RIVERSIDE COUNTY EMS AGENCY

Ambulance Patient Offload Time

Week 8 (02/21/21 – 02/27/21)

2020-21 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 – March 2, 2021

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
2020 Week 46 through 2021 Week 8

Weekly Transports and APODs
2020 Week 46 through 2021 Week 8
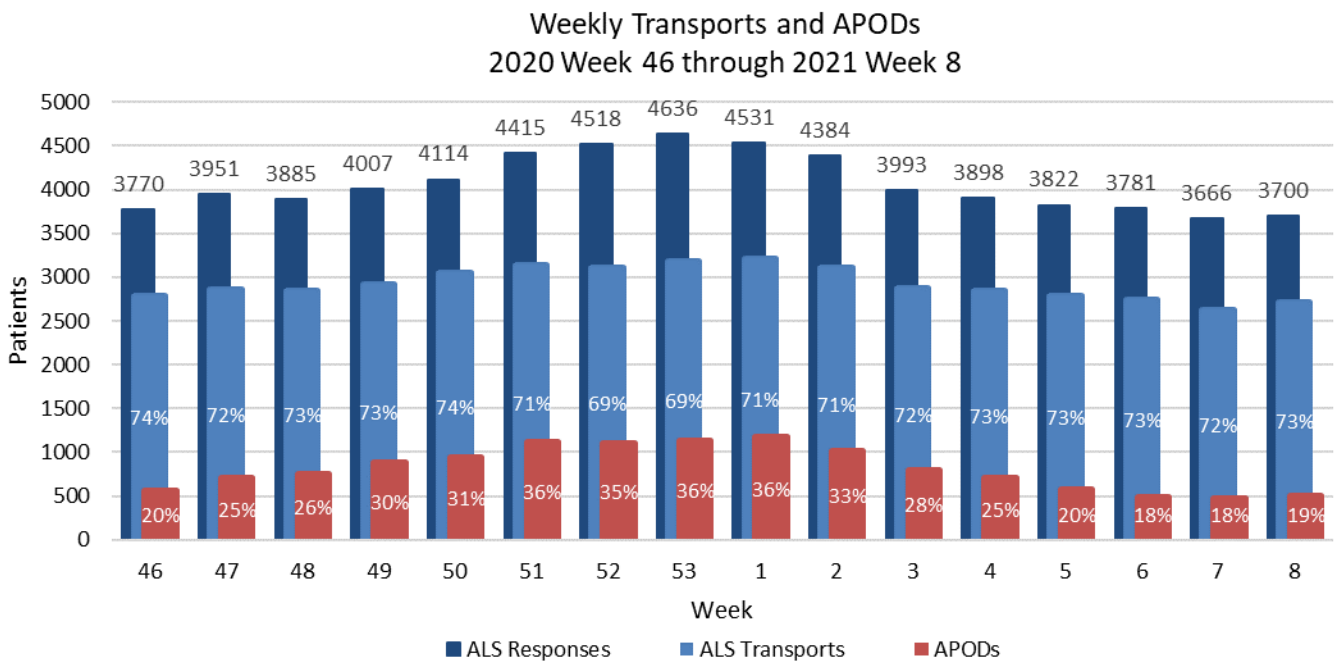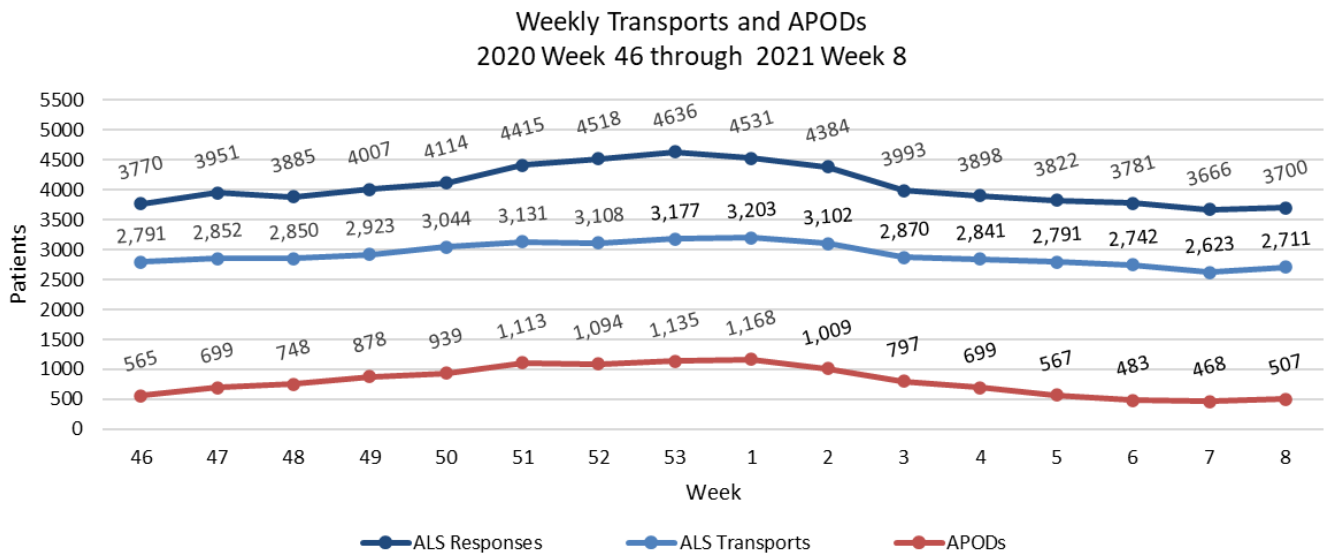
ALS Transports includes transports only to Riverside county hospitals

- During Week 8, there were a total of **3,700 ALS responses** in Riverside County— 0.9% INCREASE from the previous week's total of 3,666 responses.
- During Week 8, there were a total of **2,711 transports** in Riverside County— 3.4% INCREASE from the previous week's 2,623 transports.
- During Week 8, there were a total of **507 APODs** in Riverside County— 8.3% ABOVE the previous week's total of 468 APODs.
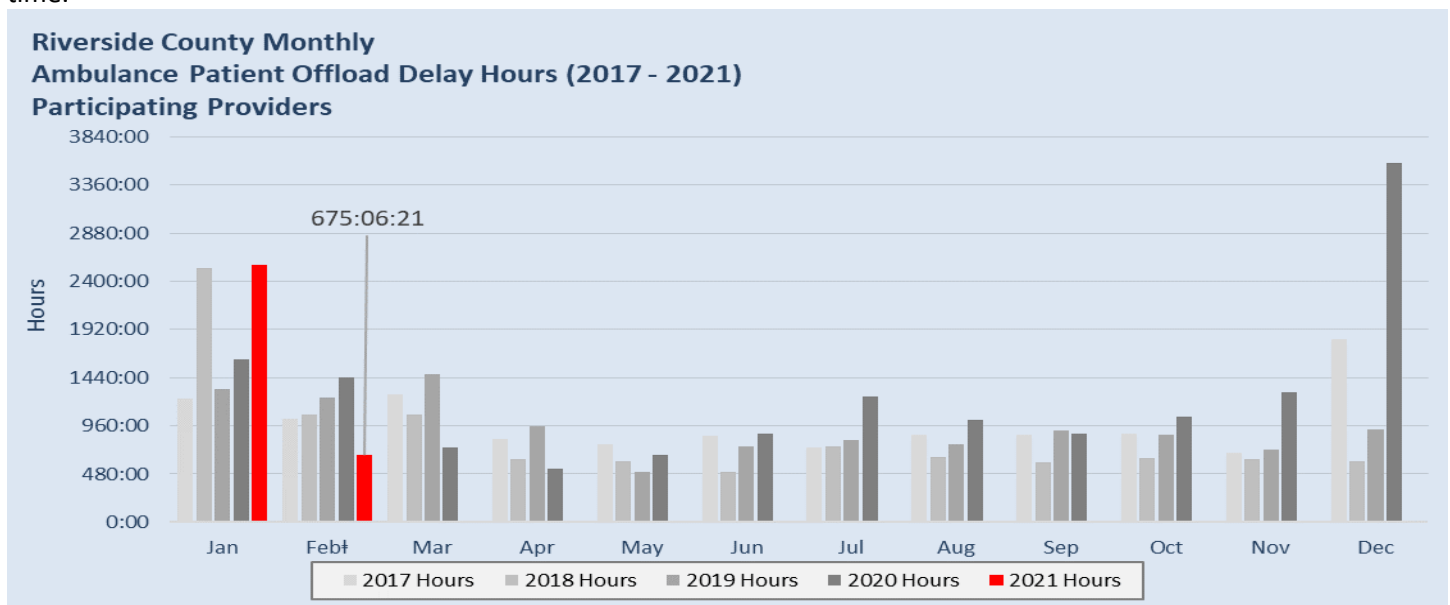
RIVERSIDE COUNTY AMBULANCE PATIENT OFFLOAD TIME

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 4204](#).

Weekly APOT and APOD Hours
2020 Week 46 through 2021 Week 8
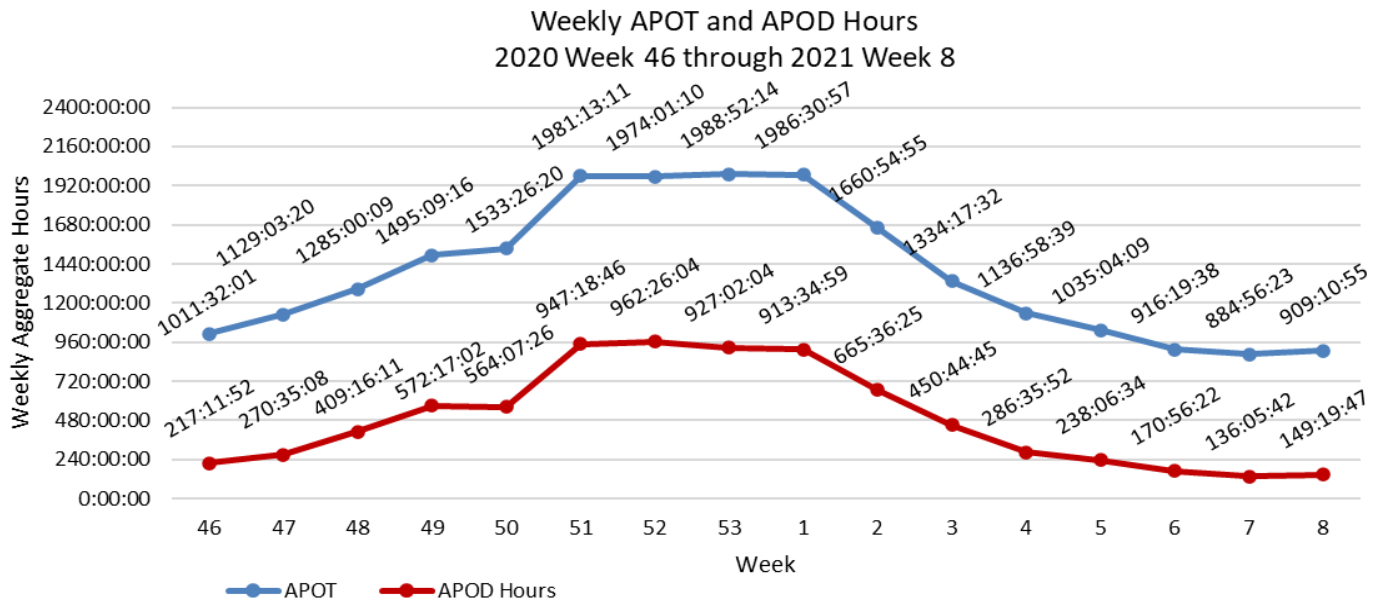
- During 2020 Week 8, **APOT county-wide totaled 909.2 hours** — 2.7% ABOVE the previous week's total of 909.2 hours.
- County-wide **APOD hours for Week 8 totaled 149.3 hours**, a 9.7% INCREASE from the previous week's total of 136.1 hours.

The 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.

Riverside County Monthly Ambulance Patient Offload Delay Hours (2017 - 2021)
Participating Providers

* Prior to January 2017, offload times were calculated using CAD times, beginning with the time that dispatch placed the ambulance on bed delay status until the time the ambulance left the hospital.
**Beginning August 2017, times represented include all participating providers. Prior to August, data included AMR responses only.
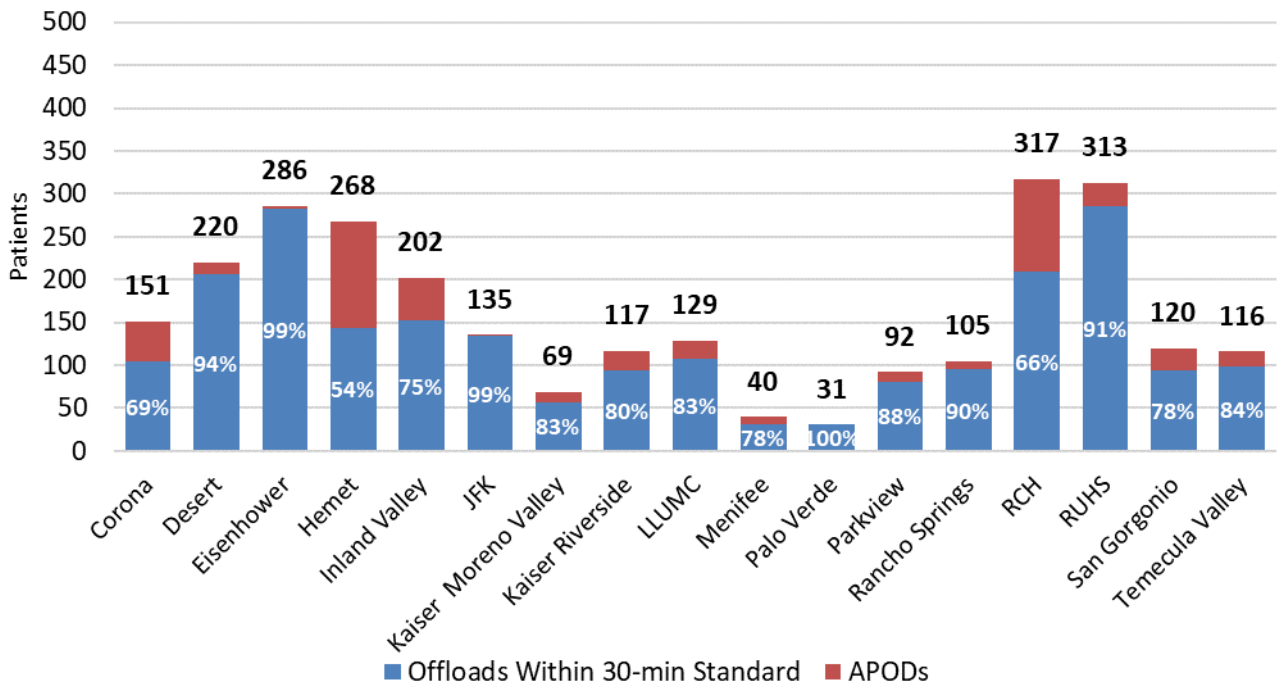*ǂFeb 2021 is a partial month*

AMBULANCE PATIENT OFFLOAD TIME BY HOSPITAL

Key:	High	Low/Best

APOT Snapshot					
	ALS Transports	APOT	APOD Hours	APODs	APOD Compliance
Corona Regional Med Ctr	151	65:32:55	13:09:16	47	68.9%
Desert Regional Med Ctr	220	47:08:37	4:01:22	14	93.6%
Eisenhower Health	286	42:36:21	0:36:11	4	98.6%
Hemet Valley Hospital	268	150:17:32	46:55:26	124	53.7%
Inland Valley Med Ctr	202	79:09:00	18:50:27	50	75.2%
JFK Hospital	135	19:04:34	0:13:34	1	99.3%
Kaiser Hospital Moreno Valley	69	21:48:38	3:50:36	12	82.6%
Kaiser Hospital Riverside	117	39:14:34	4:42:02	23	80.3%
Loma Linda Univ Med Ctr Mur	129	44:16:13	6:39:34	22	82.9%
Menifee Med Ctr	40	14:24:54	1:13:28	9	77.5%
Palo Verde Hospital	31	3:00:37	0:00:00	0	100.0%
Parkview Community Hospital	92	29:00:29	1:29:40	11	88.0%
Rancho Springs Med Ctr	105	28:38:48	2:07:01	10	90.5%
Riverside Community Hospital	317	142:26:12	24:30:40	108	65.9%
Riverside University Health System	313	90:09:12	4:09:25	28	91.1%
San Gorgonio Mem Hospital	120	51:58:25	11:21:35	26	78.3%
Temecula Valley Hospital	116	40:23:54	5:29:30	18	84.5%
Totals	2,711	909:10:55	149:19:47	507	81.3%

Transports and APOD Compliance by Hospital

Bar chart titled "Transports and APOD Compliance by Hospital" showing Patients on the y-axis (0 to 500). Values by hospital:
- Corona: 151, 69%
- Desert: 220, 94%
- Eisenhower: 286, 99%
- Hemet: 268, 54%
- Inland Valley: 202, 75%
- JFK: 135, 99%
- Kaiser Moreno Valley: 69, 83%
- Kaiser Riverside: 117, 80%
- LLUMC: 129, 83%
- Menifee: 40, 78%
- Palo Verde: 31, 100%
- Parkview: 92, 88%
- Rancho Springs: 105, 90%
- RCH: 317, 66%
- RUHS: 313, 91%
- San Gorgonio: 120, 78%
- Temecula Valley: 116, 84%

Legend: ■ Offloads Within 30-min Standard ■ APODs

AMBULANCE REDIRECTION

Policy 6104 (http://www.remsa.us/policy/6104.pdf) was activated to allow redirection of ambulances from hospitals that have extended Ambulance Patient Offload Delay (APOD) to the closest most appropriate hospital not experiencing extended offload delays. 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 ambulance diversions that occurred during Week 8.

|	Occurrences of APOD Redirection
Desert Regional Medical Center	2
Hemet Valley Medical Center	1
Inland Valley Medical Center	2
Loma Linda University Medical Center--Murrieta	1
San Gorgonio Memorial Hospital	2
Grand Total	**8**

During Week 8, there were a total of **8 ALS Redirection** in Riverside County— 20% DECREASE from the previous week's total of 10 redirects.

Weekly Ambulance Redirection
2020 Week 46 through 2021 Week 8
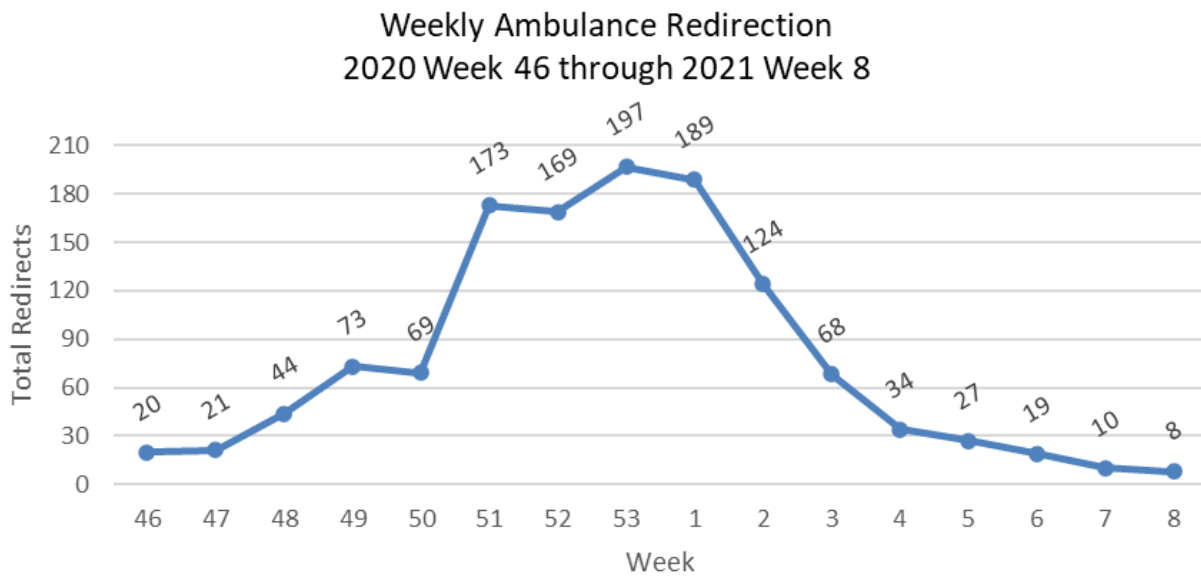
ILI - INFLUENZA-LIKE ILLNESS RESPONSE

While influenza viruses are detected year-round, they are 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.
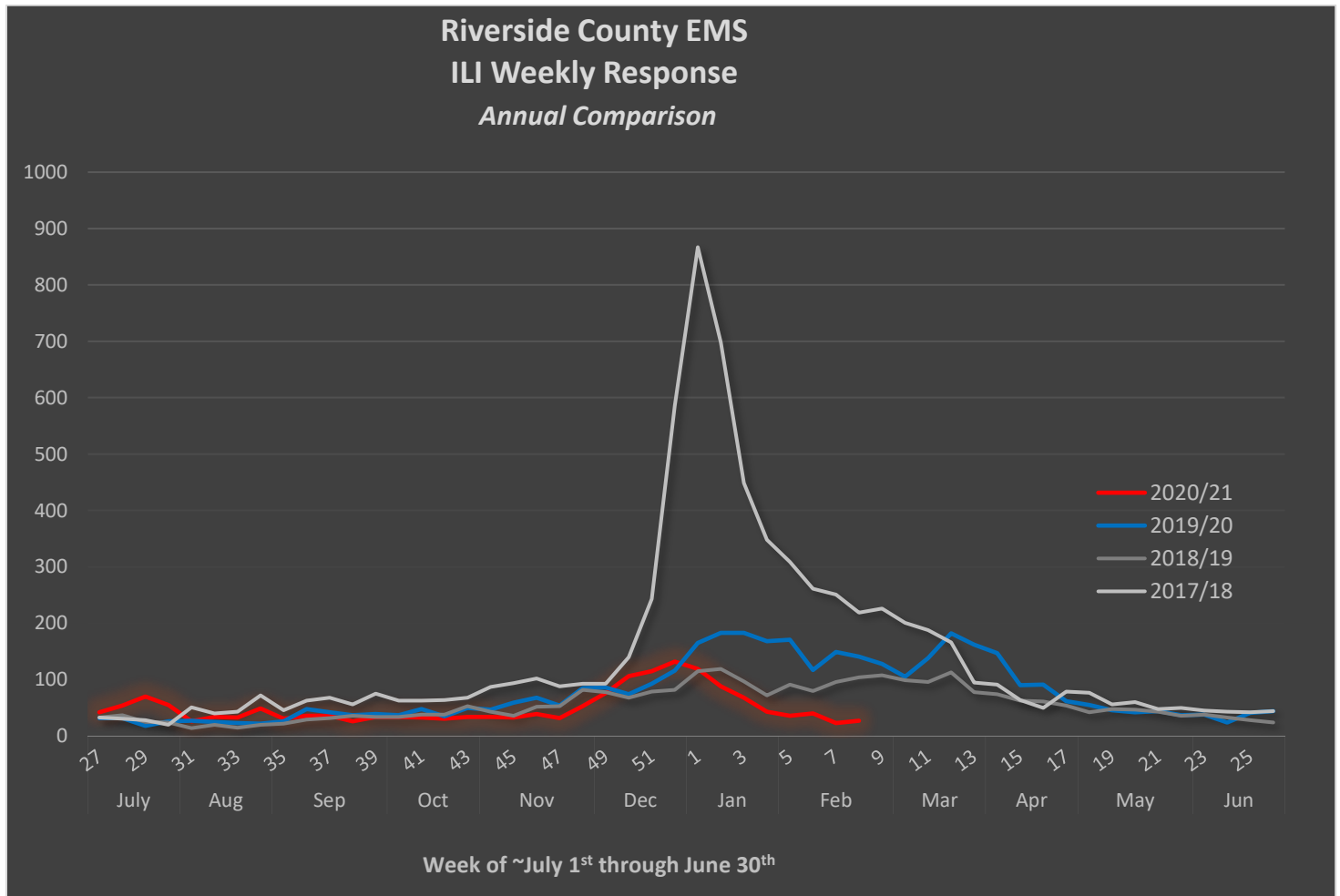
Week 80 (~October 1st) is defined by the Center for Disease Control (CDC) as the expected start of increasing influenza activity, or "flu season". Riverside County EMS Agency monitors influenza-like illness (ILI) year-round for better detection of seasonal or abnormal surges which can impact EMS utilization.

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
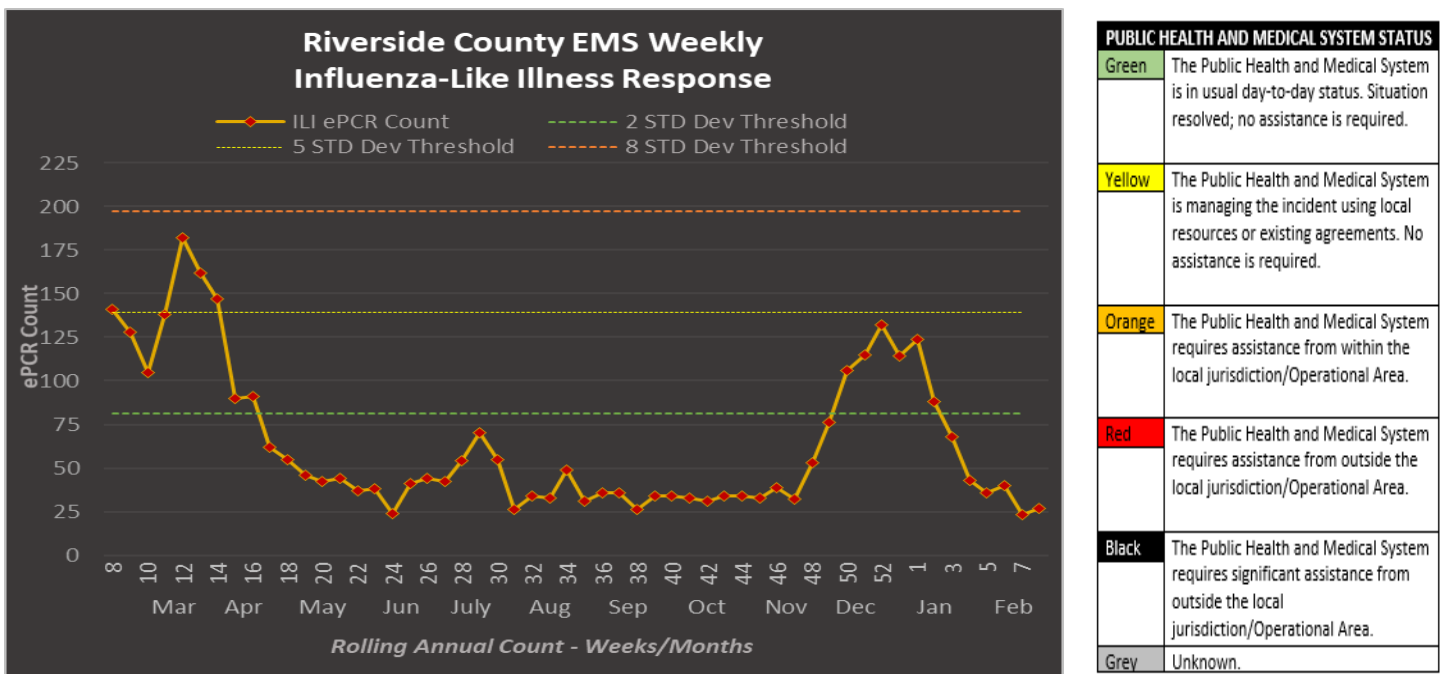
During Week 8, EMS ILI response was BELOW the two standard deviation thresholds compared to non-peak flu season activity levels (weeks 13-39).
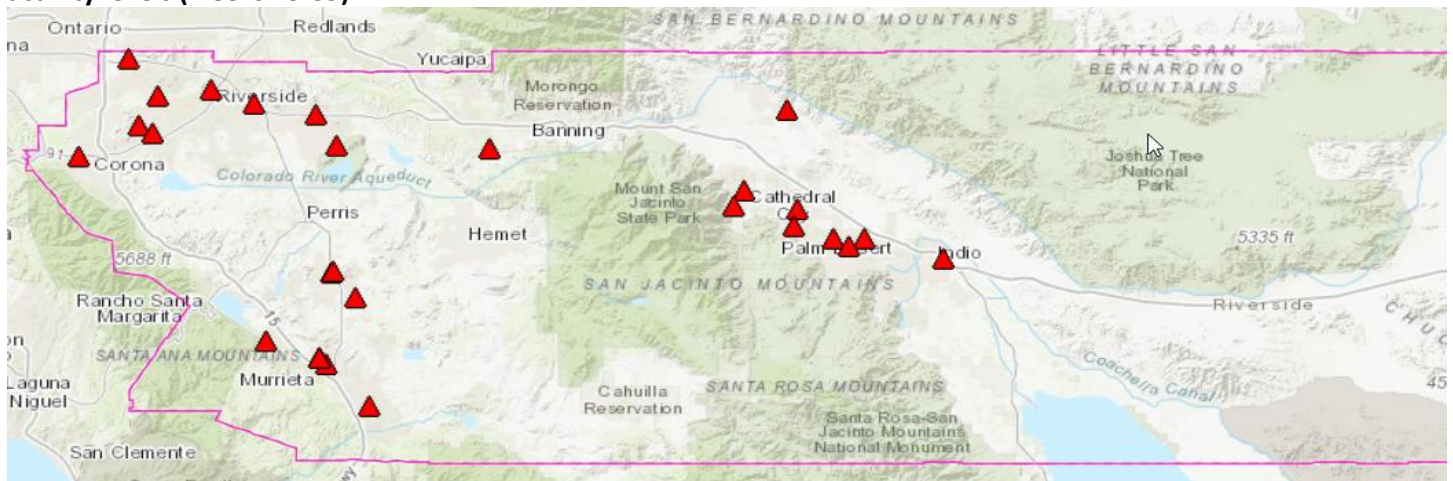

ILI-related EMS response in Riverside County, ePCR distribution map: Week 8

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.
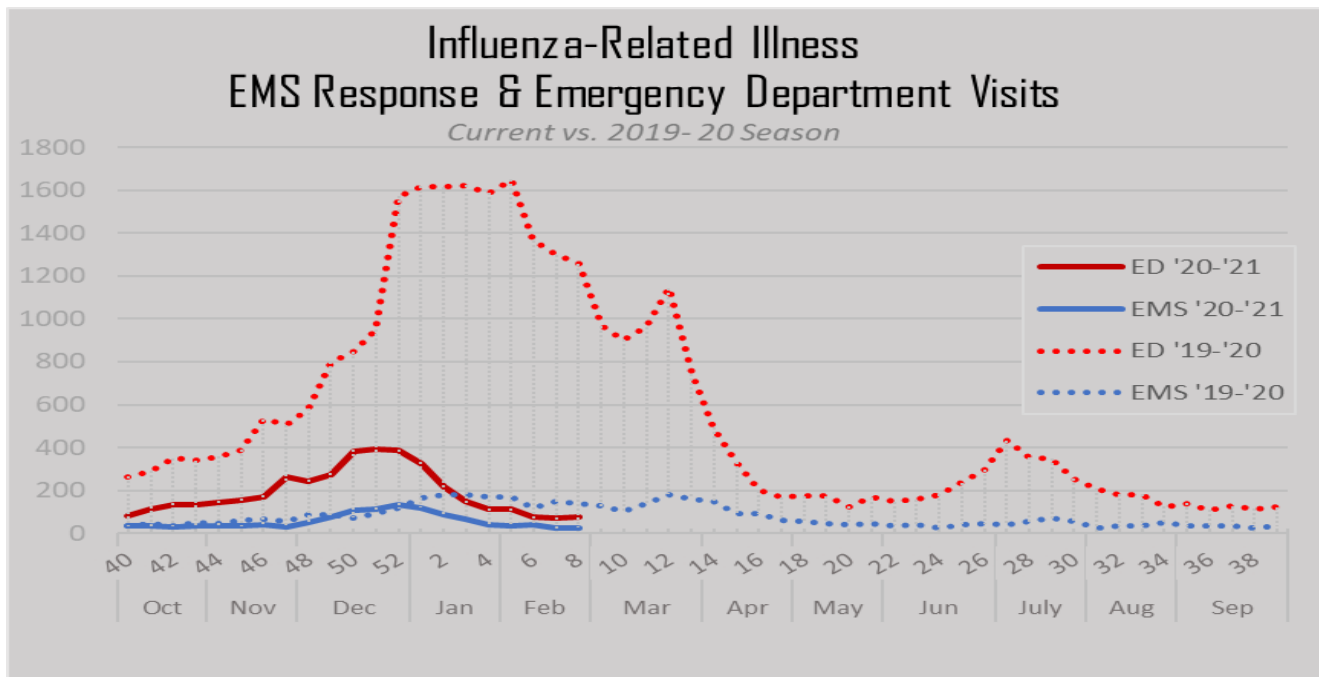
*EMS ILI responses and ED ILI visits as a percentage of their respective total volume** (adapted from CDC methodology)*
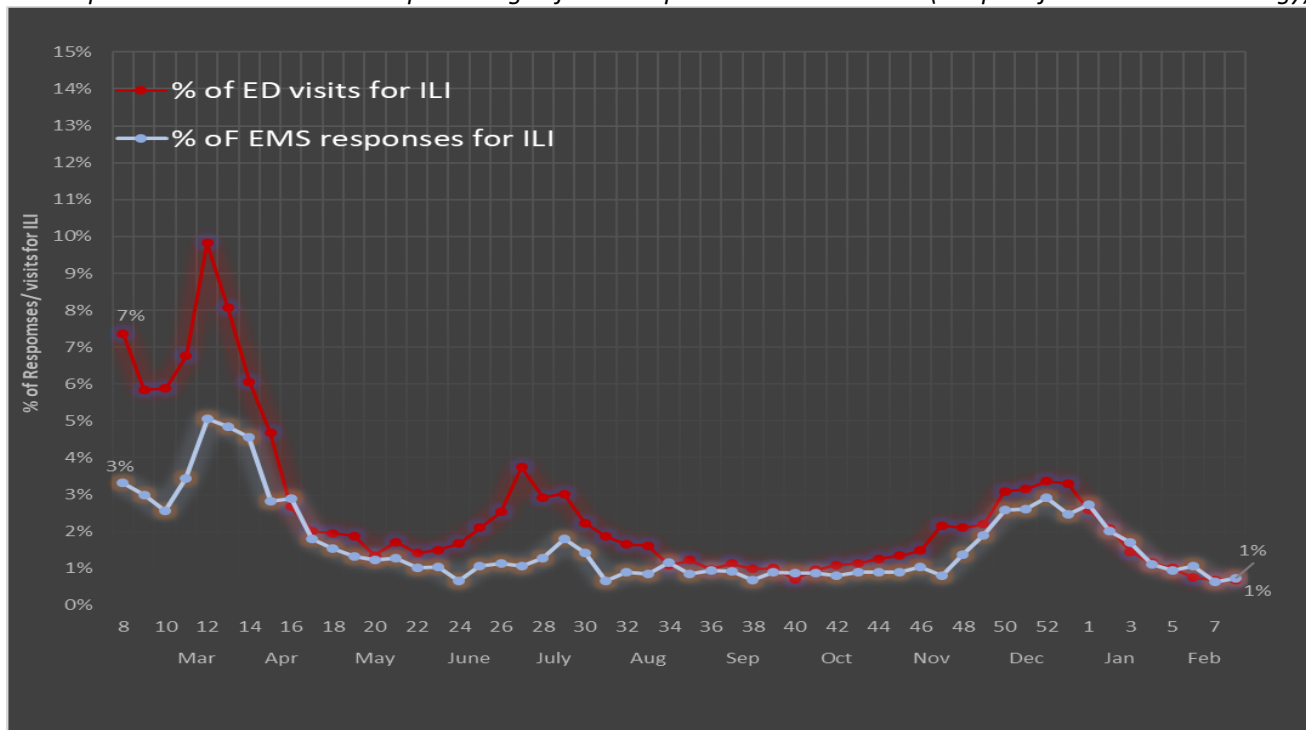
*2020 Week 40 , 41 ESSENCE data are partial data due to a temporary outage at facilities.
**A new Riverside County hospital joined ESSENCE in Week 48 of 2020 for a total of 15 participating hospitals. The addition of one hospital slightly elevates the baseline count from that week forward compared to 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

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[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 4204, Transfer of Patient Care. http://www.remsa.us/policy/4204.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