

# RIVERSIDE COUNTY



## 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. Dawn Downs

### County Permitted Air Ambulance Provider

1.f. Stephanie Zimmerman  
Brian Harrison

### 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. Scott Philippbar

### 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. Vacant

## Public Conference Call Information:

Wednesday, June 29, 2022

9:00 AM – 10:30 AM

Microsoft Teams

Public Conference Call Information (Audio Only)

(951) 465-8390 United States, Riverside

Conference ID: 459 307 2#

### 1. CALL TO ORDER

Chair—Stan Grube

### 2. ROUNDTABLE INTRODUCTIONS (5 Minutes)

Chair—Stan Grube

### 3. APPROVAL OF MINUTES (5 Minutes)

March 23, 2022 - Draft Minutes - Stan Grube (Attachment A)

### 4. UNFINISHED / NEW BUSINES (20 Minutes)

4.1 EMCC Membership – Dan Bates (Attachment B)

4.2 COVID-19 Situation Update – Misty Plumley

4.3 RUHS Public Health Report – Marie Weller

### 5. EMS AGENCY REPORTS (30 Minutes)

5.1 Administrative Unit Updates – Dan Bates

5.2 Clinical Unit Updates – Shanna Kissel

- Specialty Care Updates – Stroke, STEMI, Trauma
- LMS Platform Update
- 2023 Policy Update
- HEMS Dispatch Process Update

5.3 Data Unit Updates – Catherine Borna Farrokhi, Ph.D.

- Reports:
  - Medications and Procedures Report, 2021 (Attachment C)
  - Patient Care Continuum Report, 2021 (Attachment D)
  - Emergency Medical Dispatch Report, 2021 (Attachment E)
- Riverside County Overdose Data to Action, Update
- Community Assessment and Transport Team Pilot Program, Update
- Riverside County Data Collection System

### 6. OTHER REPORTS (20 Minutes)

6.1 PMAC - Steven Patterson, MD / Magdalena Robles

6.2 EMS Officers – Scott Philippbar

6.2 EMD Emergency Planning Division – Brian Tisdale

6.3 EMD Emergency Services Division - Mark Bassett

### 7. OPEN COMMENTS (5 Minutes)

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

Wednesday, September 28, 2022; 9AM – 10:30AM

**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 Dan Bates, Riverside County EMS Agency at (951) 358-5029.

**Next meeting:**

**TBD.**

EMCC agendas with attachments are available online at [www.rivcoems.org](http://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 Dan Bates at (951) 358-5029.

EMCC meetings are audio recorded to facilitate dictation for minutes.

---

March 23, 2022

| TOPIC  | DISCUSSION   | ACTION |
|--|--|--------|
| 1. CALL TO ORDER<br>Stan Grube   | Meeting called to order at <b>9:00am</b>   |        |
| 2. ROUNDTABLE INTRODUCTIONS(5 minutes)<br>Stan Grube                               |  |        |
| 3. APPROVAL OF MINUTES (5 Minutes)<br>Stan Grube                                   | Was determined that there were enough members to have a quorum<br>Meeting was convened at <b>9:03 AM</b>   |        |
| 4. UNFINISHED /NEW BUSINESS (20 minutes)   |  |        |
| 4.1 EMCC Membership<br>Dan Bates<br>Attachment B                                   | <ul style="list-style-type: none"> <li>• Vacancies – 1.J RCLEAA = Bruce Barton will take it to executive office and policy group will get rep appointed from RCOPS.</li> <li>• District 5 is vacant – Currently working with district 5 to get a representative</li> <li>• Positions coming up in June. Will look to our air ambulance association to get appointees for the next 3-year term – Air Methods and Reach Air. Will work with clinical team and PMAC group to get representative appointed.</li> <li>• CVAG and WRCOG will work to get a representative appointed to the group. Will follow up during the June EMCC meeting</li> <li>• District boundary changes may impact representative that we have assigned.</li> <li>• Dawn Downes representing ambulance association –</li> <li>• Chief Phillipbar was nominated by Chief Weiser</li> </ul> |        |
| 4.2 COVID 19 Situation Update<br>Misty Plumley / Dan Bates spoke on Misty's behalf | <ul style="list-style-type: none"> <li>• 81 covid cases confirmed with 15 in the ICU</li> <li>• A substantial decline since Feb 2022 noted</li> <li>• Daily admit = 6 with additional 6 possible cases as well</li> <li>• 69% licensed inpatient bed utilization / 72% ICU</li> <li>• Substantial Improvement in ambulance patient offload delays / historical issue has been mitigated.</li> <li>• ED visits are stabilizing, ED visits related to Covid is continuing to decline. now at 8%</li> </ul>   |        |

March 23, 2022

|  |   |  |
|--|---|--|
|  | <ul style="list-style-type: none"> <li>• (ILI) Influenza like illness data –ED Data shows an upward change in ILI</li> <li>• EMS volume has not changed. Will continue to monitor and update group.</li> <li>• State will continue to support regional the monoclonal antibody infusion center through June.</li> <li>• All other state support staffing support will go away by March 31st</li> <li>• System looks to be stabilizing and there is still plenty of vaccine supplies.</li> </ul>   |  |
| <b>4.3 RUHS Public Health Report</b><br><b>Marie Weller</b>                        | <ul style="list-style-type: none"> <li>• We are still technically in the pandemic:</li> <li>• There are 6 teams out vaccinating and testing at some location– refer others to the public health website for more information</li> <li>• Numbers are going down for vaccination and we are reaching a lot of the population</li> <li>• Waiting for approval on the baby vaccine (6 months to 4yr old) have a plan ready to go as soon as its improved</li> <li>• Contact tracing has declined</li> <li>• Now preparing for next year’s flu season</li> </ul> |  |
| <b>5 EMS AGENCY REPORTS (30 Minutes)</b>   |   |  |
| <b>5.1 Administrative Unit Updates</b><br><b>Dan Bates</b>                         | <ul style="list-style-type: none"> <li>• Karleen Wade and David Gibson – Continue to work on updating the credentialing application, discipline processes.</li> <li>• Canyon Lake Fire Department is a new ALS first response agency</li> <li>• Riverside County Sheriff’s office has a new helicopter 12 new EMTs to assist in rescues</li> </ul>  |  |
| <b>5.1a City of Calimesa transition from BLS to ALS</b><br><b>Chief O’Connell:</b> | <ul style="list-style-type: none"> <li>• City of Calimesa transition from BLS to ALS</li> <li>• Filed letter of intent with REMSA in January 2022</li> <li>• Currently working on application process. Was approved to purchase equipment.</li> <li>• Planning to fill related positions and to implement the program in Jan 2023 no later than March 2023</li> <li>• There is currently an ALS paramedic program coordinator position / will recruit for EMS Chief to oversee the program</li> </ul>   |  |

March 23, 2022

**5.2. Clinical Unit Updates:****Shanna Kissel**

- Specialty Care Updates – Stroke, STEMI, Trauma
  - AEMT Program
  - 2022 Policy Manual Update
  - Provider CQI Updates
  - EMS Fellow Project
  - HEMS Dispatch Process
  - LMS Platform
  - Coachella & Stagecoach Festivals
- Special Care Updates:
    - Specialty care coordinator is working on hospital IEFT education as well as EMS projects for STEMI centers
    - She is also looking at stroke and STEMI continuation of care policies which are being reviewed and updated.
    - Trauma – registry 3 of 5 trauma center on image trend trauma registry which allows for the full continuum of care – from the prehospital initial call to first receiving center to the IFT/ higher level trauma center
    - Also working to create a trauma dashboard to publish on the EMS website
    - State trauma regulation are open – currently sitting on the committee – updating regulations to current practice.
    - All 3 specialty care updates are finalized and will be submitted in the EMS plan to EMSA
  - AEMT Program:
    - Our clinical education coordinator is looking into the AEMT program to incorporate into our system
  - Policy Manual Updates:
    - Policy manual will go into effect April 1<sup>st</sup> with some changes to public comment period after consulting during PMAC meeting. Will finalize during the next PMAC meeting
  - CQI Updates:
    - Updates have been submitted by the agencies/ we have received the new CQI plans Canyon Lake Fire and Star 9 Rescue agency
  - EMS Fellow Project:
    - Dr. Michael Downes is the REMSA Fellow, ICEMA has one as well. They are working on some projects, – Sean Hakam to elaborate
  - HEMS Dispatch Process:
    - The clinical team is working with the ECC to streamline the dispatch process. Working on an agreement with our air providers as well as working to get the airships dispatched earlier
  - LMS Platform
    - We are implementing a system level of learning management platform – somewhat early stages. The platform will pertain to clinical education.
  - Coachella and Stagecoach:

March 23, 2022

|   |  |  |
|---|--|--|
|   | <ul style="list-style-type: none"> <li>○ These festivals are coming up in April. There was a meeting regarding these events. The policy regarding these events has gone out to all the base hospital in the dessert. There will be no changes in practice/ protocol as Desert Regional Hospital will be operating as the trauma base hospitals for these festivals.</li> </ul>   |  |
| <p><b>5.3 Data Unit Updates:</b><br/><b>Sean Hakam</b></p> <ul style="list-style-type: none"> <li>• RODA Update</li> <li>• "Leave Behind Naloxone"</li> <li>• Community Assessment and Transport Team (CATT) Pilot Program</li> </ul> | <ul style="list-style-type: none"> <li>• RODA update <ul style="list-style-type: none"> <li>○ 2 pilot programs – leave behind Naloxone – for overdose calls – overdose naloxone kits,</li> <li>○ We now have a state grant – AMR applied and is currently training staff should be rolling out the program next month. EMTs will have naloxone kits to hand out while on overdose calls.</li> <li>○ The onboarding of Dr. Downes our EMS fellow has allowed this program to be turned into a regional program with ICEMA.</li> <li>○ We also share a medical director with ICEMA which has made the process less complicated.</li> <li>○ ICEMA has currently rolled out this program with 4-5 of their fire departments in San Bernardino County</li> <li>○ The next step is to connect the patients to care (Connections to Care)</li> <li>○ Loma Linda, ICEMA and REMSA has been awarded a grant (Care Star grant) to start a referral program to get patients connected with subsidies navigators to receive long term care and treatment programs.</li> <li>○ This program is in the beginning stages... will give updates on a later date.</li> </ul> </li> <li>• CATT Pilot Program - Paring a clinical therapist with an EMT on a non-emergency vehicle to respond to patients in crises. Pitched in 2021: <ul style="list-style-type: none"> <li>○ We have now completed/signed two MOU's.</li> <li>○ MOU – Between Public Health and Behavior Health - \$200k to pay for the clinical therapist</li> <li>○ MOU between AMR and RUHs was for the actual team.</li> <li>○ AMR has purchased 2 SUVs as well as equipment for the team.</li> <li>○ AMR has hired EMTs.</li> </ul> </li> </ul> |  |

March 23, 2022

|   |  |  |
|---|--|--|
|   | <ul style="list-style-type: none"> <li>○ Behavior health is working to fill the clinical therapist spot – will get an update today. If they have found a candidate, the program can be up and running in 2 months.</li> <li>○ There’s about 40 hours of training for the team. AMR and RUHS has agreed and put together a curriculum</li> <li>○ Coordinators are meeting every 3 weeks to keep up with the progress.</li> </ul> <p><b>Questions about dispatching/transporting the team:</b><br/> <b>Question</b> - Who will call for dispatch?<br/> <b>Answer</b>- When the officer gets on scene, he/she will call for the CATT team to be dispatched.<br/> <b>Question</b> - How will patient be transported?<br/> <b>Answer</b> - The patient will be transported according to their mental and physical condition, either in an ambulance or the SUV with the clinical therapist.</p> |  |
| <b>6 Other Reports (20 Minutes)</b>                           |  |  |
| 6.1 PMAC<br><b>Steven Patterson, MD</b>                       | <ul style="list-style-type: none"> <li>● PMAC met on Feb 28th</li> <li>● Very busy completing the panel for PMAC representation</li> <li>● Riverside county Fire Chiefs Association – non transport BLS provider position was filled - Anthony Gonzales was selected -</li> <li>● Still awaiting a nominee for the EMT at large position.</li> <li>● EMT and EMT-Paramedic training program nominee, Robert Fontaine was selected</li> <li>● Some recognition was given to an RPD and EMS team for a resuscitation success</li> <li>● Medication error disclosure to patients - preliminary discussion presentation by the medical director Vaezazizi regarding notification processes for medication errors in an appropriate manner.</li> <li>● There is a task force that being developed to formulate a formal process.</li> </ul>   |  |
| 6.2 EMD – Emergency Planning Division<br><b>Brian Tisdale</b> | <ul style="list-style-type: none"> <li>● Established and equity team Working with public health</li> <li>● Will put an ESC in every supervisors district to target the underserved communities - help them get better prepared through training - as part of the public health’s “Health Equity Initiative”</li> </ul>   |  |

March 23, 2022

|   |  |  |
|---|--|--|
|   | <ul style="list-style-type: none"> <li>• Working on multi-jurisdictional local hazardous mitigation plan update – will kick off in April</li> <li>• There will be a participation survey sent out in a month. Brian Macgavin will lead the effort as well as other staff.</li> <li>• Several grants approved, “Pandemic Affluenza” grant, “Hospital Preparedness” grant, “Public Health Emergency Preparedness”, “City “Readiness Initiative grant” (FY 21/22)</li> <li>• Funds for HPP Supplemental/COVID responses has been extended to June 22, 2022, which helps with hospital preparedness</li> <li>• COVID 19 funds – has been extended till 2023 – 1mil balance.</li> <li>• Upcoming Training: In-person Cert classes – conducted in the unincorporated areas throughout the county – combined courses for cities and hospital leaderships. DECON and Hazmat training for hospitals will start in April and May.</li> <li>• Exercises:             <ul style="list-style-type: none"> <li>○ March Airforce base conducted the Great Shake Out exercise was conducted Oct 21<sup>st</sup>, 2021</li> <li>○ Cyber Security workshop Nov 17<sup>th</sup></li> <li>○ RACES conducted a functional exercise in Nov 2021</li> <li>○ Airforce Base conducted a major aircraft tabletop exercise in December 2021</li> </ul> </li> <li>• Current projects:             <ul style="list-style-type: none"> <li>○ AM Radio alert system for the Idyllwild/San Jacinto</li> <li>○ Mountain area – 18 – 20 sites – cost approx. \$4 mil.</li> <li>○ Working on grants to get funding</li> </ul> </li> </ul> |  |
| <p>6.3 EMD Emergency Services Division - Mark Bassett</p> | <ul style="list-style-type: none"> <li>• Received staffing funding that has increase our staffing capabilities by 50%.             <ul style="list-style-type: none"> <li>○ 15 contracts with 14 cities and 1 school district</li> <li>○ Looking to gain another city for contracts and maybe a tribal government contract– which will afford them a Emergency Management Specialist and Coordinator</li> </ul> </li> <li>• Boarding Surges are equalizing – Title 42 ending possibly on April 1<sup>st</sup> Working closely with CBP and with the state of California to get more assistance due to the increase of asylum seekers after Title 42 ends.</li> </ul>   |  |



EMCC Meeting Minutes  
 March 23, 2022

|  |   |  |
|--|---|--|
|  | <ul style="list-style-type: none"> <li>• Currently preparing for fire season by conducting training and drills with staff.</li> <li>• Shelter capabilities – Many cities within the county are relying on American Red Cross. to provide shelter, which is possible but there are currently issues with the lack of volunteers. Looking to follow San Bernardino’s SHOCK Program which has created bigger shelters and reduce the numbers of staff throughout the cities</li> <li>• Freeway closer plan which included the I10. The plan will be updated and will include the I215 and 15 freeway corridor which has also been an issue in the past, as well as other areas. This will restrict individuals to travel in a quick manner through the areas.</li> </ul> |  |
|  |   |  |
| <p><b>6 Open Comments (5 Minutes)</b></p>  |   |  |
|  | <p>NONE</p>   |  |
| <p><b>8. NEXT MEETING / ADJOURNMENT (1 Minute)</b><br/><br/>                 Wednesday, June 29, 2022; 9AM – 10:30AM</p> | <p>Meeting adjourned at 9:43 A.M.<br/><br/>                 The next EMCC Meeting will take place <b>in person</b> on Wednesday, <b>June 29, 2022 at 9:00AM</b></p>   |  |

# FOR CONSIDERATION BY EMCC

DATE: June 29, 2022

TO: EMCC

FROM: Dan Bates, Deputy EMS Administrator

SUBJECT: 2022/2023 Membership Date

ACTION: Review of Term Dates

| Sec. | #  | Representing            | Current Membership                    | 2022-2023 Term Dates |
|------|----|-------------------------|---------------------------------------|----------------------|
| 1.a  | 1  | PMAC Physician          | Stephen Patterson                     | 07/01/21—06/30/24    |
| 1.b  | 2  | HASC                    | Megan Barajas                         | NA                   |
| 1.c  | 3  | RCMA                    | James Rhee                            | 07/01/21—06/30/24    |
| 1.d  | 4  | AMR                     | Peter Hubbard                         | NA                   |
| 1.e  | 5  | Ambulance Association   | Dawn Downs                            | 07/01/22—06/30/25    |
| 1.f  | 6  | Air Ambulance Provider  | Stephanie Zimmerman<br>Brian Harrison | 07/01/22—06/30/25    |
| 1.g  | 7  | RCFCA                   | Bernie Molloy                         | 07/01/22—06/30/25    |
| 1.h  | 8  | CVAG                    | TBD.                                  | 07/01/22—06/30/25    |
| 1.i  | 9  | WRCOG                   | Jason Simpson<br>Chris Mann           | 07/01/22—06/30/25    |
| 1.j  | 10 | RCLEAA                  | Vacant                                | 07/01/22—06/30/25    |
| 1.k  | 11 | PMAC Prehospital        | TBD.                                  | 07/01/22—06/30/25    |
| 1.l  | 12 | Riverside Co Fire Dept. | Scott Philippbar                      | 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           | Claudia Galvez                        | 07/01/20—06/30/23    |
| 1.m  | 17 | District Five           | Vacant                                | 07/01/21—06/30/24    |

**FOR CONSIDERATION BY EMCC**

Attachment C  
Page 1 of 1

DATE: June 29, 2022

TO: EMCC

FROM: Catherine Borna Farrokhi, Ph.D. - Data & Reporting Unit

SUBJECT: Medications and Procedures Report, 2021

ACTION: Received and File Information

Please see attached Riverside County EMS Agency Medications and Procedures Report, 2021.

[http://remsa.us/documents/reports/annual/REMSA Medications and Procedures Report 2021.pdf](http://remsa.us/documents/reports/annual/REMSA_Medications_and_Procedures_Report_2021.pdf)



RIVERSIDE COUNTY EMS AGENCY  
**MEDICATIONS & PROCEDURES REPORT**  
2021

MAY 5<sup>TH</sup>, 2022

PREPARED BY RIVERSIDE COUNTY EMS AGENCY, EMERGENCY MANAGEMENT DEPARTMENT

## MEDICATIONS & PROCEDURES REPORT

---

Riverside County Emergency Medical Services (EMS) has a dual response system in which both non-transport units (fire departments) and transport units (ambulance agencies and some fire departments) are dispatched to every 9-1-1 medical emergency. While all paramedics in Riverside County, regardless of agency type, are governed by the same treatment protocols and policies, *Medications* and *Procedures* administered to EMS patients with the same presenting symptoms, can vary. Factors influencing these differences include patient comorbidities, interventions prior to EMS arrival, patient acuity and compliance with treatment, as well as logistical factors such as which agency arrived ‘first on scene’. Secondary factors such as field crew dynamics, experience, and differences in documentation practices can also influence how medications and procedures are utilized and documented.

REMSA Policy [3301](#), also known as ‘Drugs and Equipment list’, describes the available medications and procedures available to Riverside County EMS providers for therapeutic intervention in the field. This report summarizes the primary medications and procedures administered by Riverside County EMS providers over the course of one year as documented in the EMS electronic patient care report (ePCR) system.

### Methodology

#### Data

Electronic Patient Care Reports (ePCRs) were extracted from ImageTrend® Elite Report Writer between 1/1/2021 and 12/31/2021. Records for 9-1-1 non-transport and ground transport responses with one or more documented medication or procedure were included in the analysis. Each medication & procedure had to be documented as performed by a Riverside County EMS Agency credentialed provider name & ID number. This resulted in **111,629 medication ePCRs** and **199,140 procedure ePCRs** for a total of **207,143 unique ePCR records**. The *Medications Dataset* where one or more medication/drug was documented, was created from 44 data fields. The *Procedures Dataset* where one or more procedure/equipment was documented, was created from 44 data fields. Data was collected from the REMSA 2021 *Patient Care Continuum Report* dataset for ePCRs where any patient contact was made to determine the number of records where at least one medication or procedure was performed. This resulted in **365,846 ePCRs** and was used to calculate relative percentages of records where no medications or procedures were documented.

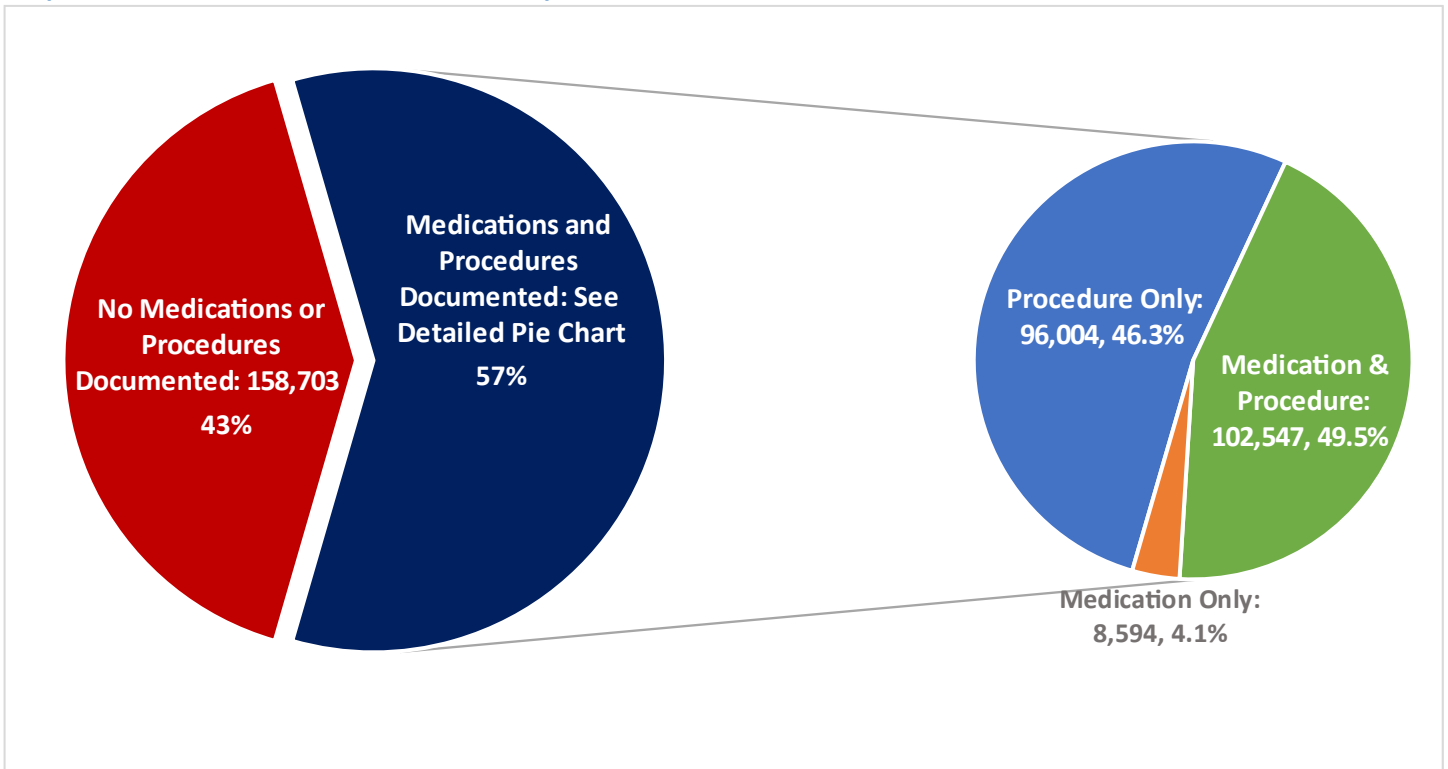
#### Exclusions

**6,743 ePCRs (6%)** from the Medications Dataset and **5,266 ePCRs (2.6%)** from the Procedures Dataset were excluded from the analysis. Exclusions were due to provider name, provider role, or provider ID being blank, or medication or procedure being documented as performed by “Other”. Additional Exclusions were for blank patient dispositions or dispositions indicating no patient contact was made (Canceled Enroute, Canceled Prior to Enroute, Canceled at Scene by Another Unit - No Patient Contact, No Patient Found, Non-Patient Transport, Standby: No Services or Support Provided, Standby: Public Safety, Fire, or EMS Operational Support Provided). No additional exclusions were made when the datasets were combined for analysis.

## Systemwide Findings on Medications & Procedures

Out of 365,846 ePCRs from 9-1-1 responses documenting patient contact, 207,145 (56.6%) documented that a medication or procedure was administered. In Graph 1, the pie chart on the left shows the breakdown in ePCRs with a documented patient contact disposition and the difference between when a medication or procedure was documented and when none were documented. The pie chart on the right gives a break down for this subset of patient contacts where a medication, procedure, or both, were documented. This allows for comparison of counts for medications and procedures performed during patient contacts.

**Graph 1: Medication and Procedures Pie Graphs**



## Response Unit Type

Response unit type describes the primary role of the EMS unit which responded to the EMS call (eResponse.07 & eResponse.13). These have been categorized into non-transport units (quick response vehicles such as fire engines, fire trucks, and squads) and transport units (ambulances). This allows for a comparison between the number of interventions performed for non-transport and transport units.

Table 1 and Table 2 below provide a breakdown of medications given, and procedures performed, by response unit type.

**Table 1: Medications by Agency and Unit Type**

| Medications                            | Medications Given | Medication ePCRs | Total ePCRs    | Medication ePCR Percentage | Average Medications Given |
|--|-------------------|------------------|----------------|----------------------------|---------------------------|
| <b>Non-Transport</b>                   | <b>56,259</b>     | <b>27,253</b>    | <b>176,622</b> | <b>15.4%</b>               | <b>2.1</b>                |
| Calimesa Fire Department               | 28                | 26               | 976            | 2.7%                       | 1.1                       |
| Cathedral City Fire Department         | 395               | 162              | 2,314          | 7.0%                       | 2.4                       |
| Corona Fire Department                 | 3,551             | 1,631            | 7,887          | 20.7%                      | 2.2                       |
| Hemet Fire Department                  | 1,472             | 688              | 8,430          | 8.2%                       | 2.1                       |
| Idyllwild Fire Protection District     | 7                 | 4                | 10             | 40.0%                      | 1.8                       |
| March Air Reserve Base Fire Department | 2                 | 2                | 36             | 5.6%                       | 1.0                       |
| Morongo Fire Department                | 344               | 181              | 3,218          | 5.6%                       | 1.9                       |
| Murrieta Fire Department               | 1,994             | 1,015            | 8,010          | 12.7%                      | 2.0                       |
| Palm Springs Fire Department           | 3,124             | 1,614            | 8,375          | 19.3%                      | 1.9                       |
| Pechanga Fire Department               | 373               | 183              | 797            | 23.0%                      | 2.0                       |
| Riverside City Fire Department         | 10,716            | 5,253            | 28,840         | 18.2%                      | 2.0                       |
| Riverside County Fire Department       | 34,026            | 16,374           | 107,079        | 15.3%                      | 2.1                       |
| Soboba Fire Department                 | 227               | 120              | 649            | 18.5%                      | 1.9                       |
| <b>Transport</b>                       | <b>140,161</b>    | <b>77,633</b>    | <b>189,152</b> | <b>41.0%</b>               | <b>1.8</b>                |
| AMR - Desert Cities                    | 16,484            | 9,331            | 26,443         | 35.3%                      | 1.8                       |
| AMR - Hemet                            | 32,990            | 16,965           | 35,964         | 47.2%                      | 1.9                       |
| AMR - Riverside                        | 74,905            | 42,819           | 102,957        | 41.6%                      | 1.7                       |
| Cathedral City Fire Department         | 4,007             | 2,059            | 4,764          | 43.2%                      | 1.9                       |
| Idyllwild Fire Protection District     | 403               | 210              | 624            | 33.7%                      | 1.9                       |
| Riverside County Fire Department       | 11,372            | 6,249            | 18,400         | 34.0%                      | 1.8                       |
| <b>Grand Total</b>                     | <b>196,420</b>    | <b>104,886</b>   | <b>365,778</b> | <b>28.7%</b>               | <b>1.9</b>                |

**Table 2: Procedures by Agency and Unit Type**

| Procedures                         | Procedures Performed | Procedure ePCRs | Total ePCRs    | Procedure ePCR Percentage | Average Procedures Performed |
|------------------------------------|----------------------|-----------------|----------------|---------------------------|------------------------------|
| <b>Non-Transport</b>               | <b>102,073</b>       | <b>54,143</b>   | <b>176,622</b> | <b>30.7%</b>              | <b>1.9</b>                   |
| Calimesa Fire Department           | 21                   | 13              | 976            | 1.3%                      | 1.6                          |
| Cathedral City Fire Department     | 474                  | 339             | 2,314          | 14.6%                     | 1.4                          |
| Corona Fire Department             | 8,363                | 4,310           | 7,887          | 54.6%                     | 1.9                          |
| Hemet Fire Department              | 890                  | 549             | 8,430          | 6.5%                      | 1.6                          |
| Idyllwild Fire Protection District | 5                    | 3               | 36             | 8.3%                      | 1.7                          |
| Morongo Fire Department            | 469                  | 285             | 3,218          | 8.9%                      | 1.6                          |
| Murrieta Fire Department           | 5,341                | 3,009           | 8,010          | 37.6%                     | 1.8                          |
| Palm Springs Fire Department       | 4,442                | 2,566           | 8,375          | 30.6%                     | 1.7                          |
| Pechanga Fire Department           | 370                  | 233             | 797            | 29.2%                     | 1.6                          |
| Riverside City Fire Department     | 25,700               | 12,781          | 28,840         | 44.3%                     | 2.0                          |
| Riverside County Fire Department   | 55,587               | 29,907          | 107,079        | 27.9%                     | 1.9                          |
| Soboba Fire Department             | 411                  | 148             | 649            | 22.8%                     | 2.8                          |
| <b>Transport</b>                   | <b>389,292</b>       | <b>139,731</b>  | <b>189,152</b> | <b>73.9%</b>              | <b>2.8</b>                   |
| AMR - Desert Cities                | 51,933               | 20,225          | 26,443         | 76.5%                     | 2.6                          |
| AMR - Hemet                        | 93,884               | 30,126          | 35,964         | 83.8%                     | 3.1                          |
| AMR - Riverside                    | 220,804              | 77,849          | 102,957        | 75.6%                     | 2.8                          |
| Cathedral City Fire Department     | 4,399                | 2,623           | 4,764          | 55.1%                     | 1.7                          |
| Idyllwild Fire Protection District | 563                  | 184             | 624            | 29.5%                     | 3.1                          |
| Riverside County Fire Department   | 17,709               | 8,724           | 18,400         | 47.4%                     | 2.0                          |
| <b>Grand Total</b>                 | <b>491,365</b>       | <b>193,874</b>  | <b>365,778</b> | <b>53.0%</b>              | <b>2.5</b>                   |

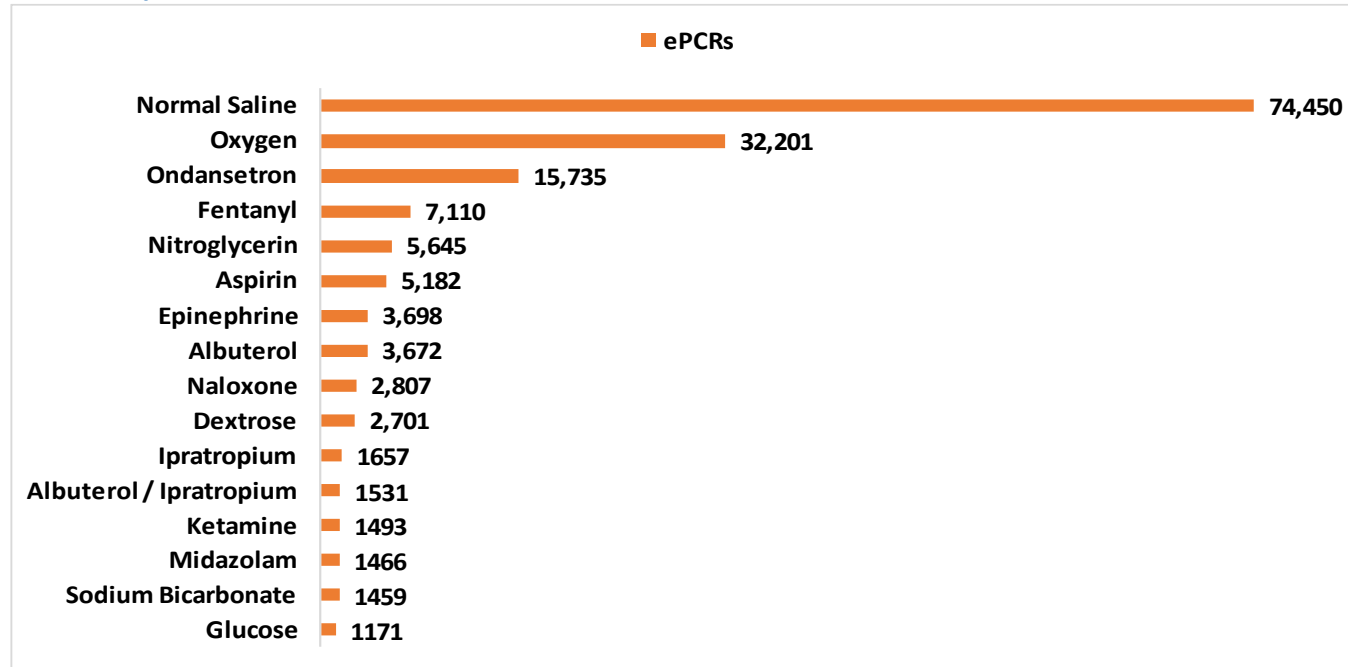


## Top Medications & Procedures

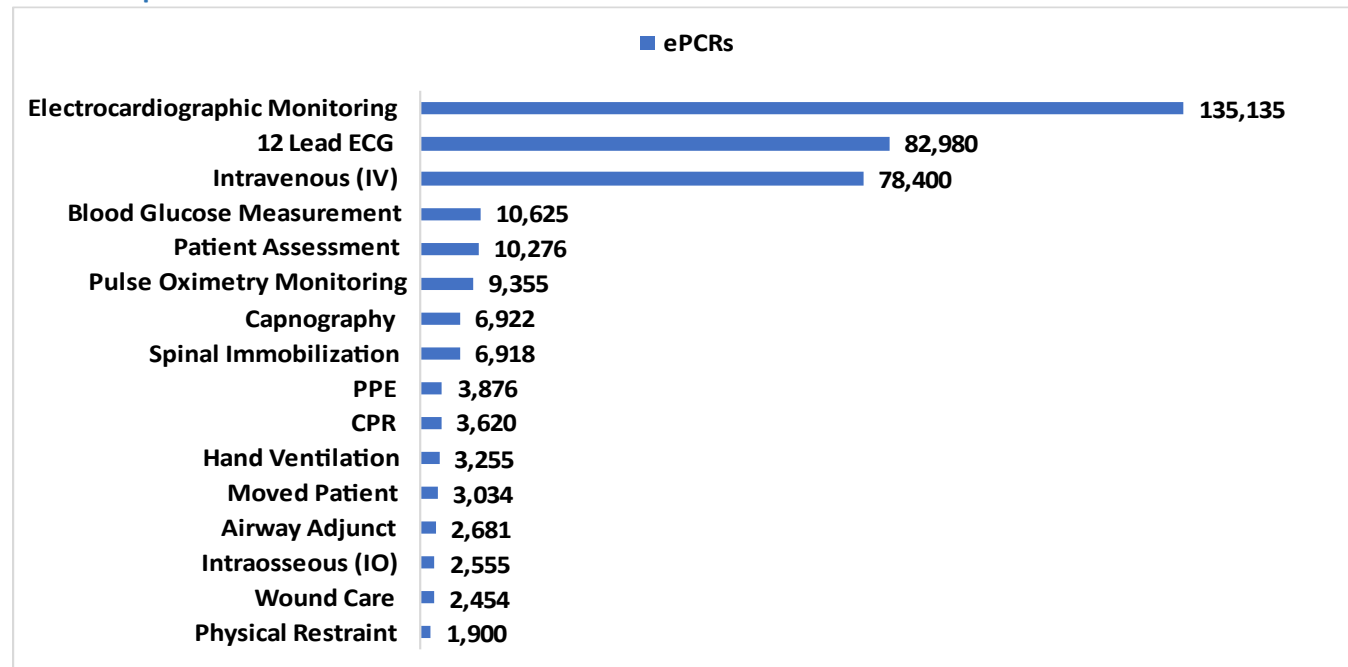
Table 3 and Table 4 below gives us an idea of which medications or procedures are most commonly used in our EMS system by looking at how often they are documented in ePCRs. To be included in this list the medication or procedure had to appear in a minimum of 1% of the time in their dataset. 16 out of 28 medication classifications and 16 out of 68 procedure classifications met this threshold for inclusion in the tables below.

A complete alphabetical list of medications and procedures is available in Tables 5 and 6 in the following section.

**Table 3: Top Medications**



**Table 4: Top Procedures**



## Findings by Medications Administered & Procedures Performed

In 2021, a total of 28 medication classifications were identified as administered in the ePCR system by EMS. A total of 181 unique procedures were identified as performed in the ePCR system by EMS and grouped into 81 categories. An average of 1.9 medications per medication ePCR and 2.5 procedures per procedure ePCR occurred in 2021. (These averages exclude ePCRs where no medication or procedure was performed as well as ePCRs with a canceled or no patient contact disposition.)

Table 5 and Table 6 below are in alphabetical order and provide a breakdown of these findings. “Count” refers to the number of times a medication was administered, or a procedure was performed. “ePCRs” refers to the number of patient contact ePCRs where the medication or procedure appears in. “ePCR Percentage” is the relative rate of ePCRs the medication or procedure is documented in and is based on medication ePCRs or Procedure ePCRs. \*\*\*The sum of “% of ePCRs” will add up to more than 100% due to multiple medications or procedures being documented in an ePCR\*\*\*

**Table 5: Medications Administered**

| Medications   | Medications Given | Medication ePCRs | Medication ePCR Percentage |
|---|-------------------|------------------|----------------------------|
| <b>Activated Charcoal</b>                                     | <b>324</b>        | <b>317</b>       | <b>0.2%</b>                |
| Activated Charcoal (272)                                      | 324               | 317              | 0.2%                       |
| <b>Adenosine</b>  | <b>454</b>        | <b>417</b>       | <b>0.2%</b>                |
| Adenosine (Adenocard) (296)                                   | 454               | 417              | 0.2%                       |
| <b>Albuterol</b>  | <b>4,261</b>      | <b>3,672</b>     | <b>2.2%</b>                |
| Albuterol (Proventil) (435)                                   | 4,219             | 3,635            | 2.1%                       |
| Albuterol (Proventil) Inhaler (90 µg / Metered Dose) (745682) | 42                | 40               | 0.0%                       |
| <b>Albuterol / Ipratropium</b>                                | <b>1,553</b>      | <b>1,531</b>     | <b>0.8%</b>                |
| Albuterol / Ipratropium (Combivent, DuoNeb) (214199)          | 1,553             | 1,531            | 0.8%                       |
| <b>Amiodarone</b>   | <b>523</b>        | <b>377</b>       | <b>0.3%</b>                |
| Amiodarone (Cordarone) (703)                                  | 523               | 377              | 0.3%                       |
| <b>Aspirin</b>  | <b>5,189</b>      | <b>5,182</b>     | <b>2.6%</b>                |
| Aspirin (1191)  | 5,189             | 5,182            | 2.6%                       |
| <b>Atropine</b>   | <b>458</b>        | <b>331</b>       | <b>0.2%</b>                |
| Atropine (1223)   | 458               | 331              | 0.2%                       |
| <b>Calcium</b>  | <b>167</b>        | <b>165</b>       | <b>0.1%</b>                |
| Calcium Chloride (1901)                                       | 155               | 153              | 0.1%                       |
| calcium chloride 10 % 10 ML Prefilled Syringe (828527)        | 12                | 12               | 0.0%                       |
| <b>Dextrose</b>   | <b>2,734</b>      | <b>2,701</b>     | <b>1.4%</b>                |
| Dextrose 10% Half Normal Saline (244098)                      | 1                 | 1                | 0.0%                       |
| Dextrose 10% Normal Saline (244099)                           | 1,734             | 1,709            | 0.9%                       |
| Dextrose 10% Water (237648)                                   | 862               | 856              | 0.4%                       |
| Dextrose 25% Water (260258)                                   | 45                | 44               | 0.0%                       |
| Dextrose 5% Quarter Normal Saline (630800)                    | 7                 | 7                | 0.0%                       |
| Dextrose 50% Water (237653)                                   | 85                | 85               | 0.0%                       |
| <b>Diphenhydramine</b>  | <b>746</b>        | <b>737</b>       | <b>0.4%</b>                |
| Diphenhydramine (Benadryl) (3498)                             | 746               | 737              | 0.4%                       |
| <b>Epinephrine</b>  | <b>9,370</b>      | <b>3,698</b>     | <b>4.8%</b>                |
| Epinephrine (Epipen) Auto-Injector (0.15 mg) (727386)         | 3                 | 2                | 0.0%                       |
| Epinephrine (Epipen) Auto-Injector (0.3 mg) (727347)          | 3                 | 3                | 0.0%                       |
| Epinephrine 1:1,000 (1 mg/mL) (328316)                        | 389               | 280              | 0.2%                       |
| Epinephrine 1:10,000 (0.1 mg/mL) (317361)                     | 7,234             | 2,766            | 3.7%                       |

|   |                |                |               |
|---|----------------|----------------|---------------|
| Epinephrine 1:100,000 (Push Dose Epi) (330545)                                      | 1,741          | 875            | 0.9%          |
| <b>Fentanyl</b>   | <b>11,274</b>  | <b>7,110</b>   | <b>5.7%</b>   |
| Fentanyl (Sublimaze) (4337)   | 11,274         | 7,110          | 5.7%          |
| <b>Glucagon</b>   | <b>405</b>     | <b>405</b>     | <b>0.2%</b>   |
| Glucagon (4832)   | 398            | 398            | 0.2%          |
| Glucagon Auto-Injector (791870)   | 7              | 7              | 0.0%          |
| <b>Glucose</b>  | <b>1,216</b>   | <b>1,171</b>   | <b>0.6%</b>   |
| Glucose (4850)  | 1,216          | 1,171          | 0.6%          |
| <b>Ipratropium</b>  | <b>1,668</b>   | <b>1,657</b>   | <b>0.8%</b>   |
| Ipratropium (Atrovent) (7213)   | 1,668          | 1,657          | 0.8%          |
| <b>Ketamine</b>   | <b>1,815</b>   | <b>1,493</b>   | <b>0.9%</b>   |
| Ketamine (6130)   | 1,751          | 1,440          | 0.9%          |
| Ketamine 10 MG/ML (330467)  | 64             | 53             | 0.0%          |
| <b>Lidocaine</b>  | <b>139</b>     | <b>139</b>     | <b>0.1%</b>   |
| Lidocaine (Xylocaine) (6387)  | 138            | 138            | 0.1%          |
| lidocaine 2 % Injectable Solution (317567)  | 1              | 1              | 0.0%          |
| <b>Magnesium Sulfate</b>  | <b>79</b>      | <b>75</b>      | <b>0.0%</b>   |
| Magnesium Sulfate (6585)  | 79             | 75             | 0.0%          |
| <b>Midazolam</b>  | <b>1,730</b>   | <b>1,466</b>   | <b>0.9%</b>   |
| Midazolam (Versed) (6960)   | 1,730          | 1,466          | 0.9%          |
| <b>Morphine</b>   | <b>15</b>      | <b>9</b>       | <b>0.0%</b>   |
| Morphine (7052)   | 15             | 9              | 0.0%          |
| <b>Naloxone</b>   | <b>6,629</b>   | <b>2,807</b>   | <b>3.4%</b>   |
| Naloxone (Narcan) (7242)  | 6,376          | 2,683          | 3.2%          |
| Naloxone (Narcan) Auto-Injector (727348)  | 253            | 132            | 0.1%          |
| <b>Nitroglycerin</b>  | <b>9,043</b>   | <b>5,645</b>   | <b>4.6%</b>   |
| Nitroglycerin (0.4 mg) (316365)   | 6,801          | 5,051          | 3.5%          |
| Nitroglycerin (4917)  | 378            | 276            | 0.2%          |
| Nitroglycerin Paste 2% (242946)   | 1,864          | 1,850          | 0.9%          |
| <b>Normal Saline</b>  | <b>83,077</b>  | <b>74,450</b>  | <b>42.3%</b>  |
| Normal Saline (125464)  | 1,317          | 1,089          | 0.7%          |
| Normal Saline (313002)  | 81,760         | 73,369         | 41.6%         |
| <b>Ondansetron</b>  | <b>17,244</b>  | <b>15,735</b>  | <b>8.8%</b>   |
| ondansetron (as ondansetron hydrochloride) 4 MG Disintegrating Oral Tablet (104894) | 73             | 73             | 0.0%          |
| Ondansetron (Zofran) (26225)  | 17,171         | 15,670         | 8.7%          |
| <b>Oxygen</b>   | <b>34,662</b>  | <b>32,201</b>  | <b>17.6%</b>  |
| Oxygen (7806)   | 34,662         | 32,201         | 17.6%         |
| <b>Sodium Bicarbonate</b>   | <b>1,499</b>   | <b>1,459</b>   | <b>0.8%</b>   |
| Sodium Bicarbonate (CARES) (36676)  | 65             | 63             | 0.0%          |
| Sodium Bicarbonate 4.2% (237361)  | 4              | 4              | 0.0%          |
| Sodium Bicarbonate 8.4% (237363)  | 1,430          | 1,396          | 0.7%          |
| <b>Sterile Water</b>  | <b>2</b>       | <b>2</b>       | <b>0.0%</b>   |
| Sterile Water (107129)  | 2              | 2              | 0.0%          |
| <b>Tranexamic Acid</b>  | <b>159</b>     | <b>157</b>     | <b>0.1%</b>   |
| Tranexamic Acid (TXA, Lysteda) (10691)  | 159            | 157            | 0.1%          |
| <b>Grand Total</b>  | <b>196,435</b> | <b>104,893</b> | <b>100.0%</b> |

**Table 6: Procedures Performed**

| Procedures  | Procedures Performed | Procedure ePCRs | Procedure ePCR Percentage |
|---|----------------------|-----------------|---------------------------|
| <b>12 Lead ECG</b>  | <b>114,867</b>       | <b>82,980</b>   | <b>42.8%</b>              |
| 12 Lead ECG (268400002)   | 114,744              | 82,961          | 42.8%                     |
| ECG Transmission (422952004)                                      | 123                  | 121             | 0.1%                      |
| <b>Active External Cooling</b>                                    | <b>234</b>           | <b>213</b>      | <b>0.1%</b>               |
| Active External Cooling (431774007)                               | 234                  | 213             | 0.1%                      |
| <b>Active External Warming</b>                                    | <b>180</b>           | <b>178</b>      | <b>0.1%</b>               |
| Active External Warming (431949004)                               | 180                  | 178             | 0.1%                      |
| <b>Airway Adjunct</b>   | <b>2,772</b>         | <b>2,681</b>    | <b>1.4%</b>               |
| Nasopharyngeal Airway (182692007)                                 | 1,166                | 1,152           | 0.6%                      |
| Oropharyngeal Airway (7443007)                                    | 1,606                | 1,593           | 0.8%                      |
| <b>Airway Clearance by Finger Sweep</b>                           | <b>2</b>             | <b>2</b>        | <b>0.0%</b>               |
| Airway Clearance by Finger Sweep (232706008)                      | 2                    | 2               | 0.0%                      |
| <b>Airway Opened</b>  | <b>150</b>           | <b>148</b>      | <b>0.1%</b>               |
| Airway Opened (232664002)   | 150                  | 148             | 0.1%                      |
| <b>Airway Suctioning</b>  | <b>1,013</b>         | <b>894</b>      | <b>0.5%</b>               |
| Airway Suctioned (230040009)                                      | 879                  | 799             | 0.4%                      |
| Irrigate and Suction Endotracheal Tube (443533003)                | 11                   | 10              | 0.0%                      |
| Suction Endotracheal Tube (225715000)                             | 84                   | 74              | 0.0%                      |
| Suction Newborn (18540005)  | 23                   | 22              | 0.0%                      |
| Vomit Removed from Airway (225713007)                             | 16                   | 16              | 0.0%                      |
| <b>Ambulance Requested</b>  | <b>6</b>             | <b>6</b>        | <b>0.0%</b>               |
| Ambulance Requested (185406000)                                   | 6                    | 6               | 0.0%                      |
| <b>Assess Airway Device Cuff Pressure</b>                         | <b>3</b>             | <b>3</b>        | <b>0.0%</b>               |
| Assess Airway Device Cuff Pressure (448464001)                    | 3                    | 3               | 0.0%                      |
| <b>Assist with Toileting</b>                                      | <b>6</b>             | <b>4</b>        | <b>0.0%</b>               |
| Assist with Toileting (313420001)                                 | 6                    | 4               | 0.0%                      |
| <b>Bleeding Control</b>   | <b>865</b>           | <b>765</b>      | <b>0.4%</b>               |
| Chemical Hemostatic Agent for Bleeding (372045002)                | 2                    | 1               | 0.0%                      |
| Direct Pressure for Bleeding (447686008)                          | 409                  | 402             | 0.2%                      |
| Hemostatic agent applied (QuikClot or other dressing) (713147009) | 18                   | 17              | 0.0%                      |
| Pressure Dressing for Bleeding (26906007)                         | 318                  | 303             | 0.2%                      |
| Pressure to Artery for Bleeding (233419004)                       | 15                   | 15              | 0.0%                      |
| Tourniquet for Bleeding (20655006)                                | 103                  | 98              | 0.1%                      |
| <b>Blood Glucose Measurement</b>                                  | <b>10,997</b>        | <b>10,625</b>   | <b>5.5%</b>               |
| Finger-prick (278450005)  | 7,775                | 7,583           | 3.9%                      |
| Glucose measurement, blood (33747003)                             | 3,222                | 3,042           | 1.6%                      |
| <b>Burn Care</b>  | <b>49</b>            | <b>38</b>       | <b>0.0%</b>               |
| Burn Care (133901003)   | 20                   | 17              | 0.0%                      |
| Burn Dressing Applied (90660004)                                  | 29                   | 24              | 0.0%                      |
| <b>Capnography</b>  | <b>7,224</b>         | <b>6,922</b>    | <b>3.6%</b>               |
| ETCO2 Colorimetric Detection (428482009)                          | 116                  | 111             | 0.1%                      |
| ETCO2 Digital Capnography (425543005)                             | 7,108                | 6,832           | 3.5%                      |
| <b>Cardiac Pacing</b>   | <b>161</b>           | <b>121</b>      | <b>0.1%</b>               |
| Cardiac Pacing (18590009)   | 161                  | 121             | 0.1%                      |

|  |                |                |              |
|--|----------------|----------------|--------------|
| <b>Cardioversion</b>   | <b>89</b>      | <b>61</b>      | <b>0.0%</b>  |
| Cardioversion (250980009)                                    | 89             | 61             | 0.0%         |
| <b>Central Pulses Present</b>                                | <b>266</b>     | <b>226</b>     | <b>0.1%</b>  |
| Central pulses present (ROSC) (425598000)                    | 266            | 226            | 0.1%         |
| <b>Cervical Spine Stabilization</b>                          | <b>307</b>     | <b>306</b>     | <b>0.2%</b>  |
| Manual Cervical Spine Stabilization (449199004)              | 307            | 306            | 0.2%         |
| <b>Childbirth</b>  | <b>32</b>      | <b>32</b>      | <b>0.0%</b>  |
| Childbirth (236973005)                                       | 32             | 32             | 0.0%         |
| <b>Comfort Measures</b>                                      | <b>1,566</b>   | <b>1,534</b>   | <b>0.8%</b>  |
| Comfort care management (385897008)                          | 16             | 15             | 0.0%         |
| Comfort Measures (133918004)                                 | 841            | 838            | 0.4%         |
| Position of Comfort (225994009)                              | 702            | 694            | 0.4%         |
| Turn Patient in Bed (359962006)                              | 7              | 7              | 0.0%         |
| <b>Comfort Survivors</b>                                     | <b>23</b>      | <b>23</b>      | <b>0.0%</b>  |
| Comfort Survivors (171007003)                                | 23             | 23             | 0.0%         |
| <b>CPAP</b>  | <b>1,589</b>   | <b>1,150</b>   | <b>0.6%</b>  |
| CPAP (47545007)  | 1,144          | 1,099          | 0.6%         |
| CPAP Titration (446573003)                                   | 445            | 305            | 0.2%         |
| <b>CPR</b>   | <b>4,341</b>   | <b>3,620</b>   | <b>1.9%</b>  |
| Manual CPR (89666000)  | 3,746          | 3,370          | 1.7%         |
| Mechanical Device CPR (429283006)                            | 595            | 538            | 0.3%         |
| <b>Decontamination</b>                                       | <b>8</b>       | <b>8</b>       | <b>0.0%</b>  |
| Decontamination (409530006)                                  | 8              | 8              | 0.0%         |
| <b>Defibrillation</b>  | <b>1,547</b>   | <b>600</b>     | <b>0.3%</b>  |
| Defibrillation (426220008)                                   | 1,547          | 600            | 0.3%         |
| <b>Electrocardiographic Monitoring</b>                       | <b>201,645</b> | <b>135,135</b> | <b>69.7%</b> |
| 3 Lead ECG (428803005)                                       | 3,782          | 3,776          | 1.9%         |
| Cardiac Monitor Surveillance (88140007)                      | 869            | 864            | 0.4%         |
| Electrocardiographic monitoring (46825001)                   | 196,994        | 131,694        | 67.9%        |
| <b>Endotracheal Tube</b>                                     | <b>271</b>     | <b>216</b>     | <b>0.1%</b>  |
| Check Endotracheal Tube for Security (225717008)             | 8              | 6              | 0.0%         |
| Check Endotracheal Tube Position by Auscultation (432028000) | 48             | 42             | 0.0%         |
| Remove Endotracheal Tube (271280005)                         | 23             | 23             | 0.0%         |
| Reposition Endotracheal Tube (225716004)                     | 3              | 3              | 0.0%         |
| Secure Endotracheal Tube by Hand (429618000)                 | 4              | 4              | 0.0%         |
| Secure Endotracheal Tube with Holder (429184008)             | 185            | 185            | 0.1%         |
| <b>Environmental Management</b>                              | <b>90</b>      | <b>53</b>      | <b>0.0%</b>  |
| Environmental Management for Comfort (386284008)             | 45             | 40             | 0.0%         |
| Environmental Management for Safety (385873004)              | 45             | 40             | 0.0%         |
| <b>Extubation of trachea</b>                                 | <b>3</b>       | <b>3</b>       | <b>0.0%</b>  |
| Extubation of trachea (309812005)                            | 3              | 3              | 0.0%         |
| <b>Eye Care</b>  | <b>94</b>      | <b>92</b>      | <b>0.0%</b>  |
| Eye Bandaging (225692006)                                    | 14             | 14             | 0.0%         |
| Eye Irrigation (49999004)                                    | 80             | 79             | 0.0%         |
| <b>Hand Ventilation</b>                                      | <b>3,305</b>   | <b>3,255</b>   | <b>1.7%</b>  |
| Hand Ventilation (11140008)                                  | 3,074          | 3,029          | 1.6%         |
| Hand Ventilation by Bag Valve Mask (425447009)               | 231            | 227            | 0.1%         |
| <b>Heimlich Maneuver</b>                                     | <b>4</b>       | <b>4</b>       | <b>0.0%</b>  |

|  |               |               |              |
|--|---------------|---------------|--------------|
| Heimlich Maneuver (Airway) (23690002)                          | 4             | 4             | 0.0%         |
| <b>Ice Pack</b>  | <b>894</b>    | <b>884</b>    | <b>0.5%</b>  |
| Chemically-activated Ice Pack Treatment (229583009)            | 21            | 21            | 0.0%         |
| Cold/Ice Pack treatment (229585002)                            | 873           | 863           | 0.4%         |
| <b>Intraosseous (IO)</b>                                       | <b>2,625</b>  | <b>2,555</b>  | <b>1.3%</b>  |
| Intraosseous (IO) (430824005)                                  | 2,612         | 2,546         | 1.3%         |
| Monitoring of Intraosseous (IO) Access (708010003)             | 13            | 13            | 0.0%         |
| <b>Intravenous (IV)</b>  | <b>83,742</b> | <b>78,400</b> | <b>40.4%</b> |
| Blood Draw for Labs (82078001)                                 | 187           | 187           | 0.1%         |
| Intravenous (IV) (392230005)                                   | 82,276        | 77,298        | 39.9%        |
| Intravenous (IV) Infusion Prior to This Unit's Care (14152002) | 109           | 109           | 0.1%         |
| IV Catheter Care (410109005)                                   | 948           | 912           | 0.5%         |
| IV Catheter Removal (424287005)                                | 156           | 156           | 0.1%         |
| Venous Puncture (396540005)                                    | 66            | 62            | 0.0%         |
| <b>Intubation</b>  | <b>1,319</b>  | <b>1,163</b>  | <b>0.6%</b>  |
| Bougie, device (physical object) (26128008)                    | 1             | 1             | 0.0%         |
| Cricoid Pressure Applied (241726007)                           | 1             | 1             | 0.0%         |
| Endotracheal Intubation-Video Laryngoscopy (-3)                | 2             | 2             | 0.0%         |
| Intubation of Existing Tracheostomy Stoma (232685002)          | 5             | 5             | 0.0%         |
| Orotracheal Intubation (232674004)                             | 1,214         | 1,154         | 0.6%         |
| Use of Bougie / Introducer Stylet (397874007)                  | 96            | 96            | 0.0%         |
| <b>Laryngoscopy</b>  | <b>25</b>     | <b>25</b>     | <b>0.0%</b>  |
| Flexible Fiberoptic Laryngoscopy (49077009)                    | 3             | 3             | 0.0%         |
| Laryngoscopy (28760000)  | 13            | 13            | 0.0%         |
| Laryngoscopy with Foreign Body Removal (19433002)              | 9             | 9             | 0.0%         |
| <b>Lubrication</b>   | <b>1</b>      | <b>1</b>      | <b>0.0%</b>  |
| Lubrication (257883005)  | 1             | 1             | 0.0%         |
| <b>Monitoring of J-tube</b>                                    | <b>5</b>      | <b>5</b>      | <b>0.0%</b>  |
| Monitoring of J-tube (302353008)                               | 5             | 5             | 0.0%         |
| <b>Mouth-to-Mask/Mouth Ventilation</b>                         | <b>57</b>     | <b>57</b>     | <b>0.0%</b>  |
| Mouth-to-Mask/Mouth Ventilation (243180002)                    | 57            | 57            | 0.0%         |
| <b>Moved Patient</b>   | <b>3,921</b>  | <b>3,034</b>  | <b>1.6%</b>  |
| Moved Patient (56469005)                                       | 3,921         | 3,034         | 1.6%         |
| <b>Needle Chest Decompression</b>                              | <b>104</b>    | <b>77</b>     | <b>0.0%</b>  |
| Needle Chest Decompression (182705007)                         | 104           | 77            | 0.0%         |
| <b>Notify Coroner</b>  | <b>48</b>     | <b>48</b>     | <b>0.0%</b>  |
| Notify Coroner (363049002)                                     | 48            | 48            | 0.0%         |
| <b>Nutrition and Oral Intake</b>                               | <b>6</b>      | <b>5</b>      | <b>0.0%</b>  |
| Giving oral fluid (225285007)                                  | 4             | 3             | 0.0%         |
| Provision of food (710925007)                                  | 2             | 2             | 0.0%         |
| <b>Occlusive Wound Dressing</b>                                | <b>95</b>     | <b>84</b>     | <b>0.0%</b>  |
| Occlusive Wound Dressing (22206003)                            | 95            | 84            | 0.0%         |
| <b>Orthostatic Vital Signs</b>                                 | <b>749</b>    | <b>736</b>    | <b>0.4%</b>  |
| Orthostatic Vital Signs (425058005)                            | 749           | 736           | 0.4%         |
| <b>Oxygen</b>  | <b>207</b>    | <b>200</b>    | <b>0.1%</b>  |
| Blow by oxygen mask (physical object) (425478008)              | 5             | 5             | 0.0%         |
| Nonrebreather oxygen mask (physical object) (427591007)        | 41            | 41            | 0.0%         |
| Oxygen nasal cannula (physical object) (336623009)             | 116           | 116           | 0.1%         |

|   |               |               |             |
|---|---------------|---------------|-------------|
| Oxygen Prior to This Unit's Care (57485005)             | 45            | 45            | 0.0%        |
| <b>Patient Assessment</b>                               | <b>12,652</b> | <b>10,276</b> | <b>5.3%</b> |
| Adult care assessment (408994004)                       | 1             | 1             | 0.0%        |
| Continuous Patient Assessment (422618004)               | 2,596         | 2,568         | 1.3%        |
| Initial Patient Assessment (315639002)                  | 9,984         | 9,973         | 5.1%        |
| Newborn Continuous Patient Assessment (423589000)       | 18            | 16            | 0.0%        |
| Patient Assessment (Triage) (245581009)                 | 53            | 52            | 0.0%        |
| <b>Physical Restraint</b>                               | <b>2,905</b>  | <b>1,900</b>  | <b>1.0%</b> |
| Physical Restraint (386423001)                          | 1,784         | 1,574         | 0.8%        |
| Physical Restraint Checked and Maintained (35497000)    | 1,121         | 887           | 0.5%        |
| <b>Police Requested</b>                                 | <b>20</b>     | <b>20</b>     | <b>0.0%</b> |
| Police Requested (184966003)                            | 20            | 20            | 0.0%        |
| <b>PPE</b>  | <b>3,944</b>  | <b>3,876</b>  | <b>2.0%</b> |
| Airborne Precautions (409524006)                        | 339           | 339           | 0.2%        |
| Aspiration Precautions (386519006)                      | 7             | 7             | 0.0%        |
| Blood and Fluids Precautions (65011002)                 | 47            | 47            | 0.0%        |
| Contact Precautions (409529001)                         | 100           | 100           | 0.1%        |
| Face mask/covering for Patient (465635009)              | 531           | 529           | 0.3%        |
| Isolation (40174006)                                    | 6             | 6             | 0.0%        |
| Respiratory Secretion Precautions (409525007)           | 20            | 20            | 0.0%        |
| Standard Precautions (409522005)                        | 2,894         | 2,880         | 1.5%        |
| <b>Psycho-spiritual Comforting</b>                      | <b>646</b>    | <b>626</b>    | <b>0.3%</b> |
| Psycho-spiritual Comforting (385728004)                 | 646           | 626           | 0.3%        |
| <b>Pulse Oximetry Monitoring</b>                        | <b>9,371</b>  | <b>9,355</b>  | <b>4.8%</b> |
| Pulse Oximetry Monitoring (284034009)                   | 9,371         | 9,355         | 4.8%        |
| <b>Removal of Foreign Body</b>                          | <b>29</b>     | <b>29</b>     | <b>0.0%</b> |
| Foreign Body Removed from Airway (232707004)            | 22            | 22            | 0.0%        |
| Removal of Foreign Body (10849003)                      | 5             | 5             | 0.0%        |
| Removal of Foreign Body from Skin (302421003)           | 2             | 2             | 0.0%        |
| <b>Removal of Ring from Finger</b>                      | <b>24</b>     | <b>24</b>     | <b>0.0%</b> |
| Removal of Ring from Finger (426509009)                 | 24            | 24            | 0.0%        |
| <b>Remove Device from Airway</b>                        | <b>2</b>      | <b>2</b>      | <b>0.0%</b> |
| Remove Device from Airway (232708009)                   | 2             | 2             | 0.0%        |
| <b>Report</b>   | <b>2,418</b>  | <b>1,527</b>  | <b>0.8%</b> |
| Report to Nurse (385775004)                             | 1,522         | 1,513         | 0.8%        |
| Report to Physician (304562007)                         | 896           | 892           | 0.5%        |
| <b>Safety Management</b>                                | <b>40</b>     | <b>40</b>     | <b>0.0%</b> |
| Safety Management (712991000)                           | 40            | 40            | 0.0%        |
| <b>Sling</b>  | <b>300</b>    | <b>287</b>    | <b>0.1%</b> |
| Sling Applied (182558000)                               | 281           | 281           | 0.1%        |
| Sling Maintained (81533008)                             | 19            | 19            | 0.0%        |
| <b>Spinal Immobilization</b>                            | <b>7,053</b>  | <b>6,918</b>  | <b>3.6%</b> |
| Cervical Collar Applied (49689007)                      | 6,482         | 6,473         | 3.3%        |
| Cervical Spine Stabilization (398041008)                | 571           | 569           | 0.3%        |
| <b>Splint</b>   | <b>1,332</b>  | <b>1,282</b>  | <b>0.7%</b> |
| Air Splint Applied (274475000)                          | 378           | 371           | 0.2%        |
| Extrication splint device (physical object) (421925007) | 3             | 3             | 0.0%        |
| Splint Applied (79321009)                               | 773           | 758           | 0.4%        |

|  |                |                |               |
|--|----------------|----------------|---------------|
| Splint Maintained (10442004)                               | 27             | 25             | 0.0%          |
| Vacuum Splint Applied (427996005)                          | 151            | 146            | 0.1%          |
| <b>Time of death</b>                                       | <b>57</b>      | <b>57</b>      | <b>0.0%</b>   |
| Time of death (observable entity) (398299004)              | 57             | 57             | 0.0%          |
| <b>Tracheostomy Care/Monitoring</b>                        | <b>5</b>       | <b>5</b>       | <b>0.0%</b>   |
| Tracheostomy Care/Monitoring (410213006)                   | 5              | 5              | 0.0%          |
| <b>Traction</b>  | <b>59</b>      | <b>52</b>      | <b>0.0%</b>   |
| Application of skeletal traction via the femur (239656007) | 1              | 1              | 0.0%          |
| Traction Maintained (48035000)                             | 10             | 10             | 0.0%          |
| Traction Splint Applied (302488007)                        | 48             | 48             | 0.0%          |
| <b>Unexpected death-Coroner told</b>                       | <b>21</b>      | <b>21</b>      | <b>0.0%</b>   |
| Unexpected death-Coroner told (finding) (270115005)        | 21             | 21             | 0.0%          |
| <b>Vagal Maneuver</b>                                      | <b>216</b>     | <b>196</b>     | <b>0.1%</b>   |
| Vagal Maneuver (128968000)                                 | 216            | 196            | 0.1%          |
| <b>Ventilator</b>  | <b>4</b>       | <b>4</b>       | <b>0.0%</b>   |
| Ventilator Care and Adjustment (385857005)                 | 4              | 4              | 0.0%          |
| <b>Wound Care</b>  | <b>2,761</b>   | <b>2,454</b>   | <b>1.3%</b>   |
| Wound Care (225358003)                                     | 100            | 97             | 0.1%          |
| Wound Dressing (182531007)                                 | 2,451          | 2,262          | 1.2%          |
| Wound Irrigation (225116006)                               | 210            | 195            | 0.1%          |
| <b>Grand Total</b>   | <b>491,366</b> | <b>193,875</b> | <b>100.0%</b> |

*Data in this report is provided by the efforts of the Riverside County EMS System and its EMS Providers in ensuring quality care and documentation of patient encounters.*

Report prepared by Sean Hakam & Catherine Farrokhi, Data & Reporting Unit, Riverside County EMS Agency

For more information, please contact Riverside County EMS Administrator, Trevor Douville [tdouville@rivco.org](mailto:tdouville@rivco.org)



**FOR CONSIDERATION BY EMCC**

Attachment D  
Page 1 of 1

DATE: June 29, 2022

TO: EMCC

FROM: Catherine Borna Farrokhi, Ph.D. - Data & Reporting Unit

SUBJECT: Patient Care Continuum Report, 2021

ACTION: Received and File Information

Please see attached Riverside County EMS Agency Patient Care Continuum Report, 2021.

[http://remsa.us/documents/reports/annual/PCC\\_Response\\_Time\\_Report\\_2021.pdf](http://remsa.us/documents/reports/annual/PCC_Response_Time_Report_2021.pdf)



RIVERSIDE COUNTY EMS AGENCY  
**PATIENT CARE CONTINUUM REPORT**  
2021

APRIL 5<sup>TH</sup>, 2022

PREPARED BY RIVERSIDE COUNTY EMS AGENCY, EMERGENCY MANAGEMENT DEPARTMENT

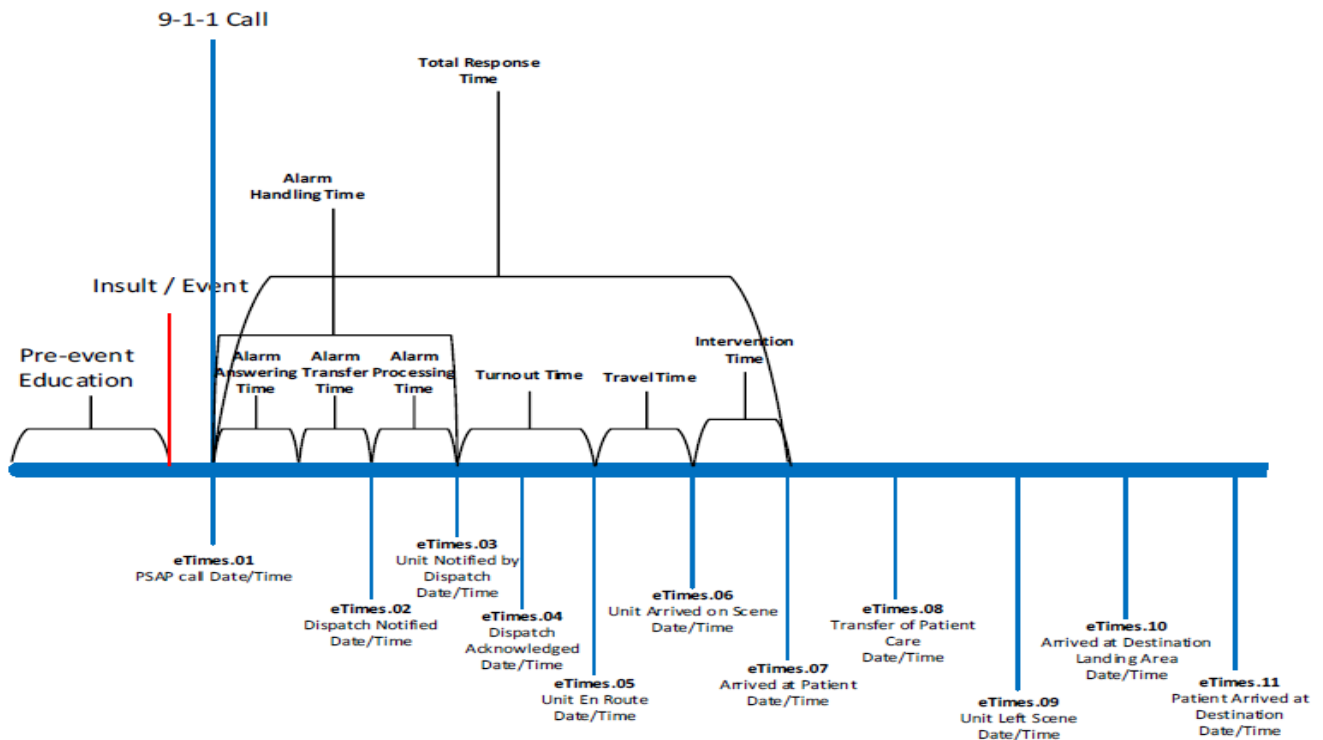
# PATIENT CARE CONTINUUM REPORT

The purpose of this report is to provide analysis of the prehospital time intervals identified in REMSA Policy 2203-Patient Care Continuum Time Standards. Additional time intervals were added to the analysis to further measure the prehospital continuum of patient care from dispatch to hospital arrival.

Below are time interval definitions and their corresponding NEMSIS 3.4 timestamps. Time intervals in italics are intervals not currently in Policy 2203.

- Alarm Answering Time – eTimes.01 to eTimes.02
- Alarm Transfer Time – eTimes.01 to eTimes.02 (when the call is transferred to another designated entity)
- Alarm Handling Time – eTimes.01 to eTimes.03
- Alarm Processing Time – eTimes.02 to eTimes.03
- Turnout Time – eTimes.03 to eTimes.05
- Travel Time – eTimes.05 to eTimes.06
- Intervention Time – eTimes.06 to eTimes.07
- *Unit Response Time – eTimes.03 to eTimes.06*
- Total Response Time – eTimes.01 to eTimes.07
- *Arrived On Scene To Arrived At Destination Time – eTimes.06 to eTimes.11*
- *Total On Scene Time – eTimes.06 to eTimes.09*
- *Total Time On Scene With Patient – eTimes.07 to eTimes.09*
- *Transport Time – eTimes.09 to eTimes.11*
- *Unit Prehospital Time With Patient – eTimes.07 to eTimes.11*
- *Total Unit Prehospital Time – eTimes.03 to eTimes.11*
- *Total Prehospital Time – eTimes.01 to eTimes.11*

**Pre-hospital Patient Care Continuum from dispatch to arrival at destination. Adapted from REMSA Policy 2203.**



## Methodology

### Data

**439,112 ePCRs** (electronic patient care reports) were initially identified on ImageTrend® Elite Report Writer between 1/1/2021 and 12/31/2021. *Sixty-seven* fields were generated for each ePCR utilized. **294,495 (67.1% of total ePCRs)** were then identified for use in time interval analysis after downloading, compiling, and cleaning the raw data.

### Exclusions

**144,617 (32.9% of total) ePCRs** were excluded due to missing data points, incorrect times, disposition, or a combination of these. ePCRs were excluded for the following dispositions: Canceled Prior to Enroute, Canceled Enroute, Canceled at Scene by Another Unit, No Patient Contact, No Patient Found, Standby: No Services or Support Provided, Standby: Public Safety, Fire, or EMS Operational Support Provided, or for leaving the disposition field blank. ePCRs were excluded for missing time stamps for eTimes.01, eTimes.02, and eTimes.07. Additional ePCRs were excluded due to having any time interval greater than three standard deviations above the mean for each time interval.

### Inclusions:

Data from **10 timestamps** were included and used to create the time intervals from REMSA Policy 2203 as well as the additional intervals created. **Sixteen (16) time intervals** were included in this dataset. Data from 16 agencies were included in the dataset. To be included, the agency had to be a fire department or transport agency providing 9-1-1 services in Riverside County. Disposition and EMD card data were also included in the dataset.

The tables below contain time interval statistics for all fire department and transport agencies providing 9-1-1 services in Riverside County. The intervals are listed at the top of the tables along with their corresponding NEMSIS 3.4 timestamps.

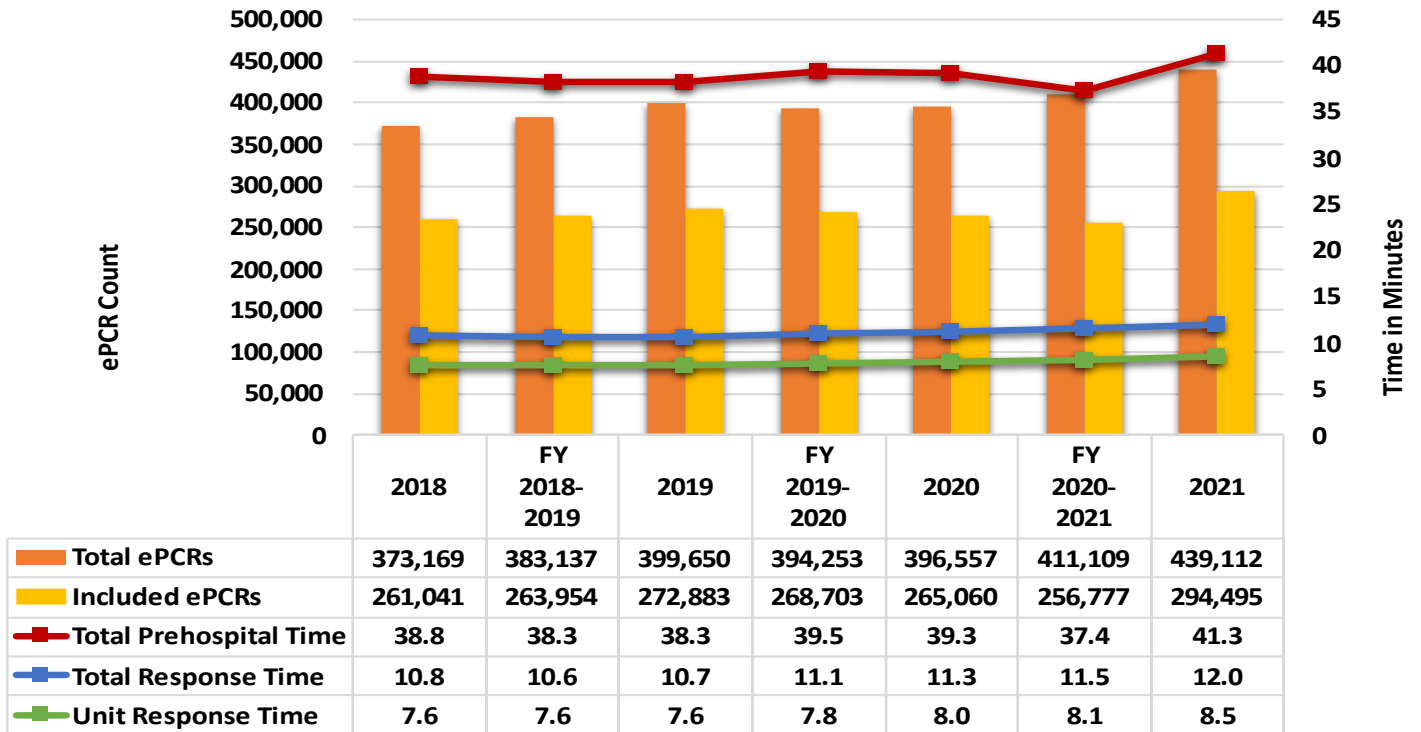
### Statistics Definitions Used

- **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.
- **90<sup>th</sup> 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.

## Change in Patient Care Continuum Over Time

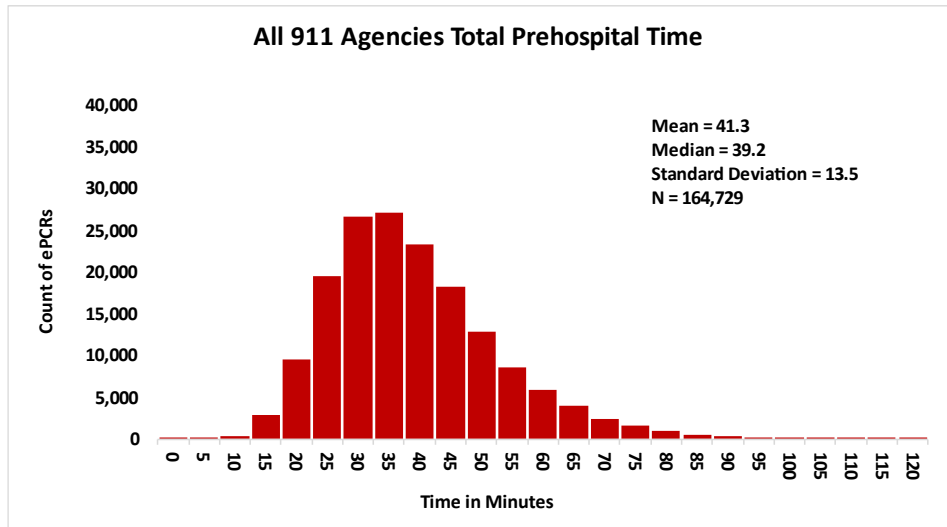
**Combination Chart I.** This combination bar and line chart show the change over time in key metrics as recorded in our semiannual Patient Care Continuum Reports. Total ePCR count has grown by 17.7% between 2018 and 2021. Mean Total Prehospital Time decreased by 0.5 minutes (1.3%) between 2018 and 2019, increased by 1 minute (2.6%) between 2019 and 2020, and increased by 2 minutes (5.1%) between 2020 and 2021. Mean Total Response Time decreased by 0.1 minutes (0.9%) between 2018 and 2019 and increased by 1.3 minutes (12.1%) between 2019 and 2021. Mean Unit Response Time stayed consistent between 2018 and 2019 and increased by 0.9 minutes (11.8%) between 2019 and 2021.

**Patient Care Continuum From 2018 to 2021**

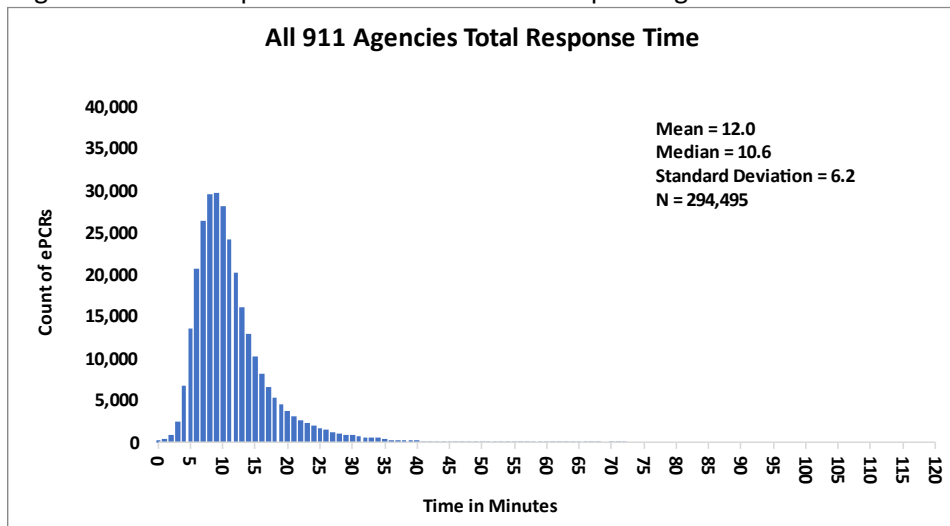


## Timeline and Findings

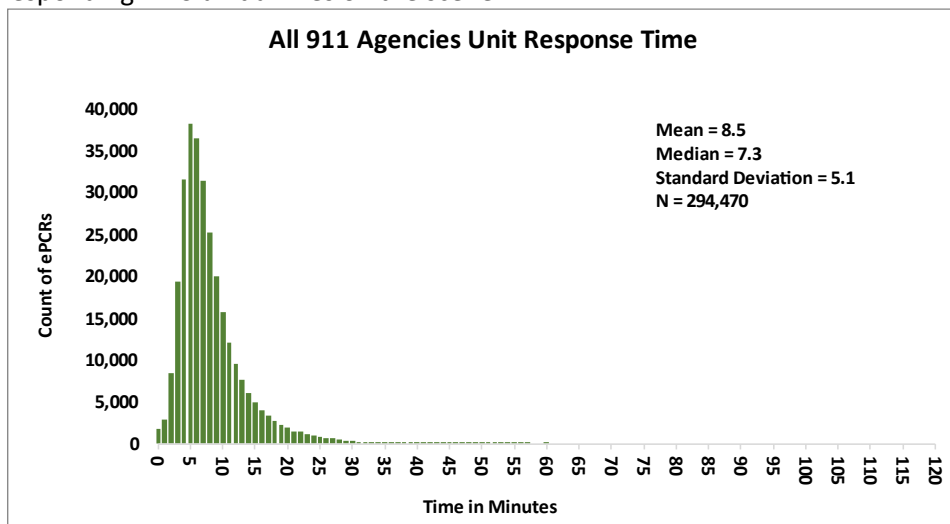
**Histogram I.** *Total Prehospital Time – eTimes.01 to eTimes.11* begins when a 9-1-1 call is made to a public safety answering point (PSAP) requesting an EMS unit response and ends when the responding EMS unit arrives with the patient at the hospital or alternate destination.



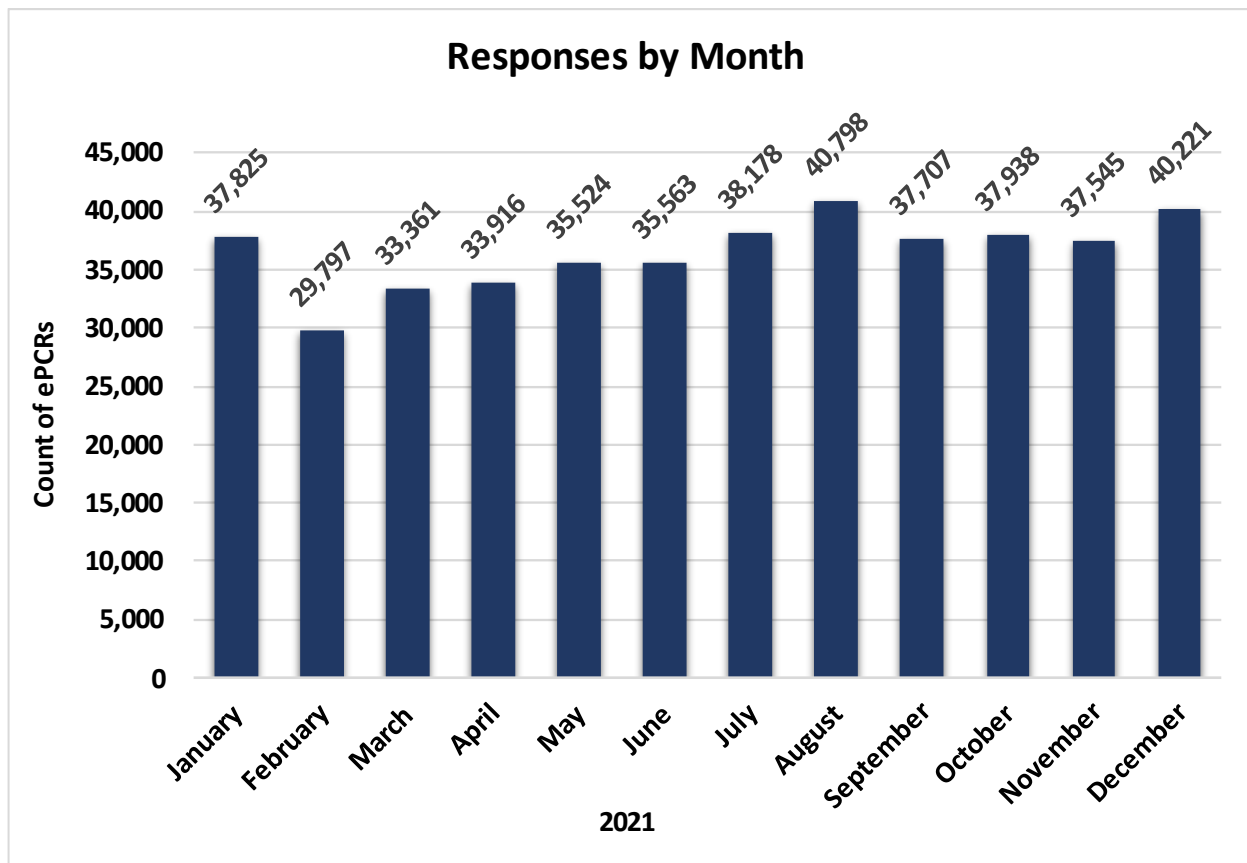
**Histogram II.** *Total Response Time – eTimes.01 to eTimes.07* begins when a 9-1-1 call is made to a public safety answering point (PSAP) requesting an EMS unit response and ends when the responding EMS unit arrive at the patient's side.



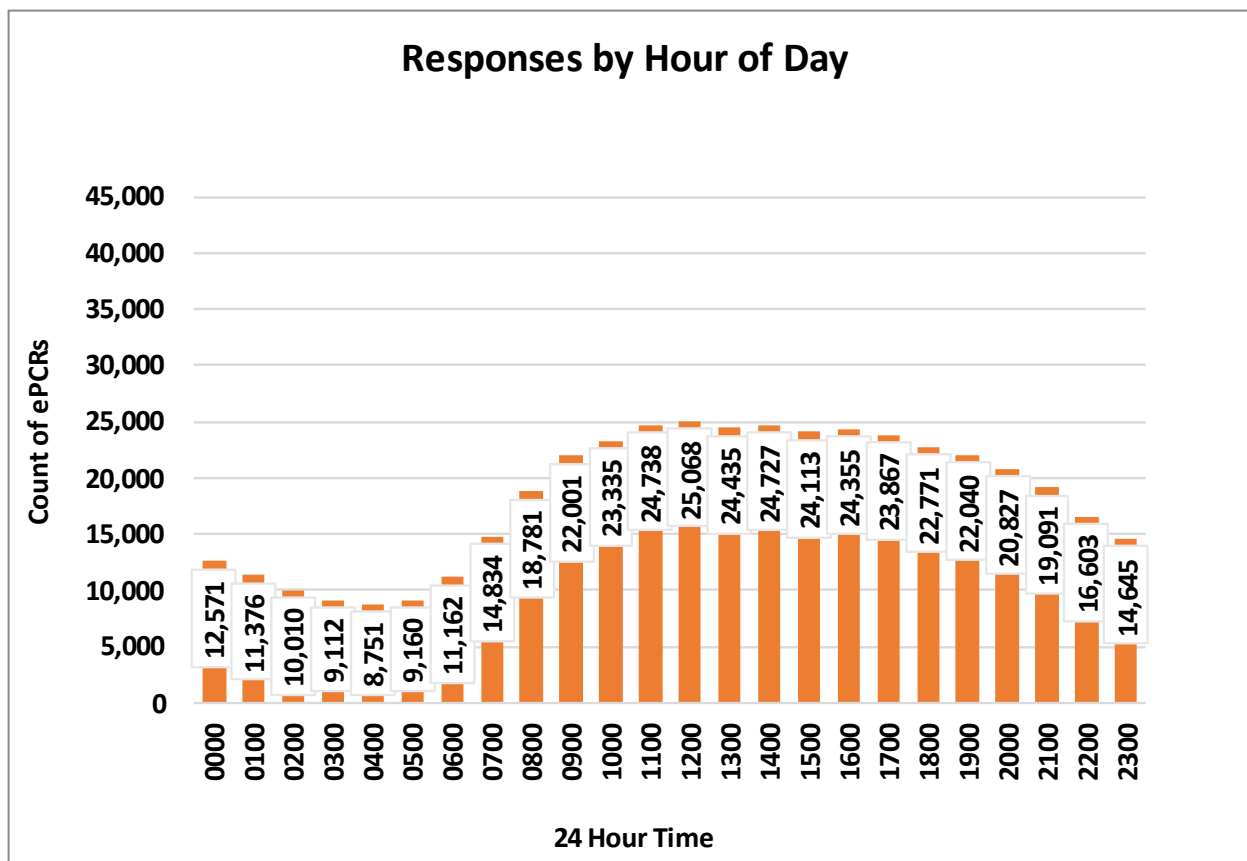
**Histogram III.** *Unit Response Time – eTimes.03 to eTimes.06* begins when the responding EMS unit is notified by dispatch and ends when the responding EMS unit arrives on the scene.



**Graph I. Responses by Month** shows ePCR volume by month and allows for a month-to-month comparison of volume.



**Graph II. Responses by Hour** shows call volumes by time-of-day and indicates which hours are busiest on average.



## Time Interval Analysis

**Tables I, II, & III.** All 9-1-1 Agencies shows the time interval statistics for all fire department and transport agencies providing 9-1-1 services in Riverside County. The intervals are listed at the top of the tables along with their corresponding NEMSIS 3.4 timestamps.

| All 911 Agencies                 |         | Alarm Answering/Transfer Time (eTimes.01 to eTimes.02) | Alarm Handling Time (eTimes.01 to eTimes.03) | Alarm Processing Time (eTimes.02 to eTimes.03) | Turnout Time (eTimes.03 to eTimes.05) | Travel Time (eTimes.05 to eTimes.06) |
|----------------------------------|---------|--|--|--|---------------------------------------|--------------------------------------|
| N                                | Total   | 439,112  | 439,112                                      | 439,112  | 439,112                               | 439,112                              |
|                                  | Valid   | 283,945  | 294,495                                      | 294,427  | 294,492                               | 294,468                              |
|                                  | Invalid | 84,185   | 140,359                                      | 88,605   | 143,536                               | 118,337                              |
|                                  | Missing | 70,982   | 4,258  | 56,080   | 1,084                                 | 26,307                               |
| Mean                             |         | 0.8  | 1.0  | 1.7  | 1.0                                   | 7.5                                  |
| Median                           |         | 0.0  | 0.3  | 0.8  | 0.7                                   | 6.1                                  |
| Standard Deviation               |         | 1.2  | 2.6  | 2.7  | 1.1                                   | 5.2                                  |
| 90th Percentile                  |         | 2.5  | 1.9  | 3.6  | 2.4                                   | 14.0                                 |
| 95% Confidence Interval for Mean |         | (0.75-0.76)  | (1-1.02)                                     | (1.72-1.74)                                    | (1.02-1.03)                           | (7.49-7.53)                          |

| All 911 Agencies                 |         | Intervention Time (eTimes.06 to eTimes.07) | Unit Response Time (eTimes.03 to eTimes.06) | Total Response Time (eTimes.01 to eTimes.07) | Total On Scene Time (eTimes.06 to eTimes.09) | Total Time On Scene With Patient (eTimes.07 to eTimes.09) |
|----------------------------------|---------|--|---|--|--|---|
| N                                | Total   | 439,112                                    | 439,112                                     | 439,112                                      | 439,112                                      | 439,112   |
|                                  | Valid   | 294,283                                    | 294,470                                     | 294,495                                      | 165,356                                      | 165,356   |
|                                  | Invalid | 36,218                                     | 118,354                                     | 6,881  | 9,341  | 8,634   |
|                                  | Missing | 108,611                                    | 26,288                                      | 137,736                                      | 264,415                                      | 265,122   |
| Mean                             |         | 1.7  | 8.5   | 12.0   | 14.8   | 13.1  |
| Median                           |         | 1.2  | 7.3   | 10.6   | 13.8   | 12.1  |
| Standard Deviation               |         | 1.9  | 5.1   | 6.2  | 6.7  | 6.5   |
| 90th Percentile                  |         | 3.0  | 14.8  | 19.3   | 23.5   | 21.7  |
| 95% Confidence Interval for Mean |         | (1.72-1.73)                                | (8.52-8.55)                                 | (11.96-12)                                   | (14.73-14.79)                                | (13.08-13.15)   |

| All 911 Agencies                 |         | Transport Time (eTimes.09 to eTimes.11) | Unit Prehospital Time With Patient (eTimes.07 to eTimes.11) | Arrived On Scene To Arrived At Destination Time (eTimes.06 to eTimes.11) | Total Unit Prehospital Time (eTimes.03 to eTimes.11) | Total Prehospital Time (eTimes.01 to eTimes.11) |
|----------------------------------|---------|---|---|--|--|---|
| N                                | Total   | 439,112                                 | 439,112   | 439,112  | 439,112  | 439,112   |
|                                  | Valid   | 164,636                                 | 164,727   | 164,729  | 164,729  | 164,729   |
|                                  | Invalid | 8,446                                   | 8,281   | 8,451  | 8,453  | 3,631   |
|                                  | Missing | 266,030                                 | 266,104   | 265,932  | 265,930  | 270,752   |
| Mean                             |         | 15.0                                    | 28.1  | 29.8   | 39.7   | 41.3  |
| Median                           |         | 13.3                                    | 26.5  | 28.1   | 37.9   | 39.2  |
| Standard Deviation               |         | 8.7                                     | 11.1  | 11.2   | 13.1   | 13.5  |
| 90th Percentile                  |         | 26.8                                    | 42.9  | 44.7   | 57.2   | 59.4  |
| 95% Confidence Interval for Mean |         | (14.99-15.07)                           | (28.08-28.19)   | (29.72-29.83)  | (39.66-39.79)  | (41.24-41.37)                                   |



## Total Response Time by Unit Type

**Table IV.** *Non-Transport Units* shows time interval statistics from *dispatch to patient contact* for all *units* that respond to 9-1-1 calls but do not provide transport services in Riverside County. The intervals are listed at the top of the tables along with their corresponding NEMSIS 3.4 timestamps.

| Non-Transport Units              |         | Alarm Answering/<br>Alarm Transfer<br>Time (eTimes.01<br>to eTimes.02) | Alarm Handling<br>Time<br>(eTimes.01 to<br>eTimes.03) | Alarm Processing<br>Time<br>(eTimes.02 to<br>eTimes.03) | Turnout Time<br>(eTimes.03 to<br>eTimes.05) | Travel Time<br>(eTimes.05 to<br>eTimes.06) | Intervention<br>Time<br>(eTimes.06 to<br>eTimes.07) | Unit Response<br>Time<br>(eTimes.03 to<br>eTimes.06) | Total Response<br>Time<br>(eTimes.01 to<br>eTimes.07) |
|----------------------------------|---------|--|---|---|---|--|---|--|---|
| N                                | Total   | 219,754  | 219,754   | 219,754   | 219,754                                     | 219,754                                    | 219,754   | 219,754  | 219,754   |
|                                  | Valid   | 107,937  | 118,450   | 118,406   | 118,447                                     | 118,425                                    | 118,240   | 118,427  | 118,450   |
|                                  | Invalid | 48,216   | 99,169  | 52,608  | 100,634                                     | 88,760                                     | 27,209  | 88,772   | 2,644   |
|                                  | Missing | 63,601   | 2,135   | 48,740  | 673   | 12,569                                     | 74,305  | 12,555   | 98,660  |
| Mean                             |         | 1.7  | 0.6   | 2.0   | 1.6   | 5.1  | 1.9   | 6.6  | 10.5  |
| Median                           |         | 1.7  | 0.2   | 2.0   | 1.5   | 4.5  | 1.4   | 6.1  | 9.8   |
| Standard Deviation               |         | 1.3  | 1.2   | 1.8   | 1.0   | 2.9  | 2.1   | 3.1  | 4.2   |
| 90th Percentile                  |         | 3.1  | 1.3   | 3.7   | 2.8   | 8.3  | 3.3   | 10.2   | 15.2  |
| 95% Confidence Interval for Mean |         | (1.84-1.87)  | (2.00-2.02)   | (0.62-0.64)   | (1.52-1.54)                                 | (4.94-4.97)                                | (1.90-1.93)   | (6.47-6.51)  | (10.37-10.42)   |

**Table V.** *Transport Units* shows time interval statistics from *dispatch to patient contact* for all *units* providing 9-1-1 transport services in Riverside County. The intervals are listed at the top of the tables along with their corresponding NEMSIS 3.4 timestamps.

| Transport Units                  |         | Alarm Answering/<br>Transfer Time<br>(eTimes.01 to<br>eTimes.02) | Alarm Handling<br>Time<br>(eTimes.01 to<br>eTimes.03) | Alarm Processing<br>Time<br>(eTimes.02 to<br>eTimes.03) | Turnout Time<br>(eTimes.03 to<br>eTimes.05) | Travel Time<br>(eTimes.05 to<br>eTimes.06) | Intervention<br>Time<br>(eTimes.06 to<br>eTimes.07) | Unit Response<br>Time<br>(eTimes.03 to<br>eTimes.06) | Total Response<br>Time<br>(eTimes.01 to<br>eTimes.07) |
|----------------------------------|---------|--|---|---|---|--|---|--|---|
| N                                | Total   | 219,358  | 219,358   | 219,358   | 219,358                                     | 219,358                                    | 219,358   | 219,358  | 219,358   |
|                                  | Valid   | 176,008  | 176,045   | 176,021   | 176,045                                     | 176,043                                    | 176,043   | 176,043  | 176,045   |
|                                  | Invalid | 35,969   | 41,190  | 35,997  | 42,902                                      | 29,577                                     | 9,009   | 29,582   | 4,237   |
|                                  | Missing | 7,381  | 2,123   | 7,340   | 411   | 13,738                                     | 34,306  | 13,733   | 39,076  |
| Mean                             |         | 0.2  | 1.3   | 1.5   | 0.7   | 9.2  | 1.6   | 9.8  | 13.0  |
| Median                           |         | 0.0  | 0.4   | 0.5   | 0.3   | 7.8  | 1.1   | 8.5  | 11.3  |
| Standard Deviation               |         | 0.7  | 3.2   | 3.2   | 1.0   | 5.8  | 1.8   | 5.8  | 7.0   |
| 90th Percentile                  |         | 0.0  | 2.8   | 3.5   | 1.7   | 16.6                                       | 3.0   | 17.2   | 21.9  |
| 95% Confidence Interval for Mean |         | (0.19-0.20)  | (1.20-1.23)   | (1.01-1.04)   | (0.65-0.66)                                 | (8.30-8.35)                                | (1.63-1.65)   | (8.95-9.00)  | (11.80-11.86)   |

## Total Response Time by Agency

**Table VI, VII, & VIII.** *Total Response Time – eTimes.01 to eTimes.07* begins when a 9-1-1 call is made to a public safety answering point (PSAP) requesting EMS services and ends when the responding EMS unit arrive at the patient's side. The tables below show Total Response Times by each agency providing 9-1-1 services in Riverside County.

| Total Response Time (eTimes.01 to eTimes.07) | Agency 1      | Agency 2     | Agency 3      | Agency 4    | Agency 5      |
|--|---------------|--------------|---------------|-------------|---------------|
| Mean   | 12.2          | 12.2         | 13.8          | 8.1         | 11.9          |
| Median                                       | 9.9           | 10.2         | 12.2          | 7.4         | 11.2          |
| Standard Deviation                           | 7.6           | 7.3          | 7.1           | 3.5         | 4.0           |
| 90th Percentile                              | 22.1          | 21.6         | 22.8          | 11.5        | 16.4          |
| 95% Confidence Interval for Mean             | (12.06-12.25) | (12.14-12.3) | (13.71-13.79) | (8.06-8.15) | (11.88-11.94) |

| Total Response Time (eTimes.01 to eTimes.07) | Agency 6    | Agency 7    | Agency 8     | Agency 9    | Agency 10   |
|--|-------------|-------------|--------------|-------------|-------------|
| Mean   | 9.3         | 9.0         | 10.1         | 9.3         | 8.3         |
| Median                                       | 8.3         | 8.4         | 9.6          | 8.9         | 7.6         |
| Standard Deviation                           | 4.5         | 3.7         | 3.4          | 3.0         | 3.8         |
| 90th Percentile                              | 13.4        | 12.0        | 13.8         | 12.7        | 11.9        |
| 95% Confidence Interval for Mean             | (9.17-9.41) | (8.92-9.08) | (9.96-10.17) | (9.21-9.34) | (8.26-8.43) |

| Total Response Time (eTimes.01 to eTimes.07) | Agency 11     | Agency 12     | Agency 13   | Agency 14     | Agency 15     | Agency 16     |
|--|---------------|---------------|-------------|---------------|---------------|---------------|
| Mean   | 11.6          | 11.5          | 6.0         | 12.8          | 11.6          | 11.1          |
| Median                                       | 11.4          | 10.1          | 5.0         | 12.7          | 11.1          | 10.0          |
| Standard Deviation                           | 3.6           | 6.2           | 4.9         | 4.4           | 3.9           | 5.8           |
| 90th Percentile                              | 16.1          | 21.1          | 11.7        | 16.6          | 16.0          | 15.7          |
| 95% Confidence Interval for Mean             | (11.36-11.87) | (10.44-12.65) | (3.05-8.99) | (12.45-13.13) | (10.93-12.21) | (10.41-11.84) |

---

*Data in this report is provided by the efforts of the Riverside County EMS System and its Providers in ensuring quality care and documentation of patient encounters.*

*Report prepared by Sean Hakam & Catherine Borna Farrokhi, Data & Reporting Unit, Riverside County EMS Agency  
For more information, please contact Riverside County EMS Administrator, Trevor Douville [tdouville@rivco.org](mailto:tdouville@rivco.org)*

---

**FOR CONSIDERATION BY EMCC**

Attachment E  
Page 1 of 1

DATE: June 29, 2022

TO: EMCC

FROM: Catherine Borna Farrokhi, Ph.D. - Data & Reporting Unit

SUBJECT: Emergency Medical Dispatch Report, 2021

ACTION: Received and File Information

Please see attached Riverside County EMS Agency Emergency Medical Dispatch Report, 2021.

[http://remsa.us/documents/reports/annual/Emergency\\_Medical\\_Dispatch\\_Report\\_2021.pdf](http://remsa.us/documents/reports/annual/Emergency_Medical_Dispatch_Report_2021.pdf)



RIVERSIDE COUNTY EMS AGENCY  
**EMERGENCY MEDICAL DISPATCH REPORT**  
2021

APRIL 5<sup>TH</sup>, 2022  
PREPARED BY RIVERSIDE COUNTY EMS AGENCY, EMERGENCY MANAGEMENT DEPARTMENT

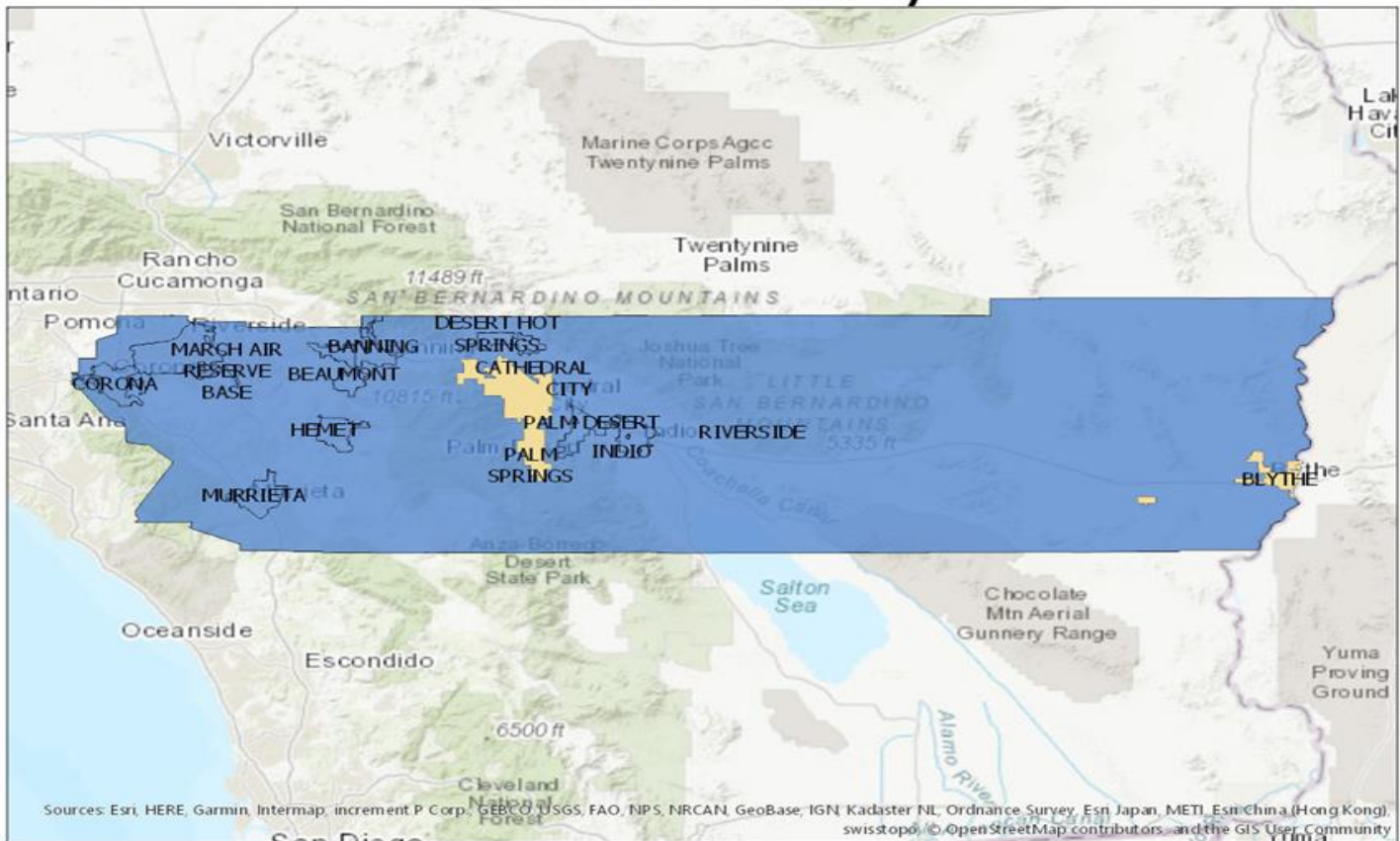
# EMERGENCY MEDICAL DISPATCH SUMMARY

The Medical Priority Dispatch System (MPDS) is utilized by Public Safety Answering Points (PSAPs) 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 2021 calendar year.

This data in this report was collected by responding agencies between January 1st, 2021, through December 31st, 2021. 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.

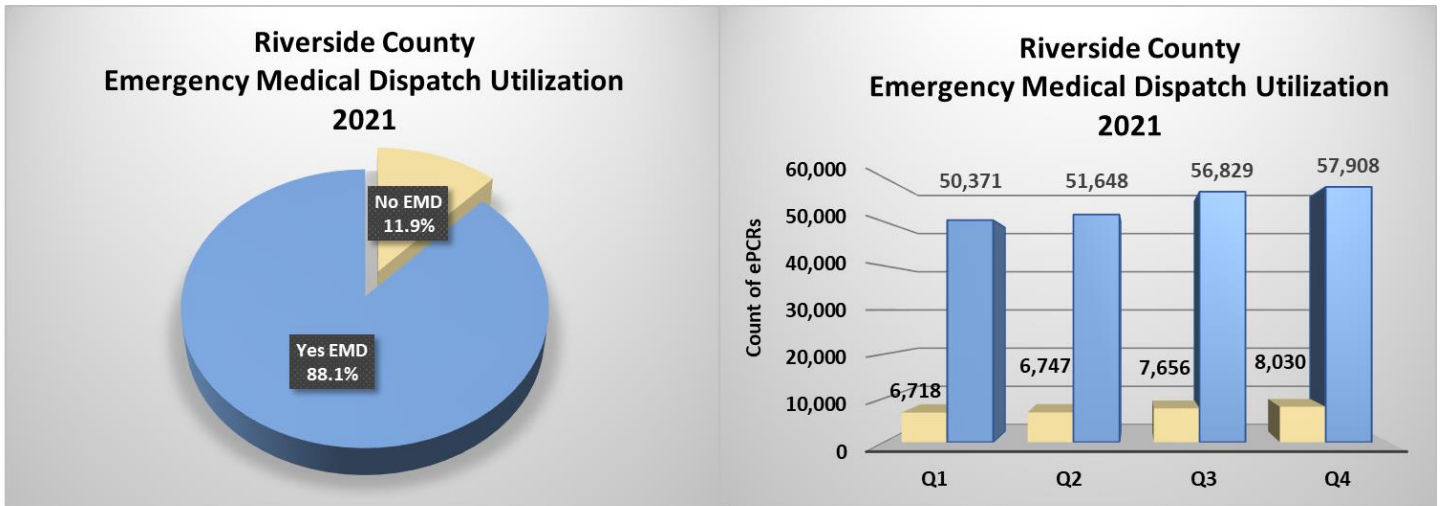
## Riverside County



● PSAP Without MPDS   ● PSAP With MPDS or Currently Implementing MPDS

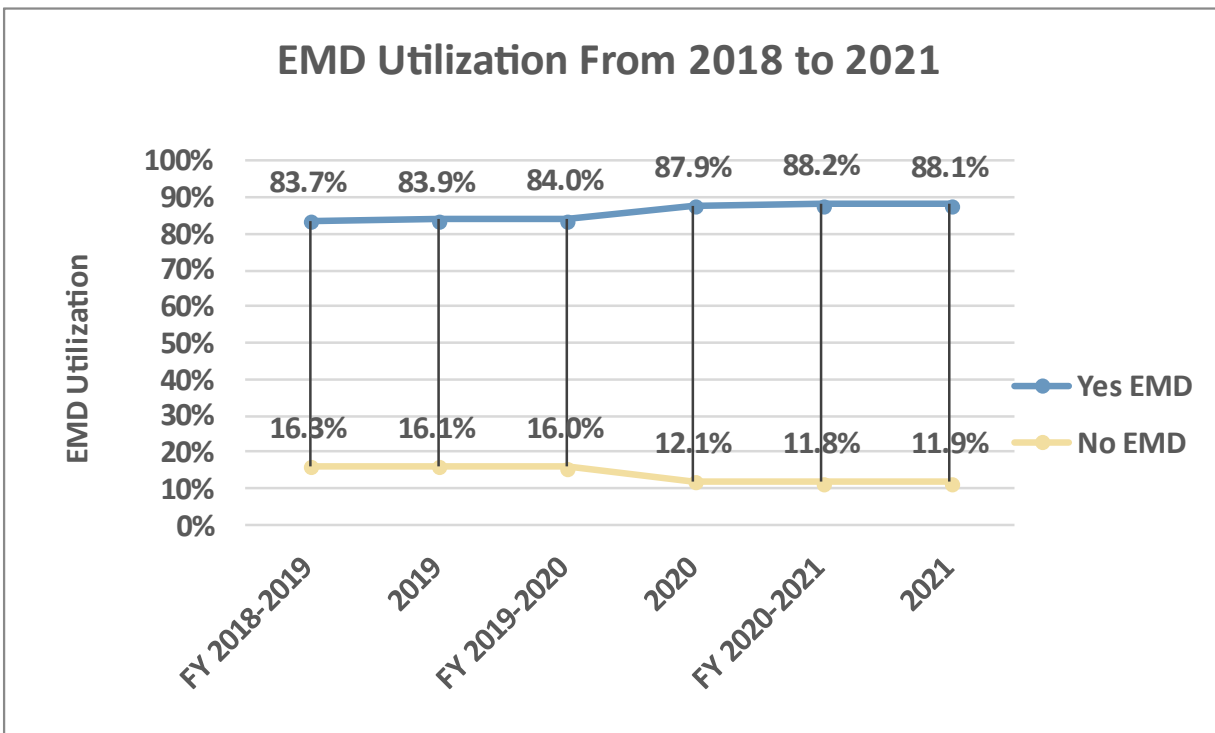
## EMD Utilization

The following data is shown to reflect EMD utilization in Riverside County in 2021. Electronic patient records (eRecord.01) were collected and grouped according to EMD participating and non-participating agencies, respectively. To reduce duplicate counts for EMD participation on the same incidents, 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 increased from 83.2% to 88.1% between 2018 and 2021.



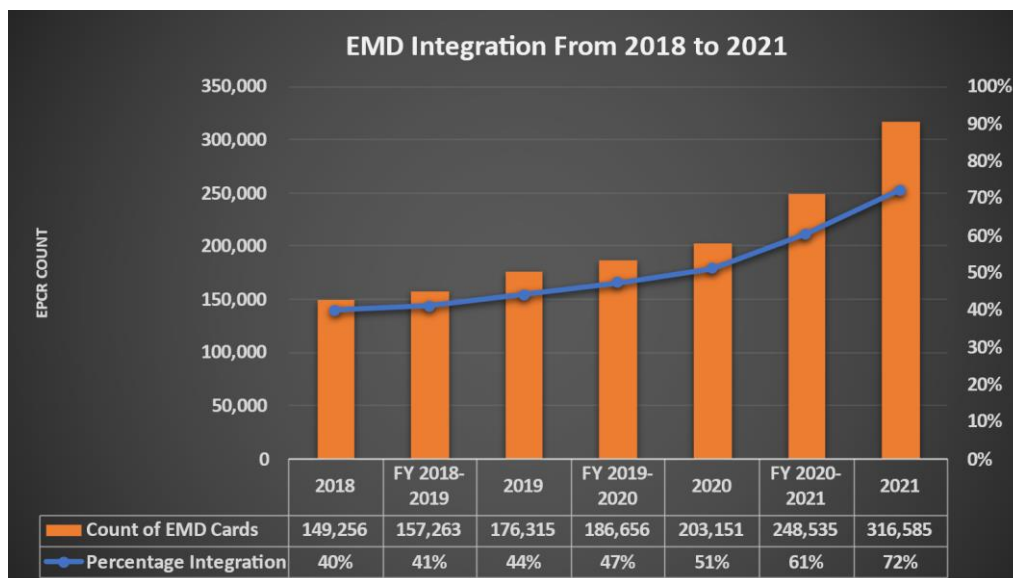
## EMD Integration

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 proportional integration of EMD in Riverside County by responding agency. “*EMD Integration with ePCR*” is a total count of *eDispatch.03*, the EMD card and dispatch determinant level. “*EMD Card Missing*” is defined here as an ePCR having a blank or not recorded *eDispatch.03*. EMD cards would be missing if the incident is generated from a non-EMD 9-1-1 call center or if the EMD card is not transferred into the ePCR system. “*Percentage of EMD Integration*” is 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 |
|--|-------------------------|--|-----------------------------|---|---------------------------------|
| <b>Transport</b>                           |                         |  |                             |   |                                 |
| AMR - Desert Cities                        | 32,590                  | 20,066                                 | 12,524                      | 61.6%   | No                              |
| AMR - Hemet                                | 40,149                  | 26,053                                 | 14,096                      | 64.9%   | No                              |
| AMR - Riverside                            | 119,718                 | 89,837                                 | 29,881                      | 75.0%   | No                              |
| <b>Total EMD Integration</b>               | <b>192,457</b>          | <b>135,956</b>                         | <b>56,501</b>               | <b>70.6%</b>  | <b>0/3</b>                      |
| <b>911 Responders (Non-EMD)</b>            |                         |  |                             |   |                                 |
| Cathedral City Fire Department             | 7,466                   | 15                                     | 7,451                       | 0.2%  | No                              |
| Hemet Fire Department                      | 12,028                  | 4                                      | 12,024                      | 0.0%  | No                              |
| Palm Springs Fire Department               | 9,657                   | 15                                     | 9,642                       | 0.2%  | No                              |
| <b>Total EMD Integration</b>               | <b>29,151</b>           | <b>34</b>                              | <b>29,117</b>               | <b>0.1%</b>   | <b>0/3</b>                      |
| <b>EMD 911 Responders</b>                  |                         |  |                             |   |                                 |
| Calimesa Fire Department                   | 980                     | 932                                    | 48                          | 95.1%   | Yes                             |
| Corona Fire Department                     | 7,887                   | 5,413                                  | 2,474                       | 68.6%   | Yes                             |
| Idyllwild Fire Protection District         | 640                     | 343                                    | 297                         | 53.6%   | Yes                             |
| March Air Reserve Base Fire Department     | 38                      | 1                                      | 37                          | 2.6%  | Yes                             |
| Morongo Fire Department                    | 3,477                   | 1,059                                  | 2,418                       | 30.5%   | Yes                             |
| Murrieta Fire Department                   | 9,285                   | 7,248                                  | 2,037                       | 78.1%   | Yes                             |
| Pechanga Fire Department                   | 972                     | 866                                    | 106                         | 89.1%   | Yes                             |
| Riverside City Fire Department             | 32,608                  | 9,622                                  | 22,986                      | 29.5%   | Yes                             |
| Riverside County Fire Department           | 160,038                 | 154,332                                | 5,706                       | 96.4%   | Yes                             |
| Soboba Fire Department                     | 840                     | 779                                    | 61                          | 92.7%   | Yes                             |
| <b>Total EMD Integration</b>               | <b>216,765</b>          | <b>180,595</b>                         | <b>36,170</b>               | <b>83.3%</b>  | <b>10/10</b>                    |
| <b>Total EMD Integration for Riverside</b> | <b>438,373</b>          | <b>316,585</b>                         | <b>121,788</b>              | <b>72.2%</b>  | <b>10/16</b>                    |

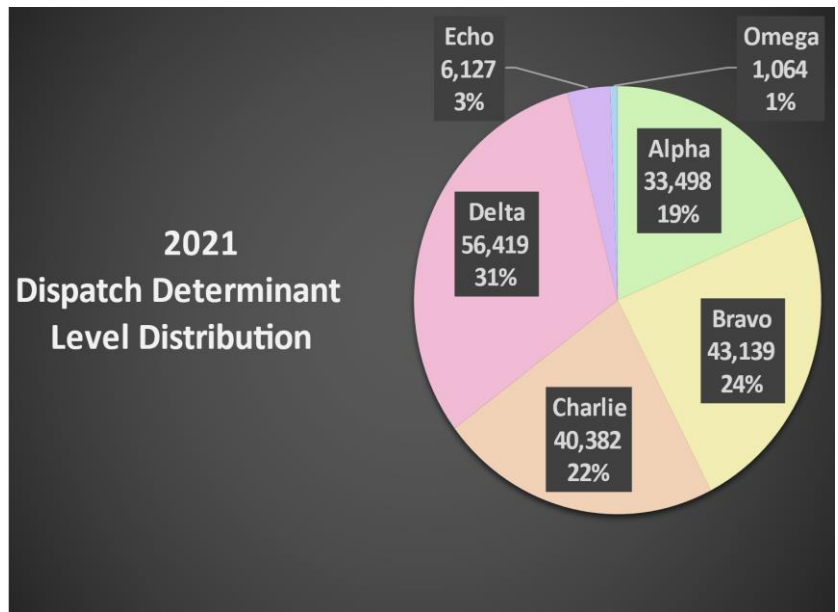
## Change in EMD Card Integration Over Time

The combination chart below shows change over time in the integration of EMD cards into ePCRs. Since 2018 the total count of EMD cards for all 911 agencies has more than doubled while the Percentage Integration of EMD cards into ePCRs for all 911 agencies has increased from 40% to 72%.



## 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 can define modes of response (whether lights and sirens are used) for emergency vehicles. The 2021 calendar year distribution of determinant levels was analyzed using ePCR data. The chart on the right reflects determinant level distribution for 911 first responding agencies with ePCR integration of dispatch data. While most of Riverside County 911 responding agencies utilize EMD, 28% do not integrate with the patient care record system, and those values are unknown. To reduce EMD Card duplication on the same incident, transport agency data was excluded from this analysis.



## Top EMD Cards & Dispatch Complaints

| EMD Card                                      | Count          | Percentage    |
|---|----------------|---------------|
| 26 Sick Person                                | 24,824         | 13.7%         |
| 17 Falls                                      | 21,400         | 11.8%         |
| 06 Breathing Problems                         | 19,709         | 10.9%         |
| 77 Vehicle Collision                          | 15,010         | 8.3%          |
| 32 Unknown Problem (Person Down)              | 13,959         | 7.7%          |
| 31 Unconscious / Fainting (Near)              | 12,765         | 7.1%          |
| 10 Chest Pain / Chest Discomfort (Non-Trauma) | 11,868         | 6.6%          |
| 12 Convulsions / Seizures                     | 6,285          | 3.5%          |
| 21 Hemorrhage / Lacerations                   | 5,755          | 3.2%          |
| 01 Abdominal Pains / Problems                 | 5,291          | 2.9%          |
| Other   | 43,763         | 24.2%         |
| <b>Total</b>                                  | <b>180,629</b> | <b>100.0%</b> |

| Dispatch Complaint                 | Count          | Percentage    |
|------------------------------------|----------------|---------------|
| Sick Person                        | 35,221         | 14.3%         |
| Falls                              | 27,195         | 11.1%         |
| Breathing Problem                  | 24,318         | 9.9%          |
| Unknown Problem/Person Down        | 23,723         | 9.6%          |
| Traffic/Transportation Incident    | 20,080         | 8.2%          |
| Unconscious/Fainting/Near-Fainting | 15,013         | 6.1%          |
| Chest Pain (Non-Traumatic)         | 14,482         | 5.9%          |
| Convulsions/Seizure                | 7,822          | 3.2%          |
| Traumatic Injury                   | 7,085          | 2.9%          |
| Abdominal Pain/Problems            | 6,847          | 2.8%          |
| Other Dispatch Complaint           | 64,125         | 26.1%         |
| <b>Dispatch Complaint Total</b>    | <b>245,911</b> | <b>100.0%</b> |

The table to the left shows the top Dispatch Complaints and EMD Card Numbers utilized by call takers at Public Safety Answering Points who were using EMD in 2021. Dispatch complaints are the reason why an emergency medical response is required and are used to categorize each request. EMD Cards are similar in that they are utilized by public safety answering points participating in the Medical Priority Dispatch System to categorize or “prioritize” each emergency medical response request. To reduce EMD card duplication on the same incident, transport agency data was excluded from this analysis.



## Key Performance Intervals by Dispatch Determinant Level

In Riverside County, Determinant Codes do not govern response times; however, determinant levels help describe urgency of care needed. As a result, 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 72% of the county's EMD-based calls have been integrated with the ePCR system, so these times reflect response time by determinant level for agencies where the data is made available. Agency specific and overall response times will vary. Overall response times by determinant level are provided, as well as a by agency type (First Response and Ambulance)

### *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 Response 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.

| Total Prehospital Time (eTimes.01 to eTimes.11) |         | OMEGA        | ALPHA         | BRAVO        | CHARLIE       | DELTA         | ECHO          |
|---|---------|--------------|---------------|--------------|---------------|---------------|---------------|
| N   | Total   | 1,677        | 55,913        | 72,740       | 69,676        | 97,665        | 19,228        |
|   | Valid   | 473          | 20,202        | 19,327       | 29,221        | 39,044        | 10,390        |
|   | Invalid | 13           | 447           | 298          | 279           | 431           | 132           |
|   | Missing | 1,191        | 35,264        | 53,115       | 40,176        | 58,190        | 8,706         |
| Mean  |         | 42.9         | 44.5          | 43.4         | 40.8          | 41.9          | 39.4          |
| Median  |         | 40.1         | 42.4          | 41.4         | 39.1          | 40.2          | 37.3          |
| Standard Deviation                              |         | 13.9         | 14.3          | 13.4         | 12.4          | 12.5          | 13.1          |
| 90th Percentile                                 |         | 61.7         | 64.0          | 61.7         | 57.3          | 58.4          | 57.1          |
| 95% Confidence Interval for Mean                |         | (41.59-44.1) | (44.34-44.73) | (43.2-43.58) | (40.68-40.96) | (41.81-42.06) | (39.15-39.65) |

| First Response Agencies |         | OMEGA         | ALPHA         | BRAVO         | CHARLIE      | DELTA         | ECHO          |
|-------------------------|---------|---------------|---------------|---------------|--------------|---------------|---------------|
| N                       | Total   | 1,064         | 33,511        | 43,184        | 40,403       | 56,462        | 6,131         |
|                         | Valid   | 61            | 2,847         | 1,581         | 4,494        | 5,701         | 810           |
|                         | Invalid | 3             | 98            | 40            | 88           | 117           | 34            |
|                         | Missing | 1,000         | 30,566        | 41,563        | 35,821       | 50,644        | 5,287         |
| Mean                    |         | 35.0          | 37.9          | 39.6          | 33.2         | 36.3          | 39.1          |
| Median                  |         | 31.7          | 35.3          | 37.3          | 31.4         | 34.0          | 37.1          |
| Standard Deviation      |         | 11.1          | 12.1          | 12.6          | 10.0         | 11.3          | 12.2          |
| 90th Percentile         |         | 49.1          | 53.9          | 56.8          | 45.7         | 51.8          | 56.2          |
| 95% Confidence          |         | (32.16-37.84) | (37.44-38.33) | (39.01-40.25) | (32.92-33.5) | (35.99-36.58) | (38.27-39.95) |

\*Valid N is low for First Response Agencies because most are not transporting patients to hospitals, missing eTimes.11.

| Transport Agencies |         | OMEGA         | ALPHA         | BRAVO         | CHARLIE       | DELTA         | ECHO          |
|--------------------|---------|---------------|---------------|---------------|---------------|---------------|---------------|
| N                  | Total   | 613           | 22,402        | 29,556        | 29,273        | 41,203        | 13,097        |
|                    | Valid   | 412           | 17,355        | 17,746        | 24,727        | 33,343        | 9,580         |
|                    | Invalid | 10            | 349           | 258           | 191           | 314           | 98            |
|                    | Missing | 191           | 4,698         | 11,552        | 4,355         | 7,546         | 3,419         |
| Mean               |         | 44.0          | 45.6          | 43.7          | 42.2          | 42.9          | 39.4          |
| Median             |         | 41.7          | 43.6          | 41.7          | 40.7          | 41.2          | 37.3          |
| Standard Deviation |         | 13.9          | 14.3          | 13.5          | 12.3          | 12.4          | 13.2          |
| 90th Percentile    |         | 62.8          | 64.9          | 62.1          | 58.6          | 59.3          | 57.2          |
| 95% Confidence     |         | (42.67-45.35) | (45.41-45.84) | (43.53-43.92) | (42.05-42.36) | (42.77-43.04) | (39.16-39.69) |

## 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.

| Total Response Time<br>(eTimes.01 to eTimes.07) |         | OMEGA         | ALPHA         | BRAVO         | CHARLIE       | DELTA         | ECHO         |
|---|---------|---------------|---------------|---------------|---------------|---------------|--------------|
| N   | Total   | 1,677         | 55,913        | 72,740        | 69,676        | 97,665        | 19,228       |
|   | Valid   | 1,064         | 40,108        | 31,891        | 53,778        | 70,978        | 15,298       |
|   | Invalid | 34            | 860           | 716           | 783           | 1,105         | 230          |
|   | Missing | 579           | 14,945        | 40,133        | 15,115        | 25,582        | 3,700        |
| Mean  |         | 13.9          | 14.2          | 12.6          | 11.9          | 11.9          | 11.4         |
| Median  |         | 12.5          | 12.5          | 11.1          | 10.8          | 10.7          | 10.0         |
| Standard Deviation                              |         | 6.3           | 7.2           | 6.5           | 5.3           | 5.5           | 5.8          |
| 90th Percentile                                 |         | 21.4          | 22.7          | 20.5          | 18.1          | 18.5          | 18.7         |
| 95% Confidence Interval for Mean                |         | (13.54-14.31) | (14.11-14.26) | (12.52-12.66) | (11.85-11.94) | (11.88-11.96) | (11.32-11.5) |

| First Response Agencies          |         | OMEGA         | ALPHA        | BRAVO        | CHARLIE       | DELTA         | ECHO         |
|----------------------------------|---------|---------------|--------------|--------------|---------------|---------------|--------------|
| N                                | Total   | 1,064         | 33,511       | 43,184       | 40,403        | 56,462        | 6,131        |
|                                  | Valid   | 593           | 21,497       | 11,182       | 27,237        | 34,943        | 4,130        |
|                                  | Invalid | 21            | 436          | 289          | 520           | 666           | 88           |
|                                  | Missing | 450           | 11,578       | 31,713       | 12,646        | 20,853        | 1,913        |
| Mean                             |         | 12.7          | 12.5         | 11.5         | 11.0          | 10.8          | 10.0         |
| Median                           |         | 12.2          | 11.8         | 10.8         | 10.5          | 10.2          | 9.4          |
| Standard Deviation               |         | 4.1           | 4.5          | 4.3          | 3.6           | 3.7           | 3.6          |
| 90th Percentile                  |         | 17.4          | 17.9         | 16.0         | 15.0          | 14.8          | 13.8         |
| 95% Confidence Interval for Mean |         | (12.37-13.03) | (12.4-12.52) | (11.4-11.56) | (10.94-11.03) | (10.73-10.81) | (9.93-10.15) |

| Transport Agencies               |         | OMEGA        | ALPHA        | BRAVO         | CHARLIE       | DELTA        | ECHO         |
|----------------------------------|---------|--------------|--------------|---------------|---------------|--------------|--------------|
| N                                | Total   | 613          | 22,402       | 29,556        | 29,273        | 41,203       | 13,097       |
|                                  | Valid   | 471          | 18,611       | 20,709        | 26,541        | 36,035       | 11,168       |
|                                  | Invalid | 13           | 424          | 427           | 263           | 439          | 142          |
|                                  | Missing | 129          | 3,367        | 8,420         | 2,469         | 4,729        | 1,787        |
| Mean                             |         | 15.5         | 16.2         | 13.2          | 12.8          | 13.0         | 11.9         |
| Median                           |         | 13.1         | 13.9         | 11.4          | 11.4          | 11.5         | 10.4         |
| Standard Deviation               |         | 8.1          | 8.9          | 7.3           | 6.4           | 6.5          | 6.4          |
| 90th Percentile                  |         | 26.8         | 28.0         | 22.7          | 21.2          | 21.5         | 20.3         |
| 95% Confidence Interval for Mean |         | (14.74-16.2) | (16.05-16.3) | (13.09-13.29) | (12.76-12.91) | (12.97-13.1) | (11.8-12.04) |

## 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.

| Unit Response Time<br>(eTimes.03 to eTimes.06) |         | OMEGA        | ALPHA       | BRAVO       | CHARLIE     | DELTA       | ECHO        |
|--|---------|--------------|-------------|-------------|-------------|-------------|-------------|
| N  | Total   | 1,677        | 55,913      | 72,740      | 69,676      | 97,665      | 19,228      |
|  | Valid   | 1,064        | 40,104      | 31,890      | 53,772      | 70,972      | 15,296      |
|  | Invalid | 491          | 12,780      | 32,862      | 13,632      | 21,676      | 2,742       |
|  | Missing | 122          | 3,029       | 7,988       | 2,272       | 5,017       | 1,190       |
| Mean   |         | 9.9          | 9.9         | 9.0         | 8.4         | 8.6         | 8.4         |
| Median   |         | 8.6          | 8.6         | 7.6         | 7.3         | 7.4         | 7.1         |
| Standard Deviation                             |         | 5.4          | 5.6         | 5.5         | 4.8         | 4.9         | 5.1         |
| 90th Percentile                                |         | 16.8         | 16.9        | 15.7        | 14.3        | 14.6        | 14.8        |
| 95% Confidence Interval for Mean               |         | (9.55-10.19) | (9.82-9.92) | (8.94-9.06) | (8.39-8.47) | (8.55-8.62) | (8.36-8.52) |

| First Response Agencies |         | OMEGA       | ALPHA       | BRAVO       | CHARLIE     | DELTA      | ECHO        |
|-------------------------|---------|-------------|-------------|-------------|-------------|------------|-------------|
| N                       | Total   | 1,064       | 33,511      | 43,184      | 40,403      | 56,462     | 6,131       |
|                         | Valid   | 593         | 21,493      | 11,181      | 27,231      | 34,937     | 4,128       |
|                         | Invalid | 404         | 10,650      | 27,766      | 11,666      | 18,275     | 1,407       |
|                         | Missing | 67          | 1,368       | 4,237       | 1,506       | 3,250      | 596         |
| Mean                    |         | 8.2         | 7.9         | 6.8         | 6.7         | 6.8        | 6.4         |
| Median                  |         | 7.7         | 7.4         | 6.3         | 6.3         | 6.3        | 6.0         |
| Standard Deviation      |         | 3.5         | 3.6         | 3.1         | 2.8         | 2.9        | 2.8         |
| 90th Percentile         |         | 12.9        | 12.4        | 10.3        | 9.9         | 10.1       | 9.6         |
| 95% Confidence          |         | (7.95-8.51) | (7.88-7.97) | (6.76-6.87) | (6.64-6.71) | (6.74-6.8) | (6.32-6.49) |

| Transport Agencies |         | OMEGA         | ALPHA         | BRAVO        | CHARLIE      | DELTA        | ECHO        |
|--------------------|---------|---------------|---------------|--------------|--------------|--------------|-------------|
| N                  | Total   | 613           | 22,402        | 29,556       | 29,273       | 41,203       | 13,097      |
|                    | Valid   | 471           | 18,611        | 20,709       | 26,541       | 36,035       | 11,168      |
|                    | Invalid | 87            | 2,130         | 5,096        | 1,966        | 3,401        | 1,335       |
|                    | Missing | 55            | 1,661         | 3,751        | 766          | 1,767        | 594         |
| Mean               |         | 11.9          | 12.1          | 10.2         | 10.2         | 10.3         | 9.2         |
| Median             |         | 10.2          | 10.8          | 8.8          | 9.0          | 9.1          | 7.8         |
| Standard Deviation |         | 6.5           | 6.5           | 6.1          | 5.6          | 5.6          | 5.6         |
| 90th Percentile    |         | 20.6          | 20.6          | 17.9         | 17.5         | 17.6         | 16.2        |
| 95% Confidence     |         | (11.35-12.53) | (12.03-12.21) | (10.1-10.26) | (10.16-10.3) | (10.28-10.4) | (9.08-9.29) |

Data in this report is provided by the efforts of the Riverside County EMS System and its Providers in ensuring quality care and documentation of patient encounters.

Report prepared by Sean Hakam & Catherine Borna Farrokhi, Data & Reporting Unit, Riverside County EMS Agency

For more information, please contact Riverside County EMS Administrator, Trevor Douville [tdouville@rivco.org](mailto:tdouville@rivco.org)