Ambulance Patient Offload Time

February 2020

Monthly Report

Prepared by Sudha Mahesh, Riverside County EMS Agency – March 10, 2020

RIVERSIDE COUNTY AMBULANCE PATIENT OFFLOAD TIME

This chart represents total ambulance patient offload delay (APOD) time from hospitals within Riverside County. This chart includes only delays greater than 30 minutes, and only the time after the first 30 minutes is summed.
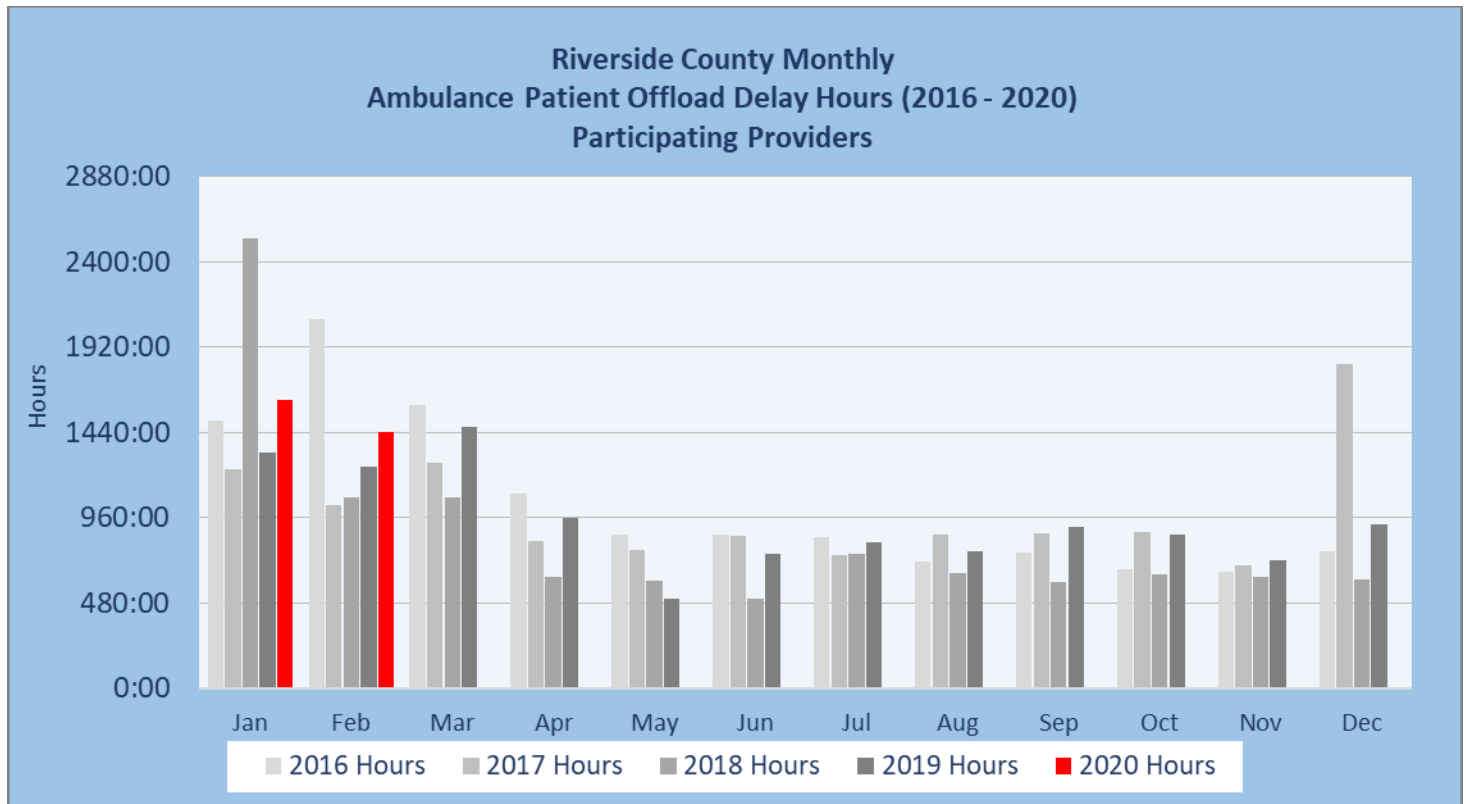
APOD times for years 2015 and 2016 were measured using a different methodology. See page 6 for details.
*For May of 2016, actual totals may have been slightly higher than are reported due to a 3-day CAD outage.
**Beginning August 2017, times represented include all participating providers. Prior to August, data included AMR responses only.
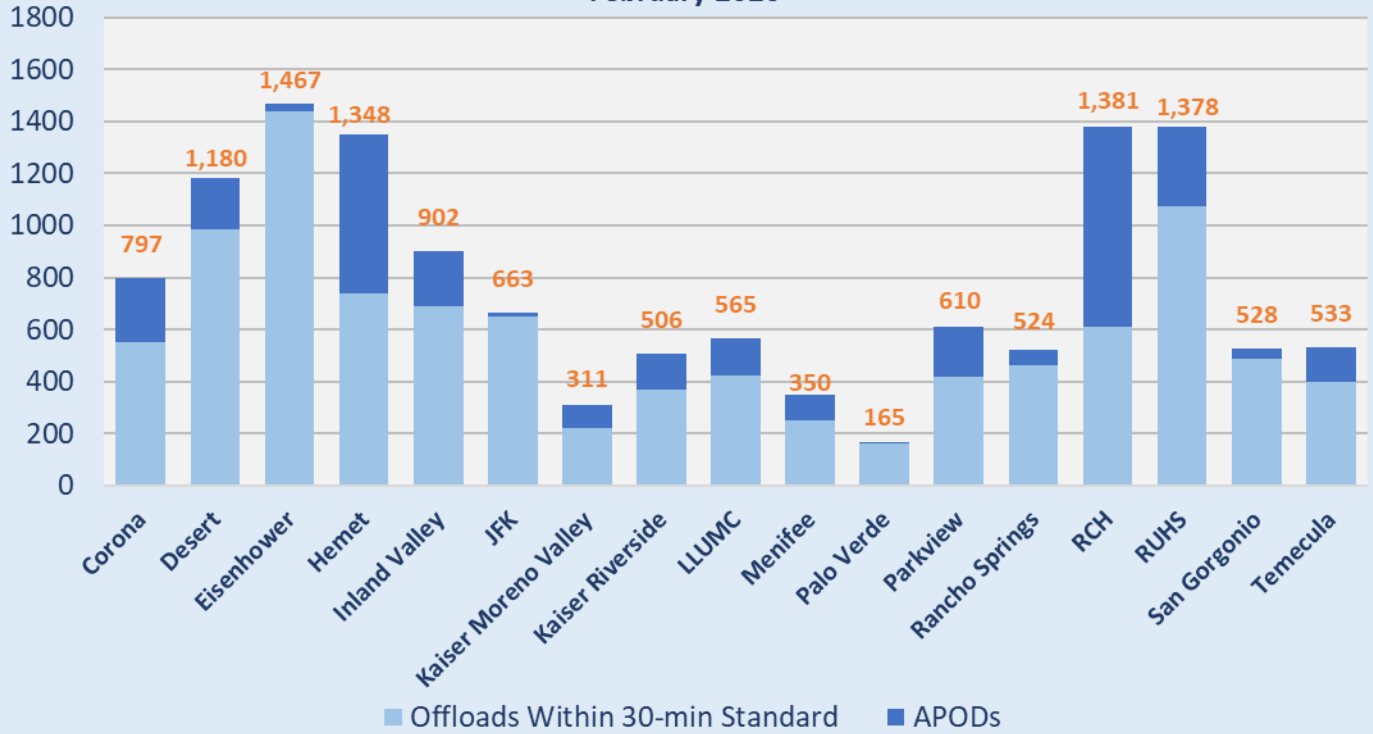
February 2020						
	ALS Transports	APOT	APOD Hours	APODs	APOD Compliance	APOT - 1
Corona Regional Med Ctr	797	381:21:26	116:36:21	244	69.4%	0:59:36
Desert Regional Med Ctr	1,180	382:10:53	77:12:43	197	83.3%	0:40:14
Eisenhower Health	1,467	253:57:45	6:14:18	30	98.0%	0:18:02
Hemet Valley Hospital	1,348	792:40:01	285:42:53	607	55.0%	1:09:14
Inland Valley Med Ctr	902	357:49:28	84:33:38	214	76.3%	0:48:31
JFK Hospital	663	96:33:48	3:38:34	14	97.9%	0:16:00
Kaiser Hospital Moreno Valley	311	167:03:38	65:29:35	87	72.0%	1:16:06
Kaiser Hospital Riverside	506	231:57:18	70:49:39	136	73.1%	0:59:56
Loma Linda Univ Med Ctr Mur	565	242:29:40	57:13:12	140	75.2%	0:42:06
Menifee Med Ctr	350	171:26:55	54:31:55	100	71.4%	0:56:27
Palo Verde Hospital	165	15:56:53	0:17:56	3	98.2%	0:13:20
Parkview Community Hospital	610	296:39:42	88:24:23	193	68.4%	0:54:44
Rancho Springs Med Ctr	524	149:04:38	10:05:05	60	88.5%	0:31:41
Riverside Community Hospital	1,381	974:09:55	408:36:11	772	44.1%	1:23:06
Riverside University Health System	1,378	523:04:48	74:24:11	304	77.9%	0:41:46
San Gorgonio Mem Hospital	528	148:53:23	7:13:09	38	92.8%	0:26:19
Temecula Valley Hospital	533	206:31:02	32:07:57	133	75.0%	0:43:25
Grand Total	13,208	5391:51:13	1443:11:40	3,272	75.2%	0:50:16

Key		High	Low

Riverside County Hospitals
Transports and APODs
February 2020

Values (labeled above bars):
- Corona: 797
- Desert: 1,180
- Eisenhower: 1,467
- Hemet: 1,348
- Inland Valley: 902
- JFK: 663
- Kaiser Moreno Valley: 311
- Kaiser Riverside: 506
- LLUMC: 565
- Menifee: 350
- Palo Verde: 165
- Parkview: 610
- Rancho Springs: 524
- RCH: 1,381
- RUHS: 1,378
- San Gorgonio: 528
- Temecula: 533

Y-axis: 0, 200, 400, 600, 800, 1000, 1200, 1400, 1600, 1800

Legend: ■ Offloads Within 30-min Standard   ■ APODs

February 2020 APOT 1, 90th Percentile

The 90th percentile is the value for which 90% of the data points are smaller.

Y-axis: 0:00:00 through 2:00:00 (5-minute intervals)

Values:
- Corona Regional Med Ctr: 0:59:36
- Desert Regional Med Ctr: 0:40:14
- Eisenhower Health: 0:18:02
- Hemet Valley Hospital: 1:09:14
- Inland Valley Med Ctr: 0:48:31
- JFK Hospital: 0:16:00
- Kaiser Hospital Moreno Valley: 1:16:06
- Kaiser Hospital Riverside: 0:59:56
- Loma Linda Univ Med Ctr Mur: 0:42:06
- Menifee Med Ctr: 0:56:27
- Palo Verde Hospital: 0:13:20
- Parkview Community Hospital: 0:54:44
- Rancho Springs Med Ctr: 0:31:41
- Riverside Community Hospital: 1:23:06
- Riverside University Health System: 0:41:46
- San Gorgonio Mem Hospital: 0:26:19
- Temecula Valley Hospital: 0:43:25

—— 30-Minute Standard
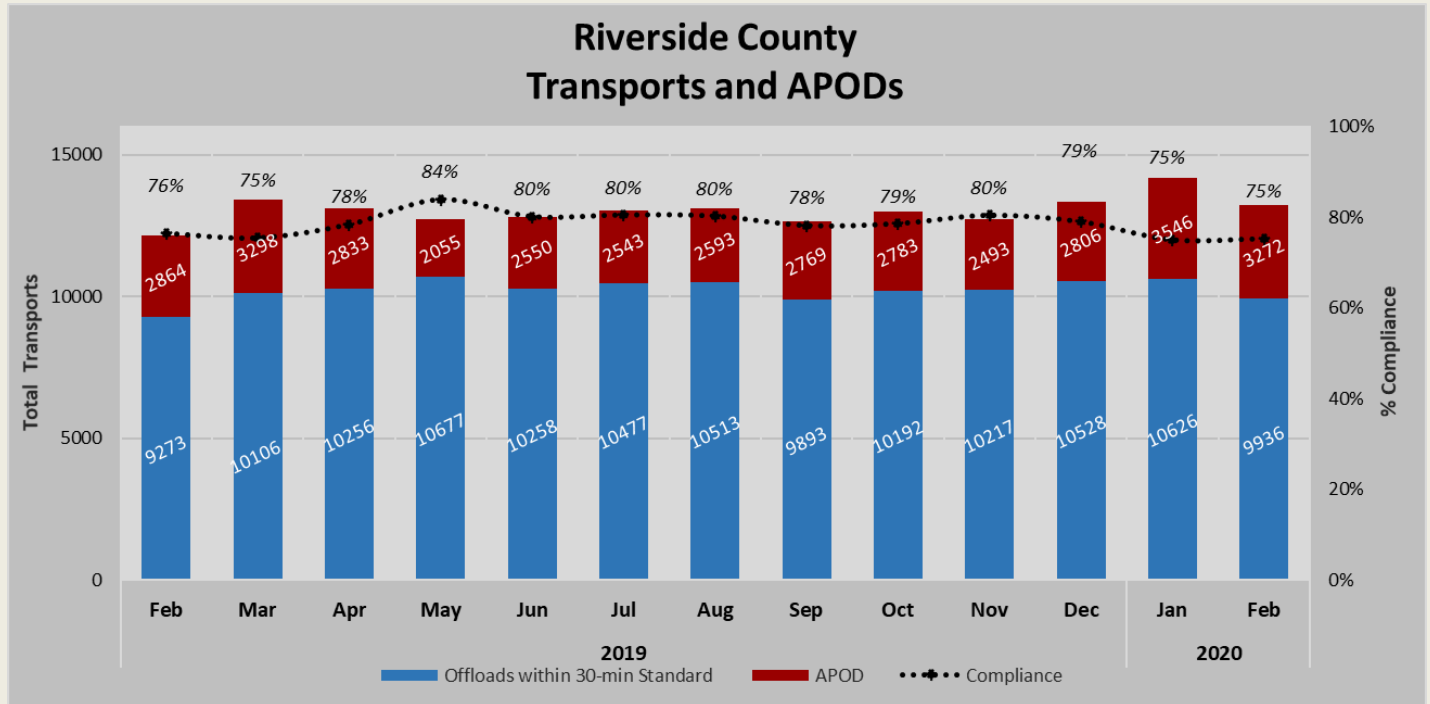
Data for this report has been collected from ePCRs (electronic patient care records) via FirstWatch® and are available after they have been completed by the provider. There is, therefore, an inherent latency to the availability of these records. Due to this latency, subsequent reports may feature higher aggregate numbers than earlier reports for the same reporting period. The difference is insignificant (averaging less than .07%) and does not impact overall compliance.

APOT AND APOD TRENDS: *ROLLING ANNUAL REVIEW*

The first chart represents Riverside County's total number of ambulance 9-1-1 *transports, patient offload delay (APOD), and percent compliance* for a rolling 12 months.

Riverside County Transports and APODs

Month	Offloads within 30-min Standard	APOD	Compliance
Feb 2019	9273	2864	76%
Mar	10106	3298	75%
Apr	10256	2833	78%
May	10677	2055	84%
Jun	10258	2550	80%
Jul	10477	2543	80%
Aug	10513	2593	80%
Sep	9893	2769	78%
Oct	10192	2783	79%
Nov	10217	2493	80%
Dec	10528	2806	79%
Jan 2020	10626	3546	75%
Feb	9936	3272	75%

APOD hours only include the time after the 30-minute standard has elapsed.

TRANSPORT VOLUME.
Transport volume for each Hospital over a 12 month period is described below.

Each hospital can be categorized as a low to high Volume facilty. Hospitals are color coded ranging from low to high based on an average of last 12 months of transports.

Transport Volume: Low — High

Hospital	2019 Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2020 Jan	Feb	Avg
Corona Regional Med Ctr	675	804	710	705	771	819	802	780	790	753	799	821	797	771
Desert Regional Med Ctr	1027	1274	1193	1083	1098	1138	1137	1052	1079	1152	1151	1275	1180	1,141
Eisenhower Health	1318	1518	1389	1293	1276	1218	1139	1240	1250	1353	1378	1564	1467	1,339
Hemet Valley Hospital	1248	1374	1487	1416	1375	1465	1435	1429	1501	1380	1472	1535	1348	1,420
Inland Valley Med Ctr	814	899	836	829	851	895	913	886	894	919	844	972	902	881
JFK Hospital	599	678	737	597	638	685	627	580	627	688	659	699	663	652
Kaiser Hospital Moreno Valley	349	392	322	328	338	341	367	330	317	283	317	353	311	334
Kaiser Hospital Riverside	470	575	507	515	535	506	515	542	511	485	542	556	506	520
Loma Linda Univ Med Ctr Mur	616	655	604	623	627	637	594	599	561	583	588	594	565	604
Menifee Med Ctr	290	296	329	319	338	343	377	311	299	280	336	334	350	323
Palo Verde Hospital	143	151	182	169	162	154	192	166	153	133	152	163	165	160
Parkview Community Hospital	467	550	519	454	480	554	572	510	513	489	594	688	610	538
Rancho Springs Med Ctr	464	481	453	431	454	448	463	440	499	456	470	564	524	473
Riverside Comm Hospital	1324	1323	1388	1472	1461	1366	1470	1351	1451	1380	1381	1292	1381	1,388
Riverside Univ Health System	1259	1344	1275	1337	1255	1314	1377	1381	1440	1284	1438	1487	1378	1,351
San Gorgonio Mem Hospital	547	598	594	588	563	587	542	563	560	547	585	657	528	574
Temecula Valley Hospital	527	492	564	573	586	550	584	502	530	545	628	618	533	556
Riverside County Total	**12137**	**13404**	**13089**	**12732**	**12808**	**13020**	**13106**	**12662**	**12975**	**12710**	**13334**	**14172**	**13208**	**13027**

COMPLIANCE.

Compliance is a frequency comparison between the total number of transports and those resulting in APOD. The table below shows compliance by hospital for the last 12 months.

Compliance — High / Low

APOT % Compliance by Hospital for the last 12 months

	2019											2020	Feb	Avg
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Avg
Corona Regional Med Ctr	64%	61%	75%	76%	74%	67%	72%	66%	69%	70%	75%	68%	69%	70%
Desert Regional Med Ctr	89%	91%	95%	97%	94%	95%	89%	90%	94%	87%	89%	83%	83%	91%
Eisenhower Health	98%	96%	98%	99%	99%	98%	99%	98%	98%	99%	99%	98%	98%	98%
Hemet Valley Hospital	73%	65%	62%	68%	64%	62%	72%	65%	70%	71%	66%	59%	55%	66%
Inland Valley Med Ctr	85%	81%	83%	85%	81%	80%	84%	82%	81%	82%	88%	74%	76%	82%
JFK Hospital	97%	98%	98%	98%	99%	99%	99%	98%	99%	99%	99%	98%	98%	98%
Kaiser Hospital Moreno Valley	79%	84%	78%	88%	83%	88%	80%	78%	81%	82%	80%	79%	72%	81%
Kaiser Hospital Riverside	83%	78%	80%	83%	80%	89%	84%	78%	75%	71%	79%	71%	73%	79%
Loma Linda Univ Med Ctr Mur	60%	57%	55%	68%	65%	74%	73%	72%	71%	73%	70%	70%	75%	68%
Menifee Med Ctr	78%	76%	74%	76%	71%	76%	78%	77%	66%	75%	72%	75%	71%	74%
Palo Verde Hospital	97%	99%	98%	99%	100%	99%	100%	100%	99%	100%	99%	97%	98%	99%
Parkview Community Hospital	71%	71%	73%	86%	81%	83%	83%	78%	84%	86%	74%	63%	68%	77%
Rancho Springs Med Ctr	87%	83%	92%	89%	93%	91%	93%	90%	89%	90%	91%	88%	89%	90%
Riverside Community Hospital	41%	41%	55%	76%	60%	54%	50%	52%	55%	63%	49%	41%	44%	52%
Riverside University Health System	69%	69%	76%	84%	84%	87%	84%	75%	73%	77%	82%	80%	78%	78%
San Gorgonio Mem Hospital	88%	84%	86%	89%	85%	89%	89%	92%	90%	86%	89%	90%	93%	88%
Temecula Valley Hospital	79%	85%	76%	81%	78%	82%	82%	85%	77%	79%	71%	67%	75%	78%
Riverside County Compliance	**76%**	**75%**	**78%**	**84%**	**80%**	**80%**	**80%**	**78%**	**79%**	**80%**	**79%**	**75%**	**75%**	**79%**

APOT-1.

APOT-1 is an Ambulance Patient Offload Time interval measure of the 90th percentile. This metric is a continuous variable measured in hours and minutes then aggregated and reported at the 90th percentile. The table below illustrates APOT-1 by hospital for the last 12 months.

APOT-1 for the last 12 Months

Hospital	2019											2020	Feb	Avg APOT-1
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	
Corona Regional Med Ctr	0:58	1:03	0:43	0:46	0:51	1:04	0:48	1:05	0:58	0:54	0:49	1:00	1:00	0:55
Desert Regional Med Ctr	0:31	0:27	0:22	0:20	0:24	0:22	0:31	0:30	0:26	0:34	0:32	0:40	0:40	0:29
Eisenhower Health	0:18	0:21	0:19	0:17	0:17	0:17	0:16	0:18	0:17	0:17	0:16	0:19	0:18	0:17
Hemet Valley Hospital	0:43	0:49	0:54	0:46	0:50	0:52	0:45	0:50	0:44	0:45	0:45	0:59	1:09	0:50
Inland Valley Med Ctr	0:36	0:42	0:39	0:38	0:43	0:39	0:37	0:39	0:42	0:42	0:32	0:54	0:49	0:40
JFK Hospital	0:19	0:17	0:17	0:15	0:17	0:17	0:17	0:16	0:16	0:16	0:15	0:16	0:16	0:16
Kaiser Hospital Moreno Valley	0:39	0:40	0:42	0:33	0:43	0:35	0:42	0:47	0:54	0:46	0:43	0:51	1:16	0:45
Kaiser Hospital Riverside	0:37	0:46	0:43	0:36	0:42	0:31	0:36	0:49	0:51	0:55	0:46	1:09	1:00	0:46
Loma Linda Univ Med Ctr Mur	1:10	1:05	1:05	0:48	0:48	0:43	0:43	0:43	0:47	0:44	0:51	0:45	0:42	0:50
Menifee Med Ctr	0:50	0:49	0:54	0:46	0:55	0:46	0:46	0:45	1:10	0:45	0:54	0:55	0:56	0:51
Palo Verde Hospital	0:11	0:13	0:14	0:12	0:10	0:12	0:13	0:11	0:09	0:12	0:12	0:13	0:13	0:11
Parkview Community Hospital	0:58	0:51	0:46	0:35	0:41	0:38	0:38	0:46	0:37	0:34	0:41	1:15	0:55	0:45
Rancho Springs Med Ctr	0:34	0:38	0:28	0:31	0:28	0:29	0:27	0:30	0:32	0:30	0:29	0:33	0:32	0:30
Riverside Comm Hospital	1:51	1:54	1:10	0:40	0:54	1:03	1:08	1:06	0:58	0:48	1:10	1:33	1:23	1:12
Riverside Univ Health System	0:46	0:48	0:41	0:35	0:35	0:32	0:36	0:41	0:45	0:40	0:35	0:38	0:42	0:39
San Gorgonio Mem Hospital	0:35	0:36	0:33	0:31	0:35	0:31	0:31	0:29	0:31	0:33	0:31	0:31	0:26	0:31
Temecula Valley Hospital	0:37	0:34	0:47	0:39	0:42	0:35	0:40	0:35	0:43	0:41	0:51	0:55	0:43	0:41
Riverside County Compliance	**0:47**	**0:48**	**0:43**	**0:36**	**0:40**	**0:40**	**0:40**	**0:43**	**0:43**	**0:39**	**0:41**	**0:50**	**0:50**	**0:43**

APOD AMBULANCE REDIRECTION

On October 1, 2019, Riverside County EMS Agency activated Policy 6104 (http://www.remsa.us/policy/6104.pdf) to allow redirection of ambulances from hospitals that have extended Ambulance Patient Offload Delay (APOD) to the closest most appropriate hospital that does not have extended APOD. Extended APOD is a patient remaining on an ambulance gurney for 90 minutes or greater after arrival at a hospital. The table below shows the total number of ambulance diversions that occurred since activation of the provisional policy in March 2019.

	2019										2020		Total Redirection
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	
Corona Regional Medical Center	3	3	4	3	10		10	12	9	6	18	11	89
Desert Regional Medical Center									2	2	3	9	16
Hemet Valley Medical Center	1	5	2		2	2	2	2	1		5	21	43
Inland Valley Medical Center	1	3	2		2	2		6	5		10	7	38
Kaiser Hospital Moreno Valley				1			4	12	2	1	4	12	36
Kaiser Hospital Riverside	2	1					4	2	5	5	10	8	37
Loma Linda Univ Med Ctr Murrieta	2	15	1	5	1	3	2	12	2	7	7	10	67
Menifee Valley Medical Center	3	5		4	3	3	4	8	1	2	4	6	43
Parkview Community Hospital	3	1					2			1	17	8	32
Rancho Springs Medical Center							2				1		3
Riverside Community Hospital	12	21	1	6	21	21	38	10		16	45	36	227
Riverside University Health System		1		1		1		14				2	19
Temecula Valley Hospital		2		2					1	1	2		8
Total Redirection	**27**	**57**	**10**	**22**	**39**	**32**	**68**	**78**	**28**	**41**	**126**	**130**	**658**

EMERGENCY TREATMENT SERVICES

Transports to Emergency Treatment Services (ETS) comprise over 3% of overall transports. This is significant enough to impact the EMS system and, therefore, warrants reporting. However, transports to ETS do not meet the EMSA definitions for APOT (see page 6); therefore, they are not included with the previous APOT aggregates.

February 2020 - Emergency Treatment Services					
	Transports to ETS	Total Offload Time	APOD Hours	APODs	APOD Compliance
Emergency Treatment Services	372	194:07:56	50:58:55	146	60.8%

The chart below represents Riverside County's total number of ETS ambulance *transports, patient offload delay (APOD), and percent compliance* for a rolling 12 months.

Riverside County ETS Transports and APODs
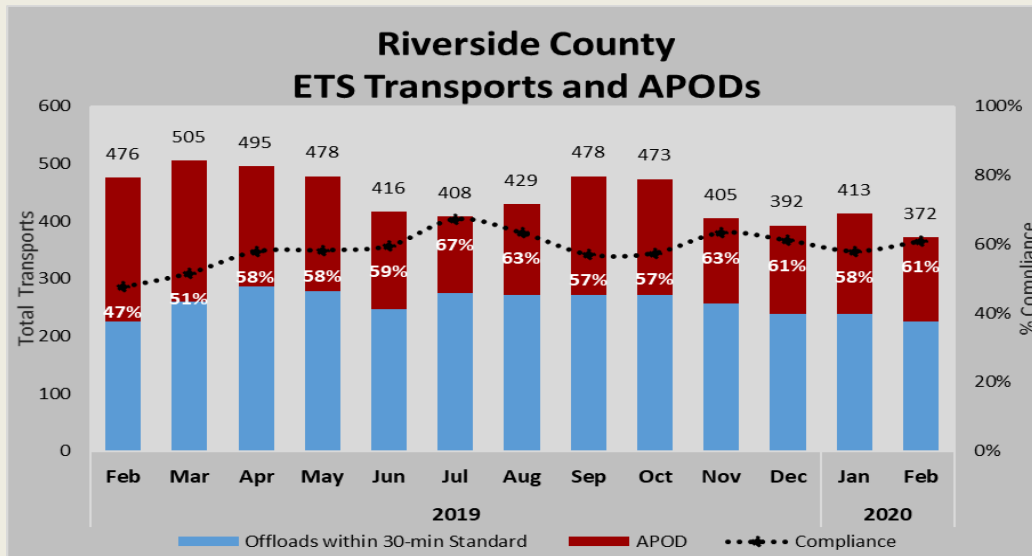
APOT AND APOD DEFINITIONS

Ambulance Patient Offload Time (APOT)
The Time interval between the arrival of an ambulance patient at an ED and the time the patient is transferred to the ED gurney, bed, chair, or other acceptable location and the emergency department assumes the responsibility for care of the patient.[1] The Clock Start (eTimes.11) is the time of patient arrival at the destination (hospital), and the Clock Stop (eTimes.12) is time the care of the patient is transferred.[2] REMSA obtains both times from the ePCR.

APOT -1 Specifications
Criteria: All 911 transports to a hospital emergency department for which the patient arrival and transfer dates and times are "logical and present."[3]
Method: Aggregate of all transfer times and reported at the 90th percentile (the value for which 90% of the times are shorter).

Ambulance Patient Offload Delay (APOD)
Any delay in ambulance patient offload time (APOT) that exceeds the local ambulance patient offload time standard of 25/30 minutes (Riverside County EMS Agency applies a 30-minute standard). This shall also be synonymous with "non-standard patient offload time" as referenced in the Health and Safety Code.[4] If the transfer of care and patient offloading from the ambulance gurney exceeds the 30 minute standard, it will be documented and tracked as APOD.[5]
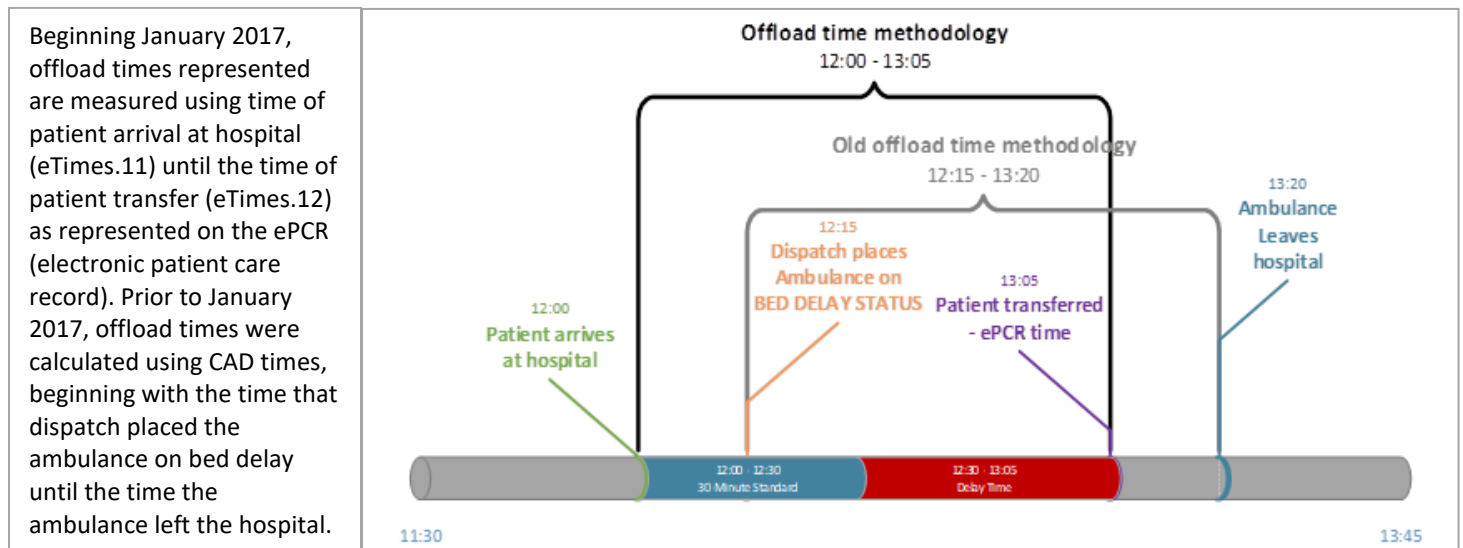
APOD Compliance
A frequency comparison between the total number of transports and those resulting in APOD.

Data Definitions
Data in this report includes all transports to the 17 hospitals monitored by REMSA in the respective month relative to the date and time the incident originates (eTimes.03--Dispatch Notified Date/Time). *For example, if an incident originates on June 30, and the patient is subsequently transferred to the care of an emergency department on July 1, that incident will be included in the month of June.*

Canceled calls, calls for which both arrival and transfer times are not present, and calls with erroneous/negative offload times are excluded. Certain incidents with offload times exceeding six hours and 12 hours are verified for accuracy, and incidents are excluded if the timeline cannot be validated.

Beginning January 2017, offload times represented are measured using time of patient arrival at hospital (eTimes.11) until the time of patient transfer (eTimes.12) as represented on the ePCR (electronic patient care record). Prior to January 2017, offload times were calculated using CAD times, beginning with the time that dispatch placed the ambulance on bed delay until the time the ambulance left the hospital.

---

[1] Health and Safety Code Division 2.5, Chapter 3, Article 1, Section 1797.120(b)
[2] Ambulance Patient Offload Time (APOT) Standardized Methods for Data Collection and Reporting, approved by EMS Commission 12/14/2016.
[3] Ibid., APOT-1 Specifications.
[4] REMSA Policy 9101.6. http://www.remsa.us/policy/9101.pdf
[5] REMSA Policy 4204, Transfer of Patient Care. http://www.remsa.us/policy/4204.pdf