RIVERSIDE COUNTY
Emergency Medical Care Committee

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

PMAC Physician Representative
1.a. Stephen Patterson, MD

Hospital Association Representative
1.b. Megan Barajas

Riverside County Medical Association
1.c. James Rhee, MD

County Contracted Emergency Ambulance
1.d. Peter Hubbard

Ambulance Association Representative
1e. Vacant

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)

Riv Co Law Enforcement Agency Admin Assoc
1.j. Vacant

PMAC Prehospital Representative
1.k. Magdalena Robles

Riverside Co Fire Dept Rep
1.l. Vacant

Supervisorial District One
1.m. David McCarthy

Supervisorial District Two
1.m. Stan Grube

Supervisorial District Three
1.m. Jerry Holldber

Supervisorial District Four
1.k. Claudia Galvez

Supervisorial District Five
1.m. Jock Johnson

The next meeting of the EMCC is on:

Wednesday, March 31, 2021
9:00 AM – 10:30 AM
Microsoft Teams
Public Conference Call Information (Audio Only)
(951) 465-8390 United States, Riverside
Conference ID: 174 263 915#

1. CALL TO ORDER
   Chair—Stan Grube

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

3. APPROVAL OF MINUTES (5 Minutes)
   August 12, 2020 Draft Minutes—Stan Grube (Attachment A)

4. UNFINISHED / NEW BUSINES (30 Minutes)
   4.1 Membership – Dan Bates (Attachment B)
   4.2 EMCC 2021 Proposed Schedule – Dan Bates (Attachment C)
   4.3 COVID-19 Situation Update – Dan Bates/Misty Plumley
   4.4 RUHS Public Health Report – Marie Weller

5. EMS AGENCY REPORTS (20 Minutes)
   5.1 Administrative Unit Updates – Dan Bates
   5.2 Clinical Unit Updates – Shanna Kissel/Leslie Duke
   - STEMI Update 2020 (Attachment D)
   - Stroke Update 2020 (Attachment E)
   - Trauma Update 2020 (Attachment F)

   5.3 Emergency Medical Dispatch (EMD) Update – James Lee
   - Summary Report: EMD 2020 (Attachment G)

   5.4 Data Unit Updates – Catherine Farrokhi

6. OTHER REPORTS (20 Minutes)
   6.1 PMAC - Steven Patterson, MD / Magdalena Robles
   6.2 EMD Preparedness Division – Dan Bates
   6.3 EMD Operations Division - Mark Bassett

7. OPEN COMMENTS (5 Minutes)

8. NEXT MEETING / ADJOURNMENT (1 Minute)
   TBD.

NOTICE: Items on the agenda: Any member of the public may address this meeting of the Emergency Medical Care Committee or any items appearing on the agenda by raising their hand to be recognized by the Chair or acting Committee Chairperson. If a member of the public desires to speak, they must do this before or anytime during discussion of the item. All comments are to be directed to the Emergency Medical Care Committee and shall not consist of any personal attacks. Members of the public are expected to maintain a professional, courteous decorum during their comments. A three-minute limitation shall apply to each member of the public, unless the Chair extends such time. No member of the public shall be permitted to "share" his/her three minutes with any other member of the public.

Items not on the agenda: Any member of the public may address this meeting of the Emergency Medical Care Committee on any item that does not appear on the agenda, but is of interest to the general public and is an item upon which the Committee may act. All comments are to be directed to the Emergency Medical Care Committee and shall not consist of any personal attacks. Members of the public are expected to maintain a professional, courteous decorum during their comments. A three-minute limitation shall apply to each member of the public who wishes to address the Committee on a matter not on the agenda. No member of the public shall be permitted to "share" his/her three minutes with any other member of the public. Usually, any items received under this heading are referred to the staff for further study, research, completion, and/or future action.

It is the responsibility of the members of the committee to disseminate information from EMCC meetings to the organizations they represent. Any questions regarding meeting or agenda items may be addressed to Trevor Douville, Riverside County EMS Agency at (951) 358-5029.

Next meeting:
TBD.
EMCC agendas with attachments are available online at www.rivcoems.org

The County of Riverside does not discriminate on the basis of disability in admission to, access to, or operations of its programs, services or activities. It is committed to ensuring that its programs, services, and activities are fully accessible to and usable by people with disabilities. If you have a disability and need assistance, contact Trevor Douville at (951) 358-5029.

EMCC meetings are audio recorded to facilitate dictation for minutes.

FOR CONSIDERATION BY EMCC

DATE: March 31, 2021

TO: EMCC

FROM: Dan Bates, Deputy EMS Administrator

SUBJECT: 2021/2022 Membership Date

ACTION: Review of Term Dates

Sec.	#	Representing	Current Membership	2021-2022 Term Dates
1.a	1	PMAC Physician	Stephen Patterson	07/01/18—06/30/21
1.b	2	HASC	Megan Barajas	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	Vacant	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	Vacant	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.	Vacant	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	07/01/20—06/30/23
1.m	16	District Four	Vacant	07/01/20—06/30/23
1.m	17	District Five	Jock Johnson	07/01/18—06/30/21

FOR CONSIDERATION BY EMCC

RIVERSIDE COUNTY
Emergency Medical Care Committee

2021
EMCC MEETING SCHEDULE
Proposed

	OPT#1	OPT#2	TIME	LOCATION
EMCC	**03/31/2021**		**9am – 10:30 am**	**Microsoft Teams**
EMCC	**06/23/2021**	**06/30/2021**	**9am – 10:30 am**	**TBD.**
EMCC	**09/22/2021**	**09/29/2021**	**9am – 10:30 am**	**TBD.**
EMCC	**12/08/2021**	**12/15/2021**	**9am – 10:30 am**	**TBD.**

FOR CONSIDERATION BY EMCC

DATE: March 31, 2021

TO: EMCC

FROM: Shanna Kissel, MSN, RN - Assistant Nurse Manager

SUBJECT: 2020 STEMI System Update

ACTION: Received and File Information

Please see attached Riverside County EMS Agency 2020 STEMI System Update.

RIVERSIDE COUNTY EMS AGENCY

November 5, 2020

Dave Duncan, M.D.
EMS Authority Director
10901 Gold Center Drive, Suite 400
Rancho Cordova, CA 95670-6073

Dear Dr. Duncan,

Enclosed is Riverside County EMS Agency's 2020 ST- Elevated Myocardial Infarction (STEMI) system update. To date, the number of STEMI receiving centers in the county remain at six. The attached update includes changes in the STEMI critical care system, goals and objectives, and system quality improvement activities. The STEMI center standards for Riverside county are concurrent with regulations as well as additional requirements implemented by our Medical Director.

The STEMI system continues to develop through the utilization of STEMI data to drive policy change, best practices and improvements in patient care. Additionally, the Riverside County STEMI system strives to maximize communication and technology to optimize patient outcomes through enhancements in STEMI recognition, center activation and the realization of efficiencies within the STEMI patient care continuum.

REMSA looks forward to your review and comments on the Riverside County's 2020 STEMI plan update.

Sincerely,

Trevor Douville
EMS Administrator
Riverside County EMS Agency

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

RIVERSIDE COUNTY EMERGENCY MEDICAL SERVICES AGENCY (REMSA)

ST-ELEVATION MYOCARDIAL INFARCTION (STEMI) SYSTEM UPDATE 2020

Reza Vaezazizi, MD, REMSA Medical Director
Trevor Douville, EMS Administrator
Shanna Kissel, MSN, RN, Assistant Nurse Manager
Leslie Duke, BSN, RN, Specialty Care Coordinator

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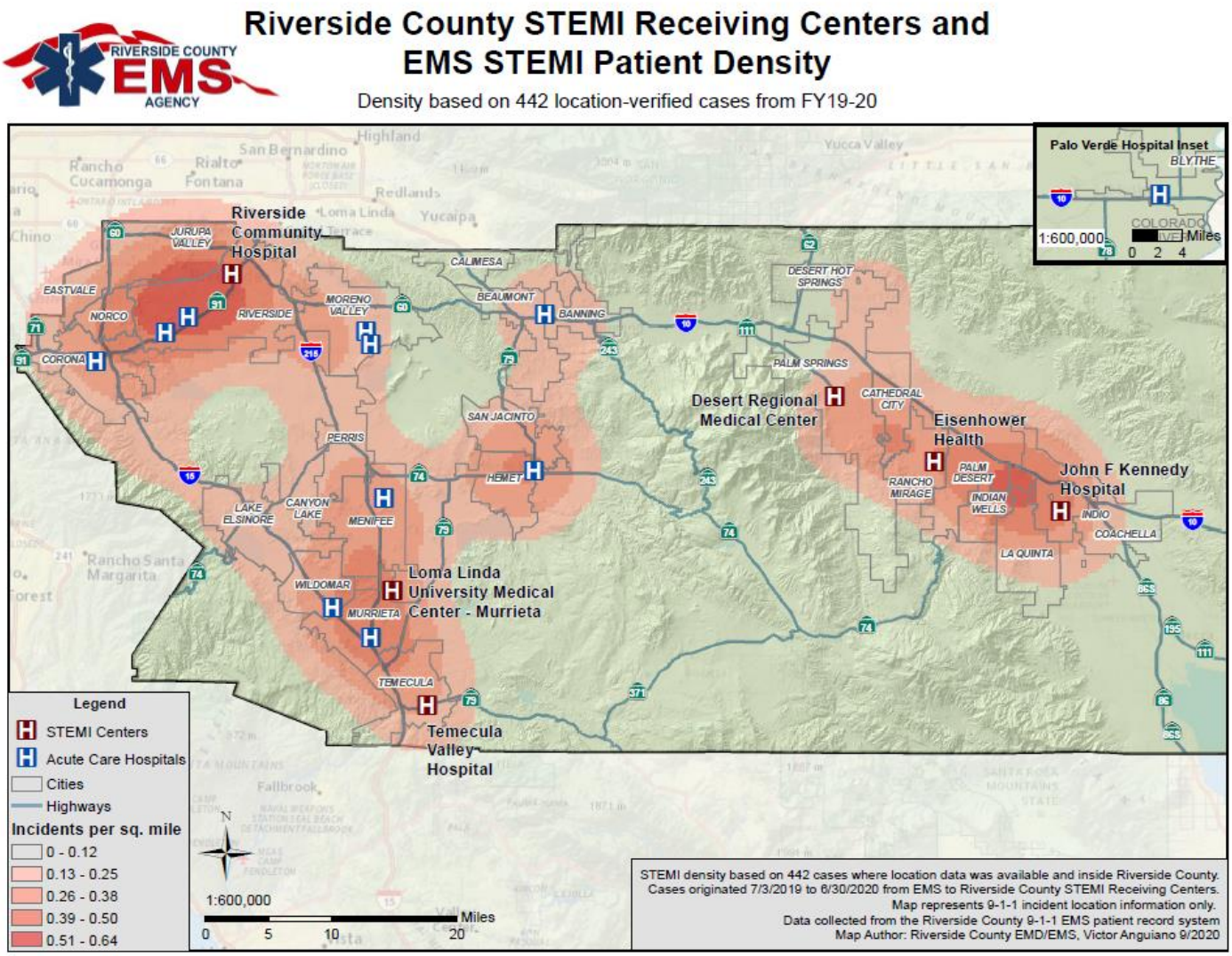
STEMI System Summary

The Riverside County EMS Agency (REMSA) STEMI Care System Plan was developed in compliance with Section 1798.160, et seq., Health and Safety Code. REMSA's organized system of care for STEMI patients has been in place since 2007 with the last update approved by the State EMS Authority (EMSA) in 2019. This current plan update reflects the 2019- 2020 data and information for Riverside County.

Riverside County's jurisdiction includes six (6) STEMI centers, all of which have achieved accreditations from the American College of Cardiology as Chest Pain Centers with Percutaneous Coronary Intervention (PCI).



REMSA collects data using the Imagetrend Patient registry, which has been utilized since July 2019. All STEMI centers provide the clinical outcome of each STEMI patient, which links back to the pre-hospital ePCR, giving EMS providers feedback and outcomes of patients transported. STEMI centers submit data concurrently, which is analyzed and reported by REMSA. There is an ongoing plan in place to align and begin submission of State mandated STEMI data in the future. STEMI data is updated quarterly and can be found here: http://www.remsa.us/documents/programs/stemi/. Meeting minutes, STEMI center applications and quarterly data can also be found there.

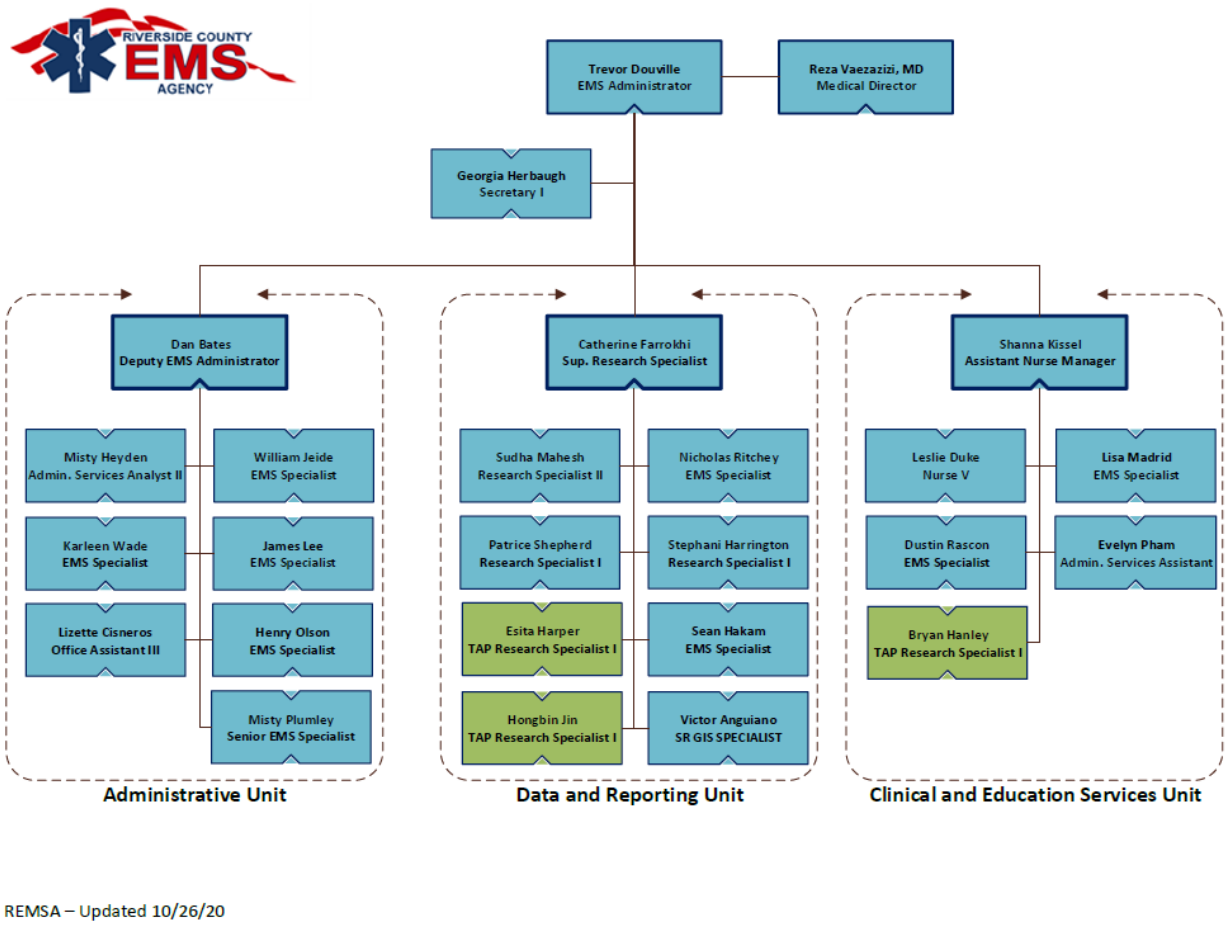
STEMI System Changes

The RIVCO STEMI program is an active and ever evolving service to the community. Based upon our data findings, STEMI System Advisory Committee recommendations and improvements in care provision we make modifications to the system. The following items were actions taken during this reporting period.

- STEMI Specialty Care Coordinator
- STEMI System Outreach- EMS education
- Policy Revisions and Additions
- System Performance Improvement

STEMI Specialty Care Coordinator

With CA STEMI regulations in place, and realignment complete, REMSA has funded a Specialty Care Nurse Coordinator role to maintain regulatory oversight and provide direction to all STEMI centers. The Specialty Care Coordinator is part of the clinical team and acts as a program administrator, and liaison, between hospital stroke programs and EMSA. In collaboration with the REMSA Medical Director, REMSA administration and the clinical and education units, the Specialty Care Coordinator facilitates stroke committee activities related to performance improvement and quality improvement indicators.



STEMI System Outreach- EMS Education

A core goal of the Riverside County STEMI Critical Care System Plan is to disseminate ongoing STEMI education to EMS field providers. Continuing STEMI-specific education is designed to reduce the incidence of disease, improve health outcomes, and enhance the quality of life for patients who have experienced a STEMI. Educational modules will be distributed bi-annually and will communicate feedback from STEMI System Advisory Committee process improvement initiatives directly to field providers. Major components of the education module will include 12-lead EKG interpretation, documentation, policy, communication, and performance metrics for the STEMI system. The frequency with which these courses are offered will be re-evaluated and adjusted as needed. Our mission is to collaboratively and continuously improve the delivery of high-quality care to those experiencing a STEMI. The STEMI Program Managers from STEMI centers, and EMS provider agencies, are heavily involved in conducting this mandated education.

Policy Revisions and Additions

All STEMI patient treatment policies are routinely updated with current standards of care and vetted through the Pre-hospital Medical Advisory Committee (PMAC).

Suspected Acute Coronary Syndrome (ACS) - Policy #4402 (http://www.remsa.us/policy/), is the field treatment policy that details patient care activities for suspected ACS and STEMI patients. It was updated in 2020 to streamline the care pathway and increase the efficiency of field treatment and transport. Mandatory base contact with a STEMI base hospital was also removed.

System Performance Improvement

Process improvement involves the practice of identifying, analyzing, and improving existing processes to optimize performance, meet best practice standards, or simply improve quality.

The STEMI System Advisory Committee participates in case review as a continuous performance improvement activity. Case review indicators consist of system issues, unanticipated outcomes, morbidity and mortality related to procedural complications, deviation from policy or protocols, and any cases needing further review or loop closure. The six (6) STEMI centers are on a rotation for case review presentations. As a future goal to provide loop closure for the STEMI centers, REMSA will send closure letters from the STEMI committee with adjudication, if any.

Retrospective data collection and analysis lies at the heart of quality improvement. Data aids in understanding how well the systems work, identifying potential areas for improvement, setting measurable goals, and monitoring the effectiveness of change.

As a system for the STEMI program, we look at data elements that align with our set goals and objectives. Data is compiled from the 2019 CARES Utstein report (Attachment A), cardiac arrest report, and Image Trend, and is presented at the STEMI CQI Committee meeting. This data is also used to drive CQI processes to improve outcome performance measures. These can call be found here: http://www.remsa.us/documents/programs/stemi/.

Number and Designation of STEMI Centers

All six (6) STEMI centers have identical contracts that establish~~es~~ a written agreement between the facilities and REMSA.

Facility	Contract Term	Agreement Type
Desert Regional 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

STEMI System Goals and Objectives

REMSA has developed the following goals and objectives for the STEMI System calendar year 2020.

Goal #1: Quality of Care

Goal	Objectives	Timeline	Status
Improve the quality and service delivered to STEMI patients	• Identify best practices through evidence-based data that can be implemented as needed • Evaluate and reduce time from symptom onset to definitive care for STEMI patients • Develop data reports from the patient registry that inform the STEMI system to include: o First medical contact to balloon time o False negative rate o True positive rate o Incident quality review performed	Ongoing	Ongoing

	○ Mortality		

Goal #2: Reduce EMS to Balloon times

Goal	Objectives	Timeline	Status
Reduce E2B times	• Monitor EMS to balloon times and reduce to under 90 min 95% of the time	Quarterly	Deferred goal until registry system is updated to pull data to obtain accurate E2B times

Goal #3: EMS Education

Goal	Objectives	Timeline	Status
Provide education to increase identification of STEMI patients	• Deliver up-to-date and relevant education to EMS professionals • Sharing current performance metrics	April 1, 2021	In process

Goal #4: Increase EMS pre-notification

Goal	Objectives	Timeline	Status
Increase EMS pre-activation	• Increase EMS notification to 95% of the time • Increase pre-activation of catheterization lab teams	Quarterly	Goal updated to reflect the intent to increase pre-activation of catheterization lab teams

Goal #5: Direct transport of ROSC patients to STEMI Center

Goal	Objectives	Timeline	Status
Direct transport of stable ROSC patients to STEMI Centers	• On scene evaluation for transport to closest STEMI center • Patients with stable ROSC and aggressive resuscitation management will be transported to closest STEMI center • Decrease time to catheterization at a specialized cardiac center • Improve patient outcome after ROSC	Quarterly	Ongoing

Goal #6: Provide EMS Feedback

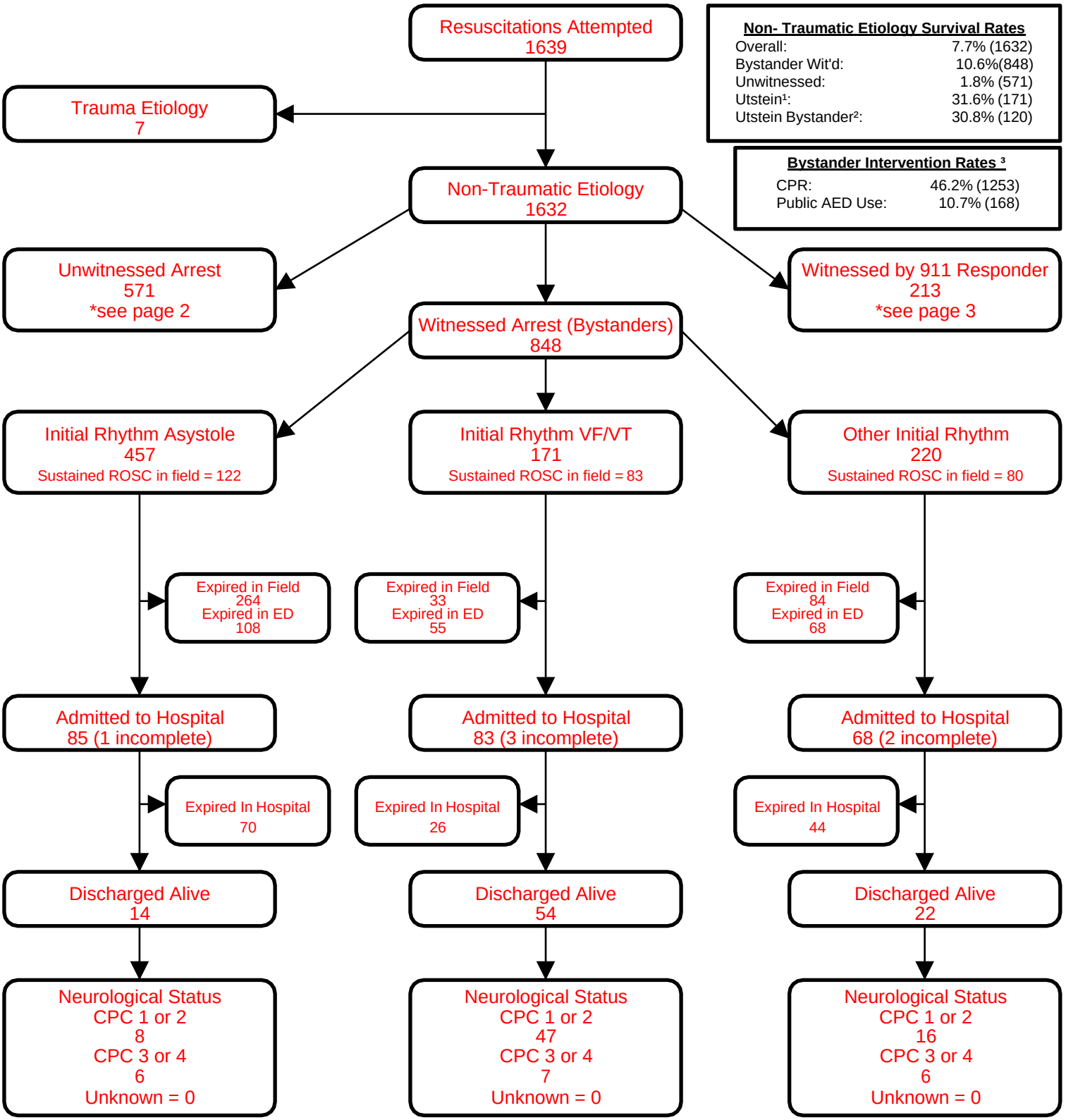
Goal	Objectives	Timeline	Status
Provide EMS feedback	• Increase awareness of patient outcomes • Improve performance • Professional growth • Increased awareness of patient outcomes	Completed Dec. 2019	Goal met, will continue to provide EMS feedback on all cases

Attachment A

Utstein Survival Report

All Agencies

Agency Group: Riverside County EMS Agency | Service Date: 01/01/19 - 12/31/19



Non- Traumatic Etiology Survival Rates

Overall:	7.7% (1632)
Bystander Wit'd:	10.6%(848)
Unwitnessed:	1.8% (571)
Utstein[1]:	31.6% (171)
Utstein Bystander[2]:	30.8% (120)

Bystander Intervention Rates [3]

CPR:	46.2% (1253)
Public AED Use:	10.7% (168)

[1]Utstein: Witnessed by bystander and found in shockable rhythm.

[2]Utstein Bystander: Witnessed by bystander, found in shockable rhythm, and received some bystander intervention (CPR and/or AED application).

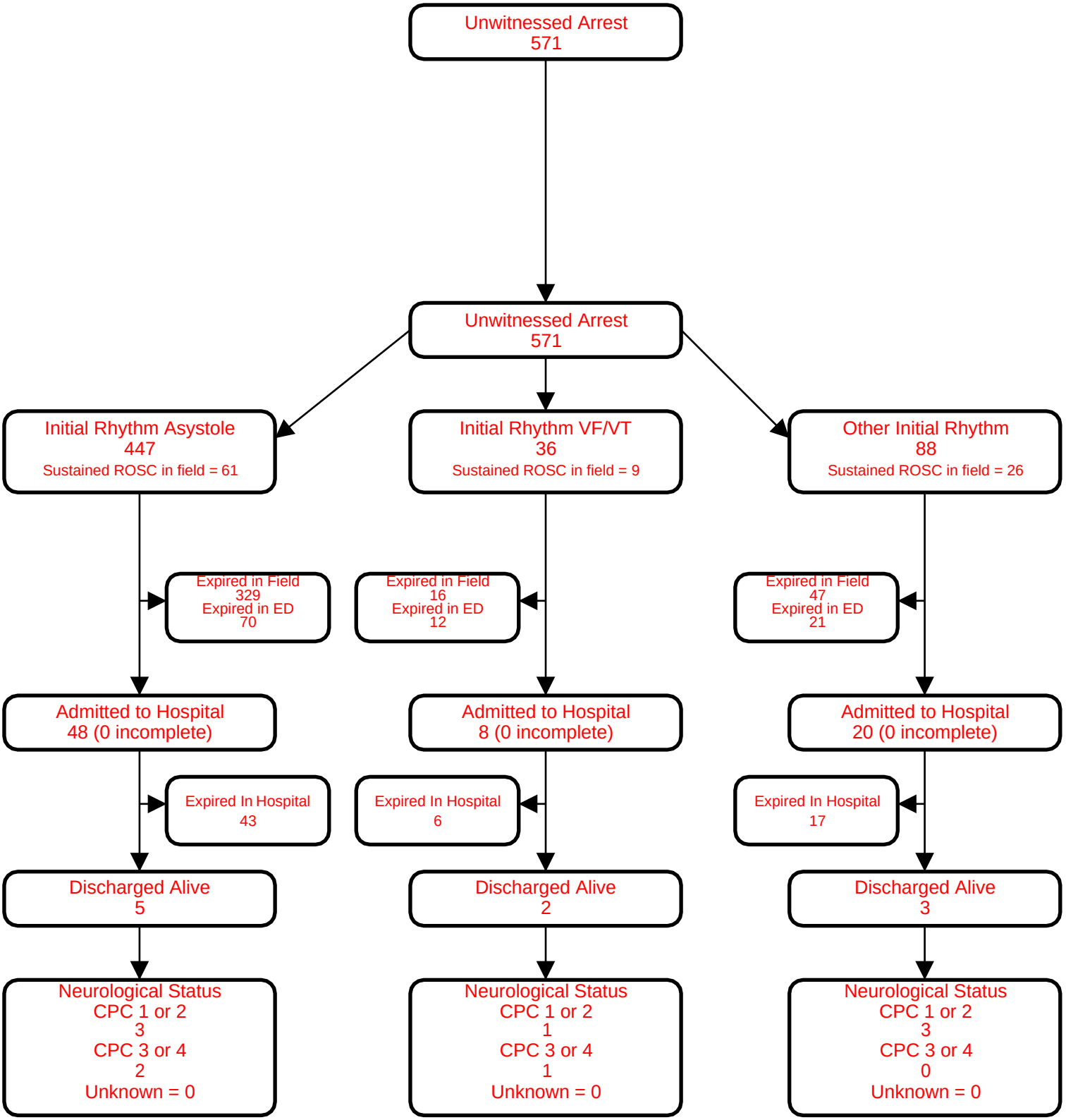
*[3]Bystander CPR rate excludes 911 Responder Witnessed, Nursing Home, and Healthcare Facility arrests. Public AED Use rate excludes 911 Responder Witnessed, Home/Residence, Nursing Home, and Healthcare Facility arrests. *Only data from the previous calendar year is fully audited. Data from the current calendar year is dynamic.*

Attachment A

Utstein Survival Report

All Agencies

Agency Group: Riverside County EMS Agency | Service Date: 01/01/19 - 12/31/19

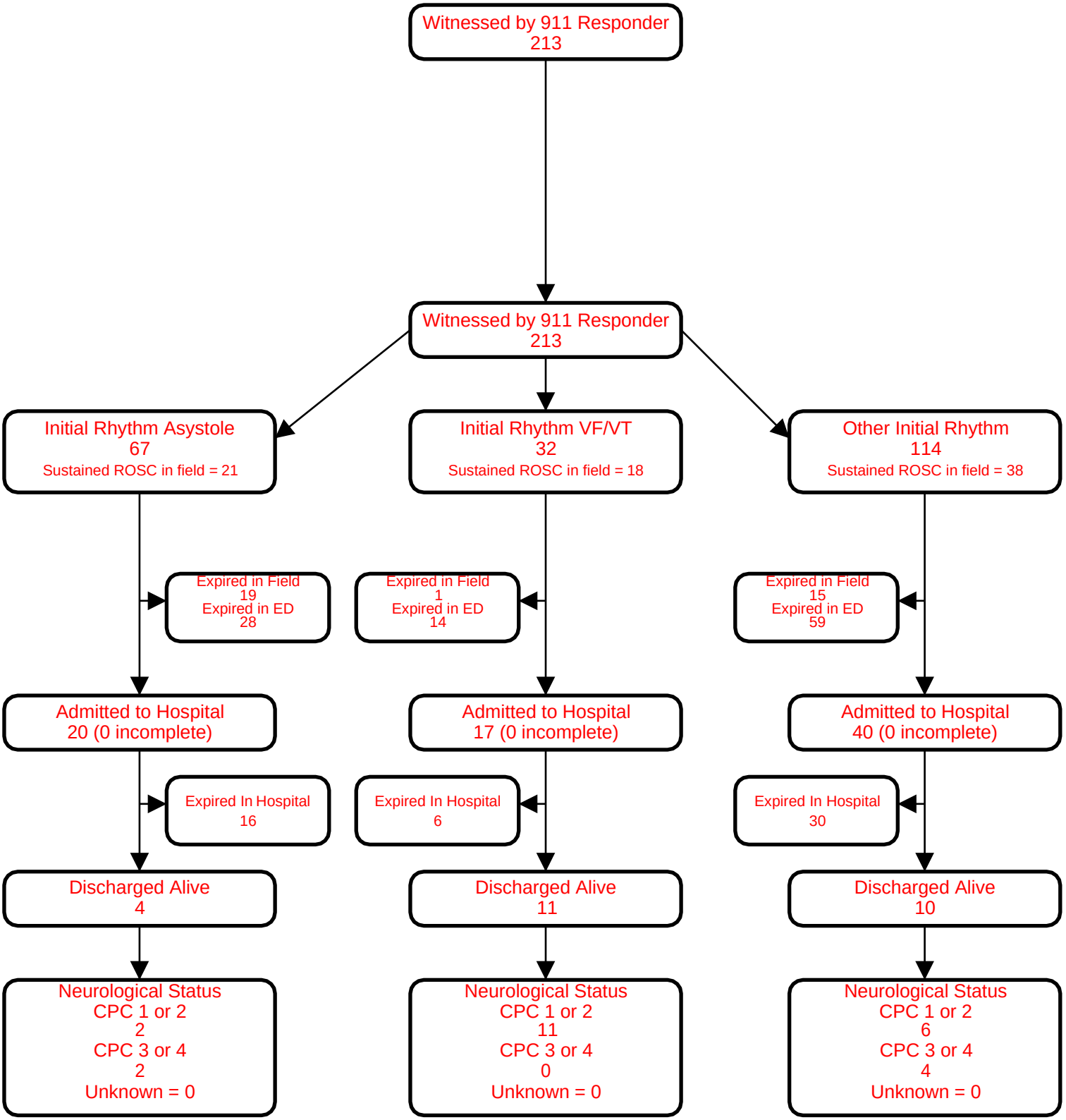


Attachment A

Utstein Survival Report

All Agencies

Agency Group: Riverside County EMS Agency | Service Date: 01/01/19 - 12/31/19



References

California Code of Regulations, Title 22. Social Security, Division 9. Prehospital Emergency Medical Services, Chapter 7.1 ST-Elevation Myocardial Infarction Critical Care System. (2020). CCR Title 22, Division 9, Chapter 7.1 ST-Elevation Myocardial Infarction Critical Care System

Riverside County EMS Agency (2020). *Policy Manual*. http://www.remsa.us/policy/

Riverside County EMS Agency System-based Clinical and Operational Performance Evaluation (SCOPE) dashboard. (2020). http://www.remsa.us/documents/programs/stemi/

End of document

FOR CONSIDERATION BY EMCC

DATE: March 31, 2021

TO: EMCC

FROM: Shanna Kissel, MSN, RN - Assistant Nurse Manager

SUBJECT: 2020 Stroke Plan Update

ACTION: Received and File Information

Please see attached Riverside County EMS Agency 2020 Stoke Plan Update.

RIVERSIDE COUNTY
EMS
AGENCY

November 5, 2020

Dave Duncan, M.D.
EMS Authority Director
10901 Gold Center Drive, Suite 400
Rancho Cordova, CA 95670-6073

Dear Dr. Duncan,

Riverside County's Stroke Program has been evolving since 2014, currently there are 10 Primary and two (2) Comprehensive stroke centers. In the attached system update, REMSA outlines the system goals and objectives, new changes to the Stroke system in the county, and stroke performance improvement activities. All Stroke Centers in Riverside county are held to the current state Stroke regulations as well as additional requirements implemented by our Medical Director.

Stroke system data collected through the registry continues to drive policy change, best practices and improvements in patient care. The Riverside County Stroke system strives to maximize communication and technology to optimize patient outcomes through enhancements in Stroke recognition, center activation and the realization of efficiencies within the Stroke patient care continuum.

REMSA looks forward to your review and comments on Riverside County's 2020 Stroke Plan update.

Sincerely,

Trevor Douville
EMS Administrator
Riverside County EMS Agency

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

RIVERSIDE COUNTY EMERGENCY MEDICAL SERVICES AGENCY (REMSA)

STROKE SYSTEM UPDATE 2020

Reza Vaezazizi, MD, REMSA Medical Director
Trevor Douville, EMS Administrator
Shanna Kissel, MSN, RN, Assistant Nurse Manager
Leslie Duke, BSN, RN, Specialty Care Coordinator

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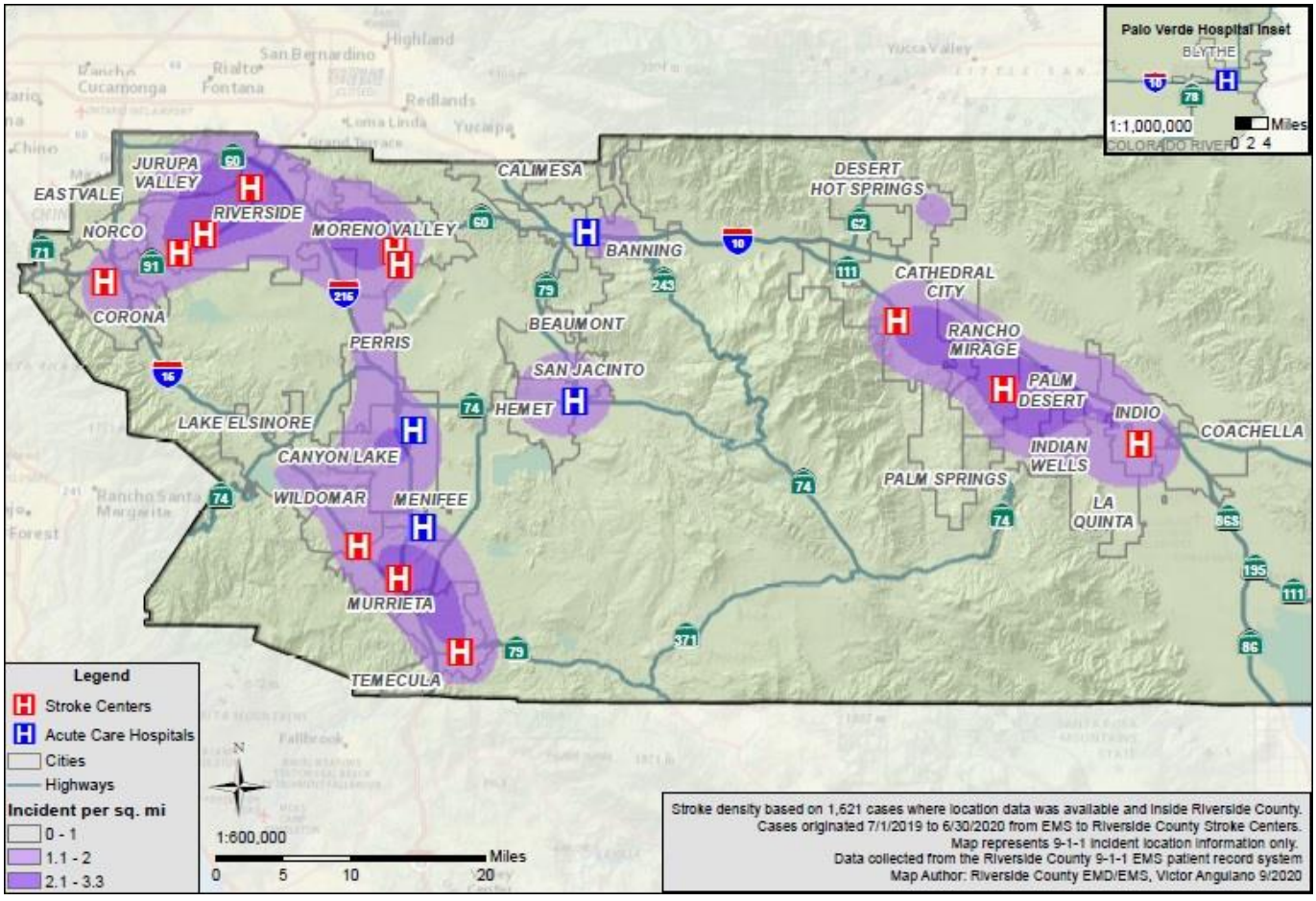
Stroke System Summary

The Riverside County EMS Agency (REMSA) Stroke Care System Plan was developed in compliance with Section 1797.107, et seq., Health and Safety Code. REMSA's organized system of care for stroke patients has been in place since 2014. The initial stroke plan was written and approved by the State EMS Authority (EMSA) in 2019. This current Stroke plan update reflects the 2019- 2020 data and information for Riverside County.

Riverside County's jurisdiction includes 10 primary stroke centers, all of which have achieved Advanced Primary Stroke certifications from The Joint Commission (TJC). Two (2) Stroke centers are currently Det Norske Veritas-Germanischer Lloyd (DNV-GL) certified Comprehensive Stroke Centers.

EMS Stroke Patient Density Received by Riverside County Stroke Centers
July 2019 to June 2020 - N = 1,621



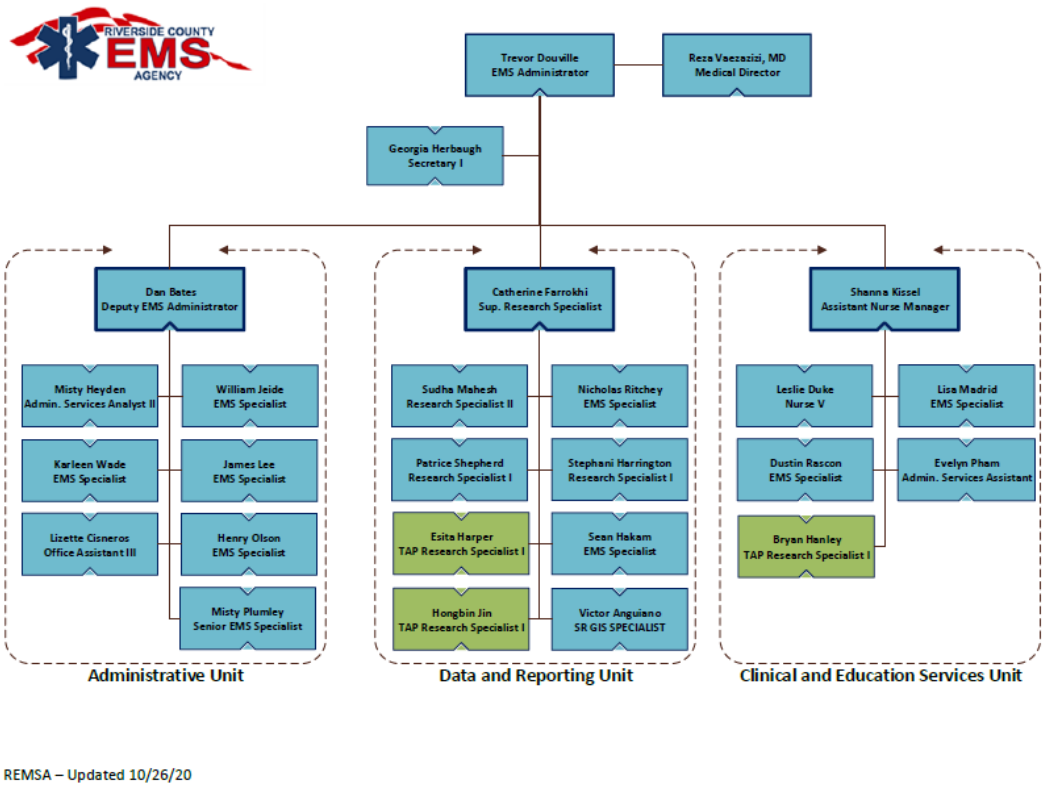
REMSA collects data using the Imagetrend Patient registry, which has been utilized since July 2019. All stroke centers provide the clinical outcome of each stroke patient which links back to the pre-hospital ePCR, giving EMS providers feedback and outcomes of patients transported. Stroke centers submit data concurrently, which is analyzed and reported by REMSA. There is an ongoing plan in place to align and begin submission of State mandated Stroke data in the future. Stroke data is updated quarterly and can be found here: http://www.remsa.us/documents/programs/stroke/ Meeting minutes, stroke center applications, and quarterly data can also be found there.

Changes in Stroke System

- REMSA Organization
- Stroke System Outreach-EMS education
- Policy Revisions and Additions

Riverside County EMS Agency Organization

With California Stroke regulations in place, and realignment complete, REMSA has funded a Specialty Care Nurse Coordinator role to maintain regulatory oversight and provide direction to all Stroke centers. The Specialty Care Coordinator is part of the clinical team and acts as a program administrator, and liaison, between hospital stroke programs and EMSA. In collaboration with the REMSA Medical Director, REMSA administration, and the clinical and education units, the Specialty Care Coordinator facilitates stroke committee activities related to performance improvement and quality improvement indicators.



REMSA – Updated 10/26/20

Stroke System Outreach- EMS Education

A core goal of the Riverside County Stroke Critical Care System Plan is to disseminate ongoing stroke education to EMS field providers. Continuing stroke-specific education is designed to reduce the incidence of disease, improve health outcomes, and enhance the quality of life for stroke patients. Educational modules will be distributed bi-annually and will communicate feedback from the Riverside County Stroke System Advisory Committee process improvement initiatives directly to field providers. Major components of the education module will include stroke pathophysiology, stroke screening tools, history taking, documentation and a review of current performance metrics for the stroke system. Our mission is to collaboratively and continuously improve the delivery of high-quality care to those suffering from an acute stroke. The Stroke Program Managers from stroke centers, and EMS provider agencies, are heavily involved in conducting this mandated education.

Policy Revisions and Additions

Stroke patient treatment policies are routinely evaluated and updated with current standards of care and vetted through the Pre-hospital Medical Advisory Committee (PMAC).

Stroke Center Standards-Policy #5701 (www.remsa.us/policy/5701.pdf) details the requirements and expectations of each of the designated stroke centers within the county. Two additions were made to the policy for performance standards in 2020. To ensure uninterrupted services, each designated center must have a minimum of two (2) CT scanners and one (1) MRI machine. In addition, Thrombectomy-capable and Comprehensive centers must have a minimum of two (2) interventional suites capable of performing mechanical thrombectomy and/or neuro-endovascular procedures. The new requirements align with current standards of certification.

Ambulance Diversion-Policy #6103 (http://www.remsa.us/policy/), describes criteria and processes for the diversion of ground and air ambulances in Riverside County using the ReddiNet as the primary communication tool for ambulance diversion. Revisions to this policy included the removal of references to stroke diversion criteria and indicate that diversion status may be triggered only in cases of Internal Disaster, with immediate notification to the REMSA Duty Officer. Consequently, ambulance diversion of stroke patients was effectively eliminated.

Number and Designation Level of Stroke Centers

Stroke Center	Stroke Designation Level_	Agreement Type	Contract Term
Corona Regional Medical Center	Primary	County of Riverside Primary Stroke Center Designation Agreement	July 1, 2020-June 30, 2023
Desert Regional Medical Center	Comprehensive	County of Riverside Comprehensive Stroke Center Designation Agreement	July 1, 2020-June 30, 2023
Eisenhower Health	Primary	County of Riverside Primary Stroke Center Designation Agreement	July 1, 2020-June 30, 2023
Inland Valley Medical Center	Primary	County of Riverside Primary Stroke Center Designation Agreement	July 1, 2020-June 30, 2023
John F. Kennedy Memorial Hospital	Primary	County of Riverside Primary Stroke Center Designation Agreement	July 1, 2020-June 30, 2023
Kaiser Permanente-Moreno Valley	Primary	County of Riverside Primary Stroke Center Designation Agreement	July 1, 2020-June 30, 2023

Kaiser Permanente-Riverside	Primary	County of Riverside Primary Stroke Center Designation Agreement	July 1, 2020-June 30, 2023
Parkview Hospital	Primary	County of Riverside Primary Stroke Center Designation Agreement	July 1, 2020-June 30, 2023
Rancho Springs Medical Center	Primary	County of Riverside Primary Stroke Center Designation Agreement	July 1, 2020-June 30, 2023
Riverside Community Hospital	Comprehensive	County of Riverside Comprehensive Stroke Center Designation Agreement	July 1, 2020-June 30, 2023
Riverside University Health System-Medical Center	Primary	County of Riverside Primary Stroke Center Designation Agreement	July 1, 2020-June 30, 2023
Temecula Valley Hospital	Primary	County of Riverside Primary Stroke Center Designation Agreement	July 1, 2020-June 30, 2023

System Performance Improvement

Process improvement involves the practice of identifying, analyzing, and improving existing processes to optimize performance, meet best practice standards, or simply improve quality.

The Stroke System Advisory Committee participates in case review as a continuous performance improvement activity. Case review indicators consist of system issues, unanticipated outcomes, morbidity and mortality related to procedural complications, deviation from policy or protocols, and any case(s) needing further review or loop closure. The 12 stroke centers are on a rotation for case review presentations. As a future goal to provide loop closure for the stroke centers, REMSA will send closure letters from the stroke committee with adjudication, if any.

Retrospective data collection and analysis lies at the heart of quality improvement. Data aids in understanding how well the systems work, identifying potential areas for improvement, setting measurable goals, and monitoring the effectiveness of change. Robust data systems, with the ability to report clinical indicators and performance measures, are a key tool to accomplish performance improvement activities. The goal is to connect data from across the continuum of care, from pre-hospital to in-hospital to post-hospital disposition, in order to optimally evaluate patient outcomes.

Data elements that align with the set goals and objectives are compiled and presented at the stroke QI Committee meetings, and on our stroke dashboard, located here: http://www.remsa.us/documents/programs/stroke/

Stroke System Goals and Objectives

REMSA has developed the following goals and objectives for the Stroke System calendar year 2020.

Goal #1: Designate additional Stroke centers

Goal	Objective	Timeline	Status
Equally designated specialty centers in the community. Decrease disability after stroke.	Designate: • One additional primary stroke center • Two comprehensive stroke centers • One additional Thrombectomy Receiving Center	July 2020 July 2020 Pending	Complete Complete Postponed due to pandemic

Goal #2: EMS Feedback

Goal	Objective	Timeline	Status
Provide EMS feedback	• Increase awareness of patient outcomes • Improve performance • Professional growth • Increased awareness of patient outcomes	Completed Dec. 2019	Complete Goal met, will continue to provide EMS feedback on all cases by using the stroke registry

Goal #3: No Diversion of stroke patients

Goal	Objective	Timeline	Status
Decrease time to treatment at a specialty care center	• Percentage of direct transport to a stroke center.	April 2021	In progress

Goal #4: Dedicated recorded phone line

Goal	Objective	Timeline	Status
All designated stroke centers to have a dedicated EMS phone line	• By 2021, all 12 stroke centers must have a dedicated EMS phone line for stroke patients. • Review EMS calls for areas of improvement	July 1, 2021	In progress-8 of 12 stroke centers have dedicated phone lines.

Goal #5: EMS Education

Goal	Objective	Timeline	Status
Provide education to increase identification of Stroke patients	• Monitor mLAPSS negative EMS patients with discharge diagnosis of stroke (false negative rate) • Increase proper documentation of LAMS score to evaluate need of field triage to higher level of care • Stroke committee reporting of identified opportunities for improvement related to pertinent patient history • False negative rate vs true positive rate • Deliver up-to-date and relevant education to EMS professionals • Sharing current performance metrics	April 1, 2021	In progress

Scheduled changes: By July 2021, stroke centers will need to have a dedicated EMS recorded line. Currently there are only four (4) hospitals that still need to meet this goal.

System changes: REMSA has identified the need for an additional stroke center in the Central zone and an interventional-capable stroke facility in the Southwest zone. These needs will help reduce transportation times to an appropriate stroke center and reduce time to needle and/or intervention. REMSA is continuing to work with medical centers in these areas to achieve this goal.

Hemet Valley Medical Center located in the Central zone has expressed interest in becoming a primary stroke center. Additionally, Temecula Valley Hospital, located in the Southwest zone, intends to achieve thrombectomy-capable designation by 2021. REMSA continues to collaborate with these medical centers to ensure successful compliance with the relevant designation criteria.

Other Issues: No relevant issues currently.

References

Riverside County EMS Agency 2020 Policy Manual. http://www.remsa.us/policy/

California Code of Regulations, Title 22. Social Security, Division 9. Prehospital Emergency Medical Services, Chapter 7.2 Stroke Critical Care System. https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=I85A8AB796B854EC3B8B93707B6D386F8&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default)

Riverside County EMS Agency System-based Clinical and Operational Performance Evaluation (SCOPE) dashboard. http://www.remsa.us/documents/programs/stroke/.

End of document

FOR CONSIDERATION BY EMCC

DATE: March 31, 2021

TO: EMCC

FROM: Shanna Kissel, MSN, RN - Assistant Nurse Manager

SUBJECT: 2020 Trauma System Update

ACTION: Received and File Information

Please see attached link for the 2020 Trauma System Update.

http://remsa.us/documents/plans/REMSATraumaPlan2020.pdf

RIVERSIDE COUNTY EMERGENCY MEDICAL SERVICES AGENCY

TRAUMA SYSTEM UPDATE 2020

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

Table of Contents

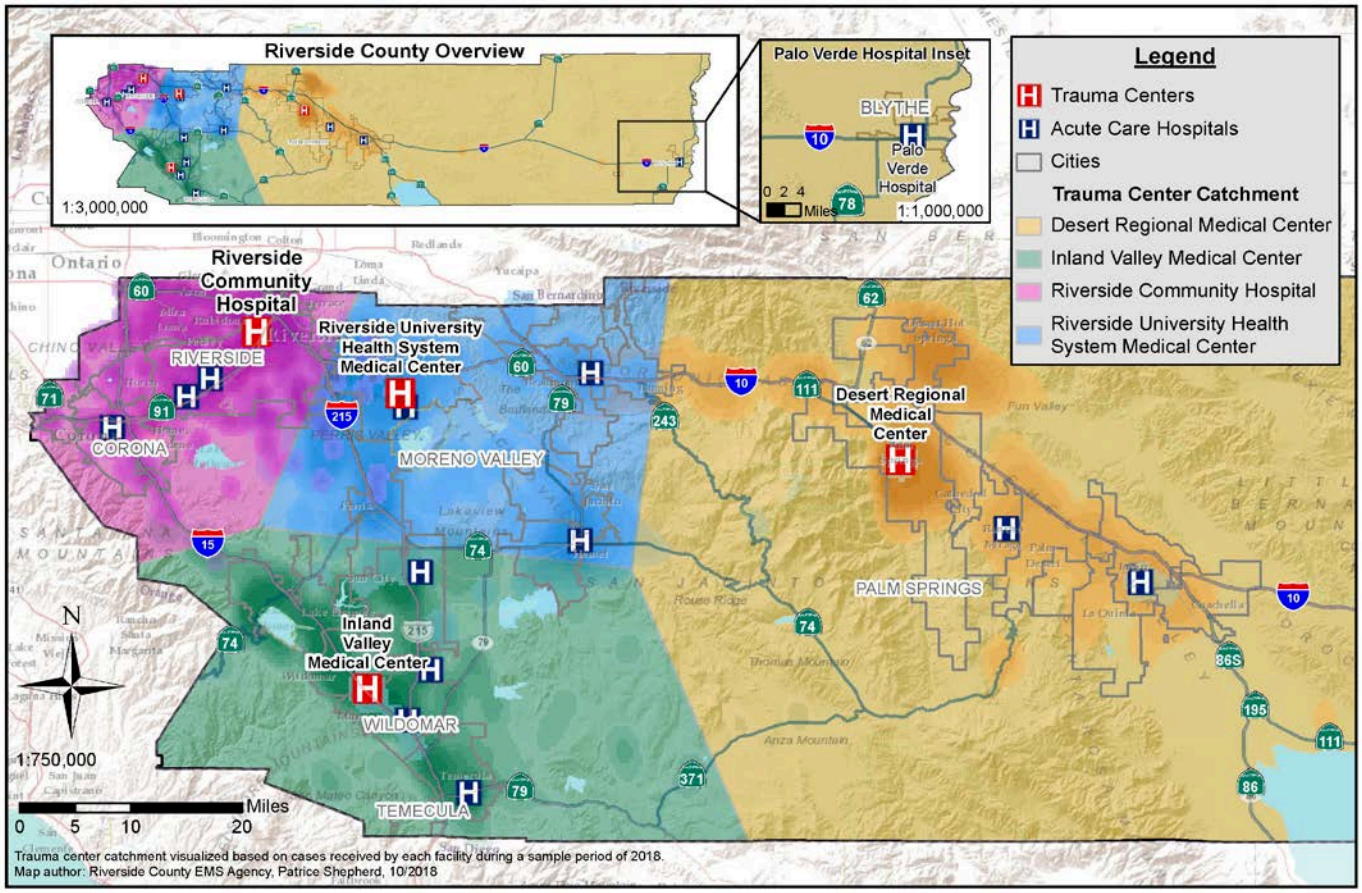
Trauma System Summary

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 2019. This current Trauma Plan update reflects the 2019 data and information for Riverside County.

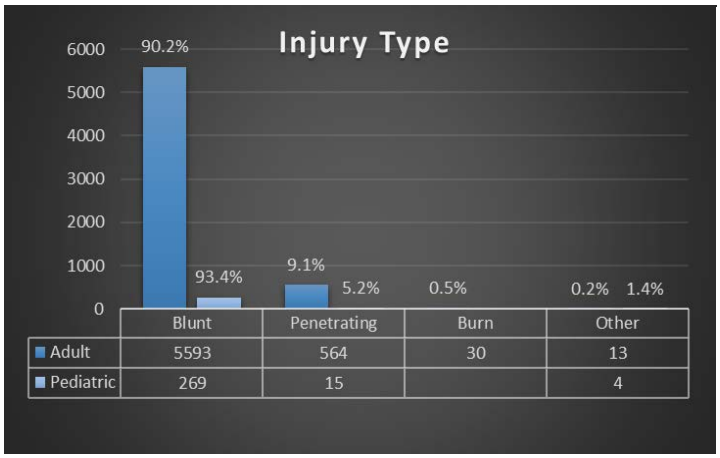
Riverside County's jurisdiction includes one (1) Level I Trauma Center and three (3) Level II Trauma Centers--one of which is a Level II Pediatric Trauma Center (PTC), geographically located in the central region of the County. Catchment areas of the four trauma centers have not changed and are distributed evenly respective to each region's population density. Based on the trauma center data, number of facilities and locations within the county, there is no need for additional trauma centers. Riverside is unique with the placement of the trauma centers with one in the Coachella valley, one in the central region, one in the southern region and one in the northwest region. Additionally, just to the north, in San Bernardino, there are two (2) trauma centers – one (1) Adult and Pediatric Level I and one (1) Adult Level II designated centers.

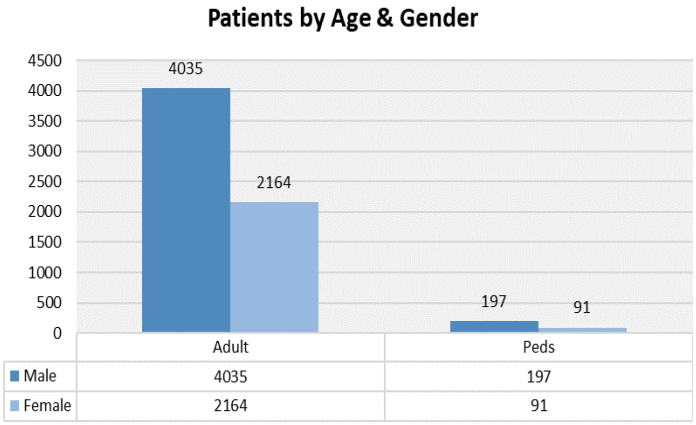
RIVERSIDE COUNTY EMS AGENCY

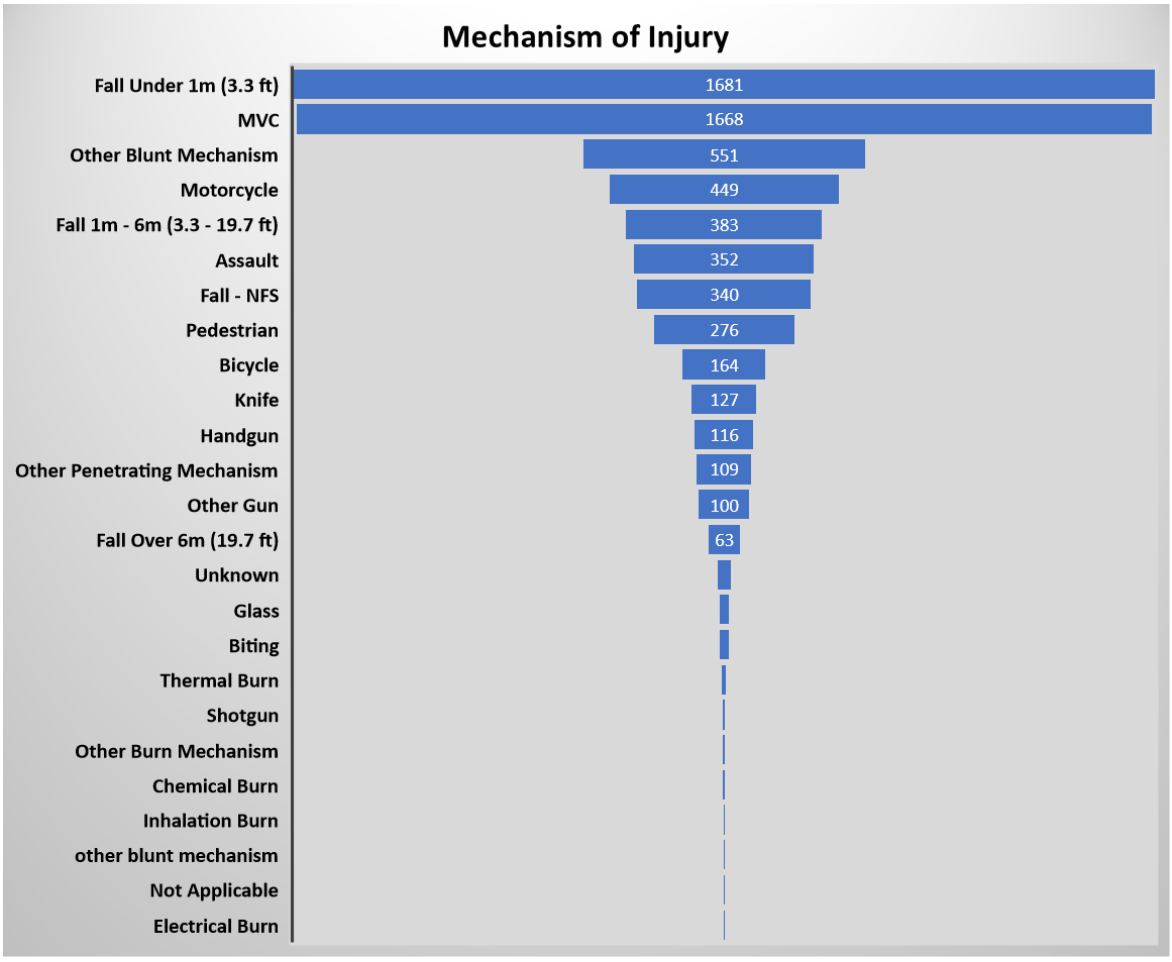
Riverside County Trauma Center Catchment Areas



2019 Riverside County Trauma Demographics





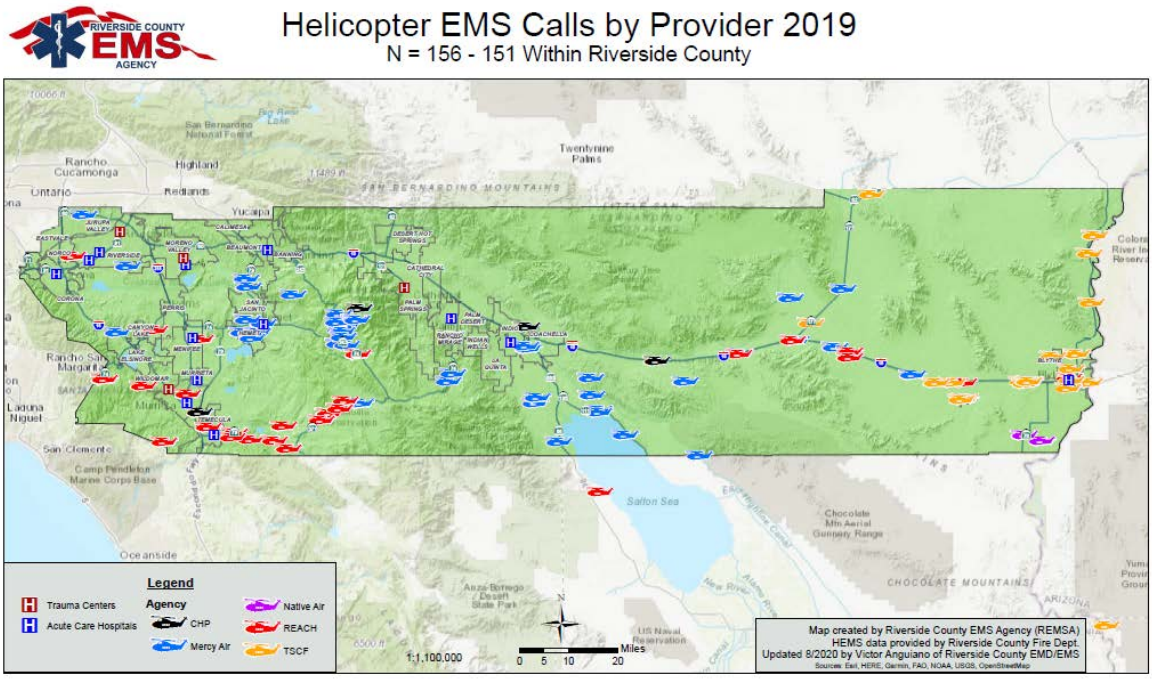


**Mechanism of Injury counts not listed above:*

Unknown- 28 *Biting- 19* *Shotgun- 7* *Chemical burn- 5* *Other blunt- 4* *Electrical Burn- 2*
Glass- 20 *Thermal burn- 11* *Other burn mechanism- 6* *Inhalation burn- 4* *Not applicable- 3*

Helicopter EMS (HEMS)

In 2019, there were 159 HEMS transports. Trauma continues to be the leading cause of HEMS transports with 114 calls. 72% of the total number of cases included Adult trauma, Pediatric trauma and Burn injury. Where transports via ground ambulance would cause a delay in hospital care and treatment, HEMS is utilized.



Changes in Trauma System

- American College of Surgeons – Committee on Trauma (ACS-COT) Verifications
- Inter-county Trauma Systems
- Trauma Patient Registry
- Policy Revisions and Additions
- Trauma System Injury Prevention
- System Quality Improvement

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

A primary 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 is one (1) newly designated Level I and three Level II-designated trauma centers; three of the four are Level II ACS-verified. ACS verification remains a contractual obligation, and compliance with standards are evaluated during site surveys every three (3) years. Due to COVID-19 activities, verification visits for 2020 have been postponed for one (1) year. Per the College, this currently affects only two (2) of four (4) trauma centers in Riverside County.

A. Desert Regional Medical Center (DRMC) had a consultation visit April 2017. DRMC's 2020 verification visit has been postponed until 2021 due to COVID-19.
B. Inland Valley Medical Center (IVMC) maintains ACS Level II verification. A re-verification survey will take place in 2021.

C. Riverside University Health System - Medical Center (RUHS- MC) maintains ACS Level II Adult verification. RUHS's 2020 Level I verification survey has been postponed until 2021 due to COVID-19.
D. Riverside Community Hospital (RCH) maintains ACS Level II verification. RCH's verification in November 2021 will be for Level I.

Inter-county Trauma Systems

REMSA and the 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 all 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 continues to be reviewed and updated on an annual basis. (Attachment A: Inter-County agreements). Additionally, REMSA has expanded its relationship with Orange County EMS by participating in their ACS System Consultation as well as working with Orange County Global Medical Center, in Orange County, to capture trauma patients crossing county borders.

Trauma Patient Registry

Currently, REMSA uses two (2) trauma registries, Digital Innovations *Collector*® (DI CV5) and ImageTrend's (IT) Patient Registry. In 2020/2021, REMSA will be transitioning away from DI CV5 and begin using IT's trauma patient registry exclusively. With this change, REMSA will be able to perform patient-matching of EMS records, allowing outcomes to be shared with prehospital providers. REMSA has, and continues to, collect more data elements in the trauma registry than what is required by the National Trauma Data Bank (NTDB). The data elements will continue to be reviewed and updated on an annual basis to align with NTDB requirements. The NTDB data dictionary is embedded in the registry elements. Additionally, REMSA will be utilizing the IT patient registry to house the patient data from non-trauma centers that receive trauma patients, and for those facilities that line the Orange County/Riverside County border (REMSA policy #9302- *Prehospital Receiving Center Trauma Patient Registry* form can be found here: http://www.remsa.us/policy/. Currently, only one (1) of four (4) trauma centers are directly entering data into the IT patient registry.

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 to align treatment protocols, as trauma patients are frequently transported across county lines. The discussion surrounding REMSA Policy #5301 (*Trauma Triage Indicators and Destination)* was initiated at the end of 2018, specifically for the Adult penetrating traumatic arrests. The conversation continued into 2019, with policy and education finalized in October 2019 (http://www.remsa.us/policy/). All Adult penetrating traumatic arrest incidents were reviewed and reported on for a six (6) month time frame following implementation.

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 (5) or greater. This study took place over the course of four (4) months, was approved for local optional scope of practice and placed into policy September 2018. Results of the Ketamine study were published in August 2020. The article can be found at:https://www.cureus.com/articles/33489-evaluation-of-safety-and-efficacy-of-prehospital-paramedic-administration-of-sub-dissociative-dose-of-ketamine-in-the-treatment-of-trauma-related-pain-in-adult-civilian-population.

Trauma System Injury Prevention

Injury Prevention is now one of the goals REMSA has created for 2021. The Preparedness Division, under the Emergency Management Department (EMD), is working with the Injury Prevention Coordinators at two of the four trauma centers to provide public education with the *Stop the Bleed (STB) Campaign*. The goal, for ~~the~~ public education, is to offer these courses four (4) times per year. The number of times these courses are offered will be evaluated and increased as needed. EMD STB courses were on hold in 2020 due to the COVID-19 pandemic.

Additionally, in using the trauma data and analysis from the trauma registries, REMSA will be partnering with the Department of Public Health Injury Prevention (DOPH-IP) to address and educate the public on identified topics every month. From a system level, the goal is to educate the public about specific injuries that are seen at our trauma centers using the REMSA and EMD websites. With this collaborative effort between the DOPH-IP, hospitals, and stakeholders, REMSA can focus on prevention and education of Riverside County as a whole.

System Quality Improvement

REMSA continues to monitor and analyze trauma data from both the electronic patient care record and the trauma registries. In 2019, REMSA began tracking, and continues to track, destinations of trauma patients, time intervals, and if base hospital contact was made in traumatic arrest patients. (Attachment B: Traumatic Arrest Report). This report helps drive EMS education and policy changes as it is reviewed and vetted through multiple clinical meetings on a quarterly basis

.

In October 2019, REMSA made a policy change for penetrating traumatic arrest patients where base hospital contact was no longer needed if a patient presented with specific criteria. These cases were reviewed for six (6) months for appropriateness and timeliness.

Number and Designation Level of Trauma Centers

Hospital	Trauma Designation Level	Designation/ Verification
DRMC Palm Springs, CA	II	Adult designation
IVMC Wildomar, CA	II	ACS Level II Adult
RCH Riverside, CA	I	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 trauma centers at this time.

System changes: Based on trauma center data analysis, and current catchment areas, REMSA does not anticipate the need for any additional trauma centers.

RUHS-MC has expressed interest in becoming a Level I ACS Verified Trauma Center. 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 2019-2020:

Goal #1: Collaborate with DOPH-IP services for trauma education

Objectives to Achieve Goal	Measure (s)	Timeline	Status
Work with Injury Prevention services on public education	Provide educational materials to the citizens of the county on a monthly basis using trauma system data	2021 Jan | Feb | Mar | Apr May | June | July | Aug Sept | Oct | Nov | Dec	Pending

Goal #2: All trauma centers to upload into IT Patient Registry

Objectives to Achieve Goal	Measure (s)	Timeline	Status
Upload all trauma data to IT Patient Registry	All four trauma centers to upload NTDB and REMSA data to IT Patient Registry	December 2020	Pending- one facility currently does direct data entry

Goal #3: System-wide ACS Verification of trauma centers

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.	December 2021	As of July 2020, three of the four trauma centers are ACS Level II verified.

Goal #4 Designate higher level trauma centers within Riverside county

Objectives to Achieve Goal	Measure (s)	Timeline	Status
Perform trauma center audits based on regulatory requirements	Designate two (2) Level II trauma centers as Level I	July 2022	50% complete- RCH designated in June 2020. RUHS- pending designation

Goal #5: Receive performance improvement plans from all trauma centers

Objectives to Achieve Goal	Measure (s)	Timeline	Status
Begin requesting annual trauma performance improvement plans from all four (4) trauma centers.	All four Trauma centers will be responsible for sending REMSA an internal trauma performance improvement plan for their individual trauma programs.	June 2021	Pending – on hold due to COVID -19 activities

Goal #6: Capture data and outcomes on trauma patients arriving at non-trauma centers in and out of Riverside County

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	June 2019 September 2019 February 2020 May 2020 August 2020 November 2020	Complete Complete Complete 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 2021	In progress- on hold due to COVID-19 activities

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	2019 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.	75% complete.

Changes to Implementation Schedule

No scheduled changes to report

Other Issues

No relevant issues currently.

Attachment A

RIVERSIDE COUNTY EMS AGENCY

October 15, 2020

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

October 30, 2020

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

Attachment B

Traumatic Cardiac Arrest- 1/1/2019- 9/30/2020

"911 Response", "Cardiac arrest during EMS event=Yes", Cardiac arrest Etiology="Trauma"

		2019				2020			Average
		Qtr1	*Qtr2*	*Qtr3*	*Qtr4*	*Qtr1*	*Qtr2*	*Qtr3*	
	Total Incidents	112	159	153	147	137	129	175	**145**
Age	Average Age	39	40	42	44	39	41	42	**41**
	Median Age	37	40	40	40	35			**38**
By Age group	0-9	8 7%	14 9%	10 7%	2 1%	7 5%	6 5%	12 7%	**8 6%**
	10-14	1 1%		3 2%	1 1%	1 1%	4 3%	2 1%	**2 1%**
	15-24	10 9%	26 16%	10 7%	16 11%	23 17%	17 13%	14 8%	**17 11%**
	25-34	32 29%	20 13%	35 23%	41 28%	34 25%	38 29%	36 21%	**34 23%**
	35-44	17 15%	27 17%	26 17%	18 12%	26 19%	16 12%	46 26%	**25 17%**
	45-54	19 17%	26 16%	19 12%	22 15%	15 11%	7 5%	17 10%	**18 12%**
	55-64	6 5%	30 19%	24 16%	24 16%	9 7%	12 9%	17 10%	**17 12%**
	65-79	16 14%	13 8%	22 14%	16 11%	8 6%	20 16%	18 10%	**16 11%**
	80+	3 3%	3 2%	4 3%	7 5%	10 7%	9 7%	13 7%	**7 5%**
By Ambulance Zone	Northwest Zone	31 28%	41 26%	40 26%	39 27%	46 34%	40 31%	38 22%	**39 27%**
	Desert Zone	34 30%	32 20%	32 21%	30 20%	18 13%	18 14%	38 22%	**29 20%**
	Southwest Zone	15 13%	29 18%	21 14%	20 14%	19 14%	16 12%	29 17%	**21 15%**
	Central Zone	16 14%	25 16%	29 19%	22 15%	25 18%	27 21%	30 17%	**25 17%**
	San Jacinto Zone	6 5%	18 11%	16 10%	24 16%	20 15%	22 17%	22 13%	**18 13%**
	Pass Zone	7 6%	6 4%	7 5%	5 3%	4 3%	3 2%	7 4%	**6 4%**
	Mountain Plateau Zone	1 1%	4 3%	0%	5 3%	4 3%	1 1%	10 6%	**4 3%**
	Palo Verde Zone	2 2%	3 2%	8 5%	2 1%	1 1%	2 2%	1 1%	**3 2%**
Injury Mechanism	Blunt only	58 52%	99 62%	73 48%	78 53%	76 55%	82 64%	80 46%	**78 54%**
	Penetrating	21 19%	29 18%	40 26%	36 24%	34 25%	19 15%	46 26%	**32 22%**
	Blunt and penetrating	4 4%	2 1%	3 2%	3 2%	3 2%	3 2%	3 2%	**3 2%**
	Burn			1 1%	1 1%			1 1%	**1 1%**
	Blunt and Burn	2 2%			0%	4 3%		2 1%	**3 2%**
	Other	19 17%	18 11%	25 16%	16 11%	10 7%	13 10%	33 19%	**19 13%**
	Not documented	8 7%	11 7%	11 7%	13 9%	10 7%	12 9%	10 6%	**11 7%**
Odomeater Reading	Total Incidents documented Odometer reading	28	30	31	29	25	20	25	**27**
	Sum of Odometer Reading	180	160	168	296	259	172	229	**209**
	Average of Odometer Reading	6	5	5	10	10	9	9	**8**
	Max of Odometer Reading	15	14	25	26	26	20	25	**22**

	2019								2020						Average	
	Qtr1		*Qtr2*		*Qtr3*		*Qtr4*		*Qtr1*		*Qtr2*		*Qtr3*			
Total Transports Dispo:Treated and Transported by this unit	**28**		**30**		**31**		**29**		**25**		**20**		**25**		**27**	
Trauma center	**15**	**54%**	**17**	**57%**	**21**	**68%**	**21**	**72%**	**17**	**68%**	**13**	**65%**	**14**	**56%**	**17**	**63%**
Riverside Community Hospital	5	18%	7	23%	8	26%	7	24%	2	8%	1	5%	3	12%	5	18%
Riverside University Health System Medical Center	3	11%	4	13%	7	23%	8	28%	6	24%	7	35%	5	20%	6	21%
Desert Regional Medical Center	4	14%	3	10%	3	10%	4	14%	5	20%	1	5%	5	20%	4	13%
Inland Valley Medical Center	3	11%	3	10%	3	10%	2	7%	4	16%	4	20%	1	4%	3	11%
Non-Trauma Center	**13**	**46%**	**13**	**43%**	**10**	**32%**	**8**	**28%**	**8**	**32%**	**7**	**35%**	**11**	**44%**	**10**	**37%**
Hemet Valley Medical Center	2	7%	2	7%	2	6%	4	14%			3	15%	3	12%	3	10%
JFK - John F Kennedy Memorial Hospital	1	4%	3	10%	1	3%	2	7%			1	5%	1	4%	2	6%
Corona Regional Medical Center	2	7%	2	7%					1	4%	1	5%	2	8%	2	6%
San Gorgonio Memorial Hospital	3	11%			1	3%			1	4%			1	4%	2	6%
Eisenhower Medical Center	1	4%	3	10%	1	3%	1	3%			1	5%			1	5%
Palo Verde Hospital	2	7%			1	3%					1	5%	1	4%	1	5%
Rancho Springs Medical Center	1	4%	1	3%			1	3%							1	4%
Menifee Valley Medical Center			1	3%	1	3%			1	4%					1	4%
Kaiser Riverside Medical Center					1	3%			1	4%					1	4%
Loma Linda University Medical Center, Murrieta									4	16%			2	8%	3	11%
Temecula Valley Hospital			1	3%	2	6%									2	6%
Parkview Community Hospital Medical Center	1	4%											1	4%	1	4%

	2019								2020						Average	
Base Hospital contact("Yes/No") (itdisposition.007)	*Qtr1*		*Qtr2*		*Qtr3*		*Qtr4*		*Qtr1*		*Qtr2*		*Qtr3*			
	112		**159**		**153**		**147**		**137**		**129**		**175**		**145**	
Yes	**29**	**26%**	**46**	**29%**	**42**	**27%**	**47**	**32%**	**30**	**22%**	**27**	**21%**	**32**	**18%**	**36**	**25%**
First Response	16	14%	24	15%	21	14%	23	16%	19	14%	15	12%	13	7%	19	13%
Ground Transport	13	12%	22	14%	21	14%	24	16%	11	8%	12	9%	19	11%	17	12%
No	**83**	**74%**	**113**	**71%**	**111**	**73%**	**100**	**68%**	**107**	**78%**	**102**	**79%**	**143**	**82%**	**108**	**75%**
First Response	49	44%	77	48%	73	48%	69	47%	64	47%	72	56%	96	55%	71	49%
Ground Transport	34	30%	36	23%	38	25%	31	21%	43	31%	30	23%	47	27%	37	26%

	2019								2020						Average	
	Qtr1		*Qtr2*		*Qtr3*		*Qtr4*		*Qtr1*		*Qtr2*		*Qtr3*			
Total Transports Dispo:Treated and Transported by this unit	**28**		**30**		**31**		**29**		**25**		**20**		**25**		**27**	
Trauma center	**15**	**54%**	**17**	**57%**	**21**	**68%**	**21**	**72%**	**17**	**68%**	**13**	**65%**	**14**	**56%**	**17**	**63%**
Riverside Community Hospital	5	18%	7	23%	8	26%	7	24%	2	8%	1	5%	3	12%	5	18%
Riverside University Health System Medical Center	3	11%	4	13%	7	23%	8	28%	6	24%	7	35%	5	20%	6	21%
Desert Regional Medical Center	4	14%	3	10%	3	10%	4	14%	5	20%	1	5%	5	20%	4	13%
Inland Valley Medical Center	3	11%	3	10%	3	10%	2	7%	4	16%	4	20%	1	4%	3	11%
Non-Trauma Center	**13**	**46%**	**13**	**43%**	**10**	**32%**	**8**	**28%**	**8**	**32%**	**7**	**35%**	**11**	**44%**	**10**	**37%**
Hemet Valley Medical Center	2	7%	2	7%	2	6%	4	14%			3	12%	3	12%	3	10%
JFK - John F Kennedy Memorial Hospital	1	4%	3	10%	1	3%	2	7%			1	4%	1	4%	2	6%
Corona Regional Medical Center	2		2	7%					1	4%	1	4%	2	8%	2	6%
San Gorgonio Memorial Hospital	3	11%			1	3%			1	4%			1	4%	2	6%
Eisenhower Medical Center	1		3		1	3%	1	3%			1	4%			1	5%
Palo Verde Hospital	2				1	3%					1	4%	1	4%	1	5%
Rancho Springs Medical Center	1		1				1	3%							1	4%
Menifee Valley Medical Center			1		1	3%			1	4%					1	4%
Kaiser Riverside Medical Center		0%			1	3%			1	4%					1	4%
Loma Linda University Medical Center, Murrieta									4	16%			2	8%	3	11%
Temecula Valley Hospital			1		2	6%									2	6%
Parkview Community Hospital Medical Center	1												1	4%	1	4%
	2019								2020						Average	
Base Hospital contact("Yes/No", Disposition)	**112**		**159**		**153**		**147**		**137**		**129**		**175**		**145**	
Yes	**29**	**26%**	**46**	**29%**	**42**	**27%**	**47**	**32%**	**30**	**22%**	**27**	**21%**	**32**	**18%**	**36**	**25%**
Patient Treated and Transported by this EMS Unit	11	38%	15	33%	19	45%	20	43%	11	37%	10	37%	8	25%	13	37%
Dead at scene	7	24%	19	41%	10	24%	15	32%	7	23%	7	26%	9	9%	11	29%
Patient Treated and Transported with this Crew in Another EMS Unit	10	34%	12	26%	13	31%	9	19%	11	37%	9	33%	6	19%	10	28%
Patient Treated and Care Transferred to Another EMS Unit	1	3%					3	6%	1	3%	1	4%			2	4%
No	**83**	**74%**	**113**	**71%**	**111**	**73%**	**100**	**68%**	**107**	**78%**	**102**	**79%**	**143**	**82%**	**108**	**75%**
Dead at scene	59	71%	90	80%	84	76%	88	88%	86	80%	86	84%	127	89%	89	82%
Patient Treated and Transported by this EMS Unit	17	20%	15	13%	12	11%	9	9%	14	13%	10	10%	8	6%	12	11%
Patient Treated and Transported with this Crew in Another EMS Unit	7	8%	7	6%	13	12%	3	3%	6	6%	6	6%	6	4%	7	6%
Patient Treated and Care Transferred to Another EMS Unit		0%	1	1%	2	2%		0%	1	1%			2	1%	2	1%

Median Time		2019				2020			
		Qtr1	Qtr2	Qtr3	Qtr4	Qtr1	Qtr2	Qtr3	
Patient contact time (etimes07-etimes03)	First Response	0:08:10	0:07:32	0:07:59	0:08:10	0:07:48	0:08:22	0:08:18	**0:08:03**
	Ground Transport	0:09:21	0:07:09	0:09:18	0:07:37	0:08:28	0:08:06	0:08:20	**0:08:20**
	Total	**0:08:45**	**0:07:20**	**0:08:39**	**0:07:53**	**0:08:08**	**0:08:20**	**0:08:18**	**0:08:12**
Scene time (etimes09-etimes07)	First Response	0:16:36	0:10:06	0:16:00	0:12:12	0:14:52	0:11:01	0:25:07	**0:15:08**
	Ground Transport	0:08:19	0:09:03	0:08:52	0:08:34	0:10:06	0:09:16	0:09:11	**0:09:03**
	Total	**0:12:28**	**0:09:34**	**0:12:26**	**0:10:23**	**0:12:29**	**0:11:01**	**0:13:56**	**0:11:45**
Patient contact to transport time (etimes11-etimes07) Dispo= "Patient treated and transported by this unit"	Ground Transport	0:19:11	0:15:04	0:17:30	0:24:10	0:25:56	0:24:59	0:24:28	**0:21:37**
Patient contact to detemination of death (earrest15-etimes07)	**First Response**								
	Dead at Scene, No Resuscitation, No Transport	0:01:39	0:02:10	0:02:00	0:01:00	0:01:00	0:01:00	0:00:50	**0:01:23**
	Resuscitation Attempted, Dead at Scene, No Transport		0:20:58	0:20:00	0:18:15	0:16:45	0:11:32	0:20:30	**0:18:00**
	Ground Transport								
	Dead at Scene, No Resuscitation, No Transport				0:02:13	0:01:32	0:00:40	0:01:57	**0:01:35**
	Resuscitation Attempted, Dead at Scene, No Transport				0:21:00	0:18:09	0:17:11	0:19:29	**0:18:57**

Number of Responses		2019				2020		
		Qtr1	Qtr2	Qtr3	Qtr4	Qtr1	Qtr2	Qtr3
Patient contact time (etimes07-etimes03)	First Response	65	101	94	92	83	85	100
	Ground Transport	47	58	59	55	54	42	66
	Total	**112**	**159**	**153**	**147**	**137**	**127**	**166**
Scene time (etimes09-etimes07)	First Response	22	23	29	20	22	17	22
	Ground Transport	27	30	32	27	26	21	25
	Total	**49**	**53**	**61**	**47**	**48**	**38**	**47**
First CPR to Determination of Death (earrest15-earrest19) Disposition :"Res., attempted, Dead at Scene"	First Response	2	7	6	13	5	8	16
	Ground Transport	1	7	3	8	4	4	12
	Total	**3**	**14**	**9**	**21**	**9**	**12**	**28**
First CPR to Transport (etimes09-earrest19)	Ground Transport	13	14	12	10	12	9	10
Patient contact to transport time (etimes11-etimes07) Dispo= "Patient treated and transported by	Ground Transport	26	28	29	27	24	20	24
Patient contact to detemination of death (earrest15-etimes07)	**First Response**	**14**	**29**	**28**	**67**	**52**	**60**	**69**
	Dead at Scene, No Resuscitation, No Transport	12	16	18	43	38	41	46
	Resuscitation Attempted, Dead at Scene, No Transport	2	13	10	24	14	19	23
	Ground Transport	**3**	**10**	**14**	**27**	**28**	**20**	**35**
	Dead at Scene, No Resuscitation, No Transport	1	3	6	14	16	10	16
	Resuscitation Attempted, Dead at Scene, No Transport	2	7	8	13	12	10	19
		17	**39**	**42**	**94**	**80**	**80**	**104**

References

California Code of Regulations, Title 22. Social Security, Division 9. Prehospital Emergency Medical Services, Chapter 7 Trauma Care System. https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=I6ECF6AF0D4C011DE8879F88E8B0DAAAE&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default).

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

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

End of document

FOR CONSIDERATION BY EMCC

DATE: March 31, 2021

TO: EMCC

FROM: James Lee, EMS Specialist

SUBJECT: Emergency Medical Dispatch (EMD) Summary Report 2020

ACTION: Received and File Information

Please see attached link for the Emergency Medical Dispatch (EMD) Summary Report for 2020.

http://remsa.us/documents/reports/annual/REMSA_Emergency_Medical_Dispatch_Report_2020_FINAL_20210217.pdf

RIVERSIDE COUNTY EMS AGENCY

SUMMARY REPORT

EMERGENCY MEDICAL DISPATCH

2020

FEBRUARY 17TH, 2021

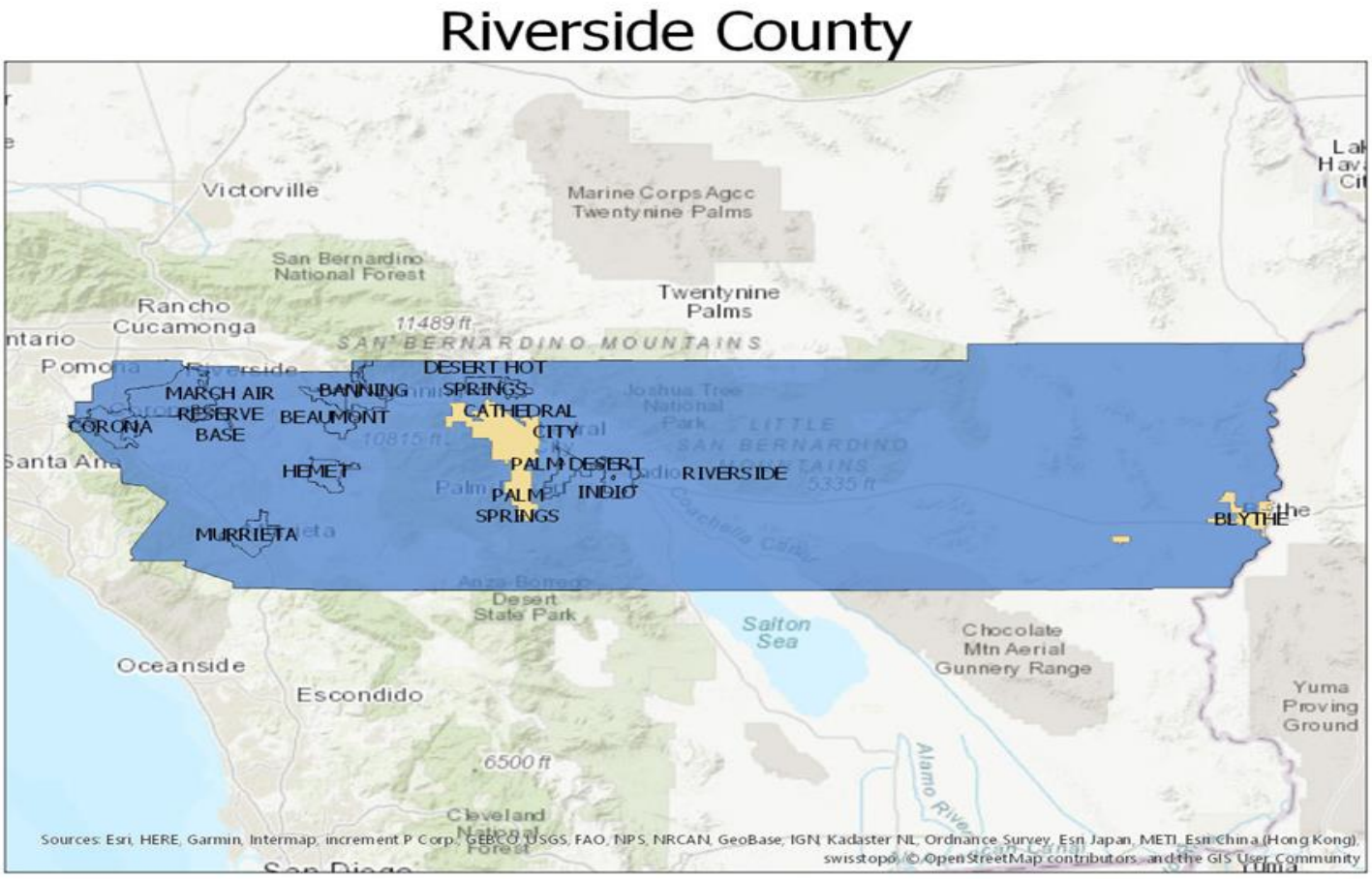
PREPARED BY RIVERSIDE COUNTY EMS AGENCY, EMERGENCY MANAGEMENT DEPARTMENT

EMERGENCY MEDICAL DISPATCH SUMMARY

The Medical Priority Dispatch System (MPDS) is utilized by Public Safety Answering Points to assist call-takers in rapidly narrowing down a caller's medical or trauma condition, dispatching emergency services, and providing standardized medical instructions to callers before help arrives. The following is the Riverside County Emergency Medical Dispatch (EMD) Response Summary Report for the 2020 calendar year.

This data in this report was collected by responding agencies between January 1st, 2020 through December 31st, 2020. To be included, the EMD Card Number (eDispatch.03) had to contain at minimum, a two- digit card number followed by an alphabetic character.

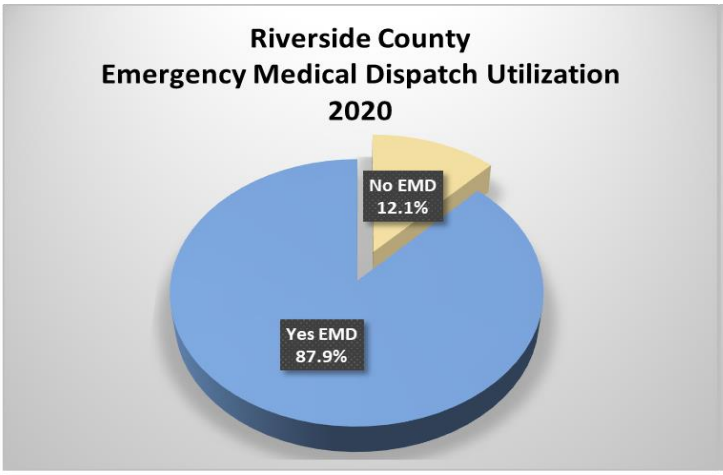
The majority of Riverside County is covered by MPDS through the EMD program.

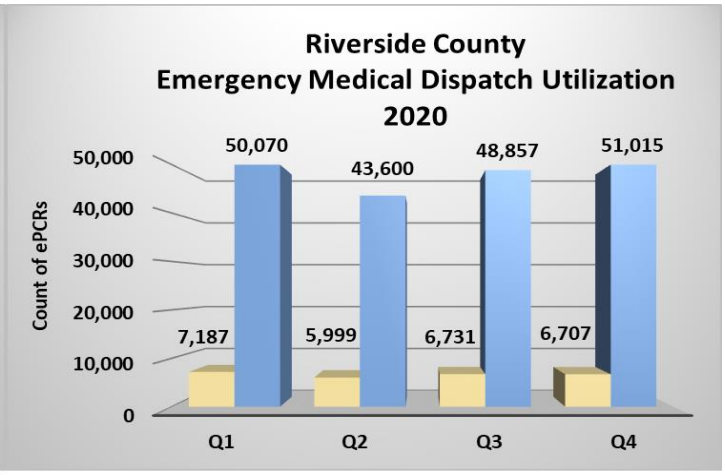


PSAP Without MPDS **PSAP With MPDS or Currently Implementing MPDS**

EMD Utilization

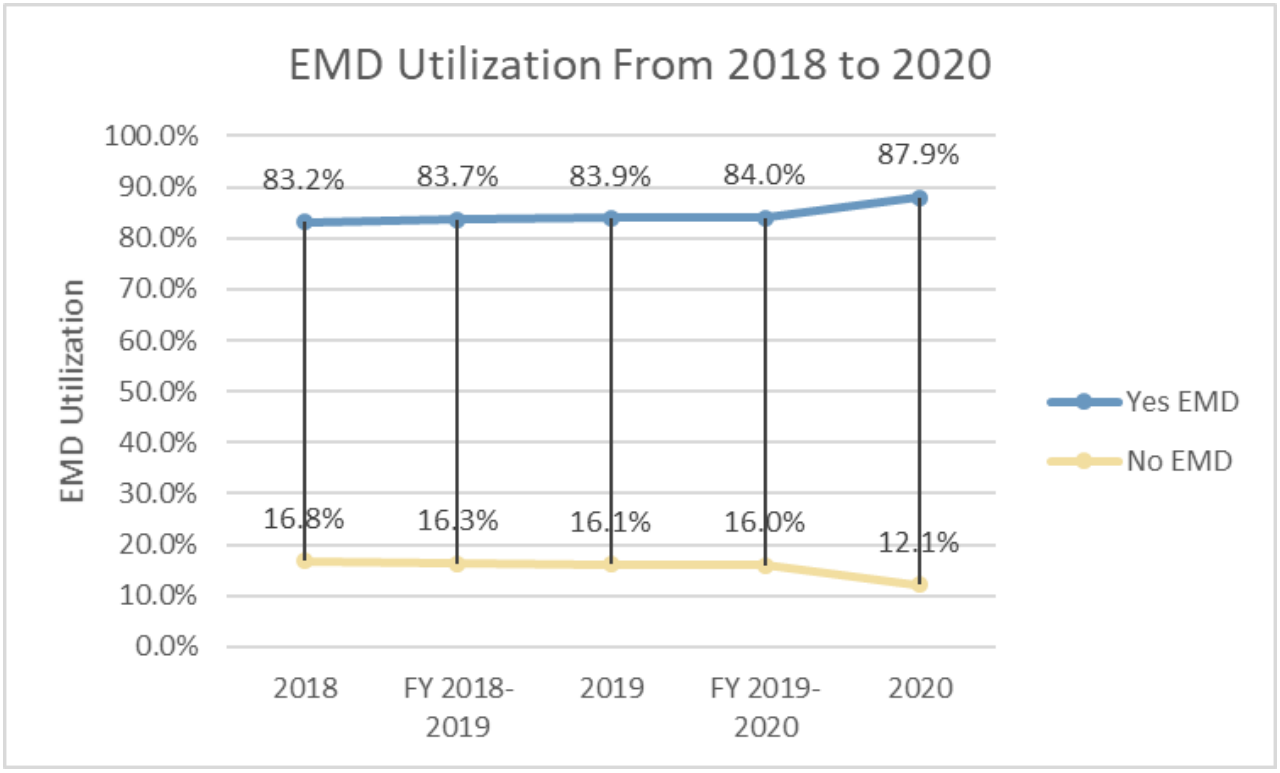
The following data is shown to reflect EMD utilization in Riverside County in 2020. Electronic patient records (eRecord.01) were collected and grouped according to EMD participating and non-participating agencies, respectively. To reduce duplication, transport agency data was excluded from this analysis.





Change in EMD Card Utilization Over Time

The line chart below shows the change in the utilization of EMD by Riverside County PSAPs as recorded in the semiannual Emergency Medical Dispatch Reports. The percentage of EMD utilization grew by 5% between 2018 and 2020.



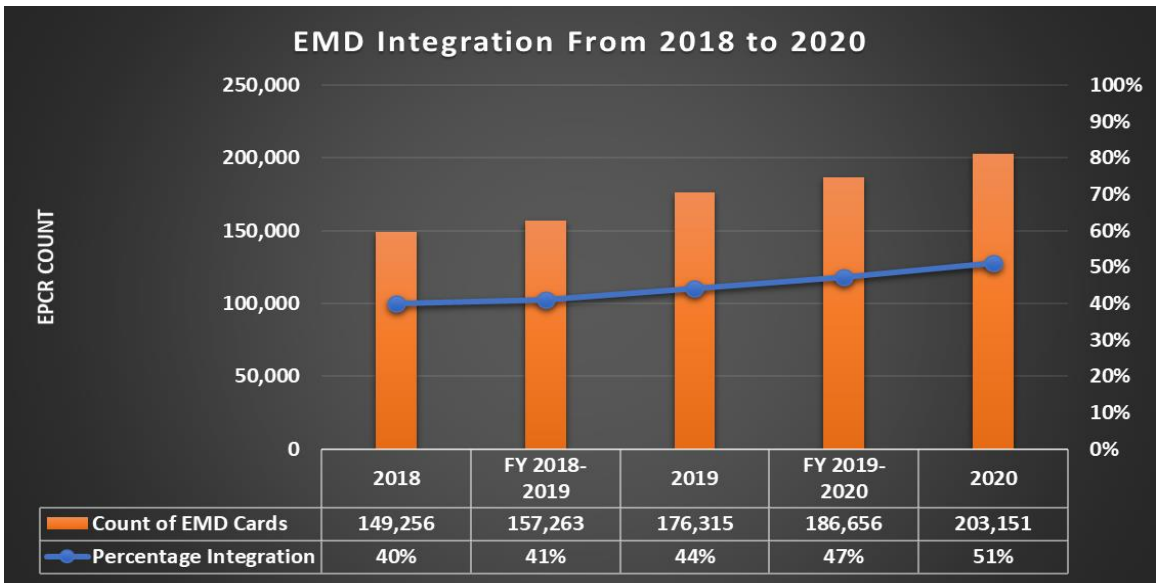
EMD Integration

The table below shows the *rate of EMD integration* with EMS Electronic Patient Care Reports (ePCRs) for all 911 provider agencies in Riverside County. A count of *eRecord.01*, a number generated with each ePCR created, was used to determine the theoretical integration of EMD by responding agency. *EMD Integration with ePCR* is a total count of eDispatch.03, the EMD card and dispatch determinant level, which is used to determine raw integration numbers of EMD by the responding agency. *EMD Card Missing* is defined here as an ePCR having a blank eDispatch.03, or no recorded EMD card and dispatch determinant level. *Percentage of EMD Integration* was calculated by dividing the total ePCR count (eRecord.01) by the EMD Integration count (eDispatch.03).

All 911 Agencies	ePCR Count (eRecord.01)	EMD Integration w/ ePCR (eDispatch.03)	EMD Cards Missing from ePCR	Percentage of EMD Integration to ePCR (Actual/ePCR Total)	911 Agency With EMD Call Center
Transport					
AMR - Desert Cities	29,829	5,546	24,283	18.6%	No
AMR - Hemet	36,274	10,455	25,819	28.8%	No
AMR - Riverside	110,288	37,833	72,455	34.3%	No
Total EMD Integration	**176,391**	**53,834**	**122,557**	**30.5%**	**0/3**
911 Responders (Non-EMD)					
Cathedral City Fire Department	5,867	7	5,860	**0.1%**	No
Hemet Fire Department	12,658	3	12,655	**0.0%**	No
Palm Springs Fire Department	8,099	0	8,099	**0.0%**	No
Total EMD Integration	**26,624**	**10**	**26,614**	**0.0%**	**0/3**
EMD 911 Responders					
Calimesa Fire Department	**747**	**724**	**23**	**96.9%**	**Yes**
Corona Fire Department	**6,848**	**4,604**	**2,244**	**67.2%**	**Yes**
Idyllwild Fire Protection District	**522**	**168**	**354**	**32.2%**	**Yes**
March Air Reserve Base Fire Department	**23**	**1**	**22**	**4.3%**	**Yes**
Morongo Fire Department	**2,266**	**936**	**1,330**	**41.3%**	**Yes**
Murrieta Fire Department	**7,962**	**2,628**	**5,334**	**33.0%**	**Yes**
Pechanga Fire Department	**732**	**686**	**46**	**93.7%**	**Yes**
Riverside City Fire Department	**29,933**	**2**	**29,931**	**0.0%**	**Yes**
Riverside County Fire Department	**143,688**	**138,786**	**4,902**	**96.6%**	**Yes**
Soboba Fire Department	**821**	**772**	**49**	**94.0%**	**Yes**
Total EMD Integration	**193,542**	**149,307**	**44,235**	**77.1%**	**10/10**
Total EMD Integration for Riverside County	**396,557**	**203,151**	**193,406**	**51.23%**	**10/16**

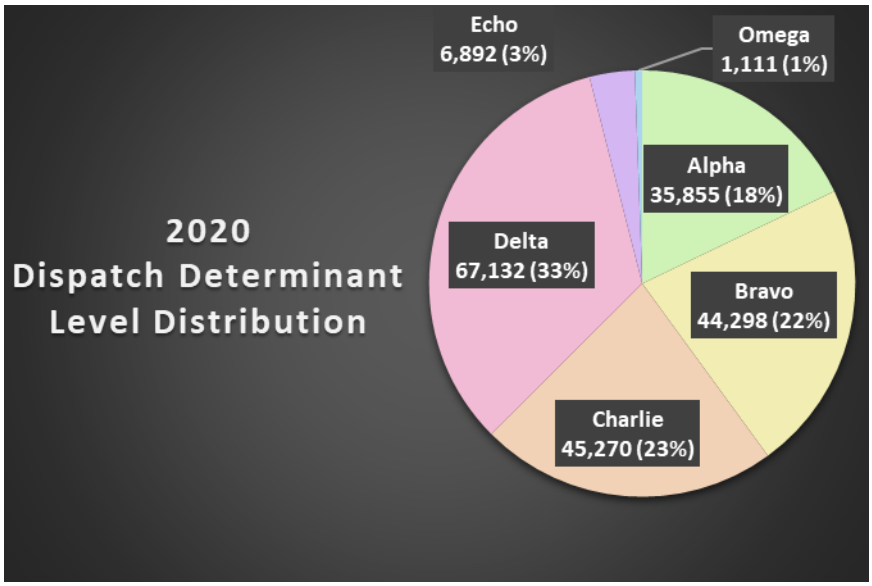
Change in EMD Card Integration Over Time

The combination chart below shows the change in the integration of EMD cards into ePCRs recorded in our semiannual Emergency Medical Dispatch Reports. The total count of EMD cards for all 911 agencies grew by 36% from 2018 to 2020. While the Perctentage Integration of EMD cards into ePCRs for all 911 agencies grew by 28% from 2018 to 2020.



Medical Priority Dispatch System Breakdown

The Medical Priority Dispatch System (MPDS) allows rapid assignment of call type using determinant levels (Alpha, Bravo, Charlie, Delta, Echo, Omega) which can identify response time and type of emergency services required (i.e. ALS vs. BLS). While Riverside County does not rely on EMD to guide response type and time, assigned determinant codes which define modes of response (whether lights and sirens are used) for emergency vehicles. The 2020 calendar year distribution of determinant levels was analyzed using ePCR data. This data reflects determinant levels for 911 responding agencies with ePCR integration of dispatch data. While most Riverside County 911 responding agencies utilize EMD, only half currently have ePCR integration.



Top EMD Cards & Dispatch Complaints

EMD Card	Count	Percentage
26 Sick Person	28,723	14.1%
06 Breathing Problem	25,377	12.5%
17 Falls	23,712	11.7%
10 Chest Pain / Chest Discomfort (Non-Traumatic)	14,931	7.4%
31 Unconscious / Fainting (Near)	14,725	7.3%
77 Vehicle Collision	14,564	7.2%
32 Unknown Problem (Person Down)	13,986	6.9%
12 Convulsions / Seizures	7,913	3.9%
21 Hemmorrhage / Lacerations	6,958	3.4%
28 Stroke (CVA) / Transient Ischemic Attack (TIA)	6,188	3.0%
Other	*46,018*	*22.7%*
Total	**203,095**	**100.0%**
Dispatch Complaint	**Count**	**Percentage**
Sick Person	61,007	15.4%
Breathing Problem	44,049	11.1%
Falls	41,442	10.5%
Unknown Problem/Person Down	41,169	10.4%
Traffic/Transportation Incident	27,575	7.0%
Chest Pain (Non-Traumatic)	25,653	6.5%
Unconscious/Fainting/Near-Fainting	22,336	5.6%
Convulsions/Seizure	13,559	3.4%
Abdominal Pain/Problems	12,043	3.0%
Traumatic Injury	10,819	2.7%
Other Dispatch Complaint	*96,892*	*24.4%*
Dispatch Complaint Total	**396,544**	**100.0%**

The table to the left shows a comparison of Dispatch Complaints to EMD Card Numbers utilized by call takers at public safety answering points for the 2020 calendar year. Dispatch complaints are the reason why an emergency medical response is required and are used to categorize each request. EMD Cards are similar and are utilized by public safety answering points participating in the Medical Priority Dispatch System to categorize each emergency medical response request.

Key Performance Intervals by Dispatch Determinant Level

In Riverside County, Determinant Codes do not govern response times; however, determinant levels help describe how rapidly care is needed, and providers may intrinsically respond more rapidly to higher acuity calls. To review potential differences in response time based on determinant levels, an aggregate analysis of key performance time intervals is described below. Only half of the county's EMD-based calls have been integrated with the ePCRs analyzed, so *these values may not represent average response times for individual agencies.*

Statistics Definitions Used

- **N Total** is the total number of ePCRs.
- **N Valid** is the number of cases which met criteria for the time interval analysis.
- **N Invalid** is the number of cases excluded from the N Valid cases for calculation of the time interval due to incorrect or erroneous data points.
- **N Missing** is the number of cases excluded from the N Valid cases for calculation of the time interval due to missing data points.
- **Mean** represents the average of the data in minutes.
- **Median** represents the midpoint in the data in minutes.
- **Standard Deviation** measures distribution of the data in minutes.
- **90th Percentile** represents time in minutes at which 90% of the responses fall under.
- **95% Confidence Interval For Mean** is the range for which we are 95% confident the true value of the mean exists.

Total Prehospital Time by Dispatch Determinant Level

Total Prehospital Time (eTimes.01 to eTimes.11) begins when a 911 call is placed and ends when the responding unit arrives at the hospital with the patient. This is a key performance interval because it measures all parts of the prehospital system and how they interact with each other to deliver a patient to definitive care.

Total Prehospital Time (eTimes.01 to eTimes.11)		Dispatch Determinant Level Not Recorded	OMEGA	ALPHA	BRAVO	CHARLIE	DELTA	ECHO
N	Total	195,994	1,111	35,856	44,299	45,270	67,135	6,892
	Valid	92,877	239	10,898	8,280	16,116	22,923	1,999
	Invalid	2,851	7	291	153	163	273	52
	Missing	100,266	865	24,667	35,866	28,991	43,939	4,841
Mean		36.1	40.8	41.4	40.1	38.3	39.3	38.8
Median		12.6	13.1	13.2	12.5	11.7	11.8	11.9
Standard Deviation		54.3	58.4	61.1	58.7	55.3	56.2	56.0
90th Percentile		54.3	58.4	61.1	58.7	55.3	56.2	56.0
95% Confidence Interval for Mean		(37.93-38.09)	(40.71-44.04)	(43.21-43.70)	(41.56-42.10)	(39.63-39.99)	(40.67-40.98)	(39.75-40.80)

Total Response Time by Dispatch Determinant Level

Total Response Time (eTimes.01 to eTimes.07) begins when a 911 call is placed and ends when the responding unit arrives at the patient's side. This is a key performance interval because it measures the experience of the patient accessing the 911 system.

Total Response Time (eTimes.01 to eTimes.07)		Dispatch Determinant Level Not Recorded	OMEGA	ALPHA	BRAVO	CHARLIE	DELTA	ECHO
N	Total	195,994	1,111	35,856	44,299	45,270	67,135	6,892
	Valid	139,280	668	24,763	15,764	32,925	46,412	5,213
	Invalid	4,534	15	547	359	501	777	99
	Missing	52,180	428	10,546	28,176	11,844	19,946	1,580
Mean		8.8	12.5	12.7	11.4	11.1	10.9	10.0
Median		5.7	5.7	6.2	5.3	4.6	4.9	4.4
Standard Deviation		16.7	20.1	21.6	18.9	17.2	17.6	15.7
90th Percentile		16.7	20.1	21.6	18.9	17.2	17.6	15.7
95% Confidence Interval for Mean		(10.22-10.28)	(13.31-14.18)	(14.12-14.27)	(12.56-12.73)	(11.95-12.05)	(11.89-11.98)	(10.75-10.99)

Unit Response Time by Dispatch Determinant Level

Unit Response Time (eTimes.03 to eTimes.06) begins when a responding unit receives the call or page from the dispatcher and ends when the responding unit arrives on the scene. This is a key performance interval because it measures the experience of the unit responding to the 911 emergency medical call.

Unit Response Time (eTimes.03 to eTimes.06)		Dispatch Determinant Level Not Recorded	OMEGA	ALPHA	BRAVO	CHARLIE	DELTA	ECHO
N	Total	195,994	1,111	35,856	44,299	45,270	67,135	6,892
	Valid	139,292	668	24,764	15,768	32,924	46,412	5,217
	Invalid	46,301	369	9,704	24,663	10,857	17,657	1,170
	Missing	10,401	74	1,388	3,868	1,489	3,066	505
Mean		6.5	8.3	8.6	7.5	7.2	7.3	6.6
Median		4.7	4.6	5.1	4.6	4.2	4.4	3.9
Standard Deviation		12.8	14.5	16.0	14.3	13.3	13.5	12.3
90th Percentile		12.8	14.5	16.0	14.3	13.3	13.5	12.3
95% Confidence Interval for Mean		(7.55-7.60)	(8.80-9.50)	(9.63-9.76)	(8.55-8.69)	(8.13-8.22)	(8.28-8.36)	(7.43-7.63)

References

Culley, Linda L. et al. (1994). **Increasing the efficiency of emergency medical services by using criteria based dispatch. Annals of Emergency Medicine**. Volume 24, Issue 5, 867 – 872.

https://www.emergencydispatch.org/articles/princdocpull03.pdf

https://www.emergencydispatch.org/articles/ArticleMPDS%28Cady%29.html

http://remsa.us/policy/2203.pdf

For more information, please contact Riverside County EMS Administrator, Trevor Douville tdouville@rivco.orgReport prepared by Sean Hakam & Catherine Borna Farrokhi, Data & Reporting Unit, Riverside County EMS Agency