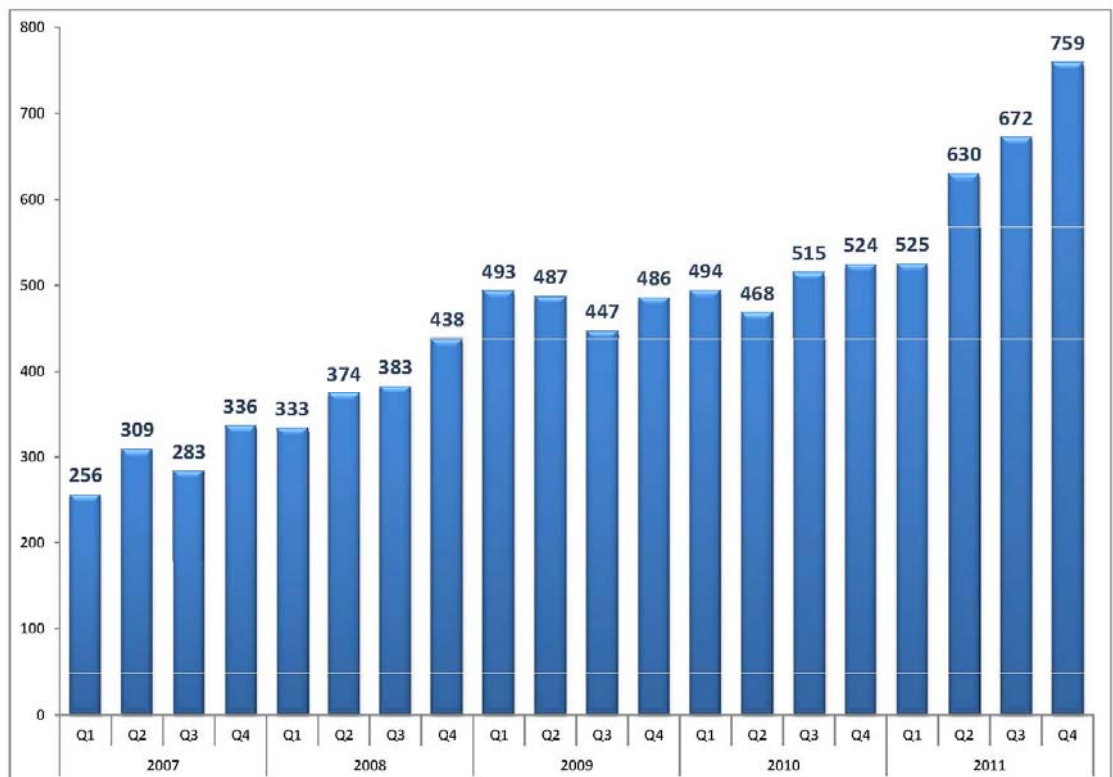
## Trauma Mortality Rates Over Time



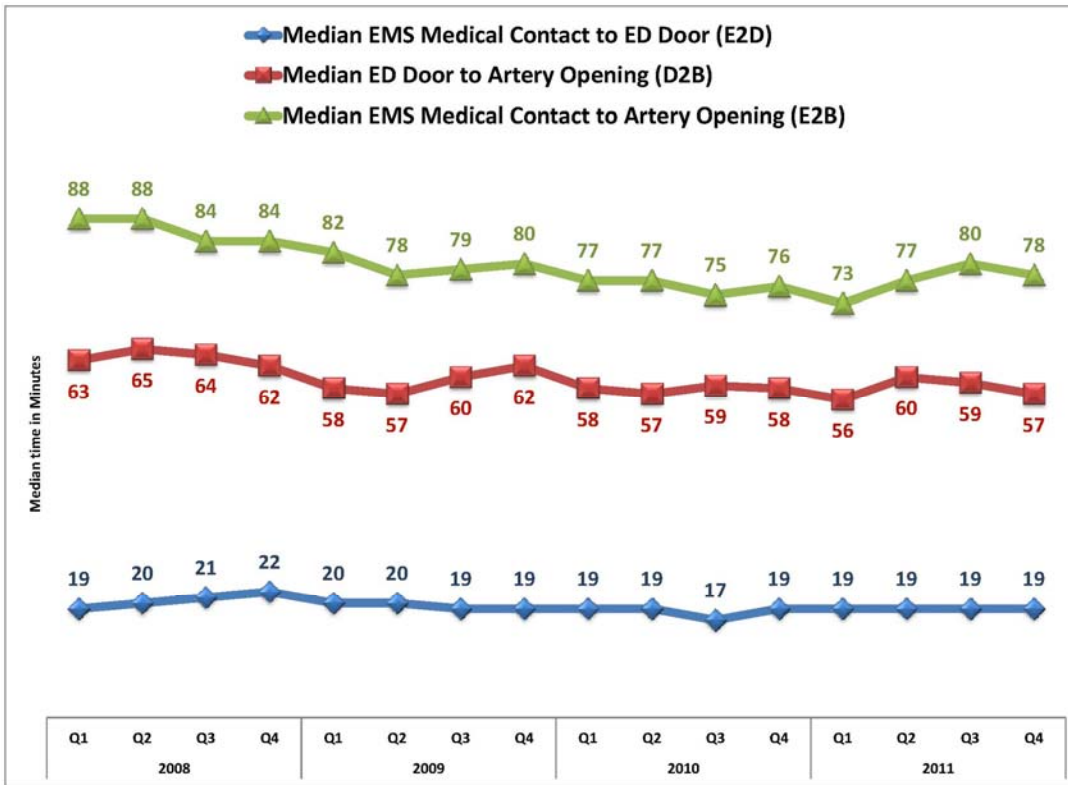
Systemwide, the mortality rate of severely injured patients transported to trauma centers has decreased.

## STEMI Receiving Center (SRC) Volume

Since its inception in December 2006, the number of patients transported to SRCs based on a prehospital 12-Lead ECG interpretation of ST-Elevation Myocardial Infarction has increased.



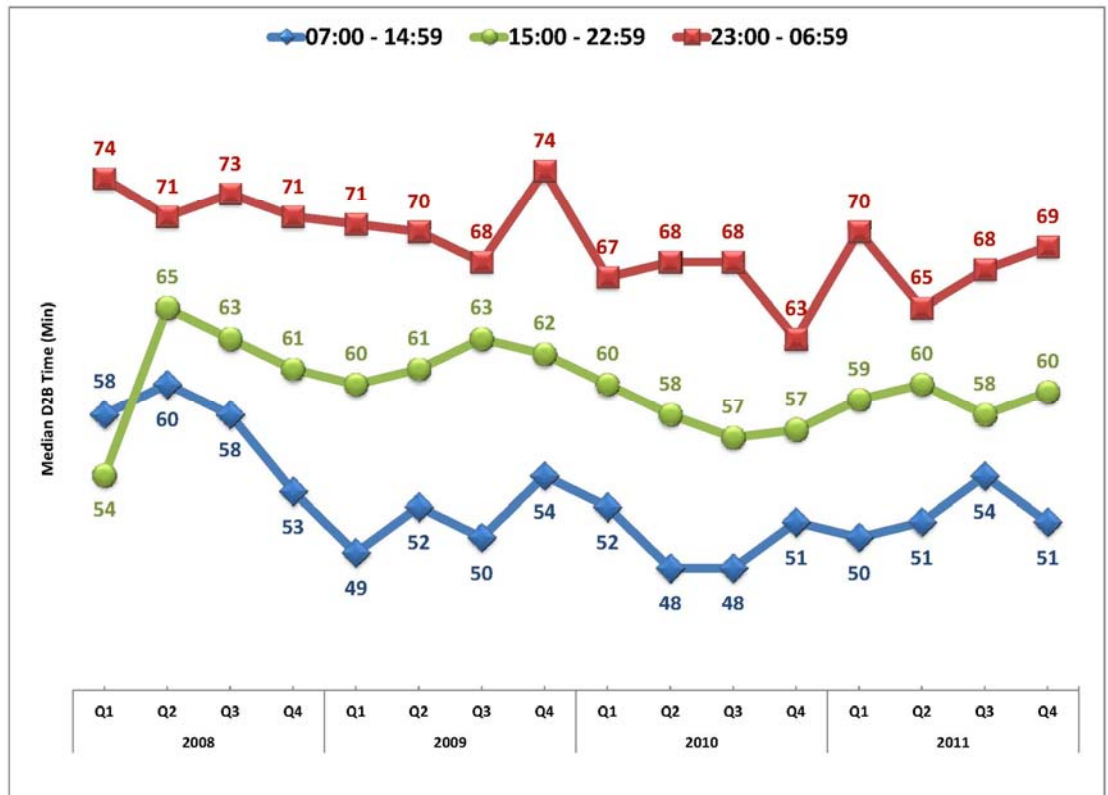
## SRC Timeliness of Care (in minutes)



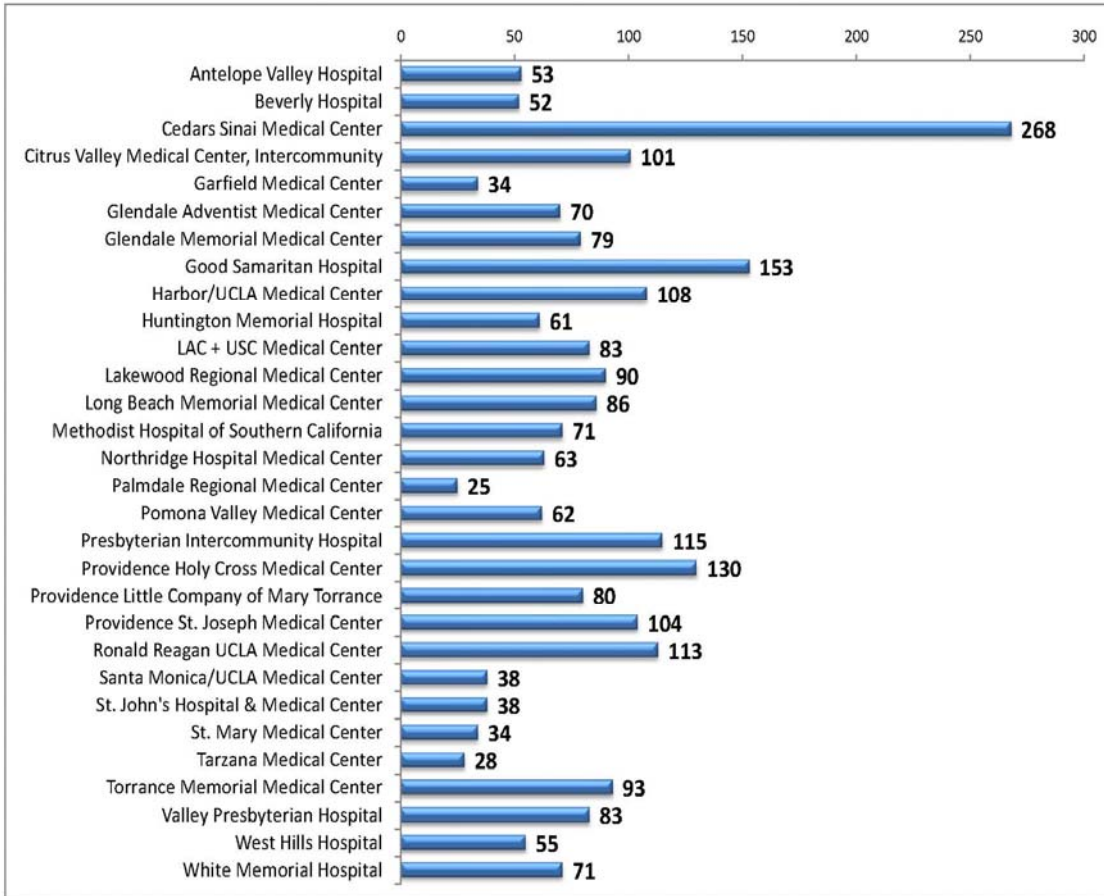
The median E2D, D2B and E2B times consistently exceed the current national standards.

## Median Time in minutes (ED Door to Artery Opening) by Shift

44% of percutaneous coronary interventions (PCI) were conducted during the day shift, 37% during the evening shift and 19% during the nights shift.



## SRC Volume by Hospital (CY 2011)



### EMS: MORE THAN A JOB, A CALLING



### EMS AGENCY

*To ensure timely, compassionate, and quality emergency and disaster medical services.*

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For data request please complete and submit the Data Request Form at <http://ems.dhs.lacounty.gov/SpCentersHospitalPrograms/TEMIS/TEMISDataReq.pdf>