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# Trauma System Status Report 2019

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County of San Diego  
Health and Human Services Agency  
Public Health Services  
Emergency Medical Services

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July 9, 2019

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## San Diego County Trauma System Status Report 2019

### Section 1: Trauma System Summary

#### Background

The San Diego County Trauma System has been in continuous operation for 30 years. In 1983, the Hospital Association of San Diego and Imperial Counties contracted with Amherst and Associates to conduct a needs assessment for the creation of a countywide trauma system. County of San Diego (CoSD) Board of Supervisors approved the establishment of a trauma system in 1984 and authorized the Department of Health Services Emergency Medical Services (EMS) to move forward with the development of the trauma system. Oversight of the Trauma System is provided by the local EMS agency (LEMSA). The Trauma System participating hospitals are active in case review, research, prevention and education through the Medical Audit Committee (MAC), its subcommittees and the nonprofit Trauma Research and Education Foundation.

#### System Design

The county is geographically divided into five adult trauma catchment areas. Pediatric trauma patients, under age 15, are transported to the pediatric trauma center. University of San Diego Medical Center, Level I, serves as backup for the pediatric trauma center. The LEMSA is responsible for evaluating and defining the designating Trauma Centers and defining the respective catchment areas. The Trauma Center Designations and Catchment Areas are approved by the County of San Diego Board of Supervisors. An external assessment of the San Diego County Trauma System in 2003, as well as subsequent internal contingency planning reviews, determined that no changes were needed to the trauma system configuration in terms of the number of trauma centers and their locations, based on the current and projected population demographics.

#### Population

“One out of every 100 United States residents lives in San Diego County. San Diego County is the fifth most populous county in the United States with 3.3 million residents living in urban, suburban, rural and remote areas covering 4,526 square miles. The majority of the population lives in the western half of the land area of the county. San Diego County’s southern border is adjacent to Mexico, to the west is 70 miles of Pacific coast and to the North and East neighboring counties include Orange, Riverside and Imperial Counties. This concentrated distribution of the majority of the population mirrors the locations and catchment areas of the Trauma Centers. Twenty-year population growth projections based on the County General Plan, show that the population center will shift to the western portions of the unincorporated County which accommodates more than 232,300 existing and future homes. In addition to resident population, San Diego County is home to the busiest international land border crossing in the world with just over 53 million crossings, mostly commuters, between Mexico and the United States through San Ysidro and Otay Mesa each year. As a popular tourist destination, San Diego also hosts nearly 18 million overnight visitors each year.”

#### San Diego County Trauma Registry

The San Diego County Trauma Registry is a population-based registry of trauma injuries and deaths. Data is collected on every patient admitted to a trauma center as a major trauma patient. The data abstracted

from patient medical records, including prehospital patient records, by trauma center staff, and submitted electronically to County EMS. All data is submitted in a compatible format that is downloaded to the receptacle database for analysis. Periodic reports prepared by EMS staff identify injury trends and populations at risk by age groups, race, ethnicity, and location and type of injury as well as system status and characteristics. The Medical Examiner’s Traumatic Death Database (ME database) contains demographic, geographic, temporal and cause of death data on every non-natural death resulting from a trauma injury that occurred in the County. Compared to the 2016 national mortality rate in the National Trauma Data Bank (NTDB) of 4.4%, San Diego County has a mortality rate among NTDB-eligible patients of 3.2%. Over the past decade the Trauma System has had a 16.2% increase in total trauma volume.

**Trauma Protocols and Policies**

Updates are made to the Trauma Protocols and Policies every two years. The Protocols and Policies are available online:

[https://www.sandiegocounty.gov/content/sdc/hhsa/programs/phs/emergency\\_medical\\_services/prehospital\\_system.html](https://www.sandiegocounty.gov/content/sdc/hhsa/programs/phs/emergency_medical_services/prehospital_system.html)

**Section 2: Changes in Trauma System**

Rady Children’s has a new Trauma Medical Director, Dr. Romeo Ignacio who began his position in January 2019.

Palomar successfully met their obligation in an ACS Focus Survey, April 2019.

**Section 3: Number and Designation Level of Trauma Centers**

Trauma Center	Level	Recent Changes	Status
Palomar Health	Level II Adult	No Program Management Changes	Trauma Center status is stable
Rady Children’s Hospital and Health Center	Level I Pediatric	Interim Trauma Medical Director appointed	Trauma Center status is stable
Scripps Memorial Hospital – La Jolla	Level II Adult	No Program Management Changes	Trauma Center status is stable
Scripps Mercy Hospital – San Diego	Level I Adult	No Program Management Changes	Trauma Center status is stable
Sharp Memorial Hospital – San Diego	Level II Adult	No Program Management Changes	Trauma Center status is stable
UCSD Medical Center – Hillcrest	Level I Adult	No Program Management Changes	Trauma Center status is stable
COSD LEMSA		No Program Management Changes	Trauma System is stable

**Section 4: Trauma System Goals and Objectives**

Green = Goals; Yellow = Not Performed

	2019-Trauma Plan Update	Q1-17	Q2-17	Q3-17	Q4-17	Q1-18	Q2-18	Q3-18	Q4-18	Q1-19	Q2-19	Q3-19	Q4-19
Goal 1	Support the maintenance of a successful ACS Level I and Level II trauma system site re-verification process every three years. Assist trauma centers with meeting the ACS requirements												
Objective 1.1	Annual provide assistance to trauma centers in meeting the ACS requirements and County of San Diego Contractual requirements		Contract Complete				Contract Complete			PMC ACS Focus survey complete			
	<b>Strategies:</b>												
	1. Provide and update annual audit tool by February of each year		Complete										
	2. Annual Trauma Center visit with TPM (start 2019)										Onsite visits complete		
	3. Conduct on-site audits in conjunction with ACS re-verification every three years						ACS/COSD Surveys Completed				Complete		
Goal 2	Ensure trauma centers have designated supplies, equipment and medications to respond effectively to a disaster.												
Objective 2.1	Coordinate with trauma centers to develop and monitor program readiness annually through hospital		Complete				Complete			Complete			

	2019-Trauma Plan Update	Q1-17	Q2-17	Q3-17	Q4-17	Q1-18	Q2-18	Q3-18	Q4-18	Q1-19	Q2-19	Q3-19	Q4-19
	participation in annual exercises												
	<b>Strategies:</b>												
	1. Annually review and support the trauma centers with disaster preparedness educational programs and exercises		Complete				Complete				Complete		
	2. Trauma Center participation in Hospital Preparedness Program	On-Going	On-Going	On-Going	On-Going	On-Going	On-Going	On-Going	On-Going	On-Going	On-Going	On-Going	On-Going
Goal 3	Support the collaborative efforts of the trauma system to provide quality and comprehensive care by providing annual reports.												
Objective 3.1	Provide annual improvement reports for Trauma Medical Audit Committee review			Complete				Complete				Complete	
	<b>Strategies:</b>												
	1. Present Annual Trauma Report to Trauma Medical Audit Committee (MAC) Administrators			Complete				Complete			Decision by MAC to conduct Admin meeting Biennial		
	2. Develop and distribute trauma system dashboard on audit filters monthly	Complete	Complete	Complete	Complete	Complete	On hold						
	3. Review each San Diego specific audit filter benchmarking each TC						On Going	On Going	On Going	On Going	On Going	On Going	On Going
	4. Continue to provide support to system and case	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete

	<b>2019-Trauma Plan Update</b>	<b>Q1-17</b>	<b>Q2-17</b>	<b>Q3-17</b>	<b>Q4-17</b>	<b>Q1-18</b>	<b>Q2-18</b>	<b>Q3-18</b>	<b>Q4-18</b>	<b>Q1-19</b>	<b>Q2-19</b>	<b>Q3-19</b>	<b>Q4-19</b>
	reviews for MAC (ongoing)												
Goal 4	Support Trauma System Research and Injury Prevention Efforts												
Objective 4.1	Provide information and tools to the Trauma Research and Education Foundation (TREF) to work with community partners to support their efforts to develop programs to increase public awareness about the trauma system and available services through outreach education and injury. (On-going)	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete
	<b>Strategies:</b>												
	1. Trauma Program Manager's Monthly Meetings	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete
	2. Provide information to Injury Prevent TREF subcommittee projects upon request	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete
	3. Report and review trauma injury statistics at MAC yearly			Complete				Complete				Complete	
	4. Identify high risk groups through data analysis on the monthly dashboard	Complete	Complete	Complete	Complete	Complete	On hold						
	5. Identify performance improvement/trends through audit filter review						Complete	Complete	Complete	Complete	Complete	Complete	Complete
Goal 5	Ensure the Quality of Data being submitted to the												

	2019-Trauma Plan Update	Q1-17	Q2-17	Q3-17	Q4-17	Q1-18	Q2-18	Q3-18	Q4-18	Q1-19	Q2-19	Q3-19	Q4-19
	County Trauma Registry.												
Objective 5.1	Collect and Maintain accurate and reliable data from Trauma Centers	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Delayed due to registry vendor change			
	<b>Strategies:</b>												
	1. Validate and update Data Dictionary with Trauma Center collaboration		MAC review/revision of COSD audit filters									MAC review/revision of COSD audit filters	
	2. Eliminating audit filters that are no longer being used or ineffective.	In Progress				No changes until new registries are in place						In process	
	3. Establish a monthly meeting with Trauma Program Managers and Registrars from each TC with the goal of completing an update of the data dictionary and enhancing communication between all TC and the County. <b>Changed to yearly 2016.</b>		Complete										
	4. Monthly meetings with Trauma Registrars and TPM representation					Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete
	4. Provide aggregated data to MAC for PIPS (after implementing updated Dictionary X 1yr)	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete
Goal 6	Support the California State Trauma Plan Implementation												

	<b>2019-Trauma Plan Update</b>	<b>Q1-17</b>	<b>Q2-17</b>	<b>Q3-17</b>	<b>Q4-17</b>	<b>Q1-18</b>	<b>Q2-18</b>	<b>Q3-18</b>	<b>Q4-18</b>	<b>Q1-19</b>	<b>Q2-19</b>	<b>Q3-19</b>	<b>Q4-19</b>
Objective 6.1	Participate in Regional (RTCC) and State PI projects and Development of State Trauma Plan	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing
	<b>Strategies:</b>												
	1. Participate in providing data to the RTCC and State for Regional and State PI projects. (ongoing)		Complete			None Required				None Required			
	2. Continue involvement with Southeast RTCC activities. County representation and participation in Face to Face meeting and participation in monthly conference calls. (Ongoing)	Monthly Conference Calls	Monthly Conference Calls	RTCC Face to Face	Monthly Conference Calls	Monthly Conference Calls	Monthly Conference Calls	Monthly Conference Calls	Monthly Conference Calls	Monthly Conference Calls	Monthly Conference Calls	RTCC Face to Face	Monthly Conference Calls



## **Section 5: Changes to Implementation Schedule**

There are no current changes to the implementation schedule.

## **Section 6: System Performance Improvement**

The System Performance Improvement activities are centered on standardizing quality improvement measures. These activities allow the trauma centers to compare their performance improvement results.

The Trauma System continues to use the County of San Diego (COSD) Trauma Data Dictionary as a base for abstracting consistent data elements to the registries. The dictionary contains National Trauma Data Standards as well as County of San Diego data standards. Definitions are reviewed and updated annually.

In addition to Audit filters identified and defined by American College of Surgeons, COSD in collaboration with the COSD Medical Audit Committee requires submission of additional audit filters. The aggregate data from these filters are identified and presented during the monthly Medical Audit Committee meetings. This process has identified many best practices and promoted several Trauma Center performance improvement projects.

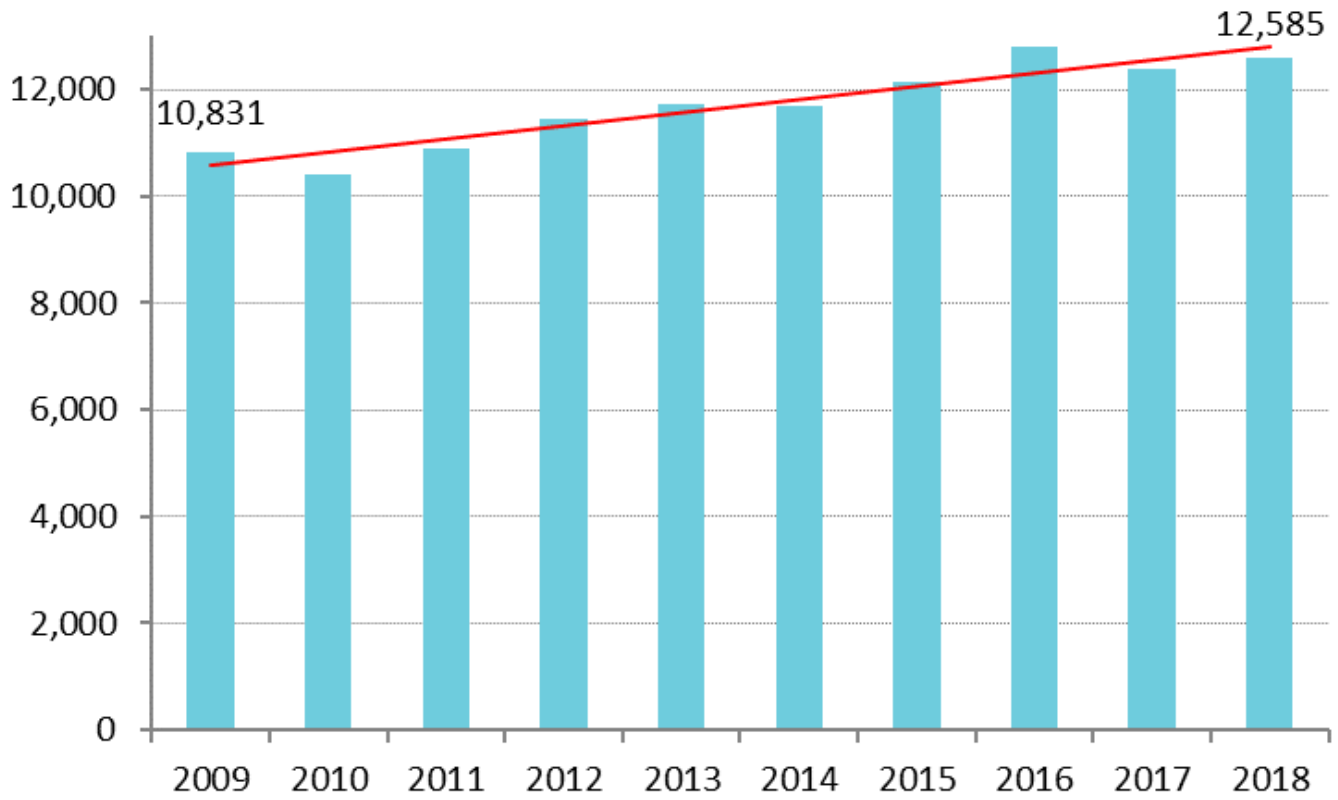
## **Section 7: Other Issues**

All trauma centers are in the process of implementing new trauma registries. This will be the first time in many years that there will be 3 different registry vendors in San Diego. Trauma Centers have agreed to begin providing data to ImageTrend starting with January 2019 patients. Because of unforeseen issues the trauma centers have had to delay their data submission. The plan is to begin trauma center data submission in the 3<sup>rd</sup> quarter of this year (2019). The data for the entire year will be submitted. Once the trauma centers submit up to date data, the County will submit it to the state.

# Appendix A

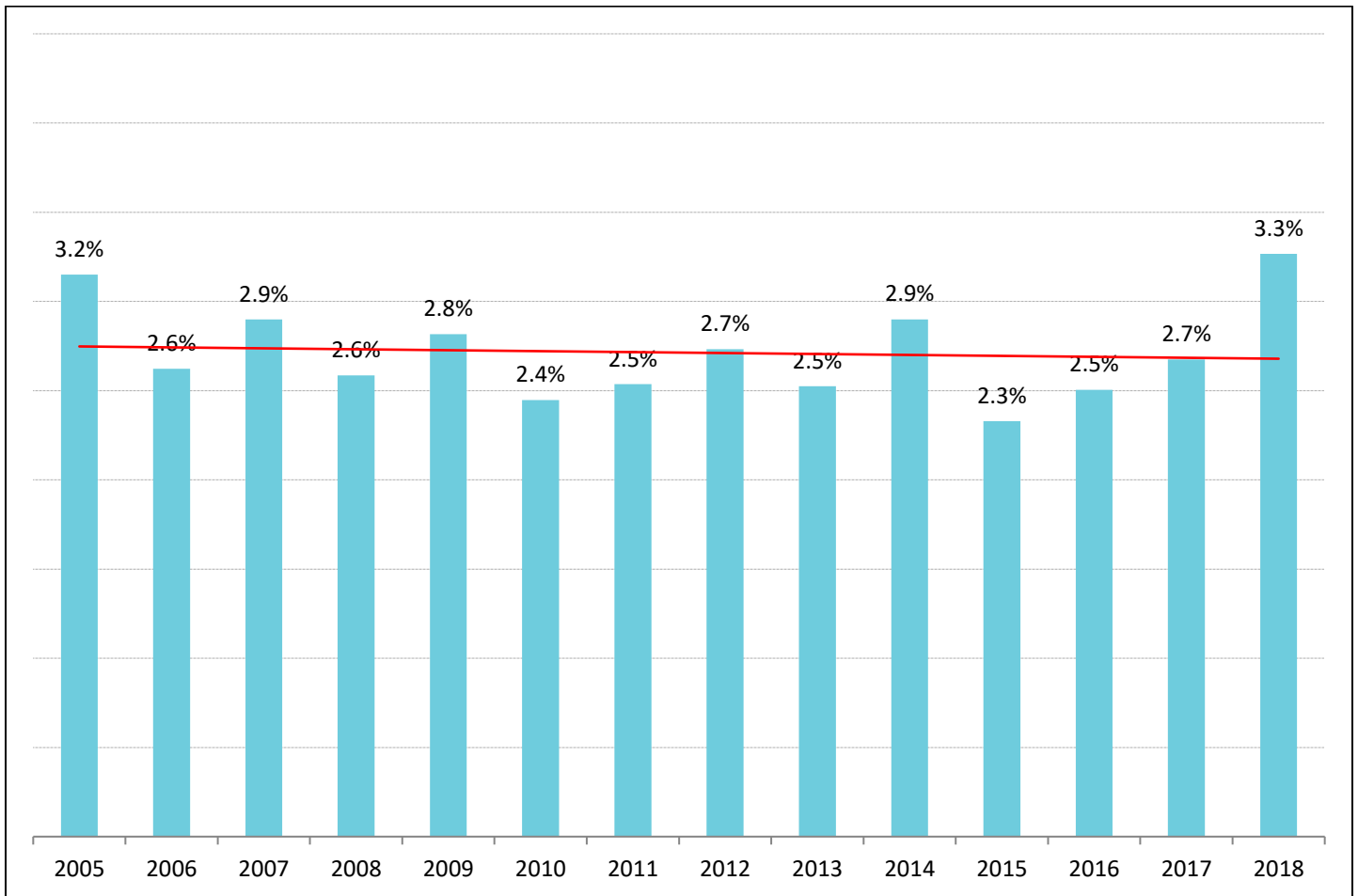
## 1. San Diego County Trauma Volume, 2009-2018

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Source: County of San Diego HHSA, Emergency Medical Services, Trauma Registry 2018

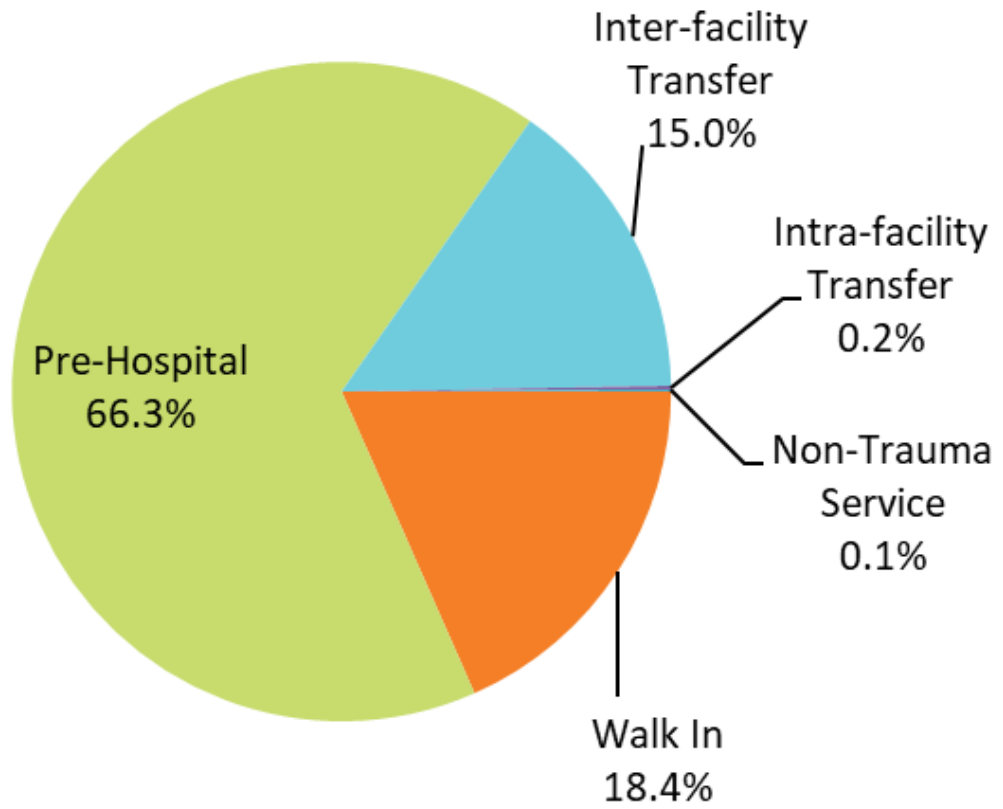
## 2. San Diego Trauma Mortality Rates, 2005-2018



Source: County of San Diego HHSA, Emergency Medical Services, Trauma Registry 2018

### 3. San Diego County Trauma System Access, 2018

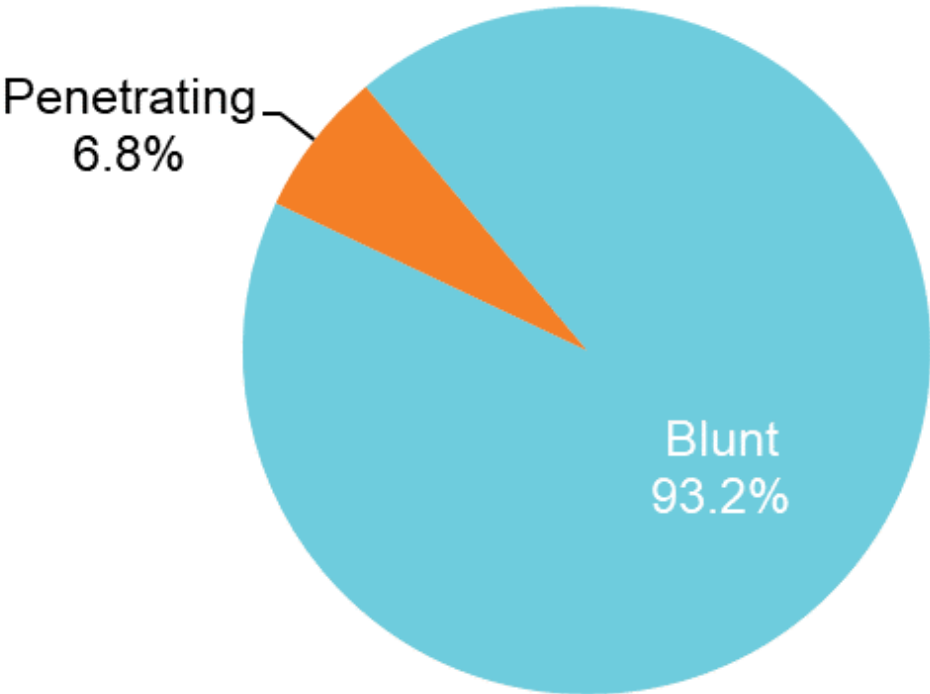
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Source: County of San Diego HHSA, Emergency Medical Services, Trauma Registry 2018

4. San Diego Trauma System Injury Type, Blunt versus Penetrating, 2018

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Source: County of San Diego HHSA, Emergency Medical Services, Trauma Registry 2018

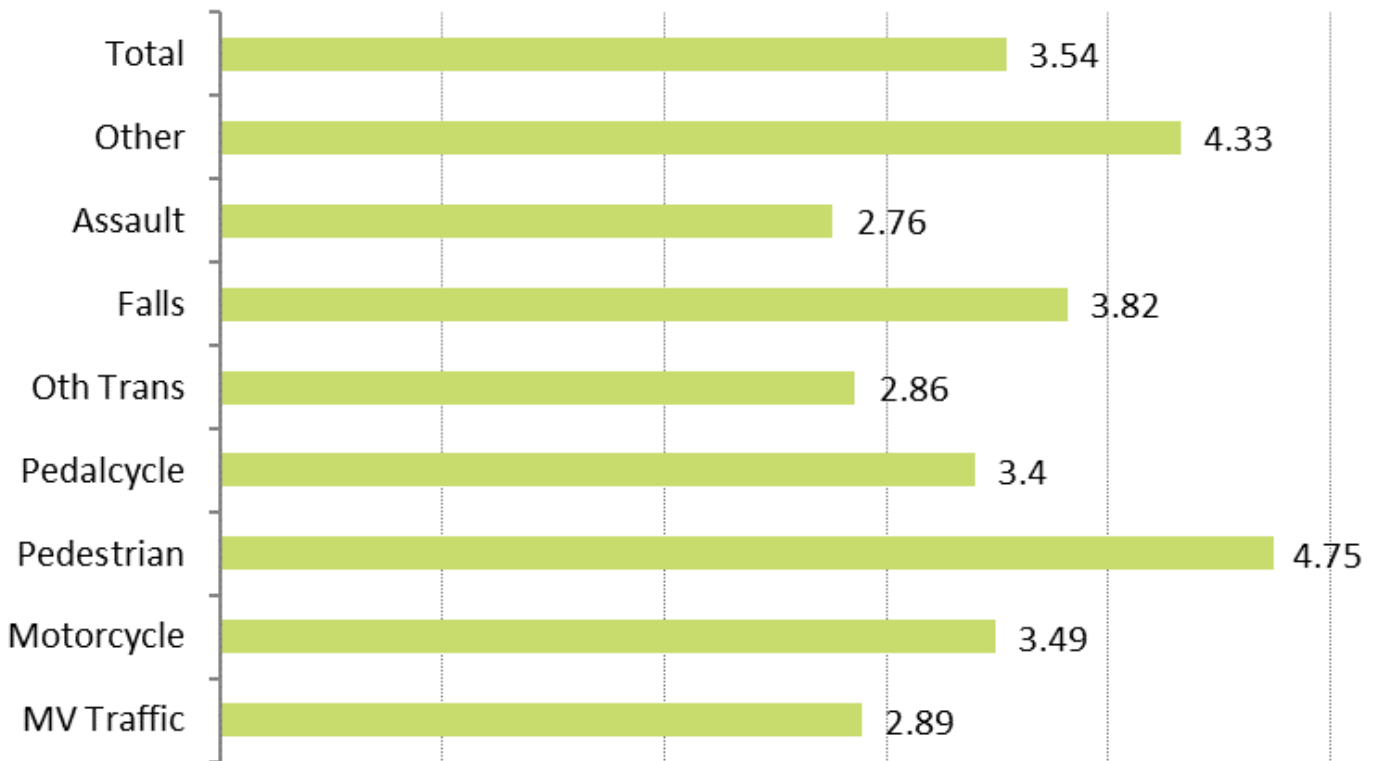
## 5. San Diego Trauma Changing Injury Type by Age Group, 2018

<b>Top Five Trauma Mechanisms by Age Group</b>					
Age	1	2	3	4	5
0 - 4	Falls	MV Traffic	Assault	Pedestrian	Oth Trans
	179	51	24	15	2
5 - 14	Falls	MV Traffic	Pedestrian	Oth Trans	Pedalcycle
	150	98	73	46	41
15 - 24	MV Traffic	Assault	Motorcycle	Falls	Pedestrian
	584	296	250	191	147
25 - 34	MV Traffic	Assault	Motorcycle	Falls	Pedestrian
	511	391	337	266	121
35 - 44	MV Traffic	Assault	Falls	Motorcycle	Pedestrian
	351	289	250	180	106
45 - 54	Falls	MV Traffic	Assault	Motorcycle	Pedalcycle
	334	245	185	155	130
55 - 64	Falls	MV Traffic	Assault	Pedalcycle	Pedestrian
	652	271	145	132	123
65 - 74	Falls	MV Traffic	Pedestrian	Pedalcycle	Motorcycle
	726	200	74	61	38
75 - 84	Falls	MV Traffic	Pedestrian	Oth Trans	Assault
	859	141	34	19	13
85+	Falls	MV Traffic	Pedestrian	Assault	Oth Trans
	921	64	23	3	3
Total	Falls	MV Traffic	Assault	Motorcycle	Pedestrian
	4528	2516	1396	1114	839

Source: County of San Diego HHSA, Emergency Medical Services, Trauma Registry 2018

## 6. San Diego County Mechanism of Injury by Mean Length of Stay (in Days), 2018

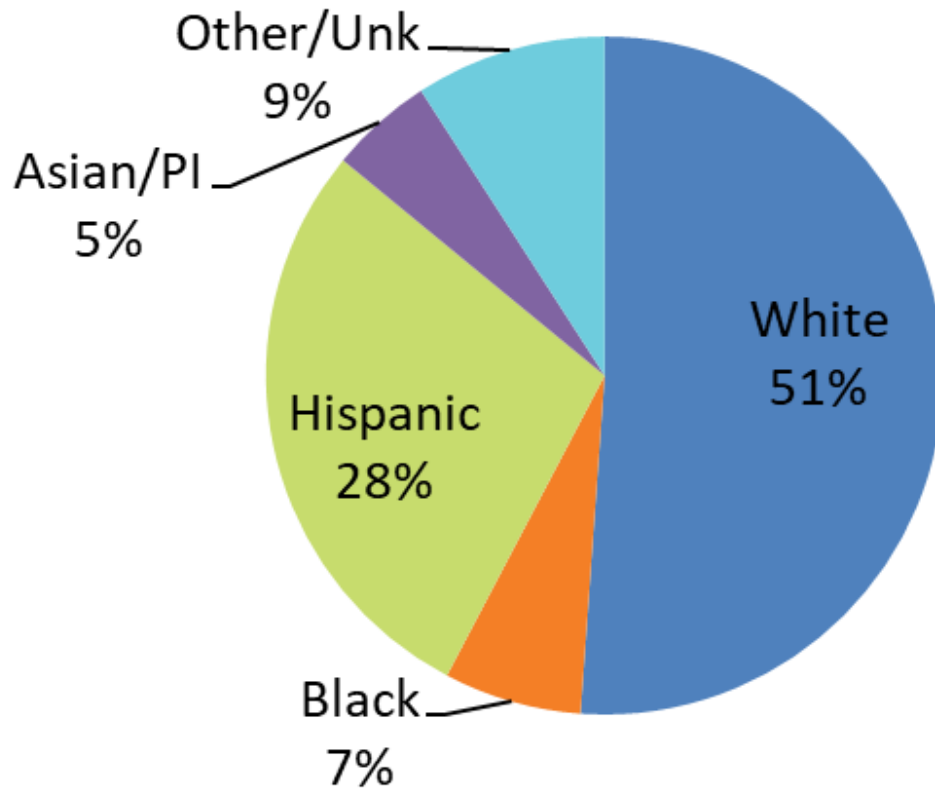
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Source: County of San Diego HHSA, Emergency Medical Services, Trauma Registry 2018

## 7. San Diego County Trauma Patients by Race/Ethnicity Percent, 2018

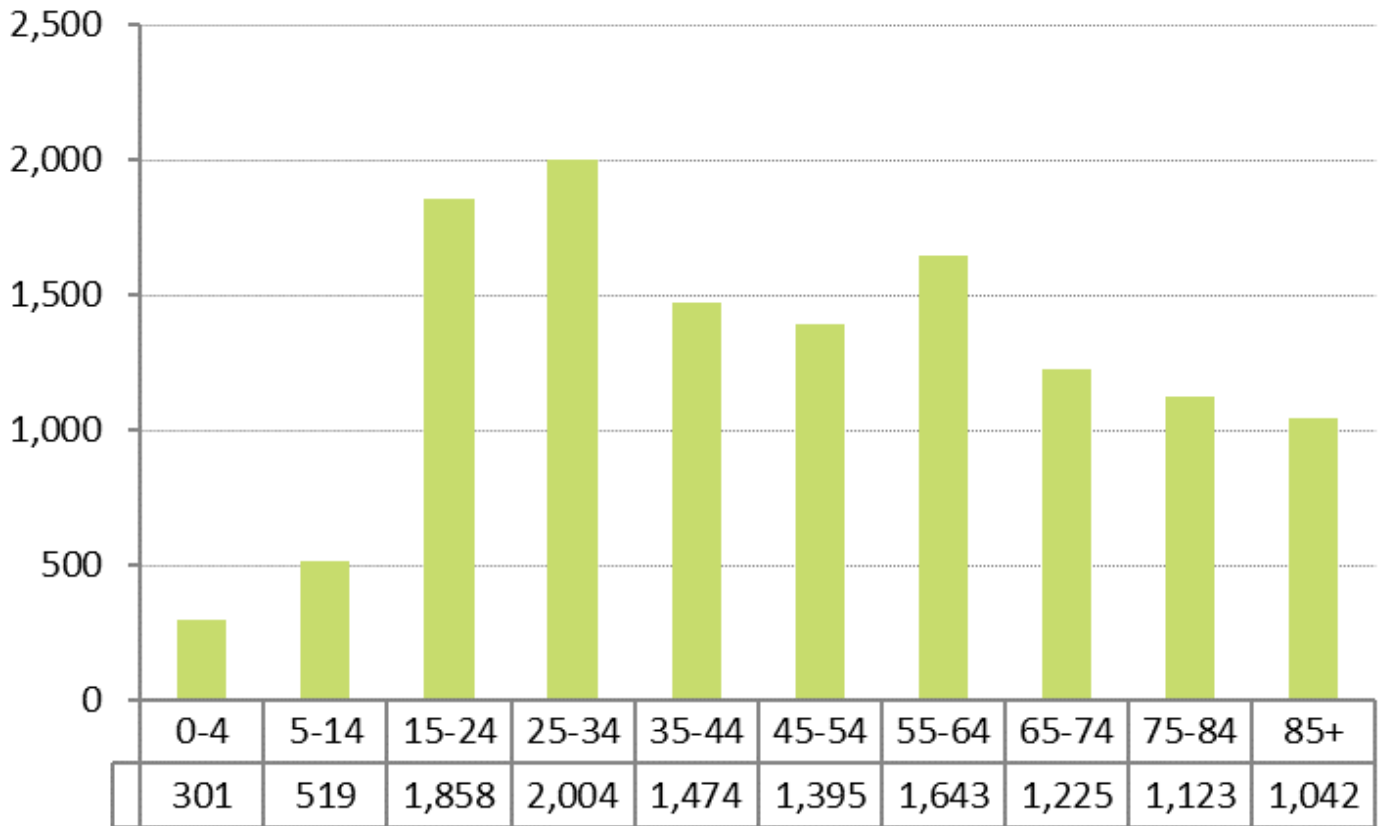
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Source: County of San Diego HHSA, Emergency Medical Services, Trauma Registry 2018



## 8. San Diego County Trauma Patients by Age Group, 2018



Source: County of San Diego HHSA, Emergency Medical Services, Trauma Registry 2018