



EMS SYSTEM REPORT

JULY 1, 2013

ISSUE 2

Message from the Director and Medical Director

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The EMS Agency's is charged with the coordination of the Emergency Medical System for Los Angeles County, one of the busiest and largest systems in the nation. Coordination of the system ensures that a person calling 9-1-1 receives uniformly high quality care and transport to the appropriate hospital, from the ocean to the mountains and desert. The geographic size and complexity make this a difficult task yet effectively managed due to the dedication of thousands of our EMS personnel working around the clock to provide quality care.



Cathy Chidester

Since its inception in the early 1970's, as one of the first providers of paramedic services, the County officials and consultants recognized the importance of data in systems management. Our current data base contains over 12 million patient

records, processed through hard copy and hand entered into a computer data system. Over 600,000 patient care records are processed each year with little change since 1970. Technological advances and healthcare reform are rapidly leading EMS from a paper based system to electronic. While it may take several years for the complete transition, we are already seeing positive effects from the rapid transmission of our data. Without a robust and real time data, management of our system is always playing "catch" up with system wide events.



Dr. William Koenig
Medical Director

Our goals for this report continue to be:

GOAL 1 - Provide EMS data to our participants, encourage them to recognize the importance of their

data in managing our system and optimizing patient care.

GOAL 2 - Highlight the detrimental impact of data gaps on our ability to make data driven decisions and the limitations they place on evaluating quality and outcomes of patient care.

GOAL 3 - Document how the EMS system design improves patient outcome and parallels the healthcare needs of the community and addresses the leading causes of death and disability (heart attack, stroke, and trauma) in Los Angeles.

We would like to thank the Board of Supervisors, Dr. Mitch Katz, Director of the Department of Health Services and the EMS Commission for their ongoing support of the system. Most significantly we need to thank Richard Tadeo for his efforts in compiling and designing this comprehensive report.

SPECIAL POINTS OF INTEREST:

- Trauma system data facts are in pages 3-4
- ROSC & Therapeutic Hypothermia information are in pages 5-6
- STEMI program information are in pages 7-9
- Stroke program information are in pages 10-12

System Demographics

72 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
- 31 Approved Stroke Centers
- 54 Perinatal Centers
- 40 Hospitals with Neonatal Intensive Care Unit
- 9 Sexual Assault Response Team Centers
- 13 Disaster Resource Centers

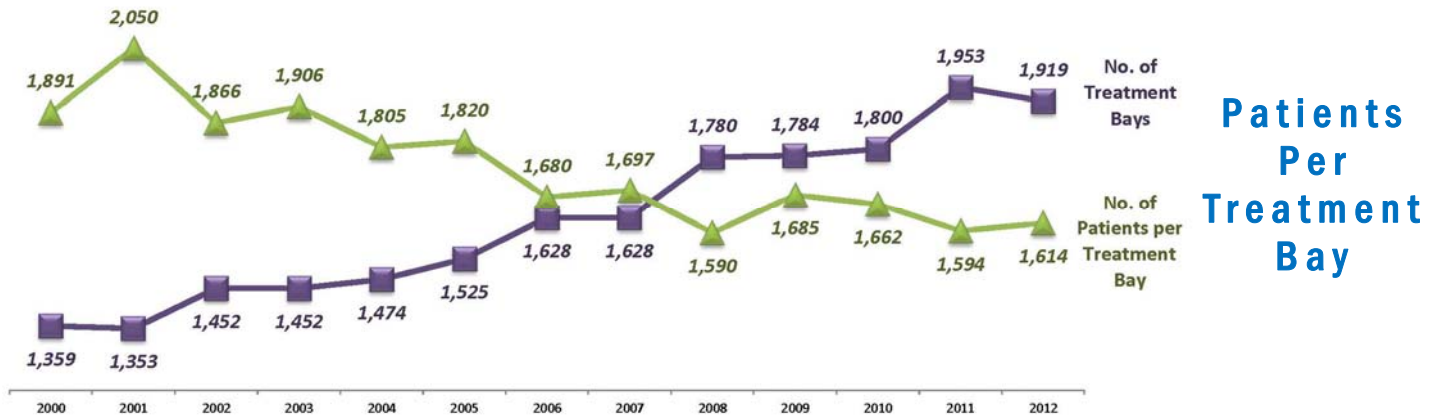
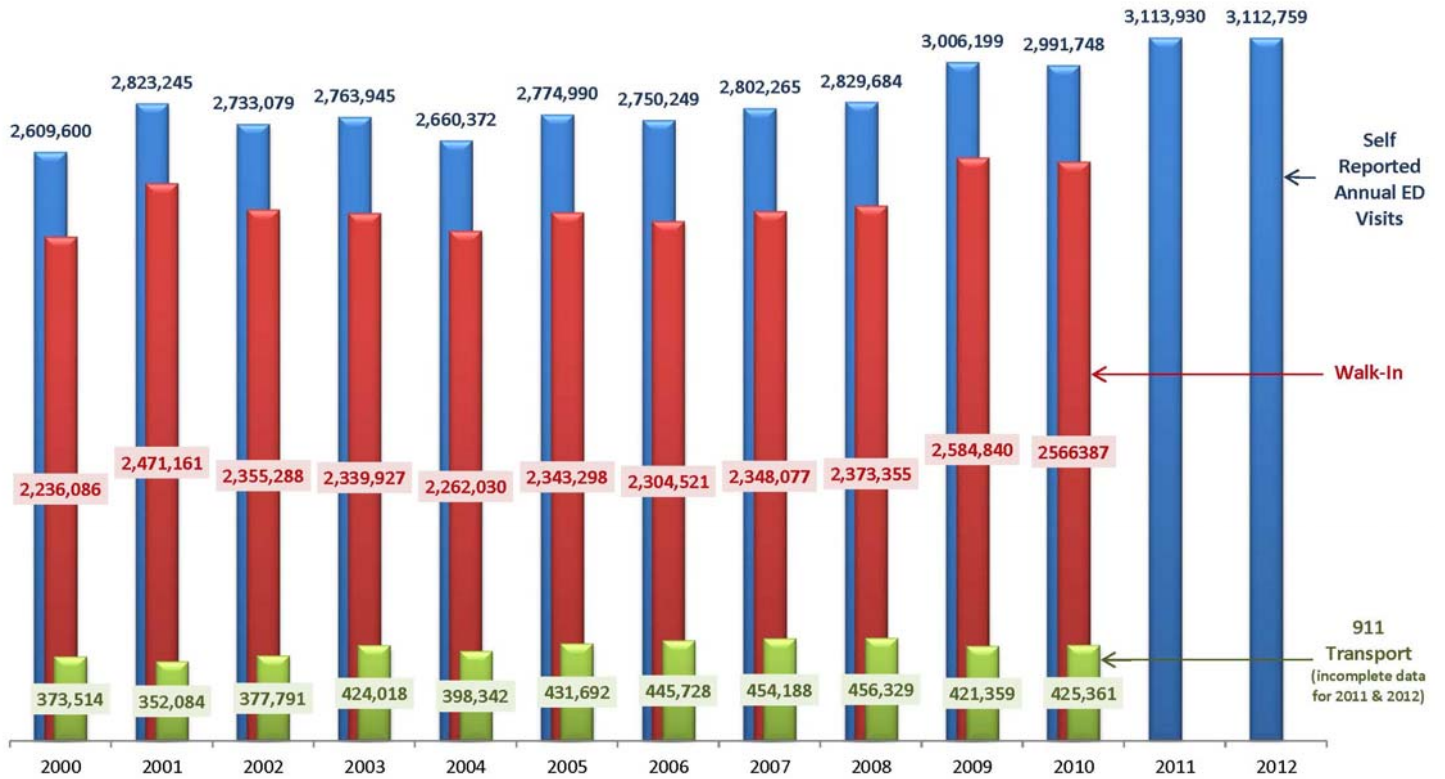
EMS Provider Agencies

- 32 Public Safety EMS Provider Agency
- 26 Licensed Basic Life Support Ambulance Operators
- 18 Licensed Advanced Life Support Ambulance Operators
- 16 Licensed Critical Care Transport Ambulance Operators
- 6 Licensed Ambulette Operators

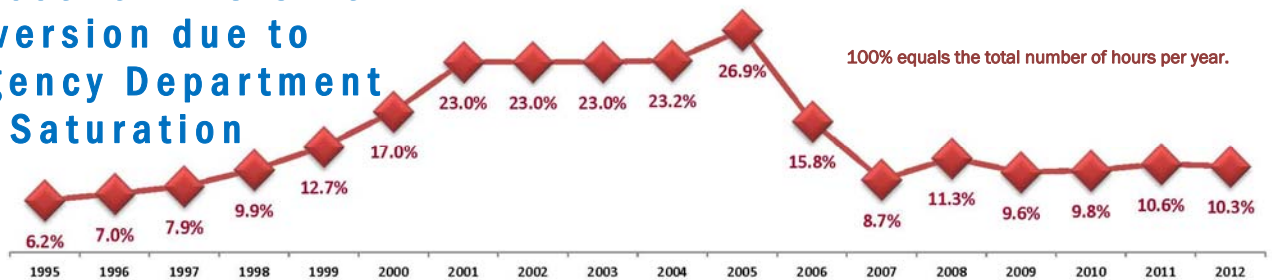
EMS Practitioners

- 3,550 Accredited Paramedics
- 7,331 Certified EMTs by LA Co EMS Agency
- 816 Certified Mobile Intensive Care Nurses

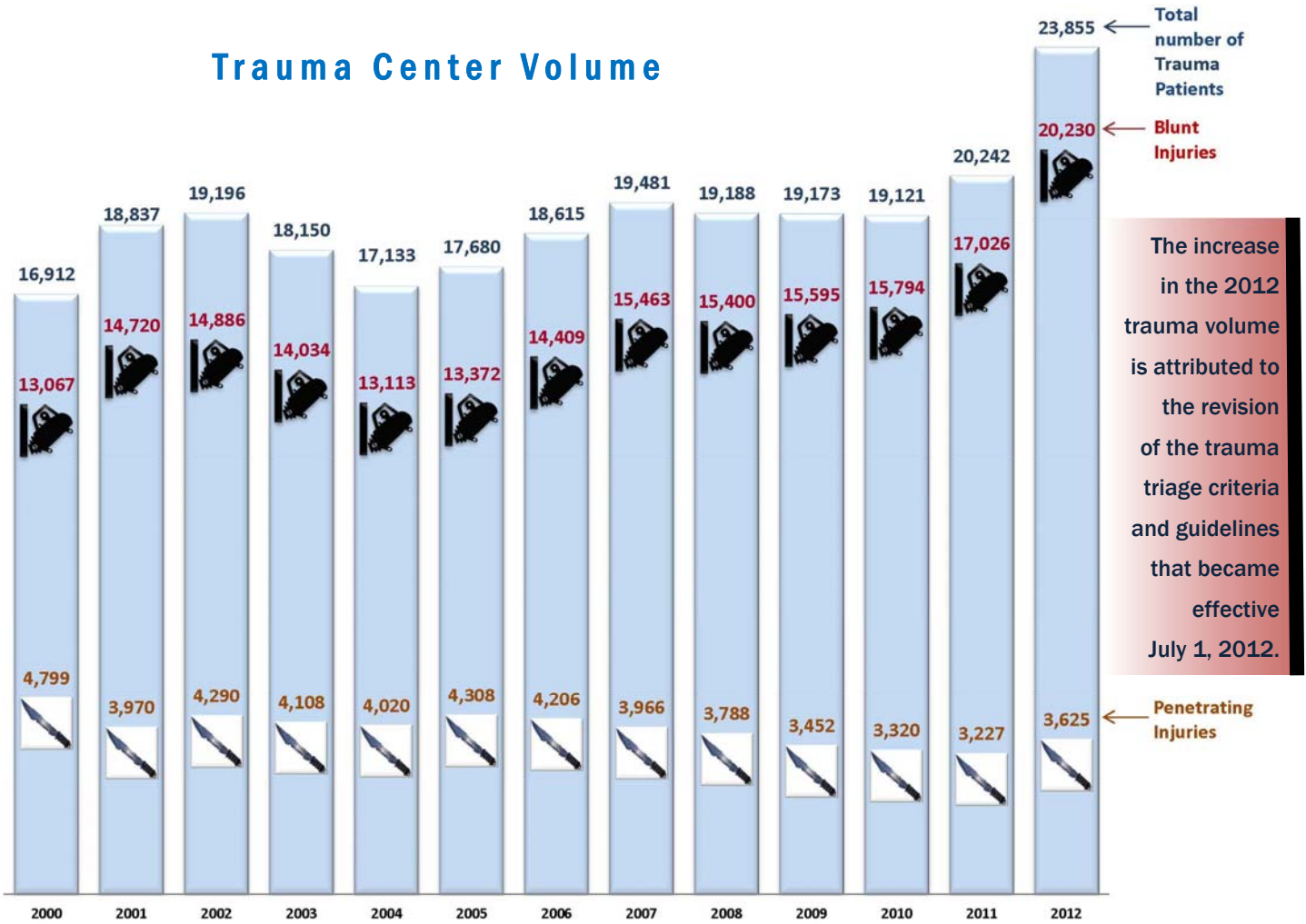
Emergency Department Volume



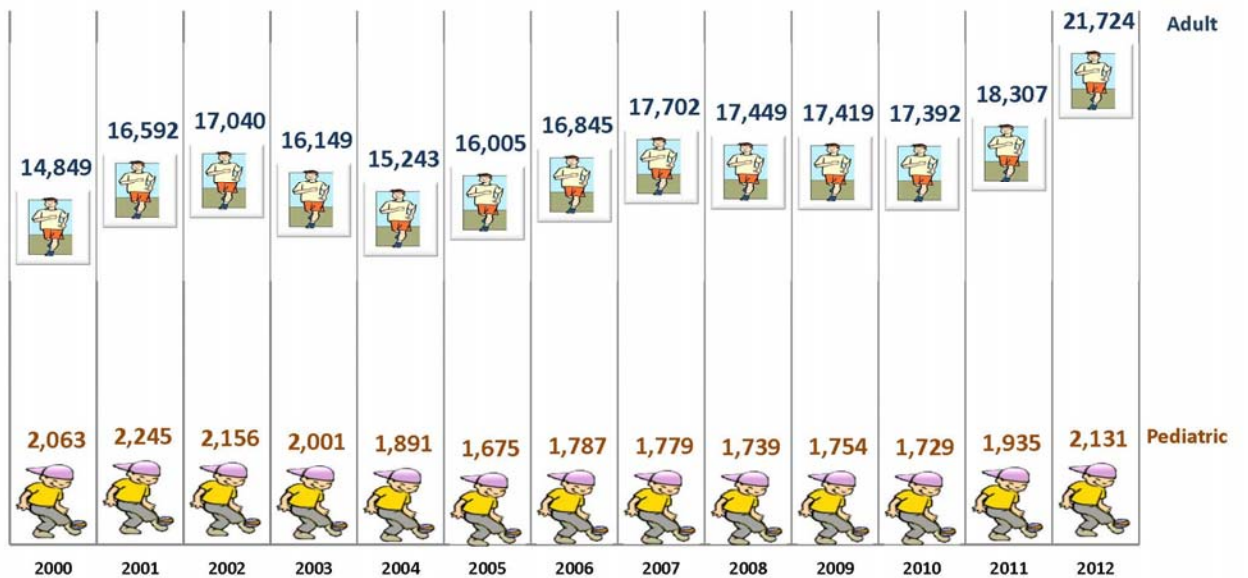
Request for ALS Unit Diversion due to Emergency Department Saturation



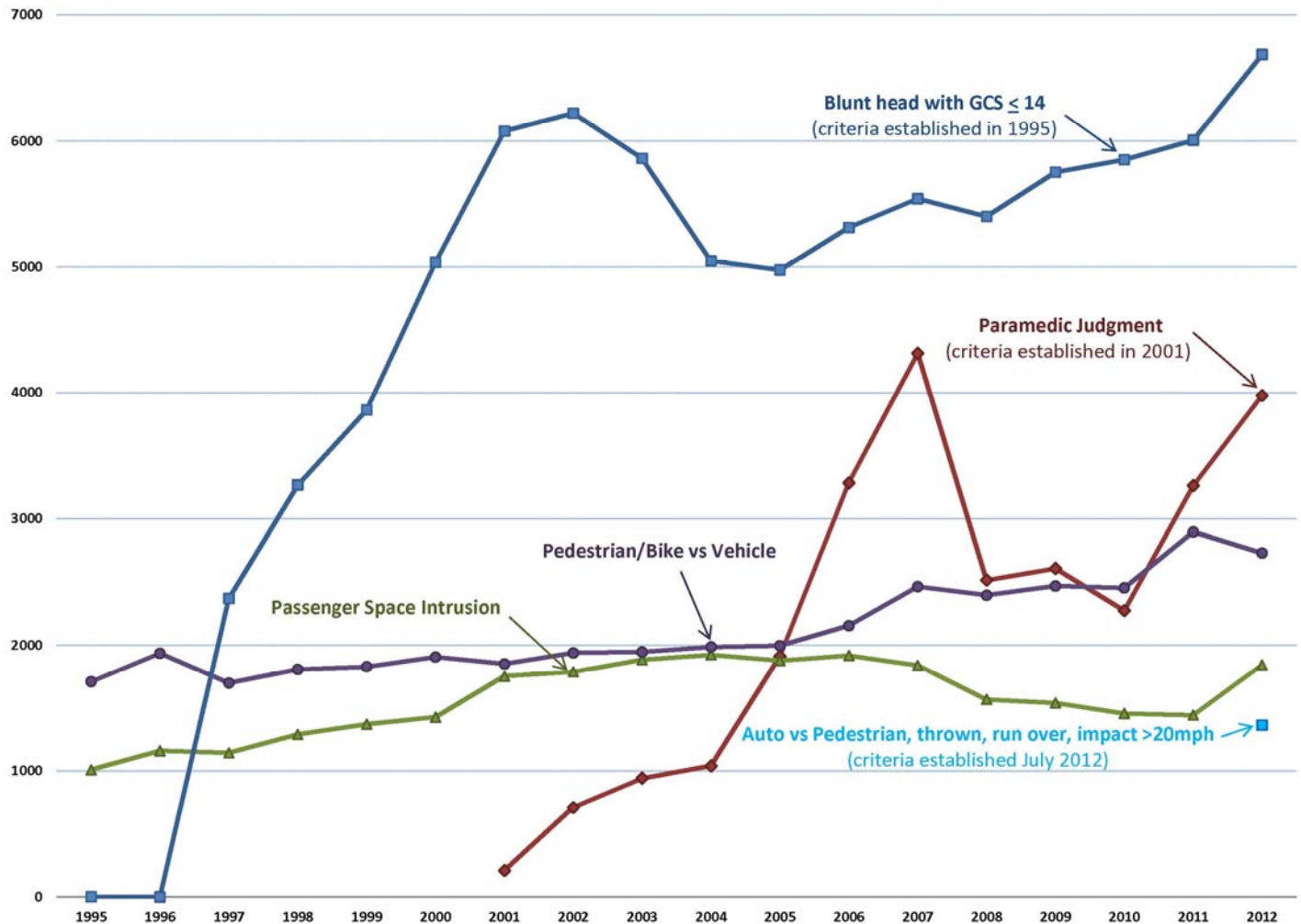
Trauma Center Volume



Adult vs Pediatric Trauma

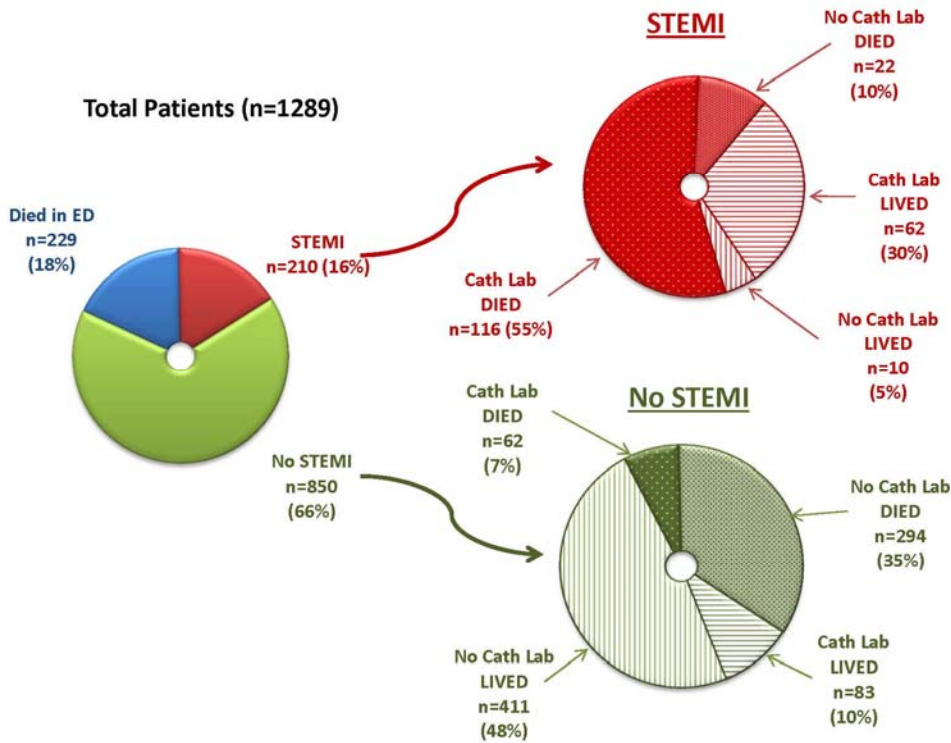


Most Prevalent Trauma Center Criteria/Guidelines



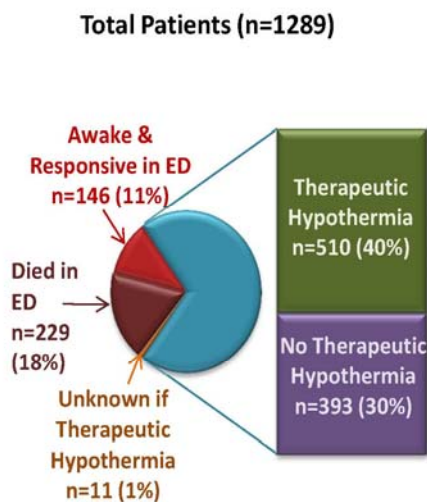
Throughout its 30-year history in Los Angeles County, The Trauma System has revised its criteria and standards to ensure that injured patients requiring the care of a trauma center are appropriately triaged and transported. While some criteria were retired (i.e., Abnormal Capillary Refill, No Spontaneous Eye Opening, Precarious Medical History), new standards were added (i.e., Blunt Head with a Glasgow Coma Scale less than or equal to 14, Paramedic Judgment). The most recent changes to the trauma center criteria and guidelines were implemented in July 2012 to align more closely with the recommendations of the Centers for Disease Control and Prevention. These recommendations were published in its Morbidity and Mortality Weekly Report: Guidelines for Field Triage of Injured Patients—Recommendations of the National Expert Panel on Field Triage. The EMS Agency continually evaluates the impact of these changes to the system.

Return of Spontaneous Circulation (ROSC)



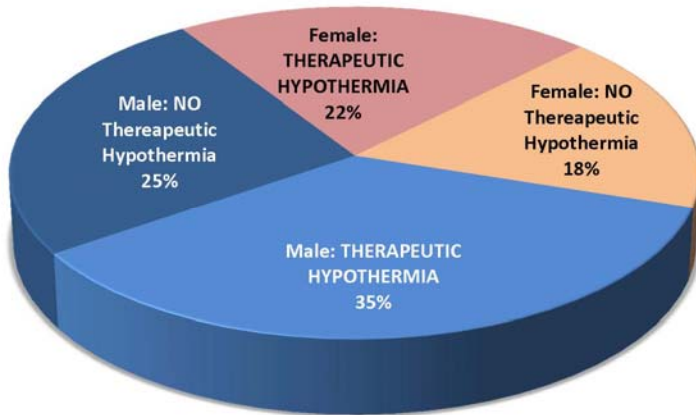
ROSC Data:
January 1, 2011
to
June 30, 2012

Therapeutic Hypothermia vs No Therapeutic Hypothermia



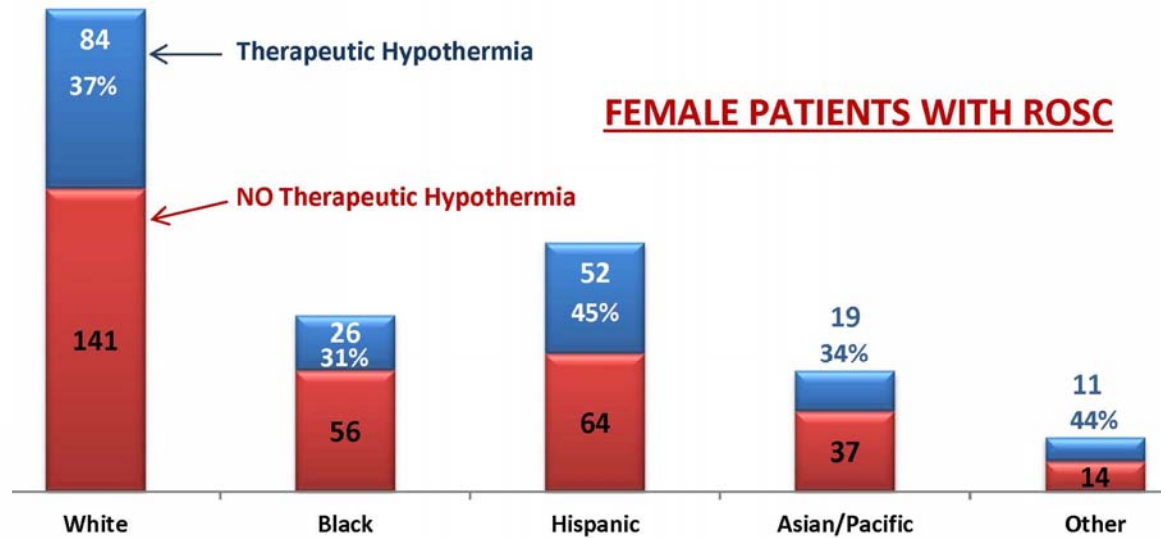
Therapeutic Hypothermia: n=510/903 (56%)						
Cerebral Performance Category	V-Tach/V-Fib: n=199/510 (39%)			Non V-Tach/V-Fib: n=311/510 (61%)		
	Lived	% Lived	Died	Lived	% Lived	Died
1 - Good Cerebral performance	71	36%		50	16%	
2 - Moderate Cerebral Disability	13	7%		8	3%	
3 - Severe Cerebral Disability	21	11%		16	5%	1
4 - Coma/Vegetative State	15	8%		26	8%	1
5 - Brain Death	4	2%	71	3	1%	195
ND - Not Documented	3	2%	1	3	1%	8
Total	127	64%	72	106	34%	205

No Therapeutic Hypothermia: n=393/903 (44%)						
Cerebral Performance Category	V-Tach/V-Fib: n=70/393 (18%)			Non V-Tach/V-Fib: n=323/393 (82%)		
	Lived	% Lived	Died	Lived	% Lived	Died
1 - Good Cerebral performance	17	24%		29	9%	
2 - Moderate Cerebral Disability	5	7%		12	4%	
3 - Severe Cerebral Disability	7	10%		16	5%	
4 - Coma/Vegetative State	7	10%		21	7%	
5 - Brain Death	1	1%	30	5	2%	221
ND - Not Documented	3	4%		7	2%	11
Total	40	57%	30	90	28%	232

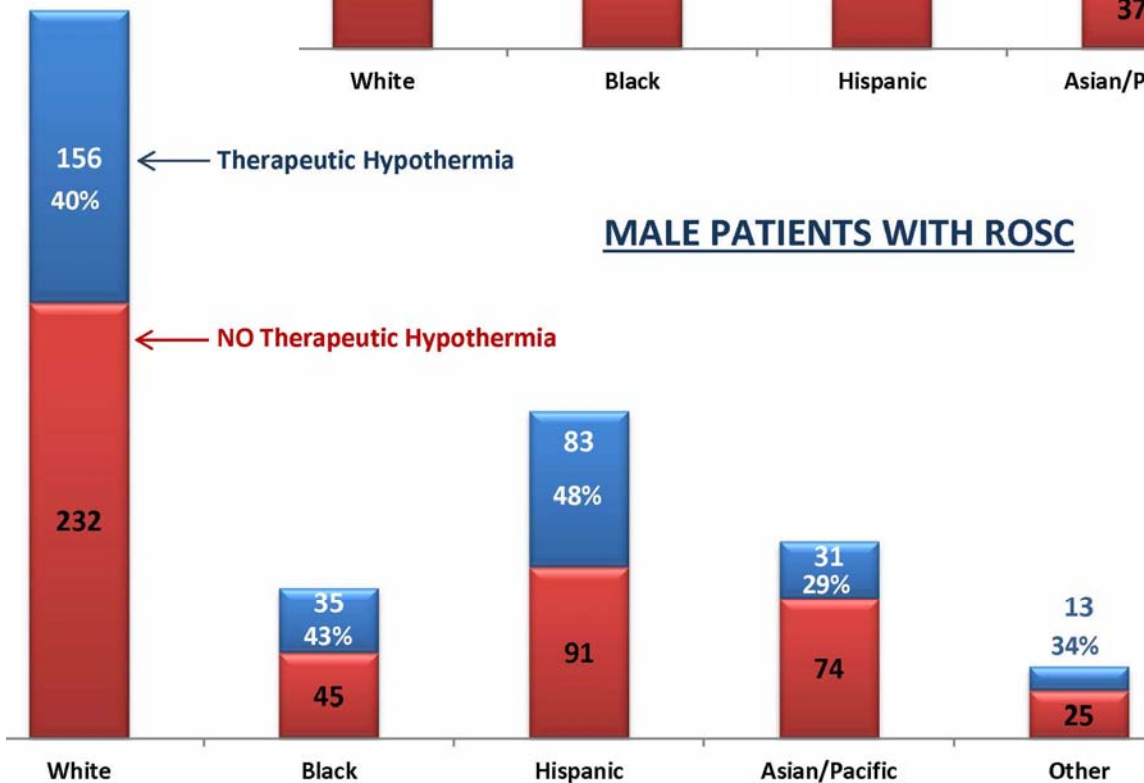


ROSC Volume by Gender and Ethnicity

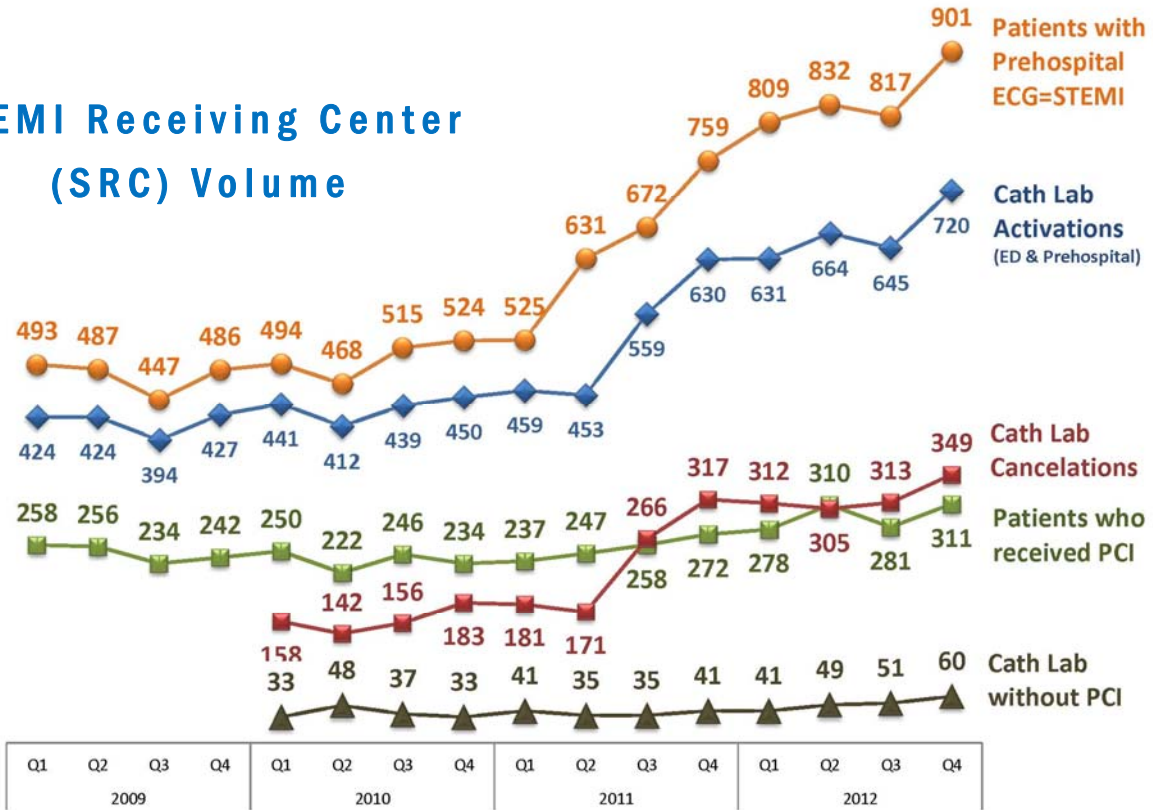
FEMALE PATIENTS WITH ROSC



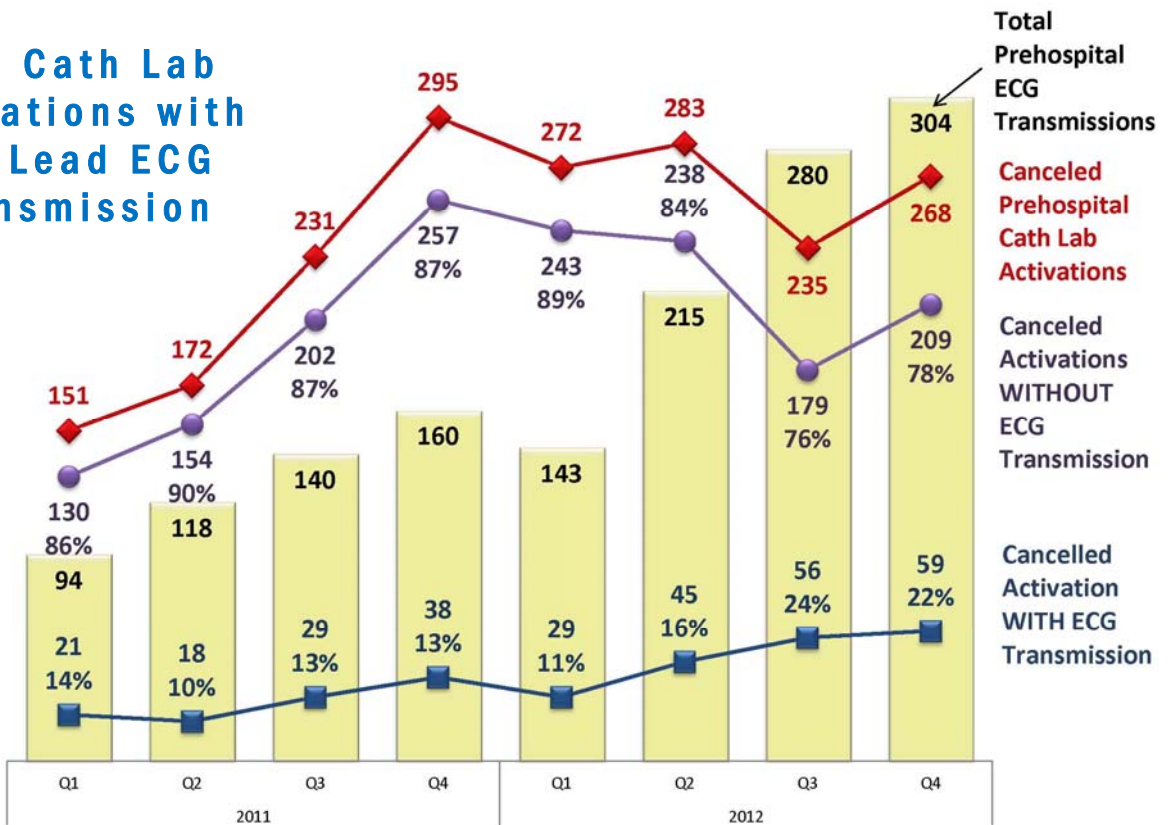
MALE PATIENTS WITH ROSC



STEMI Receiving Center (SRC) Volume

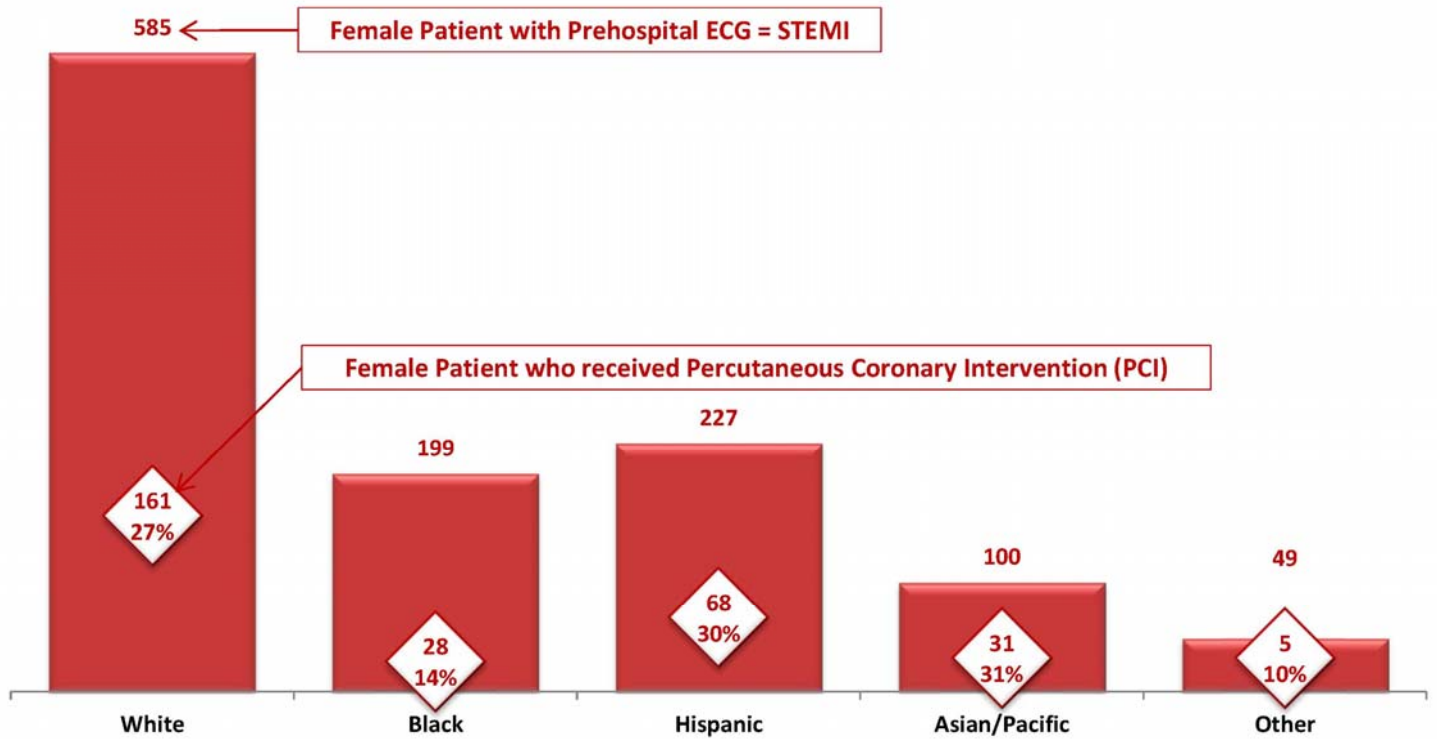
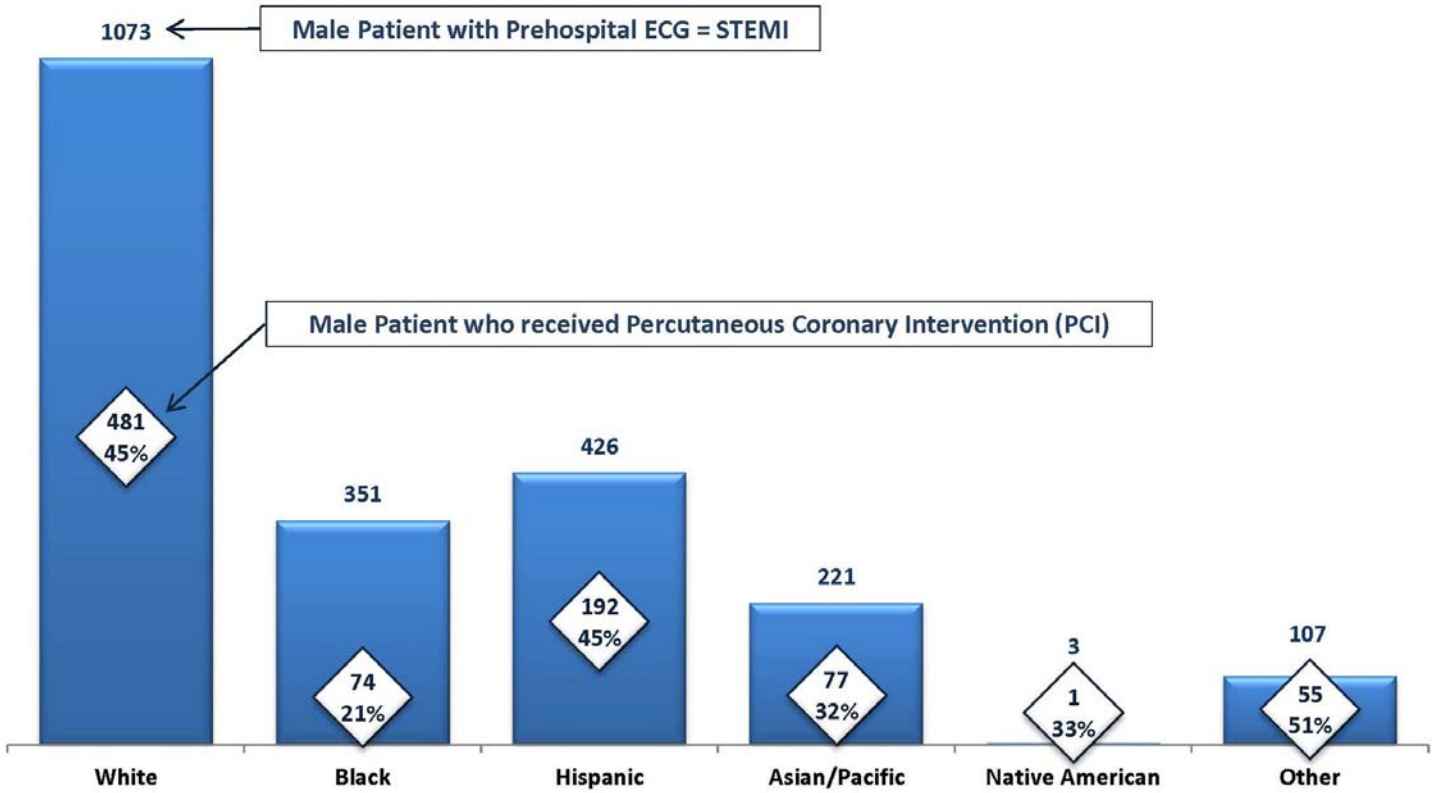


SRC Cath Lab Activations with 12-Lead ECG Transmission

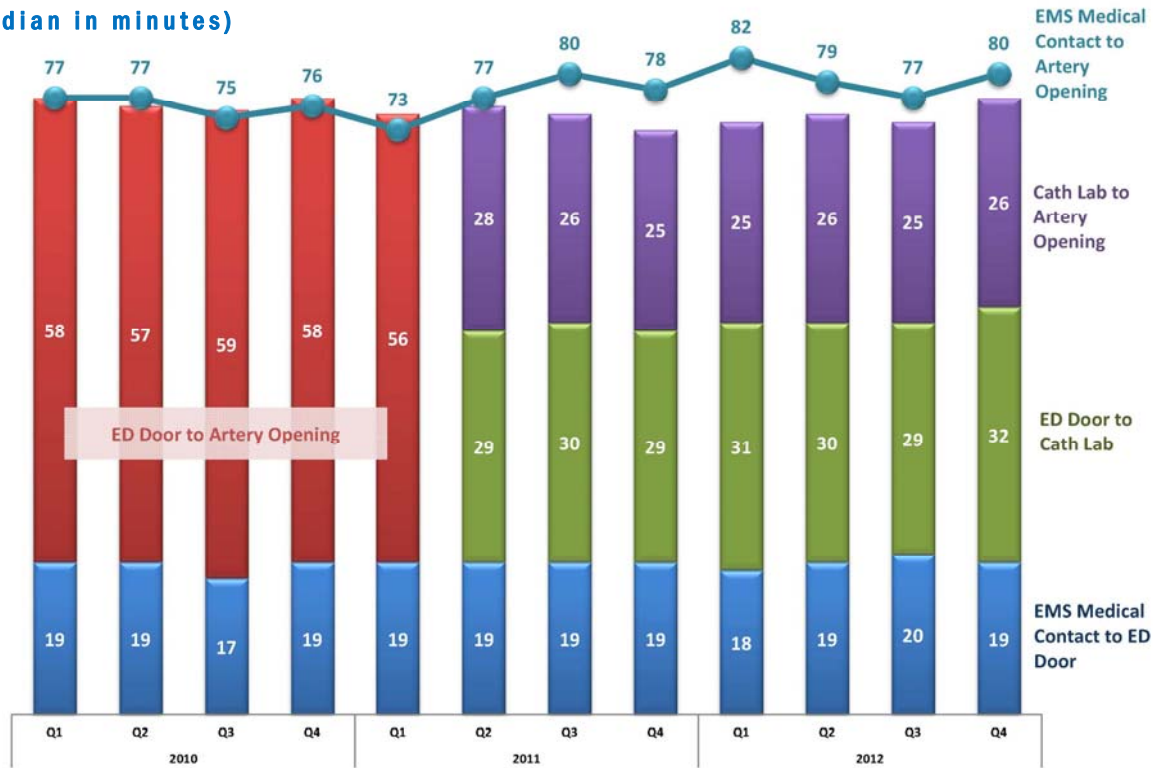


SRC Volume by Gender and Ethnicity

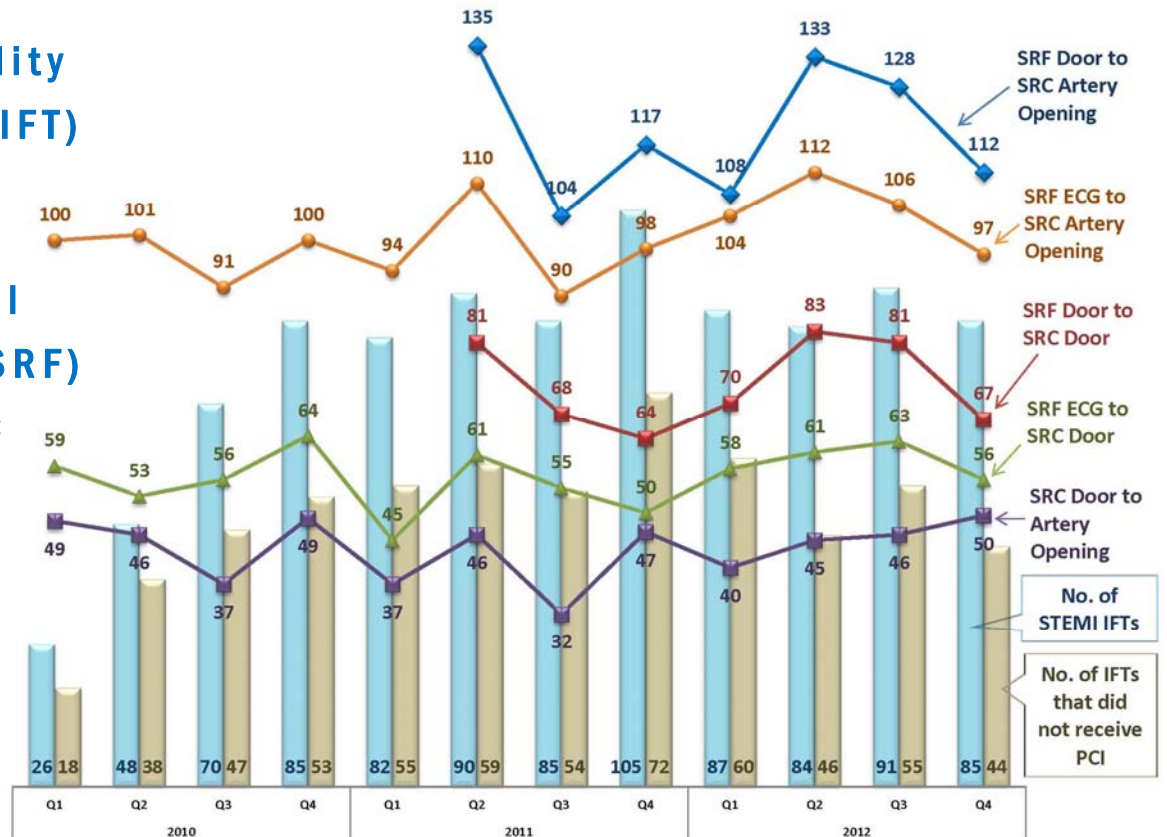
Calendar Year:
2012



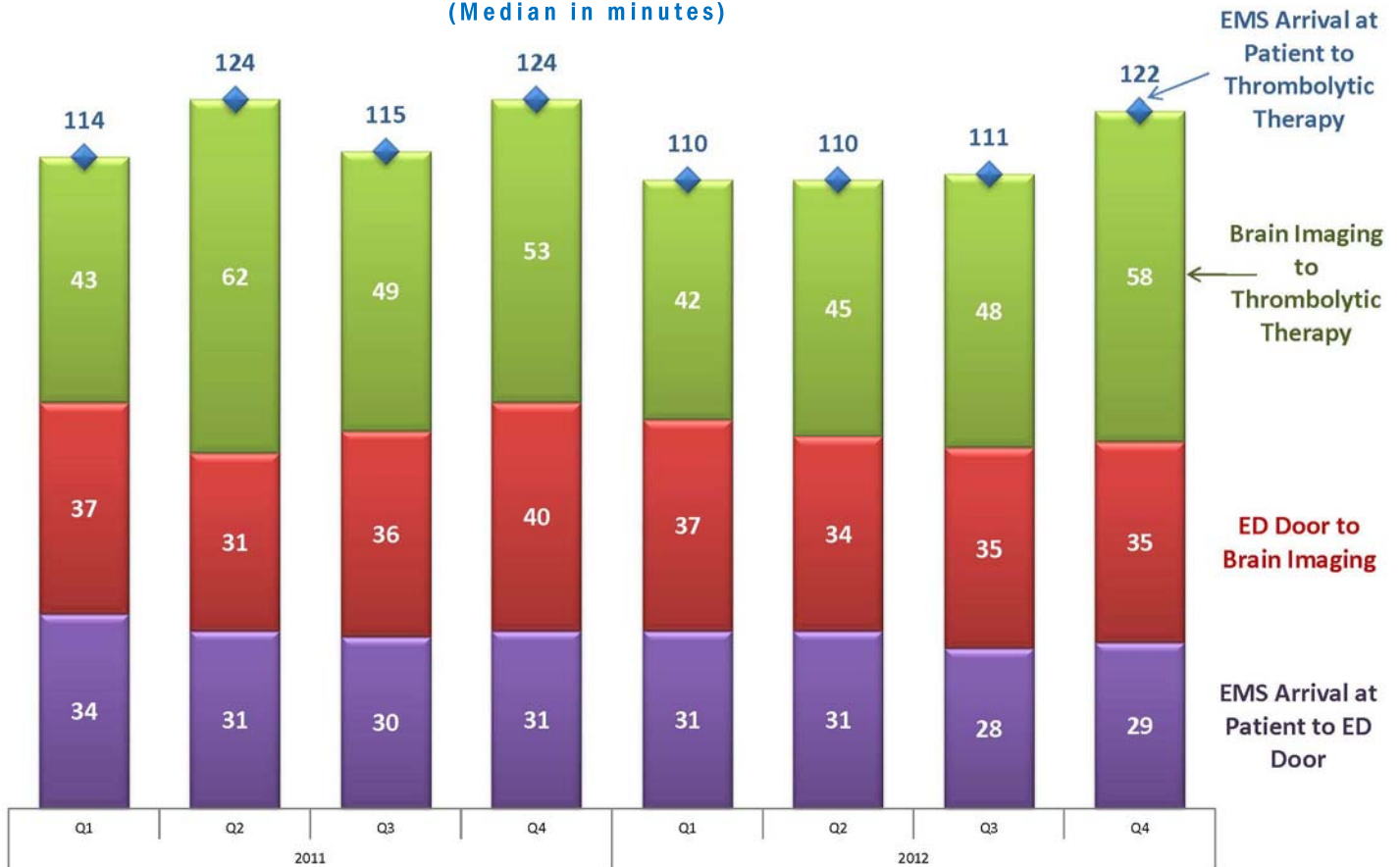
SRC Timeliness of Care (Median in minutes)



Interfacility Transfer (IFT) from STEMI Referral Facility (SRF) to SRC



Approved Stroke Center (ASC) Timeliness of Care (Median in minutes)



Calendar Year	2011	2012
ASC is Most Accessible Receiving Facility	n = 3,296/3,667 90%	n = 2,924/3,567 82%
Valid Time Values	n = 2,698/3,296 82%	n = 2,509/2,924 86%
Median Time (at patient to ED arrival)	30 Minutes	28 Minutes
ASC is NOT the Most Accessible Receiving Facility	n = 371/3,667 10%	n = 643/3,567 18%
Valid Time Values	n = 295/371 79%	n = 575/643 89%
Median Time (at patient to ED Arrival)	31 Minutes	32 Minutes

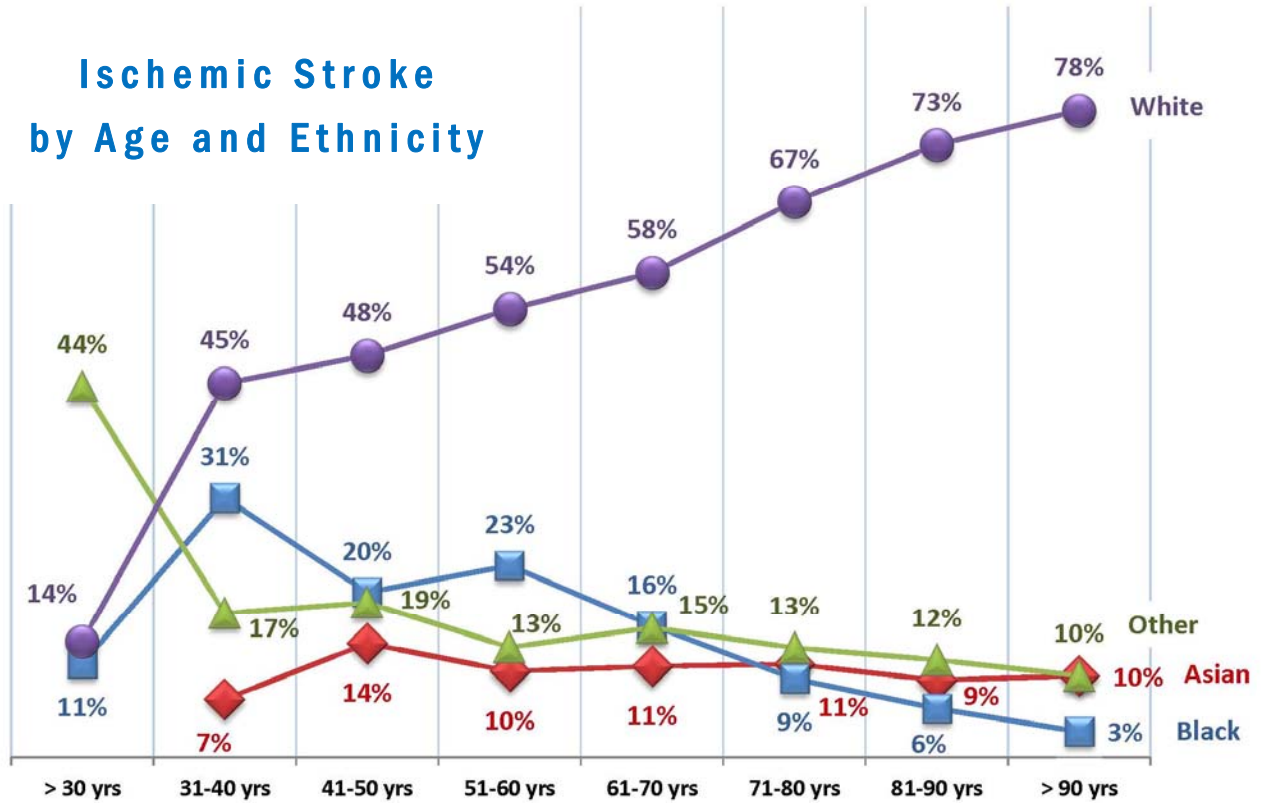
ASC Diversion

The “at patient to ED arrival” time when the ASC is the closest facility is generally 1-4 minutes shorter compared to incidents in which the paramedics by-pass a closer hospital that is not a verified primary stroke center. This is attributed to the abundance of ASCs in LA County. Forty-four percent (n=32) of the 911 receiving hospitals in LA County are Approved Stroke Centers.

Calendar Year	2011	2012
Male	1688	1688
Median Age	72 yrs	71 yrs
Female	1978	1823
Median Age	79 yrs	79 yrs

ASC Volume by Age and Gender

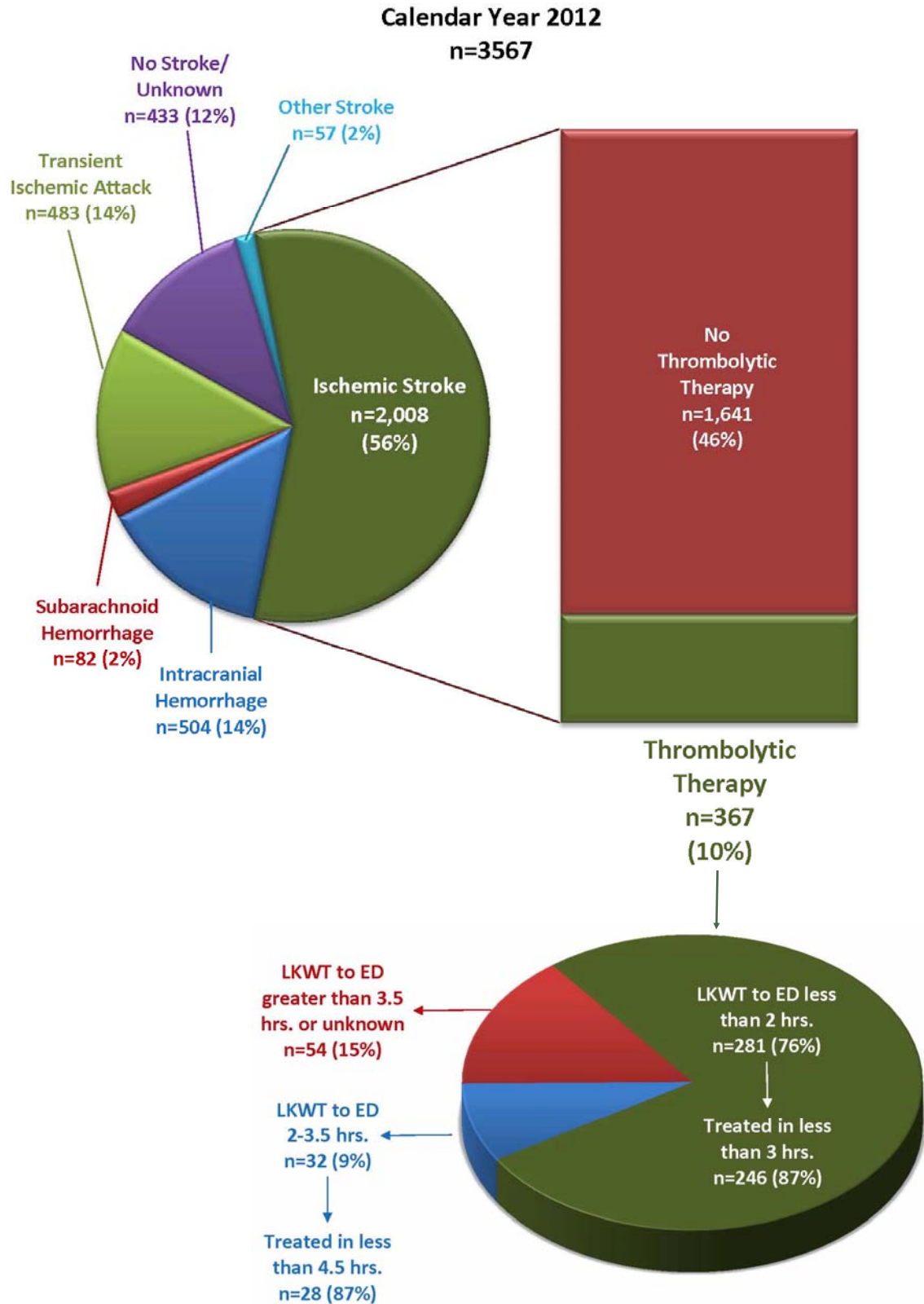
Ischemic Stroke by Age and Ethnicity



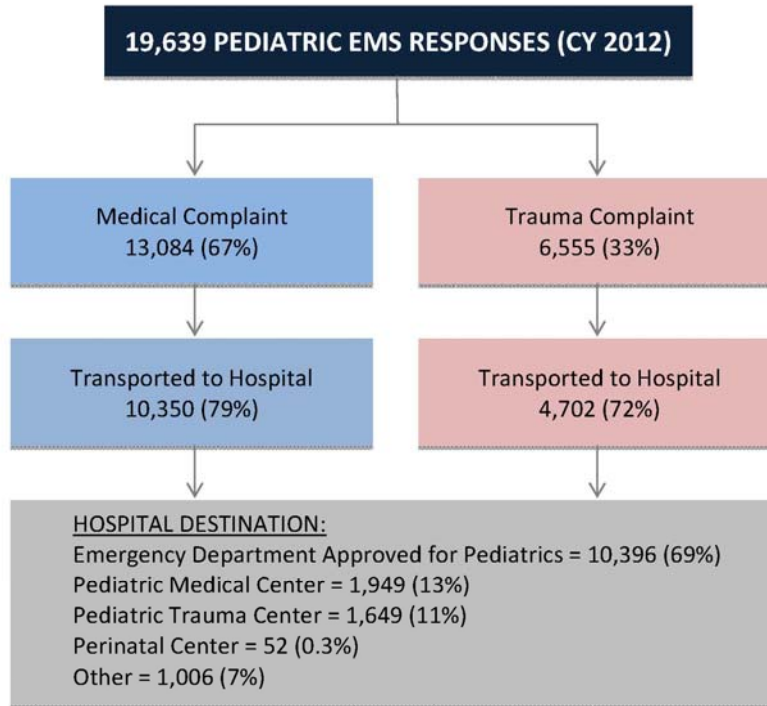
ASC: ED Arrival to Brain Imaging Completed

Calendar Year	2011	2012
Valid Time Values	n = 3,481/3,667 95%	n = 3,390/3,567 95%
Median Time	37 minutes	35 minutes
≤ 25 minutes	n = 1,181/3,481 34%	n = 1,194/3,390 35%
26 - 60 minutes	n = 1,249/3,481 36%	n = 1,182/3,390 35%
> 60 minutes	n = 1,051/3,481 30%	n = 1,014/3,390 30%

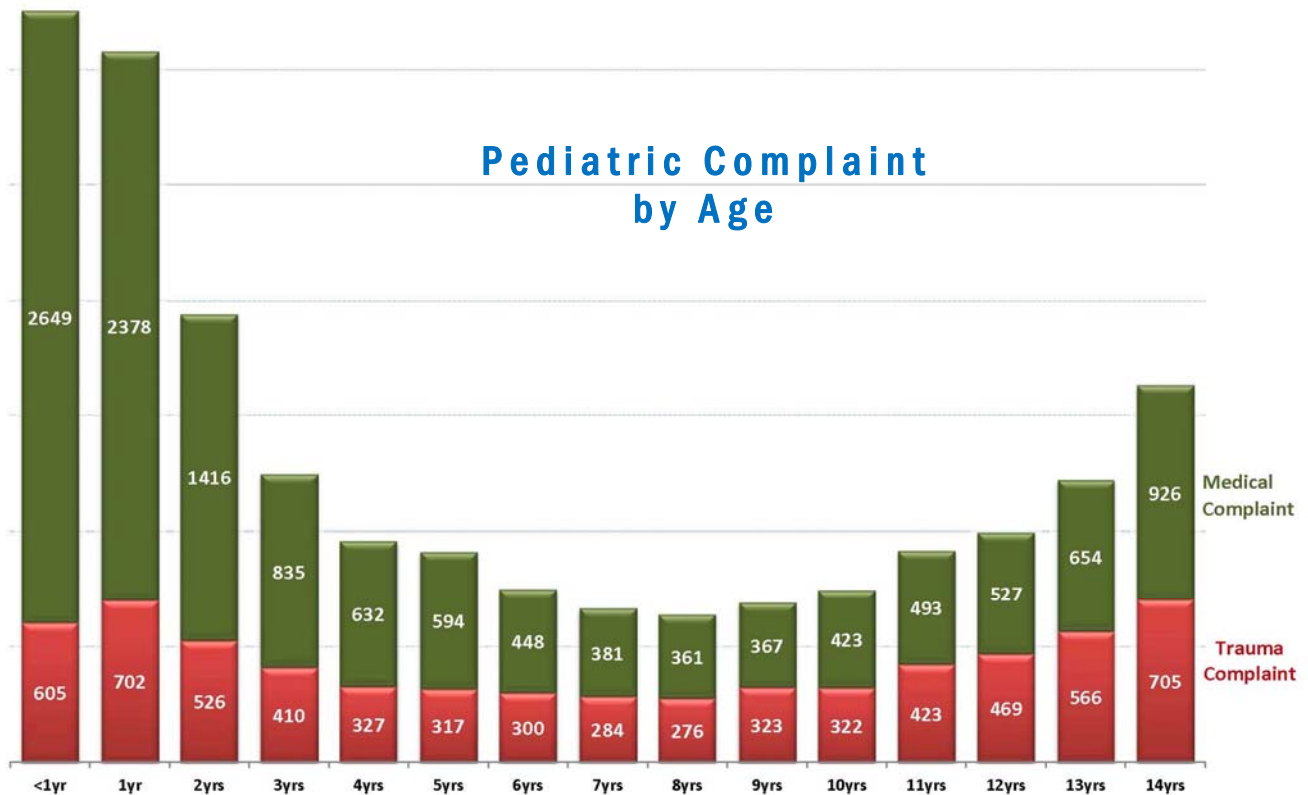
ASC: Last Known Well Time (LKWT) to Thrombolytic Therapy



Pediatric Specialty Care Centers

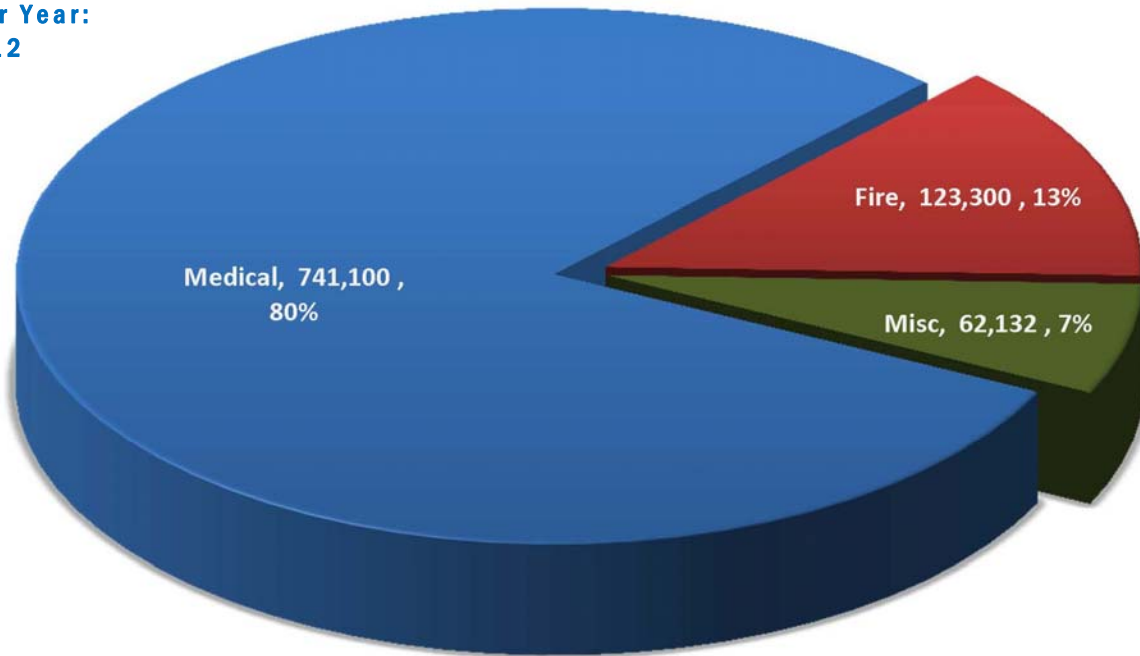


Pediatric Complaint by Age

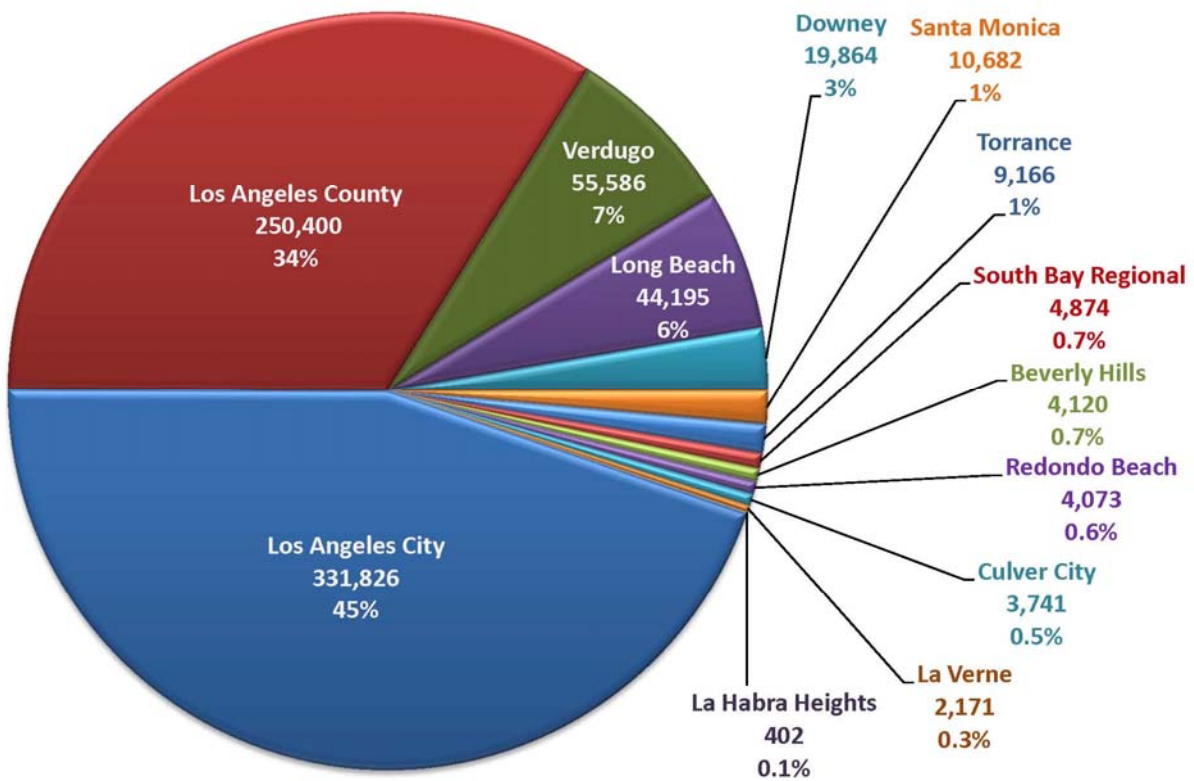


Dispatch Agency Incident Type (Data Source: eCats)

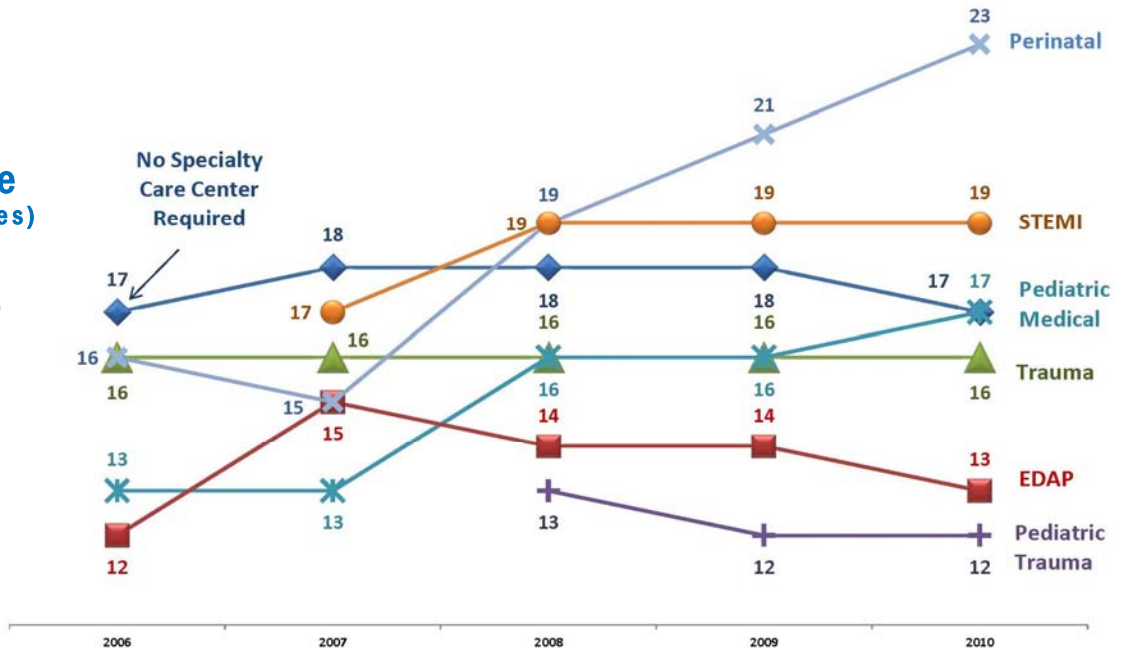
Calendar Year:
2012



Medical Incidents by Dispatch Center (Data Source: eCats)

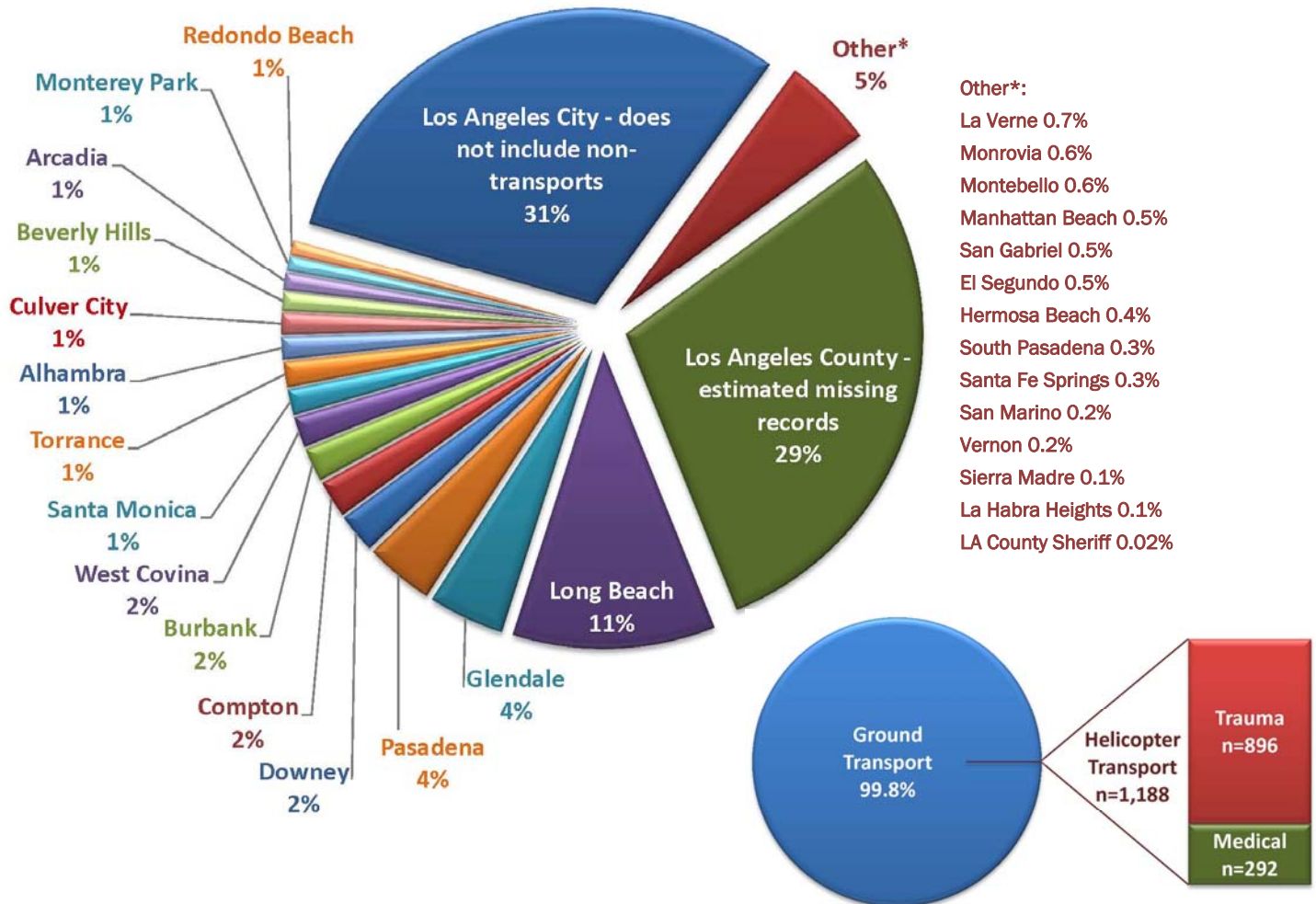


**Scene Time
(Median in Minutes)
Time at Patient to
Time Left Scene**

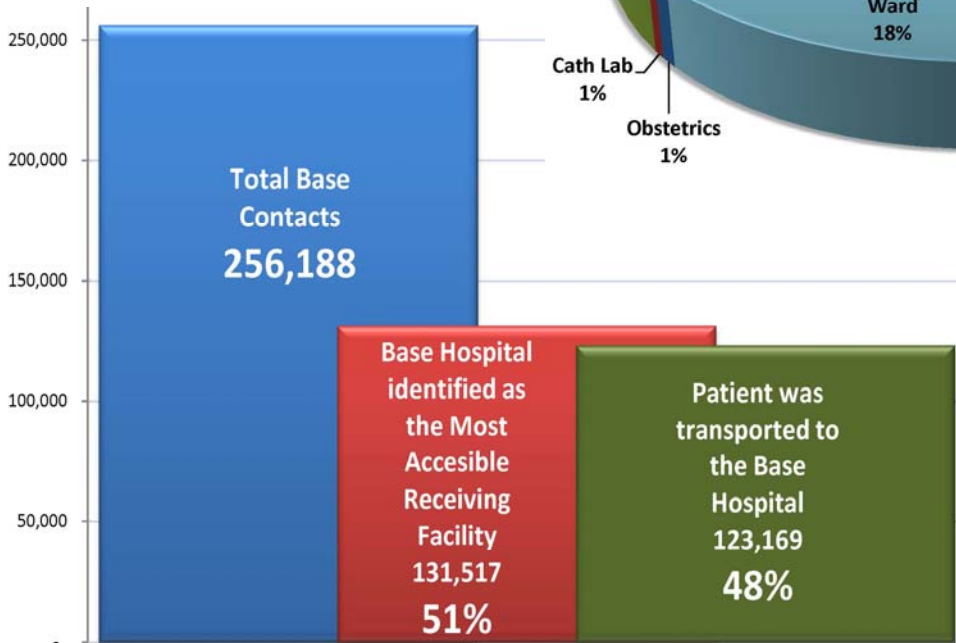
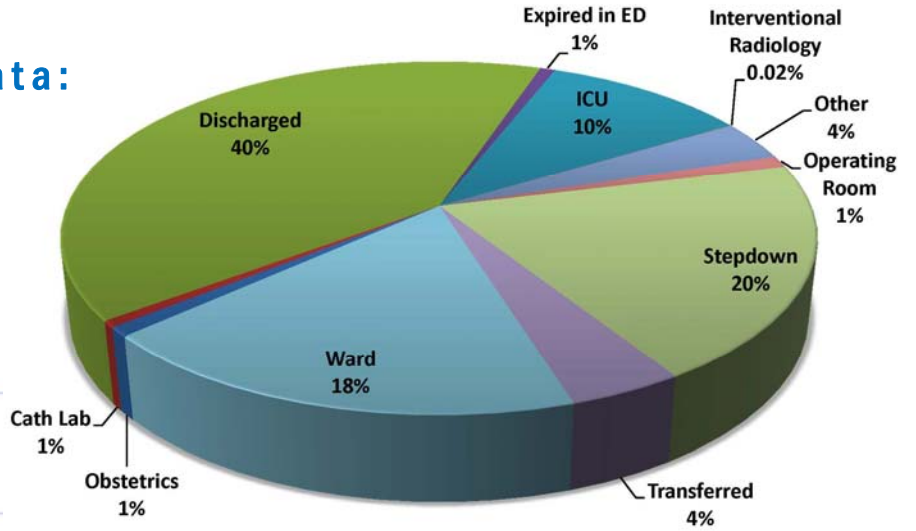


EMS Response by Provider Agency

Calendar Year 2012: n=683,648



Base Hospital Data: Emergency Department Disposition



**Base Hospital is
the Receiving
Facility**



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>