

COUNTY OF SAN DIEGO EMERGENCY MEDICAL SERVICES



SAN DIEGO COUNTY TRAUMA SYSTEM REPORT

2012

County of San Diego
Board of Supervisors

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Emergency Medical Services

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Emergency Medical Services



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2012 TRAUMA SYSTEM REPORT

San Diego County Facts

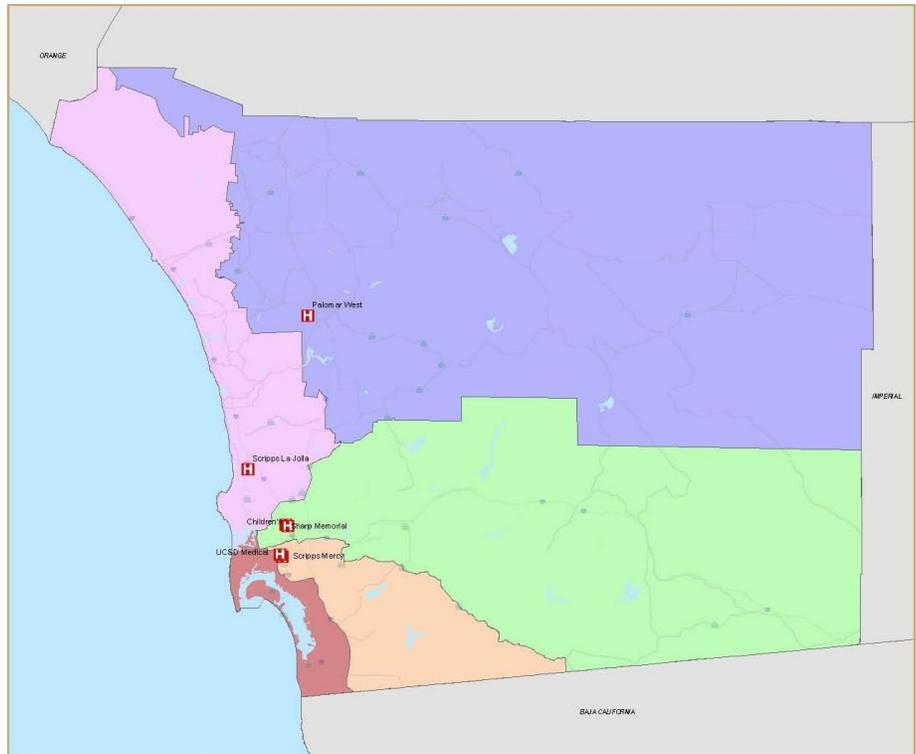
Population - 3,128,734
Square Miles - Over 4,200

Adult Trauma Centers

- Scripps Mercy Hospital
- Palomar Medical Center
- Scripps Memorial Hospital
- Sharp Memorial Hospital
- UCSD Medical Center

Pediatric Trauma Center

- Rady Children's Hospital



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Introduction and *Live Well San Diego*

Introduction

In October 1983, with support and direction from the San Diego County Board of Supervisors, the Department of Health Services created an Ad Hoc Trauma Advisory Task Force to assist in the review and evaluation of the Hospital Council – Medical Society Trauma Plan. The advisory group of outside trauma experts conducted public hearings and informal sessions with hospital and prehospital trauma providers, and synthesized the experiences of other trauma systems into a single set of recommendations for the Department and the Board of Supervisors to consider. The recommendations urged the County to adopt trauma standards that closely approximated the American College of Surgeons' guidelines. The community consensus that emerged from their effort resulted in the formal adoption of their recommendations by the County Board of Supervisors in November 1983.

Once the trauma standards were adopted, the Department implemented a competitive selection process, seeking to designate five adult trauma centers and one pediatric trauma center. Designation criteria were incorporated in a Request for Proposal and the Ad Hoc Trauma Advisory Task Force became the Proposal Review Committee to evaluate and recommend hospitals for designation. Six facilities were awarded provisional designation status based on the quality of trauma services provided.

On August 1, 1984, after sixteen months of direct preparation, major trauma victims in San Diego County began bypassing community hospitals in favor of designated trauma centers.

The purpose of this annual report is to describe the San Diego County Trauma System with regards to various aspects of data, including patient volume, patient demographics, mechanisms of injury, and patient outcomes.

***Live Well San Diego* and Trauma**

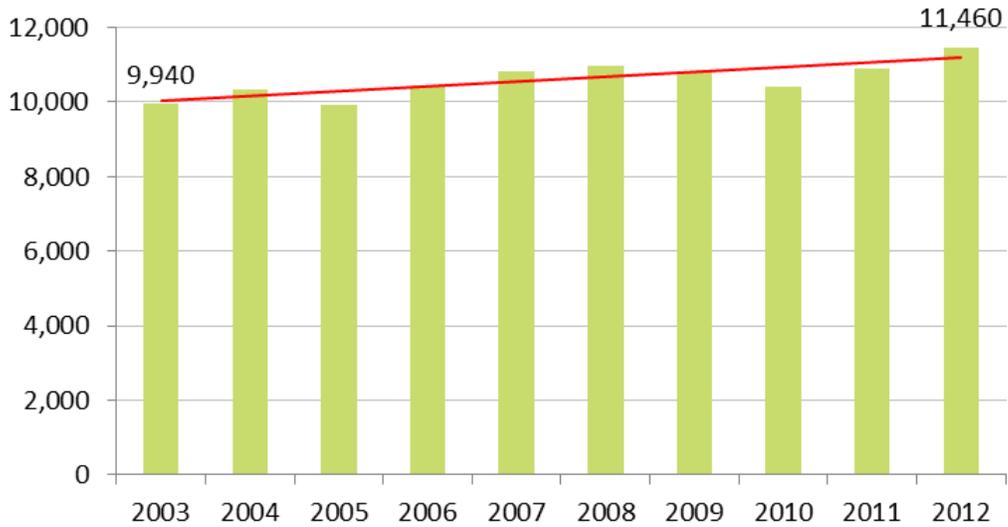
Live Well San Diego is a regional vision adopted by the San Diego County Board of Supervisors in 2010 that aligns the efforts of County government, community partners and individuals to help all San Diego County residents be healthy, safe, and thriving. The vision includes three components. *Building Better Health*, adopted on July 13, 2010, focuses on improving the health of residents and supporting healthy choices; *Living Safely*, adopted on October 9, 2012, focuses on protecting residents from crime and abuse, making neighborhoods safe, and supporting resilient communities; and, *Thriving*, adopted on October 21, 2014, focuses on cultivating opportunities for all people to grow, connect and enjoy the highest quality of life.

Live Well San Diego identifies ten primary indicators and several expanded indicators to measure the collective impact of these efforts and the work of partners over the long term to create a San Diego County where all residents are healthy, safe, and thriving. Traumatic injury (as a part of all County-wide unintentional injury) is one of the expanded indicators identified in the *Live Well San Diego* vision and is a key measure related to the second phase, *Living Safely*, which addresses both the community's perception of overall safety in San Diego County as well as the actual incidence of crime, injury and abuse.

As the County implements the *Live Well San Diego* vision, identifying patterns and trends of injury will be critical in developing prevention and intervention measures, ultimately leading to a healthier San Diego County.

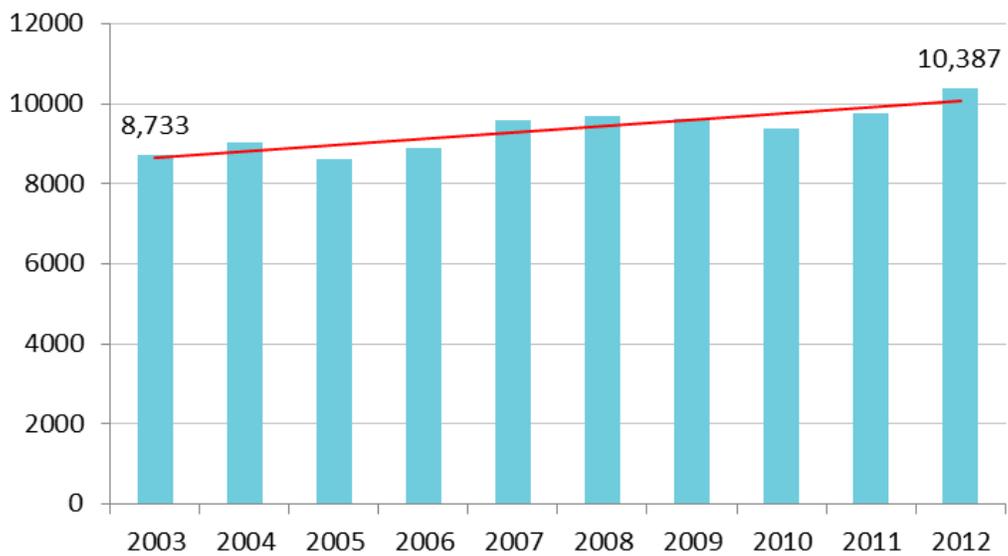
Trauma System Overview Patient Volume

A Decade of Trauma Volume



Over the last decade the San Diego County Trauma System has witnessed a 15% increase in total trauma volume and a 19% increase in trauma volume at the adult trauma centers. Over that same time period, the County of San Diego has experienced a 9% increase in population.

Trauma Volume, Adult Trauma Centers

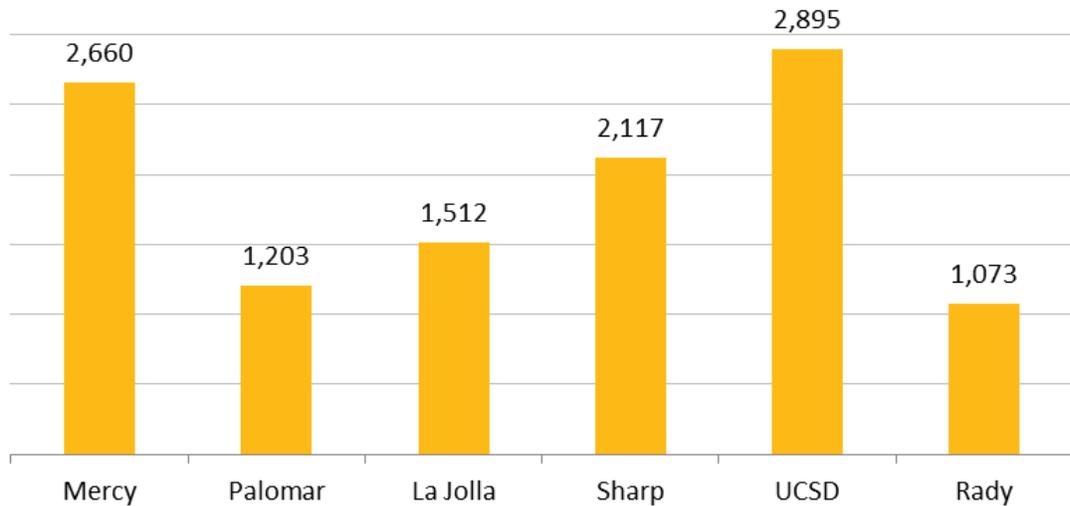


Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2012.

Trauma System Overview Patient Volume

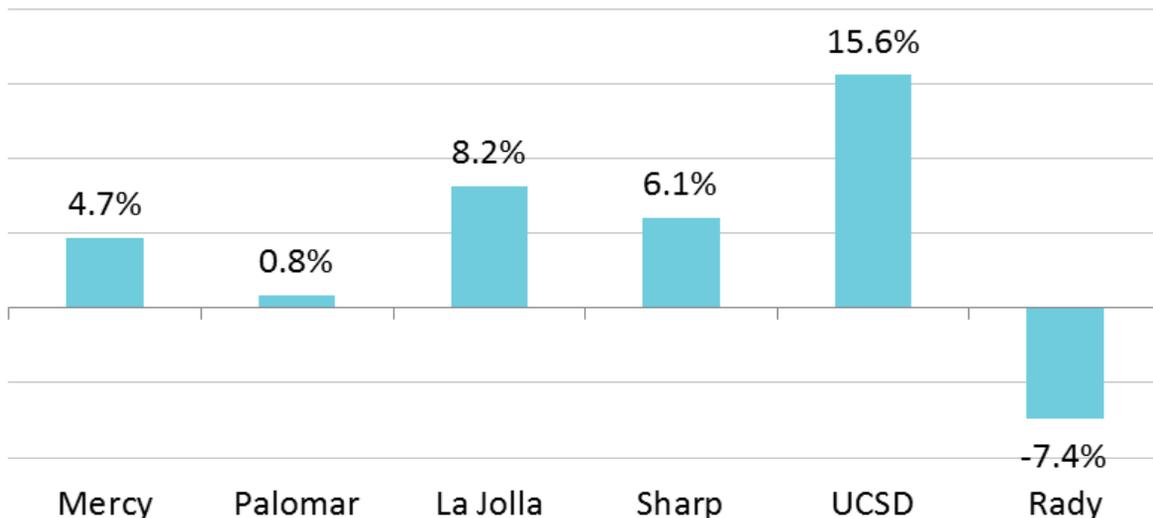
Total Trauma Volume by Trauma Center, 2012

In 2012, there were 11,460 total patients treated in the San Diego County Trauma System, with all adult centers experiencing annual growth in volume.



All adult trauma centers experienced a 3-year increase in total volume, with UCSD having the largest increase. However, Rady Children's experienced a 7.4% decrease in trauma volume over the last 3 years.

Three Year Change in Trauma Volume, 2009-2012

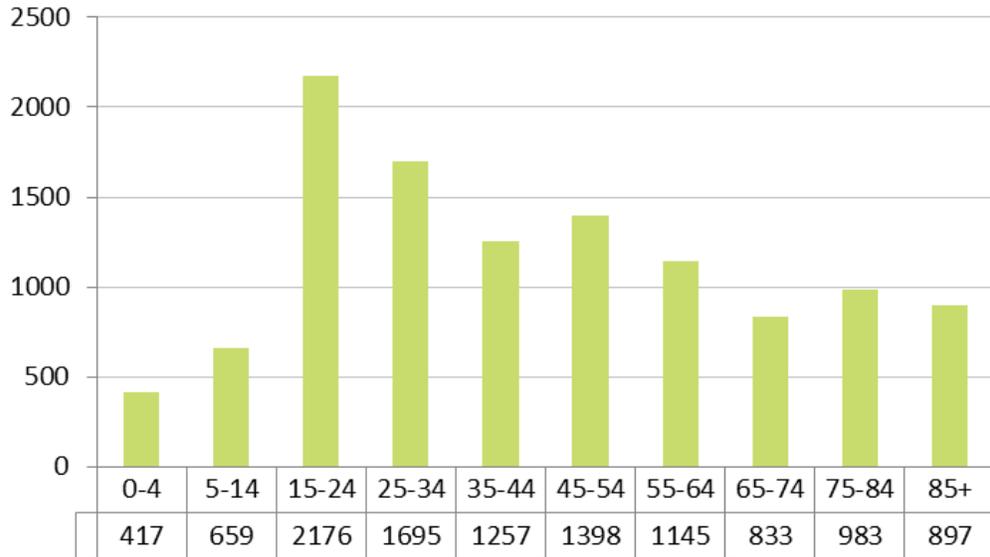


Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2012.

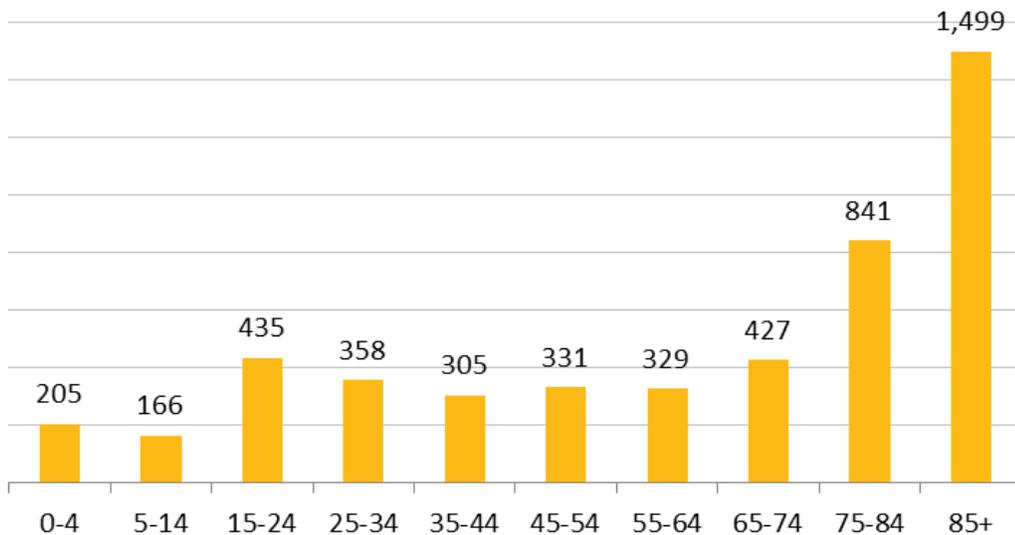
Trauma System Overview Patient Volume—Age Groups

In 2012, 57% of trauma patients were aged 15 to 54 years.

Trauma Patients by Age Group, 2012



Trauma Patient Rate* by Age Group



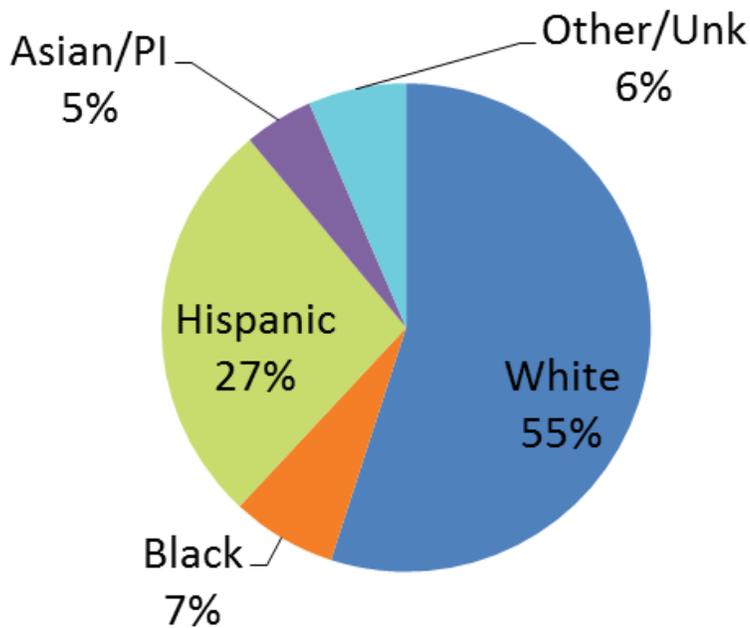
*Rate per 100,000 people

Although the majority of injuries occur in younger age groups, the highest risk for traumatic injury is actually in the oldest age group.

Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2012.

Trauma System Overview
Patient Volume—Race/Ethnicity

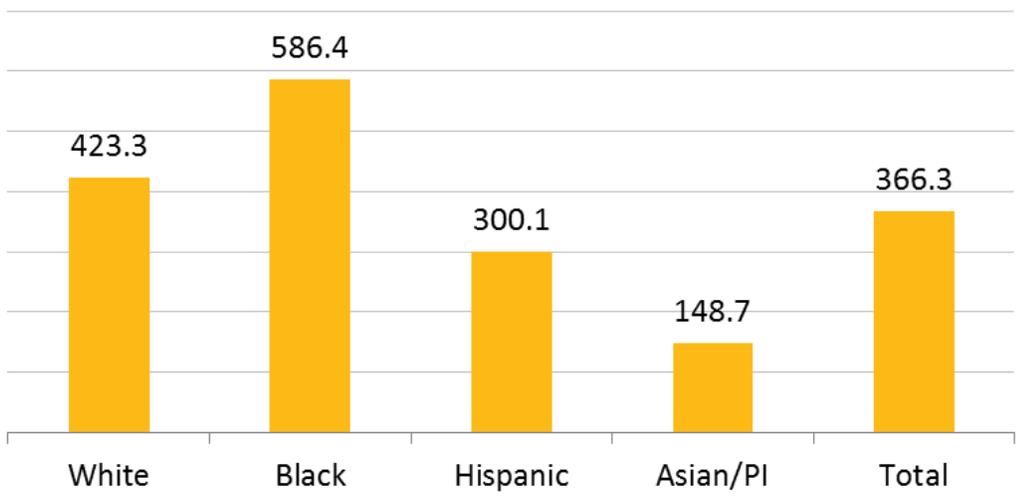
Trauma Patients by Race/Ethnicity Percent



In 2012, 55% of trauma patients were white, continuing a trend from previous years.

In 2012, Asians/Pacific Islanders had the lowest rate of traumatic injury at about 150 per 100,000.

Trauma Patients by Race/Ethnicity Rate*



At just under 600 per 100,000, the rate of traumatic injury among blacks far exceeds that of any other race/ethnicity.

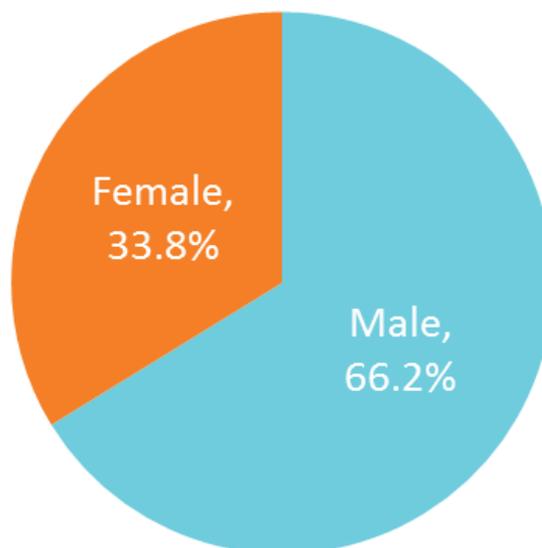
*Rate per 100,000 people

Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2012.

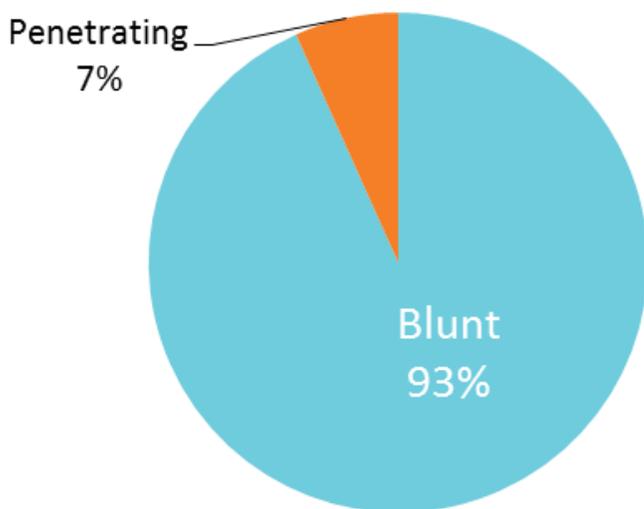
Trauma System Overview Patient Volume—Gender and Injury Type

Trauma Patients by Gender Percent, 2012

In 2012, male trauma patients outnumbered females by about 2 to 1. This has been a consistent trend for many years.



Trauma Patients by Injury Type, 2012



Similar to previous years, patients with blunt injuries outnumbered those with penetrating injuries by more than 10 to 1.

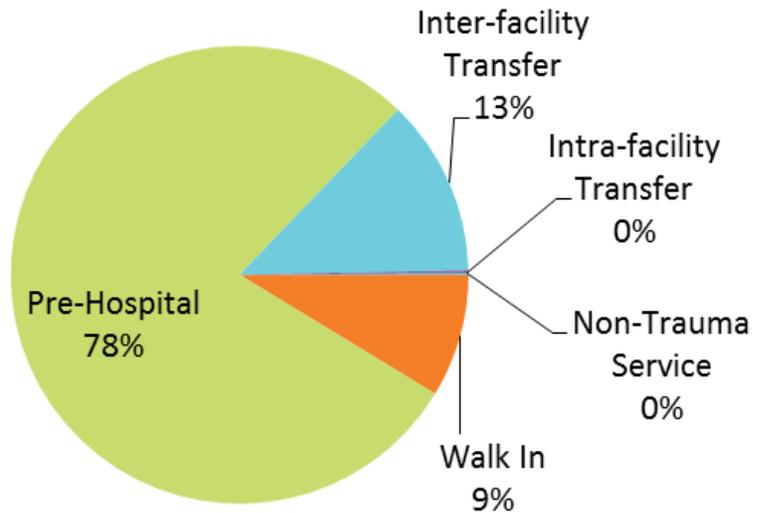
Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2012.

Trauma System Overview

Patient Volume—System Access and Discharge Month

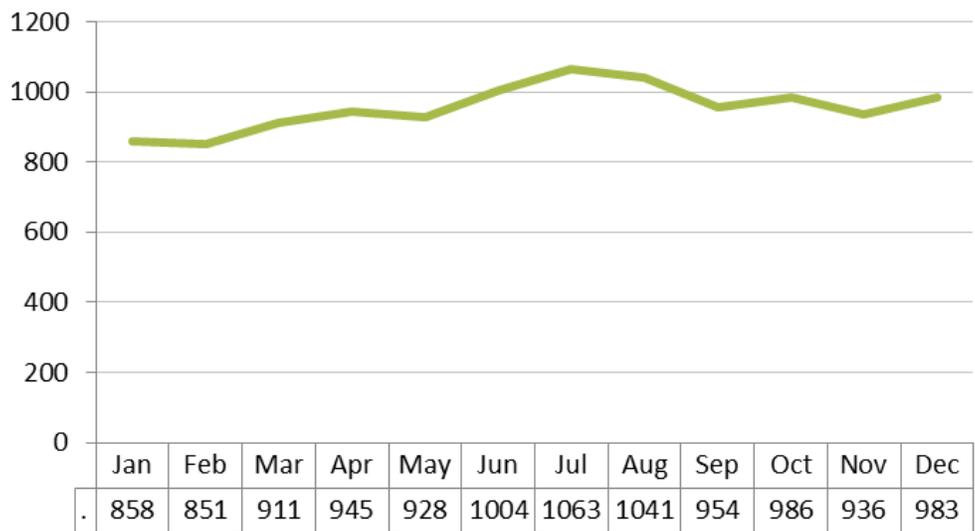
Trauma Patients by Method of System Access

In 2012, there were 8,992 patients delivered to trauma centers by pre-hospital, 1,434 inter-facility transfers, and 997 walk-ins.



As in most years, the San Diego County Trauma System experienced a slight surge in patient volume during the summer months in 2012.

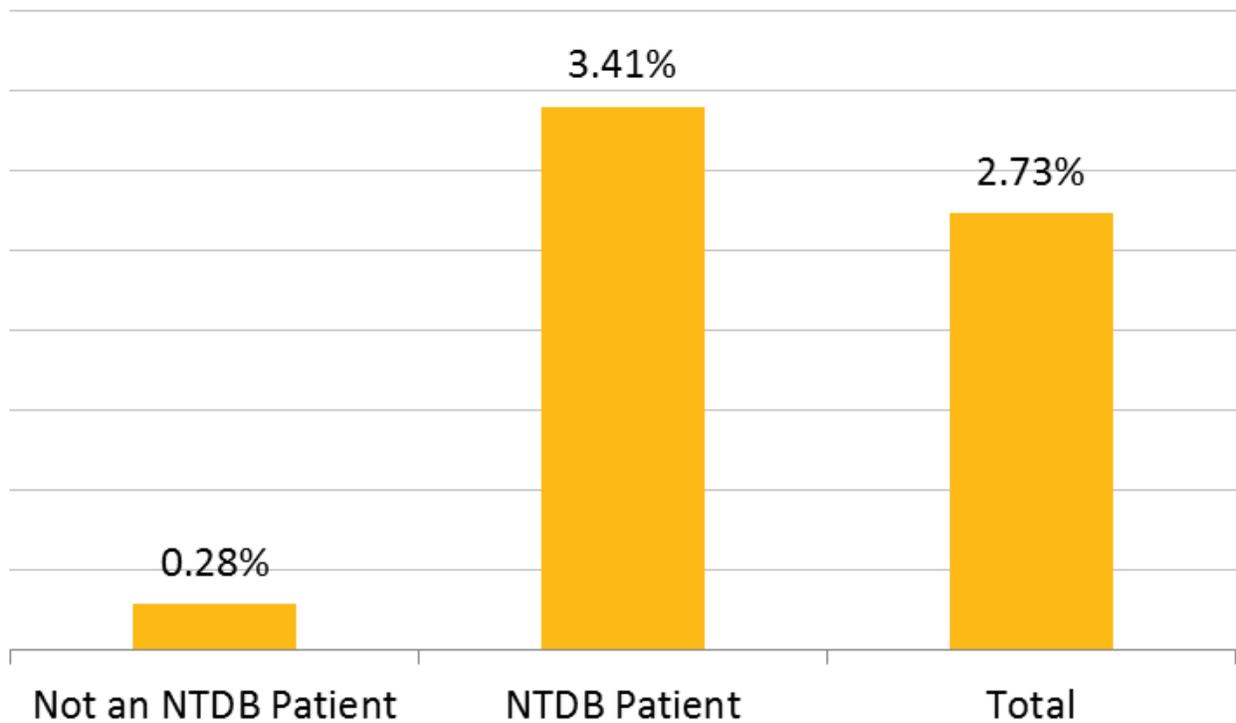
Trauma Patients by Discharge Month



Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2012.

Trauma System Overview Mortality Rates

In 2012, the overall mortality rate of the San Diego County Trauma System was 2.7%. For those patients that qualified for the National Trauma Data Bank, the mortality rate was 3.4%.



NTDB: National Trauma Data Bank. Some patients treated at San Diego County Trauma Centers do not meet criteria for NTDB inclusion.

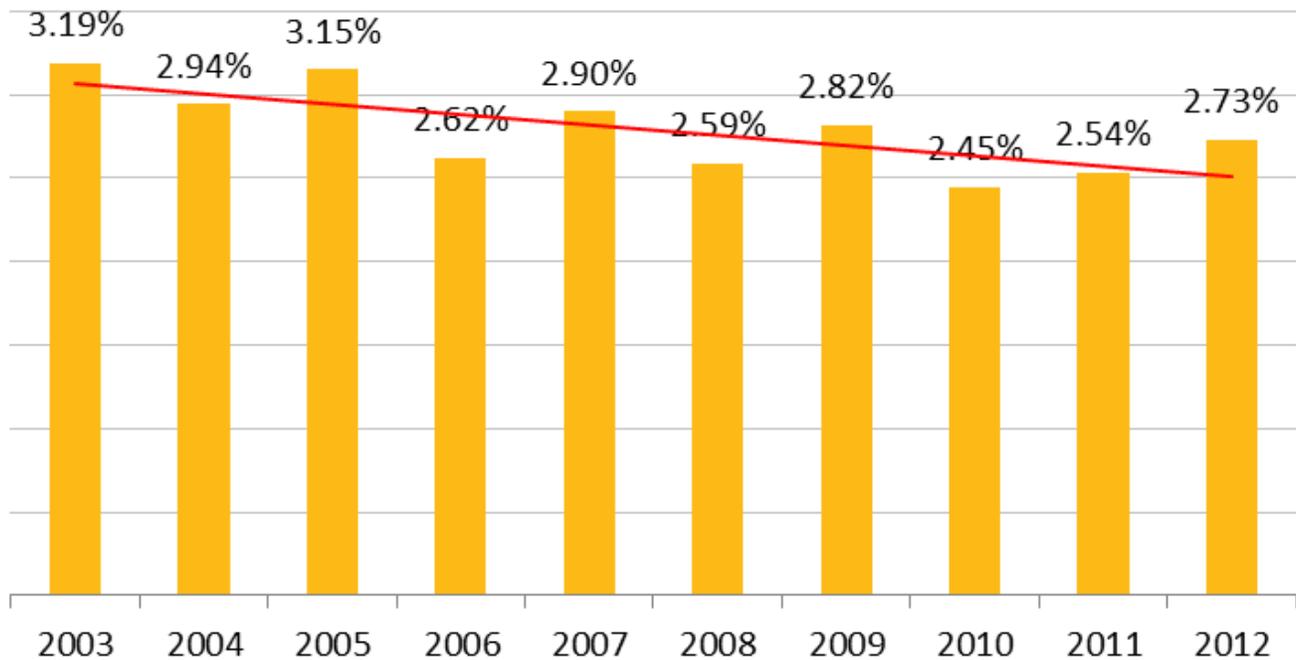
Note: Mortality rates are calculated using traumatic deaths that were treated at trauma centers. For a more complete report on traumatic deaths in San Diego County, including those dead on scene, please refer to the San Diego County Medical Examiner Annual Report available at: www.sandiegocounty.gov/me/.

Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2012.

Trauma System Overview Mortality Rate Trends

Mortality rates have continually decreased throughout the 28-year life of the San Diego County Trauma System. Over the last decade the system has experienced a 15% increase in total patient volume while achieving a 14% decrease in the rate of deaths.

Mortality Rates, 2003 - 2012



Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2012.

Mechanism of Injury—Age Groups

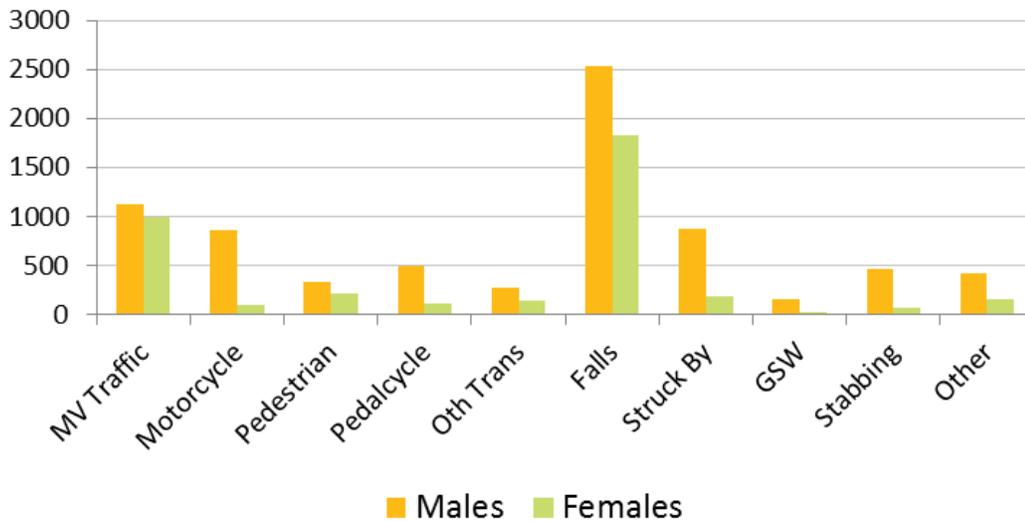
Top 5 Trauma Mechanisms by Age Group					
Age	1	2	3	4	5
0 - 4	Falls	MV Traffic	Struck By	Pedestrian	Oth Trans
	246	54	31	31	6
5 - 14	Falls	MV Traffic	Pedalcycle	Struck By	Pedestrian
	219	104	83	79	63
15 - 24	MV Traffic	Falls	Struck By	Motorcycle	Stabbing
	600	324	296	280	191
25 - 34	MV Traffic	Falls	Struck By	Motorcycle	Stabbing
	400	291	249	244	148
35 - 44	Falls	MV Traffic	Struck By	Motorcycle	Stabbing
	282	282	160	145	88
45 - 54	Falls	MV Traffic	Struck By	Pedalcycle	Motorcycle
	413	227	148	124	124
55 - 64	Falls	MV Traffic	Pedalcycle	Motorcycle	Struck By
	495	194	89	81	73
65 - 74	Falls	MV Traffic	Pedestrian	Pedalcycle	Motorcycle
	517	135	44	39	31
75 - 84	Falls	MV Traffic	Pedestrian	Oth Trans	Struck By
	774	101	24	22	16
85+	Falls	MV Traffic	Pedestrian	Struck By	Oth Trans
	798	35	12	11	6
Total	Falls	MV Traffic	Struck By	Motorcycle	Pedalcycle
	4359	2132	1078	960	617

In 2012, falls accounted for 38% of all causes of injury in the San Diego County Trauma System. Additionally, falls are the number one cause of injury in each age group, other than those aged 15 to 34 years.

Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2012.

Mechanism of Injury—Gender and Race/Ethnicity

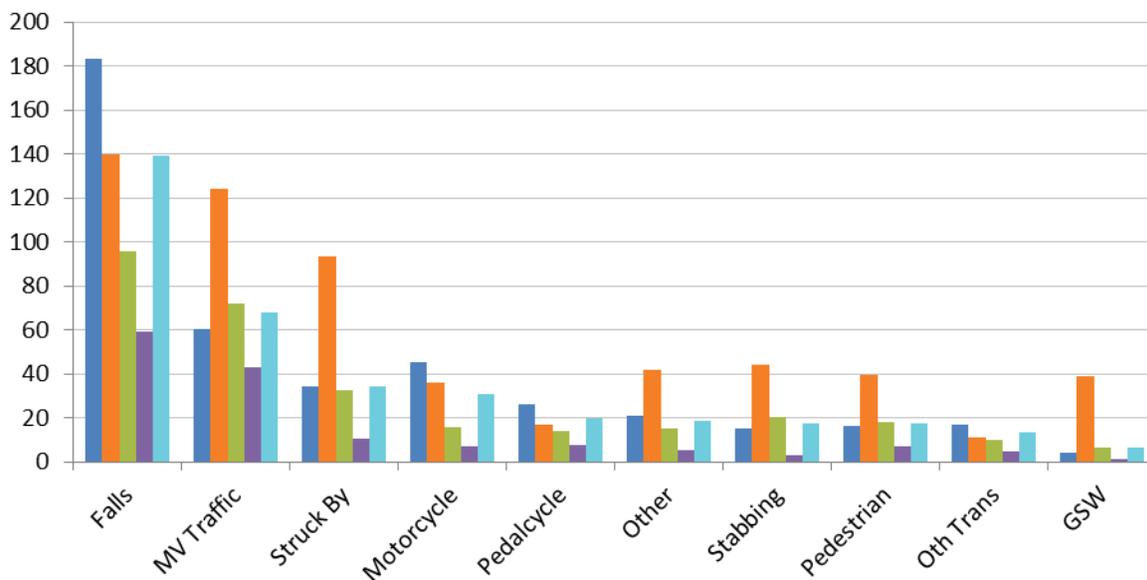
Mechanism of Injury by Gender, 2012



Although, males and females had similar numbers of motor vehicle and pedestrian injuries, males greatly exceeded females in all other causes of injury.

While whites had the highest risk of fall-related and motorcycle injuries, blacks had the highest rate of motor vehicle, struck by, stabbing, pedestrian, and gun shot injuries. Asians and Pacific Islanders had a very low rate of fall-related injuries.

Mechanism of Injury Rate* by Race/Ethnicity, 2012



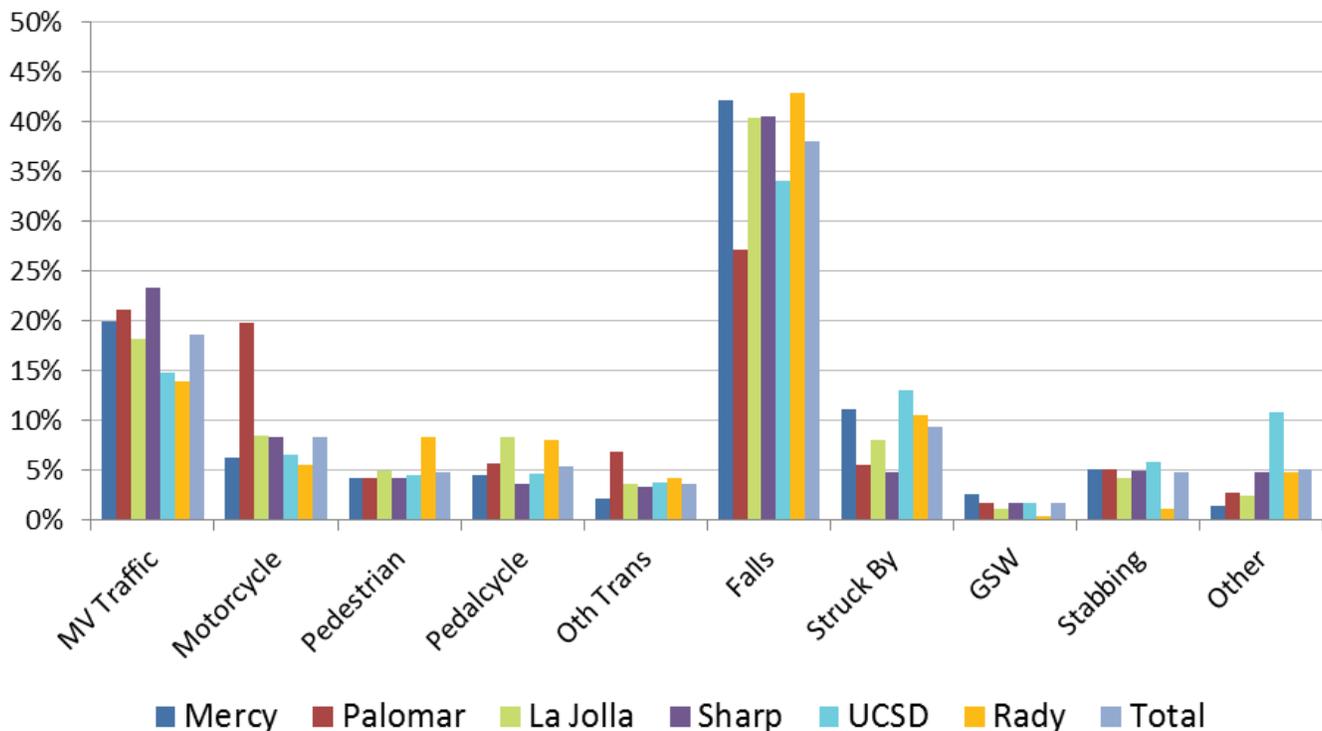
*Rate per 100,000 people ■ White ■ Black ■ Hispanic ■ Asian/PI ■ Total

Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2012.

Mechanism of Injury—Trauma Centers

In 2012, 20% of Palomar Medical Center’s traumatic injuries were from motorcycle accidents. This is more than double the percent of any other trauma center. Compared to other centers, Rady Children’s experienced a higher percent of pedestrian related injuries and Scripps La Jolla had a higher rate of pedalcycle injuries. Sharp Memorial had the highest percent of motor vehicle injuries, Scripps Mercy had the highest percent of gunshot injuries, and UCSD had the highest percent of ‘struck by’ injuries.

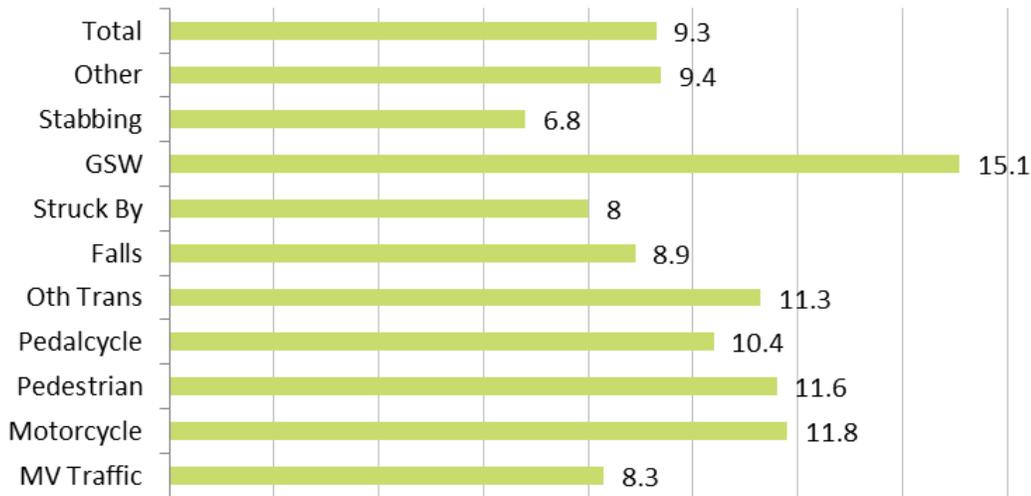
Percent of Injuries by Trauma Center and Mechanism, 2012



Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2012.

Mechanism of Injury—Injury Severity and Length of Stay

Mechanism of Injury by Mean ISS*



Gunshot injuries were, by far, the most severe injuries. While motor vehicle traffic (car crash) injuries were among the least severe, all other motor vehicle related** injuries were among the most severe injuries.

*ISS: Injury Severity Score.

**Motor Vehicle Related includes Pedestrian, Pedalcycle, Other Trans, and Motorcycle.

Mechanism of Injury by Mean Length of Stay



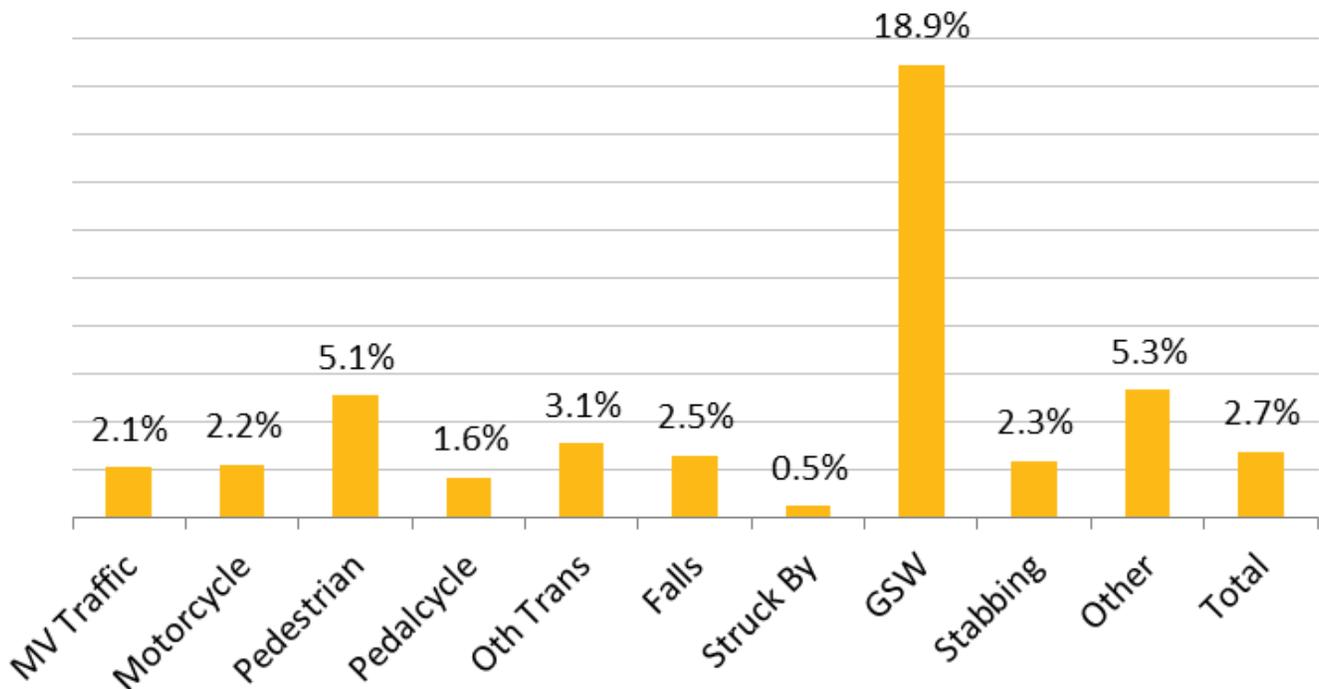
Gunshot injuries also led to the longest lengths of stay. The shortest lengths of stay were from 'Struck By' and stabbing injuries. The overall mean length of stay was 3.36 days.

Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2012.

Mechanism of Injury—Mortality Rates

In 2012, mortality rates fluctuated greatly by mechanism of injury. One out of five gunshot victims that made it to a trauma center did not survive their injuries. Conversely, only 1 in 200 'struck by' patients died. About 1 in 40 fall-related injury patients died. This is an important number to track as fall-related injuries continue to increase in San Diego County. The fall-related mortality rate was 3.3% in 2011.

Mortality Rate by Mechanism of Injury, 2012

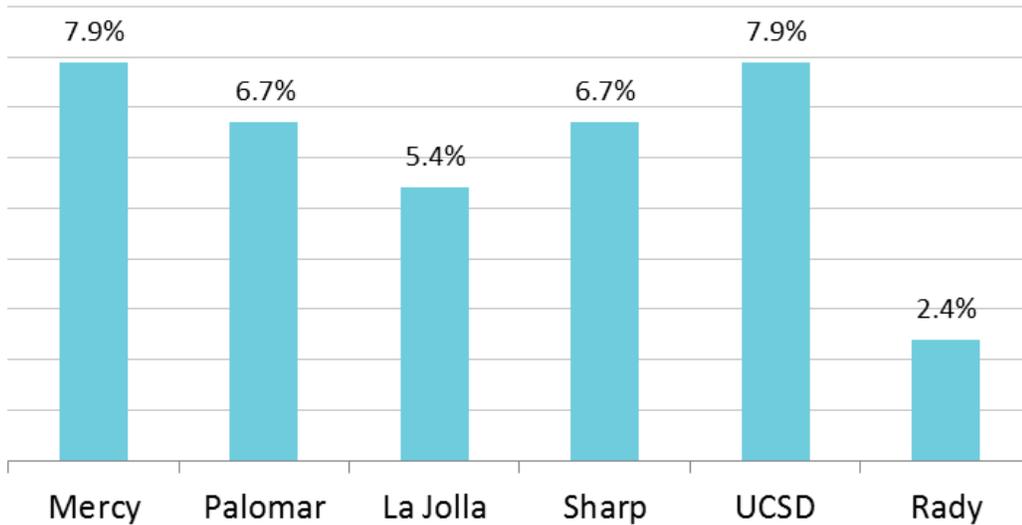


Note: Mortality rates are calculated using traumatic deaths that were treated at trauma centers. For a more complete report on traumatic deaths in San Diego County, including those dead on scene, please refer to the San Diego County Medical Examiner Annual Report available at: www.sandiegocounty.gov/me/.

Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2012.

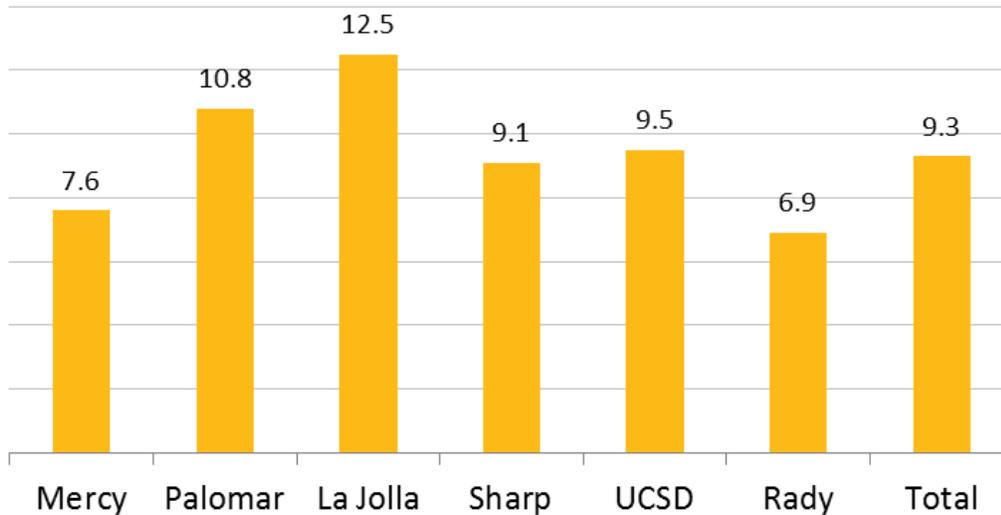
Injury Type and ISS by Trauma Center

Percent Penetrating by Trauma Center



UCSD and Scripps Mercy had the highest percent of penetrating injuries. Of the adult centers, Scripps La Jolla had the lowest percent of penetrating injuries but Rady Children's had the lowest overall.

Mean ISS by Trauma Center



Among the adult trauma centers, Scripps La Jolla had the highest mean ISS with Scripps Mercy having the lowest. Rady Children's had the lowest overall mean ISS.

Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2012.

Directory

EMS AGENCY

6255 Mission Gorge Road, San Diego, CA. 92120 - (619) 285-6429

Chief: Marcelyn Metz, RN

Medical Director: Bruce Haynes, MD

QA Specialist – Trauma: Candy Schoenheit, RN, BSN, PHN, MICN

RADY CHILDREN'S HOSPITAL SAN DIEGO

3020 Childrens Way, San Diego, CA 92123 - (858) 576-1700

Hospital Administrator: Donald Kearns, MD, CEO

Trauma Administrator: Nicholas Holmes, MD, MBA, SVP/COO

Trauma Medical Director: Mary Hilfiker, MD, PhD, MMM

Trauma Program Manager: Renee Douglas, RN, MSN, PHN, CPEN

SCRIPPS MERCY HOSPITAL

4077 Fifth Avenue, San Diego, CA 92103 - (619) 294-8111

Hospital Administrator: Tom Gammieri

Trauma Administrator: Lisa Schafer, CONE

Trauma Medical Director: Michael J. Sise, MD, FACS

Trauma Program Manager: Brian McCord, RN, MSN

Base Hospital Medical Director: Marcus Wang, MD

Base Hospital Nurse Coordinator: Darlene Bourdon, RN

PALOMAR MEDICAL CENTER

2185 Citracado Parkway, CA 92029 - (442) 281-5000

Hospital Administrator: Gerald Bracht

Trauma Administrator: Joy Gorzeman

Trauma Medical Director: John Steele, MD

Trauma Program Manager: Melinda Case, RN

Base Hospital Medical Director: Michelle Grad, MD

Base Hospital Nurse Coordinator: Cheryl Graydon, RN, MICN

Directory

SCRIPPS MEMORIAL HOSPITAL, LA JOLLA

9888 Genesee Avenue, La Jolla, CA 92037 - (858) 457-4123

Hospital Administrator: Gary Fybel

Trauma Administrator: Cynthia Steckel, PhD, RN, MSN,

Trauma Medical Director: Imad Dandan, MD

Trauma Program Manager: Melanie Gawlik, RN, MSN

Base Hospital Medical Director: Chris Wiesner, MD

Base Hospital Nurse Coordinator: Chris Wells, RN

SHARP MEMORIAL HOSPITAL

7901 Frost Street, San Diego, CA 92123 - (858) 541-3400

Hospital Administrator: Janie Kramer

Trauma Administrator: Christopher Walker

Trauma Medical Director: Frank Kennedy, MD, FACS

Trauma Program Manager: Kathi Ayers, RN, MSN

Base Hospital Medical Director: Saul Levine, MD

Base Hospital Nurse Coordinator: Linda Rosenberg, RN

UNIVERSITY OF CALIFORNIA, SAN DIEGO MEDICAL CENTER

200 West Arbor Drive, San Diego, CA 92103 - (619) 543-6222

Hospital Administrator: Paul Viviano, CEO

Trauma Administrator: Margarita Baggett

Trauma Medical Director: Raul Coimbra, MD, PhD, FACS

Trauma Program Manager (Interim): Patricia Stout, RN

Base Hospital Medical Director: Chris Kahn, MD

Base Hospital Nurse Coordinator: Melody Dotson, RN, MICN