SUMMARY REPORT
EMERGENCY MEDICAL DISPATCH
FY 2021-2022

EMERGENCY MEDICAL DISPATCH SUMMARY

The Medical Priority Dispatch System (MPDS) is utilized by Public Safety Answering Points to assist call-takers in rapidly narrowing down a caller's medical or trauma condition, dispatching emergency services, and providing standardized medical instructions to callers before help arrives. The following is the Riverside County Emergency Medical Dispatch (EMD) Response Summary Report for the 2021-2022 fiscal year.

This data in this report was collected by responding agencies between July 1st, 2021 through June 30th, 2022. 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
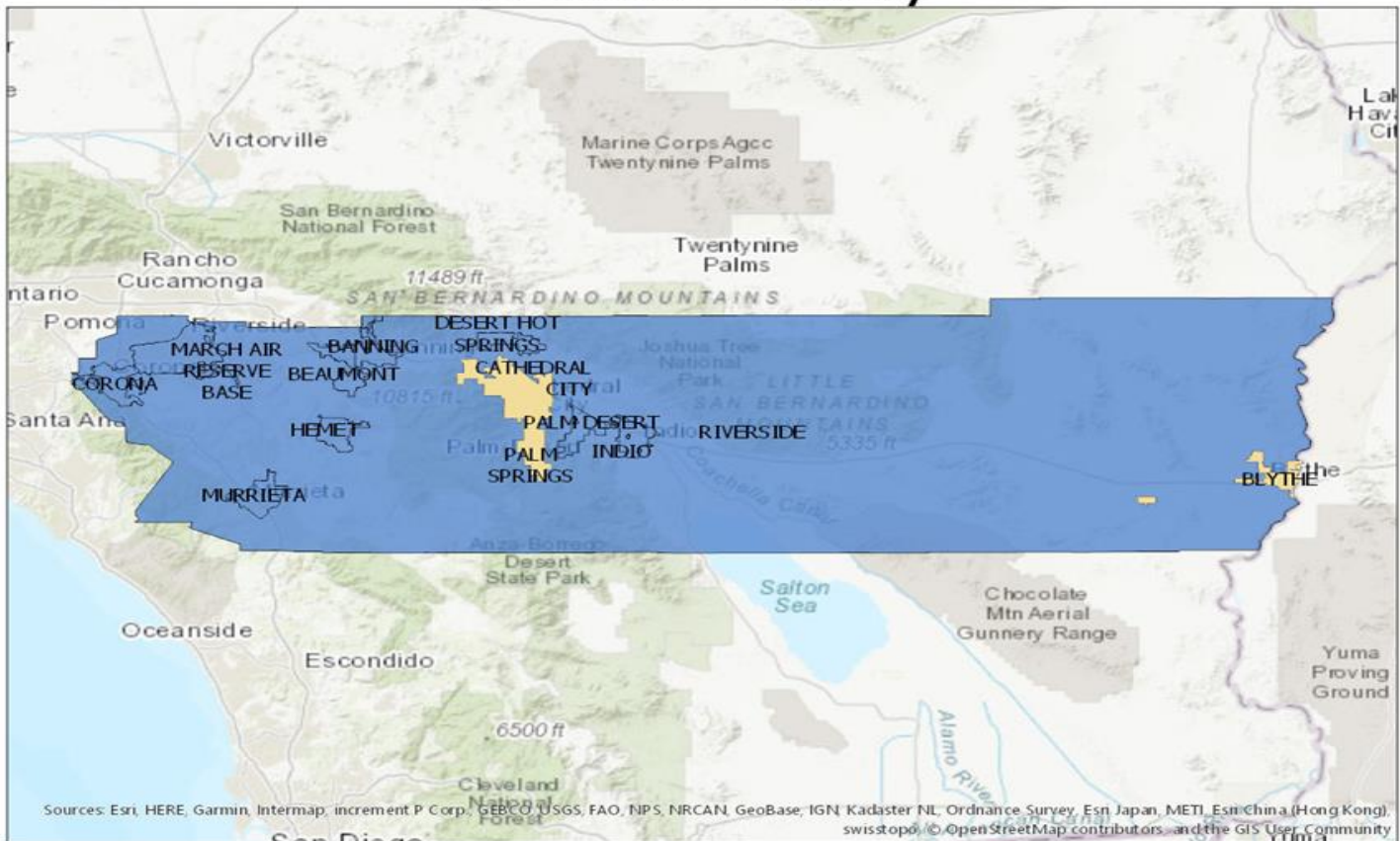
EMD Utilization

The following data is shown to reflect EMD utilization in Riverside County in FY 2020-21. Electronic patient records (eRecord.01) were collected and grouped according to EMD participating and non-participating agencies, respectively. To reduce duplication, transport agency data was excluded from this analysis.
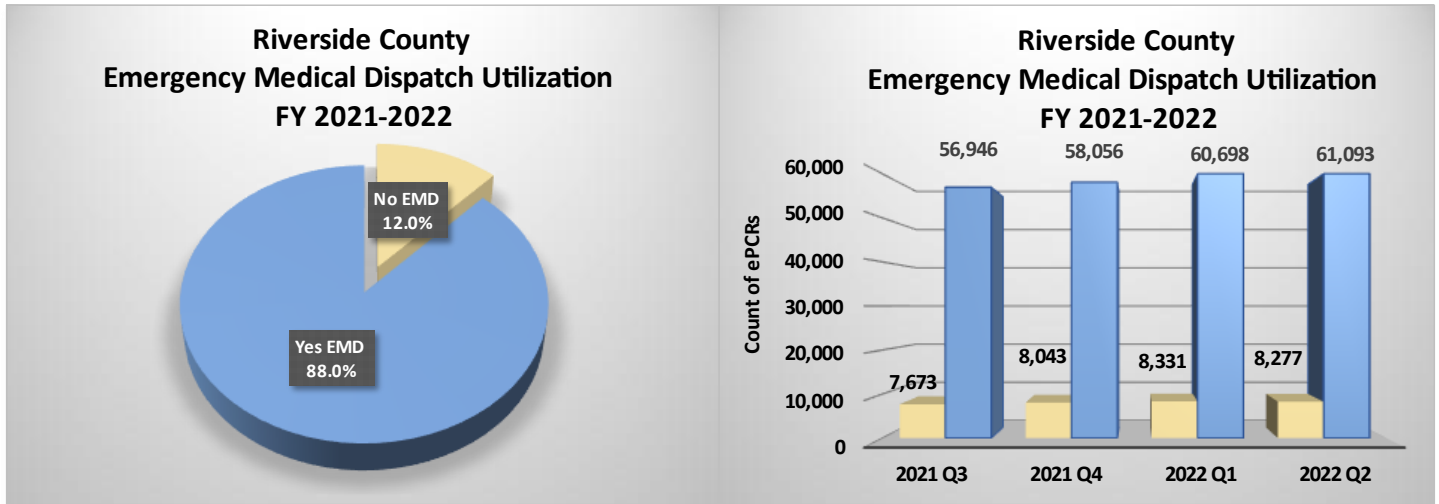
Change in EMD Card Utilization Over Time

The line chart below shows the change in the utilization of EMD by Riverside County PSAPs as recorded in the semiannual Emergency Medical Dispatch Reports. The percentage of EMD utilization increased from 83.7% to 88.0% between 2018 and FY 2021-2022.
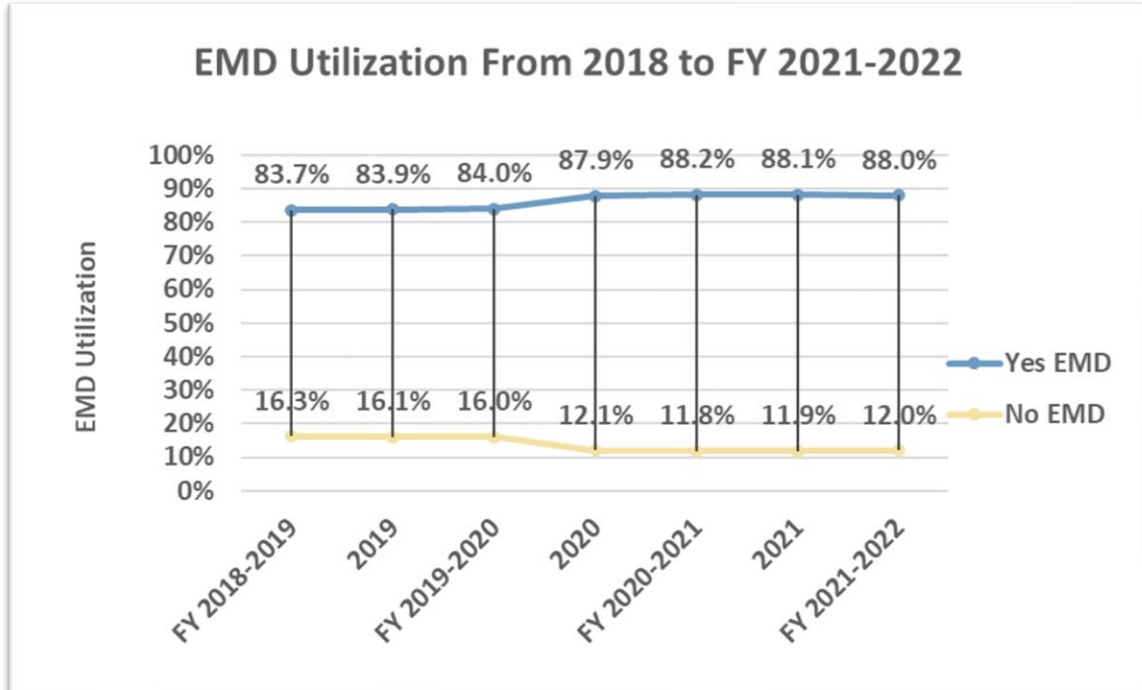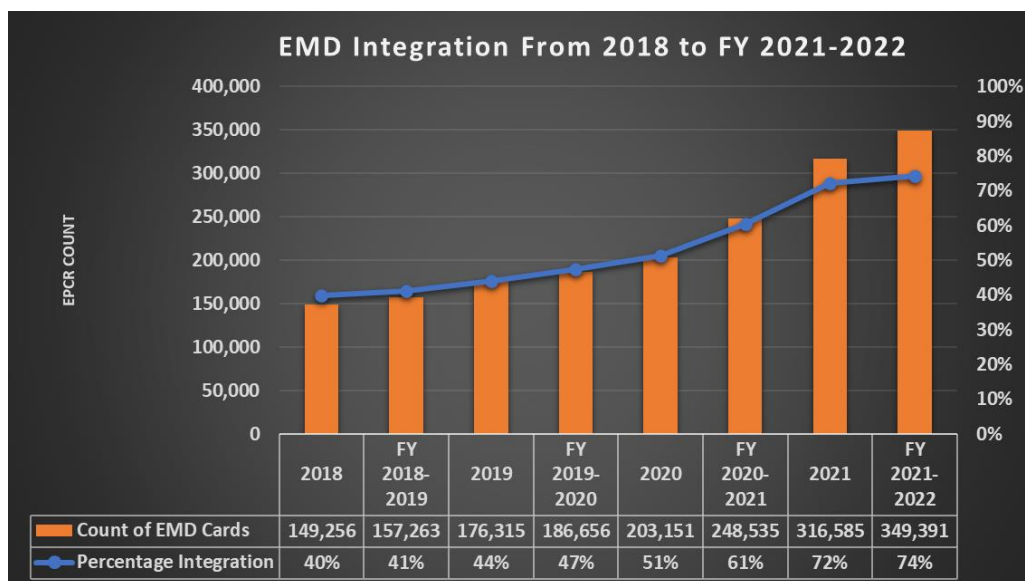
EMD Integration

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 total possible EMS records. *EMD Integration with ePCR* is a total count of eDispatch.03, where an EMD card and dispatch determinant level was assigned to the record. *EMD Card Missing* is defined here as an ePCR having a blank eDispatch.03, or no recorded EMD card and dispatch determinant level. *Percentage of EMD Integration* was calculated by dividing the total ePCR count (eRecord.01) by the EMD Integration count (eDispatch.03).

All 911 Agencies	ePCR Count (eRecord.01)	EMD Integration w/ ePCR (eDispatch.03)	EMD Cards Missing from ePCR	Percentage of EMD Integration to ePCR (Actual/ePCR Total)	911 Agency With EMD Call Center
Transport					
AMR - Desert Cities	33,650	20,999	12,651	62.4%	No
AMR - Hemet	44,778	30,354	14,424	67.8%	No
AMR - Riverside	122,843	92,103	30,740	75.0%	No
Total EMD Integration	**201,271**	**143,456**	**57,815**	**71.3%**	**0/3**
911 Responders (Non-EMD)					
Cathedral City Fire Department	10,268	12	10,256	0.1%	No
Hemet Fire Department	12,129	3	12,126	0.0%	No
Palm Springs Fire Department	9,898	14	9,884	0.1%	No
Total EMD Integration	**32,295**	**29**	**32,266**	**0.1%**	**0/3**
EMD 911 Responders					
Calimesa Fire Department	1,053	1,007	46	95.6%	Yes
Canyon Lake Fire Department	456	430	26	94.3%	Yes
Corona Fire Department	8,311	3,993	4,318	48.0%	Yes
Idyllwild Fire Protection District	583	322	261	55.2%	Yes
March Air Reserve Base Fire Department	43	1	42	2.3%	Yes
Morongo Fire Department	3,414	1,070	2,344	31.3%	Yes
Murrieta Fire Department	8,735	6,645	2,090	76.1%	Yes
Pechanga Fire Department	859	792	67	92.2%	Yes
Riverside City Fire Department	34,224	19,364	14,860	56.6%	Yes
Riverside County Fire Department	177,790	171,371	6,419	96.4%	Yes
Soboba Fire Department	1,006	911	95	90.6%	Yes
Total EMD Integration	**236,474**	**205,906**	**30,568**	**87.1%**	**11/11**
Total EMD Integration for Riverside	**470,040**	**349,391**	**120,649**	**74.3%**	**11/17**

Change in EMD Card Integration Over Time

The combination chart below shows the change in integration of EMD cards into ePCRs over time. Since 2018 the total count of EMD cards for all 911 agencies has grown by 134% while the percent Integration of EMD cards into ePCRs for all 911 agencies has increased from 40% to 74%.

	2018	FY 2018-2019	2019	FY 2019-2020	2020	FY 2020-2021	2021	FY 2021-2022
Count of EMD Cards	149,256	157,263	176,315	186,656	203,151	248,535	316,585	349,391
Percentage Integration	40%	41%	44%	47%	51%	61%	72%	74%

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 2021-2022 fiscal year distribution of determinant levels was analyzed using ePCR data. The chart on the right reflects determinant level distribution for 911 responding agencies with ePCR integration of dispatch data. While most of Riverside County 911 responding agencies utilize EMD, approximately 25% did not integrate with the patient care record system during this reporting period, and those values are unknown.

FY 2021 -2022 Dispatch Determinant Level Distribution

Echo 7,048 3%
Omega 1,253 1%
Alpha 38,837 19%
Delta 63,190 31%
Bravo 48,102 23%
Charlie 47,505 23%
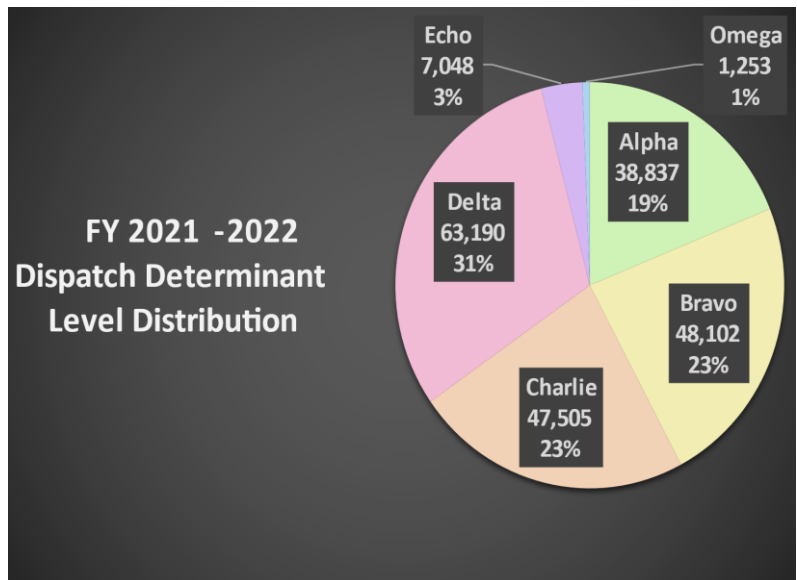
Top EMD Cards & Dispatch Complaints

EMD Card	Count	Percentage
26 Sick Person	29,354	14.3%
17 Falls	24,887	12.1%
06 Breathing Problems	22,110	10.7%
77 Vehicle Collision	16,273	7.9%
32 Unknown Problem (Person Down)	15,069	7.3%
31 Unconscious / Fainting (Near)	14,907	7.2%
10 Chest Pain / Chest Discomfort (Non-Traumat	13,433	6.5%
12 Convulsions / Seizures	7,240	3.5%
21 Hemorrhage / Lacerations	6,498	3.2%
01 Abdominal Pains / Problems	6,024	2.9%
Other	50,140	24.3%
Total	205,935	100.0%
Dispatch Complaint	Count	Percentage
Sick Person	39,810	14.8%
Falls	30,016	11.2%
Breathing Problem	25,686	9.6%
Traffic/Transportation Incident	25,483	9.5%
Unconscious/Fainting/Near-Fainting	22,360	8.3%
Chest Pain (Non-Traumatic)	16,524	6.1%
Unknown Problem/Person Down	15,582	5.8%
Convulsions/Seizure	8,523	3.2%
Hemorrhage/Laceration	7,634	2.8%
Abdominal Pain/Problems	7,383	2.7%
Other Dispatch Complaint	69,781	26.0%
Dispatch Complaint Total	268,782	100.0%

The table to the left shows a comparison of Dispatch Complaints to EMD Card Numbers utilized by call takers at public safety answering points for FY 2020-21. 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 each emergency medical response request.

Key Performance Intervals by Dispatch Determinant Level

In Riverside County, Determinant Codes do not govern response times; however, determinant levels help describe how rapidly care is needed. 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. Average time intervals vary by agency due to geographical factors. Therefore, these time *intervals are intended to represent the system view and not the response times of individual agencies.* For a more detailed view of response times, see the Riverside County Policy 2203 Annual Patient Care Continuum Report.

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

Total Prehospital Time by Dispatch Determinant Level

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

Total Prehospital Time (eTimes.01 to eTimes.11)		OMEGA	ALPHA	BRAVO	CHARLIE	DELTA	ECHO
N	Total	1,993	62,579	80,568	79,303	104,899	20,375
	Valid	541	20,906	20,312	30,780	38,288	9,989
	Invalid	32	1,175	2,077	1,402	2,103	417
	Missing	1,420	40,498	58,179	47,121	64,508	9,969
Mean		53.4	52.8	53.7	52.0	52.3	52.7
Median		46.2	47.6	48.7	47.1	47.3	47.0
Standard Deviation		27.0	24.2	23.8	24.3	24.0	25.6
90th Percentile		94.1	83.8	84.2	82.5	82.2	85.6
95% Confidence Interval for Mean		(51.13-55.69)	(52.42-53.07)	(53.36-54.02)	(51.71-52.25)	(52.02-52.5)	(52.16-53.16)

Total Response Time by Dispatch Determinant Level

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

Total Response Time (eTimes.01 to eTimes.07)		OMEGA	ALPHA	BRAVO	CHARLIE	DELTA	ECHO
N	Total	1,993	62,579	80,568	79,303	104,899	20,375
	Valid	1,253	43,888	34,778	59,671	73,534	15,053
	Invalid	39	1,358	1,137	1,453	1,839	494
	Missing	701	17,333	44,653	18,179	29,526	4,828
Mean		14.6	14.5	13.1	12.2	12.3	11.8
Median		12.8	12.7	11.5	11.0	10.9	10.2
Standard Deviation		7.4	7.6	6.8	5.6	5.8	6.3
90th Percentile		22.9	23.5	21.6	18.9	19.3	19.5
95% Confidence Interval for Mean		(14.18-15.01)	(14.42-14.57)	(13.01-13.15)	(12.2-12.29)	(12.21-12.29)	(11.72-11.92)

Unit Response Time by Dispatch Determinant Level

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

Unit Response Time (eTimes.03 to eTimes.06)		OMEGA	ALPHA	BRAVO	CHARLIE	DELTA	ECHO
N	Total	1,993	62,579	80,568	79,303	104,899	20,375
	Valid	1,253	43,888	34,778	59,671	73,534	15,053
	Invalid	557	14,784	36,261	16,511	24,782	3,736
	Missing	183	3,907	9,529	3,121	6,583	1,586
Mean		10.2	10.0	9.3	8.7	8.8	8.6
Median		8.9	8.7	7.9	7.4	7.5	7.3
Standard Deviation		5.8	5.8	5.6	5.0	5.1	5.2
90th Percentile		17.4	17.3	16.6	14.9	15.2	15.2
95% Confidence Interval for Mean		(9.86-10.5)	(9.94-10.04)	(9.23-9.34)	(8.61-8.69)	(8.75-8.82)	(8.55-8.71)

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.

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