



COUNTY OF SAN DIEGO TRAUMA SYSTEM

Thirty plus years of MAC.....and still going strong!

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QA Specialist/Trauma/EMSC System Coordinator





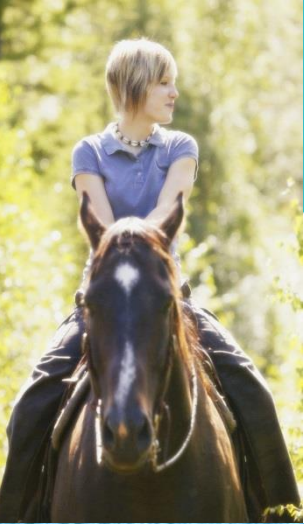
No conflicts and nothing to
disclaim

Welcome to San Diego County, the 2nd most populous county in California and 5th most populous in the United States!

FUN FACTS:

- 3.3 million residents.
- Majority minority population.
- Busiest land border crossing in the world – 1 of every 13 people who enter US come through San Ysidro.
- 70 miles of Coastline.
- 16 naval and military installations.
- 18 federally recognized Indian reservations.
- A total area of 4,526 square miles, larger than Rhode Island and Delaware combined.

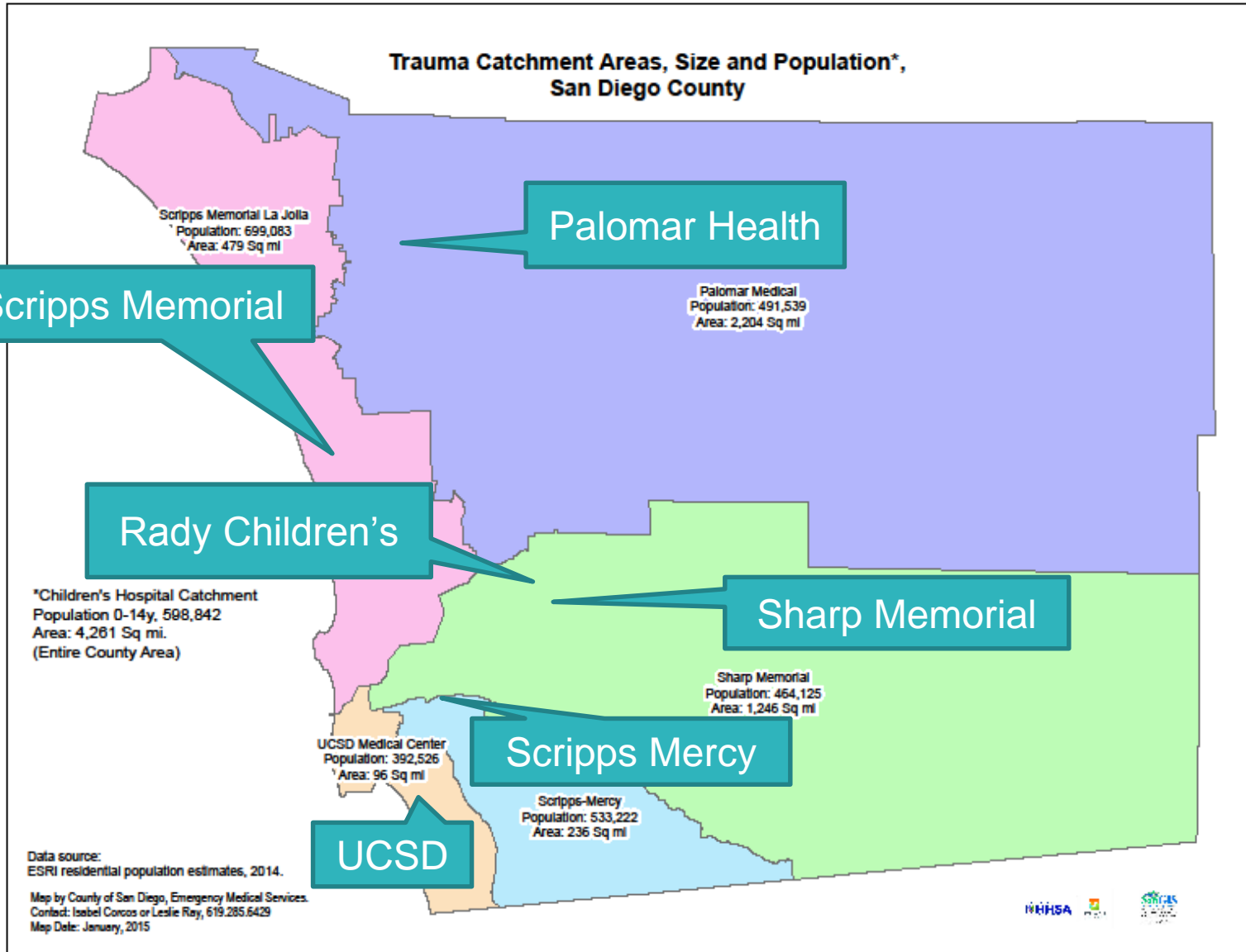




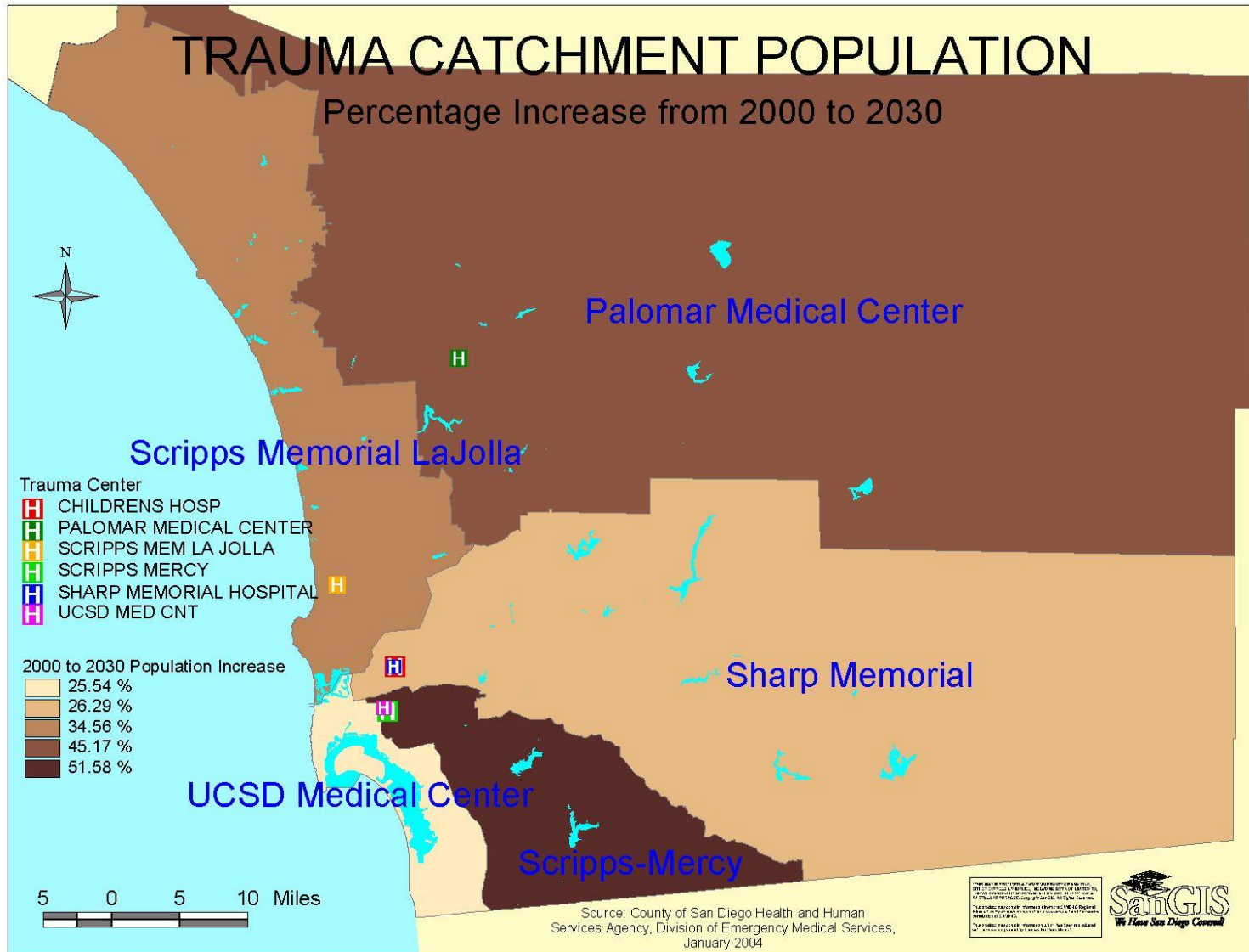


- Feasibility study completed in 1982
 - MTV Definition
 - Prolonged unconsciousness following injury (>5 MIN)
 - Severe multiple systems injury, including burn victims with involvement of 15-20% BSA under 16 y.o., or involvement of >30-40% BSA over 16 y.o. and/or
 - Unstable vital signs/shock accompanying trauma.
- On June 5, 1984, the San Diego County Board of Supervisors approved agreements with six local hospitals to create the San Diego County Trauma System as a public/private partnership.
- August 1, 1984 the first trauma patient arrived at a trauma center.

SAN DIEGO COUNTY TRAUMA CATCHMENT AREAS



CATCHMENT AREAS





3- Level I Trauma Centers

- University of California San Diego Medical Center
- Scripps Mercy Hospital
- Rady Children's Hospital

3- Level II Trauma Centers

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

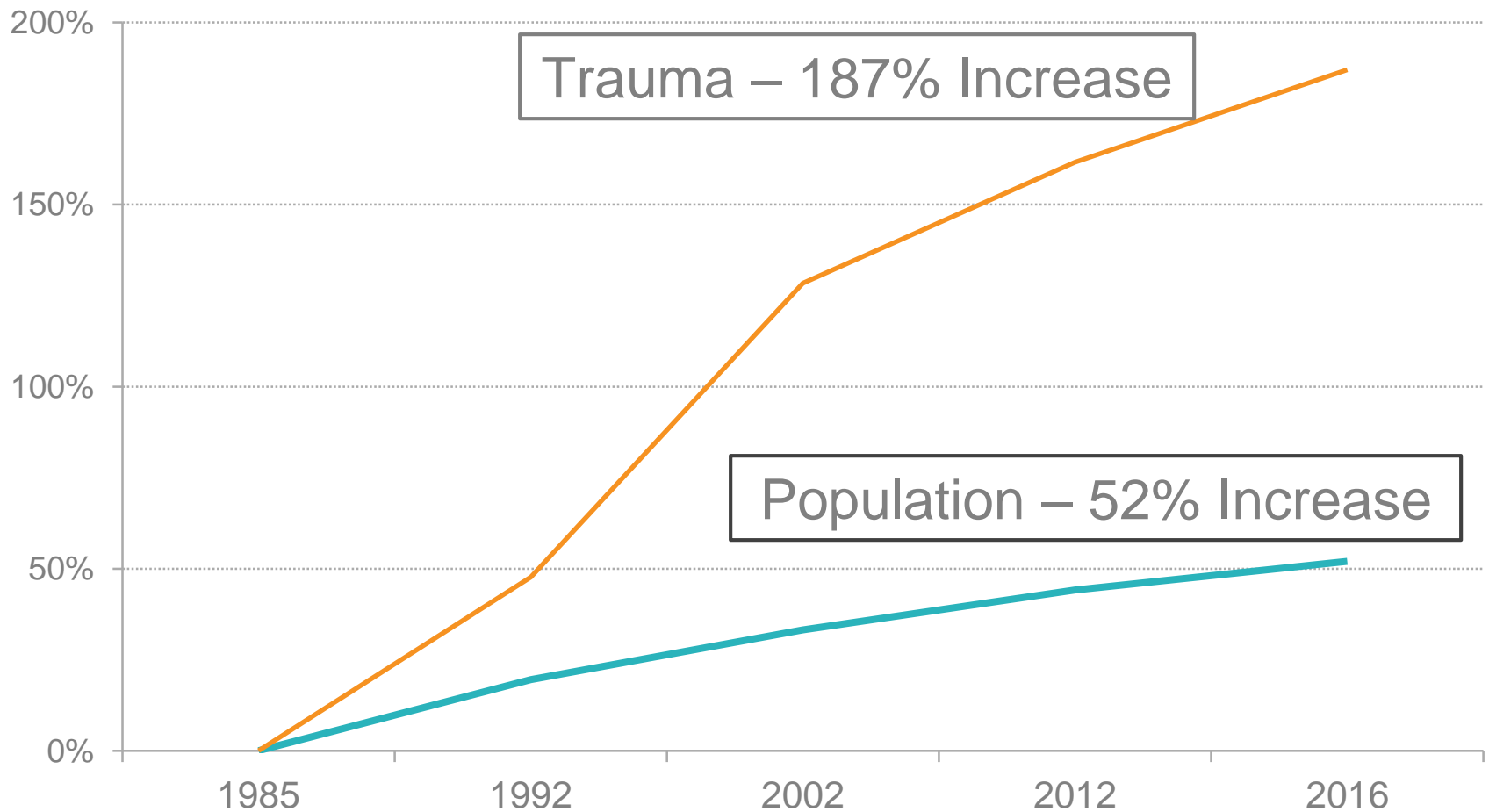


Trauma Center Designation:
CoSD Board of Supervisors

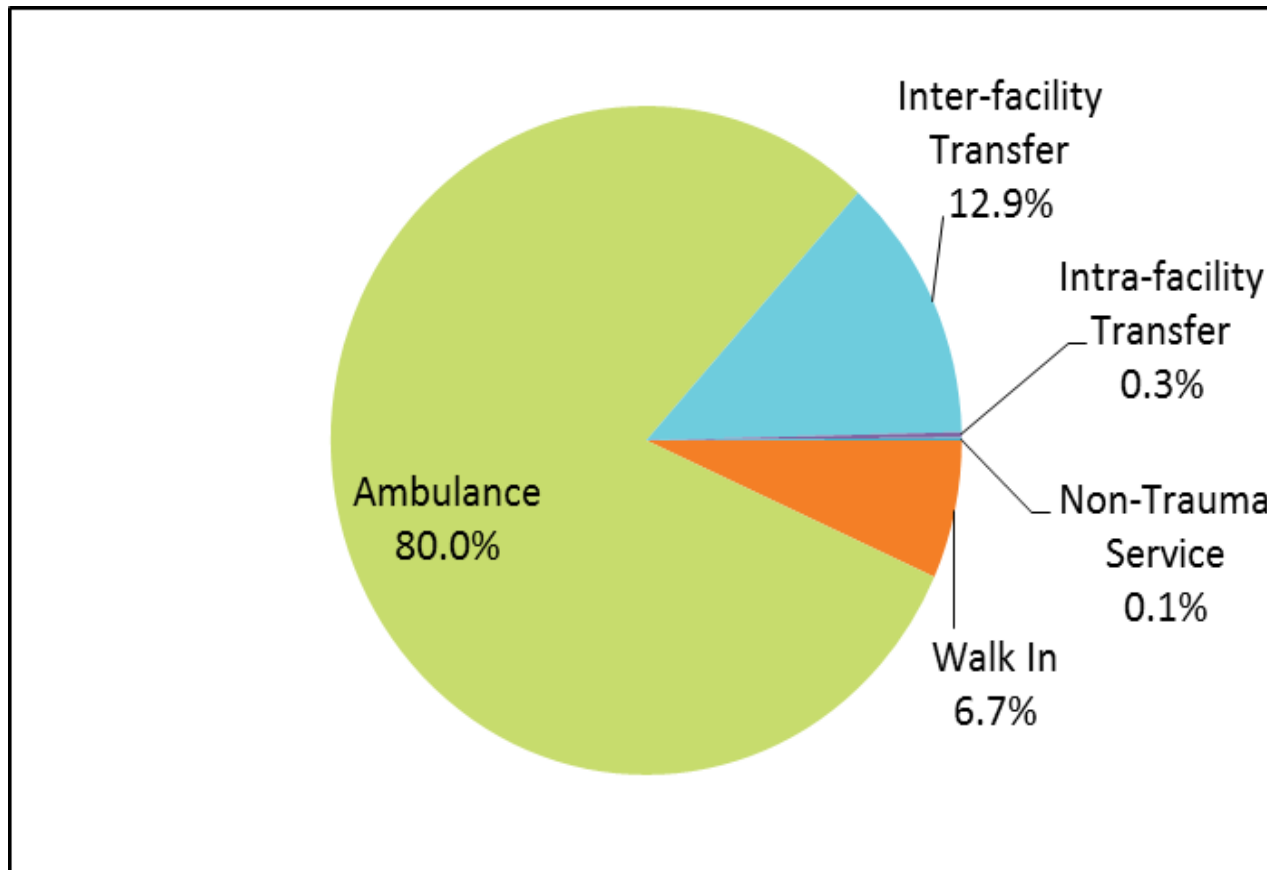
Contracts with CoSD:
Administered by EMS

Contract Compliance Review:
Triennial surveys by the American
College of Surgeons, Committee on Trauma
(ACS, COT) AND CoSD EMS

TRAUMA PATIENTS VS. GENERAL POPULATION

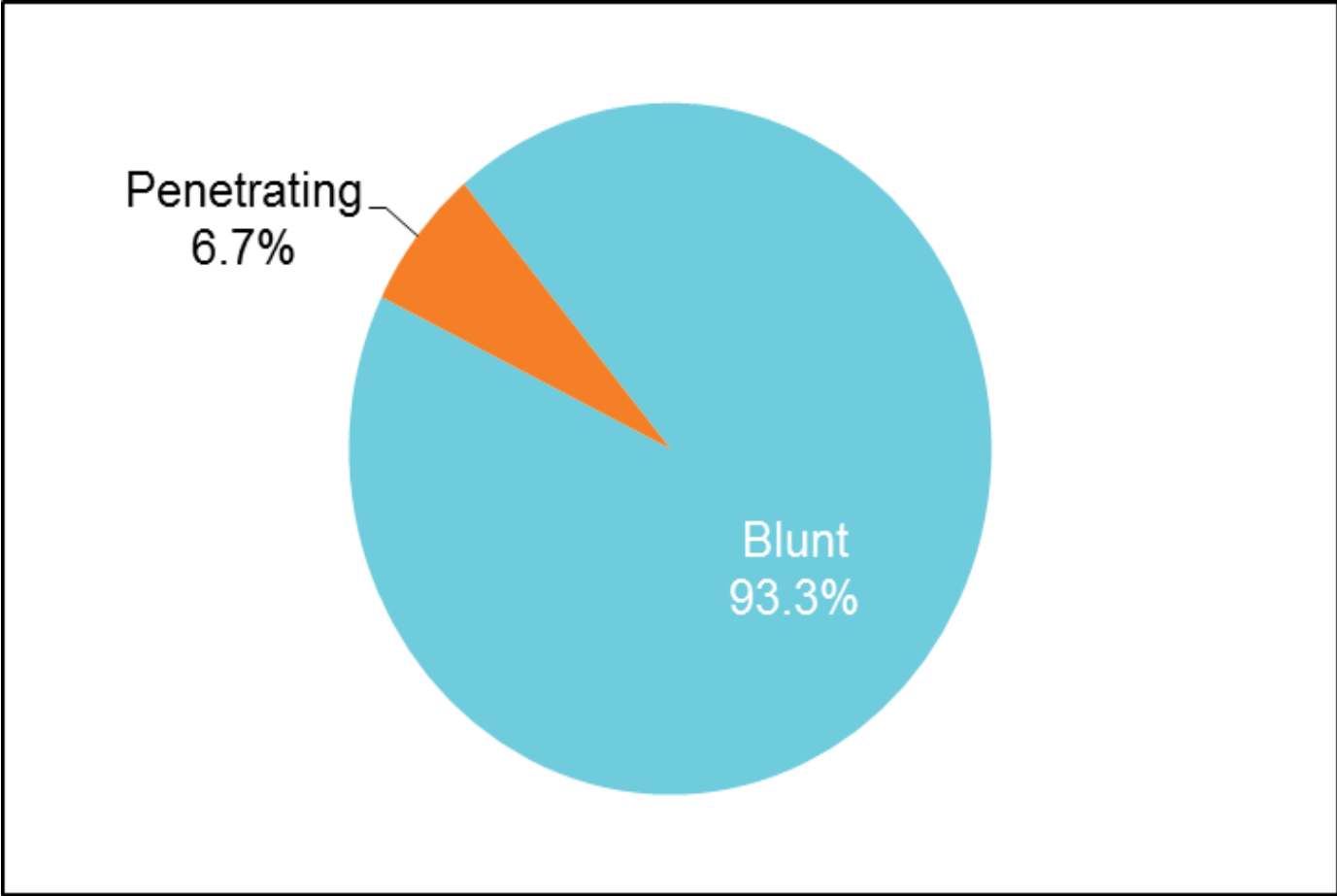


MODE OF ARRIVAL



Source: County of San Diego HHSA, Emergency Medical Services, Trauma Registry 2015

BLUNT VS PENETRATING

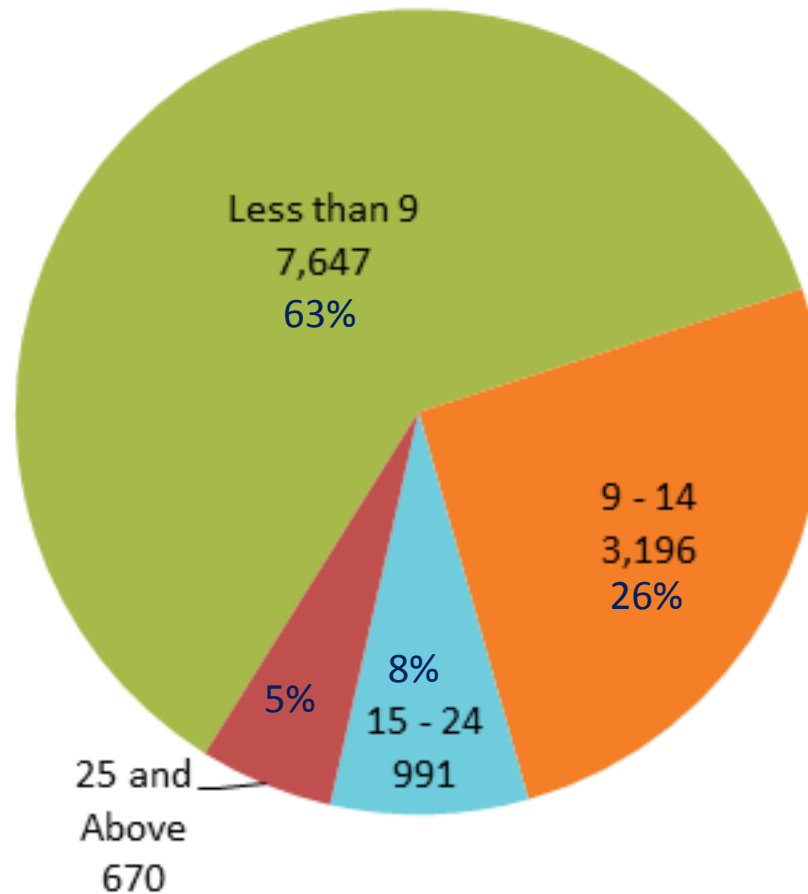


Source: County of San Diego HHSA, Emergency Medical Services, Trauma Registry 2015

ISS SCORES



San Diego County Trauma Volume by ISS Category, 2016

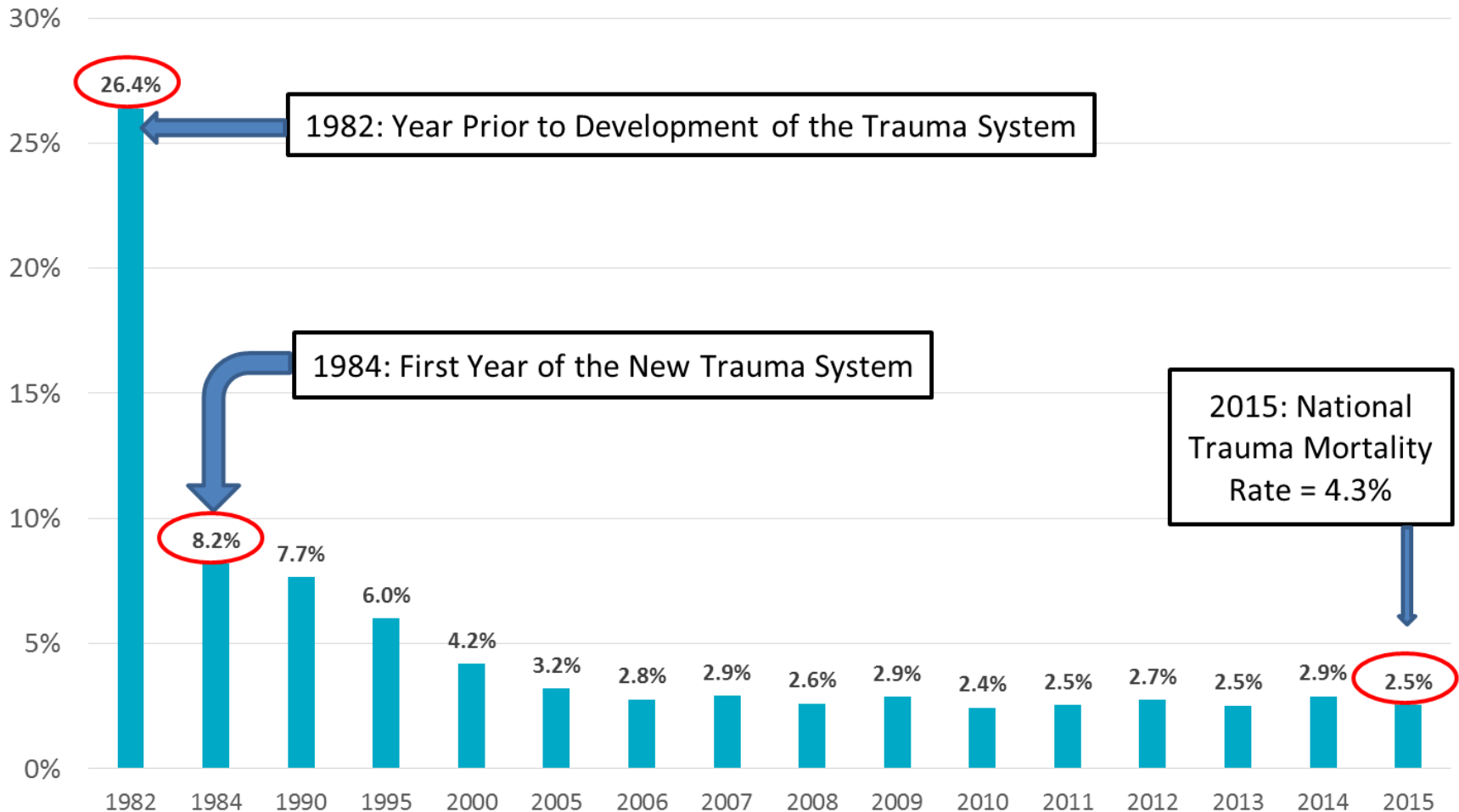


Source: County of San Diego HHSA, Emergency Medical Services, Trauma Registry 2016

MORTALITY RATES



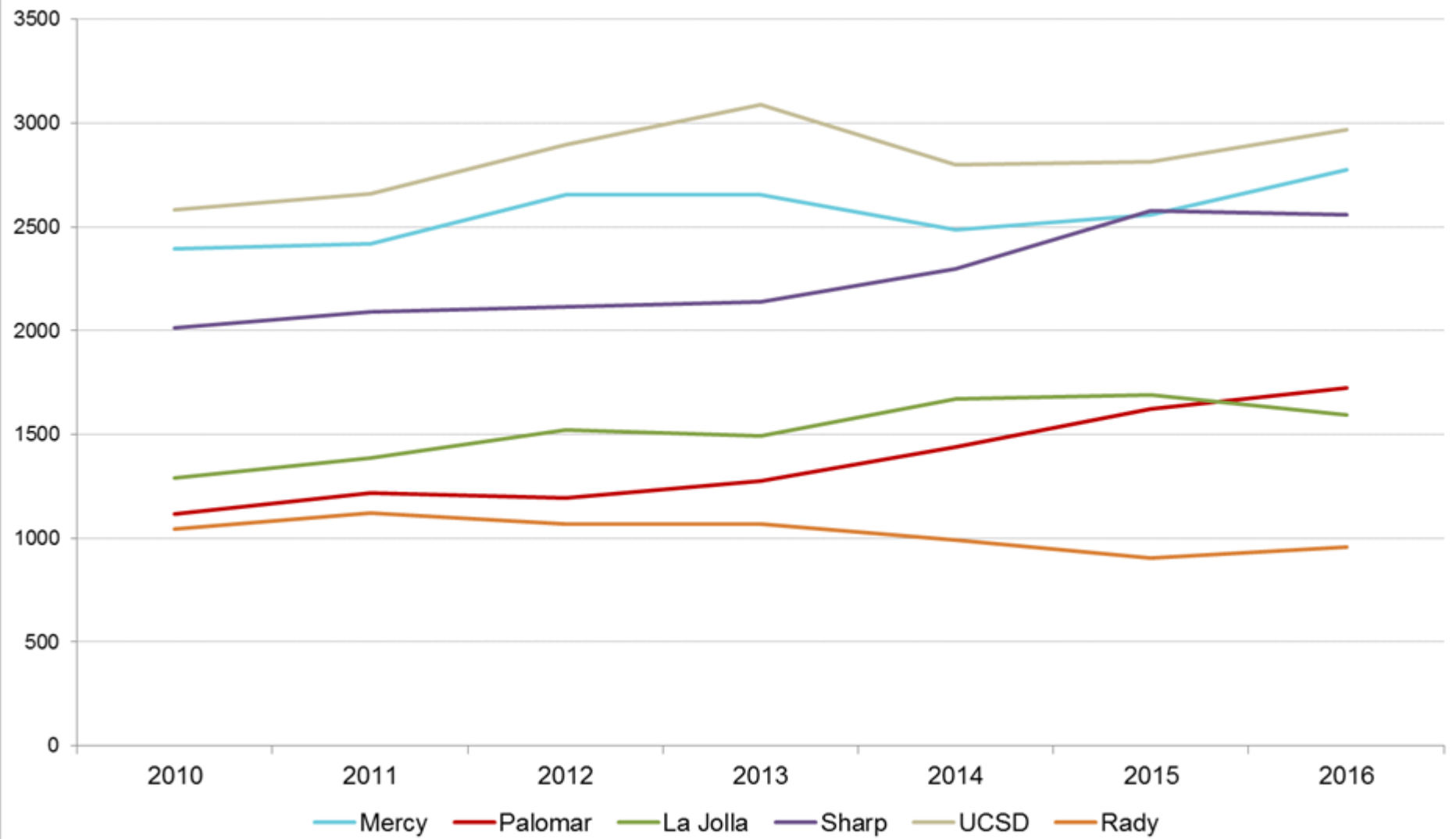
San Diego County Trauma Patient Mortality Rates, 1982 - 2015



TRAUMA CENTER VOLUME



Trauma Center Volume by Year, 2010 - 2016





**SAN DIEGO TRAUMA
SYSTEM
*PERFORMANCE
IMPROVEMENT***



County of San Diego
Trauma Medical Audit
Committee
Better known
As
“MAC”



San Diego County Trauma Centers participate in a Monthly Medical Audit Committee

Chair-Dr. Raul Coimbra, Trauma Medical Director, UCSD

Vice Chair-Melanie Gawlik, RN, Trauma Program Manager, Scripps Memorial

Members include:

County EMS Medical Director-Dr. Kristi Koenig

****County Medical Examiner**-Dr. Robert Stabley**

EMS QA Specialist-Candy Schoenheit, RN

EMS Trauma Epidemiologist-Dr. Joshua Smith

Trauma Medical Directors/Trauma Program Managers from each Trauma Center:

UCSD-Dr. Raul Coimbra/Pat Stout, RN

Scripps Mercy-Dr. Vishal Bansal/Tony Chiatello, RN

Sharp-Dr. Diane Wintz/Kathi Ayers, RN

Scripps Memorial-Dr. Imad Dandan/Melanie Gawlik, RN

Palomar Medical Center-Dr. John Steele/Melinda Case, RN

Rady Children's-Dr. Mary Hilfiker/Renee Douglas, RN

Neurosurgeon Representative-Dr. Hal Meltzer

Anesthesiologist Representative-Dr. Kris Bjornson

Orthopedic Surgeon-Dr. Jeffery Smith

Non Trauma Center Representative-Dr. Jessica Deree, Kaiser

Base Hospital Physician representing Prehospital Audit Committee-Dr. Saul Levine



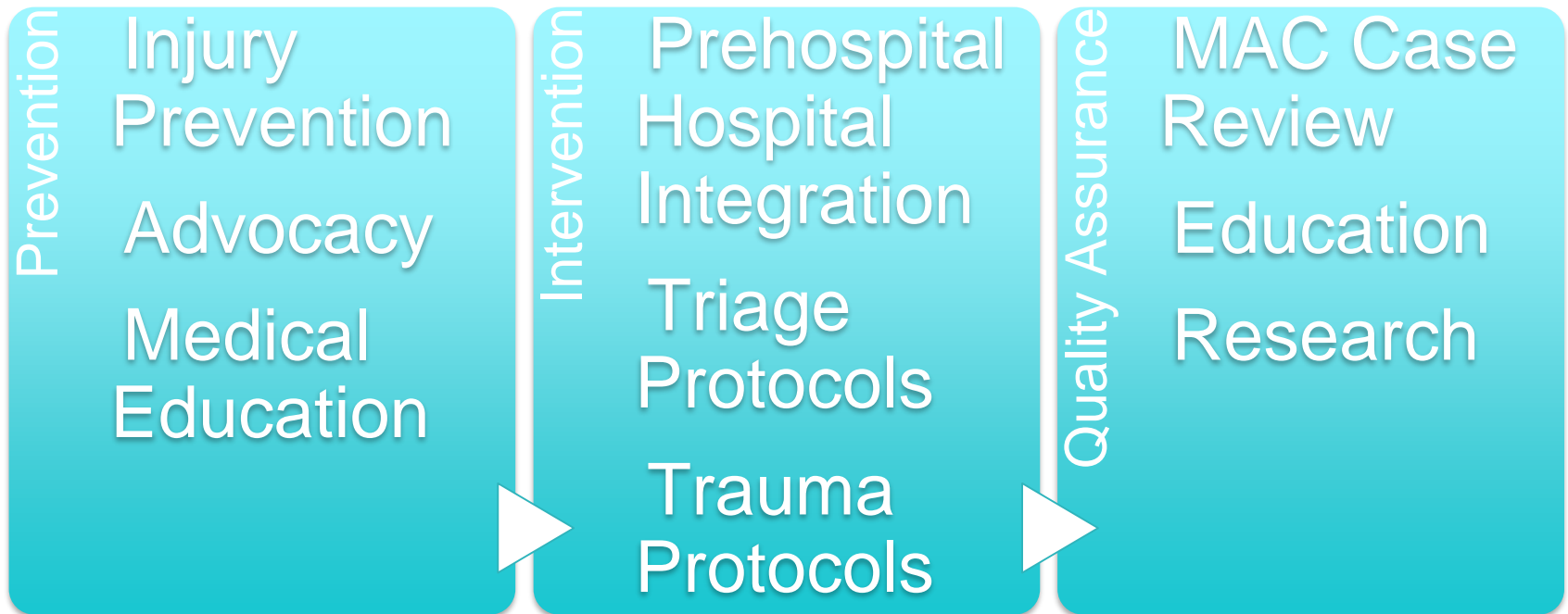
BIG MAC OR MAC ATTACK



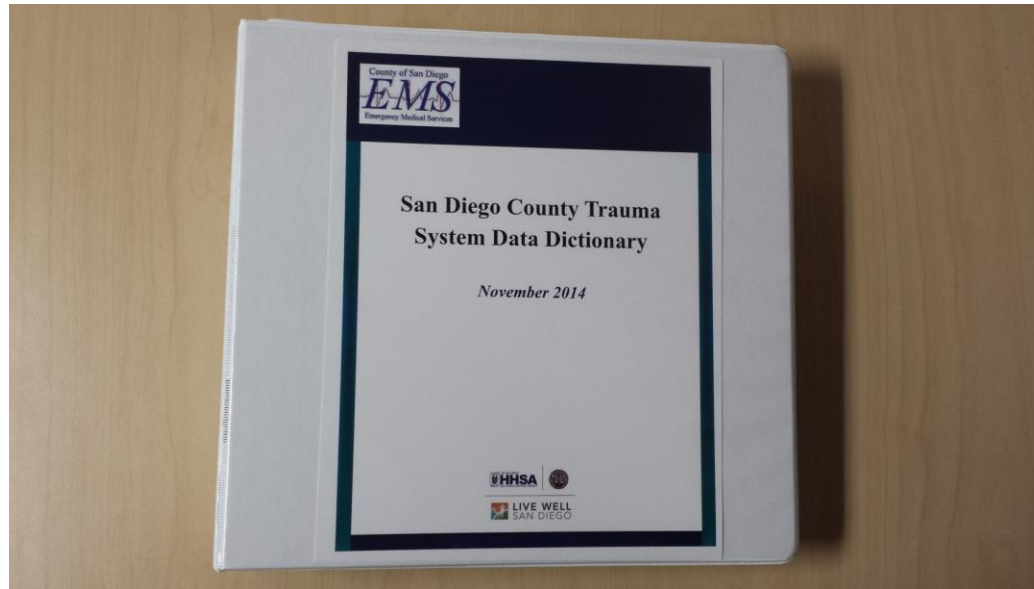
The San Diego Model:



Collaboration and Cooperation is essential for successful System PI



BACK TO BASICS



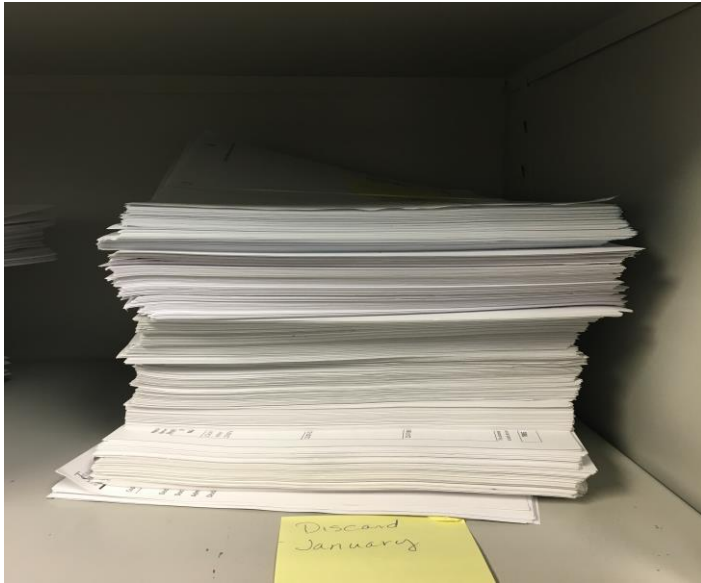
San Diego County Trauma System Data Dictionary is updated every year!!!

Over 100 SD specific audit filters

PAPER MAC TO EMAC



OLD



- Notebook submission
- Driving exchange
- Drive to pick up

NEW



- Every Case is reviewed by a TMD from another facility
- Case presented at MAC
- Adjudication happens at MAC



Each Trauma Medical
Director rotates every
other month for case
review

COMPLETED CASES



- Cases that have been closed.
- Dictations if required are complete.
- Autopsy results are reviewed.
- The case has been through the Trauma Center PI process
 - Trauma M&M
 - Specialty M&M



Reviewer receives cases via Watchdox:

Pre-Mac summary of every case

- De-identified
- Pre-selected fields from registry including all audit filters

Dictation if indicated

Autopsy if indicated



Cases chosen by the
reviewer to be presented
at MAC receive an
Adjudication



MAC BACK

Cases that receive an additional or different adjudication are taken back through the Trauma Center PI (M&M, physician consultation...)



- **Case Review- California Evidence Code Section - 1157 PROTECTION**
- **Trauma Dashboard-trending**
- **Annual Medical Examiner Report**
- **Annual Trauma Report**
- **Performance Improvement Projects ie. Falls**
- **Annual Trauma Center Administrators Meeting**



COSD Trauma Center Dashboard

San Diego County Trauma System Dashboard			
REPORT CARD 2015			
Trauma Volume & Utilization	Definition	SD County Benchmark	Trend
Month is Complete	"X" designates the month as "mostly" complete		
Total patients in the registry			
Total patients that meet NTDB registry criteria	The number of patients that meet NTDB Trauma Inclusion Criteria		
Total Activations	The total number of activations called		
Full Activations	The total number of Full Activations (Entire Trauma Team)		
Partial Activations	The total number of Partial Activations (partial team)		
Trauma Resource	The Total number of patients transported for trauma resource		
Total Admissions	Total number of patients admitted from the resuscitation room		
Percent Admitted	Percent of total patients who were admitted from the resuscitation room		
Transferred patients into the system	Total number of patients transferred to the Trauma Centers		
Total Discharges	Total number of patients discharged (excluding deaths)		
Discharged from ED	Total number of traumas discharged without admission		
% of trauma patients discharged from ED	Total % of trauma patients discharged from ED		
Average Length of Stay	Average LOS of trauma patient (in days)		
Average LOS ICU	Average ICU LOS (in days)		



- Trauma Program Managers
- Performance Improvement
- Trauma Research Education Foundation (TREF)
 - TREF Injury Prevention
 - My Gray Matters
 - Bike to work-helmets
 - Education for staff nurses
 - Live Well San Diego Partner

HOW SYSTEM PI BEGINS



Top Five Trauma Mechanisms by Age Group					
Age	1	2	3	4	5
0 - 4	Falls	MV Traffic	Pedestrian	Struck By	Oth Trans
	205	36	26	19	4
5 - 14	Falls	MV Traffic	Pedestrian	Pedalcycle	Struck By
	203	96	67	59	44
15 - 24	MV Traffic	Motorcycle	Falls	Struck By	Stabbing
	608	322	321	246	165
25 - 34	MV Traffic	Motorcycle	Falls	Struck By	Stabbing
	467	313	287	234	155
35 - 44	Falls	MV Traffic	Motorcycle	Struck By	Stabbing
	278	241	159	133	88
45 - 54	Falls	MV Traffic	Motorcycle	Struck By	Pedalcycle
	449	244	175	171	104
55 - 64	Falls	MV Traffic	Pedalcycle	Struck By	Motorcycle
	630	241	104	102	97
65 - 74	Falls	MV Traffic	Pedalcycle	Pedestrian	Motorcycle
	603	146	55	49	44
75 - 84	Falls	MV Traffic	Pedestrian	Oth Trans	Pedalcycle
	797	94	34	22	15
85+	Falls	MV Traffic	Oth Trans	Pedestrian	Struck By
	931	47	19	13	10
Total	Falls	MV Traffic	Motorcycle	Struck By	Pedestrian
	4704	2220	1163	990	638



Regional Trauma Coordinating Committees



Northern California Region

- North Coast EMS Agency
- NorCal EMS Agency
- Sierra-Sacramento EMS Agency
- Sacramento County EMS Agency
- El Dorado County EMS Agency
- San Joaquin County EMS Agency
- Coastal Valleys EMS Agency
- Marin County EMS Agency



Central California Region

- Central California EMS Agency
- Mountain Valley EMS Agency
- Tuolumne County EMS Agency
- Merced County EMS Agency
- Kern County EMS Agency



Bay Area Region

- Solano County EMS Agency
- Contra Costa County EMS Agency
- San Francisco County EMS Agency
- San Mateo County EMS Agency
- Alameda County EMS Agency
- Santa Clara County EMS Agency
- Santa Cruz County EMS Agency
- San Benito County EMS Agency
- Monterey County EMS Agency



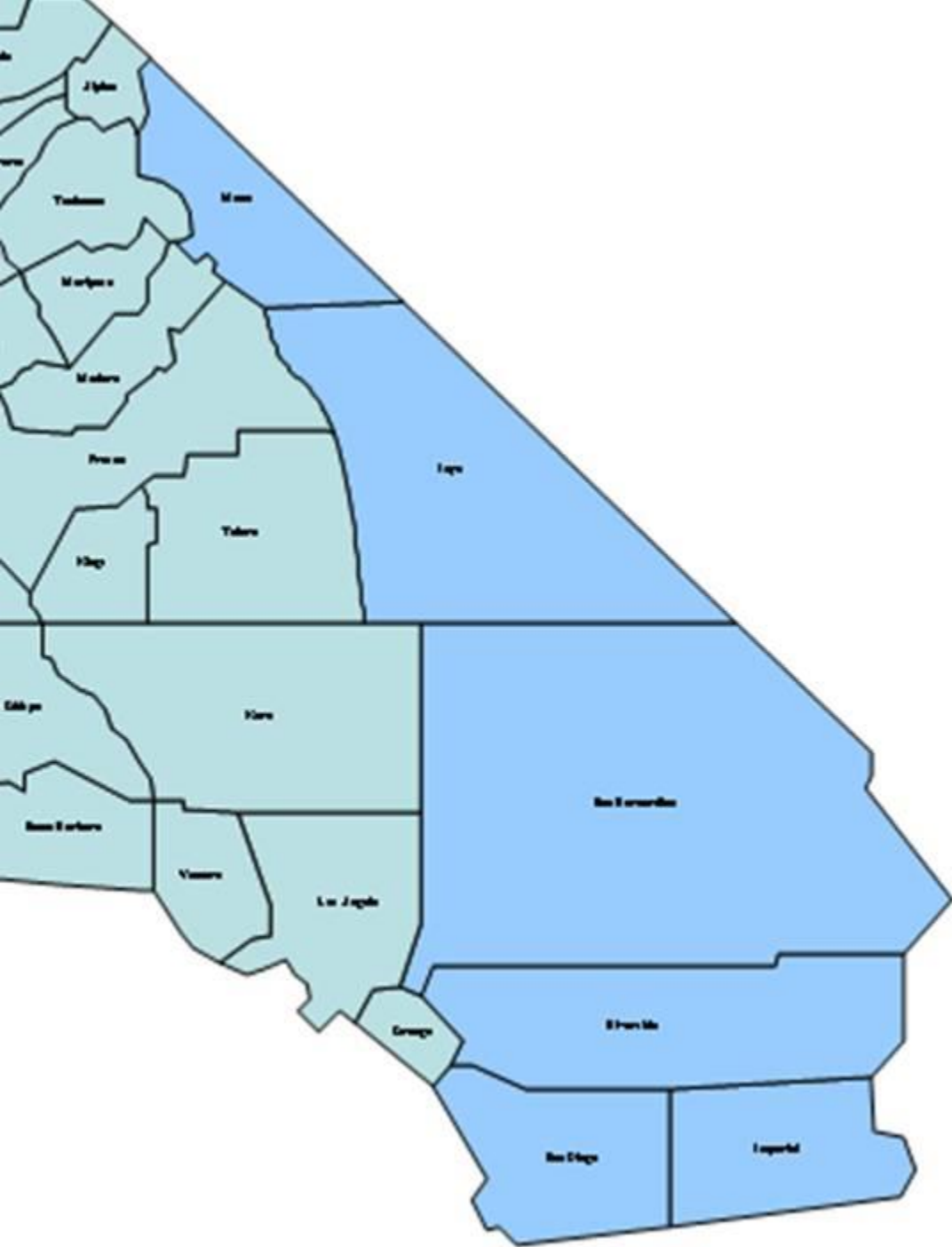
Southern Region

- San Luis Obispo County EMS Agency
- Santa Barbara County EMS Agency
- Ventura County EMS Agency
- Los Angeles County EMS Agency
- Orange County EMS Agency



South Eastern California Region

- Inland Counties EMS Agency
- Riverside County EMS Agency
- San Diego County EMS Agency
- Imperial County EMS Agency



Region #5

South Eastern California Region

Inland Counties EMS Agency

Riverside County EMS Agency

San Diego County EMS Agency

Imperial County EMS Agency



PI PROJECTS

- IMAGING FOR NON-TRAUMA CENTERS
- ADULT CERVICAL SPINAL CLEARANCE
ALGORITHM FOR NON-TRAUMA CENTERS

HOW DOES SD TRAUMA SYSTEM STAY STRONG:



System Leadership: San Diego Trauma System is a collaborative effort resulting from a public/private partnership lead by the county.

Coalition Building/Community Support: Collaboration between all trauma centers. TREF is active in many community events. Partnership with Live Well San Diego.

Lead Agency: EMS is empowered by Title 22 to create and monitor county trauma systems. Annual reviews. Combined ACS visits.

Trauma System Plan: Trauma System plan is updated every year and submitted to EMSA. Any changes or needs to the Trauma System are identified in this report.

System Integration: Each trauma center has a relationship with their catchment communities. Non-trauma centers are assigned to Trauma Centers in their catchment area for collaboration. Kaiser is included in MAC.

Financing: LEMSA fee schedule was evaluated and revised this year. TPM/TMD meet with their Administration on a regular basis.

QUESTIONS

