County Overview

The Orange County Health Care Agency serves as the local health department for Orange County, California. Emergency Medical Services is a division within the Medical and Regulatory Health service under the Orange County Health Care Agency. Other service areas include Behavioral Health, Correctional Health, Public Health, and Administrative Services.

Orange County Population

Orange County, California began with three cities and a population of approximately 15,000 individuals in 1889. Today, Orange County is home to over three million residents with 34 incorporated cities. Orange County is the third most populated county in California and is the sixth most populous county in the United States. According to the United States Census Bureau, Orange County's population is larger than that of 20 states in the nation.

Orange County is also very ethnically diverse, as of 2017, non-Hispanic whites comprised 40.4% of Orange County residents. The second largest ethnic group is Hispanics or Latinos, who represent 34.8% of residents followed by Asians, making up 19.8% of Orange County residents. Slightly more than half (54.3%) of Orange County residents speak only English. The next most common languages are Spanish, 26.5%, followed by 14% speaking an Asian or Pacific Islander language. The county is divided nearly equally by gender - with females comprising 50.6% of individuals living in Orange County.

Socio-economic Climate

The median annual income in Orange County is $80,283. However, it is important to note that median household incomes vary widely based on geography and demographics. For example, residents living in the 92679 zip code have a median income of $161,515; whereas individuals in the 92701 zip code have a median income of $40,000. Furthermore, median income for non-Hispanics is $89,543 whereas the median income for Hispanics is lower, $60,576. Santa Ana, a city within Orange County, was once ranked as the hardest place to live in the United States according to the Urban Hardship Index.

In 2014, a family of four with two working adults and two school-aged children would need to earn $70,285 to meet their basic needs, such as housing, child-care, food, and medical expenses. In 2017, about one in three households in Orange County had an annual income of less than $50,000. In fact, one in eight people in Orange County live below the poverty level.

Driving the high cost of living in Orange County are housing costs. In 2010-2014, more than half (57.9%) of renters spent 30% or more of their household income on rent. This proportion is higher than the state rate (56.9%) and the national rate (51.8%).

Most Orange County adults have some college education. In fact, 38.4% of adults have a bachelor's degree or higher. Nine in ten Orange County students graduate high school. However, Hispanics, Pacific Islanders, and African Americans are less likely to graduate high school within four years.

Geographic Details

Orange County is located in Southern California and is comprised of 799 square miles with 42 miles of coastline. Over the past 50 years, Orange County has transformed from a rural to a more suburban community. Orange County is a tourist destination with amusement parks and numerous other attractions. It is comprised of 34 incorporated cities and 28 school districts.

Economic Aspects

Orange County's unemployment rate has been trending down since 2010. As of December 2016, the rate was at 3.5%, which is close to the pre-recession level of 3.1% and is well below the recession level of 10.1%. Health services led job growth and increased 24% between 2006 and 2015. Additionally, tourism-related employment grew 19% since 2006.9

Cultural Considerations

Orange County's population has grown by 6.7% from 2010 to 2017 and continues to be diverse. Today, no single racial/ethnic group composes a majority of the population.
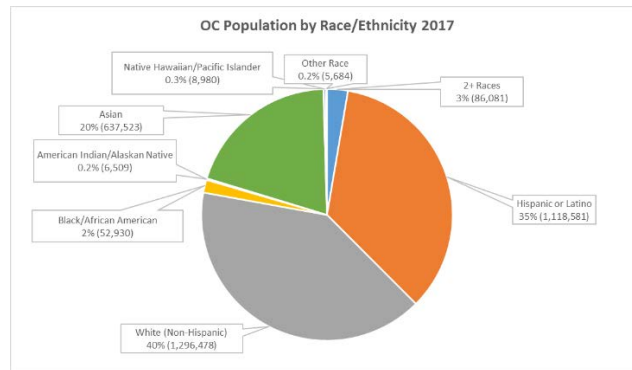

Figure 1

In 2010-2014, 30.3% of Orange County residents were born outside of the United States, which is comparable to 30.5 % in 2008-2012.4 Orange County's immigrant populations are concentrated in central and northern areas of the county, such as Santa Ana, Garden Grove, and Anaheim.

History of Orange County Trauma System

In Orange County, California, in the late 1970s, disclosure to the public of a need for improved care for injured patients led to the development of a trauma system. West et al. published a study comparing outcomes of injured patients in Orange County to those outcomes of similar patients in the city of San Francisco. West et al. found that two thirds of patients without brain injuries who died in 39 hospitals in Orange County may have been preventable deaths because they received delayed or inadequate care[1], and these observations were confirmed in a second, more rigorous study[2]. As a consequence of these reports, public opinion supported implementation of a trauma system in Orange County, with initial designation of one Level I and four Level II trauma centers. Follow-up studies of the impact of implementation of the system indicated that frequency of preventable deaths declined substantially[3,4]. As of January 2015, Orange County has 4 Trauma Centers (one Level I, two Level II Adult/Ped, one Level II Ped per ACS designations).

1. West JG, Trunkey DD, Lim RC. Systems of trauma care: a study of two counties. Arch Surg. 1979; 114:455-460.
2. West JG. Validation of autopsy method for evaluating trauma care. Arch Surg. 1982; 117:1033-1035.
3. West JG, Cales RH, Gazzaniga AB. Impact of regionalization: the Orange County experience. Arch Surg. 1983; 118:740-744.
4. Cales RH. Trauma mortality in Orange County: the effects of implementation of a regional trauma system. Ann Emerg Med. 1984; 13:1-10.

Prereview Questionnaire (PRQ)

Section 1: Assessment

Injury Epidemiology

1. Describe the epidemiology of injury in your region and unique features of:
   a. Children
      i. Conditions of Children in OC 24th Annual Report
         http://www.ochealthinfo.com/civicax/filebank/blobdload.aspx?BlobID=80557

Leading Causes of Death Infants < 1 year	No of Deaths	Crude Rate per 100,000 Population in the Age Group
Conditions originating in the perinatal period	55	146.0
Congenital malformations, deformations and chromosomal abnormalities	35	92.9
All other causes	25	66.4
Total Deaths	115	

   b. Adolescents

Leading Causes of Death Ages 1 -17 years	No of Deaths	Crude Rate per 100,000 Population in the Age Group
Cancer (malignant neoplasms)	32	4.8
Accidents (unintentional)	20	3.0
Intentional self-harm (suicide)	11	1.6
Congenital malformations, deformations and chromosomal abnormalities	10	1.5
All other causes	39	5.8
Total Deaths	112	

   c. Elderly

Leading Causes of Death Ages 65 years and older	No of Deaths	Crude Rate per 100,000 Population in the Age Group
Heart disease	3941	889.8
Cancer (malignant neoplasms)	3369	760.7
Alzheimer's disease	1418	320.2
Cerebrovascular diseases (stroke)	1199	270.7
Chronic lower respiratory disease	840	189.7
Influenza/Pneumonia	484	109.3
Diabetes Mellitus	375	84.7
Nephritis, nephrotic syndrome, nephrosis	304	68.6
Parkinson's disease	292	65.9
Accidents (unintentional)	259	58.5
All other causes	2589	584.6
Total Deaths	15,070	

   d. Special populations - In Orange County, cause of death statistics are based on the underlying cause of death. According to the Public Health Services and Health Policy, Research & Communications (OCHCA) September 2018 Report for 2016, accidents or unintentional injuries rank 6th with 855 deaths reported (26.9 per 100,000 population) behind heart disease, cancer, Alzheimer's, stroke and chronic lower respiratory diseases.

Leading Causes of Death, 2016

Rank	Leading Causes of Death	Number of Deaths	Crude Rate per 100,000 population
1.	Heart disease	4,642	146.3
2.	Cancer (malignant neoplasms)	4,607	145.2
3.	Alzheimer's disease	1,431	45.1
4.	Cerebrovascular diseases (stroke)	1,357	42.8
5.	Chronic lower respiratory diseases	917	28.9
6.	Accidents (unintentional injuries)	855	26.9
7.	Influenza and pneumonia	559	17.6
8.	Diabetes mellitus	507	16.0
9.	Chronic liver disease and cirrhosis	367	11.6
10.	Nephritis, nephrotic syndrome and nephrosis	358	11.3
	All other causes	3,865	121.8
	Total deaths	**19,465**	

Orange County, California

Leading Causes of Death By Race/Ethnicity, 2016

Leading Causes of Death among Whites	Number of Deaths	Crude Rate per 100,000 White Population
1. Heart disease	3,409	260.0
2. Cancer (malignant neoplasms)	3,033	231.3
3. Alzheimer's disease	1,111	84.7
4. Cerebrovascular diseases (stroke)	936	71.4
5. Chronic lower respiratory diseases	764	58.3
6. Accidents (unintentional injuries)	566	43.2
7. Influenza and pneumonia	341	26.0
8. Parkinson's disease	234	17.8
9. Diabetes mellitus	222	16.9
9. Nephritis, nephrotic syndrome and nephrosis	222	16.9
All other causes	2,600	198.3
Total deaths	**13,438**	

Leading Causes of Death among Latinos/Hispanics	Number of Deaths	Crude Rate per 100,000 Hispanic Population
1. Cancer (malignant neoplasms)	731	65.8
2. Heart disease	579	52.1
3. Accidents (unintentional injuries)	183	16.5
4. Cerebrovascular diseases (stroke)	181	16.3
5. Diabetes mellitus	147	13.2
6. Alzheimer's disease	131	11.8
7. Chronic liver disease and cirrhosis	114	10.3
8. Influenza and pneumonia	85	7.7
9. Nephritis, nephrotic syndrome and nephrosis	71	6.4
10. Chronic lower respiratory diseases	62	5.6
All other causes	650	58.5
Total deaths	**2,934**	

Leading Causes of Death among Asians	Number of Deaths	Crude Rate per 100,000 Asian Population
1. Cancer (malignant neoplasms)	727	119.5
2. Heart disease	521	85.6
3. Cerebrovascular diseases (stroke)	216	35.5
4. Alzheimer's disease	165	27.1
5. Influenza and pneumonia	118	19.4
6. Diabetes mellitus	105	17.3
7. Accidents (unintentional injuries)	73	12.0
8. Chronic lower respiratory diseases	68	11.2
9. Essential hypertension and hypertensive renal disease	56	9.2
10. Nephritis, nephrotic syndrome and nephrosis	54	839
All other causes	462	75.9
Total deaths	**2,565**	

*Rates shown may be unstable due to small numbers. Estimates for the next leading causes are unreliable and not shown.

Leading Causes of Death among Pacific Islanders	Number of Deaths	Crude Rate per 100,000 Pacific Islander Population
1. Heart disease	19	221.3
2. Cancer (malignant neoplasms)	16	186.3
All other causes	27	314.4
Total deaths	**62**	

Leading Causes of Death among African Americans	Number of Deaths	Crude Rate per 100,000 African American Population
1. Heart disease	65	138.5
2. Cancer (malignant neoplasms)	62	132.1
3. Diabetes mellitus	21	44.8
4. Accidents (unintentional injuries)	17	36.2
5. Cerebrovascular diseases (stroke)	13	27.7*
6. Chronic lower respiratory diseases	12	25.6*
7. Influenza and pneumonia	10	21.3*
All other causes	76	162.0
Total deaths	**276**	

Reference Documents:

Age-Adjusted Death Rate due to Unintentional Injuries
http://www.ochealthiertogether.org/indicators/index/view?indicatorId=122&localeId=267

Orange County Dashboard – Health/Access to Health Services and other Indicators
http://www.ochealthiertogether.org/index.php?module=indicators&controller=index&action=dashboard&id=84204267860187396&card=0&localeId=267

OC Health Improvement Plan – 2017-19
http://www.ochealthiertogether.org/content/sites/ochca/oc_health_improvement_plan_2017-19.pdf

OC City Profiles - 2018
http://www.ochealthiertogether.org/content/sites/ochca/City_Profiles_2018/00_Complete_City_Profiles_2018.pdf

OC Alcohol and Other Drug Prevention Strategic Plan
http://www.ochealthiertogether.org/content/sites/ochca/Local_Reports/OC_Alcohol_and_Other_Drug_Prevention_Stratetic_Plan_2018-2023.%5B1%5D.pdf

Opioid Overdose & Death in Orange County
http://www.ochealthinfo.com/civicax/filebank/blobdload.aspx?BlobID=67355

2. Describe the databases that are used to formulate the injury epidemiology profile (for example, population-based and clinical)

   RESPONSE:

   a. Data are based on information from death certificates from the California Department of Health Death Statistical Masters files for Orange County.
   https://www.cdph.ca.gov/Programs/CHSI/CDPH%20Document%20Library/CountyProfiles_2019.pdf

   b. Coroner Division Annual Report is based on data of deaths reported to the Coroner during the 2017 calendar year. This includes both residents and non-residents whose deaths occurred within the borders of the County of Orange.
   http://www.ocsd.org/civicax/filebank/blobdload.aspx?BlobID=80416

   c. Office of Statewide Health Planning and Development provide a database of Emergency Department patient visit summaries. This information is submitted by the individual facilities directly to the state. https://data.chhs.ca.gov/dataset/hospital-emergency-department-characteristics-by-facility-pivot-profile/resource/997d64de-06db-4317-8952-6b19aa9d538a

   d. Hospital Discharge Data Set (HDDS) is data submitted by the individual designated Emergency Receiving Centers (ERC) – this is a requirement for ERC criteria but is not consistently being submitted.   We are currently exploring alternative methods for submitting the required HDDS data, including direct submission as a CSV file via email or by utilizing the OC-MEDS data system through the Hospital Hub.   All ERCs have access to the Hospital Hub which gives them direct access to the ePCRs of patients that are transported to their facility. There is an outcomes menu that allows input of HDDS data and a few of the hospitals are utilizing this method.

   e. OC-MEDS is the countywide database utilized by the EMS providers (ambulance, fire, hospital, base and specialty centers).   Orange County has a 100% participation of all EMS providers with the exception of medical transports by private air ambulances and non-EMS private ground ambulance transports.

3. Have system epidemiology profile results (for example, mortality rates, distribution of mechanism, or intent) been compared with benchmark values? If so, please provide comparisons and origins of benchmarks.

   RESPONSE:

   "Analysis of Pediatric Utilization of OCEMS and Secondary Health Impact Analysis of Pediatric Trauma" paper utilized CDC and CDPH epidemiological data to produce benchmark values for a Health Impact Assessment (HIA) on the potential impact of Children's Hospital of Orange County (CHOC) becoming a Pediatric Trauma Center (PTC) for the county.
   http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=51728

4. Describe how emerging injury control patterns (for example, from trend or surveillance data) were identified and acted on.

   RESPONSE:

   > Fall Risk/Head Injury studies were done in collaboration with the OC Trauma Centers and based on those findings triage criteria was modified to allow field providers to redirect out of hospital triage of older adults with head injuries to Stroke Neuro Receiving Centers instead of Trauma Centers. Also, injury prevention program "Down With Falls Coalition" a collaborative with two of the trauma centers and community groups was created the aim of reducing falls among the geriatric population. One Trauma Center has a Geriatric Trauma Management Guidelines with established screening and order sets.

   > Trauma Triage #310.30 "Blunt head injury with bruising in area of injury and known to be taking anticoagulants or platelet inhibitors ("blood thinners") excluding aspirin or to have hemophilia or be a dialysis patient."
   > http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=59347

5. Describe how ongoing and routine injury surveillance is completed and how results are shared with constituent groups.

   RESPONSE:
   The following goals are brought to the various advisory groups (Facilities, EMCC, Trauma Operations, Medical Advisory, Transportation, Base Hospital, and County Prehospital Advisory)
   a. Ongoing audits of prehospital response times/scene times/transport times. This information is collected from OC-MEDS database directly entered by the field providers.
   b. Trauma centers input data into OC-MEDS which allows for data analysis and management. Outcomes data is also included to allow for presentation of trends to the RTOC.
   c. Each Trauma Center shares case studies at Regional Trauma Operations Committee (RTOC) meetings and each ACS-verified trauma center presents data from quality improvement (QI) activities.
   d. Recently began sharing Coroner Data with RTOC committee for review and discussion.

   Coroner Division Report 2017
   http://www.ocsd.org/civicax/filebank/blobdload.aspx?BlobID=80416

   OCEMS Information Flow Chart
   http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12113

Indicators as a Tool for System Assessment

1. <u>Has a multidisciplinary stakeholder group participated in the scoring and consensus process associated with the BIS tool?</u> Not at this time – input from various stakeholder groups occur from Advisory Committee level and various stakeholder meetings and also from State Public Comment Surveys and County Public Comment Surveys done throughout the year.

2. <u>If the process has been completed, how were the findings used?</u> N/A

3. <u>Is there a date (year/month) set for reassessment using the BIS to mark progress toward agreed on goals or benchmarks?</u> N/A

Section 2: Policy Development

Statutory Authority and Administrative Rules

1. Describe how the current statutes and regulations allow the state or region to:
   a. Develop, plan and implement the trauma system
   b. Monitor and enforce rules
   c. Designate the lead agency
   d. Collect and protect confidential data and
   e. Protect confidentiality of the quality improvement process.

RESPONSE:
Trauma System Design Policy #620.07
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12226

The California Legislature established the authority for trauma system planning in 1984. The purpose of this statutory authority was to encourage development of trauma care systems throughout the state. In 2001, the Legislature passed AB1430 which reinforced the goal of a state-wide trauma network. This legislation also approved funding for additional trauma planning and for support to designated trauma centers.

California trauma systems are regulated under the California Code of Regulations, Title 22, Division 9, and Chapter 7. These regulations define the requirements for trauma systems as well as trauma centers in California. In addition, they describe the roles of the local emergency medical services (EMS) agency and the California Emergency Medical Services Authority (EMSA) in developing local trauma systems. California trauma regulations do not require trauma systems and trauma centers but merely stipulate the requirements for such a system if established.

The EMSA provides statewide coordination and leadership for the planning, development and implementation of local trauma care systems. EMSA responsibilities include developing statewide standards for trauma care systems and trauma centers, the provision of technical assistance to local agencies; developing, implementing, or evaluating components of a trauma care system, and the review and approval of local trauma care system plans to ensure compliance with the minimum standards set by the EMSA.

The trauma plan requirements in California address all of the issues identified by the NHTSA and ACS documents described above. Local EMS agencies are responsible for planning, implementing, and managing local trauma care systems, including assessing needs, developing the system design, designating trauma care centers, collecting trauma care data, and providing quality assurance. Currently, California has trauma systems in 20 of its EMS regions, and the goal is that the remaining 12 regions will develop, or finish developing, systems in the near future. There are currently 58 trauma centers across California, including 14 with Level I designation, 31 at Level II, 7 at Level III, and the remaining 6 at Level IV.

22 CCR § 100256
§ 100256. Trauma Plan Development.
(a) The initial plan for a trauma care system that is submitted to the EMS Authority shall be comprehensive with objectives that shall be clearly stated. The initial trauma care system plan shall contain at least the following:
    (1) Summary of the plan;
    (2) organizational structure;
    (3) needs assessment;
    (4) inclusive trauma system design, which includes those facilities involved in the care of acutely injured patients, including coordination with neighboring agencies;
    (5) documentation that any intercounty trauma center agreements have been approved by the EMS agencies of both counties;
    (6) objectives;
    (7) implementation schedule;
    (8) fiscal impact of the system;
    (9) policy and plan development process;
    (10) written documentation of local approval; and
    (11) table of contents identifying where the information in this Section and Sections 100254, 100255 and 100257 of this Chapter can be found in the plan.
(b) The system design shall address the operational implementation of the policies developed pursuant to Section 100255 and the following aspects of hospital service delivery:
    (1) Critical care capability including but not limited to burns, spinal cord injury, rehabilitation and pediatrics;
    (2) medical organization and management; and
    (3) quality improvement.
(c) A local EMS agency shall advise the EMS Authority when there are changes or revisions in policy or plan development pursuant to the sections of this Article.
Note: Authority cited: Sections 1797.107 and 1798.161, Health and Safety Code. Reference: Sections 1797.258, 1798.161 and 1798.166, Health and Safety Code.
This database is current through 4/19/19 Register 2019, No. 16
22 CCR § 100256, 22 CA ADC § 100256
https://govt.westlaw.com/calregs/Document/I738D4120D4C011DE8879F88E8B0DAAAE?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default)

2. <u>Describe the process by which trauma system policies and procedures are developed or updated to manage the system including:</u>

    RESPONSE:
    a. The adoption of standards of care (see policy #635.10)
       Trauma Center Survey/Resurvey Process Policy #635.10
       http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12232

    b. Designation or verification of trauma centers

       RESPONSE: (see policies 620.00 & 620.01) below under "e."

    c.   Direct patient flow on the basis or designation

    RESPONSE: Trauma Triage Policy #310.30
        http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=59347
        Trauma Triage Algorithm Policy#310.31
        http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=90403

    d.   Data collection (see Policy #300.32)

    RESPONSE:
    Data is submitted per State (CEMSIS) and NHTSA and NEMSIS requirements as outlined in Policy #300.32 "OC-MEDS – EMS Provider Data Submission Process"
    http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=53888

    Trauma data shall be made available to OCEMS medical review and trauma registry data must be collected and in compliance with the National Trauma Data Standard (NTDS) and submitted to the National Trauma Data Bank (NTDB) as per Policy #620.00 "Trauma Center Criteria" Section X. Data Collection:
    http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12224

    e.   System evaluation (see policies 620.00 & 620.01)
    Trauma Center Criteria for Designation Policy #620.00
    http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12224
    Pediatric Trauma Center Criteria Policy #620.01
    http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=48759

Orange County EMS is responsible for developing, planning and implementing the EMS and Trauma System Plan for Orange County. This is accomplished through agreements with acute care facilities and trauma centers, the trauma center designation process (which is done in conjunction with the ACS Verification process) and the Health Care Agency. Various advisory groups and committees are used to provide subject matter expertise and policies that require Board of Supervisor approval, are posted for public comment prior to final posting and implementation.

Standing orders and protocols are reviewed and implemented twice a year with input from the same advisory groups and committees and then are presented for comments and recommendations through the appropriate EMS committees.

2 CCR § 100255
§ 100255. Policy Development.
A local EMS agency planning to implement a trauma system shall develop policies which provide a clear understanding of the structure of the trauma system and the manner in which it utilizes the resources available to it. The trauma system policies shall address at least the following:
    (a) system organization and management;
    (b) trauma care coordination within the trauma system;
    (c) trauma care coordination with neighboring jurisdictions, including EMS agency/system agreements;
    (d) data collection and management;
    (e) fees, including those for application, designation and redesignation, monitoring and evaluation;
    (f) establishment of service areas for trauma centers;

(g) trauma center designation/redesignation process to include a written agreement between the local EMS agency and the trauma center;

(h) coordination with all health care organizations within the trauma system to facilitate the transfer of an organization member in accordance with the criteria set forth in Article 5 of this Chapter;

(i) coordination of EMS and trauma system for transportation including intertrauma center transfer and transfers from a receiving hospital to a trauma center;

(j) the integration of pediatric hospitals, if applicable;

(k) trauma center equipment;

(l) ensuring the availability of trauma team personnel;

(m) criteria for activation of trauma team;

(n) mechanism for prompt availability of specialists;

(o) quality improvement and system evaluation to include responsibilities of the multidisciplinary trauma peer review committee;

(p) criteria for pediatric and adult trauma triage, including destination;

(q) training of prehospital EMS personnel to include trauma triage;

(r) public information and education about the trauma system;

(s) marketing and advertising by trauma centers and prehospital providers as it relates to the trauma care system; and

(t) coordination with public and private agencies and trauma centers in injury prevention programs.

Note: Authority cited: Sections 1797.107 and 1798.161, Health and Safety Code. Reference: Sections 1798.161 and 1798.163, Health and Safety Code.

This database is current through 4/19/19 Register 2019, No. 16

22 CCR § 100255, 22 CA ADC § 100255

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3. <u>Within the context of statutes and regulations, describe how injury prevention, EMS, public health, the needs of special populations, and emergency management are integrated or coordinated within the trauma system.</u>

    RESPONSE:
    See Policy #620.13 Trauma System Public Information & Education
    http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12228

§ 100266. Interfacility Transfer of Trauma Patients.

(a) Patients may be transferred between and from trauma centers providing that:

> *(1) any transfer shall be, as determined by the trauma center surgeon of record, medically prudent; and*
>
> *(2) in accordance with local EMS agency interfacility transfer policies.*

(b) Hospitals shall have written transfer agreements with trauma centers. Hospitals shall develop written criteria for consultation and transfer of patients needing a higher level of care.

(c) Hospitals which have repatriated trauma patients from a designated trauma center shall provide the information required by the system trauma registry, as specified by local EMS agency policies, to the transferring trauma center for inclusion in the system trauma registry.

(d) Hospitals receiving trauma patients shall participate in system and trauma center quality improvement activities for those trauma patients which have been transferred.

Note: Authority cited: Sections 1797.107 and 1798.161, Health and Safety Code. Reference: Sections 1798.160 and 1798.161, Health and Safety Code. *This database is current through 4/19/19 Register 2019, No. 16*

22 CCR § 100266, 22 CA ADC § 100266

https://govt.westlaw.com/calregs/Document/I7609D9E0D4C011DE8879F88E8B0DAAAE?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default)

System Leadership

1. How does the lead agency bring constituency groups together to review and monitor the trauma system throughout each phase of care?   Various EMS related advisory committees and participation in stakeholder-led meetings. See list:

    RESPONSE:
    Prehospital/ERC Focus
            Regional Emergency Advisory Committees (REAC)
                Base Hospital Hoag Memorial - NB
                Base Hospital Huntington Beach
                Base Hospital Mission
                Base Hospital St. Jude Med Cntr
                Base Hospital UCI Med Cntr
                Base Hospital Orange County Global
                Base Hospital Childrens Hospital Orange County (CHOC)
            BHCs (Base Hospital Coordinators)
            Education & Training
            Medical Advisory Committee
            Transportation Advisory Committee
            ED Leadership Meetings
    Prehospital/Fire Focus
            CPAC (County Paramedic Advisory)
            Fire Chiefs (Orange County Fire Chiefs)
            Fire Chiefs EMS
            Fire Chiefs EMS CQI
    Special Population Focus
          DAFN (Disability, Access and Functional Needs)
          Behavioral Health Services (HCA)
          OC Stroke Society
    Disaster Focus
          Disaster Health Volunteers Admin User Group
          Orange County Multi-Agency Disaster Network (OCMAD)
          Disaster Response Alliance (DRA)
          DSR SAFETY MEETING
          Emergency Management Council
          Leadership Steering Committee (Health Disaster Management)
          Health Care Coalition (HCC)
          Healthcare Security Network
          Homeland Security Grant Meeting
          Hospital NET/Coalition Meeting
    State Focus
          EMSA/EMSAAC/EMDAC (Emergency Medical Services Administrators & Medical Directors of CA)

EMSAAC Sub-Committee

Local Administrative Focus
        Emergency Medical Care Committee (EMCC)
        Facilities Advisory Committee (FAC)
Trauma Operations
        Trauma Operations
        Trauma Coordinator Data Subcommittee
        OC Injury Prevention Coordinator Meeting

2. Describe the composition, responsibilities, and activities of the multidisciplinary trauma system advisory committee(s) and the working relationship(s) with the trauma lead agency and the EMS lead agency, if they are different.
   a. Identify pediatric representatives on the multidisciplinary trauma system advisory committee and any pediatric advisory groups that provide input into trauma system development.
   b. Describe the process of involving experts in, and advocates for, special populations and how they help drive regional trauma system policy.
   c. Describe how the multidisciplinary advisory committee is involved in trauma system performance evaluation (for example, review of system performance reports).

RESPONSE:

Regional Trauma Operations Committee Membership
- Trauma Medical Directors (4) from all 4 OC Trauma Centers
- Trauma Program Representatives (5) includes Long Beach Memorial TC
- OC EMS Staff (Medical Director, Associate Medical Director, EMS Administrator, Systems & Standards Chief, ALS/CQI Coordinator, Facilities Coordinator and Data Systems Chief (as needed)

Authority: A recognized technical advisory group for OCEMS (includes members from Pediatric Trauma Center (CHOC)

Responsibilities: To serve as a multidisciplinary forum to monitor, evaluate, and report on the operation and quality of trauma services in Orange County. See RTOC Bylaws below.
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12129

Typical RTOC Agenda includes review of Trauma Diversion, Trauma related policies, Trauma related planning reports and Clinical Practice/PI case reviews

3. Provide examples of how the lead agency and trauma system leadership (example, trauma centers, trauma medical director, nurse coordinator, trauma administrator, and other stakeholders) inform and educate policy makers, elected officials, community groups, and others about the trauma system, its strengths and its improvement opportunities.

RESPONSE:

Trauma system related activities are reported to other committees and to the Emergency Medical Care Committee (EMCC) which was established by the OC Board of Supervisors pursuant to H&SC Section 1797.276 to act in an advisory capacity to the OC Board of Supervisors and to the OC EMS on all matters related to emergency medical services in Orange County. Recent examples would be the discussion of the impact of hospitals seeking designation as new trauma centers.   Also agenda items from the other advisory committees are taken to EMCC for review and recommendations.   See EMCC Bylaws Policy #100.30
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12117

4. Describe the process to build or expand effective trauma leadership within the trauma system (example, succession planning, leadership courses, and workshops) including the lead agency and trauma centers.

RESPONSE:
EMS is actively involved with the ACS verification process and participates during the reverification surveys. This provides an opportunity to directly interact with the administration leadership of each trauma center. Each trauma center reports active participation and membership of the Executive Committee of the California "Regional Trauma Care Committee" (RTCC) and attends the annual meeting of the Southern California Committee on Trauma.   The Trauma Program Managers are also members of the Trauma Managers Association of California and regularly meet together and also attend the California State Trauma Summits annually. Nationally, the Trauma Pediatric Medical Director and Program Manager are members of and attend Pediatric Trauma Society Conferences.

   a. Level I Trauma Center has ACGME approved residency programs in general surgery, orthopedic surgery, emergency medicine and neurosurgery among other specialties and subspecialties.   Two (2) senior general surgery residents are assigned to the trauma service every month.   Residents in orthopedic surgery, emergency medicine, ENT, plastics and urology rotate onto trauma services during their intern year. Their Surgical Critical Care fellowship has been ACGME approved since 1994.

<u>Coalition Building and Community Support</u>

1. <u>What is the status of the trauma system's coalition (for example, what is the status of recruiting members and building a coalition? Is the coalition strong and active coalition? Does the coalition need new energy? Who is not currently involved but should be a part of your coalition?</u>
   a. <u>What is the role of the coalition members (constituents and stakeholders) in promoting trauma system development?</u>
   b. <u>What is the method and frequency for communicating with coalition members?</u>

   RESPONSE:
   There are several committees and groups that interact with the trauma system providers.
   Emergency Medical Care Committee (EMCC) is primary lead agency committee that has members representing the various county stakeholders and constituents including:
   > Board of Supervisors
   > Ambulance Association of OC
   > American Red Cross
   > Hospital Association of Southern California (HASC)
   > OC Emergency Nurses Association
   > OC Business Council
   > OC City Managers Association
   > OC Fire Chiefs Association
   > OC Police Chiefs & Sheriff Association
   > OC Senior Citizens Advisory Council

   EMCC Meeting Agenda/Minutes
   http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=85176

2. <u>Describe how the trauma system leadership mobilizes community partners to improve the trauma system through effective communication and collaboration.</u>
   a. <u>How has the community been approached to identify injury control concerns?</u>
   b. <u>What key problems has the community identified?</u>
   c. <u>How do stakeholders bring system challenges or deficiencies to the attention of the lead agency?</u>

   RESPONSE:
   CHOC physicians provide pediatric neuro and trauma lectures for the prehospital providers on-site at CHOC. CHOC TMD and TPM are active members on the Orange County Trauma Operations Committee and have contributed to the following policies:
   > Spinal Motion Restriction http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=21138
   > Pediatric Trauma Center Criteria http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=48759
   > Trauma System Design http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12226
   > Integration of Pediatric Care in the Trauma System

<u>Lead Agency and Human Resources within the Lead Agency</u>

1. Describe the number, position titles, and percentage of full-time equivalency of all personnel within the lead agency or contract personnel who have roles or responsibilities to the trauma program.

    RESPONSE:
    One Emergency Medical Services Facilities Coordinator is assigned the responsibility to coordinate and monitor the designation of Emergency Receiving Centers (ERCs), Base Hospitals (BHs), Cardiovascular Receiving Centers (CVRCs aka "STEMI"), Stroke-Neurology Receiving Centers (SNRC aka "Stroke), Comprehensive Children's Emergency Receiving Centers (CCERCs) and Trauma Centers (TCs).   This includes onsite visits and field reviews for evaluation and to ensure adherence to Federal, State and local standards and designation criteria.

    > ERC = 25 facilities
    > CVRC = 14 facilities
    > SNRC = 9 facilities
    > Base Hospitals = 7 facilities
    > CCERC = 2 facilities
    > Trauma Centers = 4 facilities (OC) + 1 facility (Long Beach)

    Health Care Agency Organizational Chart http://www.ocgov.com/civicax/filebank/blobdload.aspx?BlobID=23167
    OCEMS Organizational Chart http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12113

2. <u>Identify other personnel resources that support the trauma program activities of the lead agency (for example, epidemiology support from other units within the health department, public health interns).</u>

    RESPONSE:
    The Trauma Registry and OC-MEDS data management programs are coordinated and managed by the EMS Information Systems Chief and the OC-MEDS Coordinator who are both full-time employees within EMS.   Health Care agency staff outside of the EMS division are used for legal and epidemiological resources as needed but the utilization is only as requested or required for special projects.

    Students and Interns are used for various projects and research as available (see "Analysis of Pediatric Utilization of Orange County EMS and Secondary Health Impact Analysis of Pediatric Trauma" white paper.

3. Describe the adequacy of personnel resources available to the lead agency to sustain trauma program assessment, policy development, and assurance activities.
   a. Identify impediments or barriers that hinder system development.

RESPONSE:
As described in #1 above – EMS Coordinator position has a number of other duties that are non-Trauma related.

Trauma System Plan

1. Describe the process for the development or revision of the trauma system plan.
   a. Include the role of advisory and stakeholder groups in the process.
2. Is there ongoing assessment of trauma resources and asset allocation within the system?
3. Describe the process used to determine trauma system standards and trauma system policies.
   a. How are they reviewed and evaluated?
   b. What standards and policies exist for special populations, including rural and frontier regions?
   c. How are specialized needs addressed, including burns, spinal cord injury, traumatic brain injury, and replantation?

RESPONSE:

The trauma system in Orange County is continually being assessed and reviewed with the Trauma Operations Committee membership and is reported to multiple committees and meetings and posted to the EMS website.

Facility Reports/Diversion
www.healthdisasteroc.org/ems/system_reports/health_care_facilities

Trauma System policies are developed and reviewed with input from the Regional Trauma Operations Committee and other committees such as the Facilities Advisory Committee, Paramedic Advisory Subcommittee as well as facility meetings and other EMS groups.

Trauma Plan Regulations (includes Trauma Plan, Data Collection, Trauma System Evaluation, Trauma Center Requirements, Quality Improvement and Trauma Patient Transfers)
https://emsa.ca.gov/wp-content/uploads/sites/71/2017/07/regs721.pdf

State of California Health & Safety Code Division 2.5
https://emsa.ca.gov/wp-content/uploads/sites/71/2017/07/division25.pdf

The local EMS agency shall submit a trauma system status report as part of its annual EMS Plan update. The report shall address, at a minimum, the status of the trauma plan goals and objectives.

Health and Safety Code (HSC) Section 1797.254 states:
"Local EMS agencies shall annually submit an emergency medical services plan for the EMS area authority, according to EMS Systems, Standards, and Guidelines established by the authority".
The EMS Authority is responsible for the review of EMS Plans and for making a determination on the approval or disapproval of the plan, based on compliance with statute and the standards and guidelines established by the EMS Authority consistent with HSC Section 1797.105(b).

EMS Components that are reviewed by the EMS Authority include:

- System Organization and Management
- Staffing/Training
- Communications
- Response/Transportation
- Facilities/Critical Care
- Data Collections/System Evaluation
- Public Information and Education
- Disaster Medical Response

Orange County 2018 EMS Plan Update approved by the EMS Authority.
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?blobid=93691

Orange County 2018 Trauma Plan Update has been submitted to the EMS Authority for review and is pending approval.

System Integration

1. What is the trauma system's collaboration and integration with EMS, public health, and emergency management and programs such as:
   a. prevention programs,
   b. mental health,
   c. social services,
   d. law enforcement,
   e. child protective services, and
   f. Public safety (for example, fire, lifeguard, mountain rescue, and ski patrol)?

RESPONSE:

As noted previously, all OC Trauma Centers are represented in the key lead agency advisory groups either by their TMD or TPM and they all participate in the Base Hospital Regional Emergency Advisory Committees meetings held 4 times a year at each of the 7 Base Hospitals.

They also participate in the "No Fear Conferences" that are presented to the EMS community twice a year where topics are updated regularly to include trauma-related sessions as well as conferences and educational classes offered during the year at each trauma center.

Financing

1. How does the lead agency track and analyze internal trauma system finances?
   a. How does the advisory committee participate in the financial review process?
   b. How frequently are trauma system financial reports published?
   c. Which financial data are reported (lead agency data, health facility data, or both)?
2. What is the lead agency's budget for the trauma system?
3. What is the source of funding available to support the development, operations, and management of the trauma system (for example, general funds, dedicated funds)?
4. What financial incentives and disincentives exist to encourage trauma center participation in the trauma system?
   a. Specifically include arrangements for uncompensated and undercompensated care.

RESPONSE:

The Health Care Agency receives funding for the purpose of reimbursing hospitals for uncompensated and emergency health care. Funds are passed through to the trauma care hospitals through a master agreement with various county hospitals for Indigent and Trauma Care Services. The sources of funding are: 1) Emergency Medical Services Funds through SB 12/612 MADDY and SB 1773, 2) Tobacco Settlement Revenue, and 3) SB 1100 ACA Reimbursement.

1) Emergency Medical Services Fund (EMSF) – Funds consist of penalty assessments collected by the Courts for specific penal code violations. Hospitals receive a base payment of $125,000 per year and receive their final allocations after the fiscal year collection amount is known. The trauma centers that receive this funding are CHOC, Mission Hospital, UCI, OC Global, and Long Beach Memorial.
   a. SB 12/612 MADDY - Under MADDY, twenty-five percent of funds allocated to the County EMSF is distributed to hospitals.
   b. SB 1773 - Fifteen percent of penalty assessments collected under SB 1773 are set aside for pediatric trauma care. The remaining trauma hospitals receive a portion of the balance minus the pediatric allocation.

2) Tobacco Settlement Revenue (TSR) – TSR Measure H allocates 6% of funds to hospitals that maintain basic or comprehensive emergency services or trauma centers. The funds are distributed based on the hospital's proportion of charity care and bad debt.

3) SB 1100 ACA Reimbursement – In addition to above, the State Department of Health Care Services (DHCS) provided an opportunity for Disproportionate Share Hospitals, who operate basic emergency rooms, to leverage TSR funds for drawing down additional federal revenue in accordance with WIC 14166.12. The hospitals must participate in the DHCS Private Hospital Supplemental Fund Program. Six Orange County hospitals participate in this program: Anaheim Global, CHOC, Fountain Valley Regional, Garden Grove Hospital, OC Global, and South Coast Global.

Indigent and Trauma Care Agreement Orange County Health Care Agency
http://cams.ocgov.com/Web_Publisher/Agenda05_10_2016_files/images/A16-000325.HTM

California Trauma Recovery Center Grant

https://victims.ca.gov/board/grants/18-19/

The California Victim Compensation Board (CalVCB) provides reimbursement to eligible victims of crime for many crime-related expenses. CalVCB funding comes from restitution paid by criminal offenders through fines, orders, penalty assessments and federal matching funds. On July 1, 2013, Government Code section 13963.1 became law stipulating that the CalVCB administer a program to evaluate applications and award grants to trauma recovery centers (TRCs) in California to provide services to victims of crime.

Health and Safety Code - HSC
DIVISION 2.5 - EMERGENCY MEDICAL SERVICES
CHAPTER 3.75 - Trauma Care Fund

- Section 1797.198.
- Section 1797.199.

Section 3: Assurance

Prevention and Outreach

1. List organizations dedicated to injury prevention within the region and the issues they address (for example, MADD, SADD, SafeKids Worldwide, Injury Free Coalition for Kids, American Trauma Society, university-based injury control programs).
2. Describe how the trauma lead agency has funded and coordinated system-wide injury prevention or outreach activities.
   a. Which injuries (including pediatric injuries) have been identified and prioritized for intervention strategies?
   b. Identify any dedicated lead agency or other agency staff member (full- or part-time) responsible for injury prevention outreach and coordination for the trauma system.
   c. What is the source of funding?
3. Explain the evaluation process for injury prevention projects that are conducted by the lead agency, trauma facilities, or other community-based organizations.
   a. Identify any gaps in injury prevention efforts for population groups in the state.

   RESPONSE:
   Each Trauma Center has programs in place to communicate and interact with their community stakeholders.
   Examples of injury prevention programs:
   1. Festival of Children in Costa Mesa – child passenger safety/home safety education
   2. Santa Ana College Health Fair – provided home safety education
   3. Garden Grove Elementary School Helmet Safety Program
   4. Stop the Bleed Program classes offered to a variety of community based organizations (CERT, Boy Scouts, Girl Scouts, churches, police, fire and school)
   5. Youth Drug and Alcohol Deterrence (YDAD) partnership with local court system.
   6. Down With Falls Coalition is a collaborative with two of the other trauma centers and community groups with the aim of reducing falls among the geriatric population.

   Examples of partnership organizations:
   1. Safe Kids Orange County (SKOC)
   2. Local Police Department
   3. School Districts
   4. Universities and Colleges
   5. Municipal Courts
   6. Childhood Injury Prevention Initiative collaboration with Clinical in the Park, local community physicians and the UCI School of Nursing to identify leading causes of injury among children in Orange County, seeking funding for injury prevention activities and developing injury prevention programs within the community.

   Orange County Injury Prevention Coordinator group has begun meeting monthly to discuss and share information and opportunities. This group was formed by the Trauma Injury Prevention Coordinators from each of the Trauma Centers in Orange County.

Emergency Medical Services

1. Provide information on the last assessment of EMS, including assessor and date.
   a. Describe the EMS system, including the number and competencies (that is, ALS or BLS) of ground transporting agencies, non-transporting agencies, and aeromedical resources.
   b. How are these resources allocated throughout the region to service the population?
   c. Describe the availability of enhanced 911 and wireless E-911 access in your region.
   d. Identify any specialty pediatric transporting agencies and aeromedical resources.
   e. Describe the availability of pediatric equipment on all ground transporting units.

RESPONSE:

Private Ambulance Companies – licensed in Orange County (last updated 2017)

Agency Name	City	County	Agency Organizational Type
Ambuserve, Inc	Gardena	Los Angeles	Private Ambulance
American Ambulance	Santa Ana	Orange	Private Ambulance
AmeriCare Ambulance Service	Carson	Los Angeles	Private Ambulance
Bowers Ambulance	LONG BEACH	LOS ANGELES	Private Ambulance
Care Ambulance Service	Orange	Orange	Private Ambulance
Cavalry Ambulance	Corona	Riverside	Private Ambulance
Doctor's Ambulance Service	LAGUNA HILLS	ORANGE	Private Ambulance
Elite Ambulance Service, Inc.	Los Angeles	Los Angeles	Private Ambulance
Emergency Ambulance Service	Brea	Orange	Private Ambulance
FirstMed Ambulance Service, Inc.	Sun Valley	Los Angeles	Private Ambulance
Gentle Care Transport, Inc.	Los Angeles	Los Angeles	Private Ambulance
Gerber Ambulance Service	Torrance	Los Angeles	Private Ambulance
Horizon Ambulance, Inc.	Anaheim	Orange	Private Ambulance
Huntington Ambulance Service	Westminster	Orange	Private Ambulance
Impulse Ambulance, Inc.	NORTH HOLLYWOOD	LOS ANGELES	Private Ambulance
Liberty Ambulance	DOWNEY	Los Angeles	Private Ambulance
Lifeline Ambulance	Montebello	Los Angeles	Private Ambulance
Lynch Ambulance	Anaheim	Orange	Private Ambulance
MedCoast Ambulance Service	Santa Fe Springs	Los Angeles	Private Ambulance
Medix Ambulance Service	Mission Viejo	Orange	Private Ambulance
MedLife Ambulance	Los Angeles	Los Angeles	Private Ambulance
MedLine Ambulance	Orange	Orange	Private Ambulance
Mercy Air Services, Inc.	Santee	San Diego	Private Ambulance
Mercy Ambulance	DOWNEY	LOS ANGELES	Private Ambulance
Mission Ambulance	Corona	Riverside	Private Ambulance
Pacific Ambulance	Lake Forest	Orange	Private Ambulance
PMT Ambulance	Colton	San Bernardino	Private Ambulance
Premier Medical Transport	Brea	Orange	Private Ambulance
Priority One Medical Transport	Rancho Cucamonga	Riverside	Private Ambulance
Royalty Ambulance Service, inc.	Los Angeles	Los Angeles	Private Ambulance
Samaritan Ambulance, Inc.	Anaheim	Orange	Private Ambulance
Schaefer Ambulance	Santa Ana	Orange	Private Ambulance
Shoreline Ambulance	Huntington Beach	Orange	Private Ambulance
Symons Emergency Specialties, Inc.	SAN BERNARDINO	SAN BERNARDINO	Private Ambulance

EMERGENCY MEDICAL DISPATCH AGENCIES						
Orange County, California						
city	type of dispatch	category response	training program used			
Costa Mesa P/F 79 Fair Drive Costa Mesa, CA 92821	Primary PSAP	Priority dispatching	OCFA			
Laguna P/F 505 Forest Avenue Laguna Beach, CA 92651	Primary PSAP	Priority dispatching	OCFA			
Los Angeles County Fire Command & Control 1320 N. Eastern Avenue Los Angeles, CA 90063-3244	Secondary PSAP	Priority dispatching	created own			
MetroNet Fire Authority ** 201 S. Anaheim Blvd. #302 Anaheim, CA 92805	Secondary PSAP	Priority dispatch	Medical Priority Dispatch			
OCFA 1 Fire Authority Road Irvine, CA 92602	Secondary PSAP	Priority dispatch	OCFA			
* Participating fire departments in MetroNet: Anaheim, Brea, Fountain Valley, Fullerton, Garden Grove, Huntington Beach, Newport Beach, Orang						
Primary PSAP (receives 9-1-1 calls directly from the public)	23	19 <u>city police</u>: (Anaheim, Brea, Costa Mesa, Fountain Valley, Fullerton, Garden Grove, Huntington Beach, Irvine, La Habra, Laguna Beach, Newport Beach, Orange, Placentia, Santa Ana, Tustin, Westminster, and West-Comm (cities of Cypress, Los Alamitos and Seal Beach) 1 <u>County</u> (Sheriff)				
Secondary PSAP (9-1-1 calls are transferred from another entity)	3	<u>MetroNet Fire Authority</u>, serving the cities of: Anaheim, Brea, Fountain Valley, Fullerton, Garden Grove, Huntington Beach, Newport Beach, Orange; <u>Orange County Fire Authority</u>, serving 19 cities: Aliso Viejo, Buena Park, Cypress, Dana Point, Irvine, Laguna Hills, Laguna Niguel, Laguna Woods, Lake Forest, La Palma, Los Alamitos, Mission Viejo, Placentia, Rancho Santa Margarita, San				

Emergency Receiving Center – Resource Listings
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12219

2. Describe the procedures for online and off -line medical direction, including procedures for the pediatric population.
    a. Describe how EMS and trauma medical direction and oversight are coordinated and integrated.

RESPONSE:
OCEMS designates and contracts with hospitals to provide medical direction of prehospital emergency medical care personnel, with its area of jurisdiction as base hospitals (BH). There are currently 7 hospitals with this specialty designation located throughout the county. All ERCs who are not designated a Base Hospital is assigned to one.

Each BH designates a BH Medical Director who is responsible for overall medical direction and supervision of the paramedical programs within the BH's area of responsibility. This is outlined in the Base Hospital Criteria policy #610.00. Both the BH Medical Director and the BH Coordinator act as a liaison between the base hospital, OCEMS, fire departments, ERCs, CCERCs, transport providers, OC Communications (OCC) and paramedic training programs. They also

participate in performance improvement activities, both internal base activity audits and system wide audits.

Base Hospital Criteria OCEMS Policy# 610.00
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12220

Base Hospital Incident Review Process OCEMS Policy# 385.05
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12180

Base Hospital On-Line Medical Direction and Field Protocols/Standing Orders
http://www.healthdisasteroc.org/ems/micnbh

3. Describe the prehospital workforce competencies in trauma:
    a. Initial training and certification/licensure requirements
    b. Continuing education and recertification/relicensure requirements
    c. Pediatric trauma training requirements for recertification

RESPONSE:

Initial training and certification/licensure is primarily the responsibility of the schools and fire agency employers. Continuing education is also the responsibility of the employers and is also offered at the Regional Emergency Advisory Committees (REACs) presented quarterly by each of the Base Hospitals, Conferences offered throughout the year ("No Fear"). Pediatric trauma related courses are also offered and included in the REACs provided by the Pediatric Trauma Center (CHOC) as mentioned previously.

Annual Airway Training is offered by the lead agency and EMS Updates are developed and distributed twice annually.

Accreditation to Practice – ALS Personnel Criteria #430.10
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12197

County of Orange Health Care Agency
Emergency Medical Services - PRQ

Definitive Care Facilities

1. Describe the extent to which all acute care facilities participate in the trauma system.
   a. Describe the availability and roles of specialty centers within the system (pediatric, burn, traumatic brain injury, spinal cord injury)

Designated Emergency Receiving Center's Capability List

Facility Name (Dec, 2018 updated)	ERC	Base	PTRC	CCERC	CCS PICU	CVRC	SNRC	Pediatrics	NICU	Perinatal	ICU	Coronary Care	Burn	UnSpecified General Acute Care	Acute Psych	Rehab	Licensed Capacity
COUNTY TOTALS								249	304	608	576	101	15	3438	223	88	5602
Anaheim Global Medical Center Hospital	X					X			5	37	22			35	89		188
Anaheim Regional Medical Center	X					X			11	27	22	10		153			223
Chapman Global Medical Center	X										12			63	12		87
Children's Hospital At Mission					Tertiary			24	22		8			24			78
Children's Hospital of Orange County			Ped II	X	Tertiary			158	67		54						279
Foothill Regional MC	X										15			98		22	135
Fountain Valley RHMC-Euclid	X				Community	X	X	13	23	38	36			183			293
Garden Grove Hospital & Medical Center	X								12	35	12			108			167
Hoag Memorial Hospital Presbyterian	X	X				X	X		21	70	31	12		308			442
Hoag Hospital Irvine	X					X		7	16	23	12			118			176
Huntington Beach Hospital	X	X									6	6		94	25		131
Kaiser Foundation Hospital, Anaheim	X								12	20	34	40		156			262
Kaiser Foundation Hospital Irvine	X								6	28	20			120			174
La Palma Intercommunity Hospital	X									11	4	4		105	17		141
Los Alamitos Medical Center	X					X	X			12	9	8		113	25		167
Mission Hospital Regional Medical Center	X	X	II	X		X	X			43	36	27		217		22	345
Mission Hospital Laguna Beach	X										19	10		75	36		140
Orange Coast Memorial Medical Center	X					X			12	21	21			164			218
Orange County Global Medical Center	Yes	X	II		Special (Burn)	X	X	26	16	52	42		7	139			282
Placentia Linda Hospital	X										4	4		106			114
Saddleback Memorial Medical Center, LH	X					X	X		19	39	31			163			252
South Coast Global Communities Hospital	X							9		12	9			79	23		132
St. Joseph Hospital, Orange	X					X	X			89	20	20		291	37		457
St. Jude Medical Center	X	X				X	X		14	33	52			200		30	329
University of California, Irvine Medical Center	X	X	I			X	X	45	22		60		8	214	48	14	411
West Anaheim Medical Center	X					X					10	10		147			167

https://cdph.data.ca.gov/Facilities-and-Services/Healthcare-Facility-Bed-Types-And-Counts/8t96-iu4s

2. Describe the roles of the non-designated acute care facilities in the trauma system.
    a. Address their representation on the regional trauma committee.
    b. Do they submit registry and/or financial data?
    c. What is their degree of engagement in the system-wide performance improvement process?

    RESPONSE:

    All designated ERCs are required by criteria to have transfer agreements in place for specialty care patients (including trauma). All ERCs are required to submit Hospital Discharge Data for all ambulance transported patients to their EDs. This is not consistently done at this time.

3. Describe the process for verification and designation. Briefly outline the extent of authority granted to the lead agency to receive applications and to verify, designate, and de-designate regional trauma centers.

    RESPONSE:

    All designated Trauma Centers apply for ACS Verification prior to designation.   Conditional designation is provided by EMS to allow the facility time to prepare for ACS Verification which includes a review of facility readiness and a site visit to determine if ACS Verification is obtainable.

4. Describe your standards for trauma center verification (including pediatric standards) and the extent to which they are aligned with national standards.
    a. Describe any waivers or program flexibility granted for centers not meeting verification requirements.
    b. Describe the process and frequency of use for de-designation of trauma centers.

    RESPONSE:
    ACS Verification program is used for all trauma center designation.   The trauma system in Orange County has remained stable for many years with the addition of a Pediatric Trauma Center 3 years ago.

    Trauma Center Survey/ReSurvey Process Policy #634.10
    http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12232

    Facility Program Approval/Designation Process & Appeal Procedure #640.00
    http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12233

5. Outline how the geographic distribution and number of designated acute care facilities is aligned with patient care needs.
    a. Describe the process by which additional trauma centers are brought into the system.
    b. Describe the system response to the voluntary withdrawal of designation by acute care facilities.
    c. Describe the mechanism for tracking and monitoring patient volume and flow between centers and how this influences the overall configuration of designated facilities.

6. Describe your system for assessing the adequacy of the workforce resources available within participating centers.
    a. Address nursing and subspecialty needs (trauma or general surgery, intensivists, neurosurgeons, orthopedic surgeons, anesthetists, pediatric surgeons, and others, as required).
    b. What human resource deficiencies have been identified and what corrective actions have been taken?
7. Describe the educational standards and credentialing for emergency physicians and nursing staff, general surgeons, specialty surgeons, and critical care nurses caring for trauma patients in designated facilities.
    a. What regional educational multidisciplinary conferences are provided to care providers? Who is responsible for organizing these events?

RESPONSE:
OCEMS will evaluate the request and determine the need for any additional trauma centers.
OCEMS evaluation may include the following:
    a. Geography (service area population density, travel time and distance to the next nearest facility, number and type of other available trauma services and availability of prehospital resources).
    b. Base Hospital designation (number of calls, impact on patients, prehospital personnel and other Base Hospitals).
    c. Trauma care (number of trauma patients, impact on other hospitals, trauma centers and trauma patients).
    d. Specialty services provided (neurosurgery, obstetrics, burn center, pediatrics and next nearest availability)
    e. Patient volume (number of patients annually, both 9-1-1 transported and walk-ins).

Each Trauma Center is surveyed and accredited by American College of Surgeons (ACS) and this information is also provided to the lead agency for determining designation as a Trauma Receiving Center.

See Trauma System Design OCEMS Policy #620.07
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12226

See Trauma Center Criteria OCEMS Policy #620.00
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12224

See Pediatric Trauma Center Criteria OCEMS Policy #620.01
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=48759

System Coordination and Patient Flow
1. Describe the source of prehospital trauma triage protocols, and specify whether they are consistent with national guidelines.
    a. Describe how children and patients with severe traumatic brain injury and spinal cord injury are triaged from the field to appropriate facilities.

RESPONSE:
Our trauma protocols are based on current national standards and state recommendations as well as trauma committee input with our pediatric trauma representatives. Trauma field triage protocols direct field personnel to make base contact for appropriate destination determinations. However, a field paramedic also has protocol support for making base contact if a patient does not fit trauma field triage criteria but may need trauma or other special services based on the field paramedic's assessment.

General Injury and Trauma – Pediatric SO-P15
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=63528

Trauma Triage Algorithm Policy #310.31
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=90403

Trauma Triage Policy #310.30
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=59347

2. Within the system, what criteria are used to guide the decision to transfer patients to an appropriate resource facility and are these criteria uniform across all centers?

RESPONSE:
Patients needing immediate transfer from a non-specialty center to a higher level of care can be transported by either the 911 system with paramedics if patient is in emergent need for that higher level of care. A patient can also be transferred as needed by contacted a county approved ALS Transport service that operates under IFT Standing Orders of OCEMS with additional skills. These ALS teams can transport a higher level of care patient such as a trauma, stroke or STEMI patient to the appropriate specialty center.

IFT-SO-1 Interfacility Transport ALS Standing Orders that allow ALS paramedics additional advanced skills.
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=38113

3. Specify whether there are interfacility transfer agreements to address the needs of each of the following:
   a. Transfer to an appropriate resource facility
   b. Traumatic brain injury
   c. Spinal cord injury
   d. Replantation
   e. Burns
   f. Children
   g. Repatriation

   RESPONSE:
   Every ERC designated by OCEMS is required to have transfer agreements in place for the following types of patients.
   - Pediatric patients (including critically ill)
   - Acute STEMI
   - Acute Stroke
   - Trauma

   ERC Criteria Policy #600.00
   http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12217

4. Describe the system-wide policies addressing the mode of transport and the type and qualifications of transport personnel used for interfacility transfers.

   Interfacility Transfer Between Acute Care Hospitals Using EMS Transport Providers OCEMS Policy #310.20 http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=72875

   Interfacility Transport – ALS Standing Orders
   http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=38113

   IFT Dispatch and Transport Criteria
   http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=39680

5. Specify whether there is a central communications system to coordinate interfacility transfers. Describe how this system has access to information regarding resource availability within the region.

   RESPONSE:
   In administering the EMS system, OCEMS designates and contracts with hospitals to provide medical direction of prehospital emergency medical care personal, within its area of jurisdiction as base hospitals.   All trauma centers are base hospitals (4) and 3 additional hospitals are also designated for a total of 7 base hospitals.   The individual facility requesting a transfer is responsible for contacting a facility that accepts the transfer prior to leaving the originating facility.

   Base Hospital Criteria Policy #610.00 http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12220

Rehabilitation

1. Provide data about the number of rehabilitation beds and specialty rehabilitation services (spinal cord injury, traumatic brain injury, and pediatric) available within the trauma system's geographic region. On average, how long do patients need to wait for these rehabilitation beds? Does the average wait vary by type of rehabilitation needed?

   RESPONSE: There are over 450 licensed rehabilitation beds in Orange County (see listing below) this number includes both inpatient acute rehab beds (including Trauma Centers) and transitional care beds found in our licensed acute care facilities. This does not include those intermediate care facilities. We do not collect data on wait times by type of rehabilitation or overall wait time issues. We have not been made aware of any issues related to rehabilitation needs in the county.

2. Describe how existing trauma system policies and procedures appropriately address treatment guidelines for rehabilitation in acute and rehabilitation facilities.

   RESPONSE: All trauma centers have processes in place for treatment in their facility with Acute Rehabilitation Units or transfer agreements to appropriate rehabilitation centers.

3. Identify the minimum requirements and qualifications that rehabilitation centers have established for the physician leaders (for example, medical director of spinal cord injury program, medical director of traumatic brain injury program, and medical director of rehabilitation program).

   RESPONSE: See listing below for medical directors of the various programs.

4. Describe how rehabilitation specialists are integrated into trauma system planning and advisory groups.

   RESPONSE: We currently rely upon the individual trauma centers to integrate these specialists into the care of the trauma patients.

Facility Type	Unit Size	Name	Medical Director	General Services	Specialty Services
GACH/Trauma Center In-house Rehab unit (CARF)	14 beds	UCIMC http://www.ucihealth.org/medical-services/rehabilitation-services/acute-rehab-unit	Jay Han, MD Physical Medicine & Rehabilitation	Physical Therapy, Occupational Therapy, Speech Therapy, and Rehabilitation Physician consults are performed on trauma patients on request at any time. Rehabilitation Physician consults and on-call team are available to the trauma service everyday.	As level two pediatric trauma center and regional burn center, rehabilitation and therapy services see and treat all pediatric patients that are admitted into the hospital. Within their scope of practice, PM&R physicians are trained in pediatric rehabilitation, and one physician is paneled with the California Children's Services (CCS).
GACH/Trauma Center Off-site Rehab		CHOC	Afshin Aminian, MD Orthopedic Surgery	Rehabilitation needs are evaluated upon admission to the hospital. The RN screens all admitted patients for need for evaluation and obtains physician order if screen is positive. A member of the rehabilitation team attends Trauma Education Committee.	
GACH/Trauma Center Off-site Rehab		OC Global	Andrei Dokukin, MD Physical Medicine and Rehabilitation	Rehab works w/MDs, nursing, and case managers to facilitate mobility, self care and cognitive/speech. Rehabilitation begins at time of admission thru discharge. All aspects of rehab services participates in weekly trauma rounds.	Rehab services have OT/PT who are CCS certified.
GACH/Trauma Center In-house Acute Rehab Unit (CARF)	22 beds	Mission Hospital https://www.mission4health.com/our-services/rehabilitation-services/inpatient-rehabilitation-facility/	James Cushing, MD Physical Medicine and Rehabilitation	Speech, Occupational, Physical Therapists, Social Worker, Recreational Therapist work closely with the acute rehab unit along with Physiatrist.	Specialized Pediatric Therapist
GACH In-house Rehab (CARF)	17 beds	St. Jude https://www.stjudemedicalcenter.org/our-services/rehabilitation/inpatient-rehabilitation/		The Rehabilitation Services at St. Jude Medical Center provides physical and occupational therapy as well as counseling and support groups. Five major areas of the Rehabilitation Services include: a Stroke Recovery Center, a Pain Management Center, a comprehensive Industrial Rehabilitation Center, a Spinal Cord Injury Center and a Brain Injury Center.	
GACH	84 beds	Encompass Health Rehabilitation Hospital of Tustin https://www.encompasshealth.com/locations/tustinrehab/our-programs	Ann Vasile, MD Physical Medicine and Rehabilitation	Encompass Health Rehabilitation Hospital provides inpatient and outpatient care that meet the individual and family needs of patients with diagnoses such as stroke, traumatic brain injury, neurological disorders, spinal cord injuries, acute functional decline following injury or illness, spine and joint injury or disorder, multiple fractures, arthritis, industrial or occupational injuries.	
GACH Ventilator Dependent only	21 beds	Healthbridge Children's Hospital			
GACH	70 beds	Hoag Orthopedic Institute https://www.hoagorthopedicinstitute.com/about-hoi/			
GACH Transitional Care	54 beds	Kindred Hospital Santa Ana https://www.kindredhealthcare.com/locations/transitional-care-hospitals/kindred-hospital-santa-ana/types-of-care/rehabilitation-services			
GACH Transitional Care	109 beds	Kindred Hospital Westminster			
GACH Transitional Care	48 beds	Kindred Hospital Brea			

Disaster Preparedness

1. <u>When was the last assessment of trauma system preparedness resources conducted, and what were the significant findings of the assessment as they relate to emergency preparedness?</u>
   RESPONSE:
   > All Trauma Centers take part in county and statewide disaster drills twice a year. In addition, all trauma centers are also designated as base hospitals and participate in frequent MCI drills and coordinate with other facilities and agencies to conduct disaster simulations and communication testing.

2. <u>What actions were taken to remediate or mitigate the gaps identified through tabletop or simulated responses in disaster drills among the acute care facilities participating in the system?</u>
   RESPONSE:
   > Ongoing evaluation and remediation occurs from frequent drills and planning meetings with recent changes being implemented on how to coordinate patient movement from the field to the appropriate receiving centers.

3. <u>What is the trauma system plan to accommodate a need for a surge in personnel, equipment, and supplies?</u>
   RESPONSE:
   The Health Care Agency receives funding from the federal Centers for Disease Control and Prevention (CDC) for a number of its programs. The County of Orange collaborates with the California Department of Public Health (CDPH) and other state and local partnering entities to ensure consistent disaster and preparedness planning locally, regionally and statewide.

   The Health Emergency Management (HEM) section of the Emergency Medical Services Division supports and participates in ongoing all-hazards planning and preparedness activities undertaken by the Orange County Operational Area (OA) and coordinates its planning efforts with other County departments, area cities and local special districts to mitigate against, prepare for, respond to and recover from health-related emergent disasters and events.

   HEM provides all-hazards disaster preparedness training to the Health Care Agency's employees and to its medical community partners. Such trainings include, but are not necessarily limited to: the national Incident Management System (NIMS), the state Emergency Management System (SEMS), Weapons of Mass Destruction Awareness, the Hospital Incident Command System, Decontamination, Hospital Surge-related Activities, Point-of-Distribution (POD) processes, Medical Health Operational Area Coordination and other health preparedness-related topics

   Among HEM'sPreparedness and Training's programs are:
   - [Hospital Preparedness Program (HPP)](#)
   - [Influenza Preparedness](#)
   - [Medical Reserve Corps (MRC)](#)
   - [Strategic National Stockpile (SNS)](#)
   - [Training and Exercises](#)
   - [KIDs Working Group](#)

In addition, each facility is required to have a surge capacity plan in place and is expected to review it annually. Orange County has a surge plan that includes capacity standards for every receiving center in the county. Separate from this policy, the Orange County Fire Services Operational Area Plan Annex MCI Plan defines field operation procedures during an MCI. This has currently been updated and is being exercised on this year.

Unified County of Orange Emergency Operations Plan
http://cams.ocgov.com/Web_Publisher_Sam/Agenda02_14_2017_files/images/O00617-000002A.PDF

OCEMS Multi-Casualty Incident Response Plan #900.00
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12283

4. How is the trauma system integrated into the state's incident command system and the communications center?

RESPONSE:

California Health & Safety Code 1797.200 directs the local EMS system to administer and provide oversight to coordinate medical and health disaster planning and response activities with the local public health department. This coordination includes the trauma centers within its jurisdiction.

   a. MHOAC: CA H&S Code 1797.153 directs the local Health Officer and LEMSA Administrator to act as the MHOAC for monitoring and obtaining medical/health resources during a local emergency or disaster.
   b. RDMHC: CA H&S Code 1797.152 directs the Regional Medical & Health Coordinator to initiate and respond to MHOAC mutual aid requests. Orange County is in Region I (of 6) of the California RDMHS mutual aid regions.
   c. Orange County is the Southern CalOES Administrative Regional Office of Emergency Services which coordinates information and resources within the region and between state and regional levels to support local responses.

5. What strategies and mechanisms are in place to ensure adequate interhospital communication during a mass casualty incident?

RESPONSE:

   All facilities are part of the county MCI Plan and regularly participate in drills throughout the year. There are redundant methods for interhospital and interagency communication through satellite/internet (ReddiNet), radio (HEAR), and telephone. See monthly report that is distributed to all facilities for review.

System-wide Evaluation and Quality Assurance

1. <u>What is the membership of the committee charged with ongoing monitoring and evaluating of the trauma system?</u>
   a. <u>To whom does it report its findings?</u>
   b. <u>How does it decide what parameters to monitor?</u>
   c. <u>What action is it empowered to take to improve trauma care?</u>

   RESPONSE:
   OCEMS Trauma Operations Committee is a recognized technical advisory group of OCEMS that serves as a multidisciplinary group to monitor, evaluate, report and advise on the operation and quality of trauma services in Orange County. Membership includes Trauma Medical Directors (4 OC TCs) and Trauma Program Managers (5) including Long Beach Memorial TC.   Other members are OCEMS Medical Director, Associate Medical Director, EMS Administrator, Facilities Coordinator, QI Coordinator and Data Systems Chief and Coordinator.

2. <u>Describe the trauma system performance improvement efforts as they pertain to the system for the following groups of providers in the context of system integration:</u>
   a. <u>Dispatch centers</u>
   b. <u>Prehospital provider agencies</u>
   c. <u>Trauma centers</u>
   d. <u>Other acute care and specialty facilities</u>
   e. <u>Rehabilitation centers</u>

   RESPONSE:
   Each EMS service provider submits an annual CQI plan to OCEMS for approval.   OCEMS evaluates its implementation and approval.   With provided system-wide reports, OCEMS assesses for problems or trend deficiencies.   Provider agencies may be instructed to participate in ongoing audits and/or studies with base hospitals and provider agencies.

3. <u>List the process and patient outcome measures that are tracked at the trauma system level, including measures for special populations.</u>
   RESPONSE:
   > As a system – the lead agency tracks and reports on transport times and diversion times. Interfacility transports and trauma retriage is also tracked but not reported. The individual Trauma Centers track trauma volume, number of patients with ISS > 15, mortality, age related…etc. All Trauma Centers are using TQIP at their facilities per ACS criteria.

4. As part of your system-wide performance improvement, specify whether each of the following is assessed on a regular basis:
   a. Time from arrival to a center and ultimate discharge to a facility capable of providing definitive care. If yes, specify the mean time to transfer.
   b. Proportion of patients with injury more severe than a predefined injury severity threshold (for example, ISS >15, or other criteria) who receive definitive care at a facility other than a Level I or II trauma center (undertriage)
   c. Proportion of patients with injury less severe than a predefined injury severity threshold (for example, ISS <9) who are transferred from any facility to a Level I or II trauma center (overtriage).

RESPONSE:

All of these measures are monitored and evaluated on a regular basis through self-reporting, database queries, or ACS survey monitoring and reporting. The OCEMS CQI process includes the following:

A. Prospective

1. Comply with current federal, state and county rules, regulations, laws, and codes applicable to EMS.
2. Monitor current evidence-based practice and trends, incorporating changes as appropriate
3. Plan, implement, and evaluate the EMS System.
4. Approve EMS service providers' programs.
5. Establish policies and procedures to assure medical control, which may include, but not be limited to, dispatch, basic life support, advanced life support, patient destination, patient care guidelines, and CQI requirements.
6. Facilitate implementation of required CQI programs by system participants.
7. Design system-wide reports for monitoring identified problems and/or trends analysis.
8. Approve standardized corrective action plan for isolated and trend deficiencies for prehospital and base hospital personnel.

B. Concurrent

1. Participate in ongoing audits and studies with base hospitals and provider agencies including committee discussions, site visits, field observations and ongoing monitoring.

C. Retrospective

1. Evaluate system providers for retrospective analysis of prehospital care.
2. Evaluate identified trends in the quality of prehospital care delivered in the system.
3. Evaluation of system to include any CQI findings from base hospitals and ALS provider agencies.

D. Reporting / Feedback

1. Evaluate data submitted from system participants and make changes in system design as necessary.

2. Evaluate data submitted to EMSA Core Measures project and make changes in system design as necessary.

3. Provide feedback to system participants when applicable or when requested on CQI issues.

4. Design prehospital research and efficacy studies pertaining to the prehospital use of any drug, device or treatment procedure where applicable.

5. Describe how your system addresses problems related to significant overtriage or undertriage, both primary and secondary.

RESPONSE:

See above responses.

Continuous Quality Improvement Plan Policy #385.00

http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12179

Trauma Management Information Systems

1. Which agency has oversight of the trauma management information system?
    a. Describe the role and responsibilities of this agency in collecting and maintaining the data.
    b. How are the completeness, timeliness, and quality of the data monitored?

RESPONSE:

OCEMS has oversight for the TMIS (ImageTrend/OC-MEDS) and maintains a full time System Administrator and Data Coordinator who manage the daily operations and management of the the system at the county level, including:

- Data element administration
- State/Federal data compliance
- System-based settings management
- System-based user account management
- System technical support management
- System Vendor contract administration

OC-MEDS System Management and Support Policy #300.20
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=38643

2. Specify which of the following data sources are linked to the information system. Describe the method of linkage (for example, probabilistic or deterministic).
    a. Motor-vehicle crash or incident data
    b. Law enforcement records
    c. EMS or other transporting agency records
    d. Emergency department records
    e. Hospital records (hospital trauma registries)
    f. Hospital administrative discharge data
    g. Rehabilitation data
    h. Coroner and medical examiner records
    i. Financial or payer data
    j. Dispatch

RESPONSE:

EMS/transporting agency records - deterministic
Emergency Department records - deterministic
Hospital records/trauma registries – deterministic
Hospital Discharge Data – deterministic (not used by all facilities)

3. What are the regional trauma registry inclusion criteria?

RESPONSE:

    a. Any patient with injury or suspected injury who is triaged from a scene to a designated Trauma Center based upon OCEMS trauma triage policies.

    b. Any patient with injury or suspected injury who is transferred from any acute care hospital to a designated Trauma Receiving Center (IFT)

    c. Any patient with injury or suspected injury for whom a trauma team activation occurs after arrival to the Trauma Receiving Center.

    d. Any patient with a traumatic injury who is admitted because of the injury OR who dies because of the injury

AND

→ S00 - S99 with 7th character of A, B, or C (traumatic injuries - initial encounter, non-superficial)

→ T07 (unspecified multiple injuries)

→ T14 (injuries of unspecified body region - abrasion, contusion, crush, skin injury, vascular injury, or wounds that are not otherwise specified)

→ T79.A1 through T79.A9 with 7th character of A (traumatic compartment syndrome - initial encounter)

EXCLUDING patients who present EXCLUSIVELY with any of the following

→ Superficial isolated injuries (S00, S10, S20, S30, S40, S50, S60, S70, S80, S90)

→ Effects of a foreign body entering through an orifice (T15 - T19)

→ Late effects of injury (7th characters D - S)

→ T20 - T28 and T30 - T32 (burns)

→ Closed isolated fracture (femoral neck or distal extremity) from a standing ground level fall in patients age ≥65 yrs (S72.0XXX - S72.2XXX, S52.5XXX, S52.6XXX, S62.XXXX, S82.3XXX, S82.5XXX, S82.6XXX, S82.8XXX, or S92.XXXX)

4. Which stakeholders had a role in selecting the data elements for inclusion into the regional registry?

    a. From what source(s) were the data field definitions derived?

    b. What pediatric data elements are captured?

RESPONSE:

The Trauma Data Standards Subcommittee is made up of the Trauma Program Managers and their Trauma Registrars and Data Support staff from each of the 4 trauma centers as well as a representative from OCEMS (data management). They meet quarterly to discuss standard definitions and trauma registry inclusion criteria. They also report of their meetings at the Trauma Operations Committee.

5. What local or system-wide reports are routinely generated and at what frequency?

   RESPONSE:
   > Trauma related reports have included the Pediatric Trauma paper and OC Trauma System Review white paper and Trauma Diversion Reports (posted quarterly).   The annual Trauma Plan update is also sent to the state EMS Authority and is posted on the lead agency website.

6. Are data contributed to the National Trauma Data Bank (NTDB) or other outside agencies? If so, please specify which agencies.

   RESPONSE:

   Trauma data is directly submitted to the National Trauma Data Bank by each trauma center and the lead agency submits data to the California EMS Authority.

EMS Local Assistance Grant Funding for health information exchange (HIE) between prehospital providers and hospitals/electronic health records (EHR) via health information exchange organizations (HIOs) has been awarded.   Orange County as part of the OCPRHIO agency grant along with 4 other LEMSAs will be expanding their program to other prehospital agencies and participating facilities

https://emsa.ca.gov/wp-content/uploads/sites/71/2019/04/EMS-Award-Letter-4-16-2019.pdf

RESEARCH

1. Describe the current procedures and processes investigators must follow to request access to the trauma system registry.

    RESPONSE:

    >   Any requests for Protected Health Information (PHI) must go through the Custodian of Records division of the Health Care Agency and the information is treated as a Request for Public Records.

    >   The individual Trauma Centers can choose to work together and share their information based on their individual facility guidelines.   Any trauma registry data held at the county would only be released after it has been de-identified for PHI.

2. What are the mechanisms used to ensure patient confidentiality when regional trauma registry data are used by investigators?

    RESPONSE:

    >   The [Office for Human Research Protections](#) (OHRP) provides leadership in the protection of the rights, welfare, and wellbeing of subjects involved in research conducted or supported by the U.S. Department of Health and Human Services (HHS). OHRP helps ensure this by providing clarification and guidance, developing educational programs and materials, maintaining regulatory oversight, and providing advice on ethical and regulatory issues in biomedical and social-behavioral research.

    >   https://cms.ocgov.com/gov/health/about/admin/programs/hsrc/references.asp

3. Provide examples of where research was conducted for the purpose of providing evidence that the processes of care and outcome of injured patients in the system's region are within acceptable standards.

    RESPONSE:

    >   See the list of research papers and articles at the end of this section.

4. How has research been used to modify policy or practice within the system?

    RESPONSE:

    >   See the list of research papers and articles at the end of this section.

5. What resources (for example, personnel and fiscal) are available to the lead agency to assist in conducting system research?

RESPONSE:

OC Health Care Agency has a Human Subjects Review Committee (HSRC) consisting of the following membership:

- Health Care Agency Public Health Services
- Health Care Agency Behavioral Health Services
- Health Care Agency Medical Services
- Health Care Agency Health Policy and Communication
- Outside agency or department as indicated

https://cms.ocgov.com/gov/health/about/admin/programs/hsrc/caqs.asp

Examples of research projects from outside agencies:

Trauma Research Projects w/IRB approval from Level I Trauma Center

2016-2676 Injury Severity Score Inflation Resulting from Pan-Computed Tomography in Trauma Patients

2015-2105 Serial Hemoglobin and Hematocrit in Solid Organ Injury: Does It Guide Non-Operative Injury Management

2013-9721 Blunt Aortic Injury: A Review of Techniques And Outcomes Within A Single Institution (UC Reliance #1257)

2014-1449 A prospective randomized trial for the efficacy of aggressive ultrasound screening of upper and lower extremities for venous thromboembolism

2014-1503 Use of Portable Diffuse Optical Spectroscopy Technologies for Non-Invasive Hemodynamic Evaluation of Trauma/Critical Care Patients

2014-1492 Vertebral Artery Injury in the setting of blunt neck trauma: Review of Techniques, Management, and Outcomes within a Single Institution

2014-1524 Incidence of distraction in trauma

2015-2389 Implications for an Aging Trauma Population/Geriatrics

2016-3174 What is the incidence of incidentally found and undiagnosed chronic medical conditions in trauma patients? A prospective review

2016-3063 A randomized double blinded placebo controlled trial to assess the utility of scopolamine patches to increase the rate of successful extubation in a surgical intensive care unit

2013-9346 Effectiveness of computerized alcohol screening tool in trauma patients

2013-9715 Impact of Grade of Liver Lacerations on Incidence of Venous Thromboembolism

2016-3074 Safety of therapeutic anticoagulation in patients with traumatic brain injury: a multi-center prospective observational study

2016-3176 The Effect of the American Society of Anesthesiologists Physical Status Classification on Trauma Outcomes

2016-3183 Isolated Spinous Process and Transverse Process Fractures

2015-1958 Abdominal seatbelt sign as a sole prognostic indicator of intraabdominal injury

2016-3017 EAST MultiCenter Small Bowel Perforation Study 2016-2633 A Trauma Quality Initiative on the Cost of Delayed Discharges

2017-3661 Clostridium Difficile in Trauma Patients

2017-3399 Impact of alcohol consumption on susceptibility to infections

2017-3496 Infection Following Penetrating Brain Injury â€" A Multicenter Investigation

2017-3677 Clinical outcomes of traumatic pneumothorax detected using EFAST before and after enhancements to training and equipment

2017-3782 Post Traumatic Stress Disorder in Trauma

2017-3856 Can we be FASTeR? A multicenter study utilizing Right sided roll to improve sensitivity of the FAST

2017-3865 The utility of computed tomography in diagnosing clinically significant diaphragmatic injuries in hemodynamically stable patients with left thoracoabdominal stab wounds

2017-3870 A Comparative Analysis of Single versus Two Chest tubes in Patients at UC Irvine

2017-4048 Outcomes of Traumatic Brain Injury in Patients Taking Novel Oral Anticoagulants

2017-4070 The Decreased Utility of Diagnostic Peritoneal Lavage in Trauma

2017-4075 Retrospective Review of Induction Medications Used in the Intubation of Trauma Patients and a Comparison of Effects on Outcomes

2017-4108 Determination of predictive factors for early cognitive outcomes in patients with traumatic brain injury

2017-4116 Effect of Absolute Blood Alcohol Concentration on the Risk of Venous Thromboembolism in Trauma Patients

2017-4118 Risk Factors for Early Versus Late Pulmonary Embolism in Trauma

2018-4151 Trauma ICU Prevalence Project (TRIPP study)

2018-4178 Optimal Management of Traumatic Esophageal Perforation

2018-4185 The effect of marijuana legalization on trauma

2018-4200 A retrospective single center study of the clinical outcomes associated with leukemoid reaction in patients with traumatic injury

2018-4208 The Management of Facial Fractures: A Comparison Between Plastic Surgery and Otolaryngology

Trauma Related Research Articles

General Surgery/Trauma:

1. Maximus S, Figueroa C, Pham J, Kuncir E, Barrios C. DUI Histories in Intoxicated Injured Bicyclists. J Trauma Acute Care Surg. 2016 Oct;81(4):638-43. PMID 27389138.

2. Imani G, Barrios C, Anderson C, Farahabadi MH, Banimahd F, Chakravarthy B, Hoonpongsimanont W, McCoy C, Mercado G, Farivar B, Pham J, Lotfipour S. Computerized alcohol screening identified more at-risk drinkers in a level 2 than a level 1 trauma center. BMC Public Health, 2017 Jan 6;17(1):32. PMID: 28056919

3. Kuncir E, Spencer D, Feldman K, Barrios C Jr, Miller K, Lush S, Dolich M, Lekawa M. 911 Emergency Medical Services and Re-Triage to Level I Trauma Centers. J Am Coll Surg. 2017 Sep 27 [Epub ahead of print]. PMID: 29133262

4. Thurer RL, Castro JM, Javidroozi M, Burton K, Bernal NP. Accurate Measurement of Intraoperative Blood Loss Improves Prediction of Postoperative Hemoglobin Levels. J Anesth Clin Res 2017 Sept; 8:743. DOI: 10.417212/2155-6148.

5. Munizcastro J, Burton K, Thurer R, Bernal N. Accurate Measurement of Intraoperative Blood Loss During Wound Excision Leads To Appropriate Transfusion, Reduced Blood Utilization. J Anesth Clin Res. 2017 Sept:8:11. ISSN:2155-6148.

6. Qazi A, Phillips J, Kabutey N, Nahmias J: REBOA in Hemorrhagic Shock: A Unique Non-responder? Trauma Surg Acute Care Open. 9 June 2017; 2:1-2. DOI: 10.1136/tsaco-2017-000100

7. Kuza C, Hatzakis G, Nahmias J. The Assignment of American Society of Anesthesiologists Physical Status Classification for Adult Polytrauma Patients: Results from A Survey and Future Considerations. 2017. Anesthesia and Analgesia. Anesthesia & Analgesia: December 2017 - Volume 125 - Issue 6 - p 1960â€'1966

Neurosurgery:

8. Williamson K and Chen JW. Intracranial Parasagittal Epidural Abscess: Another Consideration for the Etiology of Acute Headache and Fever Following a Minor Head Injury. Int J of Neurol and Brain Disorders. 2015, 2(1): 1-4.

9. Chen JW, Paff MR, Abrams-Alexandru D, Kaloostian SW. Decreasing the cerebral edema associated with traumatic intracerebral hemorrhages: Use of a minimally invasive technique. Acta Neurochir Suppl. 2016; 121:279-84. doi:10.1007/978-3-319-18497-5 48.PMID:26463961.

10. Sahyouni R, Moshtaghi O, Rajaii R, Tran DK, Bustillo D, Huang M, Chen JW. Evaluation of an iPhone Otoscope in a Neurotrauma Clinic and as an Adjunct to Neurosurgical Education. Insights Neurosurg. 2016;1(1). pii: 4. Epub 2016 Jan 29. PMID: 27135057.

11. Huang M, Sahyouni R, Mahmoodi A, Tran DK, Chen JW. â€œeImplementation of an Interactive Tablet-based Educational Intervention in the Neurotrauma Clinic: A 1-year Retrospective Analysis.â€ Trauma and Acute Care. 2017; 2(32): 1-8.

12. Sahyouni R, Mahmoodi A, Mahmoodi A, Rajaii RR, Hasjim BA, Bustillo D, Huang M, Tran DK, Chen JW. â€œeInteractive iBook-Based Patient Education in a NeuroTrauma Clinic. Neurosurgery.2017, Nov 1;81(5):787-794. doi:10.1093/neuros/nyx095. PMID: 28368534.

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Table of Contents for OCEMS Policy/Procedures
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12109

OCEMS Policy and Procedure Review Process #080.00
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=12114

Click here for safety-education programs
https://www.211oc.org/safety-and-disasters/safety-education.html

Click here for APOT reports:
http://www.healthdisasteroc.org/ems/system_reports/ems_core_measures

Click here for diversion reports:
http://www.healthdisasteroc.org/ems/system_reports/health_care_facilities

OCEMS White Paper on OC Trauma, click here:
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=71646

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http://www.tiporangecounty.org/

California Statewide Trauma System Planning Recommendations of the STAC – May 2017
https://emsa.ca.gov/wp-content/uploads/sites/71/2017/07/California-Statewide-Trauma-System-
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OC Emergency Medical Services Plan – 2017 Annual Update
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?blobid=71198

OC Emergency Medical Services – Disaster Medical Response Plan – February 2018
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?blobid=67352

OC Health Care Coalition Guide to Building an Emergency Plan
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=75924

California Emergency Medical Services Authority Trauma Services
https://emsa.ca.gov/trauma/

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https://www.chcf.org/wp-content/uploads/2019/01/PromisePitfallsCARegionalHIO.pdf

ReddiNet Emergency Medical Communications System
https://www.hasc.org/general-description/reddinetr-0

MAPS

Acute Care Hospitals by Designation Types
<u>See map included in this section</u>

EOA Ambulance Response Regions
http://www.healthdisasteroc.org/civicax/filebank/blobdload.aspx?BlobID=50555

EMS ALS Providers Response Regions
<u>See map included in this section</u>

Orange County Fire Authority Service Area
https://www.ocfa.org/Uploads/OCFA%20County%20Map.pdf

2018 Freeway Traffic Map OCTA
https://www.octa.net/pdf/2018-ADT.pdf

LA County Map of Hospitals by Designation Types
http://egis3.lacounty.gov/dataportal/wp-content/uploads/2013/04/LACUSCED1011a.pdf

MISCELLANEOUS DOCUMENTS

Heliport Database
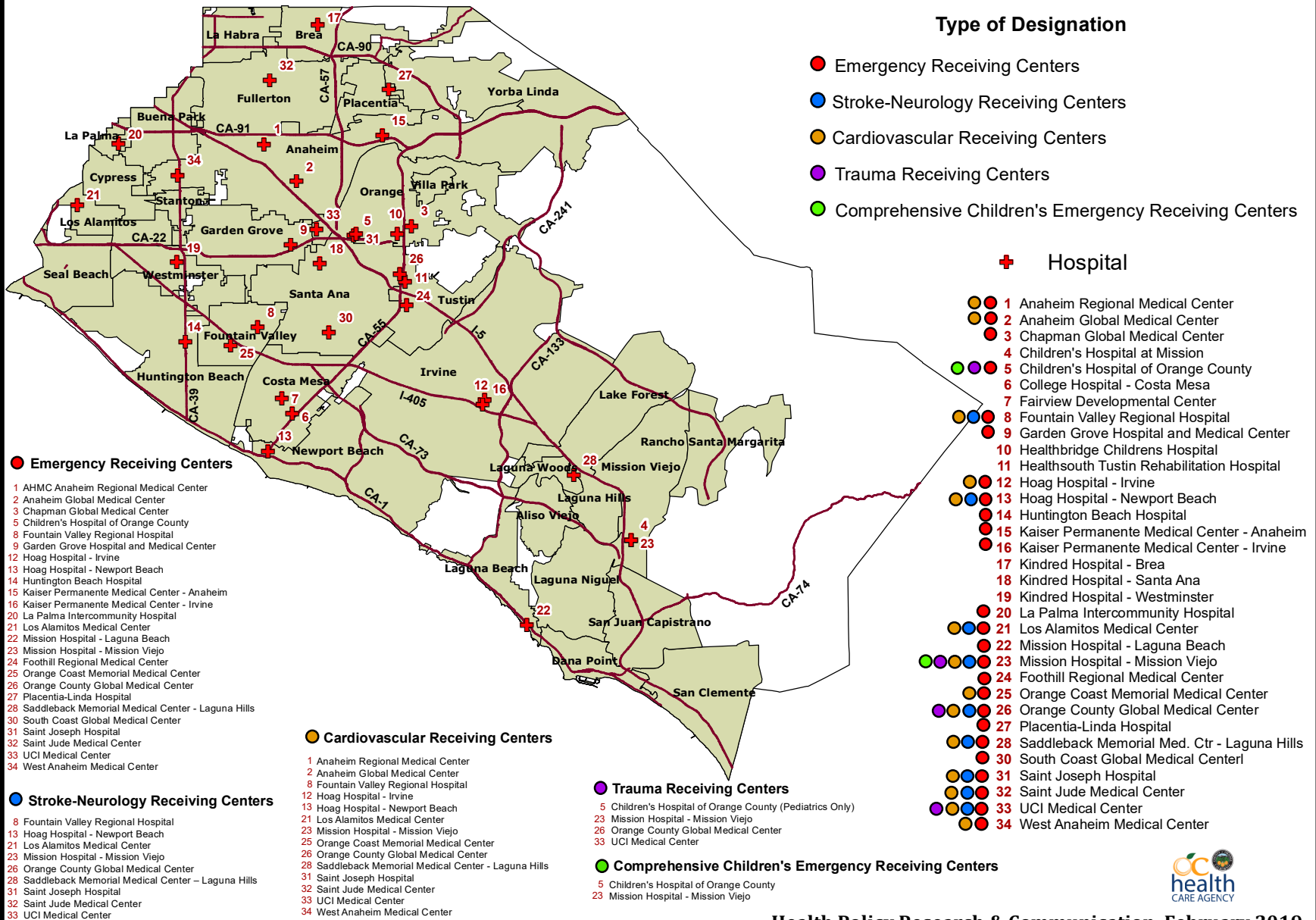   CHOC
      Mission Hospital
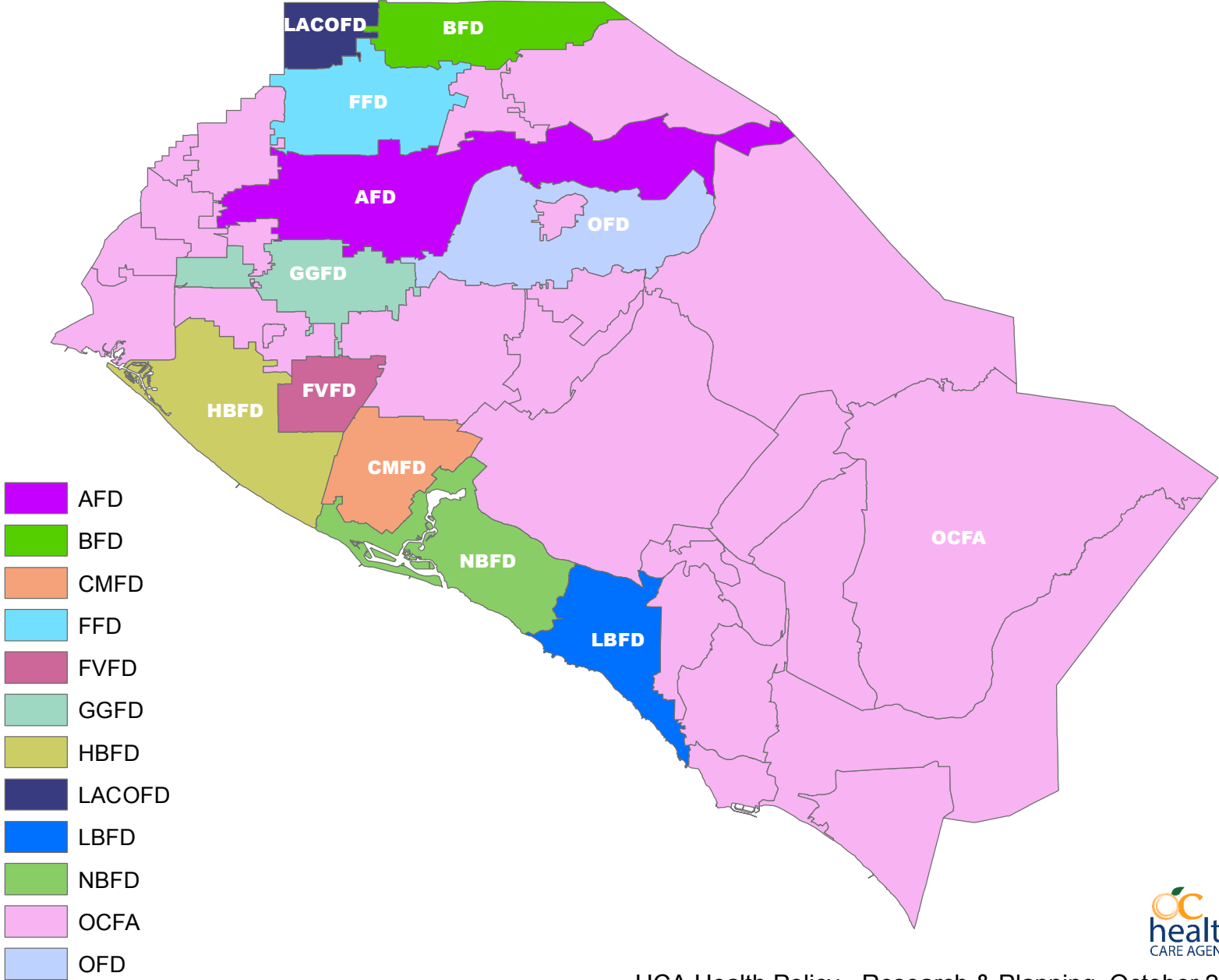   OC Global
      UCIMC
      Saddleback
      Hoag Newport
      Long Beach Memorial

# Acute Care Hospitals by Type of Designation
Orange County, California

Type of Designation

- 🔴 Emergency Receiving Centers
- 🔵 Stroke-Neurology Receiving Centers
- 🟠 Cardiovascular Receiving Centers
- 🟣 Trauma Receiving Centers
- 🟢 Comprehensive Children's Emergency Receiving Centers

✚ Hospital

No.	Hospital
1	Anaheim Regional Medical Center
2	Anaheim Global Medical Center
3	Chapman Global Medical Center
4	Children's Hospital at Mission
5	Children's Hospital of Orange County
6	College Hospital - Costa Mesa
7	Fairview Developmental Center
8	Fountain Valley Regional Hospital
9	Garden Grove Hospital and Medical Center
10	Healthbridge Childrens Hospital
11	Healthsouth Tustin Rehabilitation Hospital
12	Hoag Hospital - Irvine
13	Hoag Hospital - Newport Beach
14	Huntington Beach Hospital
15	Kaiser Permanente Medical Center - Anaheim
16	Kaiser Permanente Medical Center - Irvine
17	Kindred Hospital - Brea
18	Kindred Hospital - Santa Ana
19	Kindred Hospital - Westminster
20	La Palma Intercommunity Hospital
21	Los Alamitos Medical Center
22	Mission Hospital - Laguna Beach
23	Mission Hospital - Mission Viejo
24	Foothill Regional Medical Center
25	Orange Coast Memorial Medical Center
26	Orange County Global Medical Center
27	Placentia-Linda Hospital
28	Saddleback Memorial Med. Ctr - Laguna Hills
30	South Coast Global Medical Centerl
31	Saint Joseph Hospital
32	Saint Jude Medical Center
33	UCI Medical Center
34	West Anaheim Medical Center

🔴 Emergency Receiving Centers

1 AHMC Anaheim Regional Medical Center
2 Anaheim Global Medical Center
3 Chapman Global Medical Center
5 Children's Hospital of Orange County
8 Fountain Valley Regional Hospital
9 Garden Grove Hospital and Medical Center
12 Hoag Hospital - Irvine
13 Hoag Hospital - Newport Beach
14 Huntington Beach Hospital
15 Kaiser Permanente Medical Center - Anaheim
16 Kaiser Permanente Medical Center - Irvine
20 La Palma Intercommunity Hospital
21 Los Alamitos Medical Center
22 Mission Hospital - Laguna Beach
23 Mission Hospital - Mission Viejo
24 Foothill Regional Medical Center
25 Orange Coast Memorial Medical Center
26 Orange County Global Medical Center
27 Placentia-Linda Hospital
28 Saddleback Memorial Medical Center - Laguna Hills
30 South Coast Global Medical Center
31 Saint Joseph Hospital
32 Saint Jude Medical Center
33 UCI Medical Center
34 West Anaheim Medical Center

🔵 Stroke-Neurology Receiving Centers

8 Fountain Valley Regional Hospital
13 Hoag Hospital - Newport Beach
21 Los Alamitos Medical Center
23 Mission Hospital - Mission Viejo
26 Orange County Global Medical Center
28 Saddleback Memorial Medical Center – Laguna Hills
31 Saint Joseph Hospital
32 Saint Jude Medical Center
33 UCI Medical Center

🟠 Cardiovascular Receiving Centers

1 Anaheim Regional Medical Center
2 Anaheim Global Medical Center
8 Fountain Valley Regional Hospital
12 Hoag Hospital - Irvine
13 Hoag Hospital - Newport Beach
21 Los Alamitos Medical Center
23 Mission Hospital - Mission Viejo
25 Orange Coast Memorial Medical Center
26 Orange County Global Medical Center
28 Saddleback Memorial Medical Center - Laguna Hills
31 Saint Joseph Hospital
32 Saint Jude Medical Center
33 UCI Medical Center
34 West Anaheim Medical Center

🟣 Trauma Receiving Centers

5 Children's Hospital of Orange County (Pediatrics Only)
23 Mission Hospital - Mission Viejo
26 Orange County Global Medical Center
33 UCI Medical Center

🟢 Comprehensive Children's Emergency Receiving Centers

5 Children's Hospital of Orange County
23 Mission Hospital - Mission Viejo

Health Policy Research & Communication, February 2019

Orange County ALS Providers

Legend:
- AFD
- BFD
- CMFD
- FFD
- FVFD
- GGFD
- HBFD
- LACOFD
- LBFD
- NBFD
- OCFA
- OFD

Map labels: LACOFD, BFD, FFD, AFD, OFD, GGFD, FVFD, HBFD, CMFD, NBFD, LBFD, OCFA

OC health CARE AGENCY

Children's Hospital of Orange County Heliports (P-II)

Lat. 33° 46.85' N Long. 117° 51.92'W (NAD 83)

LOCATION	FACILITY	HELIPORT

LOCATION

1201 West La Veta Ave
City: Orange, 92868
County: Orange
Loc ID: 4CA5
FAA Site NR: 01989.14*H

FACILITY

Trauma: P-II
PH: (714) 997-3000
Notes:
PCL 123.075 MHz

HELIPORT

TLOF: South Tower (S) HP-50'x50', North Tower (N) HP-40'x40'
FATO: S-90'x90', N-70'x70'
Max Weight:15K (each)
Max Design Helicopter
 Overall Length: D S-56', N-47'
Lighting: Perimeter
Elev: Elevated Roof top, S-129', N-103' AGL
MSL: S-291', N-279'
Wind Sock: Yes for each HP, lighted
Design Helicopter: S-Bell 412, N-Eurocopter AS-365 Dauphin

Notes:
1. South Tower is primary HP; North Tower is backup
2. N HP located 250' North of S HP. Lt/Lng 33°46.88'N/ 117°51.90'W
3. FAR Part 77 Transitional surface North of South Tower penetrated by elevator penthouse.
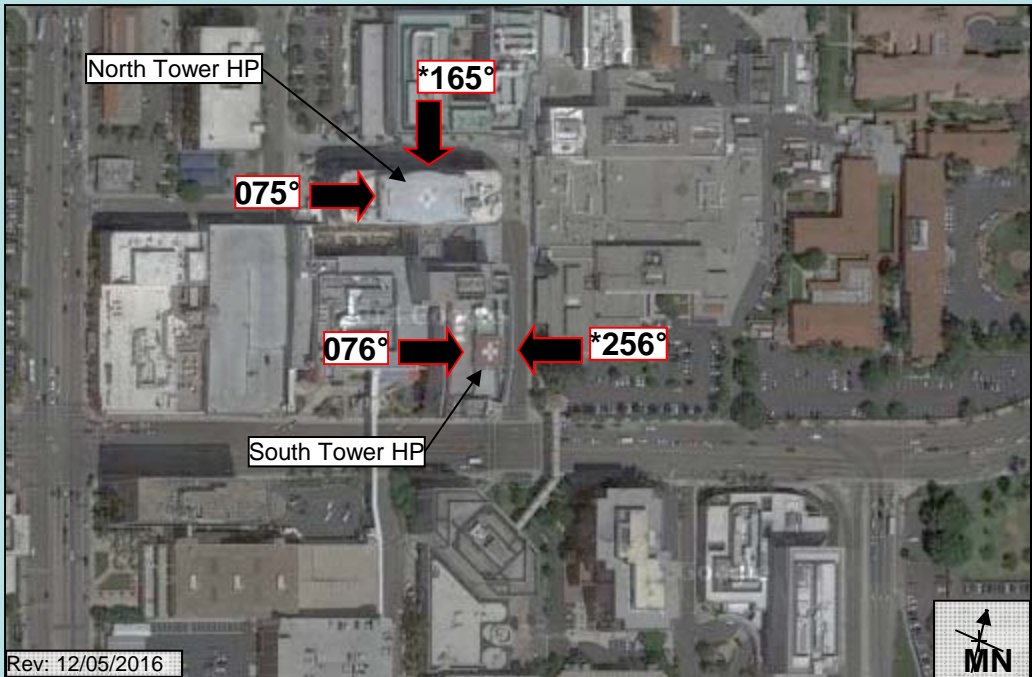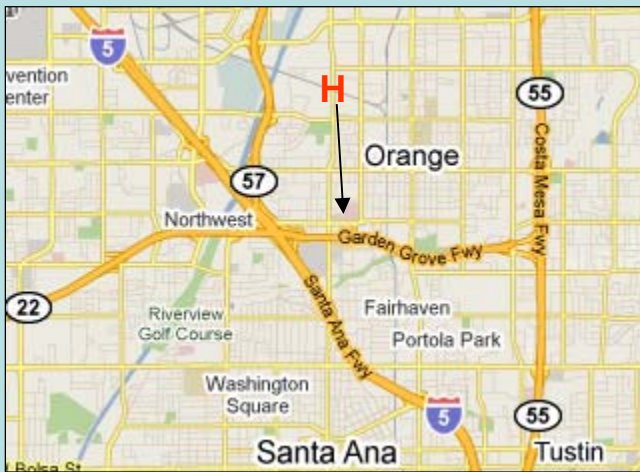
North Tower HP

*165°

075°

076°

*256°

South Tower HP

MN

Rev: 12/05/2016

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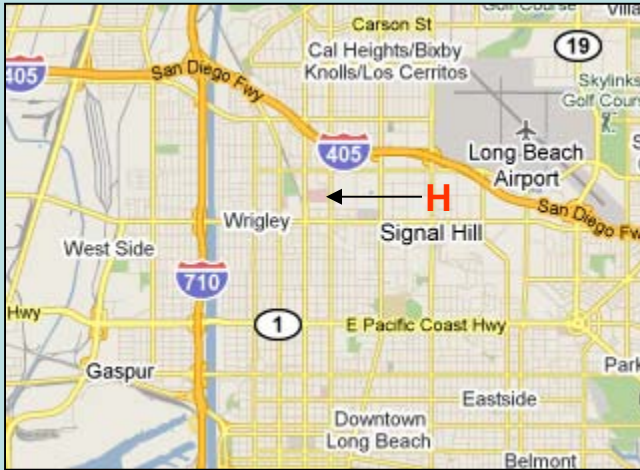 *** - Primary Approach Course**

DMS: 33° 46' 51" N / 117° 51' 55" W

User Notes:

Hoag Memorial Hospital Heliport

Lat. 33° 37.52' N Long. 117° 55.85' W (NAD 83)

LOCATION	FACILITY	HELIPORT

LOCATION

1 Hoag Drive
City: Newport Beach, 92663
County: Orange
Loc ID: 14CA
FAA Site NR: 01947.01*H

FACILITY

Trauma: N/A
PH: (949) 645-8600
Notes:

HELIPORT

TLOF: 42'x42'
FATO: 76' Dia
Max Weight: 8K
Max Design Helicopter
 Overall Length: D 51'
Lighting: Perimeter
Elev: Elevated Rooftop, 16' AGL
MSL: 94'
Wind Sock: Yes, lighted
Design Helicopter: Bell 222
Notes:
1. Southeast FAR Part 77 Transitional Surface penetrated by Emergency Department extension and Hospital Tower buildings, both of which are marked with red obstruction lights.
2. Heliport perimeter lights outline concrete pad and not the FATO, which is offset to the North side of pad (centered on HP markings).
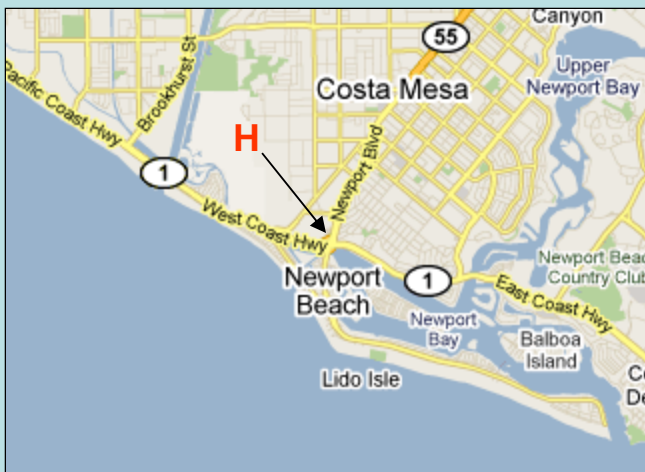
136°

*234°

Rev: 12/05/2016

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**DMS: 33° 37' 31" N / 117° 55' 51" W**

User Notes:

Long Beach Memorial Medical Center Heliport (A-II/P-II)

Lat. 33° 48.50' N Long. 118° 11.18' W (NAD 83)

LOCATION	FACILITY	HELIPORT

LOCATION

2801 Atlantic Ave
City: Long Beach, 90806
County: Los Angeles
Loc ID: 30CL
FAA Site NR: 01794.21*H

FACILITY

Trauma: A-II/P-II
PH: (562) 933-2000
Notes:

HELIPORT

TLOF: 40'x40'
FATO: 44'x58'
Max Weight: 10K
Max Design Helicopter
 Overall Length: D 31'
Lighting: Perimeter, flood
Elev: Elevated Rooftop,
34' AGL
MSL: 84'
Wind Sock: Yes, lighted
Design Helicopter: MD 500

Notes:
1. A/C Duct penetrates South edge of Northeast FAR Part 77 Approach Surface.
2. A/C Unit penetrates South side of Northwest FAR Part 77 Approach Surface.

H

100°
*220°

Rev: 11/14/2016

MN

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DMS: 33° 48' 30" N / 118° 11' 11" W

User Notes:

Mission Hospital Heliport

Lat. 33° 33.63' N Long. 117° 39.92' W (NAD 83)

LOCATION	FACILITY	HELIPORT
27700 Medical Center Rd **City:** Mission Viejo, 92691 **County:** Orange **Loc ID:** CA55 **FAA Site NR:** 01893.*H	**Trauma:** A-II **PH:** (949) 364-1400 **Notes:**	**TLOF:** 52'x96' **FATO:** 96'x96' **Max Weight:** 12K **Max Design Helicopter** **Overall Length:** D 64' **Lighting:** Perimeter **Elev:** Elevated Rooftop, 90' AGL **MSL:** 550' **Wind Sock:** Yes, lighted **Design Helicopter:** Bell 212

H

Notes:
Eastern FAR Part 77
Transitional Surface penetrated
by elevator penthouse
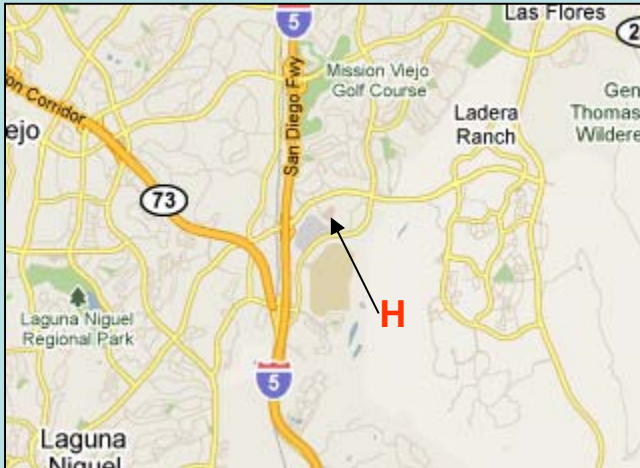
*180°

360°

Rev: 12/05/2016

MN

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DMS: 33° 33' 38" N / 117° 39' 55" W

User Notes:

Orange County Global Medical Center Heliport (A-II)

Lat. 33° 45.30' N Long. 117° 49.97' W (NAD 83)

LOCATION	FACILITY	HELIPORT

LOCATION

1001 North Tustin Ave
City: Santa Ana, 92705
County: Orange
Loc ID: 1CN1
FAA Site NR: 02228.23*H

FACILITY

Trauma: A-II
PH: (714) 835-3555
Notes:

HELIPORT

TLOF: 50'x50'
FATO: 65'x65'
Max Weight: N/A
Max Design Helicopter
 Overall Length: D 43'
Lighting: Perimeter
Elev: 0' AGL
MSL: 168'
Wind Sock: Yes, lighted
Design Helicopter: Bell 206L, Eurocopter A-Star, Agusta A109

Notes:
1. Southwest FAR Part 77 Transitional Surfaces penetrated by Hospital buildings

H

*200°

Rev: 12/05/2016

MN

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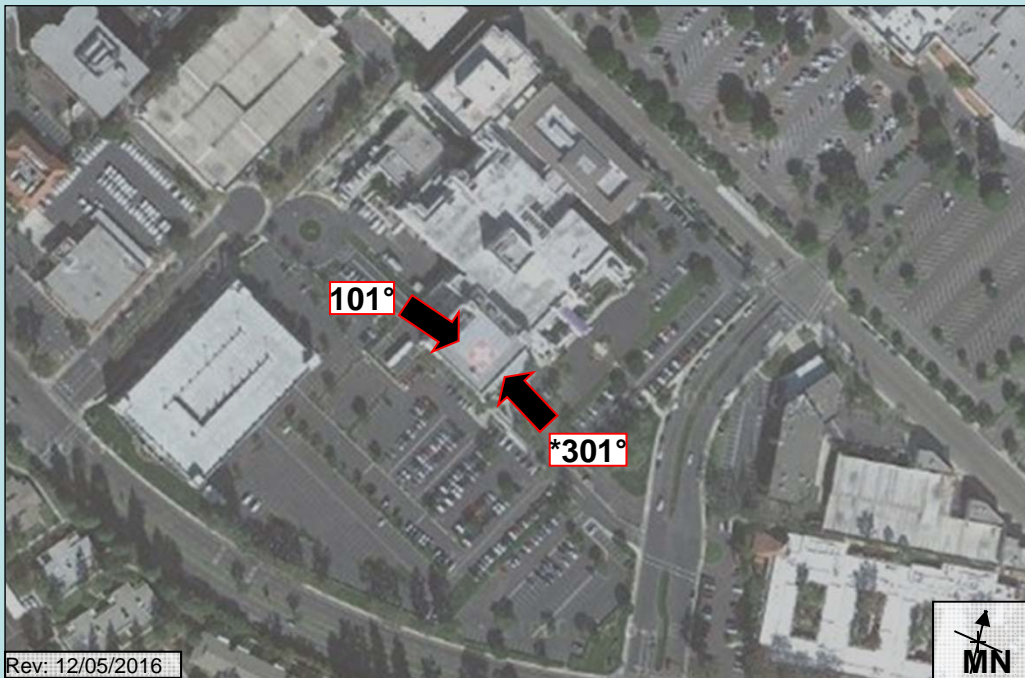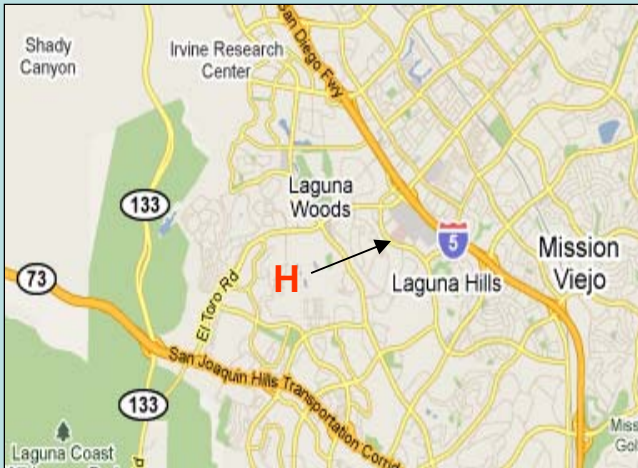 *** - Primary Approach Course**

DMS: 33° 45' 18" N / 117° 49' 58" W

User Notes:

Saddleback Memorial Medical Center Heliport

Lat. 33° 36.50' N Long. 117° 42.53' W (NAD 83)

LOCATION	FACILITY	HELIPORT

LOCATION

24451 Health Center Drive
City: Laguna Hills, 92653
County: Orange
Loc ID: CA68
FAA Site NR: 01735.01*H

FACILITY

Trauma: N/A
PH: (949) 337-4500
Notes:

HELIPORT

TLOF: 40'x40'
FATO: 86' Dia
Max Weight: 12K
Max Design Helicopter
 Overall Length: D 57'
Lighting: Perimeter
Elev: Elevated Rooftop, 46' AGL
MSL: 398'
Wind Sock: Yes, lighted
Design Helicopter:
Bell 205/212/412

Notes:
1. North FAR Part 77 Transitional Surface penetrated by elevator tower, which is marked by red obstruction lights.

Rev: 12/05/2016

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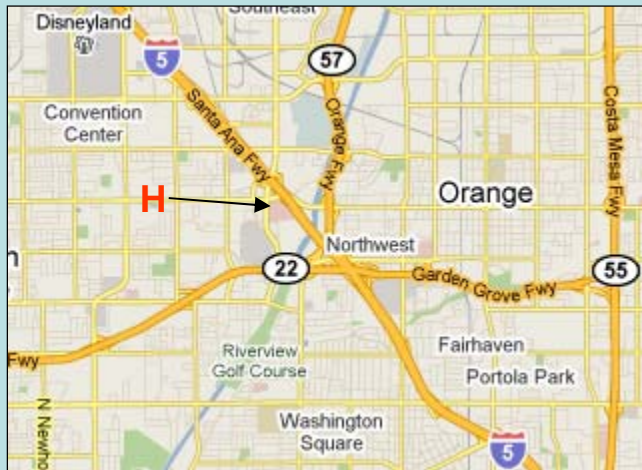 *** - Primary Approach Course**

DMS: 33° 36' 30" N / 117° 42' 32" W
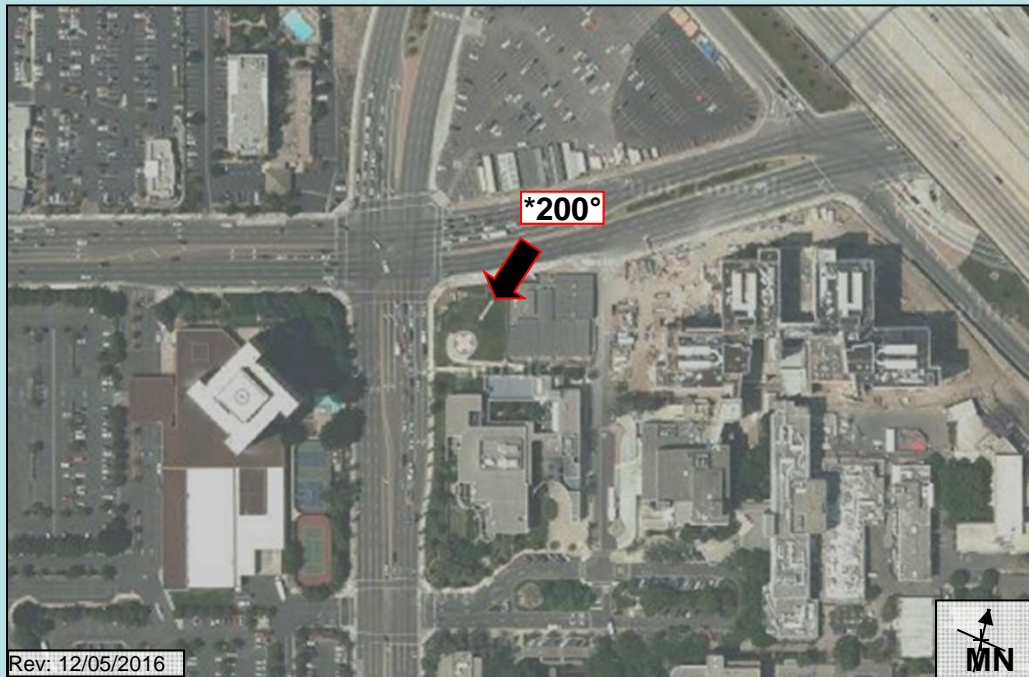
User Notes:

UCI Medical Center Heliport

(A-I)

Lat. 33° 47.33' N Long. 117° 53.38' W (NAD 83)

LOCATION	FACILITY	HELIPORT

LOCATION

101 The City Drive South
City: Orange, 92868
County: Orange
Loc ID: 1CL4
FAA Site NR: 01989.11*H

FACILITY

Trauma: A-I
PH: (714) 456-6011
Notes:

HELIPORT

TLOF: 40' Dia
FATO: 76' Dia
Max Weight: N/A
Max Design Helicopter
 Overall Length: D 51'
Lighting: Perimeter
Elev: 6' AGL
MSL: 140'
Wind Sock: Yes, lighted
Design Helicopter: Bell 222

Notes:

1. Southeastern FAR Part 77 Transitional Surface penetrated by Hospital building.

*200°

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DMS: 33° 47' 20" N / 117° 53' 23" W

User Notes: