



RIVERSIDE COUNTY EMS AGENCY
WIC-5150 IMPACT
SUMMARY REPORT
2019

FEBRUARY 20TH, 2020

PREPARED BY RIVERSIDE COUNTY EMS AGENCY, EMERGENCY MANAGEMENT DEPARTMENT

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. In 2019, Riverside County Emergency Medical Services (EMS) providers responded to approximately 1,200 WIC-5150 emergency and non-emergency transport calls every month. In Riverside County alone, this amounts to thousands of 5150 responses by EMS providers each year at a conservatively estimated cost of \$1.5 million annually. While many WIC-5150 patients require immediate behavioral health intervention to ensure safety and transport, many are not experiencing an imminent medical risk consistent with the aid EMS was designed to provide. As a result, 5150 responses can over-utilize complex and costly emergency services. Alternative behavioral health response and transport strategies would reduce the current impact of WIC-5150 on the EMS system, deploy more suitable care for this patient population, and help ensure emergency services are more rapidly available for those experiencing life-threatening medical conditions.

Methodology:

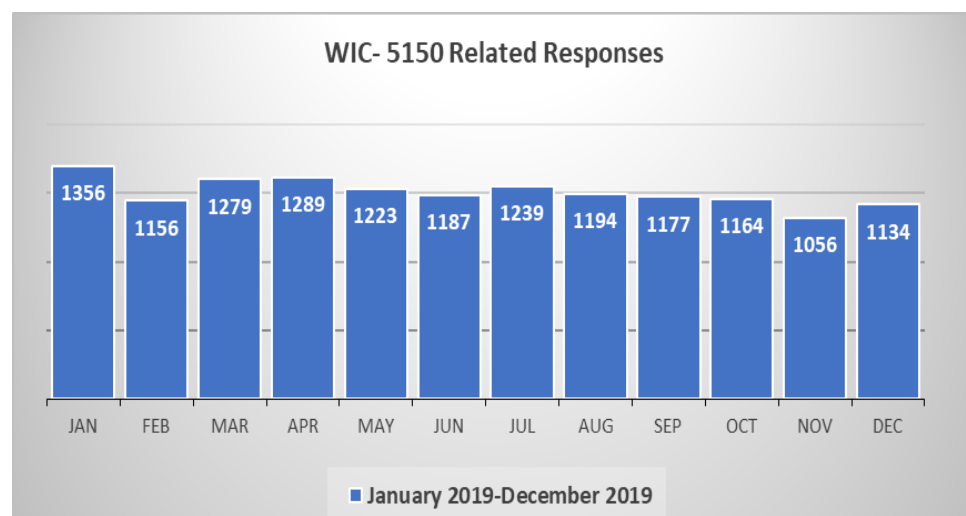
To determine the frequency of WIC-5150 responses by Riverside County EMS, **electronic patient care reports (ePCRs)** completed by on-scene 9-1-1 emergency, and non-emergency transport providers between January 1, 2018 through December 31, 2018 in ImageTrend® Elite were analyzed. While a 5150-hold code may be available for dispatch as a call reason, it is not available in the ePCR system as a selectable symptom or diagnostic code; however, the term is often entered by responders into an 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 reports (ePCRs) indicate **Riverside County EMS agencies generated approximately 14,454 WIC-5150 responses between January 1, 2019 and December 31, 2019.**

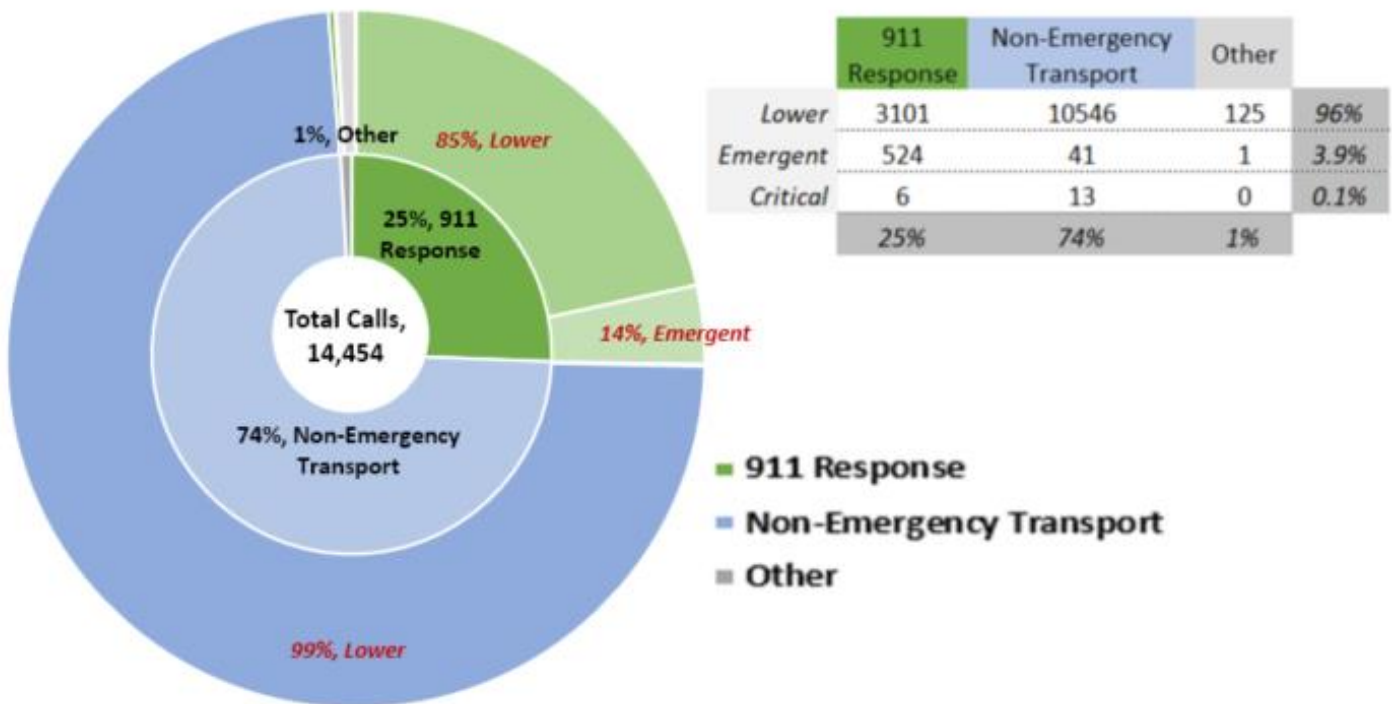
This count reflects all responding agencies including 9-1-1 emergency responders (fire), and transport agencies (emergency and non-emergency). Riverside County has a dual response EMS system where fire and an ambulance provider respond to 9-1-1 medical emergencies. This can result in a single incident generating more than one ePCR.



Response Types vs Acuity levels:

Nearly three-quarters of 5150 responses were for Non-Emergency transports while one-quarter involved 9-1-1 Emergencies. Only 1% fell into an “Other” category consisting of calls classified as Intercept, Public Assistance, or Mutual Aid. Call types were further classified by patient acuity.

WIC- 5150 Response Type by Initial Acuity

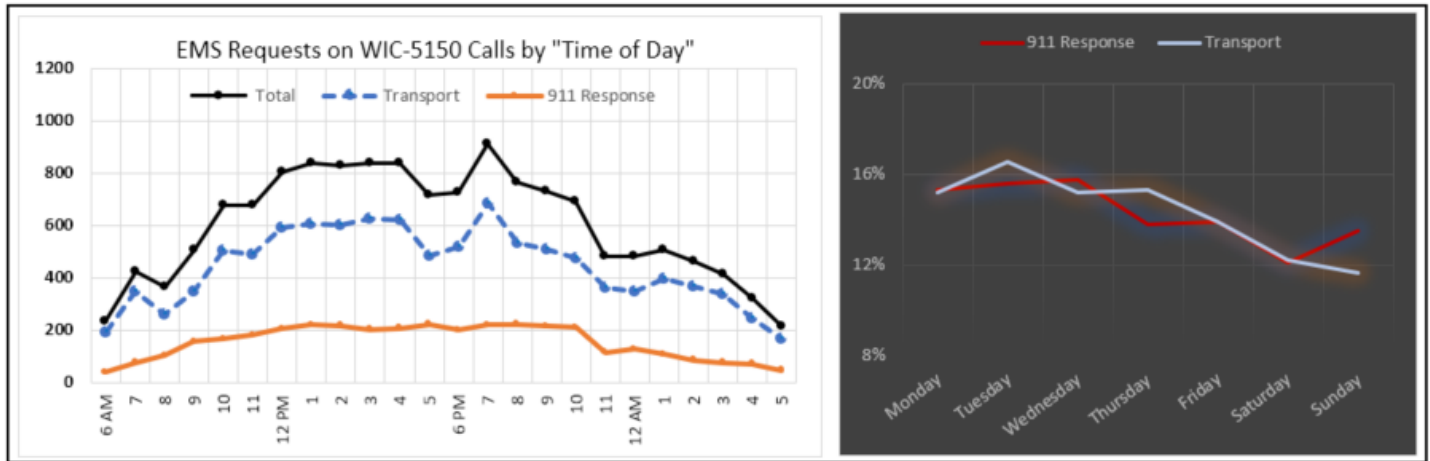


Initial Patient Acuity (eSituation.13) is a description code (Lower, Emergent, Critical, or Dead) assigned by EMS responders to describe patient condition upon encounter. A systemic review of ePCRs using randomly selected samples revealed “Initial Acuity” level can be used to predict when an EMS response 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 911-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:

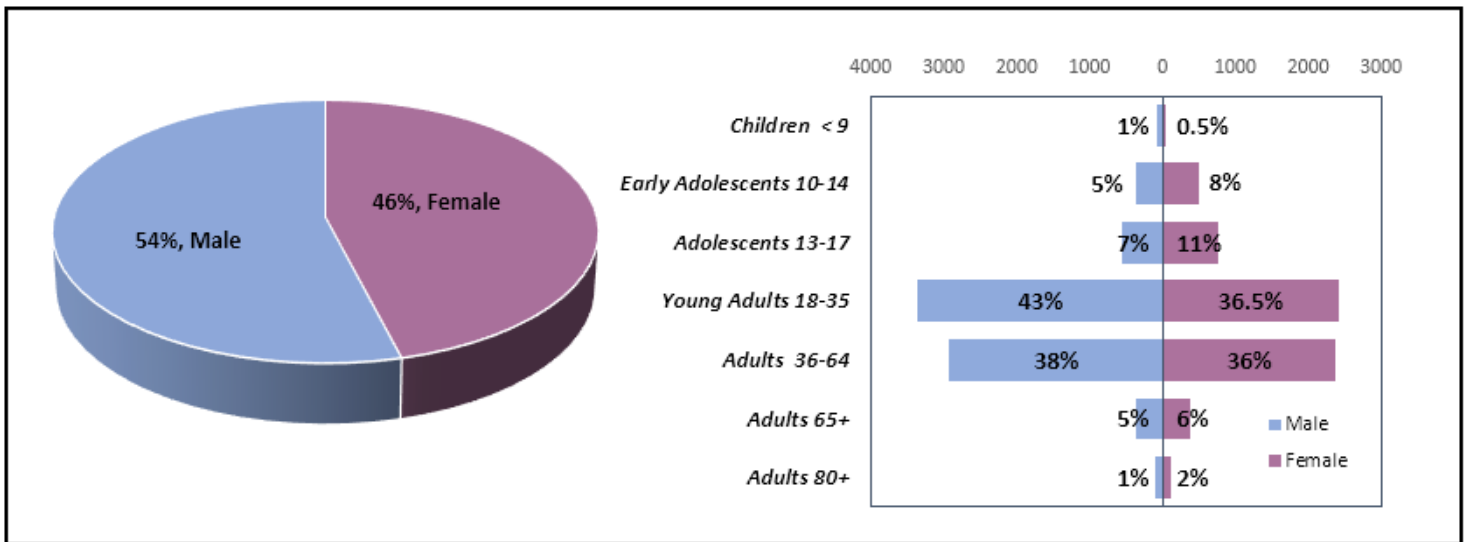
- Less than 20 ePCRs (~0.3%) were designated *Critical* acuity cases.
- 26.3% of *Emergent* acuity cases were downgraded to *Lower* acuity.
- 68% of *Critical* acuity cases were downgraded to *Emergent* or *Lower* acuity.

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 and 9-1-1 responses, WIC-5150 calls 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.**



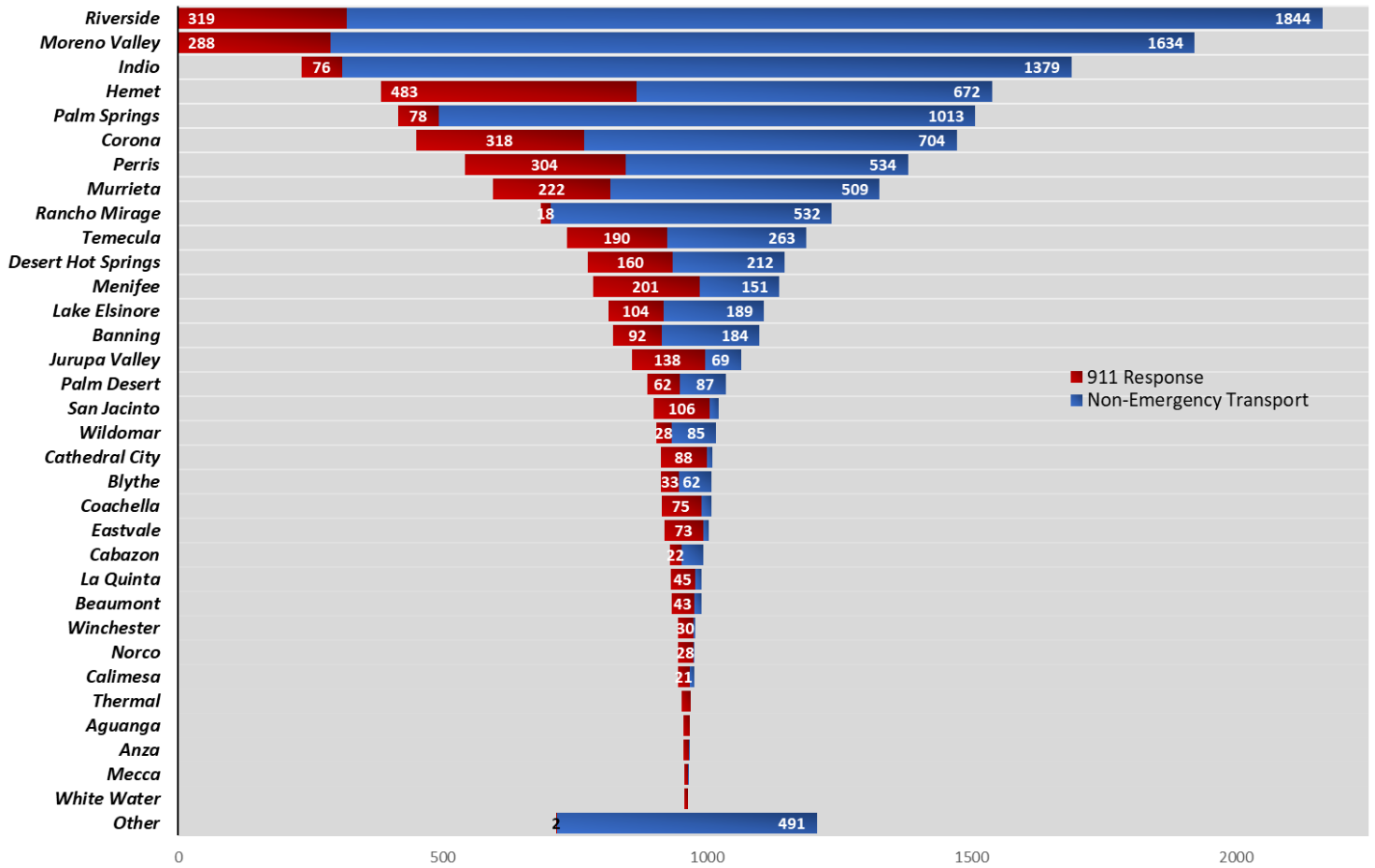
Patient Demographics

14,348 valid data points were used to analyze patient demographic information. Below is the graphical representation of gender distribution and categorical age distribution by gender.



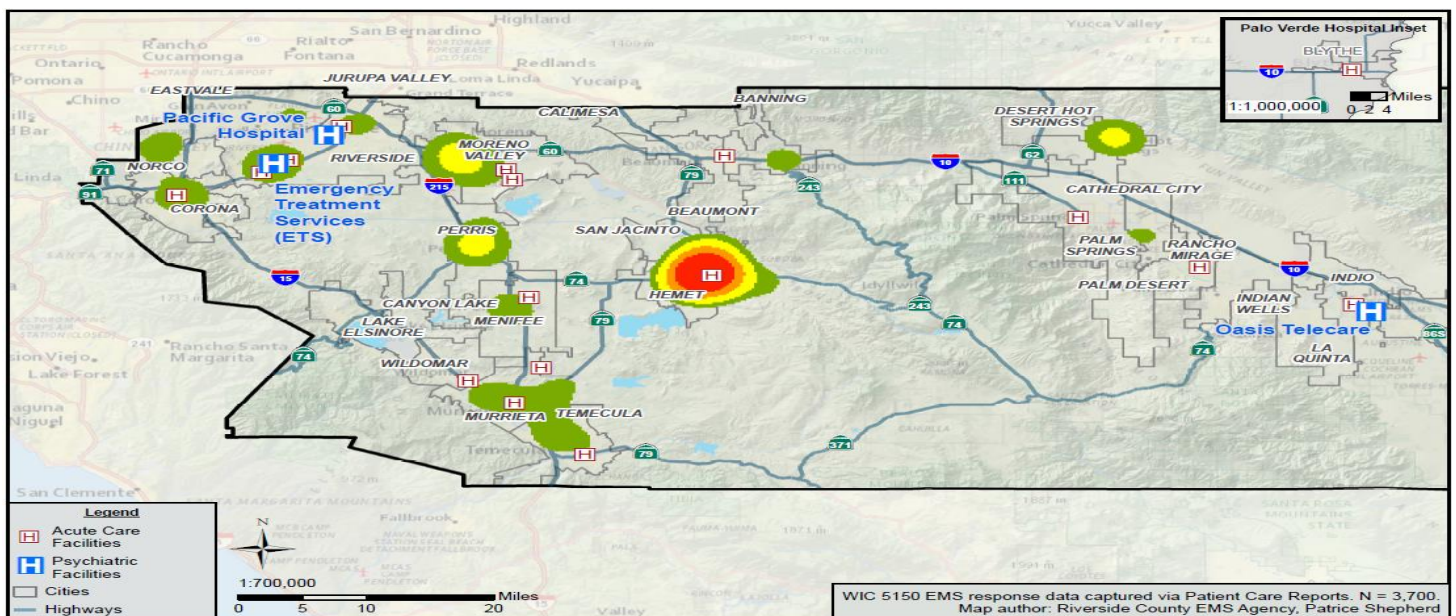
- Based on overall data, 54% are Male.
- 40% of are Young adults (Age:18-35)
- 37% are Adult below the age of 65 (Age: 36-64)
- Adolescents are the only age category where WIC-5150s occur more commonly in females than males

Response Type by City:



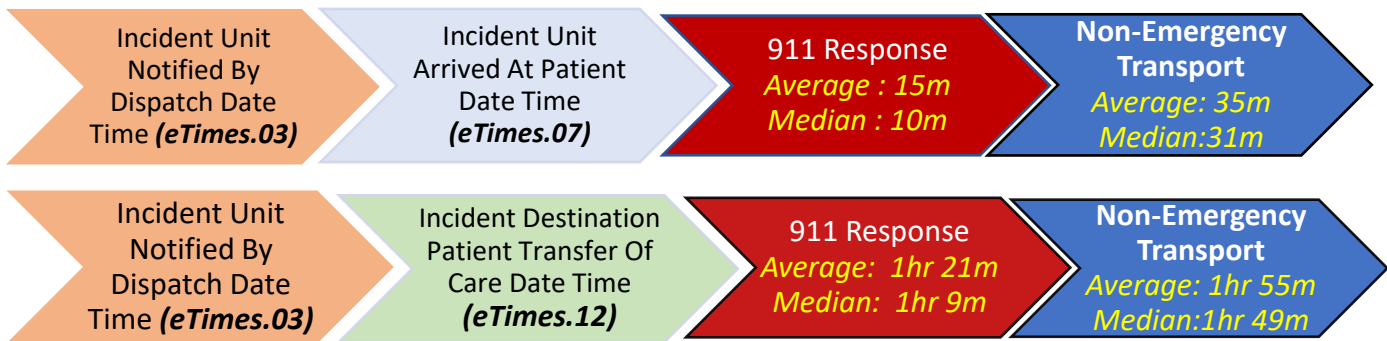
Cities with the highest density of WIC-5150 Non-Emergency Transports vs. 911 Responses exhibit different characteristics. The majority of 5150 responses involve Interfacility Transport, thus higher densities for transport are expected in cities with hospitals embedded, notwithstanding predictable factors such as population. The following is a graph of 5150 call origin by city and response type between January 2019 and December 2019.

Heat Map Distribution of WIC 5150 911 Responses



Response Timeline

EMS response timestamps are standardized and defined by the National Emergency Medical Services Information System (NEMSIS). [REMSA Policy 2203](#) further defines some time intervals between timestamps for data collection and reporting. In this report, the time at which a unit was notified (eTimes.03) to the time at which the unit arrived at the patient (eTimes.07), along with the time at which a unit was notified (eTimes.03) to when a transfer of care occurred (eTimes.12), were analyzed for the available WIC-5150 emergency and non-emergency transports. The findings are as follows:



Summary of Findings / Recommendations

- In Riverside County alone, approximately 1,200 WIC-5150 responses are made by Emergency Medical Services (EMS) each month.
- Most, approximately three-quarters, of WIC-5150 responses are documented as non-emergency EMS transport requests ('Interfacility' or 'Medical'). This is in stark contrast to the way in which the Riverside County EMS system is predominantly utilized at approximately 90% for 9-1-1 medical emergency responses, and 10% for non-emergency transports.
- 96% of all WIC-5150 responses are for patients coded 'lower acuity' suggesting that in most cases little to no medical attention beyond transport to an appropriate facility was required.
- Developing alternative transportation, resources, and response protocols to WIC-5150 incidents in Riverside County can greatly reduce impact on the EMS system and provide better, more appropriate care for these patients.

*For more information, please contact Riverside County EMS Administrator, Trevor Douville tdouville@rivco.org
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