Ambulance Patient Offload Time

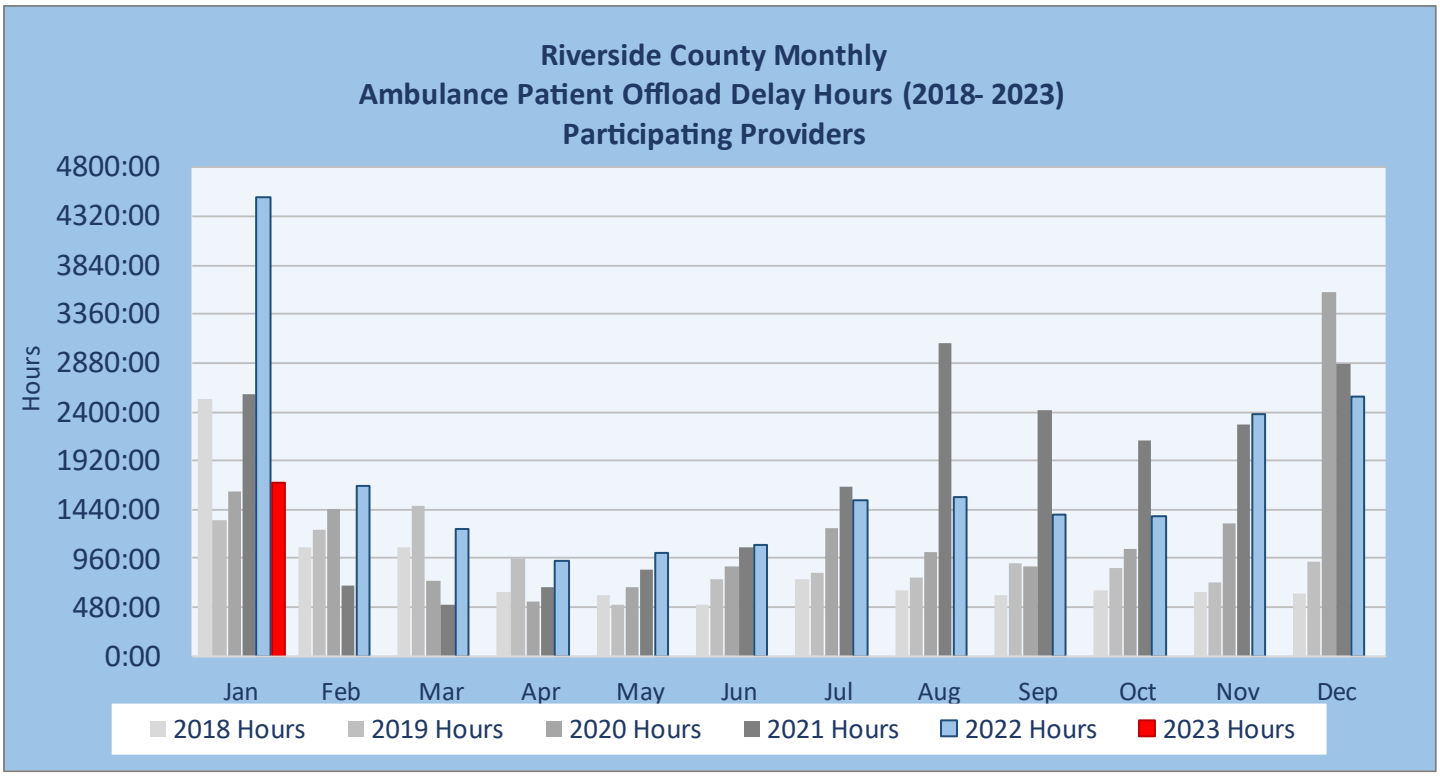
January 2023

Monthly Report

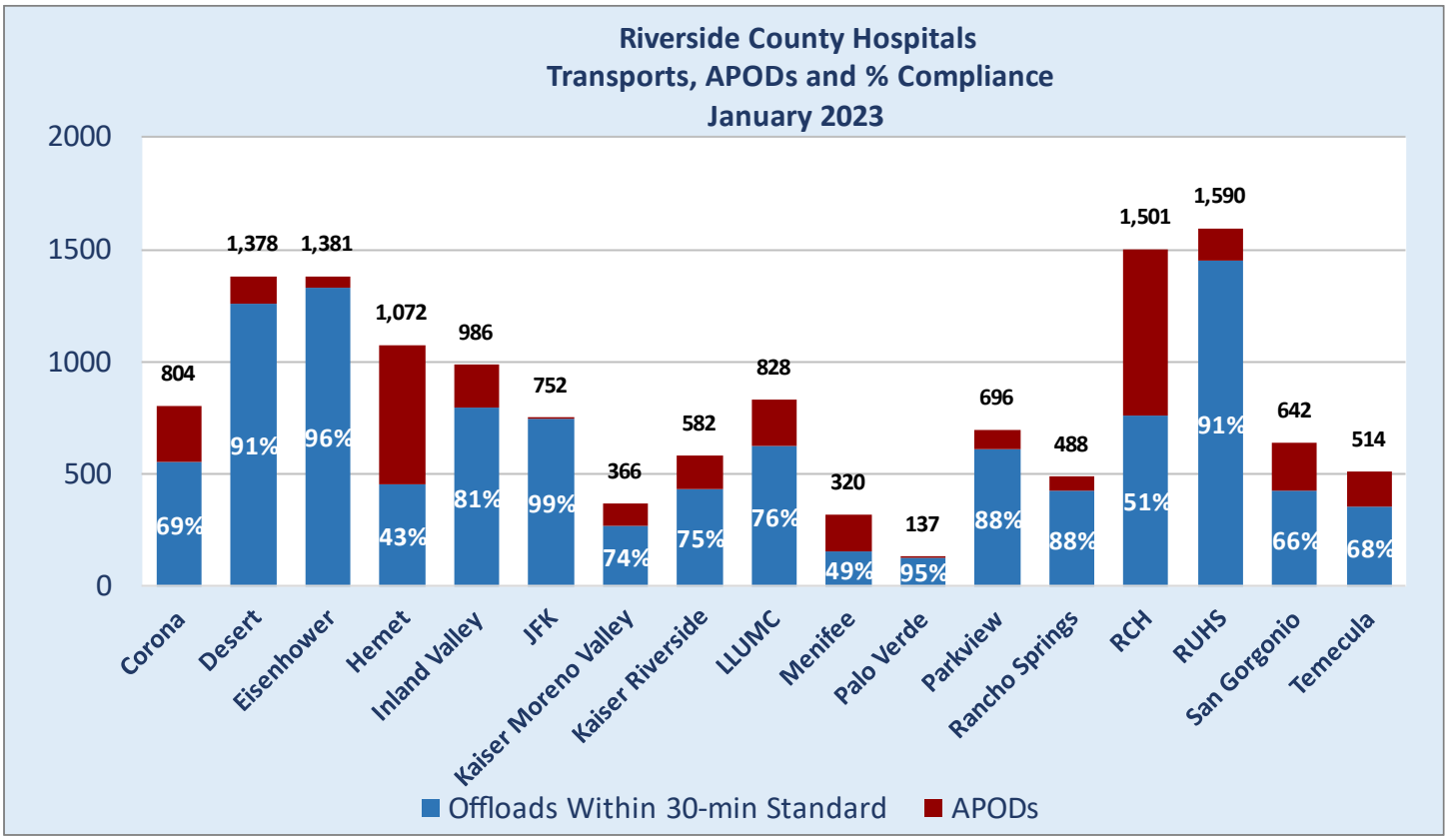
Prepared by Riverside County EMS Agency – February 10, 2023

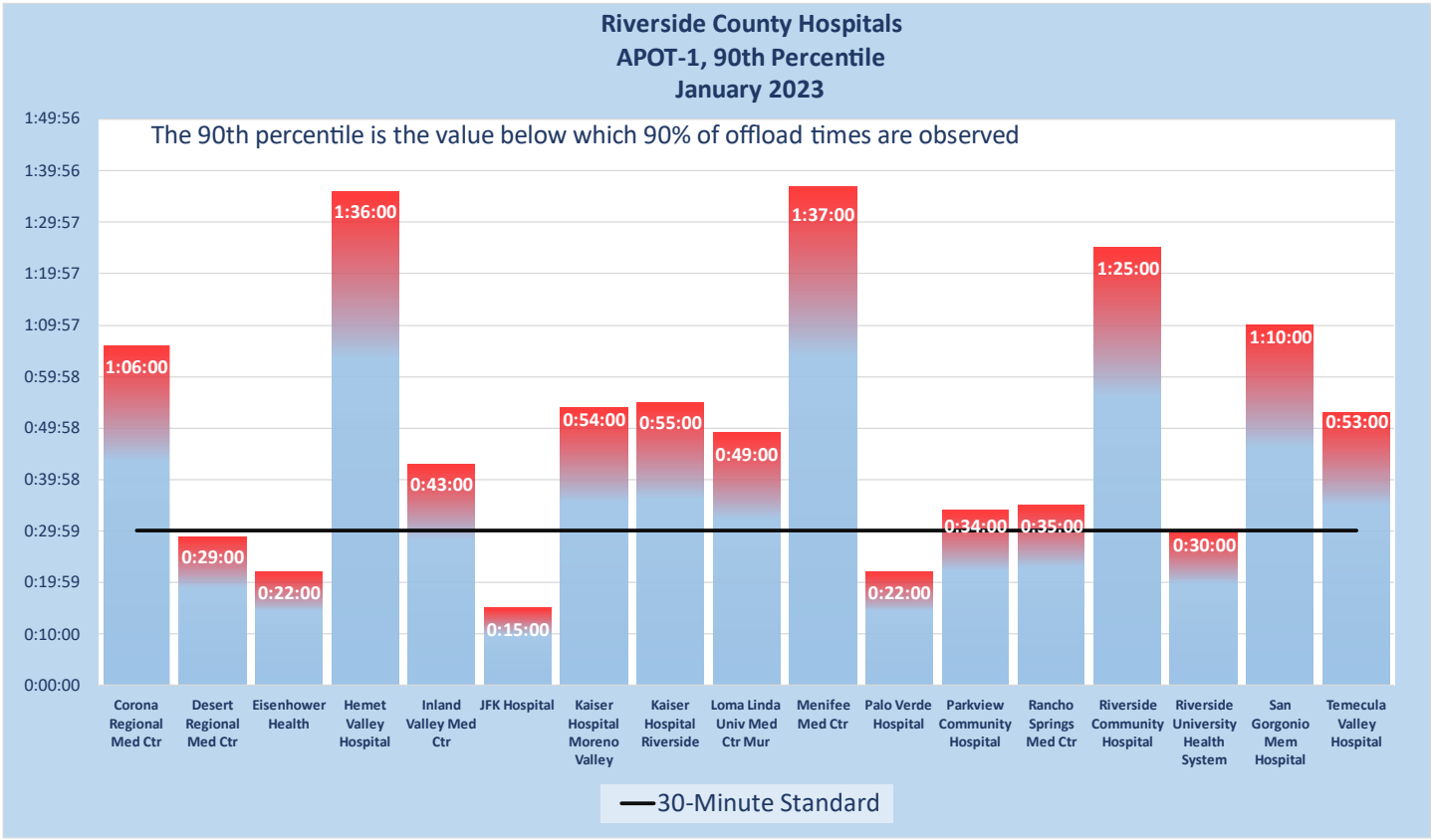
RIVERSIDE COUNTY AMBULANCE PATIENT OFFLOAD TIME

These charts represent total ambulance patient offload times (APOT) and delays (APOD) from hospitals within Riverside County. APOD includes delays greater than 30 minutes and only the time after the first 30 minutes have passed.



January 2023	ALS Transports	APOT	APOD Hours	APODs	APOD Compliance	APOT - 1
Corona Regional Med Ctr	804	451:37:44	169:52:15	249	69.0%	1:06:00
Desert Regional Med Ctr	1,378	367:42:17	59:55:59	120	91.3%	0:29:00
Eisenhower Health	1,381	295:55:46	10:20:08	50	96.4%	0:22:00
Hemet Valley Hospital	1,072	892:58:08	419:05:01	616	42.5%	1:36:00
Inland Valley Med Ctr	986	357:41:27	66:25:21	191	80.6%	0:43:00
JFK Hospital	752	105:21:16	4:15:01	9	98.8%	0:15:00
Kaiser Hospital Moreno Valley	366	165:22:38	45:26:55	94	74.3%	0:54:00
Kaiser Hospital Riverside	582	266:26:23	72:21:17	148	74.6%	0:55:00
Loma Linda Univ Med Ctr Mur	828	375:36:01	83:38:44	201	75.7%	0:49:00
Menifee Med Ctr	320	264:11:05	123:01:12	164	48.8%	1:37:00
Palo Verde Hospital	137	28:25:57	4:03:15	7	94.9%	0:22:00
Parkview Community Hospital	696	232:15:09	20:50:07	85	87.8%	0:34:00
Rancho Springs Med Ctr	488	155:47:25	11:22:49	61	87.5%	0:35:00
Riverside Community Hospital	1,501	1014:34:50	415:38:38	741	50.6%	1:25:00
Riverside University Health System	1,590	476:57:04	19:26:15	139	91.3%	0:30:00
San Gorgonio Mem Hospital	642	351:50:55	112:57:53	219	65.9%	1:10:00
Temecula Valley Hospital	514	249:37:18	63:08:56	162	68.5%	0:53:00
Grand Total	**14,037**	**6052:21:23**	**1701:49:46**	**3256**	**76.8%**	**0:33:08**

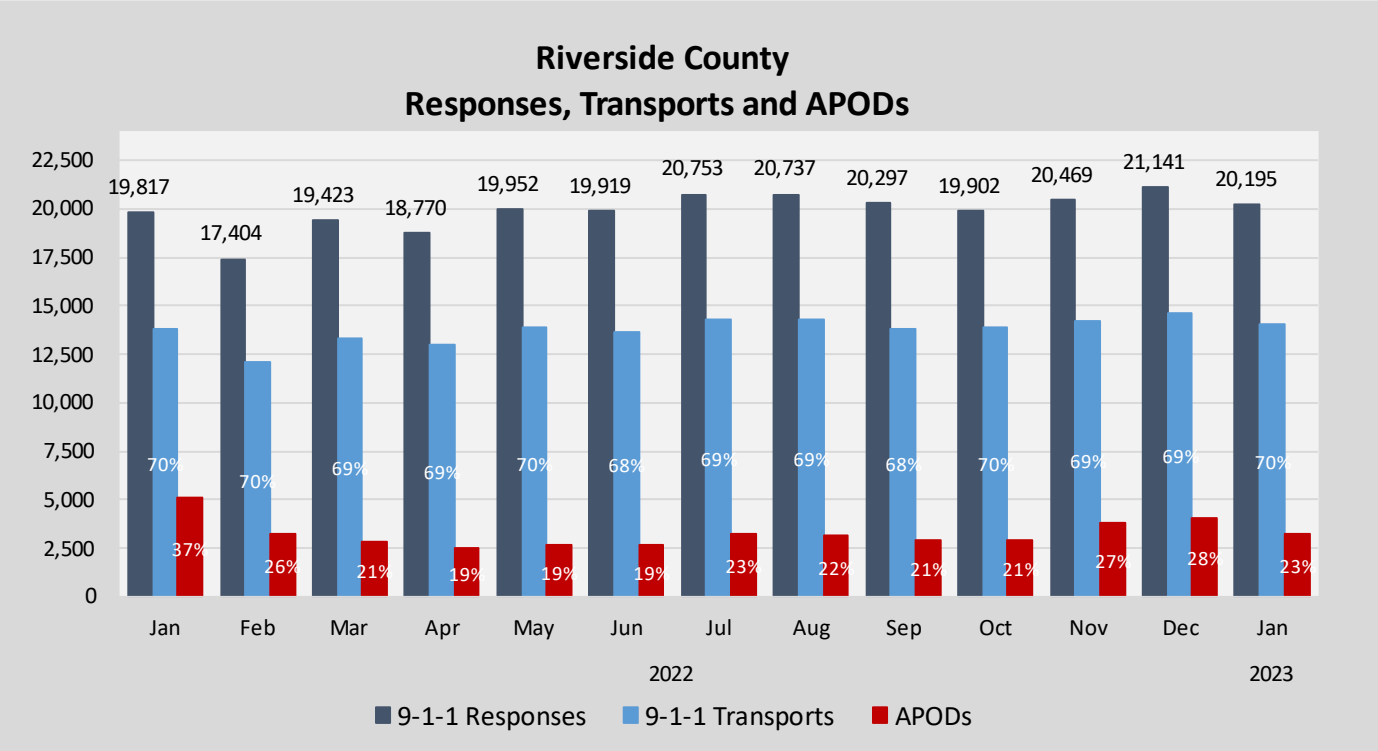




Data for this report has been collected from ePCRs (electronic patient care records) via FirstWatch® and are available after they have been completed by the provider. There is, therefore, an inherent latency to the availability of these records. Due to this latency, subsequent reports may feature higher 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 a summary of Riverside County's total 9-1-1 ambulance (ALS) responses, transports, and total transports resulting in patient offload delay (APOD) for a rolling 12 months compared to the current month.



TRANSPORT VOLUME.

Transport volume for each hospital over a 12 month period compared to the current month is described below. Each hospital can be categorized as a low to high volume facility relative to all facilties in the county. Hospitals are color coded ranging from low to high based on an average transports of the last 12 months.

Transport Volume	Low											High	
Hospital	**2022**											**2023**	**Monthly**
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Avg**
Corona Regional Med Ctr	680	685	729	720	709	757	770	803	767	779	778	829	804	**755**
Desert Regional Med Ctr	1311	1121	1316	1288	1314	1365	1437	1381	1357	1399	1298	1402	1378	**1,336**
Eisenhower Health	1484	1284	1386	1350	1385	1268	1387	1338	1234	1294	1415	1455	1381	**1,359**
Hemet Valley Hospital	744	893	1205	1201	1326	1276	1219	1258	1135	1162	1146	879	1072	**1,117**
Inland Valley Med Ctr	850	812	891	823	951	892	979	950	897	1041	972	1069	986	**932**
JFK Hospital	707	619	716	773	756	679	695	750	700	668	734	765	752	**716**
Kaiser Hospital Moreno Valley	369	314	361	304	321	346	353	387	375	323	364	380	366	**351**
Kaiser Hospital Riverside	603	506	525	513	570	521	568	568	539	549	529	595	582	**551**
Loma Linda Univ Med Ctr Mur	871	754	720	675	812	752	807	867	825	825	809	901	828	**804**
Menifee Med Ctr	318	238	263	237	234	264	328	291	285	293	276	390	320	**287**
Palo Verde Hospital	176	118	120	142	178	151	161	169	142	143	152	167	137	**150**
Parkview Community Hospital	872	607	632	523	637	659	714	682	745	726	768	760	696	**694**
Rancho Springs Med Ctr	552	436	491	430	483	499	465	499	521	475	557	597	488	**499**
Riverside Comm Hospital	1236	1283	1534	1552	1614	1537	1602	1601	1528	1456	1506	1468	1501	**1,494**
Riverside Univ Health System	1825	1385	1395	1369	1534	1477	1632	1586	1581	1570	1711	1676	1590	**1,564**
San Gorgonio Mem Hospital	630	541	495	524	547	651	617	636	604	566	622	673	642	**596**
Temecula Valley Hospital	611	533	567	549	531	549	596	559	545	582	556	628	514	**563**
Riverside County Total	**13839**	**12129**	**13346**	**12973**	**13902**	**13643**	**14330**	**14325**	**13780**	**13851**	**14193**	**14634**	**14037**	**13768**

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 compared to the current month.

Compliance
High — Low

APOT % Compliance by Hospital for the last 12 months

	2022												2023	Monthly
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Average
Corona Regional Med Ctr	42%	60%	65%	65%	71%	68%	63%	68%	64%	67%	58%	58%	69%	**63%**
Desert Regional Med Ctr	78%	84%	93%	94%	94%	98%	95%	98%	97%	96%	92%	90%	91%	**92%**
Eisenhower Health	91%	93%	97%	97%	99%	99%	98%	97%	96%	98%	96%	95%	96%	**96%**
Hemet Valley Hospital	40%	46%	54%	69%	68%	57%	52%	62%	55%	58%	50%	42%	43%	**53%**
Inland Valley Med Ctr	51%	65%	75%	75%	70%	73%	74%	71%	81%	76%	78%	72%	81%	**73%**
JFK Hospital	98%	98%	99%	99%	100%	99%	98%	99%	100%	100%	98%	99%	99%	**99%**
Kaiser Hospital Moreno Valley	57%	72%	68%	62%	72%	79%	71%	73%	81%	75%	65%	78%	74%	**71%**
Kaiser Hospital Riverside	51%	63%	59%	60%	66%	64%	58%	58%	62%	57%	52%	62%	75%	**61%**
Loma Linda Univ Med Ctr Mur	64%	77%	83%	83%	80%	84%	79%	75%	82%	75%	71%	63%	76%	**76%**
Menifee Med Ctr	39%	58%	71%	72%	78%	76%	73%	62%	69%	73%	40%	40%	49%	**62%**
Palo Verde Hospital	100%	95%	96%	97%	98%	100%	100%	96%	99%	98%	97%	96%	95%	**97%**
Parkview Community Hospital	53%	73%	83%	85%	85%	89%	92%	94%	88%	90%	77%	75%	88%	**82%**
Rancho Springs Med Ctr	51%	70%	81%	79%	76%	76%	70%	69%	77%	79%	73%	80%	88%	**75%**
Riverside Community Hospital	41%	55%	59%	61%	60%	62%	52%	50%	51%	54%	46%	48%	51%	**53%**
Riverside University Health System	76%	90%	93%	93%	92%	93%	92%	91%	88%	91%	89%	88%	91%	**90%**
San Gorgonio Mem Hospital	55%	77%	88%	84%	91%	79%	81%	77%	81%	82%	65%	61%	66%	**76%**
Temecula Valley Hospital	52%	62%	80%	87%	79%	82%	69%	79%	76%	72%	66%	56%	68%	**71%**
Riverside County Compliance	**63%**	**74%**	**79%**	**81%**	**81%**	**81%**	**77%**	**78%**	**79%**	**79%**	**73%**	**72%**	**77%**	**76%**

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 compared to the current month

APOT-1 (90th Percentile) for the last 12 Months

Hospital	2022 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2023 Jan	Avg APOT-1
Corona Regional Med Ctr	2:51	1:21	1:07	1:01	0:58	1:05	1:20	1:05	1:15	1:09	1:35	1:50	1:06	1:21
Desert Regional Med Ctr	1:00	0:44	0:25	0:25	0:23	0:20	0:24	0:21	0:21	0:21	0:28	0:32	0:29	0:28
Eisenhower Health	0:29	0:25	0:20	0:19	0:18	0:18	0:20	0:19	0:21	0:18	0:21	0:24	0:22	0:21
Hemet Valley Hospital	2:42	1:43	1:15	0:52	0:54	1:08	1:28	1:06	1:34	1:11	1:33	2:28	1:36	1:30
Inland Valley Med Ctr	1:41	1:06	0:54	0:54	0:57	0:54	0:55	1:01	0:46	0:56	0:52	0:54	0:43	0:57
JFK Hospital	0:16	0:16	0:16	0:16	0:18	0:16	0:19	0:18	0:14	0:14	0:15	0:15	0:15	0:16
Kaiser Hospital Moreno Valley	1:25	0:59	1:03	1:14	1:00	0:45	0:57	0:52	0:44	1:00	1:14	0:50	0:54	0:59
Kaiser Hospital Riverside	2:38	1:08	1:29	1:20	1:08	1:13	1:26	1:26	1:17	1:25	1:51	1:24	0:55	1:26
Loma Linda Univ Med Ctr Mur	1:13	0:46	0:40	0:37	0:39	0:37	0:44	0:50	0:38	0:45	1:08	1:07	0:49	0:48
Menifee Med Ctr	3:02	2:03	0:55	0:55	0:42	0:44	0:52	1:13	0:57	0:51	2:14	2:07	1:37	1:24
Palo Verde Hospital	0:15	0:23	0:21	0:21	0:18	0:12	0:16	0:14	0:13	0:19	0:16	0:19	0:22	0:17
Parkview Community Hospital	1:52	0:51	0:37	0:37	0:35	0:31	0:29	0:27	0:33	0:31	0:55	0:50	0:34	0:43
Rancho Springs Med Ctr	2:35	0:58	0:46	0:43	1:03	0:49	0:59	1:11	0:53	0:53	1:04	0:47	0:35	1:01
Riverside Comm Hospital	2:26	1:23	1:09	1:02	1:01	1:03	1:15	1:28	1:14	1:10	1:30	1:23	1:25	1:20
Riverside Univ Health System	0:42	0:32	0:30	0:28	0:30	0:29	0:29	0:30	0:32	0:30	0:32	0:33	0:30	0:31
San Gorgonio Mem Hospital	2:07	0:49	0:33	0:40	0:31	0:46	0:43	0:53	0:42	0:44	1:22	1:22	1:10	0:57
Temecula Valley Hospital	1:41	1:04	0:37	0:34	0:41	0:40	0:50	0:42	0:45	0:49	0:56	1:21	0:53	0:53
Riverside County Compliance	**1:37**	**0:56**	**0:47**	**0:43**	**0:43**	**0:44**	**0:49**	**0:50**	**0:48**	**0:48**	**1:02**	**1:03**	**0:52**	**0:54**

AMBULANCE DIVERSIONS

REMSA Policy 6103 (https://www.remsa.us/policy/6103.pdf) describes ground and air ambulance diversions to facilitate safe transport of patients to the closest alternate facility. Ambulance Diversions described here are those activated as a result of unusual circumstances at a facility limiting access to emergency care *(Internal Disaster - INT)* or a temporary outage in Specialty Care services *(STEMI, Stroke, Trauma).* The following tables provide diversion history by count of occurrences and total hours/minutes by facility for a rolling 12 months compared to the current month. *Hospitals not listed had no diversions during this evaluation period.*

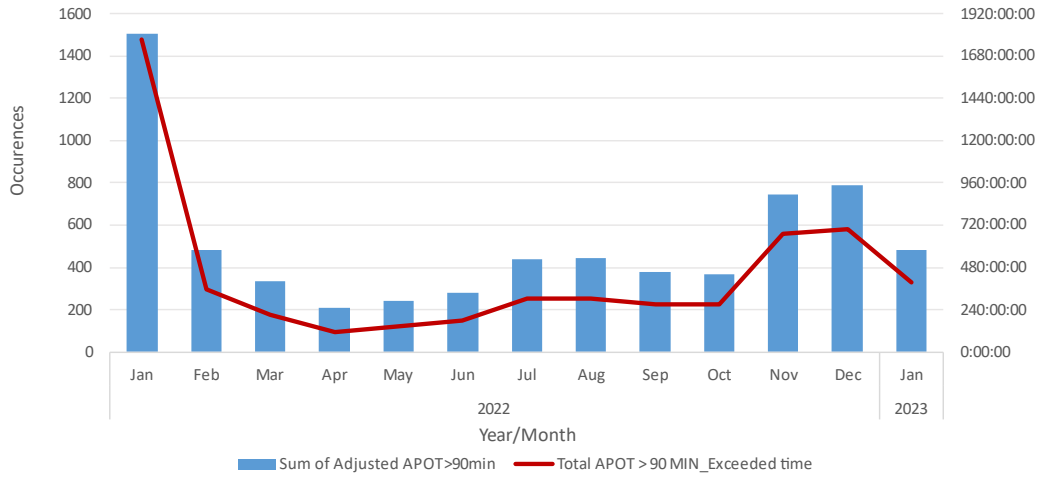
Diversions by Count	2021	2022												Total
Diversion Category/Facility	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
INT	**1**	**1**		**1**	**3**	**1**	**1**							**8**
John F. Kennedy Memorial Hospital					1									1
Menifee Valley Medical Center	1			1										2
Inland Valley Medical Center							1							1
Kaiser Permanente Moreno Valley Medical Center		1			1									2
Kaiser Permanente Riverside Medical Center					1	1								2
STEMI	**1**			**1**	**1**							**1**		**4**
John F. Kennedy Memorial Hospital				1	1									2
Riverside Community Hospital												1		1
Loma Linda University Medical Center--Murrieta	1													1
Stroke										**1**		**1**	**1**	**3**
Riverside Community Hospital												1		1
Kaiser Permanente Moreno Valley Medical Center													1	1
Rancho Springs Medical Center										1				1
Trauma	**3**	**5**		**3**	**1**	**4**	**2**	**1**	**1**	**1**		**2**	**1**	**24**
Riverside Community Hospital				1		3		1		1		2		8
Inland Valley Medical Center	2			2	1		2		1				1	9
Riverside University Health System	1	5				1								7
Total	**5**	**6**		**5**	**5**	**5**	**3**	**1**	**1**	**2**		**4**	**2**	**39**

Diversions by HH:MM	2022			2022									
Diversion Category/Facility	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
INT	**0:41**	**1:13**		**1:09**	**5:31**	**0:56**	**1:39**						
John F. Kennedy Memorial Hospital					3:33								
Menifee Valley Medical Center	0:41			1:09									
Inland Valley Medical Center							1:39						
Kaiser Permanente Moreno Valley Medical Center		1:13			0:37								
Kaiser Permanente Riverside Medical Center					1:21	0:56							
STEMI	**2:21**			**10:16**	**15:51**							**0:28**	
John F. Kennedy Memorial Hospital				10:16	15:51								
Riverside Community Hospital												0:28	
Loma Linda University Medical Center--Murrieta	2:21												
Stroke										**7:57**		**0:27**	**3:34**
Riverside Community Hospital												0:27	
Kaiser Permanente Moreno Valley Medical Center													3:34
Rancho Springs Medical Center										7:57			
Trauma	**4:15**	**5:54**		**6:44**	**1:04**	**3:12**	**3:21**	**0:49**	**2:38**	**0:24**		**3:41**	**1:11**
Riverside Community Hospital				2:44		1:51		0:49		0:24		3:41	
Inland Valley Medical Center	3:01			4:00	1:04		3:21		2:38				1:11
Riverside University Health System	1:14	5:54				1:21							
Total	**7:17**	**7:07**	**0:00**	**18:09**	**22:26**	**4:08**	**5:00**	**0:49**	**2:38**	**8:21**	**0:00**	**4:36**	**4:46**

AMBULANCE REDIRECTION

REMSA Policy 6104 allows redirection of ambulances away from hospitals experiencing significant Ambulance Patient Offload Delays (APOD) to the next most appropriate facility. *Significant* APOD is defined as a patient remaining on an ambulance gurney for **90 minutes or greater after arrival at the hospital** (APOT < 90 min). Standard transfer of care is 30 minutes or less (APOT<30 min). Until the transfer of care is complete (patient is removed from the gurney and hospital staff assume care of the patient), ambulance crews must remain at the hospital and continue care. While patients held on excessive APODs are generally those classified as lower acuity, approximately one-third of the County's ~600 daily 9-1-1 medical responses are determined by dispatch as critical, requiring immediate medical attention (e.g. cardiac arrest, stroke, traumatic injury). As a result, excessive, or multiple APODs within the same service area impact ambulance timeliness and availability in the field posing a direct risk to 9-1-1 patient safety. Ambulance redirection is one strategy to reduce the consequential backlog of EMS services which occurs when there are excessive ambulance delays at hospital emergency departments. Below is the countywide breakdown of APOD occurrences where ambulances were documented as held for greater than 90 minutes before the transfer of care for the last 12 months compared to the current month.

Patient Offload Delays Greater than 90 Minutes

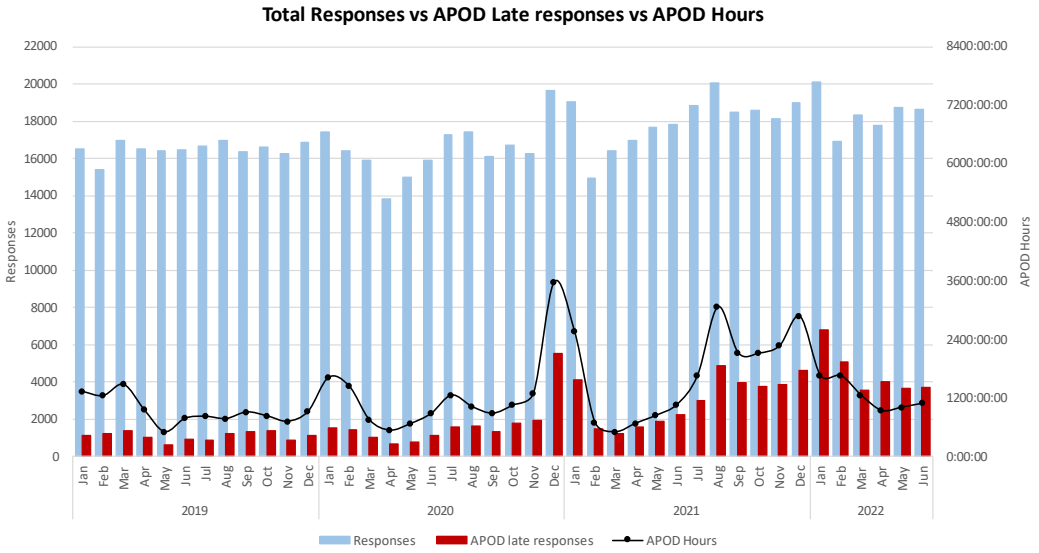


The table below shows the count of ambulances that held for greater than 90 minutes and total hours accumulated after 90 minute threshold by facility for the reporting month.

Facility	Total Time APOT>90 min (HR: MM: S)	Total Incidents APOT>90 min
Corona Regional Med Ctr	58:47:36	51
Desert Regional Med Ctr	15:39:49	16
Eisenhower Health	0:10:09	1
Hemet Valley Hospital	131:14:12	121
Inland Valley Med Ctr	2:53:53	10
JFK Hospital	0:30:30	1
Kaiser Hospital Moreno Valley	7:41:55	13
Kaiser Hospital Riverside	11:14:56	21
Loma Linda Univ Med Ctr Mur	13:28:05	21
Menifee Med Ctr	39:57:03	37
Palo Verde Hospital	1:10:39	2
Parkview Community Hospital	0:31:47	2
Rancho Springs Med Ctr	0:00:00	0
Riverside Community Hospital	82:12:22	129
Riverside University Health System	0:54:05	1
San Gorgonio Mem Hospital	19:56:53	38
Temecula Valley Hospital	7:18:18	20
Grand Total	**393:42:12**	**484**

APOD IMPACT ON 9-1-1 AMBULANCE RESPONSES

The graph below displays APOD hours, AMR responses, and AMR APOD late responses. A response is classified as an APOD late response when the response time is beyond the response time standard and APOD hours were a direct cause. The classification (exemption) process individually matches specific ambulances out-of-service on APOD to the specific APOD late responses. More reports can be found at: https://www.rivcoems.org/Documents/Reports-Current

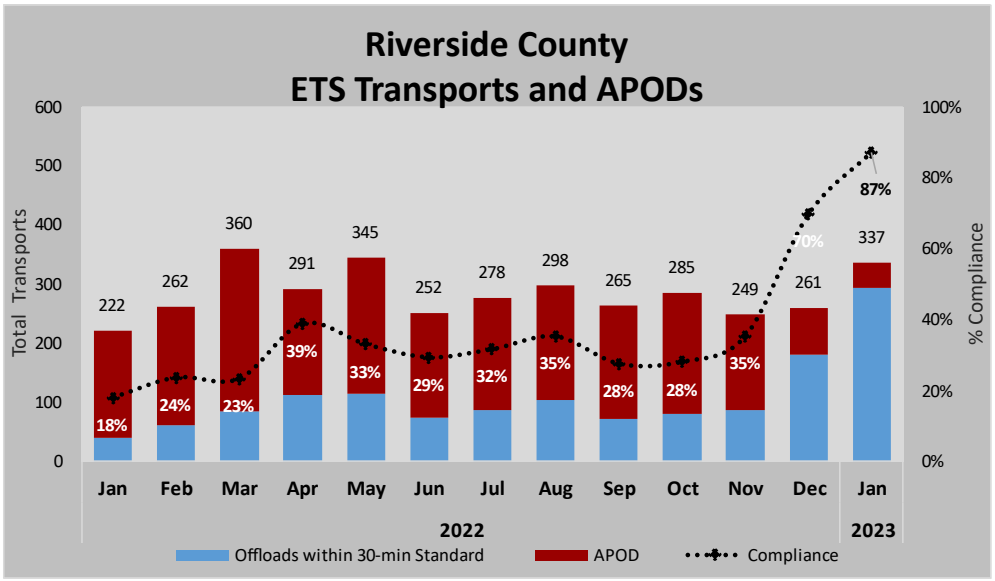


EMERGENCY TREATMENT SERVICES

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.

January 2023 - Emergency Treatment Services						
	Transports to ETS	Total Offload Time	APOD Hours	APODs	APOD Compliance	APOT-1
Emergency Treatment Services	337	114:22:36	11:22:08	43	87.2%	0:33:08

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



APOT AND APOD DEFINITIONS

9-1-1 Ambulance Response

For the purpose of reporting patient offload time and delays, only ground transport units responding to 9-1-1 incidents are included in this report. To avoid duplicate response counts, this excludes all records from First Responder Fire agencies also arriving on scene as part of Riverside County's dual 9-1-1 medical response system. With the exception of ETS transports which are predominantly from local hospitals, it also excludes interfacility transports and other call types such as air ambulances.

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."[1]

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 Time (APOT)

The Time interval between the arrival of an 9-1-1 patient at an Emergency Department (ED) and the time that patient is transferred from the ambulance gurney to a bed, chair, or other acceptable location, and the ED assumes responsibility of care.[2] The Clock Start (eTimes.11) is the time of patient arrival at the destination (hospital), and the Clock Stop (eTimes.12) is the time patient care is transferred.[3] REMSA obtains both times from the ePCR.

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 offload from the ambulance gurney exceeds the 30-minute standard, it will be documented and tracked as APOD.[5] *The Riverside County ePCR system requires medics to enter an " APOD Reason" when APOT exceeds the 30-minute standard. While the number of APODs documented as non-ED-related is nominal, beginning in Week-1 of 2022, only delays identified as having an ED origin are counted against APOD compliance for a more precise metric.*

APOD Compliance

Frequency comparison between the total number of transports and those resulting in APODs with an ED-related origin.

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[1] Ibid., APOT-1 Specifications.

[2] Health and Safety Code Division 2.5, Chapter 3, Article 1, Section 1797.120(b)

[3] Ambulance Patient Offload Time (APOT) Standardized Methods for Data Collection and Reporting, approved by EMS Commission 12/14/2016. https://emsa.ca.gov/wp-content/uploads/sites/71/2017/09/APOT-Methodology_Guidance-2016.pdf

[3] Ibid., APOT-1 Specifications

[5] REMSA Policy 4109, Transfer of Patient Care. https://www.remsa.us/policy/4109.pdf

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