



RIVERSIDE COUNTY EMS AGENCY
WIC-5150 IMPACT
SUMMARY REPORT *2018*

NOVEMBER 27TH, 2019

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WIC-5150 IMPACT SUMMARY

California Welfare and Institutional Code (WIC) 5150 enables law enforcement and designated medical professionals to place individuals posing imminent risk to self or others on involuntary 72-hour hold. These holds are intended for psychiatric evaluation at a designated mental health facility; however, many of these patients are transported to emergency departments (ED) based on proximity and lack of alternative resources. Riverside County Emergency Medical Services Agency (REMSA) estimates approximately 1,300 WIC-5150 transports and 9-1-1 emergency medical responses are made by the county’s Emergency Medical Service (EMS) providers each month. In Riverside County alone, this amounts to thousands of 5150 responses by EMS each year at a conservatively-projected cost of \$1.5 million annually. While many 5150 patients require immediate behavioral health intervention to ensure safety and transport, many lack critical medical conditions which require what emergency medical services are designed to provide. As a result, 5150 responses can over-utilize complex and costly emergency services. Alternative response and transport strategies may reduce the current impact of WIC 5150s on EMS and deploy more suitable care for this patient population.

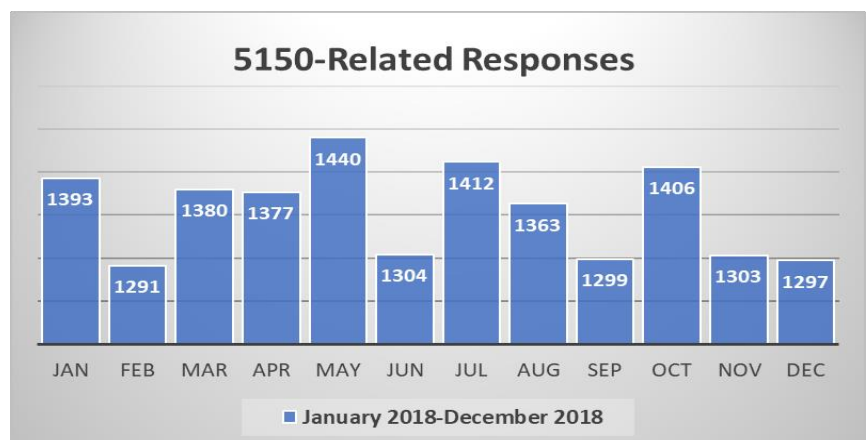
Methodology:

To determine frequency of WIC-5150 responses by Riverside County EMS, electronic patient care records (ePCR) completed by on-scene 9-1-1 or transport, medical responders between January 1, 2018 through December 31, 2018 in ImageTrend® Elite were analyzed. While a 5150-hold code may be available at dispatch as a call reason, it is not available in the ePCR system as a selectable code or possible diagnosis. However, the term is often entered by responders into the ePCR narrative field. Using the ImageTrend® Report Writer analysis tool, the following parameters were used to identify and extract WIC-5150 records from ePCRs:

- Inclusion of ePCRs with the terms “5150”, “51/50”, “51-50”, “Psych Hold”, or “5585” (minor code for 5150) in the *Patient Care Report Narrative* (eNarrative.01) or *Situation Primary Complaint Statement* (eSituation04)
- Exclusion of records where on-scene time was equal to zero
- Selection of “Distinct Only” rows to account for duplication

Findings:

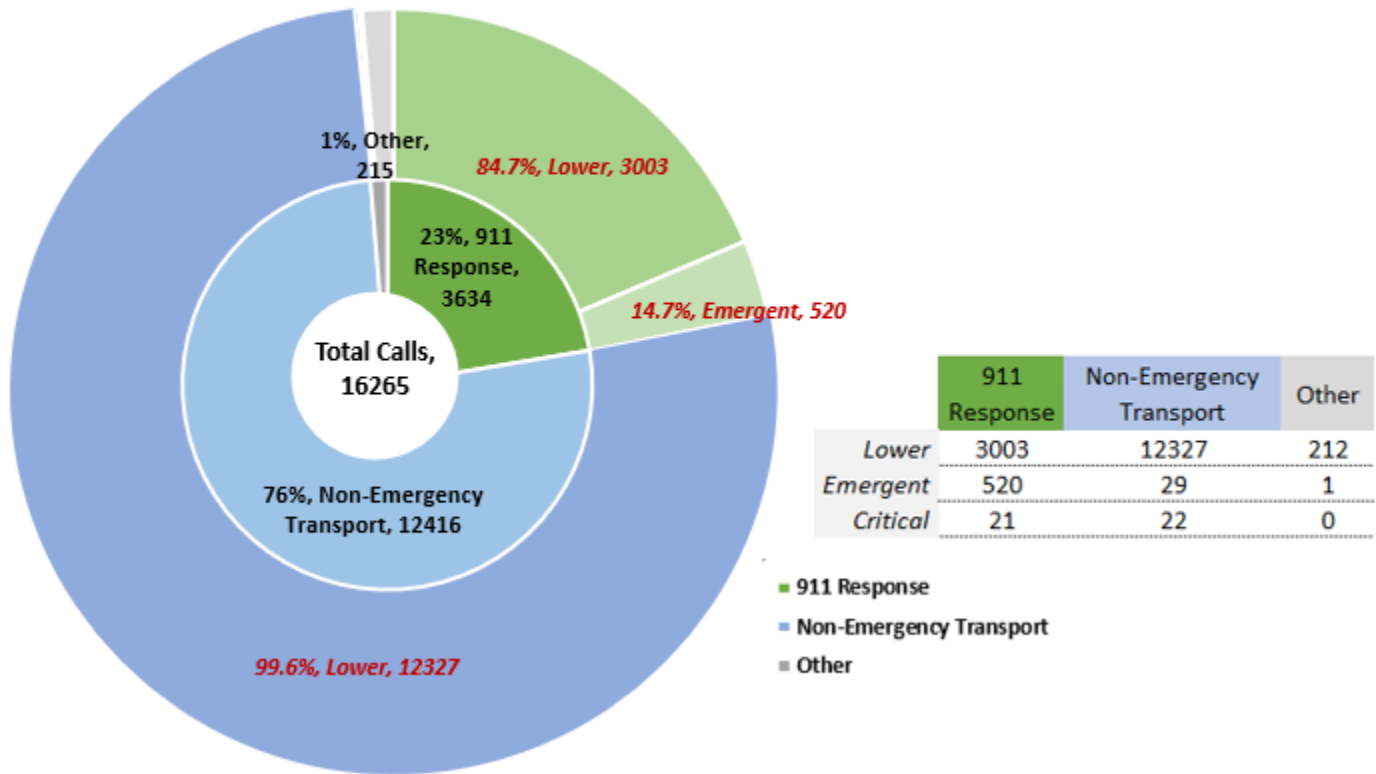
Analysis of Electronic Patient Care Records (ePCR) indicate **Riverside County EMS agencies generated approximately 16,265 WIC-5150 responses between January 1, 2018 and December 31, 2018**. This count reflects all responding agencies including 9-1-1 responders and transport agencies, so a single incident can generate more than one ePCR.



Response Types vs Acuity levels:

Nearly three-quarters of 5150 responses were for Non-Emergency Transport while one-quarter involved 9-1-1 Medical Dispatch Responses. 1% were designated as “Other” consisting of calls classified as Intercept, Public Assistance, or Mutual Aid.

5150 Response type by Initial acuity

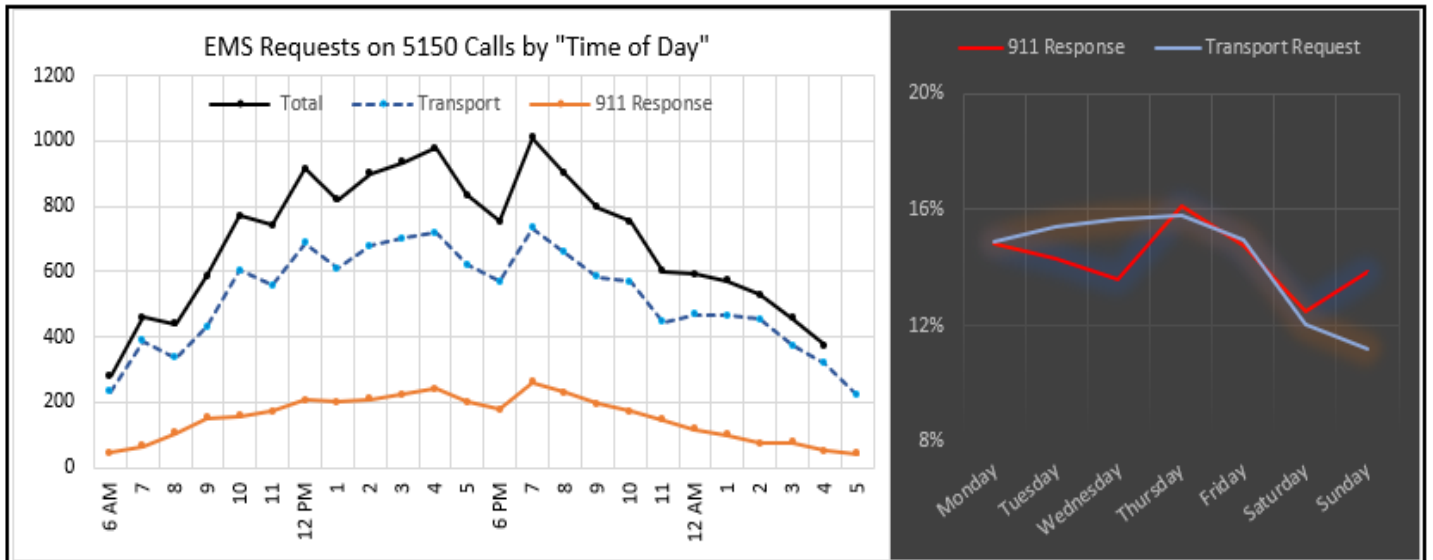


Initial Patient Acuity (eSituation.13) is a description code (Lower, Emergent, Critical, or Dead) assigned by EMS responders to describe patient condition upon encounter. A systemic review of ePCRs using randomly selected samples revealed “Initial Acuity” level can be used to predict when an EMS response involved a WIC-5150 alone (*lower acuity*) or involved additional risk factors or comorbidity such as self-inflicted injury or overdose (*emergent/critical acuity*).

Approximately **85% of 9-1-1 responses** and **over 99% of non-emergency EMS transports** (interfacility or medical) were coded as **Lower acuity calls**. Additional key points to be noted are:

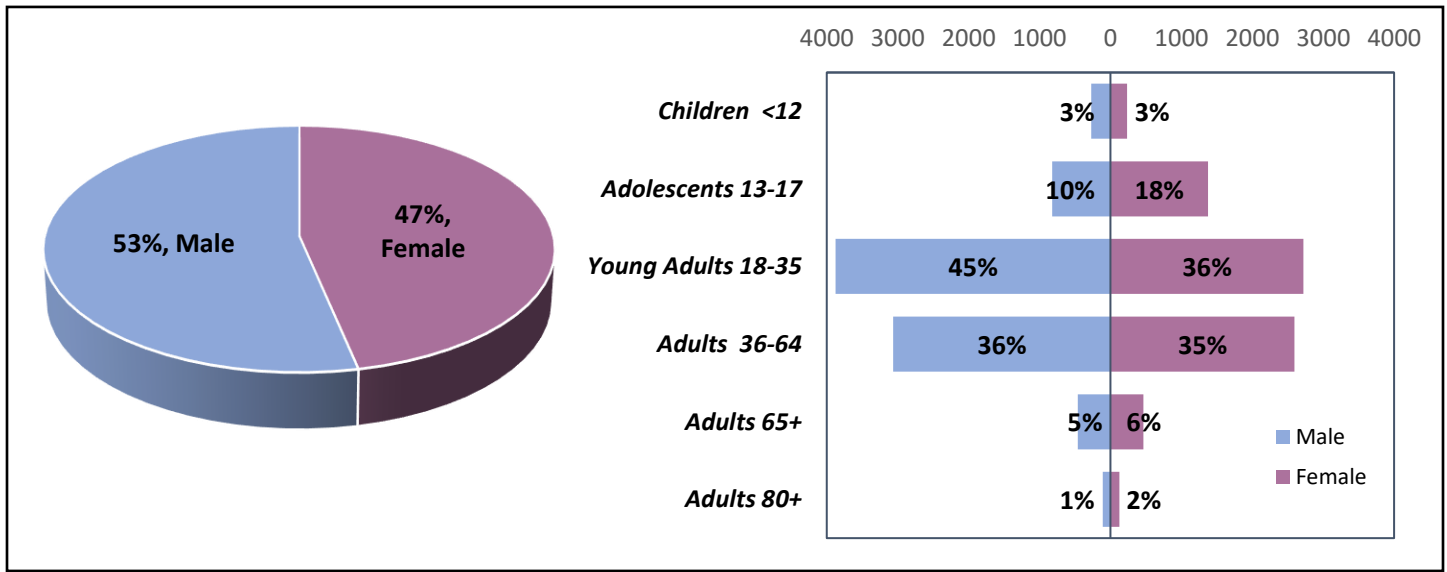
- Less than 50 ePCRs (~0.3%) were designated as *Critical* acuity cases.
- 22.2% of *Emergent* acuity cases were downgraded to *Lower* acuity cases.
- 78% of *Critical* acuity cases were downgraded to *Emergent* or *Lower* acuity cases.

Peak times for WIC-5150 responses occur between 10AM and 10PM. This can be a function of resource availability during business hours as most calls are for transport, however 911 responses which are less influenced by peak operating times follow a similar pattern. For both transport requests and 911 dispatch calls, 5150 service requests for EMS are greatly reduced between 11PM and 7AM. Interestingly, a similar pattern exists on weekends with a marked reduction in the total number of calls. However, **911 responses are notably reduced only on Saturdays.**



Patient Demographics

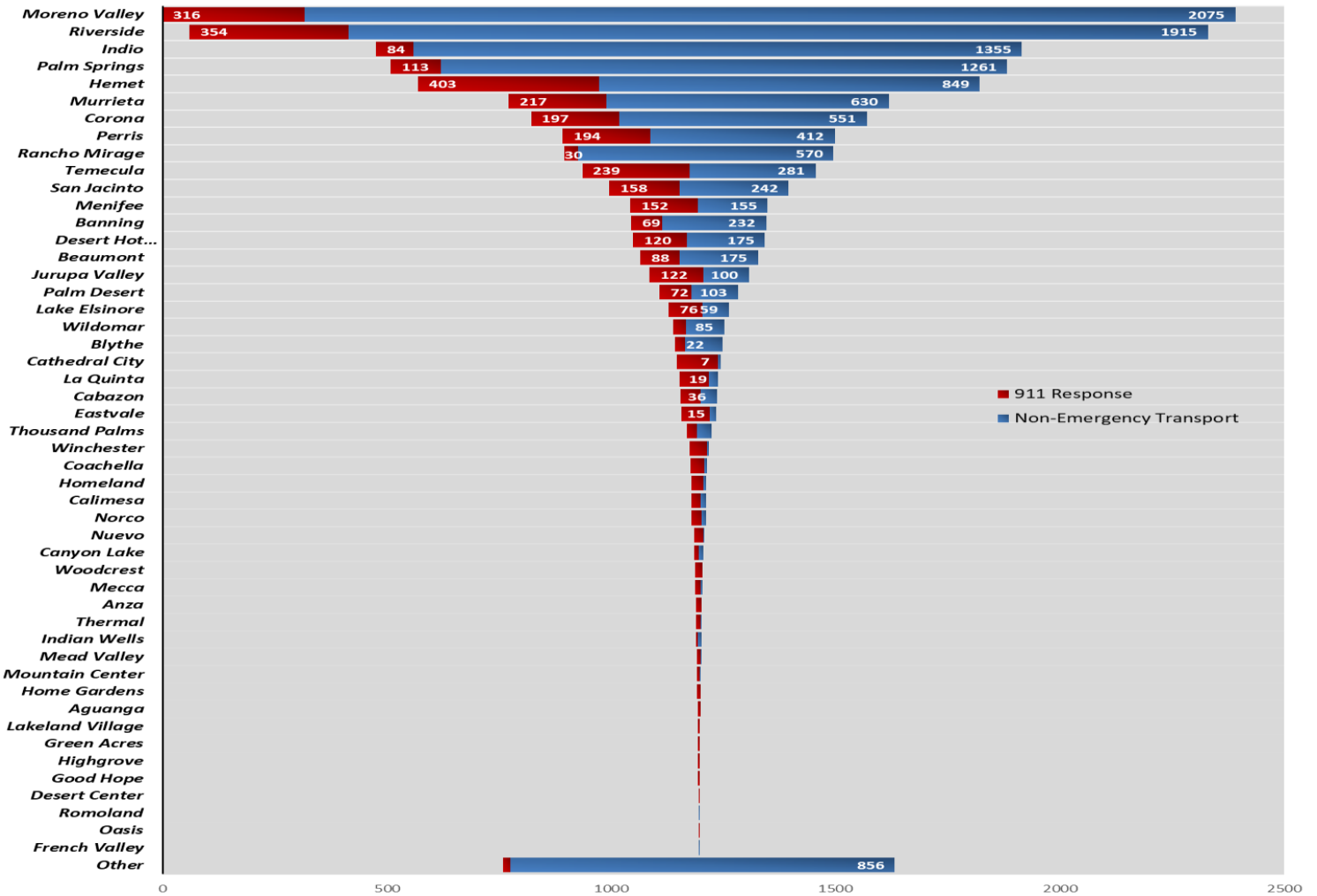
16,119 Valid data points were used to analyze patient demographic information. Below is the graphical representation of gender distribution and categorical age distribution by gender.



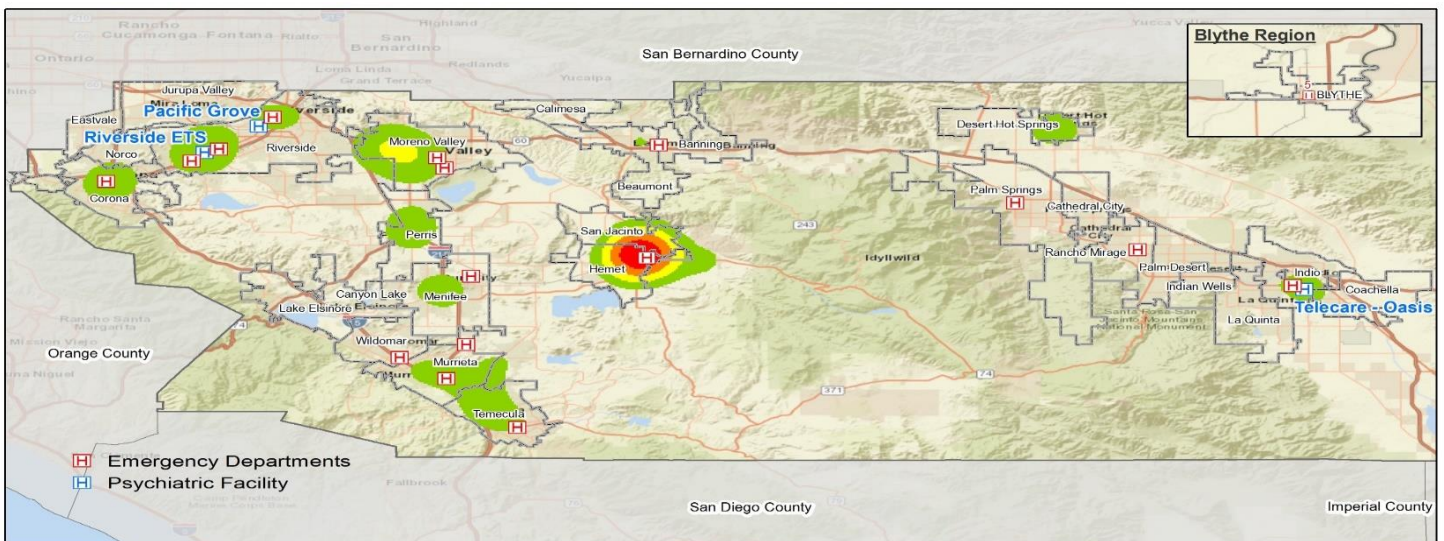
- 53% of WIC-5150 EMS patients were male
- 41% were young adults (Age:18-35)
- 35% were between 36-64 years old
- The single age group more commonly female were adolescents (63% of all adolescents)

Response Type by City:

Cities with the highest density of WIC-5150 Non-Emergency Transports vs. 9-1-1 Responses exhibit different characteristics. The majority of 5150 responses involve Interfacility Transport, thus higher densities for transport are expected in cities with hospitals embedded, notwithstanding predictable factors such as population. The following is a graph of 5150 call origin by city and response type between January 2018 and December 2018.

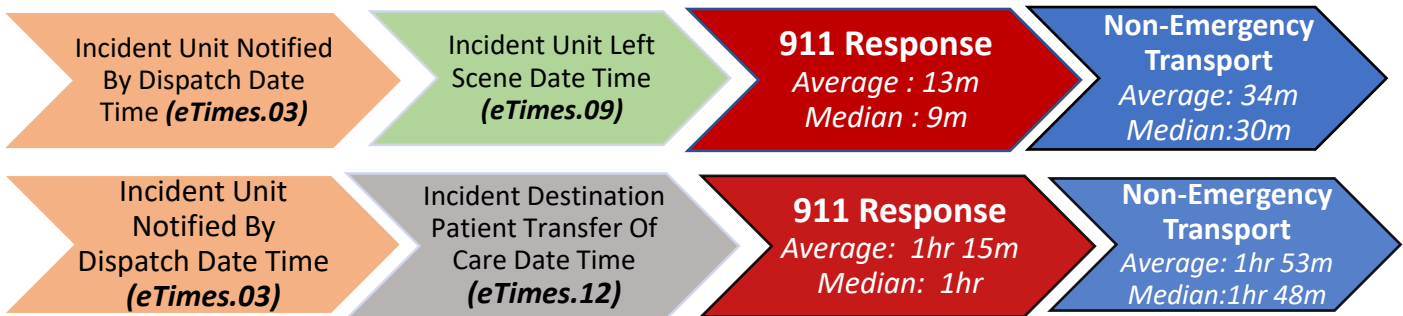


Heat Map Distribution of WIC-5150 9-1-1 Responses



Response Timeline

A preliminary Response Time analysis for WIC-5150 responses is as follows:



Findings and Recommendations

- In Riverside County alone, approximately 1,300 WIC-5150 responses are provided by EMS each month.
- Of those, one-quarter are responding to 9-1-1 calls. The remaining 75% are non-emergency medical transports.
- 95% of all WIC-5150 patients are described as 'lower acuity', suggesting little to no medical attention beyond transport to an appropriate facility was required.
- Developing alternative transportation, resources, and response protocols to WIC-5150 incidents can greatly reduce impact on the EMS system.