



SUMMARY REPORT
EMERGENCY MEDICAL DISPATCH
2019

FEBRUARY 4TH, 2020

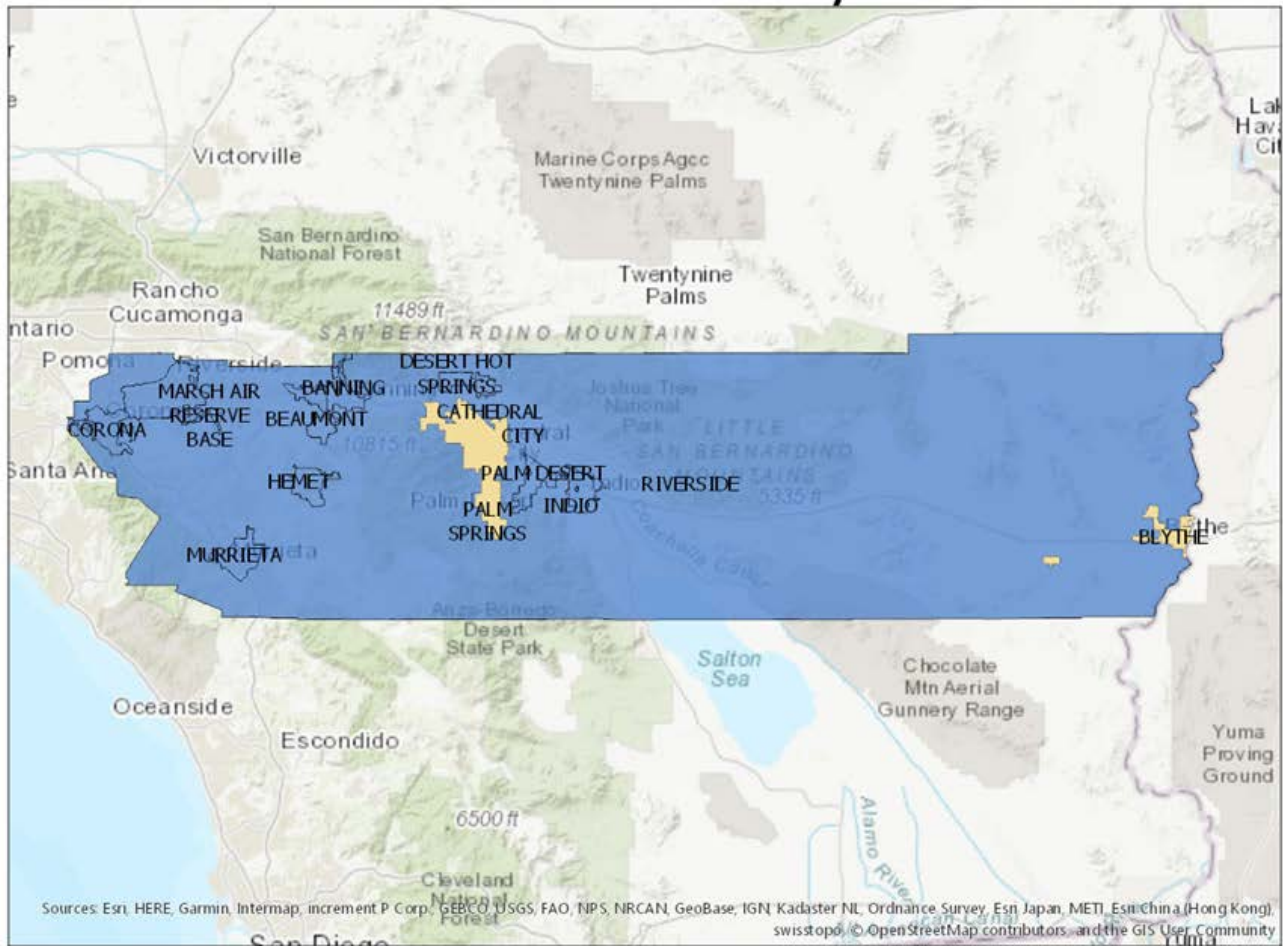
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EMERGENCY MEDICAL DISPATCH SUMMARY

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 2019 calendar year. This data was collected by responding agencies between January 1st, 2019 through December 31st, 2019.

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

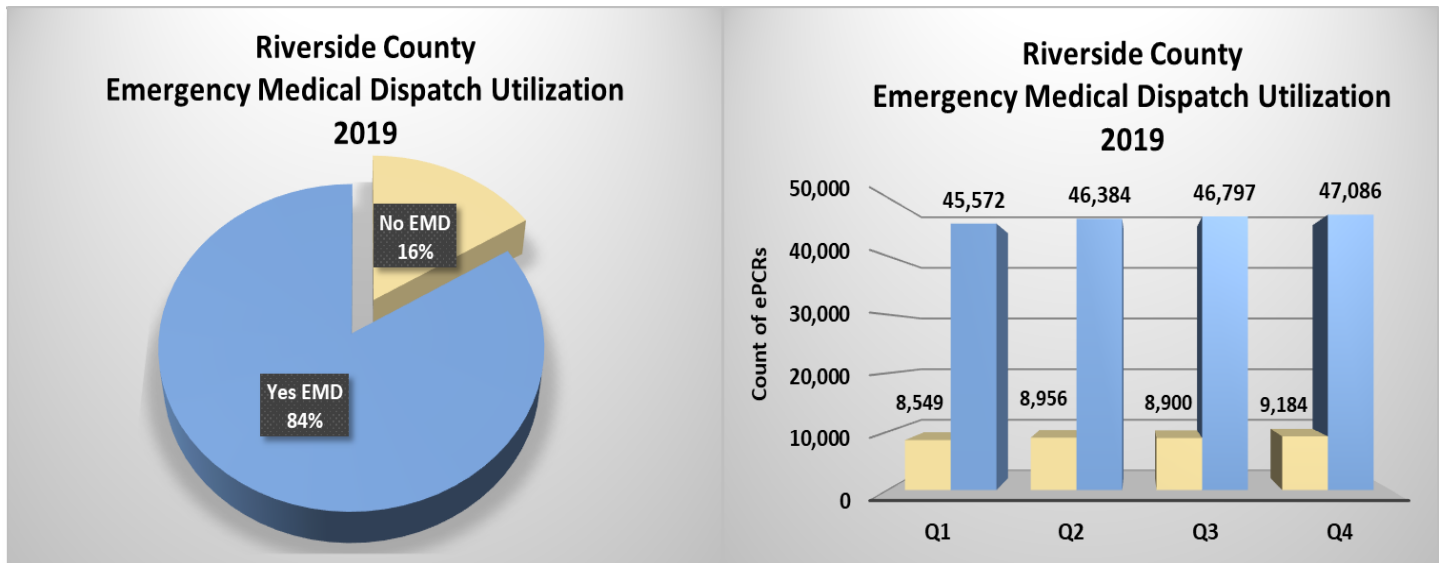
Riverside County



Legend

- Riverside County PSAP's Without MPDS
- Riverside County PSAP's With or Currently Implementing MPDS

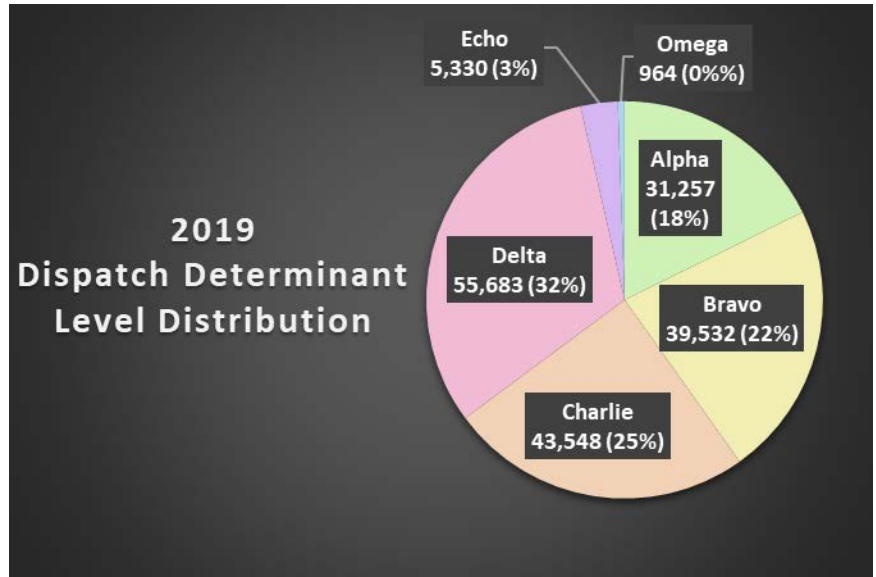
The following data is shown to reflect **EMD utilization** in Riverside County in 2019. Electronic patient records (eRecord.01) were collected and grouped according to EMD participating and non-participating agencies, respectively. *To reduce duplication, transport agency data was excluded from this analysis.*



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

All 911 Agencies	ePCR Count (eRecord.01)	EMD Integration w/ ePCR (eDispatch.03)	EMD Cards Missing from ePCR	Percentage of EMD Integration to ePCR (Actual/ePCR Total)	911 Agency With EMD Call Center
Transport					
AMR - Desert Cities	29,768	2,739	27,029	9.2%	No
AMR - Hemet	36,634	9,335	27,299	25.5%	No
AMR - Riverside	111,820	29,905	81,915	26.7%	No
Total EMD Integration	178,222	41,979	136,243	23.6%	0/3
911 Responders (Non-EMD)					
Cathedral City Fire Department	5,170	2	5,168	0.0%	No
Hemet Fire Department	14,361		14,361	0.0%	No
Murrieta Fire Department	7,738	2	7,736	0.0%	No
Palm Springs Fire Department	8,320		8,320	0.0%	No
Total EMD Integration	35,589	4	35,585	0.0%	0/4
EMD 911 Responders					
Calimesa Fire Department	812	725	87	89.3%	Yes
Corona Fire Department	7,377	64	7,313	0.9%	Yes
Idyllwild Fire Protection District	672	41	631	6.1%	Yes
March Air Reserve Base Fire Department	70		70	0.0%	Yes
Morongo Fire Department	999	865	134	86.6%	Yes
Pechanga Fire Department	1,300	1,162	138	89.4%	Yes
Riverside City Fire Department	30,027		30,027	0.0%	Yes
Riverside County Fire Department	144,026	130,997	13,029	91.0%	Yes
Soboba Fire Department	556	478	78	86.0%	Yes
Total EMD Integration	185,839	134,332	51,507	72.3%	9/9
Total EMD Integration for Riverside County	399,650	176,315	223,335	44.12%	9/16

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 do define modes of response for emergency vehicles. The 2019 distribution of determinant levels was analyzed using ePCR data. This data reflects determinant levels for 911 responding agencies with ePCR integration of dispatch data. While most Riverside County 911 responding agencies utilize EMD, less than half currently have ePCR integration.



Dispatch Complaint	Count	Percentage
Sick Person	60,805	15.2%
Falls	42,510	10.6%
Breathing Problem	39,225	9.8%
Unknown Problem/Person Down	36,593	9.2%
Traffic/Transportation Incident	30,862	7.7%
Chest Pain (Non-Traumatic)	27,243	6.8%
Unconscious/Fainting/Near-Fainting	23,708	5.9%
Convulsions/Seizure	14,794	3.7%
Traumatic Injury	12,334	3.1%
Abdominal Pain/Problems	12,221	3.1%
Other Dispatch Complaint	99,355	24.9%
Dispatch Complaint Total	399,650	100.0%
EMD Card	Count	Percentage
26 Sick Person	24,834	14.1%
17 Falls	21,038	11.9%
06 Breathing Problems	19,664	11.2%
10 Chest Pain / Chest Discomfort (Non-Traumatic)	14,338	8.1%
31 Unconscious / Fainting (Near)	13,462	7.6%
32 Unknown Problem (Person Down)	12,845	7.3%
12 Convulsions / Seizures	7,670	4.4%
77 Vehicle Collision	7,653	4.3%
21 Hemorrhage / Lacerations	6,018	3.4%
33 Transfer / Interfacility / Palliative Care	5,890	3.3%
Other EMD Card	42,902	24.3%
EMD Card Total	176,314	100.0%

The table to the left shows a comparison of Dispatch Complaints to EMD Card Numbers utilized by call takers at public safety answering points for the 2019 calendar year. Dispatch complaints are the reason why an emergency medical response is required and are used to categorize each request. EMD Cards are similar and are utilized by public safety answering points participating in the Medical Priority Dispatch System to categorize each emergency medical response request.

Key Performance Intervals by Dispatch Determinant Level

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

Total Prehospital Time by Dispatch Determinant Level

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

Total Prehospital Time (eTimes.01 to eTimes.11)		Dispatch Determinant Level Not Recorded	OMEGA	ALPHA	BRAVO	CHARLIE	DELTA	ECHO
N	Total	223,336	964	31,257	39,532	43,549	55,683	5,330
	Valid	106,167	230	9,663	7,679	15,509	19,311	1,599
	Invalid	3,143	5	128	111	129	196	38
	Missing	114,026	729	21,466	31,742	27,911	36,176	3,693
Mean		37.6	40.4	42.3	40.0	38.3	39.3	38.9
Median		35.5	39.5	40.3	38.1	36.7	37.8	37.7
Standard Deviation		12.6	12.7	12.8	12.0	11.5	11.2	10.9
90 th Percentile		54.0	56.5	59.8	56.1	53.5	53.9	53.5
95% Confidence Interval for Mean		(37.51-37.66)	(38.72-42.02)	(42.05-42.56)	(39.76-40.3)	(38.11-38.47)	(39.11-39.43)	(38.32-39.39)

Total Response Time by Dispatch Determinant Level

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

Total Response Time (eTimes.01 to eTimes.07)		Dispatch Determinant Level Not Recorded	OMEGA	ALPHA	BRAVO	CHARLIE	DELTA	ECHO
N	Total	223,336	964	31,257	39,532	43,549	55,683	5,330
	Valid	160,866	624	21,693	14,718	31,478	39,615	3,852
	Invalid	3,444	6	144	156	163	237	47
	Missing	59,026	334	9,420	24,658	11,908	15,831	1,431
Mean		10.0	13.9	13.9	11.9	11.2	11.1	10.3
Median		8.5	12.5	12.6	10.9	10.5	10.3	9.6
Standard Deviation		5.7	6.0	5.9	4.8	4.1	4.2	4.1
90 th Percentile		16.2	20.0	20.7	17.4	15.9	15.9	14.7
95% Confidence Interval for Mean		(9.92-9.98)	(13.43-14.37)	(13.86-14.01)	(11.79-11.94)	(11.2-11.29)	(11.05-11.13)	(10.17-10.43)

Unit Response Time by Dispatch Determinant Level

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

Unit Response Time (eTimes.03 to eTimes.06)		Dispatch Determinant Level Not Recorded	OMEGA	ALPHA	BRAVO	CHARLIE	DELTA	ECHO
N	Total	223,336	964	31,257	39,532	43,549	55,683	5,330
	Valid	160,861	624	21,683	14,718	31,471	39,610	3,851
	Invalid	51,075	267	8,272	21,335	10,570	13,544	1,000
	Missing	11,400	73	1,302	3,479	1,508	2,529	479
Mean		7.3	9.5	9.5	8.0	7.6	7.7	7.2
Median		6.2	8.5	8.6	7.2	6.8	6.9	6.4
Standard Deviation		4.6	5.1	4.8	4.2	3.9	3.9	3.6
90 th Percentile		12.4	15.1	15.5	13.0	12.1	12.1	11.4
95% Confidence Interval for Mean		(7.28-7.33)	(9.09-9.89)	(9.46-9.59)	(7.97-8.11)	(7.56-7.64)	(7.63-7.7)	(7.05-7.28)

References

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

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

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

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