EMCC Members Per Board of Supervisors Resolution No. 2013-052:

PMAC Physician Representative
1.a Stephen Patterson, MD

Hospital Association Representative
1.b Keven Porter

Riverside County Medical Association
1.c James Rhee, MD

County Contracted Emergency Ambulance
1.d Peter Hubbard

Ambulance Association Representative
1.e Rosemary Dudevoir

County Permitted Air Ambulance Provider
1.f Vacant

Riverside County Fire Chiefs' Association
1.g Brian Young

Coachella Valley Association of Governments
1.h Mark Scott

Western Riverside Council of Governments
1.i Gary Nordquist (primary)
Chris Mann (secondary)

RivCo Law Enforcement Agency Admin. Assn.
1.j Colleen Walker

PMAC Prehospital Representative
1.k Magdalena Robles

RivCo Fire Department Representative
1.l Phil Rawlings

Supervisorial District One
1.m Vacant

Supervisorial District Two
1.m Stan Grube

Supervisorial District Three
1.m Jerry Holldber

Supervisorial District Four
1.m Vacant

Supervisorial District Five
1.m Jock Johnson

The next meeting of the EMCC is on:

Wednesday, Aug 12, 2020
9:00 AM – 10:30 AM

Microsoft Teams

Public Conference Call Information
866-919-4269
Participant 17731182

1. CALL TO ORDER
   Chair—Stan Grube

2. ROUNDTABLE INTRODUCTIONS (5 Minutes)
   Chair—Stan Grube

3. APPROVAL OF MINUTES (5 Minutes)
   Oct 2, 2019 Draft Minutes—Stan Grube (Attachment A)

4. UNFINISHED / NEW BUSINESS (30 Minutes)
   4.1 Membership – Dan Bates (Attachment B)

   4.2 COVID-19 Situation Update – Dan Bates
   4.3 RUHS Public Health Activity - Marie Weller
   4.4 EMCC Annual Report Updates – Jerry Holldber

5. EMS AGENCY REPORTS (20 Minutes)
   5.1 Admininstrative Unit Updates – Dan Bates
   5.2 Clinical Unit Updates – Shanna Kissel
   - STEMI Plan 2019 (Attachment C)
   - Stroke Plan 2019 (Attachment D)
   - Trauma Plan 2019 (Attachment E)

   5.3 Data Unit Updates - Catherine Farrokhi

6. OTHER REPORTS (20 Minutes)
   6.1 PMAC – Steven Patterson, MD / Magdalena Robles
   6.2 EMD Preparedness Division – Brian Tisdale
   6.3 EMD Emergency Services Division – Mark Bassett

7. OPEN COMMENTS (10 Minutes)

8. NEXT MEETING / ADJOURNMENT (1 Minute)
   TBD
   Microsoft Teams/Conference Line

FOR CONSIDERATION BY EMCC

DATE: Aug 10, 2020

TO: EMCC

FROM: Dan Bates, Deputy EMS Administrator

SUBJECT: 2020/2021 Membership Date

ACTION: Review of Term Dates

Sec.	#	Representing	Current Membership	2019-2020 Term Dates
1.a	1	PMAC Physician	Stephen Patterson	07/01/18—06/30/21
1.b	2	HASC	Keven Porter	NA
1.c	3	RCMA	James Rhee	07/01/18—06/30/21
1.d	4	AMR	Peter Hubbard	NA
1.e	5	Ambulance Association	Rosemary Dudevoir	07/01/19—06/30/22
1.f	6	Air Ambulance Provider	Vacant	07/01/19—06/30/22
1.g	7	RCFCA	Brian Young	07/01/18—06/30/21
1.h	8	CVAG	Mark Scott	07/01/19—06/30/22
1.i	9	WRCOG	Gary Nordquist Chris Mann	07/01/19—06/30/22
1.j	10	RCLEAA	Colleen Walker	07/01/19—06/30/22
1.k	11	PMAC Prehospital	Magdalena Robles	07/01/19—06/30/22
1.l	12	Riverside Co Fire Dept.	Phil Rawlings	NA
1.m	13	District One	David McCarthy	06/30/20 - 06/20/23
1.m	14	District Two	Stan Grube	06/30/20 – 06/30/23
1.m	15	District Three	Jerry Holldber	07/01/17—06/30/20
1.m	16	District Four	Vacant	07/01/17—06/30/20
1.m	17	District Five	Jock Johnson	07/01/18—06/30/21

RIVERSIDE COUNTY EMERGENCY MEDICAL SERVICES AGENCY (REMSA)

ST- ELEVATION MYOCARDIAL INFARCTION (STEMI) CRITICAL CARE SYSTEM PLAN

2019

Reza Vaezazizi, MD, REMSA Medical Director
Trevor Douville, EMS Administrator
Shanna Kissel, MSN, RN, Assistant Nurse Manager
Daniel Sitar, MSN, RN, Specialty Care Nurse Consultant

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Executive Summary

The Riverside County STEMI system has been in place for more than ten years. With over 365,000 EMS calls made annually in Riverside County, approximately *15-20* per day are patients who suffer from cardiac arrest. These patients are not only residents of Riverside county, they are visitors and residents of surrounding counties that often present to one of the six designated STEMI centers. This STEMI System plan is designed to outline the coordinated STEMI program within the county of Riverside including the EMS agency organization, designation process, EMS STEMI policies and Education. This comprehensive approach to STEMI care continues to be a collaborative effort between the EMS agency, field providers and hospitals within the system while focusing on the principal goal to reduce morbidity and mortality from the severe and quickly identifiable form of acute myocardial infarction called STEMI. Achievement of this goal is realized by improvements in the delivery of emergency medical care within the community through a collaborative and iterative quality improvement process.

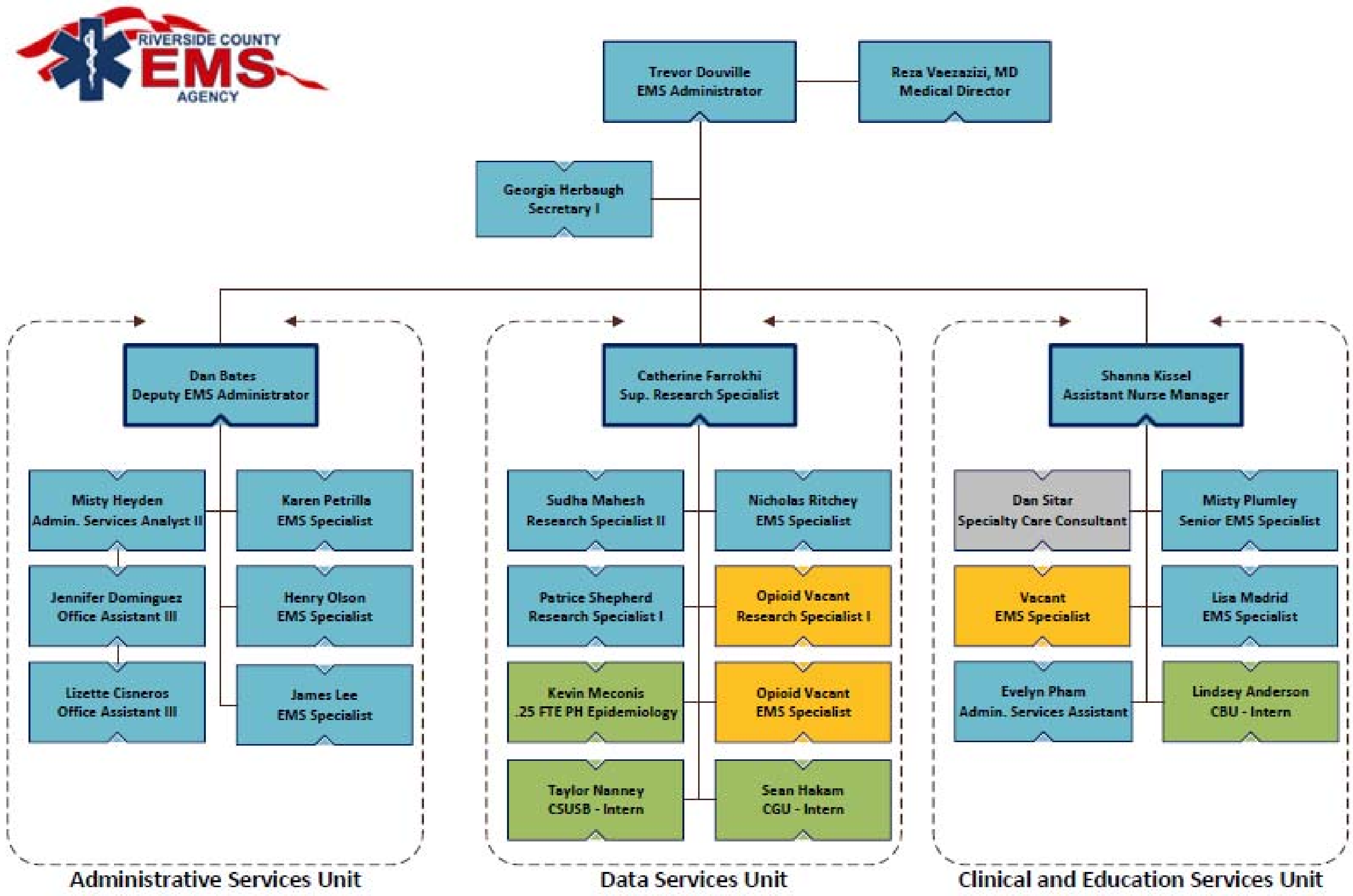
Trevor Douville
EMS Administrator
Riverside County EMS Agency

STEMI Critical Care System

The STEMI Critical Care System is a subspecialty care component of the larger EMS system that was developed by REMSA and links prehospital and hospital care to deliver treatment to STEMI patients who potentially require immediate medical or surgical intervention. Positive patient outcomes are best attained when patients consistently receive a standard of care based on national standards and best practices. Therefore, the REMSA STEMI Critical Care system is predicated on recommendations from national organizations, evidence-based practices, and current peer-reviewed literature. Developed and implemented in 2007, the STEMI system began with three locally designated STEMI receiving centers. By 2015, the system had expanded to six centers, all of which had achieved accreditations from the American College of Cardiology as Chest Pain Centers with Percutaneous Coronary Intervention (PCI). Currently, there remains six designated STEMI receiving centers covering all of Riverside County.

Riverside County EMS Agency Organization

Two branches of the Riverside County EMS Agency play key roles in the operation of the STEMI system and work under the direction of the EMS Administrator and EMS Medical Director: the data team and the clinical team. During the assessment and realignment period, the EMS Agency had funded a Nurse Consultant to carry out the objectives of STEMI program oversight. Now that the regulations are in place and realignment is near completion, the EMS Agency intends to fund in Fiscal year 2020/2021, through specialty care center fees, a Specialty Care Nurse Coordinator to maintain regulatory oversight and direction to the STEMI receiving centers.



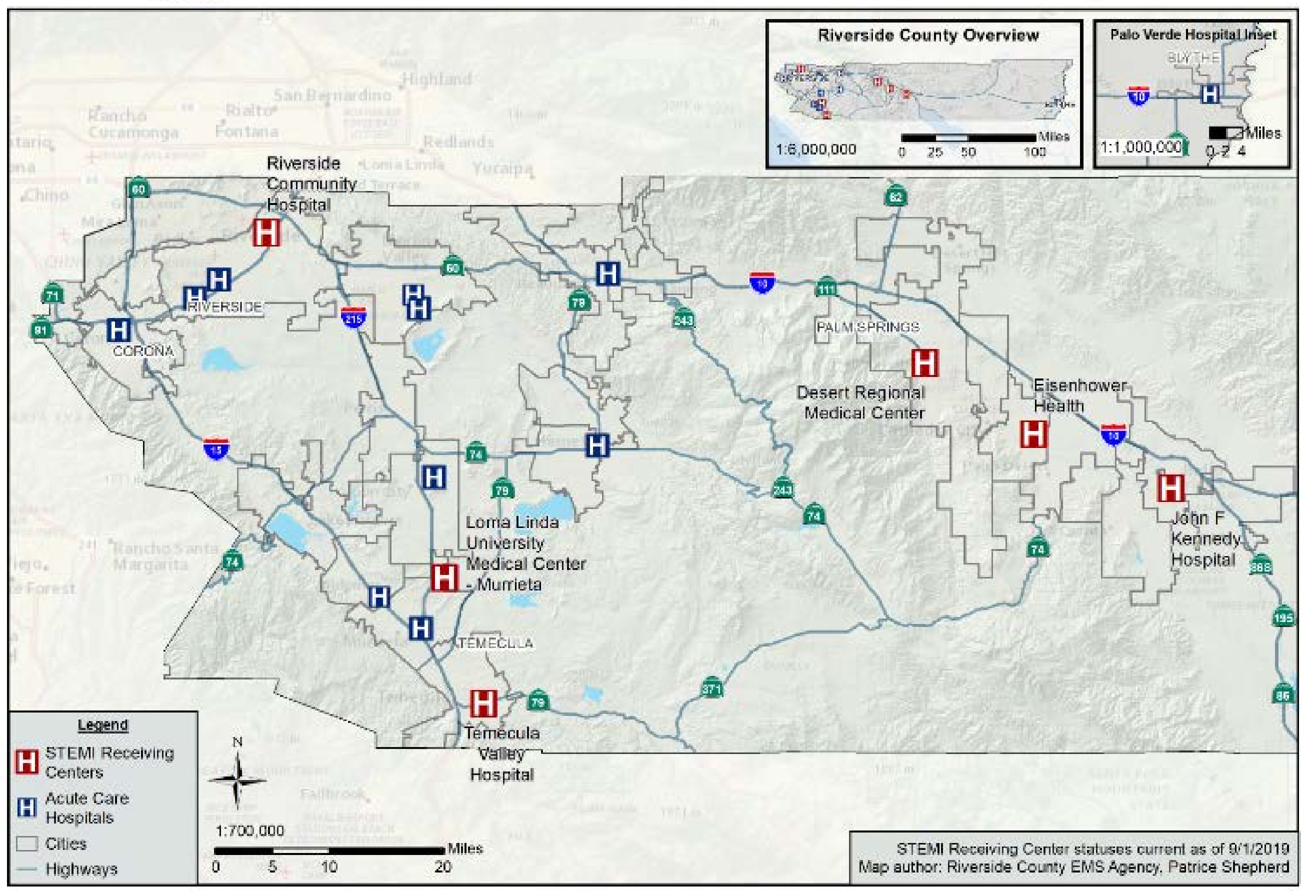
Both teams fulfill specific roles in the STEMI system and work closely together to accomplish system goals. The data team provides maintenance of data collection modalities and databases, performs statistical analyses, creates GIS mapping of STEMI-related elements, and generates reports for system stakeholders. Equally important, the clinical team contains experienced professionals from the hospital and pre-hospital environments and performs continuous quality improvement (CQI) activities to drive patient-centered STEMI care. The Specialty Care Coordinator role acts as a program administrator between hospital STEMI programs and the state EMS Authority. In collaboration with Administration, the Clinical and Education Services Unit, and the EMS Medical Director, the Specialty Care Coordinator facilitates STEMI committee activities related to performance improvement and quality improvement indicators, acts as a liaison between the LEMSA and the state of CA EMS Authority, and interfaces with stakeholders throughout the system.

Designation Process

A strong foundation of hospitals that are both geographically accessible and capable of quality cardiac care is paramount to a robust STEMI critical care system. Of the 17 prehospital receiving centers in Riverside County, six are currently designated as STEMI receiving centers. Title 22 regulations describe a STEMI center as a hospital that meets a comprehensive list of cardiac-specific qualifications and always has PCI capability available. The Riverside County EMS Agency has written agreements with hospitals that are designated STEMI receiving centers. To be considered for STEMI receiving center designation, hospitals must hold a current accreditation as a Chest Pain Center with PCI by The American College of Cardiology and complete a STEMI Center Designation Application packet. The application packet contains an audit tool and checklist that ensures the facility meets all requirements to receive STEMI center designation. A successful site visit, a written agreement, and continued compliance with all elements of the STEMI Center Standards policy # 5401 (www.remsa.us/policy/5401) is required to grant designation. All designated STEMI centers in Riverside County meet or exceed the requirements in the California Code of Regulations contained in Title 22, Division 9, Chapter 7.1 STEMI Critical Care System.

Riverside County STEMI Centers

Riverside County STEMI Receiving Centers



Six STEMI facilities have an identical contract that establishes a written agreement between the facilities and REMSA:

Facility	Contract term	Agreement Type
Desert Reginal Medical Center	July 1, 2019- June 30, 2022	ST Elevation Myocardial Infarction (STEMI) Receiving Center Designation Agreement
Eisenhower Health	July 1, 2019- June 30, 2022	ST Elevation Myocardial Infarction (STEMI) Receiving Center Designation Agreement
John F. Kennedy Memorial Hospital	July 1, 2019- June 30, 2022	ST Elevation Myocardial Infarction (STEMI) Receiving Center Designation Agreement

Loma Linda University Medical Center - Murrieta	July 1, 2019- June 30, 2022	ST Elevation Myocardial Infarction (STEMI) Receiving Center Designation Agreement
Riverside Community Hospital	July 1, 2019- June 30, 2022	ST Elevation Myocardial Infarction (STEMI) Receiving Center Designation Agreement
Temecula Valley Hospital	July 1, 2019- June 30, 2022	ST Elevation Myocardial Infarction (STEMI) Receiving Center Designation Agreement

EMS Communications

Early pre-notification of an inbound suspected STEMI patient allows the appropriate hospital resources to be mobilized and is vital to minimize time delays in patient care. Emergency Medical Services personnel are directed to make early contact with the closest STEMI center as soon as a suspected STEMI patient is identified and communicate pertinent details so the facility may activate the proper resources. To further expedite patient care, 12 lead ECG transmission from the field directly to the STEMI receiving center is mandatory.

Prehospital providers have two methods to make pre-hospital notification, either of which are permissible for STEMI pre-notification. The first is a county-wide 800 MHz radio system available to all transporting units in Riverside County. As a second method, providers have a phone number that is assigned to each receiving hospital for the purposes of receiving prehospital reports. Having two means of communication provides redundancy and backup to ensure consistent pre-notifications to STEMI centers.

In addition to the standard patient reporting format that addresses the minimum acceptable information to be communicated and is described in REMSA Universal Patient policy (www.remsa.us/policy/4102), the acute coronary syndrome treatment policy describes STEMI-specific information to be communicated, such as symptomatology, ECG findings, and blood thinner status. Prehospital STEMI notifications are enhanced by using this layered process that places an emphasis on communicating relevant information specific to STEMI patients.

REMSA STEMI Policies

There are five (5) REMSA policies specific to the STEMI critical care system. The first of these is policy #5401, which details the requirements and expectations of each of the designated STEMI centers within the county. Each designated center is bound to comply with all elements contained in this policy and outlines a minimum standard for capabilities of all STEMI centers.

REMSA Suspected Acute Coronary Syndrome policy (www.remsa.us/policy/4402) is the current treatment guideline for all suspected STEMI patients. It clearly defines screening, treatment, and transport of STEMI patients as well as the communication pathway to the closest STEMI center. Destination for suspected STEMI patients is directly to the closest, most appropriate designated STEMI center in which diversion is not permitted unless the facility is on internal disaster.

Cardiac Arrest policy (www.remsa.us/policy/4406) references patients with out-of-hospital cardiac arrest with return of spontaneous circulation of unknown or suspected cardiac etiology, which should be transported to the closest STEMI receiving center. EMS providers have a performance standard skill for high frequency/high risk to identify guidelines for acquisition and transmission of a 12 lead ECG in the prehospital setting. (www.remsa.us/policy/7401)

For patients requiring higher level of care services for patients arriving to non-STEMI centers via EMS or private auto, the Continuation of STEMI care policy (www.remsa.us/policy/5402) affords the ability for the STEMI system to capture all acute STEMI patients regardless of mode of arrival and to expedite the care of those requiring advanced services. This policy facilitates transfers for higher level of care to designated STEMI centers and assists with complying with federal transfer guidelines.

Data Collection

To achieve the needed data necessary to properly inform and drive a continuous quality improvement process, REMSA has implemented a standard patient registry in which hospitals enter outcome information for all suspected and confirmed STEMI cases. The patient registry vendor *ImageTrend*®, who also hosts the prehospital patient care record system, allows the linkage of pre-hospital patient care records with hospital outcome data for a data set that contains each patient encounter from 9-1-1 call to hospital discharge. Prehospital records are matched case-by-case to hospital outcome data entered by the facilities. All designated STEMI centers are mandated to enter a minimum set of STEMI outcome data into the registry in a near-concurrent manner, but no later than one month following patient discharge. A variety of performance metrics are obtained from the *ImageTrend*® unified data platform and are tracked and trended to improve and maintain the performance of the entire system. Data is analyzed as a system-wide aggregate but can also be broken down to the facility or provider level as needed for more granular analysis. The patient population in the database includes all suspected and confirmed STEMI cases, arriving to the hospital both by EMS and walk-in patients. Utilizing this inclusion criteria provides a complete representation of STEMI occurrence within Riverside County. Performance measures tracked include but are not limited to:

- All time intervals from first medical contact through treatment with PCI
- Aspirin administration
- Twelve lead ECG obtained and transmitted
- STEMI center pre-notification made
- Direct transport to a STEMI center

- False positives, False negatives, and True positives
- Hospital length of stay
- Risk and propensity weighted mortality and morbidity

With both EMS and hospitals using the same platform for the patient care record and patient registry, the hospitals link patient outcomes back to the prehospital patient care records for the field responders to see outcomes of their calls.

Data is submitted to the agency on a quarterly basis where it is thoroughly analyzed with the above-mentioned performance measures. This data is reviewed at the STEMI System Committee in addition to being available at www.remsa.us under the System-based Clinical and Operational Performance Evaluation (SCOPE) dashboard.

Inter-county Agreements

Riverside County, and its northern county San Bernardino, are close in proximity with many patients crossing county borders. Riverside and San Bernardino counties also share the same Medical Director, resulting in their STEMI systems working similarly with EMS designation and treatment policies. REMSA has a written agreement (Attachment A) between both EMS agencies, which permits bi-directional data sharing and resource utilization of each county's STEMI critical care system assets. This includes the use of designated STEMI centers located across county lines as the closest, most appropriate facility to the scene of a suspected STEMI patient.

STEMI System QI Committee

Riverside County Emergency Medical Services Agency hosts an interdisciplinary STEMI System Advisory Committee (www.remsa.us/policy/8207) with representation from each of the STEMI Centers as well as members that represent the prehospital providers throughout the county. The STEMI Care Committee meets quarterly and is tasked with reviewing performance data, identifying opportunities for improvement, planning and monitoring improvement efforts, recommending policy changes to the EMS medical director, and conducting case reviews. For these activities, the committee uses a variety of QI approaches and tools, including Plan, Do, Study, Act (PDSA) cycles, assessments, audits and feedback, benchmarking, and best practices research.

STEMI Education

Education is key to improving health outcomes, reducing the incidence of disease, and enhancing quality of life for STEMI patients. Education is directed to the patient via health and safety fairs and access to STEMI specialty care, as well as to both the EMS field provider level and those providing STEMI care to patients at the hospital. Hospital education is based upon individual regulatory requirements, but facilities often collaborate to provide education directly to field EMS providers. Furthermore, STEMI-specific education to EMS field providers is mandated twice a year and the content is driven by needs identified through the quality improvement process. The STEMI program managers from many of the STEMI centers are heavily involved in conducting this mandated education.

Additional STEMI education is directed at community outreach and includes sponsorship of STEMI conferences, offering education to non-STEMI facilities, and direct involvement at community events focused on STEMI and cardiovascular disease-related topics.

STEMI Goals and Objectives

Goal #1: Monitor E2B times

Goals	Objective (s)	Timeline	Status
Reduce E2B times	Monitor EMS to balloon times and reduce to under 90 min 95% of the time	Quarterly	Pending

Goal #2: Increase EMS prenotification

Goals	Objective (s)	Timeline	Status
Increase pre-activation of cath lab teams	Increase EMS notification to 80% of the time	Quarterly	Pending

Goal #3: Provide EMS feedback

Goals	Objective (s)	Timeline	Status
Provide 100% feedback from confirmed and suspected EMS transported STEMI cases to providers	Feedback to include: A. Discharge diagnosis B. Hospital disposition C. Discharge summary	Monthly	Pending

Attachments

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Attachment A: Intercounty Agreements

August 14, 2019

Tom Lynch
Executive Director
Inland Counties Emergency Medical Services Agency
1425 South "D" Street
San Bernardino, CA 92415-0060

Dear Tom,

Riverside County would like to continue collaborating with San Bernardino County in accepting all specialty care patients (Trauma, Stroke, and STEMI) from the field. Riverside County EMS continues to remain committed to providing optimal patient care and outcomes for all of these patients. Reciprocal acceptance of specialty care patients from the field between both Riverside and San Bernardino Counties continues to be effective and a critical component between both systems.

Thank you for your ongoing partnership between REMSA and ICEMA.

Sincerely,

Trevor Douville
Director
EMS Administrator
Emergency Management Department

Mailing Address: 4210 Riverwalk Parkway • Suite 300 • Riverside, CA 92505
Phone: (951) 358-5029 • Fax: (951) 358-5160 • TDD: (951) 358-5124 • www.rivcoems.org

Inland Counties Emergency Medical Agency
1425 South D Street, San Bernardino, CA 92415-0060 ▪ (909) 388-5823 ▪ Fax (909) 388-5825 ▪ www.icema.net

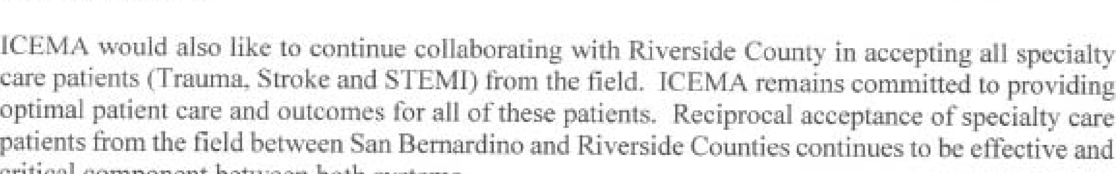
Serving San Bernardino, Inyo, and Mono Counties
Tom Lynch, EMS Administrator
Reza Vaezazizi, MD, Medical Director

September 19, 2019

RECEIVED
SEP 25 2019
REMSA

Trevor Douville, Director
Riverside County Emergency Medical Services Agency
4210 Riverwalk Parkway, Suite 300
Riverside, CA 92505

Dear Mr. Douville:



ICEMA would also like to continue collaborating with Riverside County in accepting all specialty care patients (Trauma, Stroke and STEMI) from the field. ICEMA remains committed to providing optimal patient care and outcomes for all of these patients. Reciprocal acceptance of specialty care patients from the field between San Bernardino and Riverside Counties continues to be effective and critical component between both systems.

Thank you for your ongoing partnership between ICEMA and REMSA.

Sincerely,

Tom Lynch
EMS Administrator

TL/jlm

c: File Copy

BOARD OF DIRECTORS

Robert A. Lovingood, First District
Jan Rutherford, Second District
Dawn Rowe, Third District
Curt Hagman, Chairman, Fourth District
Josie Gonzales, Vice Chair, Fifth District
Gary McBride, Chief Executive Officer

Attachment B: References

Riverside County EMS Agency 2019 Policy Manual. Retrieved from www.remsa.us/policy.

California Code of Regulations, Title 22. Social Security, Division 9. Prehospital Emergency Medical Services, Chapter 7.1 ST-Elevation Myocardial Infarction Critical Care System.

Riverside County EMS Agency System-based Clinical and Operational Performance Evaluation (SCOPE) dashboard. www.remsa.us.

RIVERSIDE COUNTY EMERGENCY MEDICAL SERVICES AGENCY (REMSA)

STROKE CRITICAL CARE SYSTEM PLAN

2019

Reza Vaezazizi, MD, REMSA Medical Director
Trevor Douville, EMS Administrator
Shanna Kissel, MSN, RN, Assistant Nurse Manager
Daniel Sitar, MSN, RN, Specialty Care Nurse Consultant

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Executive Summary:

The Stroke System in Riverside County originated in 2015. Approximately 365,000 Emergency Medical Services (EMS) calls are made in Riverside County every year with more than 300 suspected stroke patients transported each month. Residents and visitors of Riverside County may receive treatment at one of 11 designated Primary Stroke Centers distributed throughout the county. In the last two years, Riverside County's Stroke System has matured in its data collection process to link pre-hospital care to patient outcomes and has now automated this process through linkage of the prehospital and hospital stroke patient reporting systems. This Stroke Critical Care System plan outlines the designation process for hospitals, EMS treatment protocols, ongoing Stroke education, and the Quality Improvement process for the Stroke program. Riverside County EMS Agency (REMSA) works in collaboration with EMS providers and Stroke coordinators in the county to provide the most current treatment and intervention in Stroke care with the goal of reducing morbidity and mortality related to strokes.

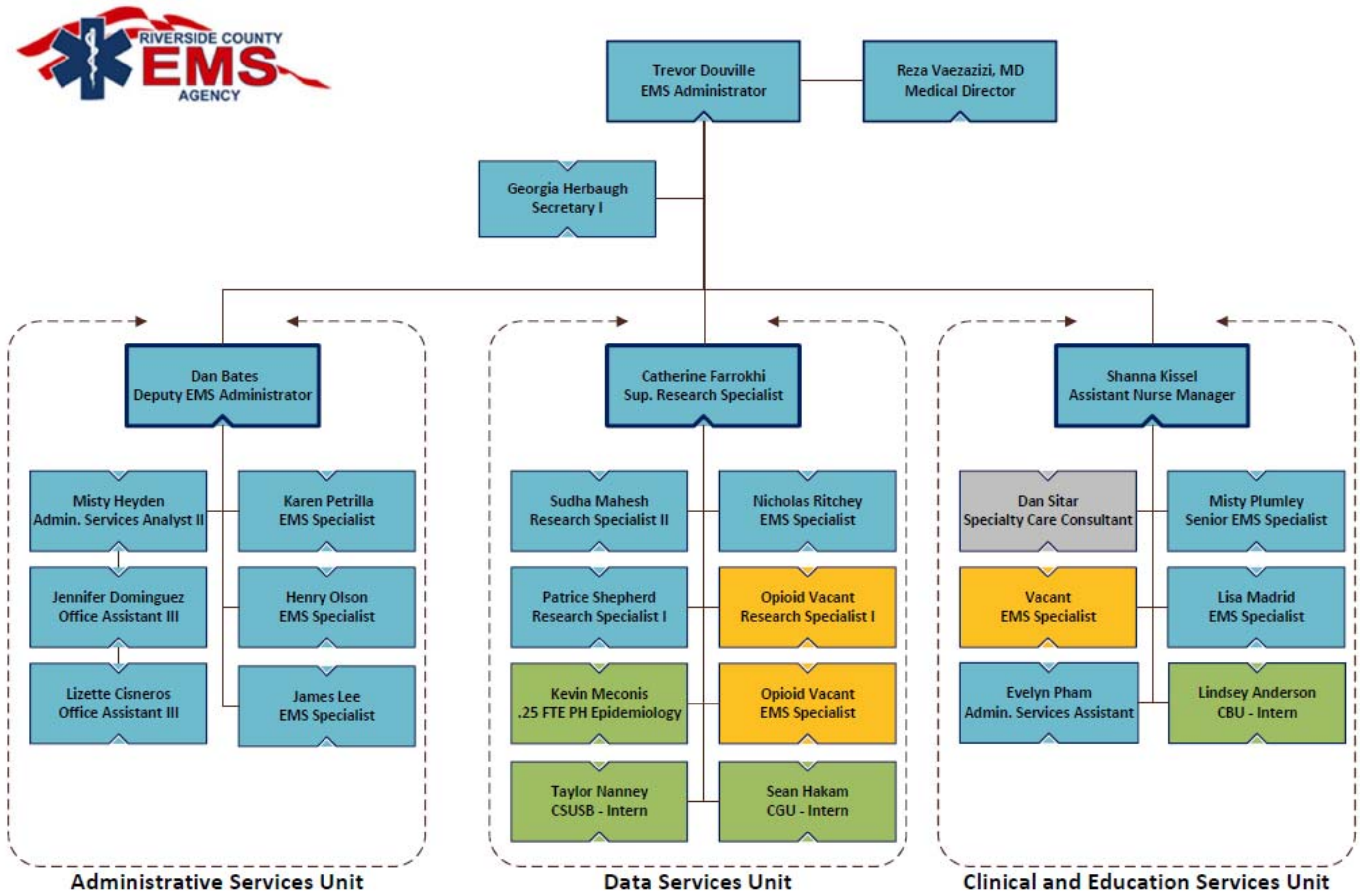
Trevor Douville
EMS Administrator
Riverside County EMS Agency

Stroke Critical Care System

The overarching goal of the stroke critical care system is to reduce morbidity and mortality from acute stroke disease by improving the delivery of emergency medical care within the community. This system is a subspecialty care component of the larger EMS system that was developed by the Riverside County EMS Agency (REMSA) and links prehospital and hospital care to deliver treatment to stroke patients who potentially require immediate medical or surgical intervention. Positive patient outcomes are best achieved when patients consistently receive a standard of care based on national standards and best practices. Therefore, the REMSA stroke critical care system was based on recommendations from national organizations, evidence-based practices, and current peer-reviewed literature. At its inception in 2014, the stroke system began with eight locally designated primary stroke centers. By 2015 the system had expanded to 12 primary centers, all of which had achieved Advanced Primary Stroke certifications from The Joint Commission. Currently, there are 11 primary stroke centers distributed throughout Riverside County.

Riverside County EMS Agency Organization

Two branches of the Riverside County EMS Agency play key roles in the operation of the Stroke system and work under the direction of the EMS Administrator and EMS Medical Director, the data team and the clinical team. During the assessment and realignment period, the EMS Agency has funded a Nurse Consultant to carry out the objectives of Stroke program oversight. Now that regulations are in place and realignment is near completion, the EMS Agency intends to fund in Fiscal year 2020/2021, through specialty care center fees, a Specialty Care Nurse Coordinator to maintain regulatory oversight and direction to the Stroke centers.



Both teams fulfill specific roles in the stroke system and work closely to accomplish system goals. The data team provides maintenance of data collection modalities and databases, performs statistical analyses, creates GIS mapping of stroke-related elements, and generates reports for system stakeholders. Equally important, the clinical team contains experienced professionals from the hospital and pre-hospital environments and performs continuous quality improvement (CQI) activities facilitate transparent, exemplary patient-centered stroke care. During the assessment and realignment period, the EMS Agency has funded a nurse consultant to carry out the objectives of stroke program oversight. In fiscal year 2020/2021, the EMS Agency intends to fund a specialty care nurse coordinator position to maintain regulatory oversight and direction to the stroke system. The Specialty Care Coordinator role operates under the clinical team and acts as a program administrator between hospital stroke programs and the state EMS Authority. In collaboration with administration, the clinical and

education services unit, and the EMS Medical Director, the specialty care coordinator facilitates stroke committee activities related to performance improvement and quality improvement indicators, acts as a liaison between the LEMSA and the state of California EMS Authority, and interfaces with stakeholders throughout the system.

Designation Process

A strong foundation of hospitals that are both geographically accessible and capable of quality stroke care is paramount to a robust stroke critical care system. Of the 17 prehospital receiving centers in Riverside County, 11 are currently designated as primary stroke centers (PSC). Title 22 regulations define a primary stroke center as, "a hospital that "…stabilizes and treats acute stroke patients, providing initial acute care, and may transfer to one or more higher level of care centers when clinically warranted". Currently, the Riverside County EMS Agency has written agreements with hospitals that are designated PSC's and, in 2020, REMSA will be assessing the need to designate higher level interventional-capable stroke centers. To be designated as a stroke receiving center hospitals must, at minimum, hold a current certification as an Advanced Primary Stroke Center by The Joint Commission, Det Norske Veritas, or Healthcare Facilities Accreditation Program and must complete a Stroke Center Designation application. The application packet contains an audit tool and checklist that ensures the facility meets all requirements to receive stroke center designation. A successful site visit, a written agreement, and continued compliance with all elements of the Stroke Center Standards policy (www.remsa.us/policy/5701.pdf) are required to grant designation. All designated stroke centers in Riverside County meet or exceed the requirements in the California Code of Regulations contained in Title 22, Division 9, Chapter 7.2 Stroke Critical Care System.

Riverside County Stroke Centers

Riverside County Stroke Centers

Of the 11 designated Stroke facilities in Riverside County, 10 have the same contract with REMSA, and one, Riverside University Health System, which is unique since it is owned and operated by the same governmental entity as REMSA. For this reason, a memorandum of understanding serves as the written agreement to designate it as a stroke center.

At this time, there are no facilities designated as an EMS Thrombectomy-capable or Comprehensive Stroke centers, although this is a goal that is on the horizon as early as 2020.

Stroke facility	Contract term	Agreement Type
Corona Regional Medical Center	July 1, 2017- June 30, 2018, with an option to renew annually for 2 years; Extended through July 30, 2019, Extension #2 through July 30, 2020	County of Riverside Primary Stroke Center Designation Agreement

Desert Regional Medical Center	July 1, 2017- June 30, 2018, with an option to renew annually for 2 years; Extended through July 30, 2019, Extension #2 through July 30, 2020	County of Riverside Primary Stroke Center Designation Agreement
Eisenhower Health	July 1, 2017- June 30, 2018, with an option to renew annually for 2 years; Extended through July 30, 2019, Extension #2 through July 30, 2020	County of Riverside Primary Stroke Center Designation Agreement
Inland Valley Medical Center	July 1, 2017- June 30, 2018, with an option to renew annually for 2 years; Extended through July 30, 2019, Extension #2 through July 30, 2020	County of Riverside Primary Stroke Center Designation Agreement
Kaiser Permanente- Moreno Valley	July 1, 2017- June 30, 2018, with an option to renew annually for 2 years; Extended through July 30, 2019, Extension #2 through July 30, 2020	County of Riverside Primary Stroke Center Designation Agreement
Kaiser Permanente- Riverside	July 1, 2017- June 30, 2018, with an option to renew annually for 2 years; Extended through July 30, 2019, Extension #2 through July 30, 2020	County of Riverside Primary Stroke Center Designation Agreement
Parkview Hospital	July 1, 2017- June 30, 2018, with an option to renew annually for 2 years; Extended through July 30, 2019, Extension #2 through July 30, 2020	County of Riverside Primary Stroke Center Designation Agreement
Rancho Springs Medical Center	July 1, 2017- June 30, 2018, with an option to renew annually for 2 years; Extended through July 30, 2019, Extension #2 through July 30, 2020	County of Riverside Primary Stroke Center Designation Agreement
Riverside Community Hospital	July 1, 2017- June 30, 2018, with an option to renew annually for 2 years; Extended through July 30, 2019, Extension #2 through July 30, 2020	County of Riverside Primary Stroke Center Designation Agreement
Riverside University Health System- Medical Center	July 1, 2017- June 30, 2018, with an option to renew annually for 2 years; Extended through July 30, 2019, Extension #2 through July 30, 2020	Memorandum of Understanding
Temecula Valley Hospital	July 1, 2017- June 30, 2018, with an option to renew annually for 2 years; Extended through July 30, 2019, Extension #2 through July 30, 2020	County of Riverside Primary Stroke Center Designation Agreement

EMS Communication

Early pre-notification by EMS of an arriving suspected stroke patient allows the appropriate hospital resources to be activated and is crucial to reducing time delays in the care of stroke patients. Prehospital personnel are directed to make early contact with the closest stroke center as soon as a suspected stroke patient is identified to communicate pertinent details such as last know well times, stroke screening results, and family contact information.

There are two methods to make prehospital notification, either of which are permitted for stroke pre-notification. The first is a county-wide 800 MHz radio system available to all transporting units in Riverside County. As a second method, providers have a phone number assigned to each receiving hospital for the purposes of receiving prehospital reports. In having two means of communication, there is redundancy and backup to help ensure consistent pre-notifications is made.

The universal patient policy (www.remsa.us/policy/4102.pdf) describes the minimal acceptable information communicated for all transports within REMSA. The stroke treatment policy goes on to describe stroke-specific information to be communicated in cases of suspected stroke, such as stroke screen results, last known well times, and blood thinner status. Prehospital stroke notifications are enhanced by using this layered process that emphasizes the communication of stroke-specific information.

REMSA Stroke Policies

There are six (6) REMSA policies specific to the stroke critical care system. The first of these is policy #5701 (www.remsa.us/policy/5701.pdf) which details the requirements and expectations of each of the designated stroke centers within the county. Each designated center is bound to comply with all elements contained in this policy and it outlines a minimum standard for capabilities of all stroke centers.

A suspected stroke policy (www.remsa.us/policy/4503.pdf) contains the current pre-hospital treatment guidelines for all suspected stroke patients. It clearly defines a validated stroke screening tool and stroke severity scale, the modified LAPSS and LAMS, to be used to rapidly identify acute stroke patients. The destination for suspected acute stroke patients is the closest, most appropriate designated stroke center, although this direction may be updated in the future to reflect the addition of interventional-capable centers into the system. Referenced in this policy is hypoglycemia with altered mental status as a physical finding related to potential stroke patients. Policy #4501 (www.remsa.us/policy/4501.pdf), titled hypoglycemia with altered mental status, identifies the management and treatment of this underlying condition. The EMS providers have an accompanying performance standard policy for the category III skill, high frequency-low risk, use of the glucometer (www.remsa.us/policy/7501.pdf).

For patients requiring a higher level of care services for either neuro-intervention or patients arriving to non-stroke centers via private auto, the continuation of stroke care policy (www.remsa.us/policy/5702.pdf) affords the ability for the stroke system to capture all acute stroke patients regardless of the mode of arrival and to expedite the care of those requiring advanced services. This policy facilitates transfers for a higher level of care to designated stroke centers and assists with complying with federal transfer guidelines.

Finally, policy #8206 (www.remsa.us/policy/8206.pdf) acts as the charter for the Stroke System Advisory Committee and describes the committee's purpose, structure, and CQI activities.

Data Collection

Large volumes of data are necessary to properly inform and drive a CQI process. To achieve the needed data, REMSA has implemented a standard patient registry in which hospitals enter outcome information for all suspected and confirmed stroke cases. The patient registry vendor, *ImageTrend*®, also hosts the prehospital patient care record system and migrates the data to the state-level California Stroke Registry in an automated fashion. Prehospital records are matched case by case to the hospital outcome data entered by the facilities. All designated stroke centers are mandated to enter a minimum set of stroke data into the registry in a near-concurrent manner, but no later than one month following patient discharge. A variety of performance metrics are obtained from the *ImageTrend*® unified data platform. Measures are tracked and trended and are used to improve and maintain the performance of the entire system. Data is analyzed as an aggregate but can also be broken down to the facility or provider level as needed. The patient population in the database encompasses all suspected and confirmed strokes, regardless of the mode of arrival to the hospital. Utilizing this inclusion criteria provides a complete representation of acute stroke within Riverside County. Performance measures tracked include but are not limited to:

- All time intervals from first medical contact through treatment with thrombolytics and/or neuro-intervention
- Blood sugar assessed
- Last known well time obtained.
- A complete stroke screen completed
- Stroke center pre-notification made
- Direct transport to a stroke center
- False positives, False negatives and, True positives
- Hospital length of stay
- Risk and propensity weighted mortality and morbidity

With both EMS and hospitals using the same platform for the patient care record and patient registry, the hospitals can link patient outcomes directly back into the corresponding prehospital patient care records, which provides feedback to field responders to view hospital outcomes from their stroke calls.

Monthly, all PSC's submit data to the EMS Agency for analysis. The data is reviewed and validated prior to report creation. These reports are shared with the stroke system advisory committee and available at www.remsa.us under the System-based Clinical and Operational Performance Evaluation (SCOPE) dashboard.

Inter-county Agreements

Due to the proximity of Riverside and San Bernardino Countys' urban areas, many patients have the potential to cross county borders. A written agreement (Attachment A) between the two countys' local EMS agencies permits bi-directional data sharing and resource utilization of each counties' stroke critical care system assets. This includes the use of designated stroke centers located across county lines as the closest, most appropriate facility to the scene of a suspected stroke patient. Riverside and San Bernardino have the same MEDCAL Director, resulting in similarities between their designation and treatment policies.

Stroke System QI Committee

Riverside County Emergency Medical Services Agency hosts an interdisciplinary stroke system advisory committee with representation from each of the stroke centers as well as members that represent the prehospital providers throughout the county. The stroke system advisory committee meets quarterly and reviews stroke performance measures, identifies opportunities for improvement, and plans and monitors improvement efforts. Additionally, it serves as an advisory committee to recommend policy changes to the EMS Medical Director and as a forum for conducting case reviews. For these activities, the committee uses a variety of QI approaches and tools, including Plan, Do, Study, Act (PDSA) cycles, assessments, audits and feedback, benchmarking, and best practices research. The stroke system advisory committee policy (www.remsa.us/policy/8206.pdf) outlines the stroke system QI committee.

Stroke Education

Education is paramount to reduce the incidence of disease, improve health outcomes, and enhance the quality of life for stroke patients. A portion of education is directed at community members at risk for stroke with health screening and risk assessments, as well as to those providing stroke care at the hospital and EMS field provider level. Hospitals direct the education of their internal workforce based upon their regulatory requirements but often collaborate to provide education directly to field EMS providers. Furthermore, stroke-specific education to EMS field providers is mandated twice a year with the content driven by needs identified through the quality improvement process. The stroke program managers from many of the stroke centers are heavily involved in conducting this mandated education.

The remainder of stroke education is directed at outreach efforts throughout the community and includes sponsorship of stroke conferences, offering education to non-stroke facilities, and direct involvement at community events focused on early recognition of possible stroke onset, how/when to utilize the EMS system, and other stroke topics. Data initiatives help to target higher risk areas to further facilitate collaborative education opportunities with long term care facilities and other vulnerable populations.

A group of Riverside and San Bernardino stroke coordinators independently developed a regional stroke coordinator committee called the Inland Empire Stroke Coordinators Association (IESCA), which allows coordinators to identify issues, participate in community stroke awareness efforts, discuss challenges and successes of site surveys, and provide education to both EMS and non-stroke hospitals. This regional group meets quarterly and consists of stroke program managers from both counties with the common goal of providing a commitment to improving the care of stroke patients and by educating through the collaboration amongst leaders and advocates. Since its formation in 2012, IESCA has developed a charter that includes mission and vision statements, and participation has grown with many of the stroke centers between the two counties represented at each quarterly meeting.

Stroke System goals and objectives

Goal #1: Designate additional Stroke centers

Goals	Objective (s)	Timeline	Status
Designate additional stroke centers	Designate: Two additional primary stroke centers Two comprehensive stroke centers One thrombectomy-capable stroke center	December 2020	Incomplete

Goal #2: Development of tiered field triage

Goals	Objective (s)	Timeline	Status
Explore the development of a tiered field triage scheme	Direct possible large vessel occlusions (LVO) to interventional-capable stroke centers. Collect detailed data collection and analysis from all current stroke centers	December 2020	Incomplete

Goal #3: Reduce door to intervention times

Goals	Objective (s)	Timeline	Status
Reduce door to intervention times for IFT LVO's	Goal of < 120 minutes 75% of the time	July 2020	Pending, to begin collecting Q.3, 2019

Goal #4: EMS feedback

Goals	Objective (s)	Timeline	Status
Provide 100% feedback to EMS providers for confirmed and suspected stroke patients	Feedback includes: A. Discharge diagnosis B. Hospital disposition C. Discharge summary	Ongoing	In progress

Attachments

A. Inter-county Agreements ____ 14
B. References ____ 16

Attachment A: Inter-county Agreements

August 14, 2019

Tom Lynch
Executive Director
Inland Counties Emergency Medical Services Agency
1425 South "D" Street
San Bernardino, CA 92415-0060

Dear Tom,

Riverside County would like to continue collaborating with San Bernardino County in accepting all specialty care patients (Trauma, Stroke, and STEMI) from the field. Riverside County EMS continues to remain committed to providing optimal patient care and outcomes for all of these patients. Reciprocal acceptance of specialty care patients from the field between both Riverside and San Bernardino Counties continues to be effective and a critical component between both systems.

Thank you for your ongoing partnership between REMSA and ICEMA.

Sincerely,

Trevor Douville
Director
EMS Administrator
Emergency Management Department

Mailing Address: 4210 Riverwalk Parkway • Suite 300 • Riverside, CA 92505
Phone: (951) 358-5029 • Fax: (951) 358-5160 • TDD: (951) 358-5124 • www.rivcoems.org

Inland Counties Emergency Medical Agency

1425 South D Street, San Bernardino, CA 92415-0060 ▪ (909) 388-5823 ▪ Fax (909) 388-5825 ▪ www.icema.net

Serving San Bernardino, Inyo, and Mono Counties
Tom Lynch, EMS Administrator
Reza Vaezazizi, MD, Medical Director

September 19, 2019

RECEIVED
SEP 25 2019
REMSA

Trevor Douville, Director
Riverside County Emergency Medical Services Agency
4210 Riverwalk Parkway, Suite 300
Riverside, CA 92505

Dear Mr. Douville:

ICEMA would also like to continue collaborating with Riverside County in accepting all specialty care patients (Trauma, Stroke and STEMI) from the field. ICEMA remains committed to providing optimal patient care and outcomes for all of these patients. Reciprocal acceptance of specialty care patients from the field between San Bernardino and Riverside Counties continues to be effective and critical component between both systems.

Thank you for your ongoing partnership between ICEMA and REMSA.

Sincerely,

Tom Lynch
EMS Administrator

TL/jlm

c: File Copy

BOARD OF DIRECTORS

Robert A. Lovingood	Jan Rutherford	Dawn Rowe	Curt Hagman Chairman	Josie Gonzales Vice Chair	Gary McBride
First District	Second District	Third District	Fourth District	Fifth District	Chief Executive Officer

Attachment B: References

Riverside County EMS Agency 2019 Policy Manual. Retrieved from www.remsa.us/policy/2019.

California Code of Regulations, Title 22. Social Security, Division 9. Prehospital Emergency Medical Services, Chapter 7.2 Stroke Critical Care System.

Riverside County EMS Agency System-based Clinical and Operational Performance Evaluation (SCOPE) dashboard. www.remsa.us.

RIVERSIDE COUNTY EMERGENCY MEDICAL SERVICES AGENCY

TRAUMA SYSTEM UPDATE 2019

Reza Vaezazizi, MD, REMSA Medical Director
Trevor Douville, EMS Administrator
Shanna Kissel, MSN, RN, Assistant Nurse Manager

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Trauma System Summary

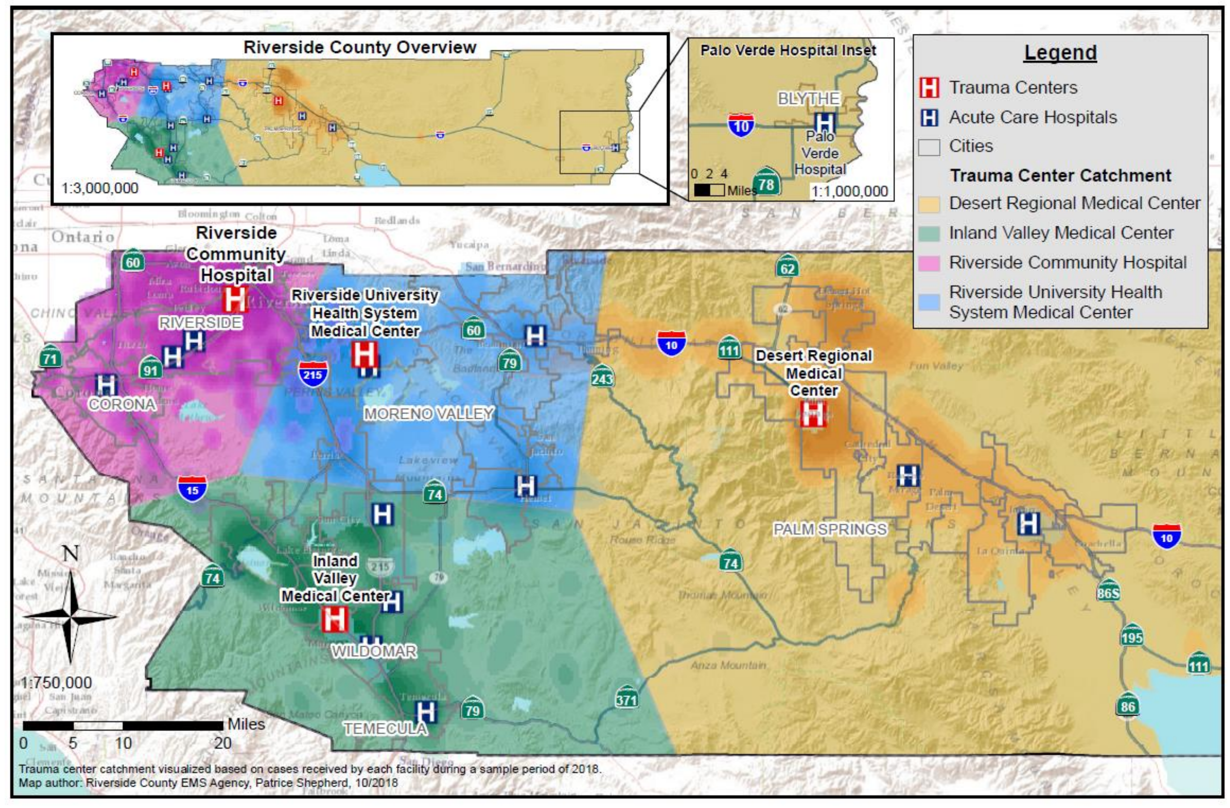
The Riverside County EMS Agency (REMSA) Trauma Care System Plan was developed in compliance with Section 1798.160, et seq., Health and Safety Code. REMSA's organized system of the care for trauma patients has been in place since 1994 with approval by the California EMS Authority (EMSA) in 1995. The plan was last updated and approved by EMSA in 2018. This current Trauma Plan update reflects the 2018 data and information for Riverside County.

Riverside County's jurisdiction includes four Level II Trauma Centers--one of which is a Level II Pediatric Trauma Center (PTC). The PTC is geographically located towards the western region of the County and central to the majority of the County's population. All four trauma centers are distributed evenly, respective to each region's population density.

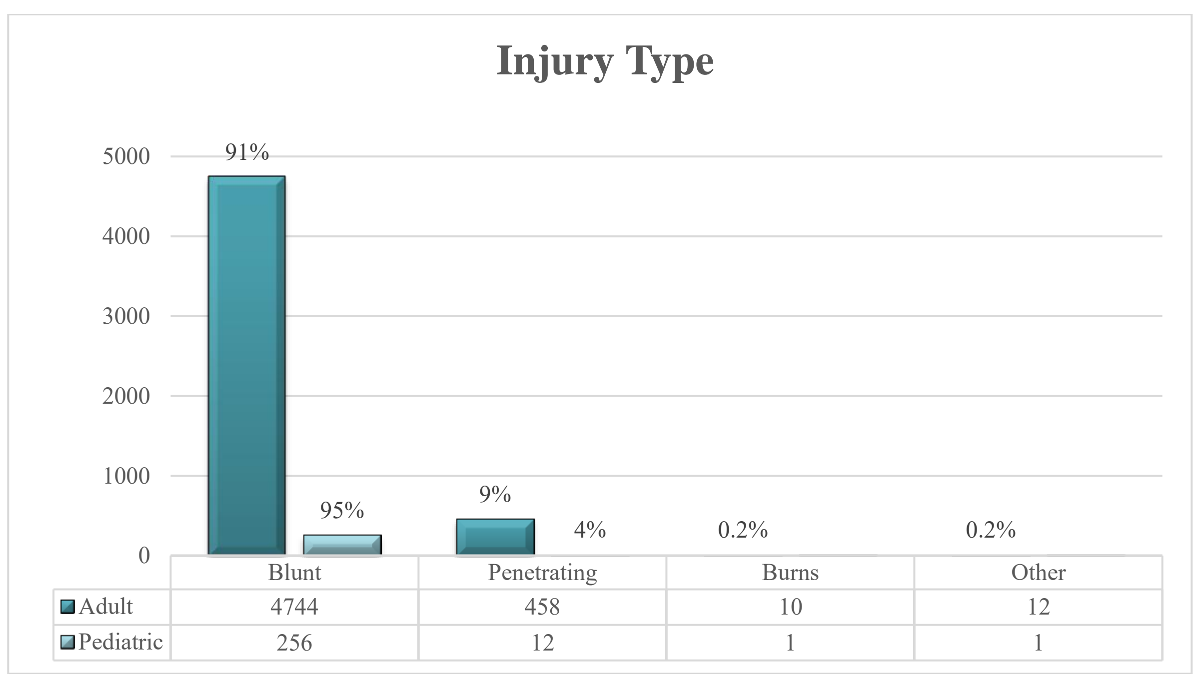
Catchment areas have remained the same, although population has increased throughout the County (see Trauma Center Population map below).

Currently, REMSA uses Digital Innovations *Collector*® Trauma Registry CV 5 as the data entry platform for the identified trauma patient. In 2020, REMSA will begin utilizing *ImageTrend*® patient registry for system collection of trauma patients.

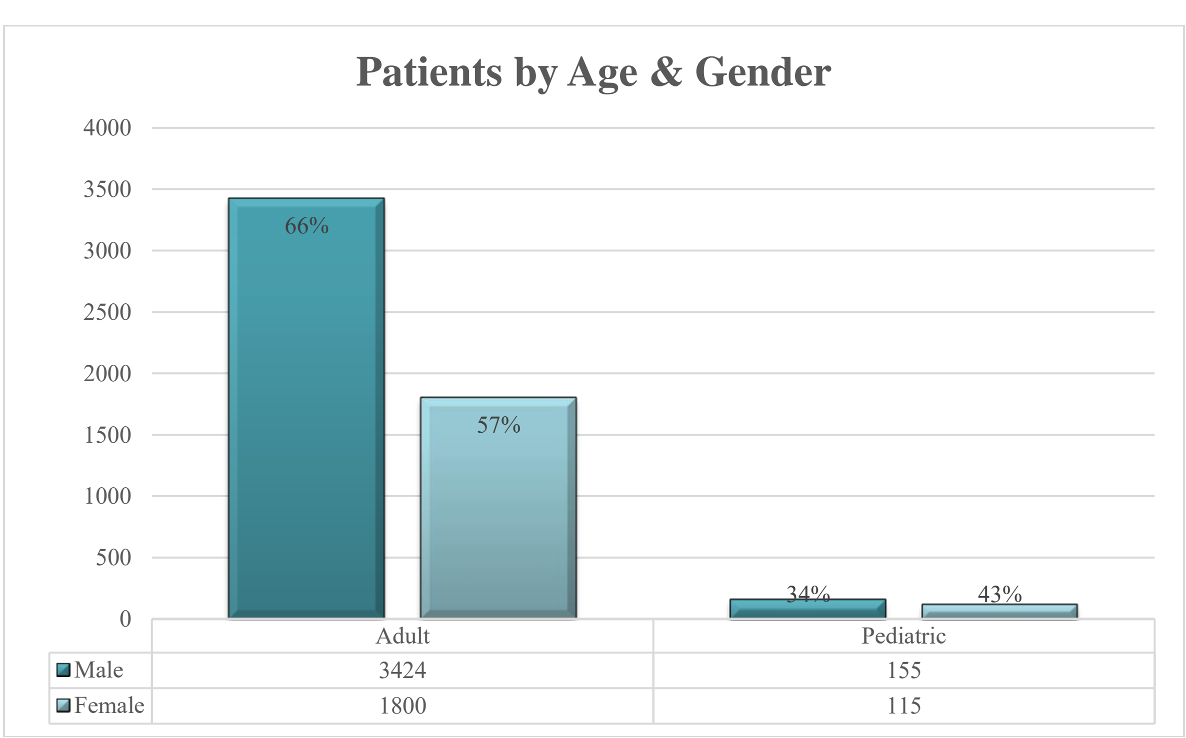
Riverside County Trauma Center Catchment Areas



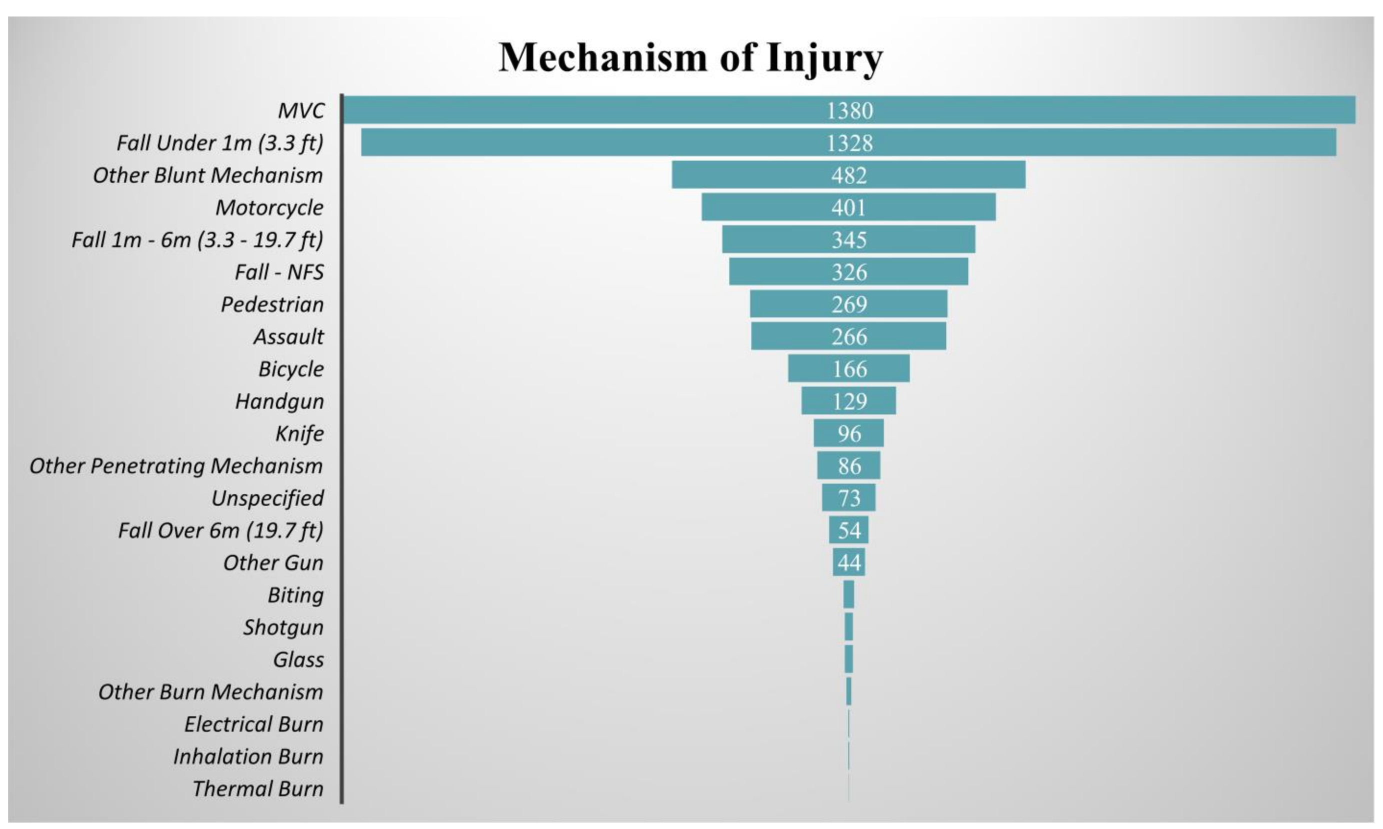
2018 Riverside County Trauma Demographics



	Blunt	Penetrating	Burns	Other
Adult	4744	458	10	12
Pediatric	256	12	1	1



	Adult	Pediatric
Male	3424	155
Female	1800	115



**Mechanism of Injury counts not listed above::*

Biting- 15	*Electrical Burn- 2*
Shotgun- 11	*Inhalation Burn- 2*
Glass- 11	*Thermal Burn- 1*
Other Burn mechanism- 7	

Changes in Trauma System

- American College of Surgeons- Committee on Trauma (ACS-COT) Verifications
- Inter-county Agreements
- Trauma Patient Registry
- Policy Revisions and Additions
- Trauma System Outreach

American College of Surgeons- Committee on Trauma (ACS-COT) Verifications

One goal of the Riverside County Trauma Care System Plan is for all trauma centers to become ACS-verified by the end of 2020. Currently, there are four Level II-designated trauma centers; three of the four are Level II ACS-verified. ACS verification remains a contractual obligation, and compliance with the standards are performed during site surveys every three years. (Attachment A: Trauma Center Review Form)

A. Desert Regional Medical Center (DRMC) had a consultation visit April 2017 and plans to schedule a site verification in 2020.
B. Inland Valley Medical Center (IVMC) achieved ACS Level II verification November 2018. (Attachment B: IVMC ACS verification letter)
C. Riverside University Health System- Medical Center (RUHS- MC) received ACS Level II re-verification August 2017. Their future goal in 2020 is to become an ACS-verified Level I trauma center.
D. Riverside Community Hospital (RCH) achieved ACS Level II verification November 2018. (Attachment C: RCH ACS verification letter)

Inter-county Agreements

REMSA and Inland Counties Emergency Medical Agency (ICEMA) continue to have inter-county agreements regarding the acceptance of all specialty care patients, including trauma patients. Both counties collaborate in regional activities and meetings to assure that the care delivered is in the best interest of the patients. Any EMS issues, identified in association with the transports between the two counties, have multiple layers of review during system committee meetings and are presented at the Trauma Audit Committee (TAC) for adjudication. This agreement is reviewed and updated on an annual basis. (Attachment D: Inter- County agreements)

Trauma Patient Registry

Currently, REMSA and all trauma centers use the trauma registry, Digital Innovations (DI CV5). In 2020, Riverside EMS will be changing registries to *ImageTrend®* (IT) trauma patient registry. With this change, REMSA will be able to use patient-matching for EMS records, which allows the outcome of patients to be shared back with the prehospital providers. REMSA will continue to collect the majority of data elements in the trauma registry beyond the required National Trauma Data Bank (NTDB) fields. The data elements will continue to be reviewed and updated on an annual basis to align with NTDB, and the data dictionary is embedded in the registry elements. Additionally, REMSA will be utilizing the IT registry to house the patient data from the non-trauma centers that receive trauma patients and for those facilities that line the Orange County/Riverside County border. (REMSA policy #5303- *Prehospital Receiving Center Trauma Patient Registry form* can be found at www.remsa.us/policy/5303.pdf).

Policy Revisions and Additions

All trauma patient treatment policies are routinely-updated with current standards of care and vetted through the regional TAC. REMSA works closely with ICEMA for treatment protocols as patients are transported across the county lines. The discussion for REMSA Policy #5301- *Trauma Triage Indicators and Destination* was initiated at the end of 2018, specifically for the Adult penetrating traumatic arrest. The conversation continued into 2019, and the policy will be final October 2019.

Tranexamic Acid (TXA) was approved by EMSA for local optional scope of practice June 2018. TXA was included in REMSA treatment policies July 2018. (REMSA policy #4301- *Shock due to Trauma* and policy #4302- *Traumatic Injuries* can be found at www.remsa.us/policy/). Publication for the TXA trial study REMSA participated in can be found at https://escholarship.org/uc/item/9f99j268.

In addition to the TXA trial study, REMSA participated in a Ketamine trial study for pain management in patients 15 years and older with acute traumatic injury or acute burn injury and a pain scale score of five or greater. This study took place over the course of four months, was approved for local optional scope of practice September 2018, and was placed into policy September 2018. Publication for this trial study is pending. Ketamine can be found in policy 4302 and 4303 (REMSA policy #4303- Burns can be found at www.remsa.us/policy/4303.pdf).

Trauma System Outreach

REMSA is a division of the County of Riverside Emergency Management Department (EMD). The Preparedness Division under EMD is working with the Injury Prevention Coordinators at two of the four trauma centers to provide public education with the *Stop the Bleed Campaign*. The goal, for the public education, is to offer these courses four times per year. The number of times these courses are offered will be evaluated and increased as needed.

Number and Designation Level of Trauma Centers

Hospital	Trauma Designation Level	Designation/ Verification
DRMC Palm Springs, CA	II	Adult
IVMC Wildomar, CA	II	ACS Level II Adult
RCH Riverside, CA	II	ACS Level II Adult
RUHS-MC Moreno Valley, CA	II	Pediatric Trauma Center (PTC) ACS Level II Adults
Arrowhead Regional Medical Center *San Bernardino County	II	ACS Level II Adults, Burn Center ICEMA designated trauma center
Loma Linda University Medical Center and Loma Linda University Children's Hospital *San Bernardino County	I	ACS Level I Adult and Pediatric, ICEMA designated trauma center

Scheduled changes: There are no scheduled changes to the Trauma centers at this time.

System changes: REMSA does not anticipate the need for any additional trauma centers at this time based-on trauma center data analysis and catchment areas.

RUHS-MC has expressed interest in becoming a Level I ACS Verified Trauma Center early Spring 2020. REMSA is continuing to work with the medical center to achieve this goal.

Trauma System Goals and Objectives

REMSA has developed the following goals and objectives for the Trauma System calendar year 2018-2019:

Goal #1: Participate in regional activities with ICEMA

Objectives to Achieve Goal	Measure (s)	Timeline	Status
Participate in TAC 4x/yr.	Bring trauma cases from Riverside county to TAC to peer review with ICEMA trauma centers and Pomona Valley Medical Center. Cases are peer reviewed across county borders as a regional effort to improve patient outcomes. *PI Indicators updated in 2018	November 28, 2018 February 20, 2019 May 15, 2019 August 21, 2019 November 20, 2019	Complete Complete Complete Complete Complete Pending

Goal #2: LEMSA to become more involved in Tactical Response to Violent Incidents

Objectives to Achieve Goal	Measure (s)	Timeline	Status
REMSA will be actively involved in countywide drills and exercises with stakeholders in the system	REMSA will participate in MCI/ Active shooter drills	-November 2018- Riverside City Joint Active shooter full scale exercise	Complete
		-November 2018- Statewide Medical and Health functional exercise	Complete
	REMSA will participate in Disaster Preparedness activities	- March 2018- Health care Coalition surge	Complete
		- October 2019- Full scale active shooter exercise	Pending

Goal #3: LEMSA participation in Trial Studies

Objectives to Achieve Goal	Measure (s)	Timeline	Status
REMSA to participate in multi-county trial studies	Complete CQI on all patients receiving TXA in the pre-hospital setting Complete CQI of patients enrolled in Ketamine trial study	June 1, 2018 report due to state EMSA Trial study began April 1, 2018	TXA LOSOP approved by EMSA. Completed Ketamine LOSOP approved by EMSA. Completed

Goal #4: ACS Verification of trauma centers system-wide

Objectives to Achieve Goal	Measure (s)	Timeline	Status
Hospital contracts were updated in 2017 to state they will achieve ACS Verification within contract term ending in 2020.	Provide support to those trauma centers that are not ACS verified. Perform evaluations in line with ACS site visits.	June 2020	As of January 2019, three of the four trauma centers are ACS Level II verified.

Goal #5: LEMSA to obtain Trauma center performance improvement plans from trauma centers

Objectives to Achieve Goal	Measure (s)	Timeline	Status
Receive will begin requesting annual trauma performance improvement plans from all four trauma centers.	All four Trauma centers will be responsible for sending the EMS Agency an internal trauma performance improvement plan for their individual trauma programs.	June 2020	Pending

Goal #6: REMSA to capture data and outcomes on trauma patients arriving to non-trauma centers in county and facilities out of the county/ state

Objectives to Achieve Goal	Measure (s)	Timeline	Status
Send non-trauma centers and out of county hospitals REMSA policy 5303- PRC Trauma patient registry form.	Send out quarterly to: Non-trauma centers x 13 Out of county facilities x 2 Out of state facilities x 1	January 2018 July 2018 November 2018	Complete Complete Pending

Goal #7: Publish Trauma Report

Objectives to Achieve Goal	Measure (s)	Timeline	Status
Publish five- year trauma report	Use trauma data from 2015- 2019 to publish countywide report	July 1, 2020	In progress

The following identifies the Pending goal-completion status from recent Trauma Plan Updates.

Trauma System Goals 2013	Goal met (Y/N)	Status as of 2015 update	2016 Trauma Plan update status	2017 Trauma Plan Update status	2018 Trauma Plan Update status
Grow into ACS verification	No	1. IVMC upgraded to a Level II trauma center 2. ACS site visits planned for DRMC, IVMC, and RCH in 2016.	In process. 25% met- RUHS-MC is the only verified Level II trauma center at this time	In progress. One ACS Verified Level II trauma center. Three trauma centers with ACS Verification visits in 2019.	75% complete. Three ACS Level II verified trauma centers. All to be verified by 2020.
Trauma System Goals 2016	Goal met (Y/N)	Status as of 2017 update			
Participate in Regional activities with ICEMA	Partial	3.1 Not met- implementation of new trauma database		**Pending**	**Pending- estimated January 2020**

Changes to Implementation Schedule

No scheduled changes to report

System Performance Improvement

Trauma Audit Committee (TAC):

Both Riverside and San Bernardino Counties participate in a regional quarterly Trauma Audit Committee, which includes Trauma Program Medical Directors, Trauma Program Directors, and Trauma Performance Improvement Nurses. A change that took place in 2018 was the addition of Pomona Valley Hospital Medical Center (Level II trauma center in Los Angeles EMS Agency's jurisdiction) to the audit committee. Some trauma patients originating in ICEMA's catchment area are transported to Pomona Valley; cases presented at TAC by Pomona Valley will be these. With the eight trauma centers, hospitals are on a rotation for chart exchange to peer review on the hospital level. System performance indicators are evaluated and updated on an annual basis (see Attachment). To provide loop closure for the trauma centers, the LEMSAs currently will send closure letters from the TAC committee with the adjudication. (Attachment E: Trauma Audit Committee peer review).

Other Issues

No relevant issues currently.

Attachments

A. Trauma Center Review Form ________ 13

B. IVMC ACS Level II Verification letter ________ 23

C. RCH ACS Level II Verification letter ________ 24

D. Inter-county agreements ________ 25

E. Trauma Audit Committee peer review ________ 27

F. References ________ 28

Attachment A: Trauma Center Review Form

Riverside EMS Agency Compliance tool- 2018					
	TRAUMA CENTER STANDARDS	**Level**	**Compliance**		Comments
	E = Essential (Title 22), D = Desired (Title 22), R=REMSA required	**II**	**yes**	**no**	
1	**Institution/ Organization:**				
2	The Joint Commission (TJC) Accreditation	E			
3	Licensed hospital in the State of California	E			
4	Basic or comprehensive emergency services with special permits	E			
5	1. A minimum of 1200 trauma program hospital admissions, or 2. A minimum of 240 trauma patients per year whose Injury Severity Score (ISS) is >15, or 3. An average of 35 trauma patients (with an ISS of >15) per trauma program surgeon per year				
6	A trauma research program				
7	An Accreditation Council on Graduate Medical Education (ACGME) approved surgical residency program				
8	**Trauma Program Medical Director:**	E			
9	Board Certified Surgeon	E			
10	Qualified Surgical Specialist (*Level IV may be a non-surgical qualified specialist)				
11	Must maintain trauma- related extramural continuing medical education as per the most recent ACS recommendations	R			
12	Current ATLS certification	R			
13	Responsibilities include but not limited to:				
14	Recommending trauma team physician privileges	E			
15	Working with nursing and administration to support needs of trauma patients	E			
16	Developing trauma treatment protocols	E			
17	Determining appropriate equipment and supplies	E			
18	Ensuring development of policies/procedures for domestic violence, elder/child abuse/neglect	E			

19	Having authority and accountability for QI peer review process	E			
20	Correcting deficiencies in trauma care or excluding from trauma call those team members who no longer meet standards	E			
21	Coordinating with local and State EMS agencies (level IV with local EMS agency only)	E			
22	Coordinating pediatric trauma care with other hospitals and professional services	E			
23	Assisting with the coordination of budgetary processes for trauma program	E			
24	Identifying representatives from neurosurgery, orthopaedic surgery, emergency medicine, pediatrics and other appropriate disciplines to assist in identifying physicians from their disciplines who are qualified to be members of the trauma program	E			
25	Using the expertise of representatives from neurosurgery, orthopaedics, emergency medicine, pediatrics and other appropriate disciplines	E			
26	**Trauma Program Manager**	E			
27	Qualifications are:				
28	Registered Nurse	E			
29	Dedicated FTE; Current in TNCC or ATCN; Completes 16 hr. of trauma education/yr.	R			
30	Provide evidence of educational preparation and clinical experience in the care of adult and/or pediatric trauma patient and administrative ability	E			
31	Responsibilities include but not limited to:				
32	Organizing services and systems necessary for multidisciplinary approach to the care of the injured patient	E			
33	Coordinating day-to-day clinical process and performance improvement of nursing and ancillary personnel	E			
34	Collaborating with trauma program medical director to carry out educational, clinical, research, administrative and outreach activities of the trauma program	E			
35	**Trauma Service**	E			
36	Implementation of requirements as specified under Title 22 Chapter 7 and provide for coordination with the local EMS agency	E			
37	**Trauma Team**				

38	A multidisciplinary team responsible for the initial resuscitation and management of the trauma patient	E			
39	Emergency Department/Trauma Team Nursing Staff				
40	Registered Nurse	R			
41	Expertise in adult and pediatric trauma care	E			
42	Maintains TNCC or ATCN	R			
43	6 hr./yr. of trauma nursing education	R			
44	ENPC (optional) or PALS	R			
45	Responsibilities include but not limited to:				
46	Capability of providing *immediate* initial resuscitation/management of the trauma patient	E			
47	Capability of providing *prompt* assessment, resuscitation and stabilization to trauma patients				
48	Ability to provide treatment or arrange for transportation to higher level trauma center	E			
49	**Trauma Data/Registry**				
50	Trauma registrar FTE requirements as per the most current ACS recommendations	R			
51	**Surgical Department (s), Division (s), Service (s), Sections (s)**				
52	Which include at least the following surgical specialties which are staffed by qualified specialists:				
53	General	E			
54	Neurologic (*May be provided through transfer agreement)	E			
55	Obstetric/Gynecologic	E			
56	Ophthalmologic	E			
57	Oral or maxillofacial or head and neck	E			
58	Orthopaedic	E			
59	Plastic	E			
60	Urologic	E			
61	**Non-surgical Department (s), Division (s), Service (s), Section (s):**				
62	Which include at least the following non-surgical specialties which are staffed by qualified specialists:				
63	Anesthesiology	E			
64	Internal Medicine	E			
65	Pathology	E			
66	Psychiatry	E			

67	Radiology	E					
68	Emergency Medicine, immediately available	E					
69	**Qualified Surgical Specialist (s):** available as follows:						
70	General Surgeon:	E					
71	Capable of evaluating and treating adult and pediatric trauma patients shall be immediately available for trauma team activation and promptly available for consultation	E					
72	Other Qualified Surgical Specialists on-call and *promptly* available:						
73	Neurologic (*Level III - May be provided through written transfer agreement)	E					
74	Obstetric/Gynecologic	E					
75	Ophthalmologic	E					
76	Oral or maxillofacial or head and neck	E					
77	Orthopaedic	E					
78	Plastic	E					
79	Reimplantation/microsurgery capability (may be provided through written transfer agreement)	E					
80	Urologic	E					
81	Residency Coverage:						
82	Surgical Specialists' requirements may be fulfilled by supervised senior residents	E					
83	Senior Resident shall:						
84	Be capable of assessing emergent situations in their respective specialty, and	E					
85	Be able to provide overall control and surgical leadership including surgical care if needed	E					
86	A staff trauma surgeon/surgeon with experience in trauma care shall be on-call and *promptly* available	E					
87	A staff trauma surgeon/surgeon with experience in trauma care shall be advised of all trauma patient admissions, participate in major therapeutic decisions, and be present in the ED for major resuscitations and in the OR for all trauma operative procedures	E					
88	Trauma Team Activation: Tiered activations are monitored and reviewed through the Performance Improvement (PI) process for accuracy of under/over triage. "Immediate response" is defined as 15 mins, 80% of the time; "Promptly" is defined as 30 mins, 80% of the time	R					

89	Surgical Consultations:						
90	Available for consultation or consultation and transfer agreements for adult and pediatric trauma patients **(in-house or through written agreements)** **REMSA note: EMTALA supersedes "written agreements" for higher level of care from the ED.*						
91	Burn Care	E					
92	Cardiothoracic - On-Call and *Promptly available*						
93	Cardiothoracic	E					
94	Pediatric - On-Call and *Promptly available*						
95	Pediatrics	E					
96	Reimplantation/microsurgery	E					
97	Spinal cord injury	E					
98	**Qualified Non-Surgical Specialist (Applies to all specialties)**						
99	*Residency Coverage*						
100	Emergency Medicine and Anesthesiology Specialists' requirements may be fulfilled by supervised senior residents.	E					
101	Senior Resident must be capable of assessing emergent situations in their respective specialty and initiating treatment	E					
102	Supervising physician with experience in trauma care shall be on-call and promptly available	E					
103	Supervising qualified specialists shall be advised of all trauma patient admissions, participate in major therapeutic decisions, and be present in the ED for major resuscitations (Anesthesiologists will be in the OR for all trauma operative procedure)	E					
104	Emergency Medicine:						
105	In-house and *Immediately Available*	E					
106	Board certified or recognized qualified specialists in emergency medicine	E					
107	ATLS Certification: Required for emergency medicine physicians boarded in other specialties	E					
108	Anesthesiology						
109	In-house 24 hours/day and *Immediately Available*						
110	On-call and *promptly available* with a mechanism to ensure presence in the OR when the patient arrives.	E					

111	Senior Resident or CRNA in-house supervised by Staff Anesthesiologist are *promptly* available at all times and present for all operations	E			
112	Radiology				
113	On Call and *Promptly Available*	E			
114	Other Non-Surgical Specialists Available for consultation:				
115	Cardiology	E			
116	Gastroenterology	E			
117	Hematology	E			
118	Infectious Diseases	E			
119	Internal Medicine	E			
120	Nephrology	E			
121	Neurology	E			
122	Pathology	E			
123	Pulmonary Medicine	E			
124	**Service Capabilities:**				
125	Radiological Service				
126	Radiological technician *immediately available* and capable of performing plain film and computed tomography	E			
127	Shall have a radiological technician *promptly available*				
128	Angiography and ultrasound services shall be *promptly* available	E			
129	Clinical Laboratory Service				
130	Comprehensive blood bank or access to community central blood bank	E			
131	Clinical laboratory services *immediately* available	E			
132	Clinical laboratory services *promptly* available				
133	Surgical Services				
134	Shall have an operating suite available or being utilized for trauma patients and has:	E			
135	A surgical service that has at least the following: (1) operating staff who are immediately available unless operating on trauma patients and back-up personnel who are *promptly* available.				
136	Operating staff, *promptly* available, and back-up staff who are promptly available unless operating on trauma patients. *Back up staff not required	E			

137	Appropriate surgical equipment and supplies as determined by the trauma program medical director	E			
138	Appropriate surgical equipment and supplies requirements which have been approved by the local EMS agency				
139	Cardiopulmonary bypass equipment				
140	Operating microscope				
141	**Basic or comprehensive emergency services with special permits**				
142	Designate an emergency physician to be member of trauma team	E			
143	Provide emergency services to adult and pediatric patients	E			
144	Personnel knowledgeable in the treatment of adult and pediatric trauma	E			
145	Designated trauma resuscitation area physically separated from other patient care areas and of adequate size to accommodate multi-system injured patient and equipment	R			
146	Appropriate equipment and supplies for adult and pediatric patients as approved by the director of emergency medicine in collaboration with the trauma program medical director	E			
147	Key controlled elevator, where necessary for immediate access between trauma resuscitation area and helipad, OR or radiology	R			
148	**In addition to the special permit licensing services, Trauma Centers shall have the following approved supplemental services:**				
149	Intensive Care Service				
150	Special permit licensing ICU service	E			
151	Qualified specialist in-house 24 hours/day *and immediately* available to care for the trauma ICU patient				
152	Qualified specialist *promptly* available to care for trauma patients in the ICU	E			
153	RN's caring for trauma patients must have completed TNCC, ATCN, TCAR (or REMSA approved course can substitute for TCAR) and have 6 hrs./2yr of trauma nursing education	R			
154	Qualified specialist may be a resident with 2 years of training who is supervised by staff intensivist or attending surgeon who participates in all critical decision making	E			
155	Qualified specialist (above) shall be a member of the trauma team	E			

156	Appropriate equipment and supplies determined by physician responsible for intensive care service and the trauma program medical director.	E			
157	Burn Center - in house or transfer agreement	E			
158	Physical Therapy Service:				
159	Personnel trained in physical therapy	E			
160	Equipped for acute care of critically injured patient	E			
161	Rehabilitation Center:				
162	Rehabilitation services shall be in-house or may be provided by written transfer agreement with a rehabilitation center	E			
163	Personnel trained in rehabilitation care	E			
164	Equipped for acute care of critically injured patient	E			
165	Respiratory Care Service:	E			
166	Personnel trained in respiratory therapy	E			
167	Equipped for acute care of critically injured patient	E			
168	Acute Hemodialysis Capability	E			
169	Occupational Therapy Service:	E			
170	Personnel trained in Occupational therapy	E			
171	Equipped for acute care of critically injured patient	E			
172	Speech Therapy Service	E			
173	Personnel trained in speech therapy	E			
174	Equipped for acute care of critically injured patient	E			
175	Social Service	E			
176	**Trauma Centers shall have the following services and programs (special license or permit not required)**				
177	Pediatric Service providing in-house pediatric trauma care shall have:				
178	PICU approved by CCS or a written transfer agreement with an approved PICU	E			
179	Hospitals without a PICU shall establish and utilize written criteria for consultation and transfer of pediatric patients needing intensive care	E			
180	A multidisciplinary team to manage child abuse and neglect	E			
181	Acute spinal cord injury - This service may be provided through in-house or written transfer agreement	E			
182	Organ Donor Protocol as described in Div.7, Ch. 3.5 of CHSC	E			

183	**Outreach Program to include:**						
184	Telephone and on-site physician consultations with physicians in the community and outlying areas	E					
185	Trauma prevention for general public	E					
186	**Continuing Education** in Trauma Care for:						
187	Provide ongoing education requirements as per the most current ACS recommendations for:	E					
188	Staff physicians	E					
189	Staff nurses	E					
190	Staff allied health personnel	E					
191	EMS personnel	E					
192	Other community physicians and health care personnel	E					
193	**Quality Improvement:**						
194	Must have a quality improvement process in place which includes structure, process and outcome evaluations	E					
195	Must have improvement process in place to identify root causes of problems	E					
196	Must have interventions to reduce or eliminate the causes	E					
197	Must take steps/actions to correct the problems identified	E					
198	*In addition, the process shall include:*						
199	A detailed audit of all trauma -related deaths, major complications and transfers (including interfacility transfer)	E					
200	A multidisciplinary trauma peer review committee that includes all members of the trauma team	E					
201	Participation in the trauma data management system	E					
202	Participation in the local EMS agency trauma evaluation committee	E					
203	A written system in place for patients, parents of minor children who are patients, legal guardians of children who are patients, and/or primary caretakers of children who are patients to provide input and feedback to hospital staff regarding the care provided to the child	E					
204	**Interfacility transfer of trauma patients:**						
205	Patients may be transferred between and from trauma centers providing that: (REMSA note: EMTALA supersedes Title 22 for higher level of care and the need for written transfer agreements; however,						

	repatriation agreements should be in writing.)						
206	Transfers shall be medically prudent as determined by the trauma physician of record	E					
207	Shall be in accordance with the local EMS Agency interfacility transfer policies	E					
208	Hospitals shall have written transfer agreements exists with receiving trauma centers	E					
209	Hospital shall develop written criteria for consultation and transfer of patients needing a higher level of care	E					
210	Hospitals which have repatriated trauma patients from a designated trauma center will provide the trauma center with all required information for the trauma registry, as specified by local EMS policy	E					
211	Hospitals receiving trauma patients shall participate in system and trauma center quality improvement activities for those trauma patients they have transferred	E					

Attachment B: IVMC ACS Level II verification letter

December 19, 2018

Bradley Neet
Chief Executive Officer
Inland Valley Medical Center
36485 Inland Valley Drive
Wildomar, CA 92592

Dear Mr. Neet,

The Committee on Trauma would like to extend its congratulations to the Inland Valley Medical Center on its verification as a Level II trauma center for a period of one year through November 6, 2019. The Verification Review Committee (VRC), a subcommittee of the Committee on Trauma of the American College of Surgeons, has very carefully reviewed the enclosed verification report written by Drs. Matthew Wall (lead reviewer) and Gail Tominaga after the visit of November 5 and 6, 2018. The VRC agrees with the report as it is written.

To extend the verification period an additional two years, the hospital must submit documentation that reflects the following:

- All emergency medicine physicians who are board certified or eligible in emergency medicine have successfully completed ATLS at least once.
- A formal call schedule is in place that ensures a backup consultant on-call is available when the on-call orthopaedic surgeon is unable to respond promptly. This must be demonstrated over the course of a 6-month period.

The documentation must be received prior to November 6, 2019, and may be submitted electronically.

The Committee on Trauma's certificate of verification will arrive under separate cover within the next several weeks.

Effective January 1, 2017, centers that are required to have a Focused by mail-in will be invoiced for the additional work. This fee is listed on our website at: https://www.facs.org/quality-programs/trauma/vrc/fees.

Thank you for your continued participation and support of the Verification, Review, & Consultation Program of the Committee on Trauma of the American College of Surgeons. As always, we will be glad to answer any questions you may have and look forward to working with your trauma center in the future.

Sincerely,

Daniel Margulies, MD, FACS
Chair, Verification Review Committee

William Marx, DO, FACS
Vice-Chair, Verification Review Committee

cc: Tito Gorski, MD, FACS
Lana Bordenkecher, RN, CCRN
Riverside County EMS Agency

AMERICAN COLLEGE OF SURGEONS
Inspiring Quality:
Highest Standards, Better Outcomes

100*years*

Attachment C: RCH ACS Level II verification letter

December 13, 2018

Patrick Brilliant
Chief Executive Officer
Riverside Community Hospital
4445 Magnolia Avenue
Riverside, CA 92501

Dear Mr. Brilliant:

The Committee on Trauma would like to extend its congratulations to Riverside Community Hospital on its verification as a Level II trauma center for a period of 3 years, expiring on November 9, 2021. The Verification Review Committee (VRC), a subcommittee of the Committee on Trauma of the American College of Surgeons, has very carefully reviewed the enclosed verification report written by Drs. Michael McGonigal (lead reviewer) and Mark Stevens after the visit of November 8 and 9, 2018.

The Committee on Trauma's certificate of verification will arrive under separate cover within the next several weeks.

Thank you for your continued participation and support of the Verification, Review, & Consultation Program of the Committee on Trauma of the American College of Surgeons. As always, we will be glad to answer any questions you may have and look forward to working with your trauma center in the future.

Sincerely,

Daniel Margulies, MD, FACS
Chair, Verification Review Committee

William Marx, DO, FACS
Vice-Chair, Verification Review Committee

cc: David Plurad, MD, FACS
Dina Elias, RN
Riverside County Emergency Medical Services Agency

Attachment D: REMSA and ICEMA inter-county agreement

August 14, 2019

Tom Lynch
Executive Director
Inland Counties Emergency Medical Services Agency
1425 South "D" Street
San Bernardino, CA 92415-0060

Dear Tom,

Riverside County would like to continue collaborating with San Bernardino County in accepting all specialty care patients (Trauma, Stroke, and STEMI) from the field. Riverside County EMS continues to remain committed to providing optimal patient care and outcomes for all of these patients. Reciprocal acceptance of specialty care patients from the field between both Riverside and San Bernardino Counties continues to be effective and a critical component between both systems.

Thank you for your ongoing partnership between REMSA and ICEMA.

Sincerely,

Trevor Douville
Director
EMS Administrator
Emergency Management Department

Mailing Address: 4210 Riverwalk Parkway • Suite 300 • Riverside, CA 92505
Phone: (951) 358-5029 • Fax: (951) 358-5160 • TDD: (951) 358-5124 • www.rivcoems.org

Inland Counties Emergency Medical Agency
1425 South D Street, San Bernardino, CA 92415-0060 ▪ (909) 388-5823 ▪ Fax (909) 388-5825 ▪ www.icema.net

Serving San Bernardino, Inyo, and Mono Counties
Tom Lynch, EMS Administrator
Reza Vaezazizi, MD, Medical Director

September 19, 2019

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SEP 25 2019
REMSA

Trevor Douville, Director
Riverside County Emergency Medical Services Agency
4210 Riverwalk Parkway, Suite 300
Riverside, CA 92505

Dear Mr. Douville:

ICEMA would also like to continue collaborating with Riverside County in accepting all specialty care patients (Trauma, Stroke and STEMI) from the field. ICEMA remains committed to providing optimal patient care and outcomes for all of these patients. Reciprocal acceptance of specialty care patients from the field between San Bernardino and Riverside Counties continues to be effective and critical component between both systems.

Thank you for your ongoing partnership between ICEMA and REMSA.

Sincerely,

Tom Lynch
EMS Administrator

TL/jlm

c: File Copy

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Attachment E: Trauma Audit Committee peer review

2018 Peer Review Indicators

A. Unanticipated Outcome with Opportunity for Improvement

B. Preventable Deaths

C. Trauma Continuation of Care/ Under-triage

D. Pre-hospital trauma care, Appropriateness of triage criteria and performance

E. Hospital trauma care

*Trauma centers to submit a minimum of 2 cases from indicator A-E.

February- ARMC, DRMC, LLUMC-P, PVMC

May- IVMC, LLUMC, RCH, RUHS

August- ARMC, DRMC, LLUMC-P, PVMC

November- IVMC, LLUMC, RCH, RUHS

F. Any additional cases needing further review may be submitted to TAC by any of the Trauma centers

Cases must be submitted to Loreen or Shanna two weeks prior to TAC. If you would like another facility to review your case in their peer review, please look at the assigned schedule for chart swapping

Loreen Gutierrez, RN, Specialty Care Coordinator, at (909) 388-5803 or via e-mail at Loreen.Gutierrez@cao.sbcounty.gov or Shanna Kissel, RN Trauma Systems Manager @ 951-358-5548 or via email at shkissel@rivco.org

Attachment F: References

Committee on Trauma, American College of Surgeons. (2014). Resources for Optimal Care of the Injured Patient.

Riverside County EMS Agency 2018 Policy Manual. Retrieved from www.remsa.us/policy/2018.

End of document