

Special Seasonal Report



Ambulance Patient Offload Time
Week 52 (12/26/21 – 01/01/22)

**2021-22
Seasonal
Report**

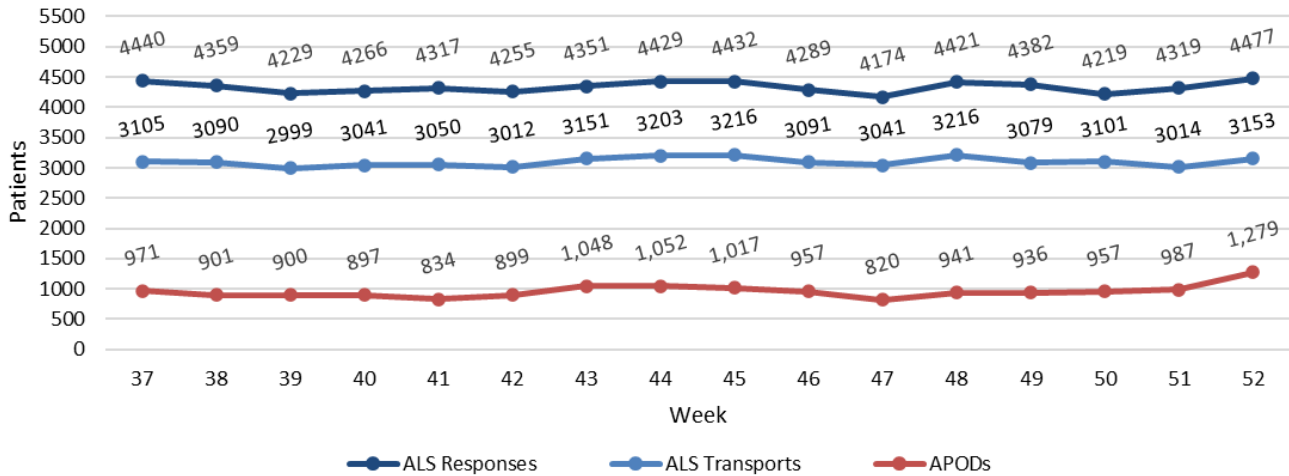
This report and all current and recent APOT reports can be found online at:
<http://www.rivcoems.org/Documents/Reports-Current>

Prepared by Riverside County EMS Agency – January 10, 2022

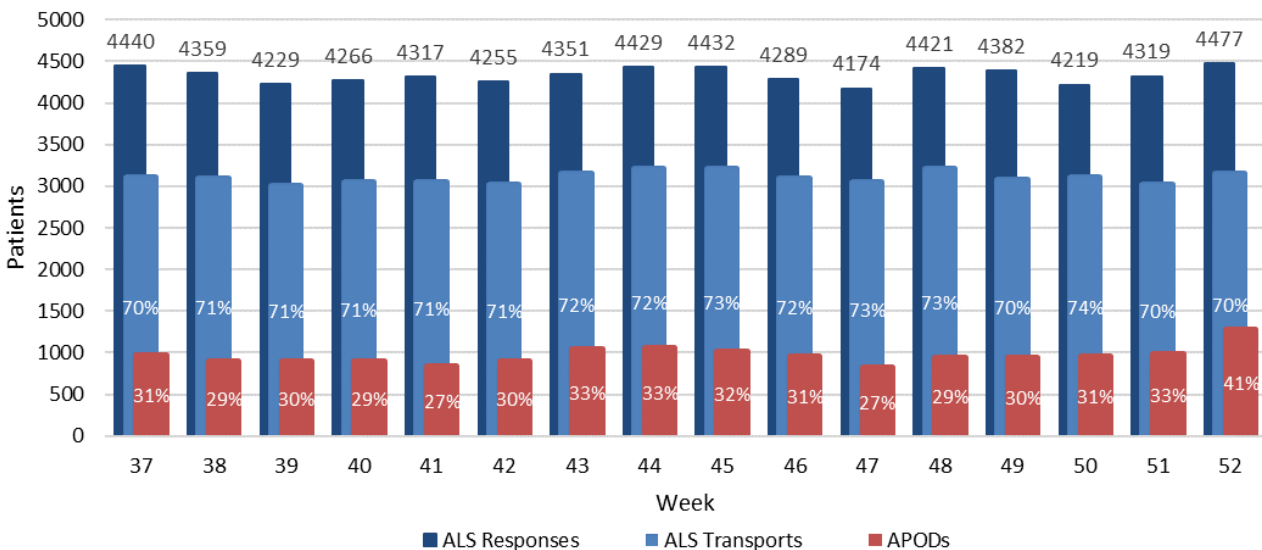
SPECIAL SEASONAL REPORT

In an effort to monitor Ambulance Patient Offload Time (APOT) and influencing factors such as seasonal surge, Riverside County EMS Agency is publishing weekly reports. The following charts represent weekly aggregates of 9-1-1 Ambulance (ALS) Responses, Transports, and Ambulance Patient Offload Delays (APOD) for the past 16 weeks.

**Weekly Transports and APODs
2021 Week 37 through Week 52**



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2021 Week 37 through Week 52**

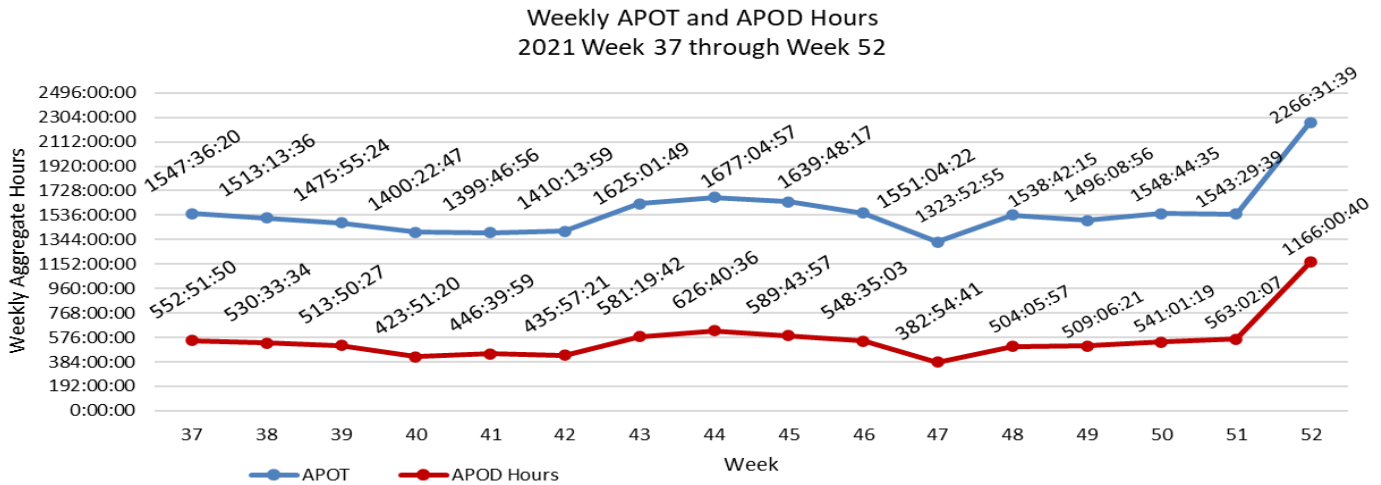


*ALS Transports includes transports only to Riverside county hospitals

- During Week 52, there were a total of **4,477 ALS responses** in Riverside County— 3.7% INCREASE from the previous week’s total of 4,319 responses.
- During Week 52, there were a total of **3,153 transports** in Riverside County—4.6% INCREASE from the previous week’s 3,014 transports.
- During Week 52, there were a total of **1,279 APODs** in Riverside County— 29.6 % ABOVE from the previous week’s total of 987 APODs.

RIVERSIDE COUNTY AMBULANCE PATIENT OFFLOAD TIME

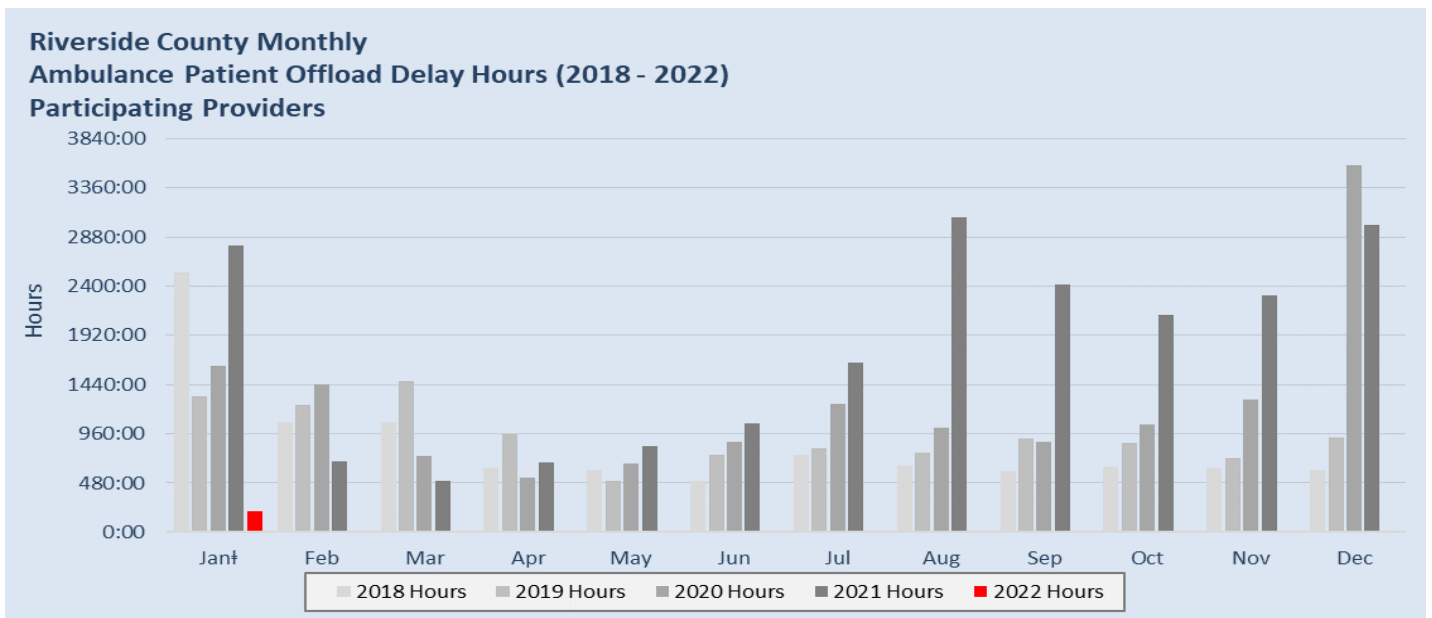
The following chart represent weekly aggregate APOT and APOD hours (hh:mm:ss) for the past 16 weeks. APOT begins at patient arrival at hospital (eTimes.11) and ends when patient care is transferred to the hospital (eTimes.12). APOD calculation begins when APOT exceeds the 30-minute transfer of care standard defined in REMSA [Policy 4109](#).



*Beginning Week-33, actual APOT/D time may be slightly greater than the total time reported above due to temporary activation of a secondary EMS transfer-of-care strategy following frequent and excessive delays of ambulances at some hospitals. This delay mitigation strategy allows 9-1-1 transport units on extended delay at a hospital to transfer care to another non-transport EMS unit until the emergency department assumes care of the patient. This allows the 9-1-1 transport unit to return to field response; however, the transfer of care time recorded for that unit is the same one used to calculate transfer of care to the hospital (NEMESIS value eTimes.13). As a result, beginning Week-33, total APOD times are expected to be greater than those reported above. This change should not affect total APOD counts as this back up transfer process occurs only with units already on delay.

- During Week 52, **APOT county-wide totaled 2266.5 hours** — 46.8% INCREASE the previous week’s total of 1543.5 hours.
- County-wide **APOD hours for Week 52 totaled 1166.0 hours**, a 107.1% INCREASE from the previous week’s total of 563.0 hours.

Data provided below illustrates total APOD time (hh:mm) by month over the last five years. This chart is a summation of offload time delays only and excludes the initial 30 minute period defined as the standard transfer of care time.

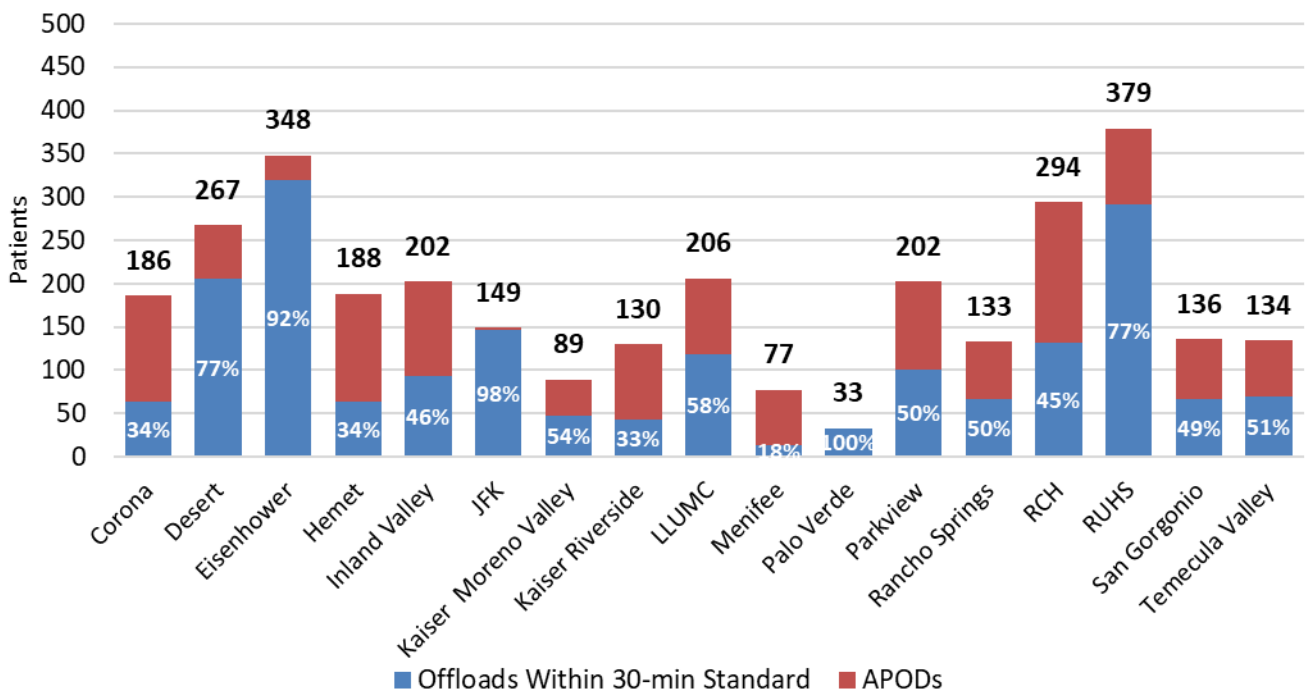


AMBULANCE PATIENT OFFLOAD TIME BY HOSPITAL

Key: High Low/Best

APOT Snapshot					
	ALS	APOT	APOD Hours	APODs	APOD
	Transports				Compliance
Corona Regional Med Ctr	186	216:26:49	136:34:40	122	34.4%
Desert Regional Med Ctr	267	129:22:59	57:15:58	62	76.8%
Eisenhower Health	348	83:17:27	7:43:27	28	92.0%
Hemet Valley Hospital	188	232:09:03	153:56:30	124	34.0%
Inland Valley Med Ctr	202	165:14:37	84:27:01	109	46.0%
JFK Hospital	149	21:40:56	1:23:03	3	98.0%
Kaiser Hospital Moreno Valley	89	60:07:47	25:43:00	41	53.9%
Kaiser Hospital Riverside	130	169:57:45	114:31:00	87	33.1%
Loma Linda Univ Med Ctr Mur	206	125:11:47	47:01:06	87	57.8%
Menifee Med Ctr	77	126:57:17	91:45:36	63	18.2%
Palo Verde Hospital	33	6:07:52	0:00:00	0	100.0%
Parkview Community Hospital	202	173:15:50	91:44:19	101	50.0%
Rancho Springs Med Ctr	133	108:10:27	56:26:35	67	49.6%
Riverside Community Hospital	294	264:31:26	147:36:32	163	44.6%
Riverside University Health System	379	151:05:45	24:19:07	87	77.0%
San Geronio Mem Hospital	136	142:29:27	86:16:35	70	48.5%
Temecula Valley Hospital	134	90:24:25	39:16:11	65	51.5%
Totals	3,153	2266:31:39	1166:00:40	1,279	59.4%

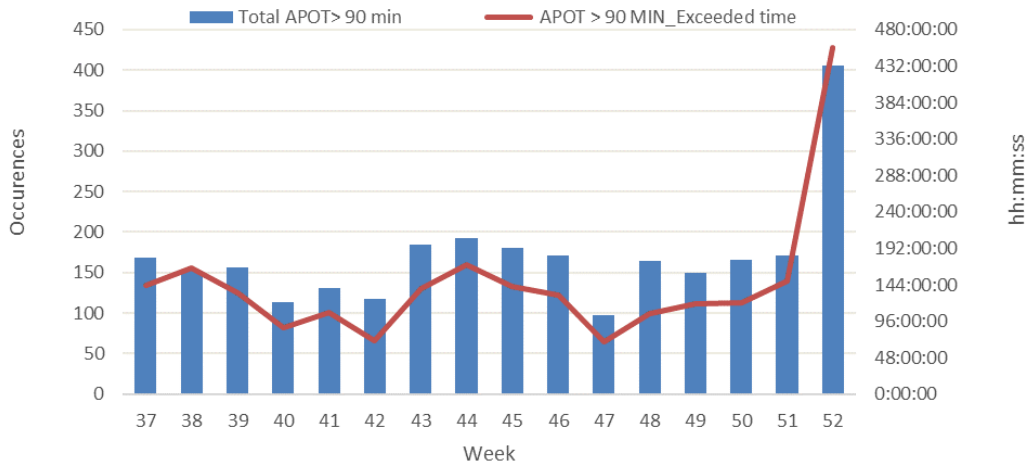
Transports and APOD Compliance by Hospital



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 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 Week 52 countywide breakdown of APOD occurrences where ambulances were documented as held for greater than 90 minutes before transfer of care.

Patient Offload Delays Greater than 90 Minutes



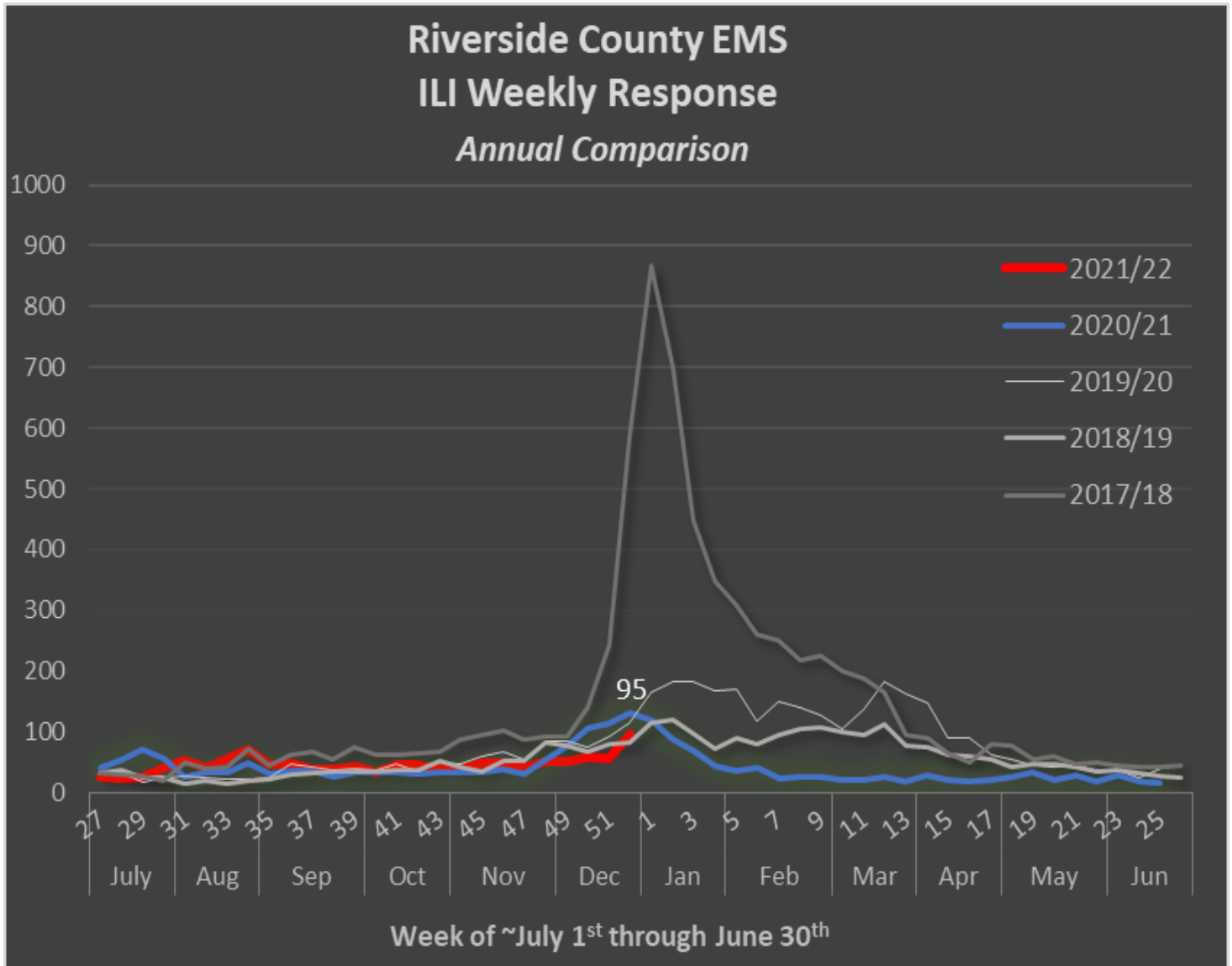
During Week 52, **405 ambulances were delayed greater than 90 minutes** — 136.8% INCREASE from the previous weeks total of 171.

Facility	Total Time APOT>90 min (HR: MM: S)	Total Incidents APOT>90 min
Corona Regional Med Ctr	58:31:23	48
Desert Regional Med Ctr	19:45:28	25
Eisenhower Health	2:04:04	2
Hemet Valley Hospital	79:42:54	47
Inland Valley Med Ctr	20:52:05	32
JFK Hospital	0:14:42	1
Kaiser Hospital Moreno Valley	3:12:51	10
Kaiser Hospital Riverside	48:50:20	49
Loma Linda Univ Med Ctr Mur	10:42:06	9
Menifee Med Ctr	47:11:12	31
Palo Verde Hospital	0:00:00	0
Parkview Community Hospital	36:56:16	34
Rancho Springs Med Ctr	16:57:35	20
Riverside Community Hospital	56:25:01	49
Riverside University Health System	3:55:00	5
San Geronio Mem Hospital	38:47:06	32
Temecula Valley Hospital	11:41:34	11
Grand Total	455:49:37	405

ILI - INFLUENZA-LIKE ILLNESS RESPONSE

While influenza is detected year-round, it is most common during fall and winter. Increases in influenza-like-illness (ILI) generally begin in October and peak sometime between December and February (<https://www.cdc.gov/flu/about/season/flu-season.htm>).

Hospital Emergency Departments (EDs) generally experience an increase in volume during flu season which, in turn, can impact Ambulance Patient Offload Time. The purpose of the Riverside County EMS system ILI (Influenza-like Illness) reporting is to improve tracking of influenza-related activity and facilitate EMS preparedness in the event of a significant surge event, similar or greater than that observed during the 2017-18 flu season.



Week 40 (~October 1st) is defined by the Center for Disease Control (CDC) as the expected start of increasing influenza activity, or “flu season”. Riverside County EMS Agency monitors influenza-like illness (ILI) year-round for better detection of seasonal or abnormal surges which can impact EMS utilization.

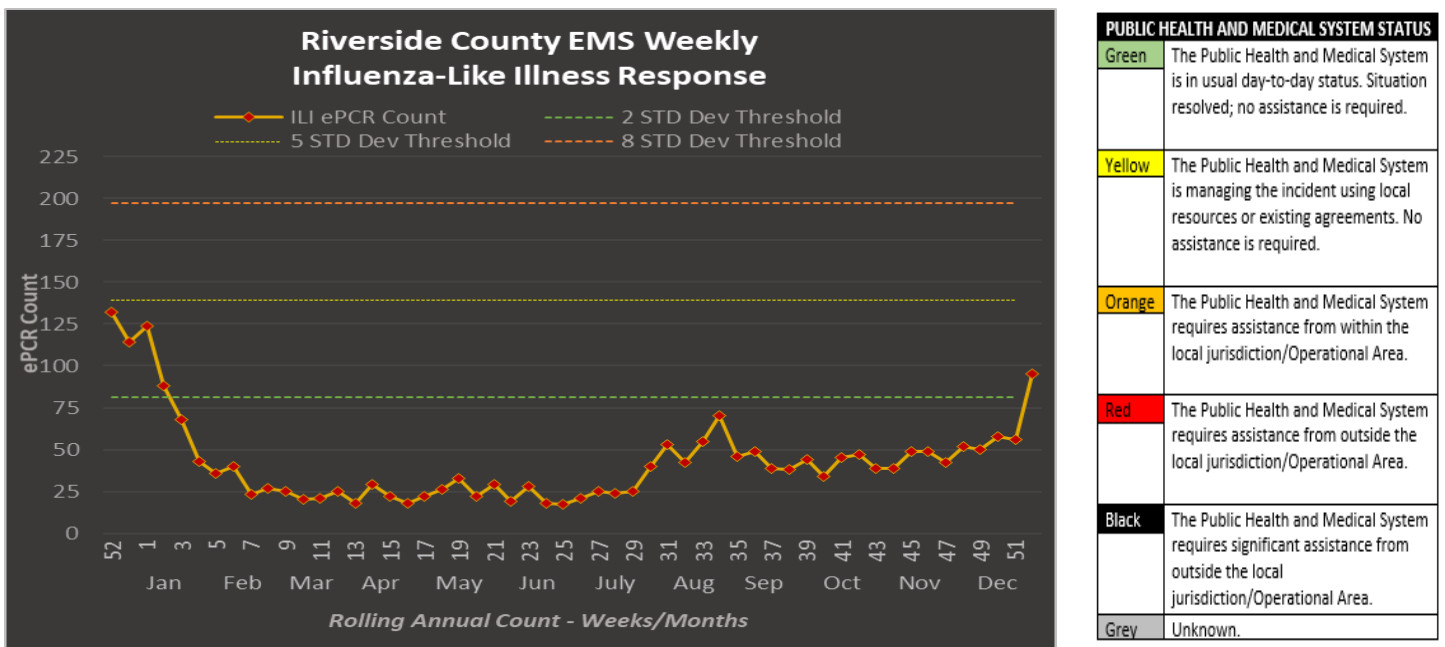
ILI - INFLUENZA-LIKE ILLNESS RESPONSE (CONT.)

The ILI trigger evaluates electronic patient report (ePCR) data using the following methodology:

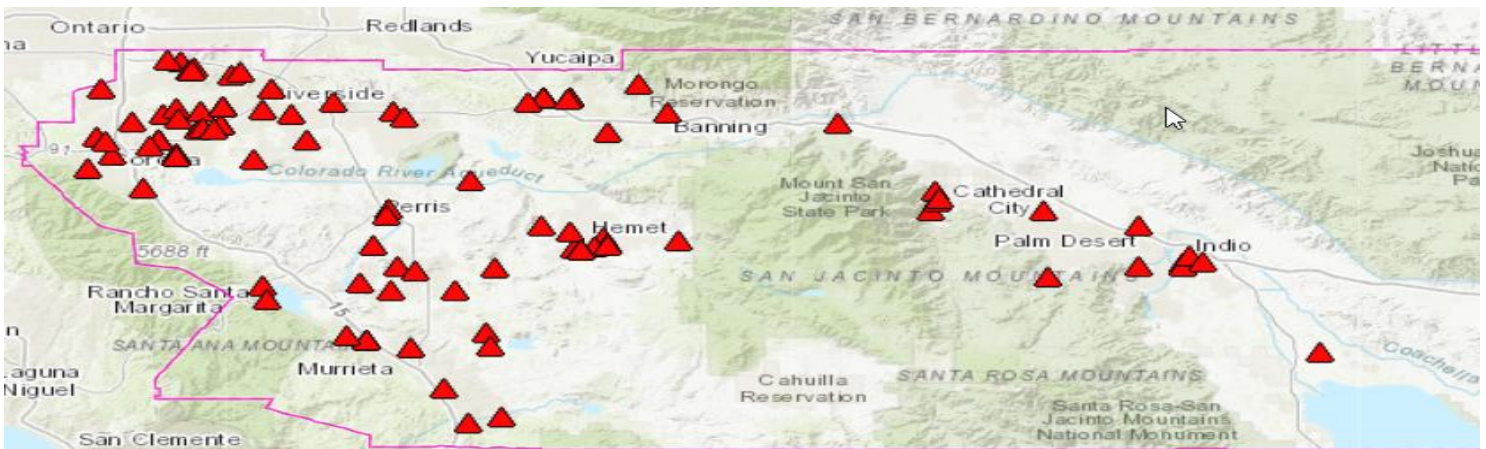
1. Filters primary or secondary impression of code J11 (Influenza due to unidentified influenza virus)
OR
2. A primary / secondary impression code J80, J98.09 (Acute respiratory distress syndrome, Respiratory disorder unspecified) with a match in the narrative for ILI, influenza like illness, Flu, Flu-, Flu\., or influenza
OR
3. Any incident with a match in the narrative for ILI, influenza like illness, Flu, Flu-, Flu\., or influenza.

EMS ILI response two standard deviations above the calculated baseline average during non-peak flu seasons is considered a surge in flu activity. For the current Flu season 2020-'21, the standard deviation threshold value is not calculated as there was abnormal non-peak flu season behavior due to COVID-19. The threshold value listed in the graph is based on previous years non-peak flu season. Surges are identified as color levels adapted from the *CDPH Standards and Guidelines for Healthcare Surge During Emergencies* (actual response status for the EMS system may differ):

<https://www.cdph.ca.gov/Programs/EPO/CDPH%20Document%20Library/FinalEOM712011.pdf>



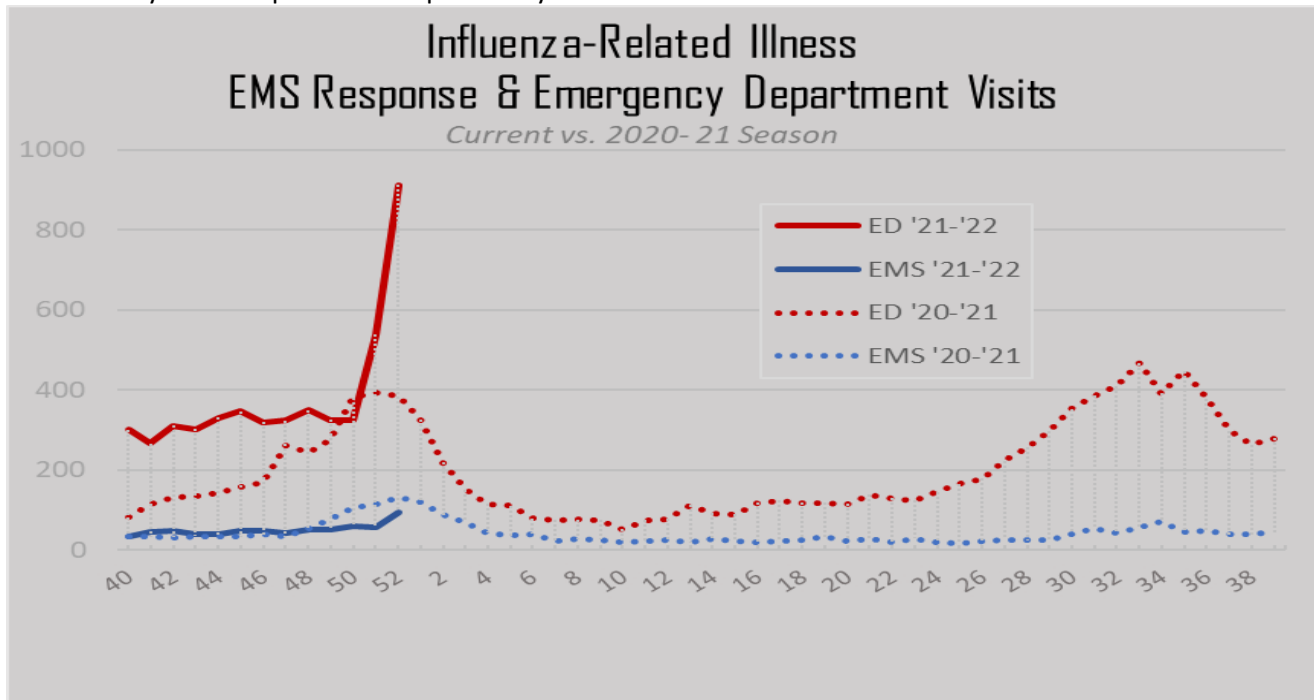
During Week 52, EMS ILI response was ABOVE the two standard deviation threshold compared to non-peak flu season activity levels (weeks 13-39).



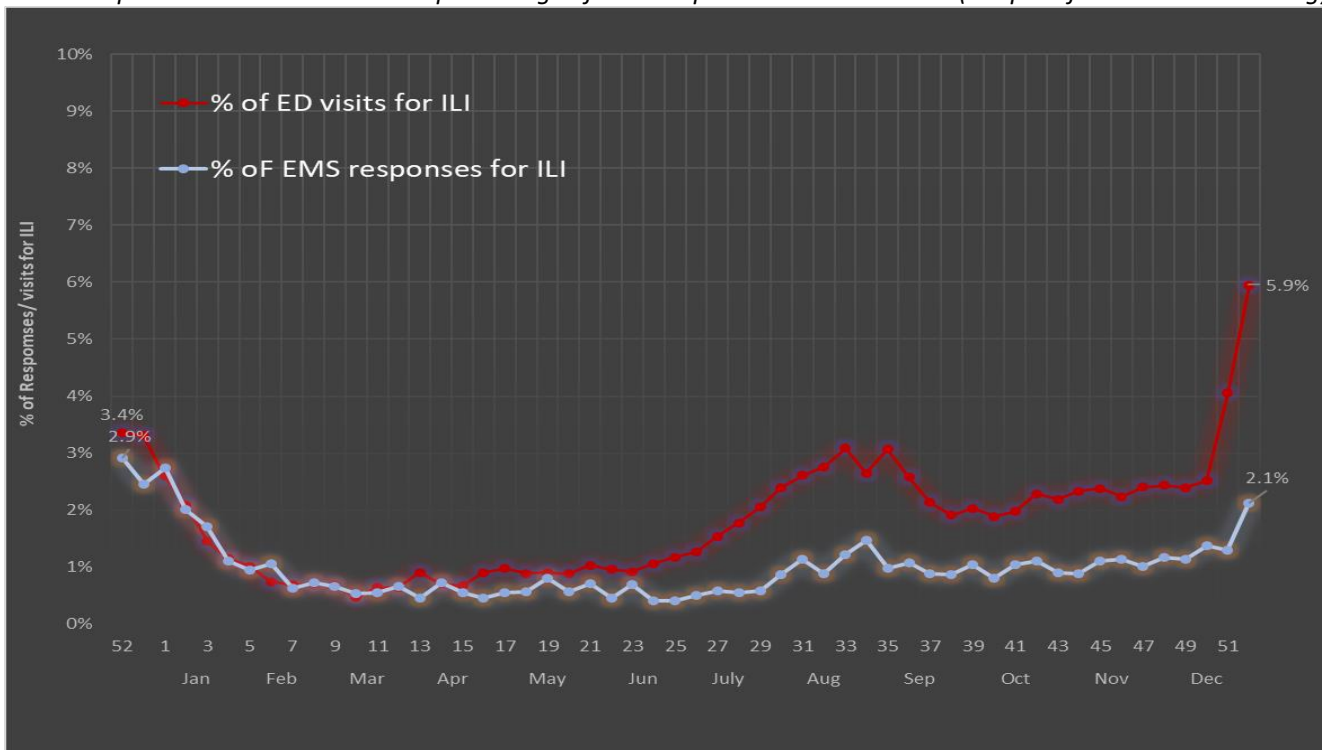
ILI-related EMS response in Riverside County, ePCR distribution map: Week 52

RIVERSIDE COUNTY PUBLIC HEALTH INFLUENZA-LIKE ILLNESS DATA

Riverside County Public Health Department – DOPH collects Emergency Department ILI activity data from the Center for Disease Control’s (CDC) *Early Notification of Community-based Epidemics (ESSENCE)* system as part of the National Syndromic Surveillance Program (NSSP). Fifteen of 17 Riverside County hospitals participate in ESSENCE. The graph below provides a comparison between Riverside County’s EMS ILI responses and Emergency Department (ED) ILI visits for the current year* compared to the previous year.



EMS ILI responses and ED ILI visits as a percentage of their respective total volume** (adapted from CDC methodology)



**A new Riverside County hospital joined ESSENCE in Week_48 of 2020 for a total of 15 participating hospitals. The addition of one hospital slightly elevates the baseline count from that week forward compared to previous weeks.

APOT AND APOD DEFINITIONS

9-1-1 Ambulance Response

For the purpose of reporting patient offload time and delays, only ALS (Advance Life Support) 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 the dual 9-1-1 medical response system in Riverside County. It also excludes interfacility transports and other types of 9-1-1 responses such as air ambulances.

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.

APOD Compliance

Frequency comparison between the total number of transports and those resulting in APOD.

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.³ 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.⁴

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.

Data for this report has been collected from ePCRs (electronic patient care reports) from 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.

-For inquiries, please contact EMS Administrator, TDouville@rivco.org

-Current report prepared by Sudha Mahesh & Catherine Borna Farrokhi, Riverside County EMS Agency

-ESSENCE Emergency Department data compiled by Rick Lopez, Riverside County Department of Public Health

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. https://emsa.ca.gov/wp-content/uploads/sites/71/2017/09/APOT-Methodology_Guidance-2016.pdf

³ Ibid., APOT-1 Specifications

⁴ REMSA Policy 4109, Transfer of Patient Care. <https://www.remsa.us/policy/4109.pdf>

⁷ Calkins MM, Isaksen TB, Stubbs BA, Yost MG, Fenske RA (2016). Impacts of extreme heat on emergency medical service calls in King County, Washington, 2007-2012: relative risk and time series analyses of basic and advanced life support. *Environ Health*. doi: 10.1186/s12940-016-0109-0

⁸ Sheridan SC, Kalkstein AM, Kalkstein LS (2009). Trends in heat-related mortality in the United States, 1975–2004. *Natural Hazards* 50:1, 145-160

⁹ Guo Y, Gasparrini A, Armstrong BG (2017). Heat Wave and Mortality: A Multicountry, Multicommunity Study. *Environ Health Perspect*. 2017;125(8):087006. doi:10.1289/EHP1026

¹⁰ CDC, Climate and Health Program. 2010. <https://www.cdc.gov/climateandhealth/effects/default.htm>