Special Seasonal Report

Ambulance Patient Offload Time
Week 32 (08/04/19 – 08/10/19)

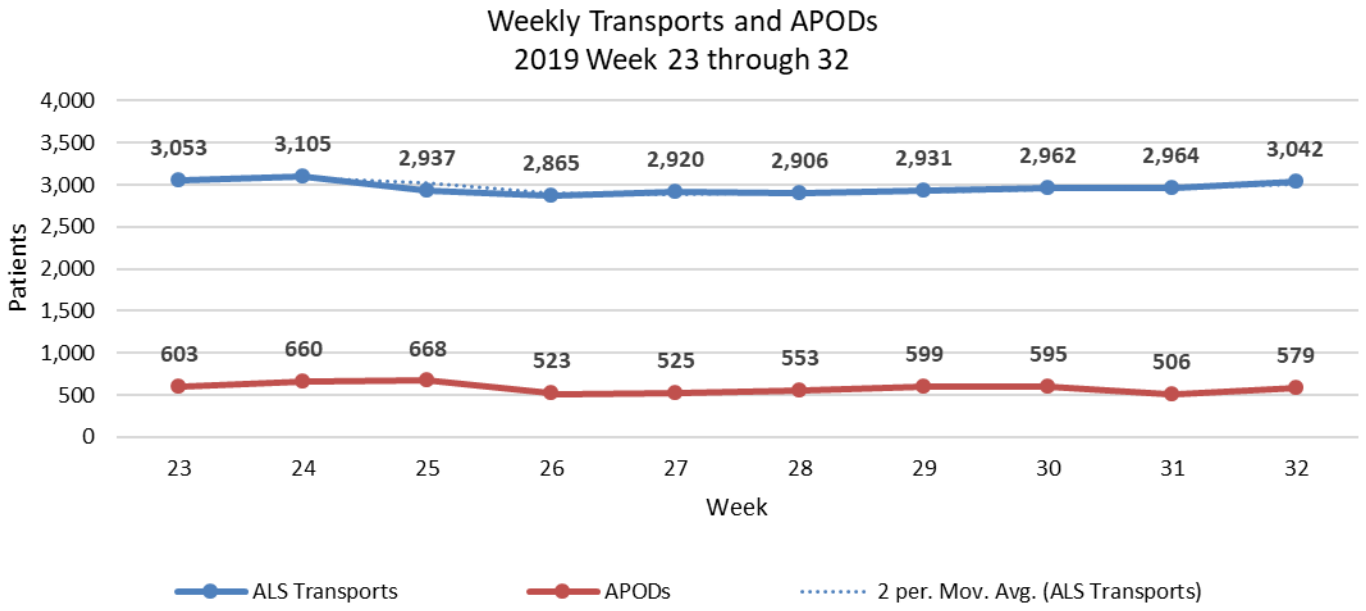
2019-20 Seasonal Report

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

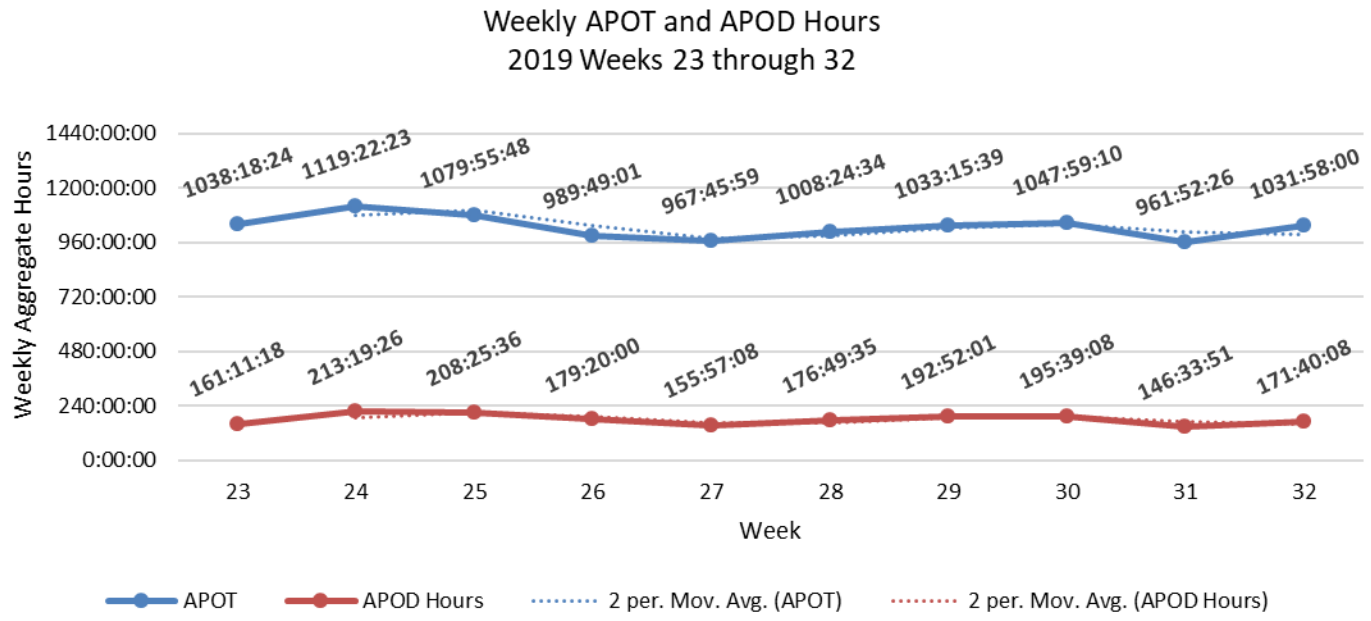
Prepared by Sudha Mahesh, Riverside County EMS Agency – August 21, 2019

SPECIAL SEASONAL REPORT

In an effort to monitor seasonal surge in Ambulance Patient Offload Time (APOT) during the 2018-19 Influenza season, Riverside County EMS Agency is publishing weekly reports. The following charts represent weekly aggregate APOT/APOD data for the past 10 weeks, updated weekly.



- During 2019 week 32, there was a total of **3042 transports in Riverside County**— a **2.6%** INCREASE from the previous week's 2964 transports.
- The number of **APODs in week 32 was 579,** which is **14.4%** ABOVE the previous week's total of 506 APODs.

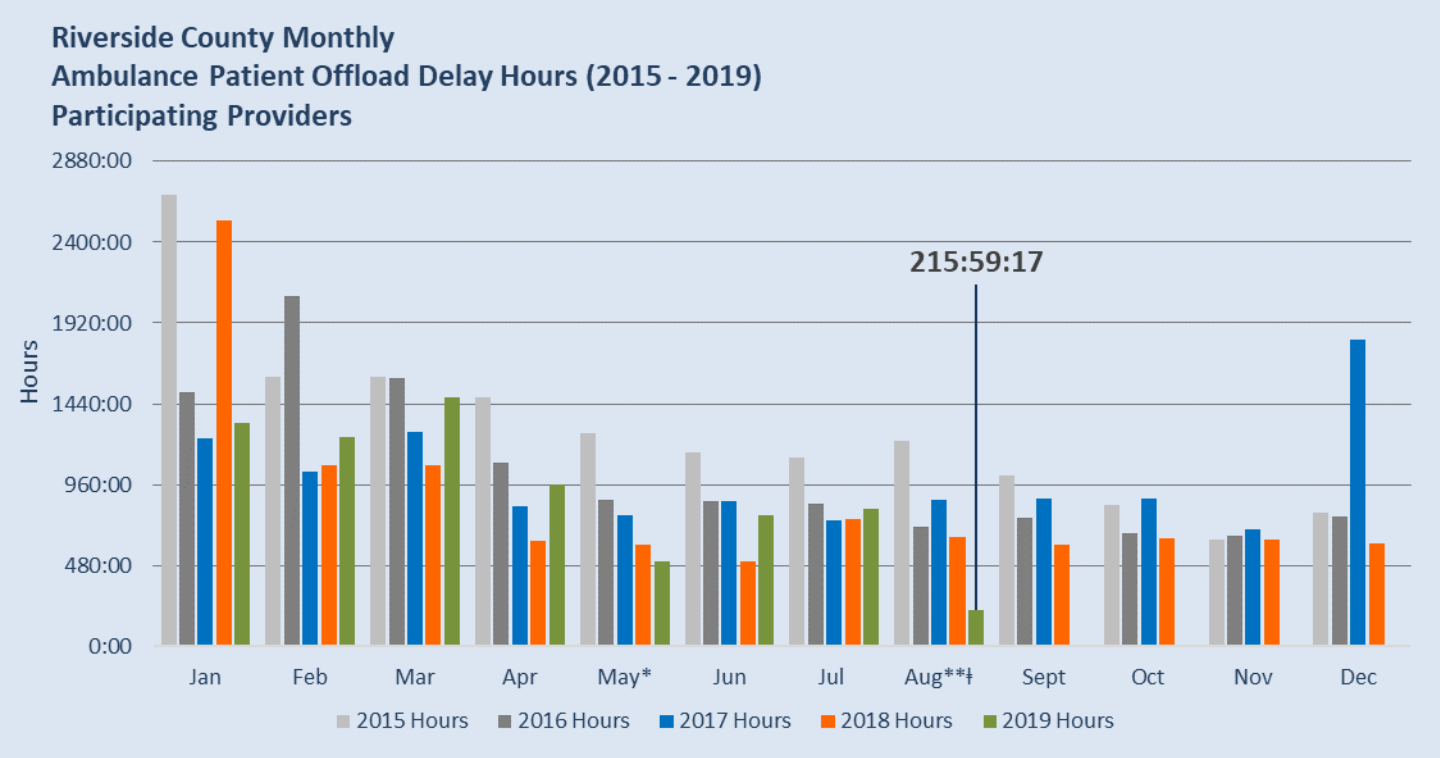


- During 2019 week 32, **APOT county-wide totaled 1031.6 hours** —**7.3%** ABOVE the previous week's total of 961.5 hours.
- County-wide **APOD hours for week 32 totaled 171.4 hours**, a **17.1%** INCREASE from the previous week's total of 146.3 hours.

RIVERSIDE COUNTY AMBULANCE PATIENT OFFLOAD TIME

The data provided illustrates total ambulance patient offload delay time (hh:mm) by month for 2015 through **Aug 10, 2019 (week 32)** from hospitals within Riverside County. To qualify for this chart, the duration of offload delay must be greater than 30 minutes, and only the time period after the first 30 minutes is summed.

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 report). This represents a different methodology in offload time measurement. 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. This chart represents the difference in the old vs. current by displaying the former time measurement/methodology in grayscale.



**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.*
ǂAugust 2019 is a partial month.

APOD AMBULANCE REDIRECTION

On March 20, 2019, Riverside County EMS Agency activated Provisional Policy 6104 (http://www.remsa.us/policy/6104.pdf) to allow provisional 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 ambulance diversions that occurred during week 32.

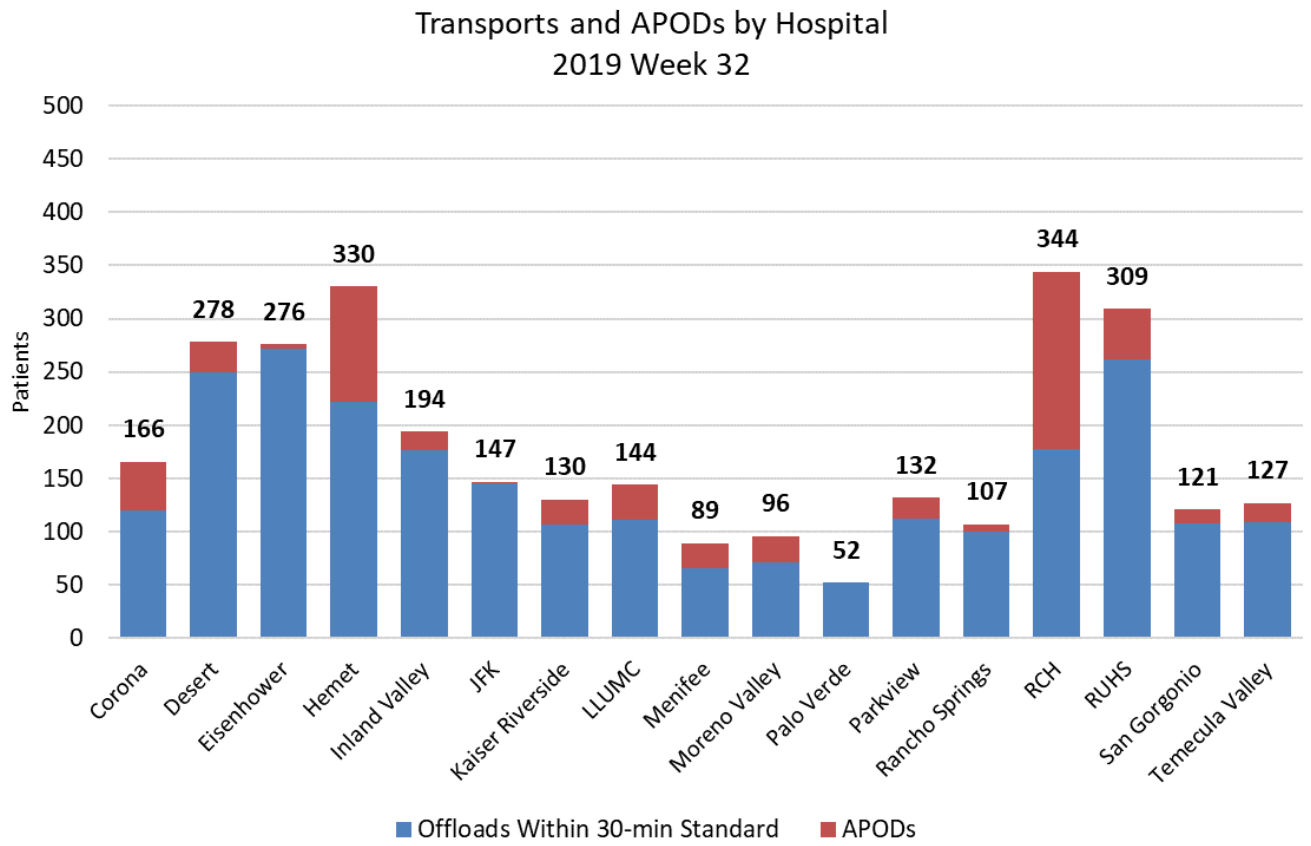
	Occurrences of APOD Redirection
Hemet Valley Medical Center	1
Loma Linda University Medical Center	1
Menifee Valley Medical Center	1
Riverside Community Hospital	5
Grand Total	**8**

AMBULANCE PATIENT OFFLOAD TIME BY HOSPITAL

For 2019 Week 32

Key: High | Low/Best

APOT Snapshot					
	ALS Transports	APOT	APOD Hours	APODs	APOD Compliance
Corona Regional Med Ctr	166	61:15:57	10:40:19	46	72.3%
Desert Regional Med Ctr	278	76:46:54	7:41:12	28	89.9%
Eisenhower Health	276	42:31:05	0:19:17	4	98.6%
Hemet Valley Hospital	330	142:17:16	25:18:07	108	67.3%
Inland Valley Med Ctr	194	51:02:57	3:38:26	17	91.2%
JFK Hospital	147	22:17:24	0:07:42	1	99.3%
Kaiser Hospital Riverside	130	41:27:40	4:50:16	23	82.3%
Loma Linda Univ Med Ctr Mur	144	58:31:43	9:30:02	33	77.1%
Menifee Med Ctr	89	38:07:17	10:29:29	23	74.2%
Moreno Valley Hospital	96	37:33:19	7:29:49	25	74.0%
Palo Verde Hospital	**52**	**5:36:13**	**0:00:00**	**0**	**100.0%**
Parkview Community Hospital	132	42:19:44	4:57:23	20	84.8%
Rancho Springs Med Ctr	107	28:21:08	0:43:07	7	93.5%
Riverside Community Hospital	**344**	**209:56:49**	**71:10:15**	**166**	**51.7%**
Riverside University Health System	309	103:15:17	8:42:44	47	84.8%
San Gorgonio Mem Hospital	121	31:34:57	1:17:20	13	89.3%
Temecula Valley Hospital	127	39:02:20	4:44:40	18	85.8%
Totals	**3,042**	**1031:58:00**	**171:40:08**	**579**	**81.0%**



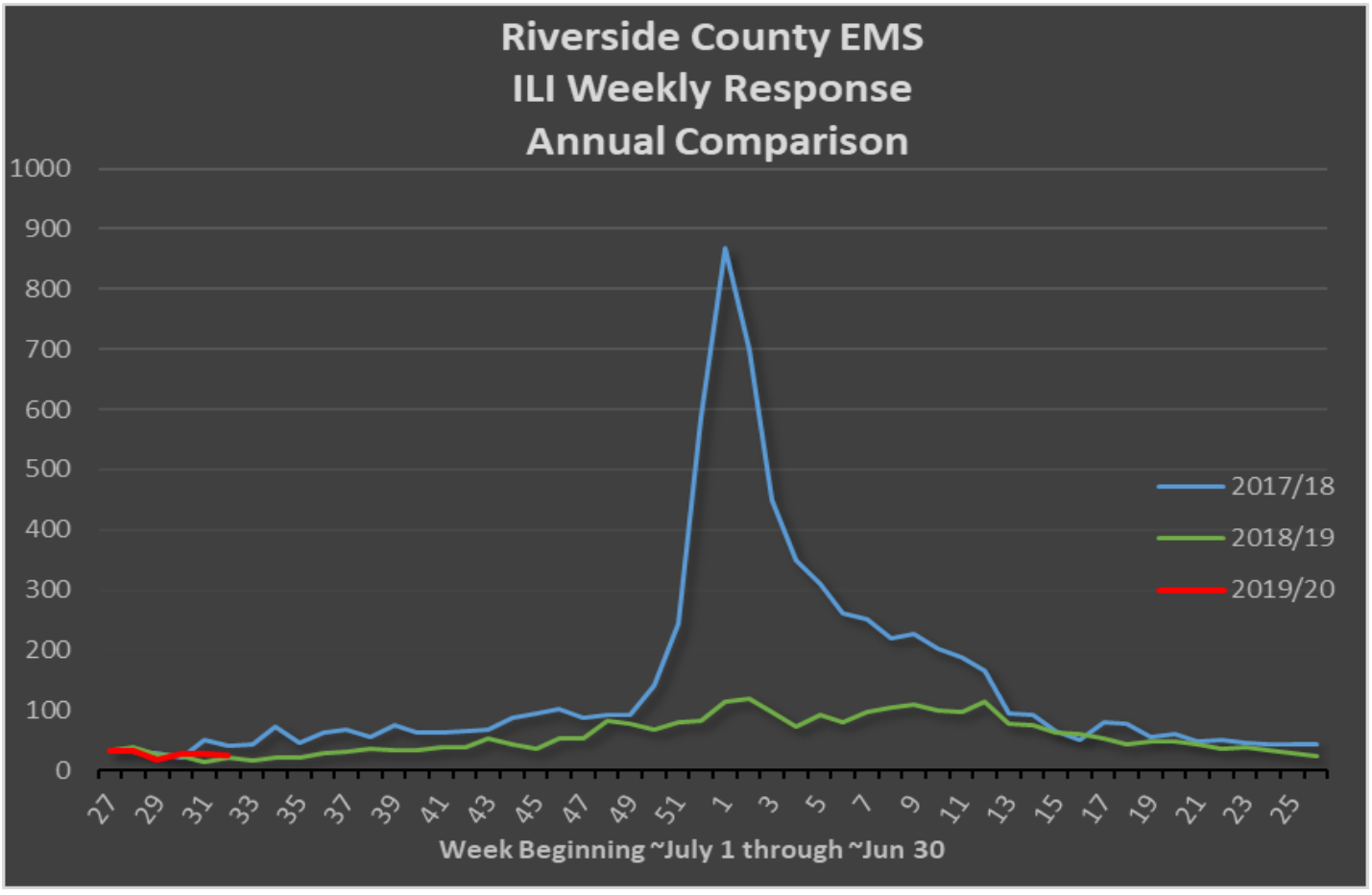
ILI -INFLUENZA-LIKE ILLNESS RESPONSE

The purpose of the REMSA ILI (Influenza-like Illness) trigger and report is to improve tracking of influenza related activity and facilitate EMS preparedness in the event of a significant influenza surge event, similar or greater than that observed during the 2017-18 flu season.

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

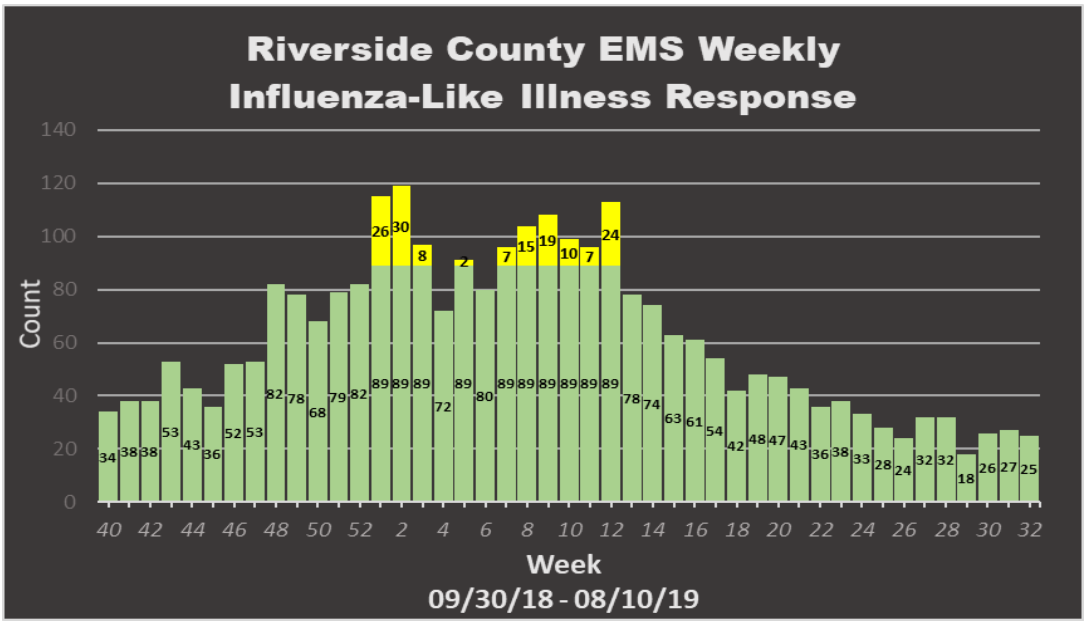
1. Filters primary or secondary impression of code J11 (Influenza due to unidentified influenza virus)
   OR
2. A primary / secondary impression code J80, J98.09 (Acute respiratory distress syndrome, Respiratory disorder unspecified) with a match in the narrative for ILI, influenza like illness, Flu,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

Beginning Week-31 of the 2019-20 season, the ILI trigger methodology was modified to improve detection of ILI-related incidents and further reduce false-positive detection rates. This change has been applied to all data presented resulting in a slight shift of ILI-related ePCR counts and alert threshold when compared to previous weekly reports.



ILI - INFLUENZA-LIKE ILLNESS RESPONSE *(CONT.)*

October - Week 40 is defined by the Center for Disease Control (CDC) as the expected seasonal start of increasing flu activity. In Week 32, EMS ILI response DECREASED by 7.4% compared to the previous week and was 58.1% LOWER than the rolling annual average.



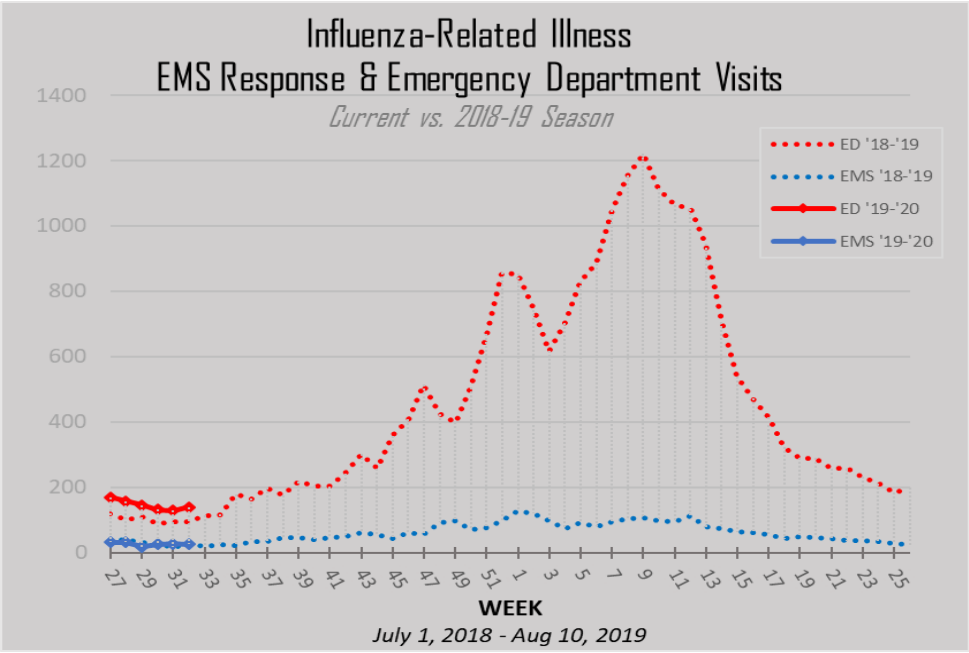
PUBLIC HEALTH AND MEDICAL SYSTEM STATUS	
Green	The Public Health and Medical System is in usual day-to-day status. Situation resolved; no assistance is required.
Yellow	The Public Health and Medical System is managing the incident using local resources or existing agreements. No assistance is required.
Orange	The Public Health and Medical System requires assistance from within the local jurisdiction/Operational Area.
Red	The Public Health and Medical System requires assistance from outside the local jurisdiction/Operational Area.
Black	The Public Health and Medical System requires significant assistance from outside the local jurisdiction/Operational Area.
Grey	Unknown.

EMS ILI response two standard deviations above the calculated baseline average during non-peak flu seasons is considered a surge in flu activity. Surges are identified as color levels adapted from the *CDPH Standards and Guidelines for Healthcare Surge During Emergencies*:

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

DOPH

Riverside County Public Health provides Emergency Department (ED) ILI activity information from participating hospitals throughout the county. The graph on the right provides a comparison between EMS and ED related ILI activity.



ILI data compiled by Catherine Farrokhi and Sudha Mahesh, Riverside County EMS Agency.

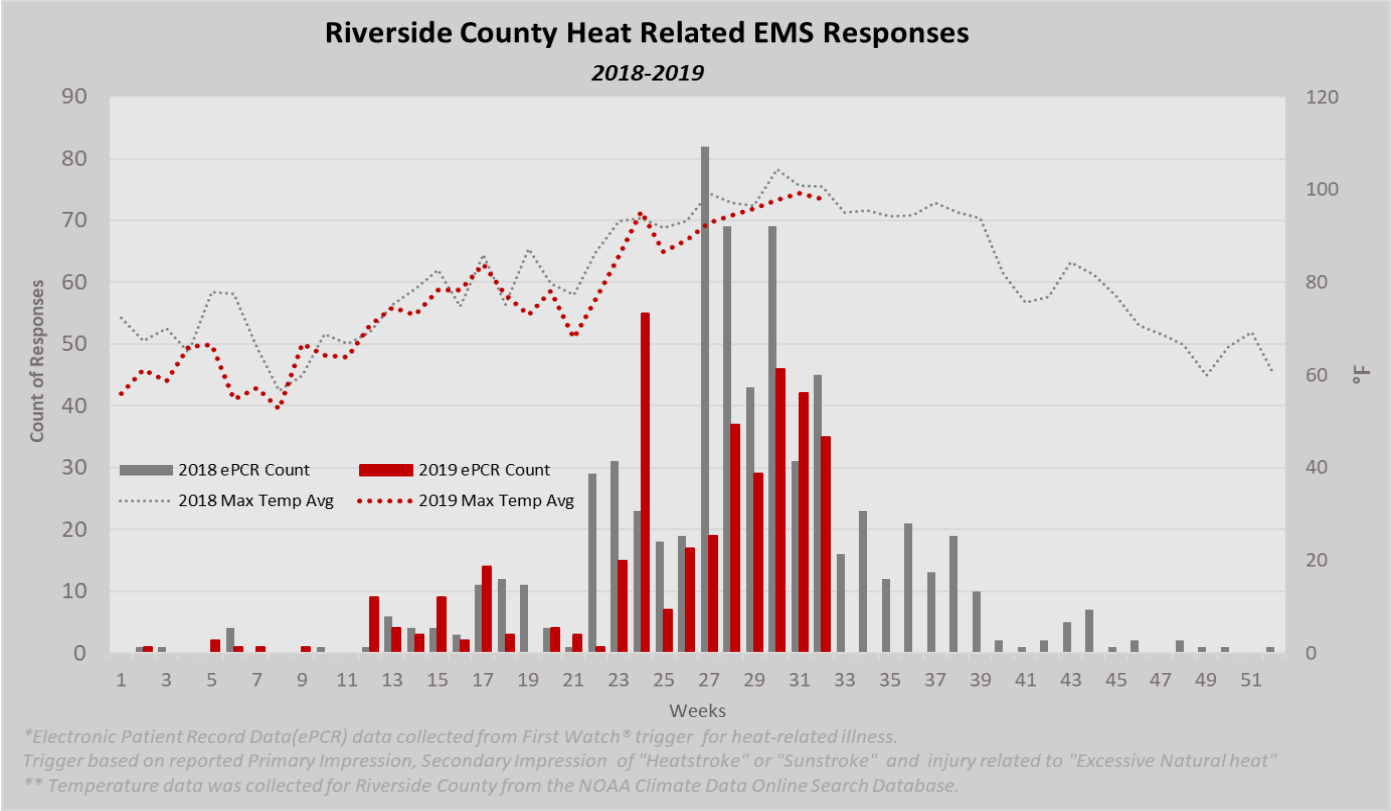
HEAT-RELATED RESPONSE

Excessive heat exposure kills more people than any other weather-related phenomenon, aggravates chronic diseases, and causes direct heat illness[7,8,9,10]. Relationships between extreme heat and health can be identified through increased hospitalizations, emergency department visits and demand for emergency medical services (EMS). The purpose of the REMSA Environmental Heat trigger is to analyze EMS demand associated with extreme heat, using response data from electronic patient care reports (ePCRs).

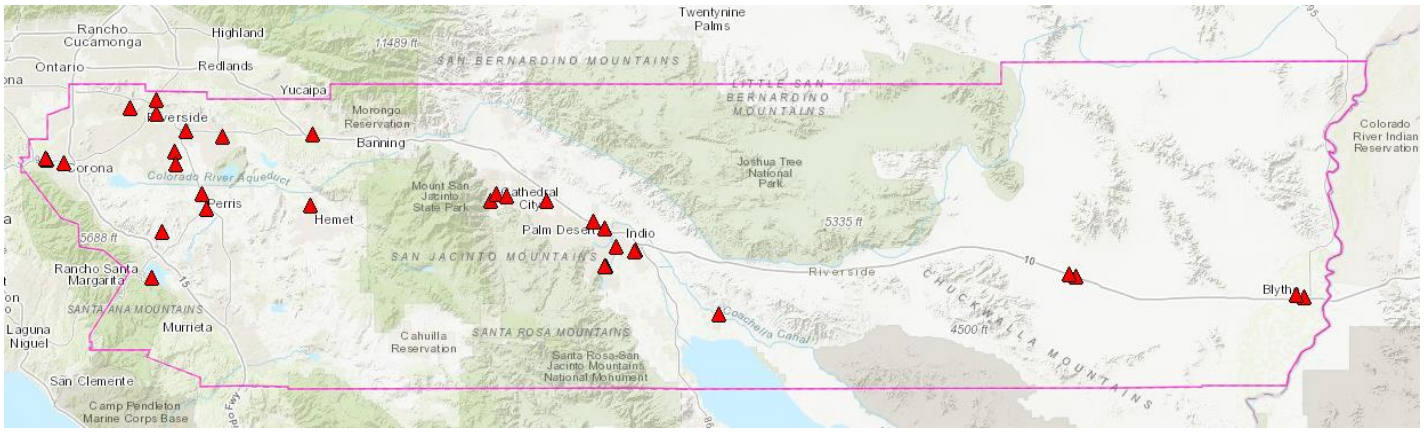
The HEAT trigger evaluates ePCRs using the following methodology:

1. Primary or Secondary Impression as "Heatstroke" or "Sunstroke"
   OR
2. Injury related to "Excessive Natural Heat".

The graph below illustrates total EMS heat-related responses by week from 2018 through Aug 10, 2019 (week 32) and compares them against maximum temperature averages across Riverside County for the same week. Climate data is obtained from the National Climate Data Center, National Oceanic and Atmospheric Administration - NOAA.



**Electronic Patient Record Data(ePCR) data collected from First Watch® trigger for heat-related illness.*
Trigger based on reported Primary Impression, Secondary Impression of "Heatstroke" or "Sunstroke" and injury related to "Excessive Natural heat"
*** Temperature data was collected for Riverside County from the NOAA Climate Data Online Search Database.*



Heat-related EMS response in Riverside County, ePCR distribution map: Week 32 – Aug 04, 2019 through Aug 10,2019

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).

APOT -2
An ambulance patient offload time interval process measure. This metric demonstrates the incidence of ambulance patient offload times expressed as a percentage of total EMS patient transports within a twenty (20) minute target and exceeding that time in reference to 60, 120 and 180 minute time intervals.[4]

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.[5] 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.[6]

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.

[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] Ibid., Definitions.
[5] REMSA Policy 9101.6. http://www.remsa.us/policy/9101.pdf
[6] 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