

2009 –
2013



Oklahoma EMS Service Call Summary

Oklahoma State Department of Health

Protective Health Service

Emergency Systems Division

www.ok.gov/health

Foreword

This document is the result of hard work on the part of many persons involved in pre-hospital care in Oklahoma. It is a compilation of quality data reporting along with collection and analysis which provides us with valuable information about Oklahoma's system of pre-hospital care. Ambulance data was reported by EMS service providers to the Oklahoma EMS Information System (OKEMSIS) and an analysis was performed by EMS/Trauma Epidemiologists of the Oklahoma State Department of Health.

The purpose of collecting Ambulance data is to gain a more complete picture of pre-hospital patient care in Oklahoma in order to improve the EMS system as a whole. By analyzing this data, we can allocate resources more effectively and develop targeted strategies to improve pre-hospital care in Oklahoma. We can also identify further areas of research to help improve overall patient outcomes.

Quality data collection is the key to pre-hospital system development in Oklahoma as it enables us to continually improve our EMS system and helps us to measure improvements in pre-hospital care. Through the continued leadership of the Oklahoma State Department of Health and the work of EMS providers, emergency medical technicians (EMT's), and the OSDH Emergency Systems staff, we can ensure that the citizens of Oklahoma continue to receive the proper level of care throughout the continuum of patient care in Oklahoma.

Dale Adkerson



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2013 Oklahoma Population

Between the years of 2000 and 2013, the Oklahoma population increased 10% with a 4% increase between 2009 and 2013 ([Figure 1](#)). Just over 50% of the Oklahoma population was Female with approximately 14% of the population being between the years of 20 and 29 followed by the 1 to 10 age group at 13.9% (median age: 36 years, [Figure 2](#)). There were slightly more males than females in all the age groups less than 40 years of age with the 40+ age groups having more females than males ([Figure 3](#)). Seventy-five percent of the Oklahoma population categorized themselves as being in the White racial group in 2013 followed by American Indian/Alaska Native at 9.0% and Black/African American at 7.7%. Hispanic/Latino's made up 9.1% of the population ([Figure 4](#)). 48.5% of the Oklahoma population lived in 5 counties with Oklahoma County having the highest percentage (19.2%) followed by Tulsa (16.1%), Cleveland (6.8%), Comanche (3.3%), and Canadian Counties (3.1%). Approximately 73% lived in 5 of the 8 defined regions in Oklahoma, Region 8 (19.2%), Region 7 (16.1%), Region 6 (14.7%), Region 4 (10.6%), and Region 2 (12.7%, [see Map 1](#)). According to the Center for Medicare and Medicaid Services, 32.2% of the zip codes in Oklahoma are urban, 35.0% are rural, and 32.7% are super rural ([Map 2](#)). *Oklahoma population statistics were calculated using 2009 population estimates for Oklahoma while 2010 rates were calculated using the 2010 US census statistics. Rates for 2011–2013 were calculated using population estimates for Oklahoma. Urban/Rural analyses were calculated using zip codes for 2014 with the urban/rural/super rural designation defined by the Centers for Medicare and Medicaid Services (CMS).*

Figure 1

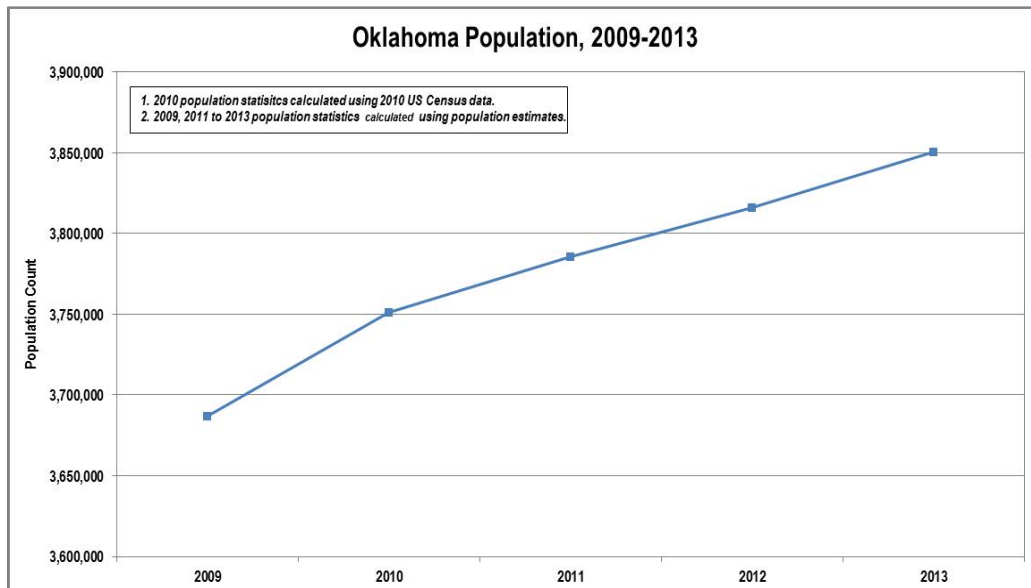


Figure 2

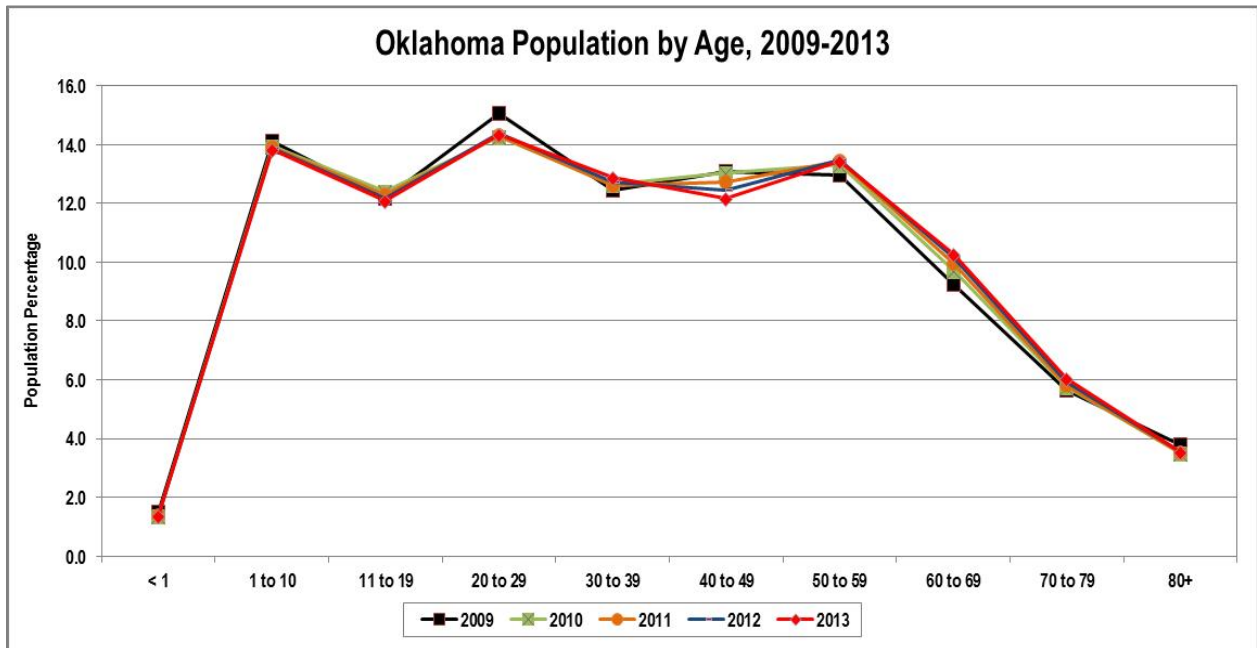


Figure 3

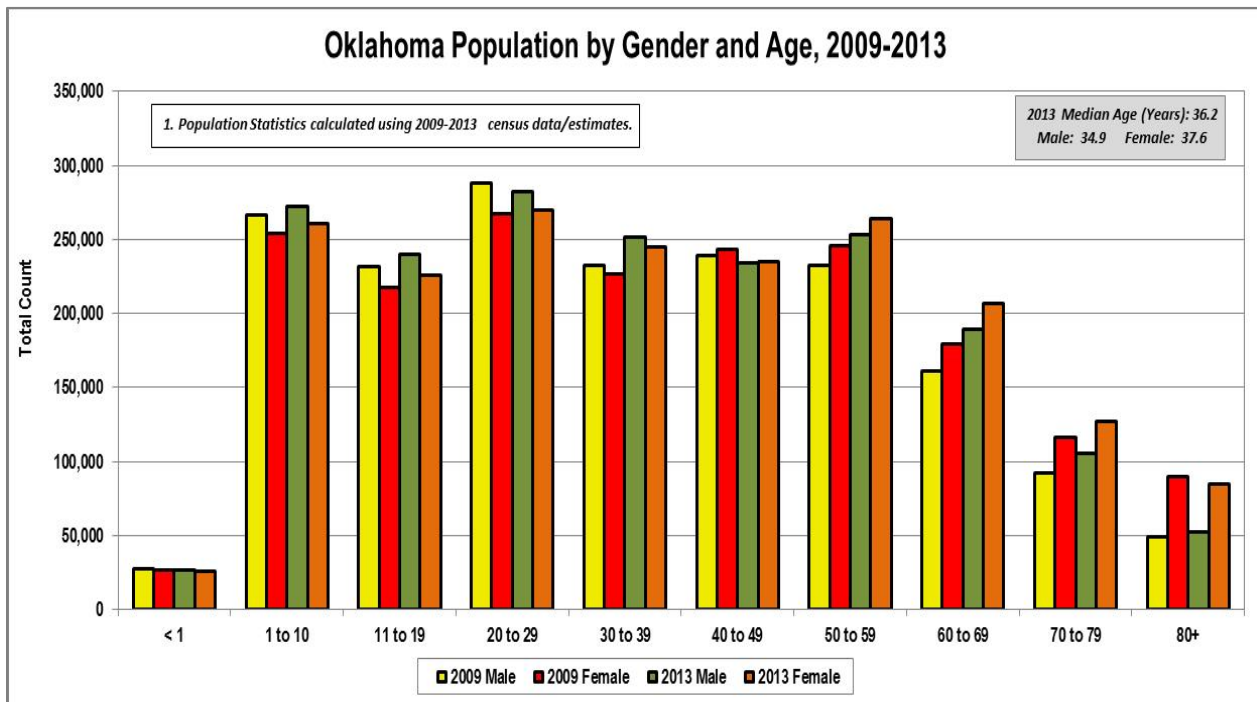
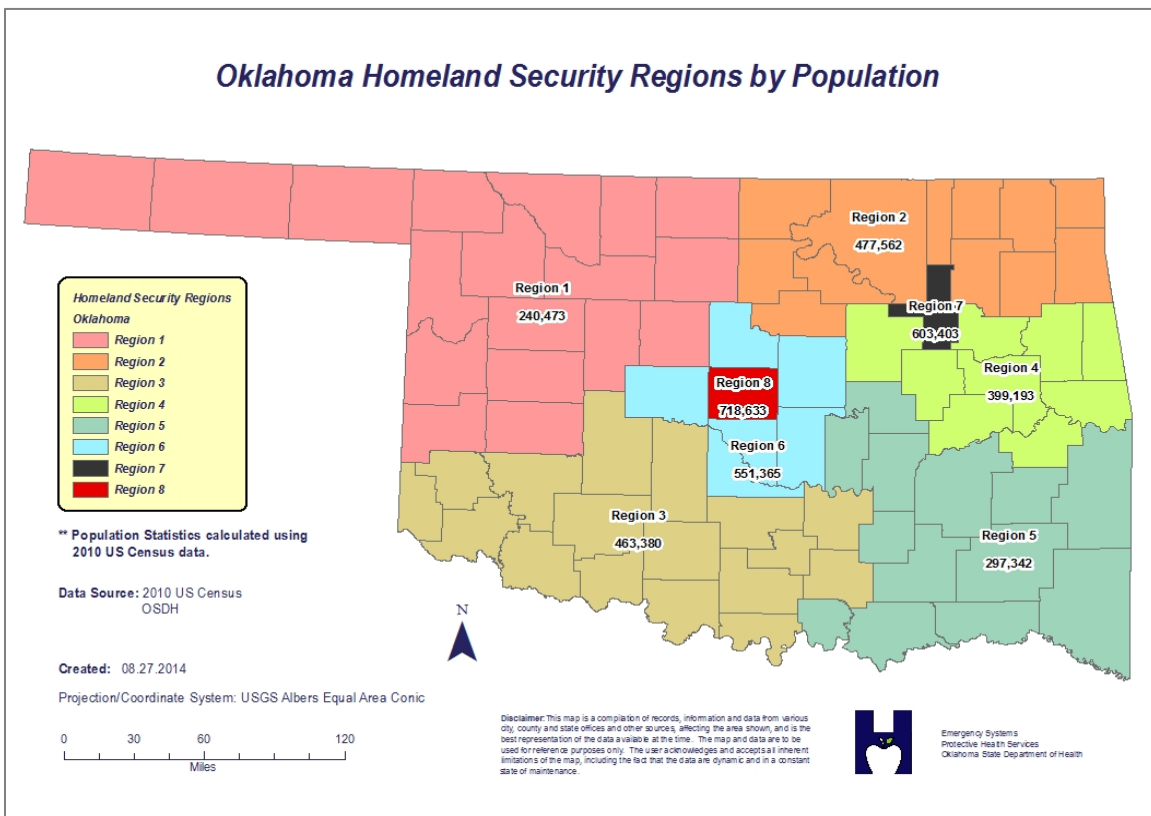
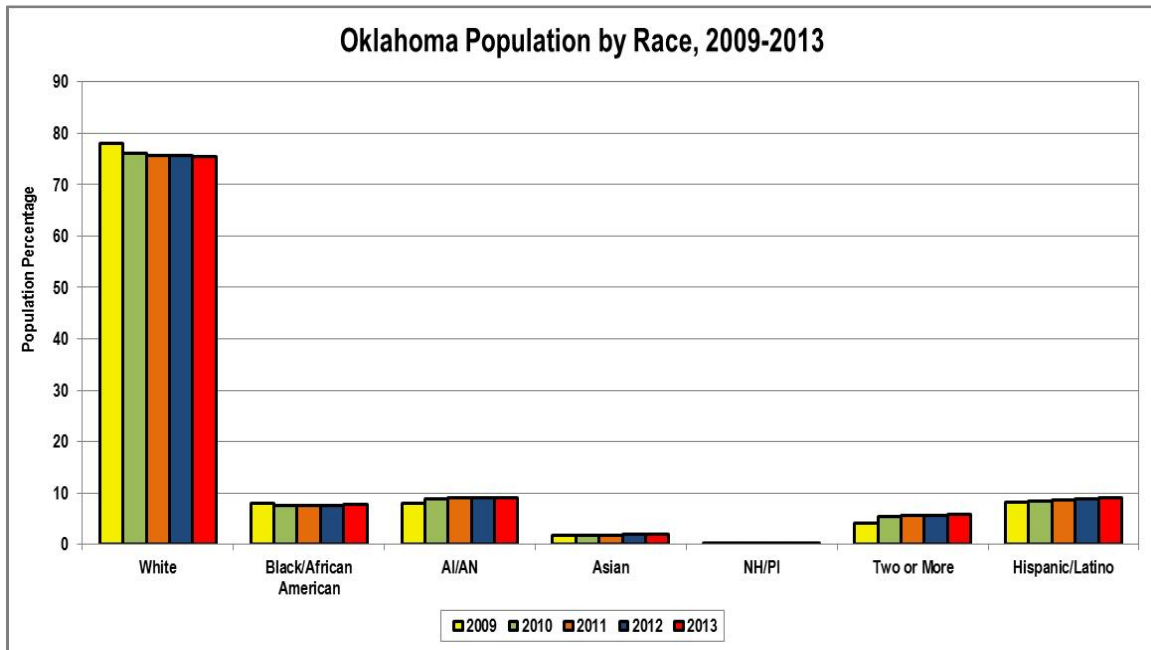


Figure 4



Map 1: Oklahoma homeland security regions by population (2010 US Census).

Oklahoma EMS Agency Demographics

The State of Oklahoma has 5 types of licensure: Basic Life Support (BLS), Intermediate Life Support (ILS), Paramedic Life Support (PLS), Specialty Care, and stretcher aid vans. Transporting Ground and air ambulance agencies can have more than one license type (for example: PLS and Specialty Care) but all air services must have at least a PLS license (separate from a Specialty Care License). Oklahoma also has Emergency Medical Response Agencies (EMRA's), previously known as first responders, which are non-transporting agencies. Currently there are 203 licensed services (Figure 5, Map 3) in Oklahoma and 148 EMRA's. Out of the 203 transporting licensed services, 45.8% are Basic Level Services (BLS), 28.5% are Paramedic Level Services (PLS), 16.2% are Intermediate Level Services (ILS), 9.3% are Specialty Care Services, and 3.4% are Stretcher Aid Vans. Approximately 18% of the licensed services were air services.

NOTE: licensed services do not equal actual number of agencies as an ambulance service can have more than one license.

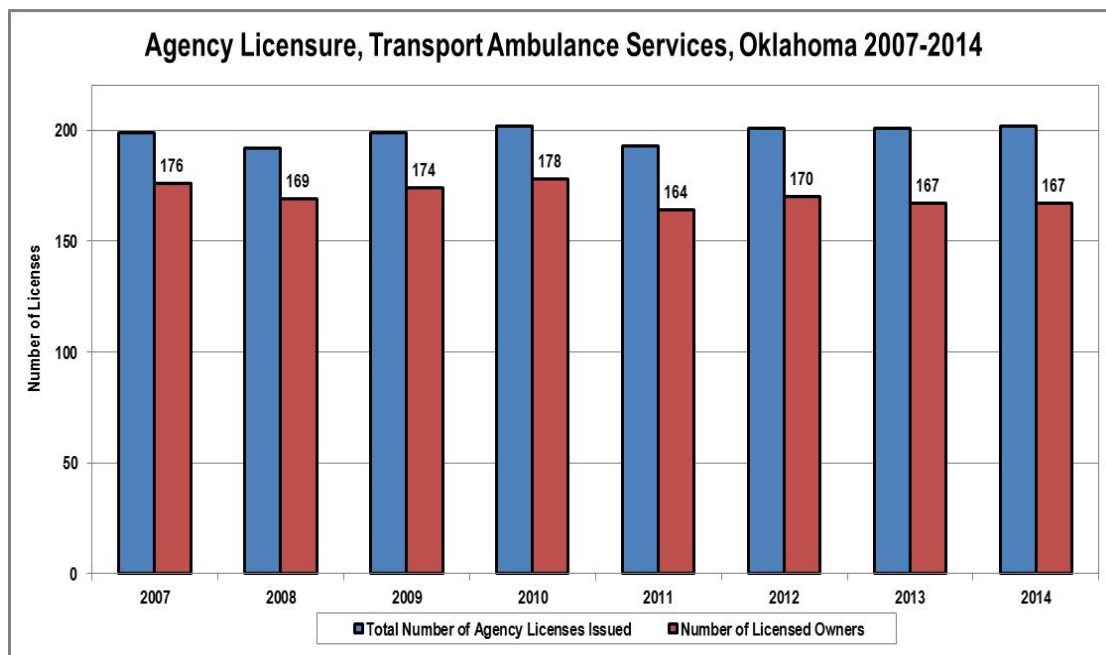


Figure 5: Total number of transport ambulance services between 2007 and 2014 (air and ground services).

EMS Personnel (Transporting Agencies)

Oklahoma has 3 levels of EMS personnel licensure: EMT, Intermediate, and Paramedic along with certification for Emergency Medical Responders (EMR's). All EMT's must have a state license to work as an EMT while EMR's can have either state certification or national registry certification. Currently in Oklahoma there are 9,751 licensed/certified personnel of which 1,660 are certified EMR's, 4,773 basic EMT's, 748 Intermediate EMT's, and 2,570 paramedics.

Licensed transporting ambulance agencies employ 5,669 people across the state of which 69.9% were Full Time Employee's (FTE's), 20.7% were Part Time, and 9.3% were volunteer's. There were a total of 51 transporting agencies in Oklahoma that had volunteers in their workforce of which 14 had all volunteers, 10 agencies had between 75%–99% volunteers, and 4 agencies had between 50%–74% volunteers ([Table 1](#)).

NOTE: EMS agency demographics and personnel statistics were taken from the 2014 Ambulance Provider Survey sent out to the Oklahoma EMS providers by the Oklahoma State Department of Health, Emergency Systems Division (survey completed annually).

<i>Table 1: EMS Work Force</i>	
Zero FTE*:	22 Agencies (10%)
1-6 FTE:	52 Agencies (26%)
7-12 FTE:	43 Agencies (21%)
13-18 FTE:	21 Agencies (10%)
19-25 FTE:	20 Agencies (10%)
26-50 FTE	25 Agencies (12%)
52 - 100 FTE	5 Agencies (2%)
101 - 399 FTE	6 Agencies (3%)

****Full Time Employee's (FTE).***

OKEMSIS Data Submission

According to Oklahoma EMS regulations, all licensed and transporting EMS ambulance services (EMRA's and stretcher aid vans are not required to report data) are required to submit patient run data into the OKEMSIS (Oklahoma Emergency Medical Services Information System) database. Data is due on a monthly basis and EMS agencies have until the last business day of the following month to submit (ex. January data is due on the last business day of February) to the database. OKEMSIS is a web-based system and agencies can submit their data for free using the various run forms on the site, by third-party vendor through the data exchange (XML submission), or post their run data through a field bridge. Web services are also available (must be approved by OSDH staff) for XML submission.

EMS Service Call Executive Summary

Oklahoma saw a 19.3% increase in the overall number of service calls reported from 2009 to 2013 with 434,791 calls in 2009 and 518,813 calls in 2013 ([Figure 6](#)). There are several possible reasons for this increase which include better reporting by the service providers to the Oklahoma EMS Information System (OKEMSIS), a true increase in the number of runs, and an overall population increase in Oklahoma. Ground ambulance services responded to the majority of the EMS service calls (98.06%) during this time period followed by air services (1.9%, [Figure 7](#), [Figure 8](#)). Approximately 80% of the total call volume was 911 responses during the prescribed time period followed by inter-facility transfers (10.5%) and medical transports (3.8%). Almost 75% were treated and transported by EMS with patient refusals (10.4%) and No Patient Found (4.5%) coming in a distant second and third, respectively. Fifty-four percent of all the EMS Service Calls between 2009 and 2013 occurred in urban areas followed by 31.9% from rural and 10.5% from super rural areas ([Figure 12](#)). The overall state response time for 911 calls (cancelled calls excluded) increased during this time period at 7.09 minutes in 2009 to 8.03 minutes in 2013. Scene time for treated and transported patients (911 Calls only) increased from 18.78 minutes in 2009 to 20.02 minutes in 2013. Total time (Time of destination arrival – time unit dispatched) showed a moderate increase at 42.62 minutes in 2009 to 47.12 minutes in 2013.

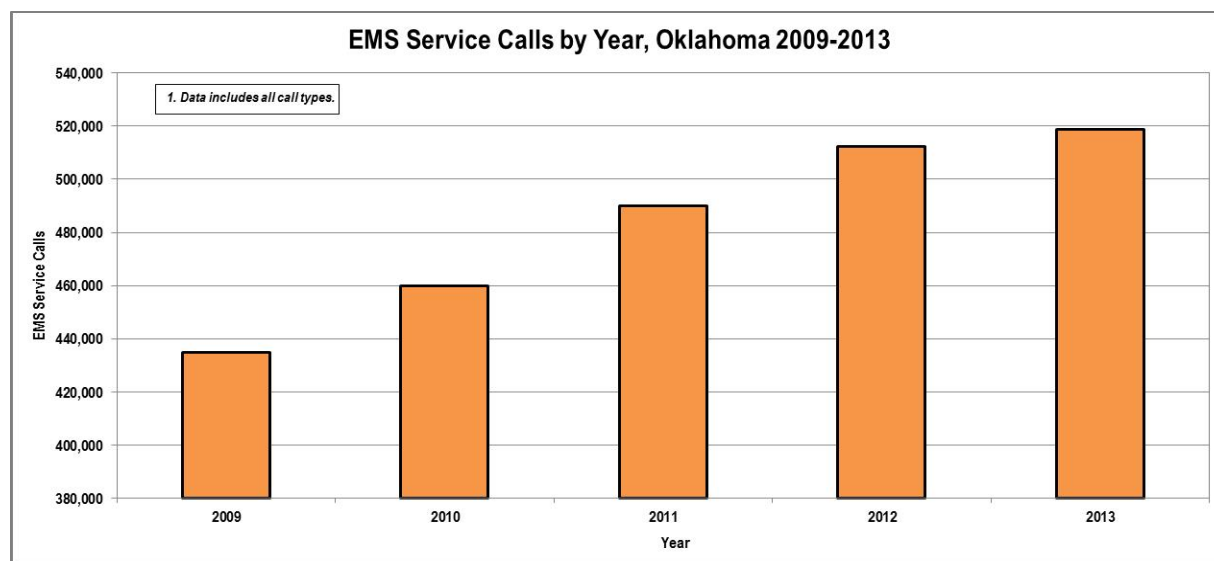


Figure 6: Total number of EMS Service Calls by Year, Oklahoma 2009–2013.

Six agencies reported $\approx 52\%$ of all the service calls between 2009 and 2013 with one agency reporting 37.6% of all statewide EMS calls ([Table 2](#)). Tulsa (Region 7) and Oklahoma Counties (Region 8) reported the most EMS runs followed by Cleveland, Muskogee, Comanche, Osage and Pottawatomie Counties ([Table 3](#)). EMS service calls occurred in Oklahoma City and Tulsa 33.8% of time during the specified time period followed by Muskogee, Norman, and Lawton ([Table 38](#)). A majority of EMS service calls in Oklahoma were female (50.6%) for the specified time period with the 70 to 79 and 80+ age groups making up 33.0% of the total call volume ([Figure 116](#)). Most of the Oklahoma EMS service calls reported White (70.9%) as the patient’s racial category for all 5 years followed by Black/African Americans (9.9%) and American Indian/Alaska Natives (5.1%). Hispanics made up 2.8% of all the EMS service Calls in Oklahoma between 2009 and 2013. Black/African Americans had the highest rate of EMS service calls at 167.4/1,000 population (a 24.5% rate increase from 2009) followed by the White racial category at 122.4/1,000 population (a 22.9% rate increase from 2009) in 2013. The Hispanic/Latino population saw a 24% rate increase between 2009 and 2013 at 43.9/1,000 population while the Native Hawaiian/Pacific Islander (NH/PI) population had the only rate drop since 2009 (24.4% decrease).

NOTE: **The data represented in this document was extracted from the OKEMSIS (Oklahoma EMS Information System) database and is in a constant state of maintenance therefore all information in this document is subject to change. The data represents the best information extracted at the time of this report. All rates in this document for 2009–2013 were calculated using population statistics from the US*

*census at www.census.gov . Rates for 2009 were calculated using 2009 population estimates for Oklahoma while 2010 rates were calculated using the 2010 US census statistics. Rates for 2011–2013 were calculated using population estimates for Oklahoma. Any cell in a table represented by an asterisk (**) is not reported due to privacy concerns. Urban/Rural analysis was calculated using zip codes for 2014 with the urban/rural/super rural designation defined by the Centers for Medicare and Medicaid Services (CMS).*

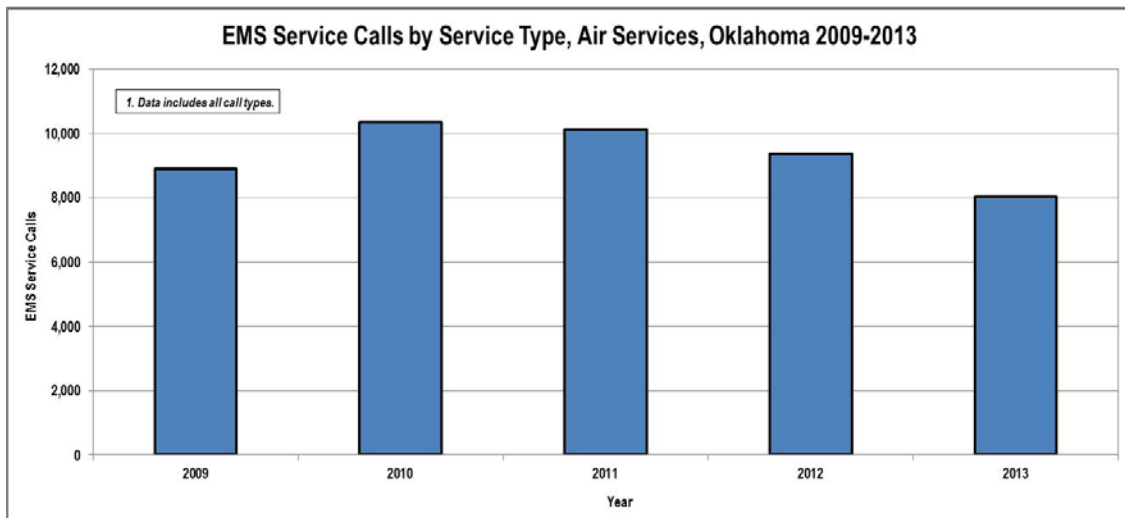


Figure 7: EMS service calls by service type, air services, Oklahoma 2009–2013.

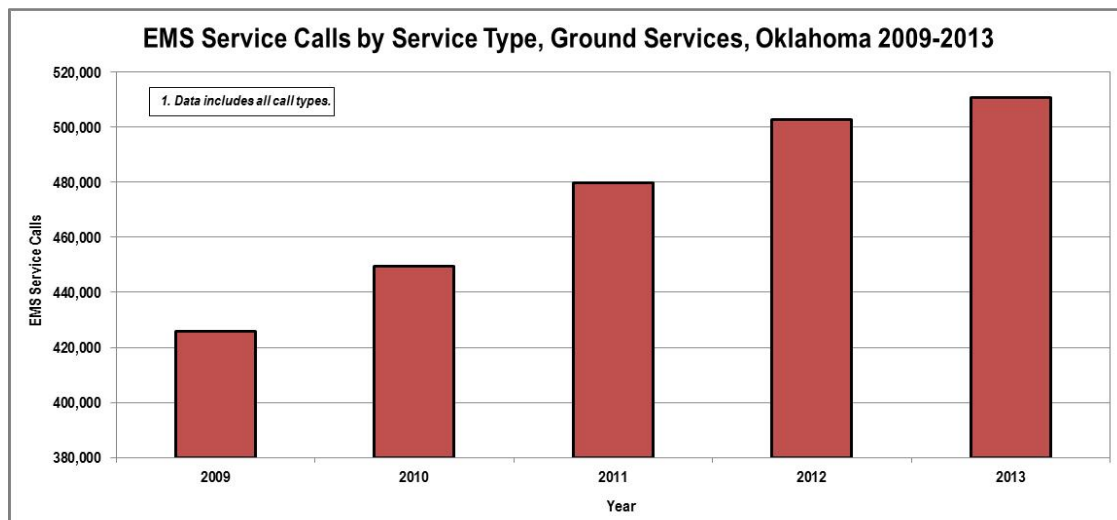


Figure 8: EMS service calls by service type, ground services, Oklahoma 2009–2013.

EMS Service Calls by Type of Service Requested and Patient Disposition

- The majority of EMS calls in Oklahoma for 2009 to 2013 were 911 Responses (80.1%) followed by Inter-Facility Transfers (10.5%).
- Most patients were treated and transported by EMS (74.9%) followed by Patient Refusals (10.4%) and No Patient Found (4.5%).
- 51.7% of EMS service calls for air services were inter-facility transfers followed by 911 responses (25.7%, [Figure 9](#)).
- Most patients for air services were treated and transported (84.3%) followed by cancelled calls (11.5%, [Figure 10](#)).
- 81.19% of EMS service calls for ground services were 911 responses followed by inter-facility transfers (9.7%).
- Most patients for ground services were treated and transported (75.3%) followed by patient refusals (10.6%).

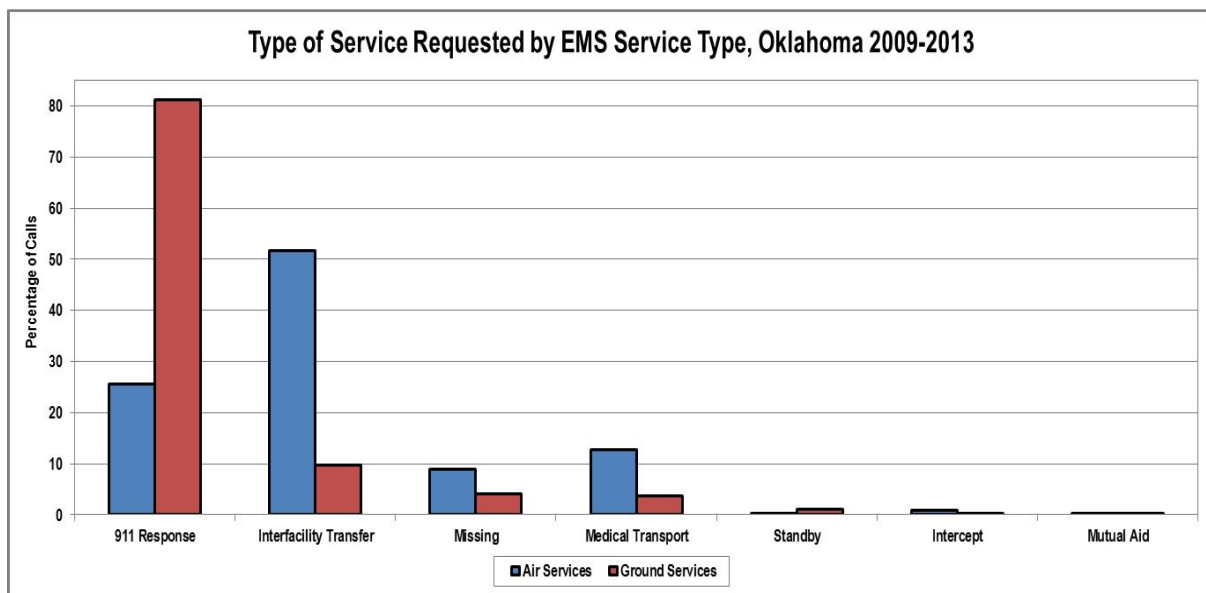


Figure 9: EMS service calls by type of service requested, air vs ground, Oklahoma 2009–2013.

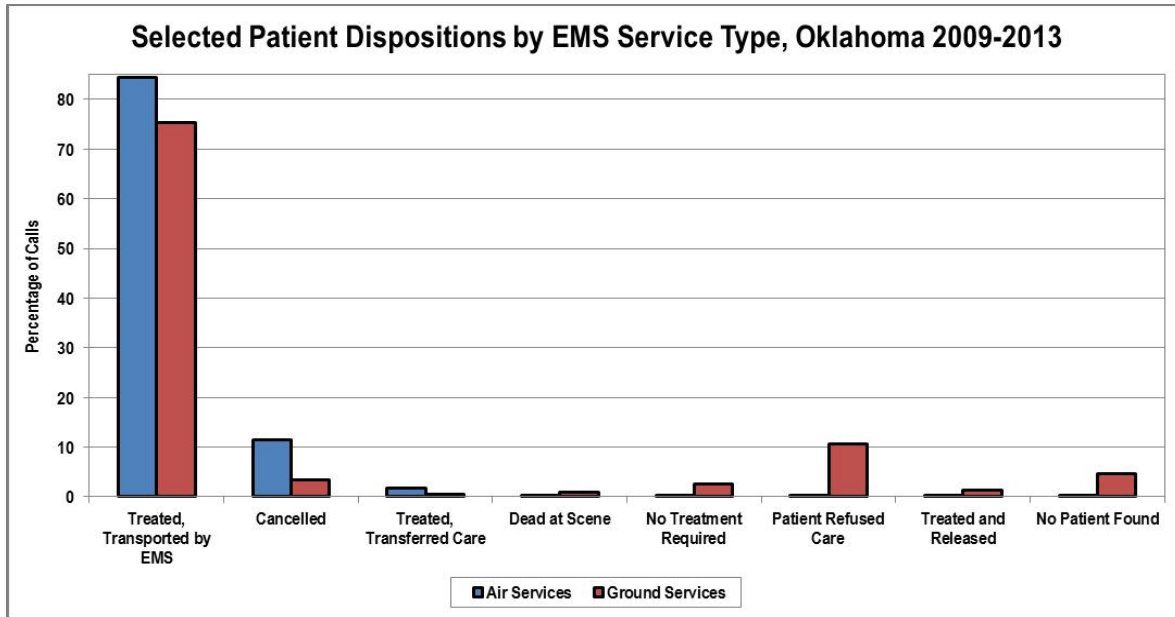


Figure 10: EMS service calls by patient disposition, air vs ground, Oklahoma 2009–2013.

Geographic Distribution

Most of the EMS service calls in Oklahoma between 2009 and 2013 occurred in areas where there were larger population centers ([Figure 12](#)). Consequently, Oklahoma and Tulsa counties accounted for 42.6% of the total call volume during that period. The same pattern emerged by zip code as a majority of the zip codes in Oklahoma for 2013 had an EMS service call incident rate between 2 and 300 per 1,000 people ([Map 11](#)) with the highest incident rates in Oklahoma City and Tulsa. The following section looks at the geographic distribution of EMS service calls in Oklahoma. All Regions in Oklahoma are based off Homeland Security Regions for Oklahoma ([Map 1](#), [Figure 125](#)). *Incident Region is defined as the location of the EMS service call based on county while Agency Region is defined as the region where the actual service provider is located.*

- Tulsa (Region 7) and Oklahoma Counties (Region 8) reported the most EMS runs followed by Cleveland, Muskogee, Comanche, Rogers and Pottawatomie Counties ([Table 3](#)).
- Oklahoma City had the most service calls followed by Tulsa, Muskogee, Norman, and Lawton ([Table 4](#)).

- EMS agencies located in Region 8 (Agency Region) reported the most service calls in 2013 followed by Region 7.
- EMS Service calls occurred in urban areas 53.7% of the time followed by Rural (32.4%) and Super Rural (10.7%) areas ([Map 2](#)).
- Air service responses occurred in rural areas 49.5% of the time followed by super rural (30.7%) and urban (10.4%) areas ([Figure 117](#)).
- Ground service responses occurred in urban areas 55.2% followed by rural (31.6%) and super rural (10%) areas (Figure 13).
- EMSA (37.6%) had the highest call volume in Oklahoma followed by Muskogee County EMS (4%), EMSSTAT–Norman Regional Hospital EMS (3.1%), Midwest Regional Hospital EMS (2.7%) and Pafford EMS (2.6%) ([Table 2](#)).
- EMS service providers were called to a home or residence 42.7% (no patient contact excluded) of the time followed by a healthcare facility (28.9%) and street or highway (10.7%).
- Air service providers were called to a health care facility 73.3% of the time followed by a street or highway (5%) and private residence (2%, [Figure 11](#)).
- Ground service providers were called to a home or residence 43.5% of the time followed by a healthcare facility (28%) and street or highway (10.8%, [Figure 11](#)).
- St. Francis Hospital (Tulsa) received the highest volume of EMS service calls between 2009 and 2013 followed by St. John Medical Center and OU Medical Center ([Table 39](#)).
- Out of the top twelve destinations (> 2% total EMS service call volume), St. Anthony Hospital– Main Campus had the biggest service call volume increase (267.8%) followed by Muskogee Regional Medical Center (29.7%) and Mercy Hospital– Oklahoma City (28.2%, see [Table 38](#)).
- EMS service calls going to nursing homes, rest homes, or long term care showed the only decrease out of the top twelve destinations showing a 23.9% decrease since 2009.

Table 2: EMS Service Calls by Agency, Highest Call Volume, Oklahoma 2009-2013

EMS Agency Name*	2009	2010	2011	2012	2013	Total # of Calls	% of Total Calls
EMSA-West Division	76,887	83,546	92,062	99,352	103,154	455,001	18.9%
EMSA-East Division	81,817	87,235	90,028	95,826	97,276	452,182	18.7%
Muskogee County EMS	19,204	18,831	19,846	19,551	19,943	97,375	4.0%
EMSSTAT-Norman Reg Hosp EMS	12,357	14,093	15,521	15,804	15,679	73,454	3.1%
Midwest Reg Hosp EMS	13,129	13,109	13,256	13,436	14,279	67,209	2.9%
Pafford EMS of Oklahoma	12,235	11,583	11,802	12,738	13,493	61,851	2.6%
React EMS	9,262	9,940	9,919	10,208	10,846	50,175	2.1%

*Top 6 agencies by call volume only, all call types.

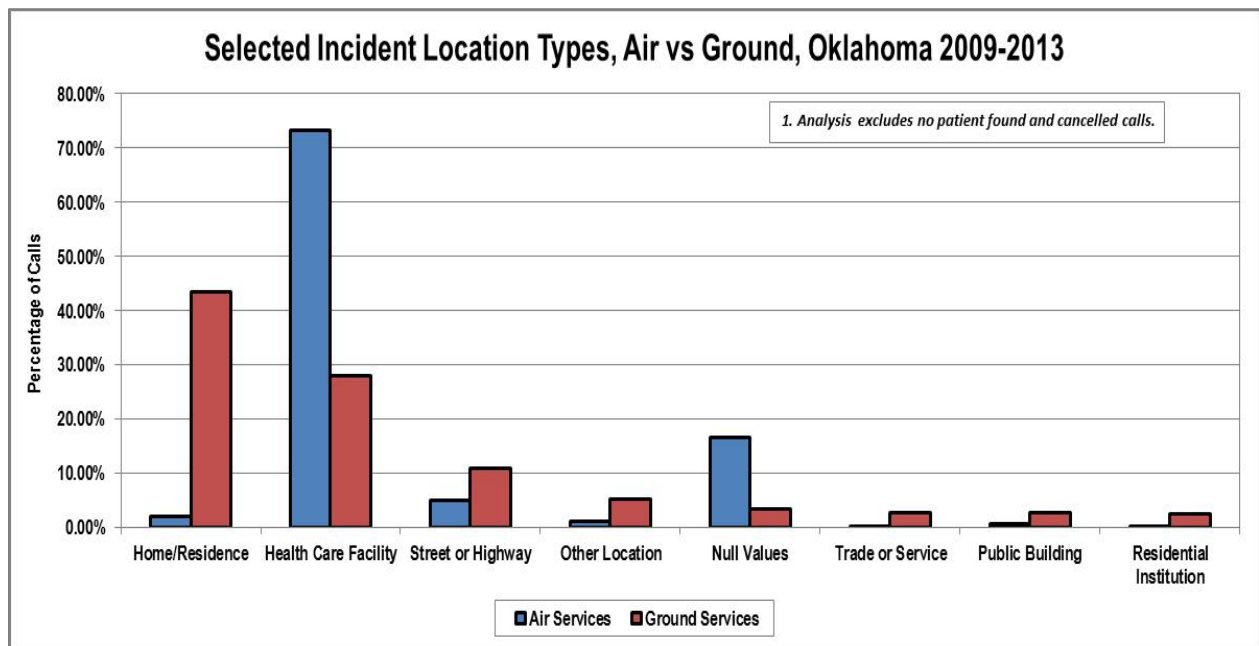


Figure 11: EMS service calls by incident location, air vs ground, Oklahoma 2009–2013.

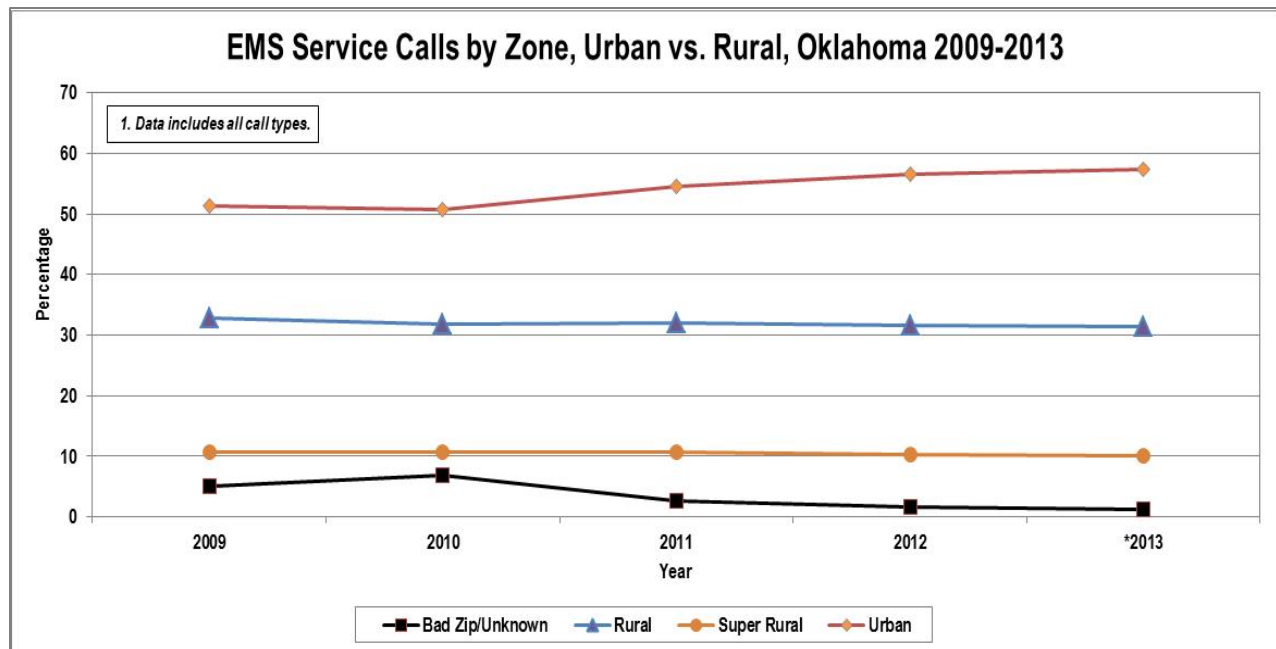


Figure 12: EMS service calls by zone, Oklahoma 2009–2013.

EMS Service Calls Weekday, Month, and Time of Day

- The months of May through August had the highest percentage of calls (34.5%) with February having the lowest percentage (7.60%, [Figure 13](#)).
- 15.5% of all EMS Service calls occurred on Friday for 2009 through 2013 followed by Monday (14.6%).
- Sunday (12.7%) had the lowest percentage of service calls for all three years.
- Approximately Forty-Four percent of the all EMS service calls occurred on Thursday, Friday, and Saturday ([Figure 14](#)) for the specified time period.
- Approximately 51% of all calls between 2009 and 2013 occurred between 9:00am and 6:00pm ([Figure 15](#)) with 35.4% occurring between noon and 6:00pm.
- Just over sixty-one percent of all calls between 2009 and 2013 occurred between 9:00am and 9:00pm.

- Air and Ground providers followed a very similar pattern with both performing a higher percentage of runs between May and August with February having the lowest percentage (Figure 18).
- Air service providers performed slightly more runs on Sunday (14.3%) compared to Ground providers (12.6%, Figure 17).
- Air service providers also performed more runs on Saturday (15.3%) compared to Ground providers (13.9%, Figure 17) with air service providers performing 44.6% of their runs on Friday, Saturday, and Sunday.
- Air and ground service providers followed a very similar pattern by time of day with air services performing a slightly higher percentage of runs between 3:00pm and midnight (Figure 16).

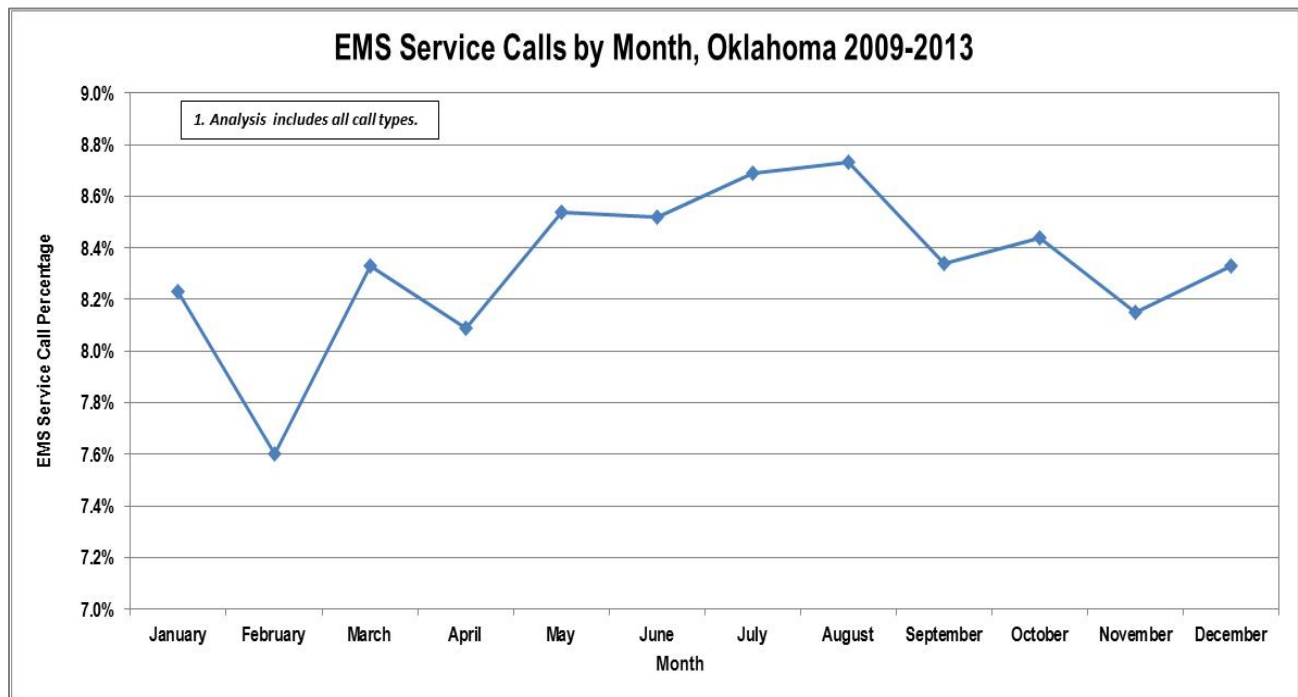


Figure 13: EMS service calls by month, all call types, Oklahoma 2009–2013.

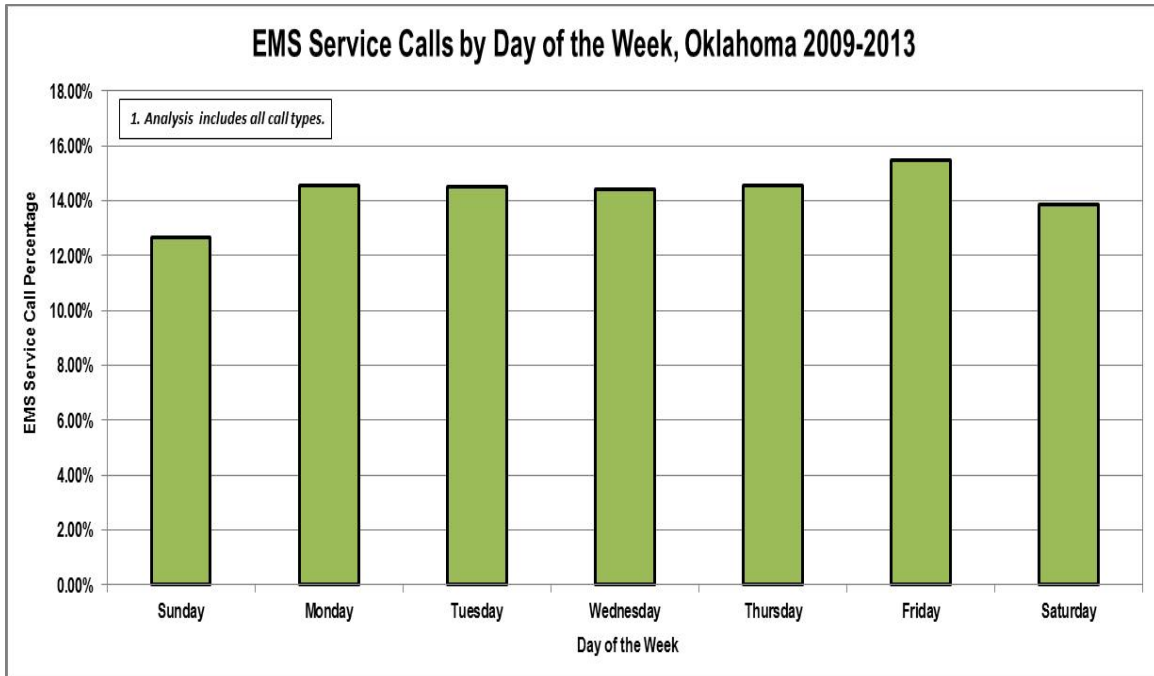


Figure 14: EMS service calls by day of the week, Oklahoma 2009–2013.

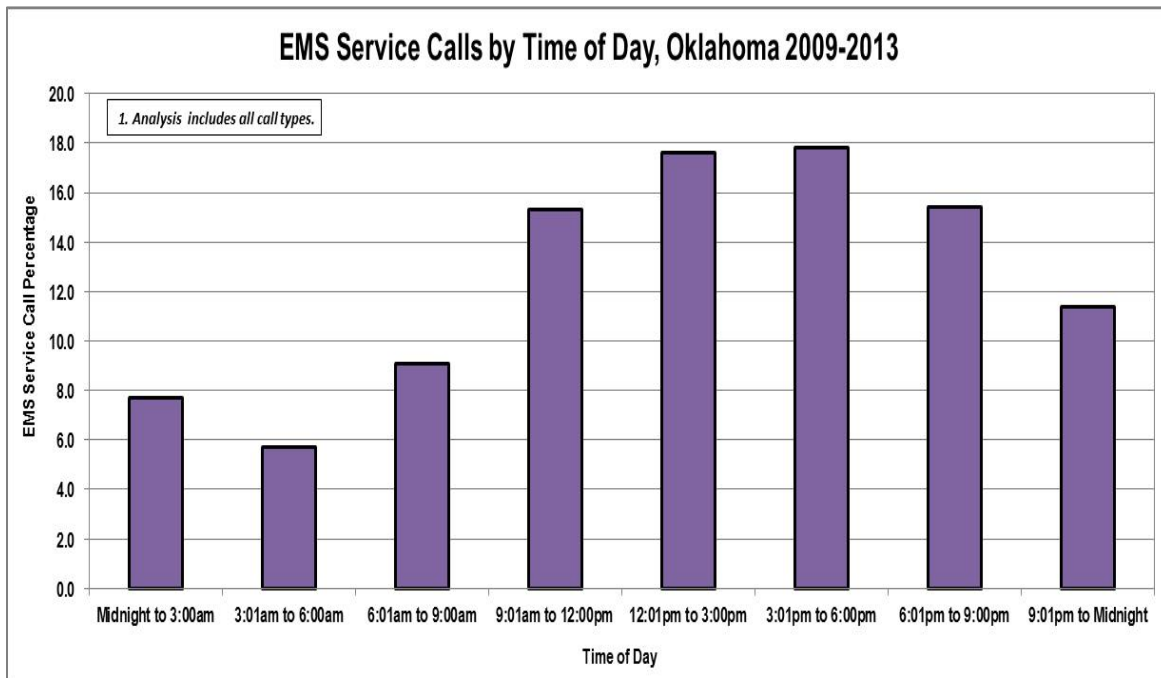


Figure 15: EMS service calls by time of day, Oklahoma 2009–2013.

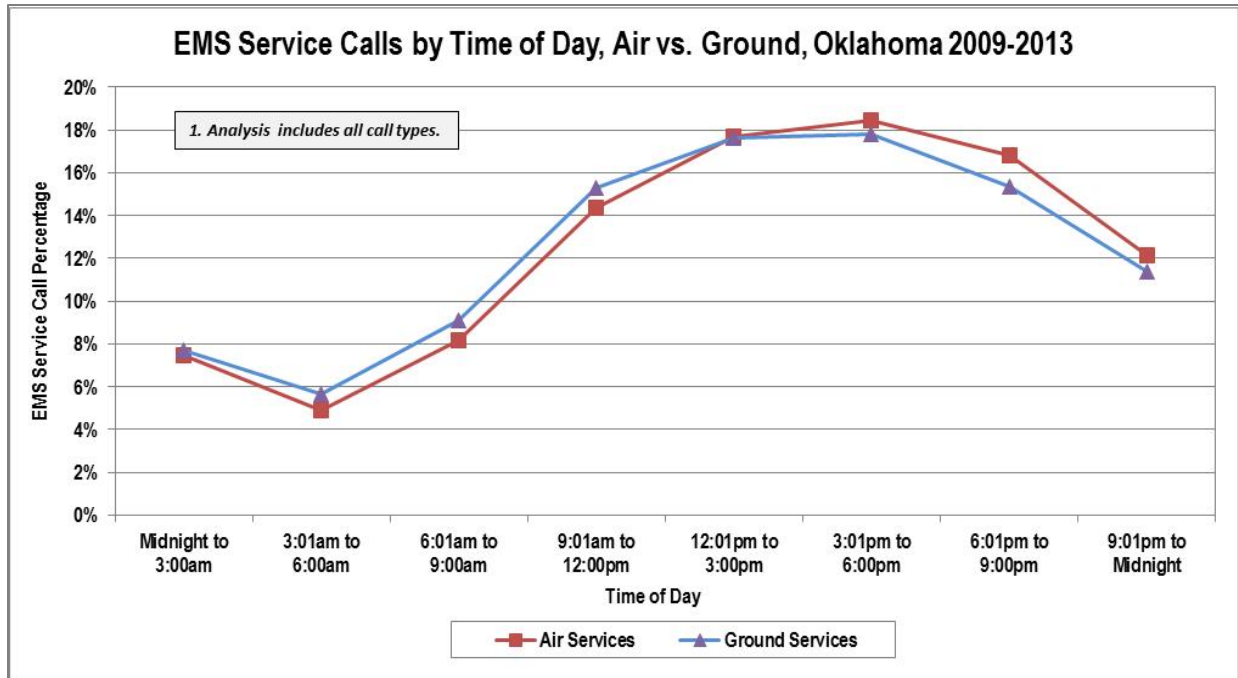


Figure 16: EMS service calls by time of day, air vs. ground, Oklahoma 2009–2013.

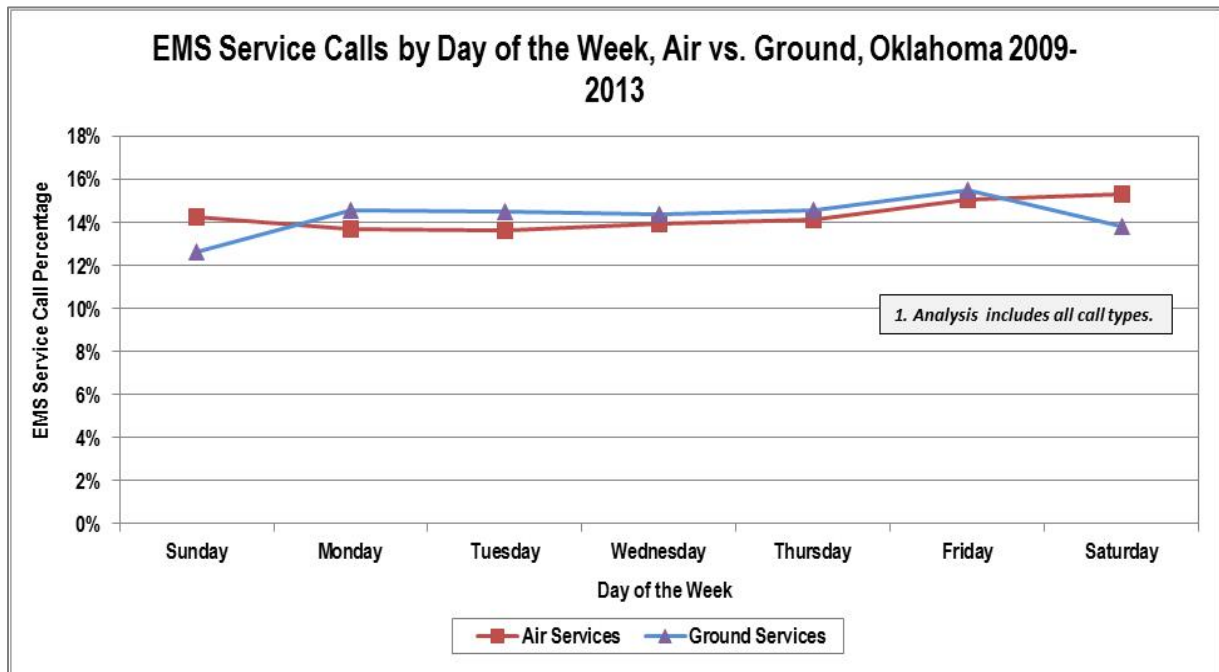


Figure 17: EMS service calls by day of the week, air vs. ground, Oklahoma 2009–2013.

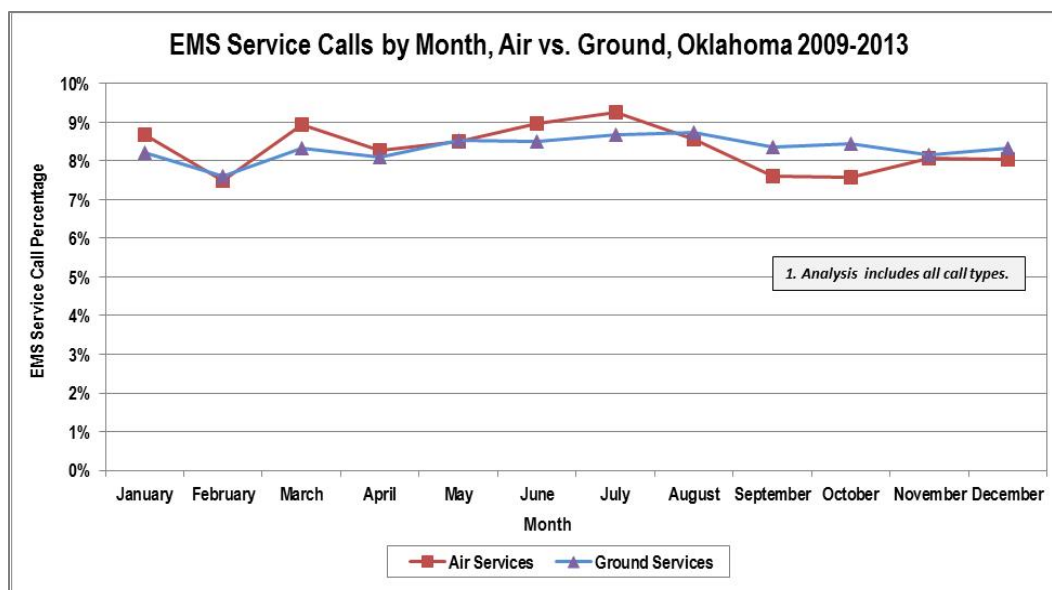


Figure 18: EMS service calls by month, air vs. ground, Oklahoma 2009–2013.

EMS Service Calls by Gender, Age, and Racial Group

- Just over 50% of the EMS Service Calls for 2009 through 2013 were Female with 42.3% being Male. Gender was not recorded for 7.1% of the patients.
- The overall EMS service call rate per 1,000 population increased 14.3% between 2009 and 2013 at 134.7/1,000 in 2013 compared to 117.9/1,000 in 2009 (Figure 19).
- Patients 50 and over made up 61.1% of all the EMS service calls with the 80+ age group making up 19%, the highest percentage of all age groups.
- The 80+ age group also had the highest rate per 1,000 population (Figure 22) at 633.2 in 2013, 2.2 times higher than the second highest age group(70 to 79, 285.5/1,000 population).
- The 20 to 29 and 50 to 59 age groups had the biggest rate increases between 2009 and 2013 at 80.9/1,000 and 134.6/1,000 population, respectively, with both age groups showing just over a 19% rate increase (Figure 21).

- Call frequency was similar for Males and Females by age group except for the 60 to 69, 70 to 79, and 80+ age groups which had more females than males.
- Rates by age and gender were similar between males and females with females having higher rates than males in the 70 to 79 and 80+ age groups for all five years ([Figure 23, 24](#)).
- The majority of the services calls for all 5 years reported their patient racial group as White (70.9%) followed by Black/African American (10%) and American Indian/Alaska Native (5.1%).
- Black/African Americans (167.4/1,000 population) had the highest rate per 1,000 population followed by the White (122.4/1,000 population) racial group in 2013 ([Figure 20](#)). Pacific Islanders have a very small population percentage therefore the rate for that group may not be stable.

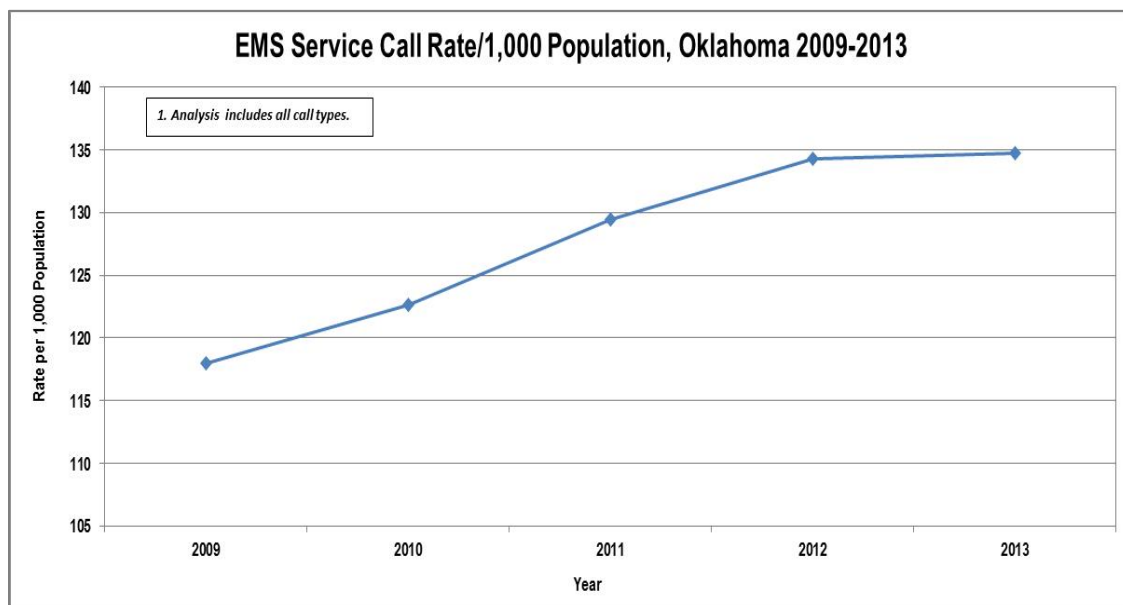


Figure 19: EMS service calls by rate, Oklahoma 2009–2013.

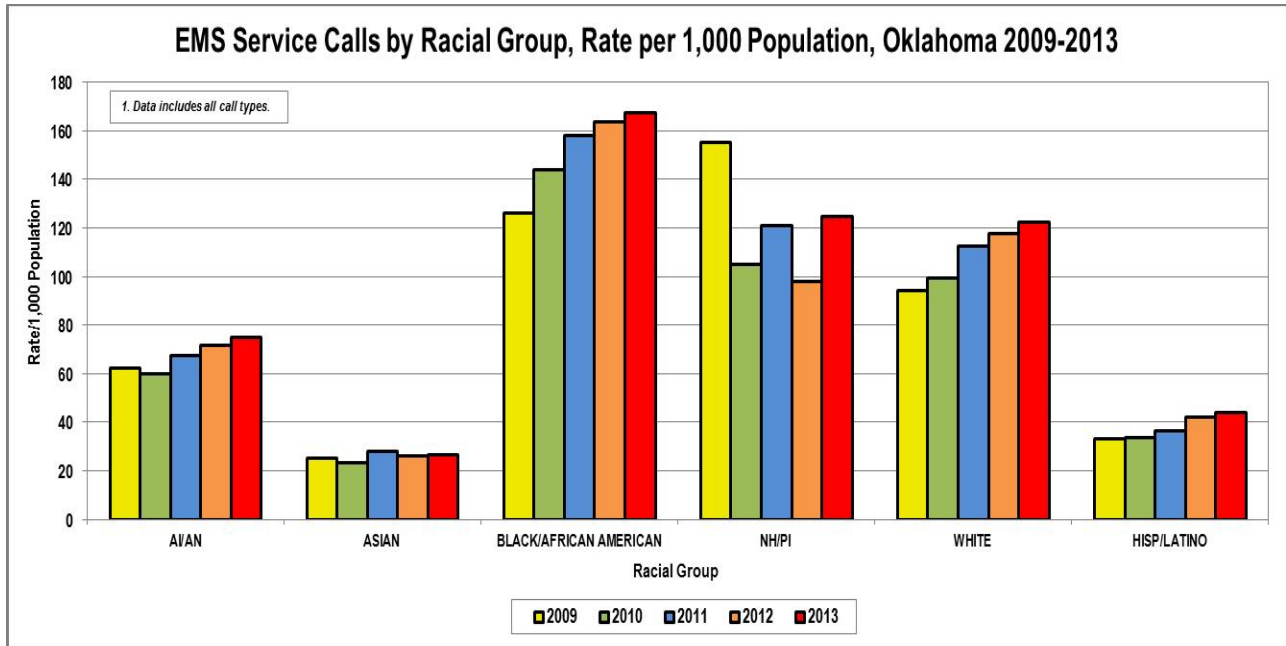


Figure 20: EMS service calls by racial group, Oklahoma 2009–2013.

Note: NH/PI racial group has a very small population in Oklahoma. Data can be affected by small changes therefore use caution interpreting the rate for this group.

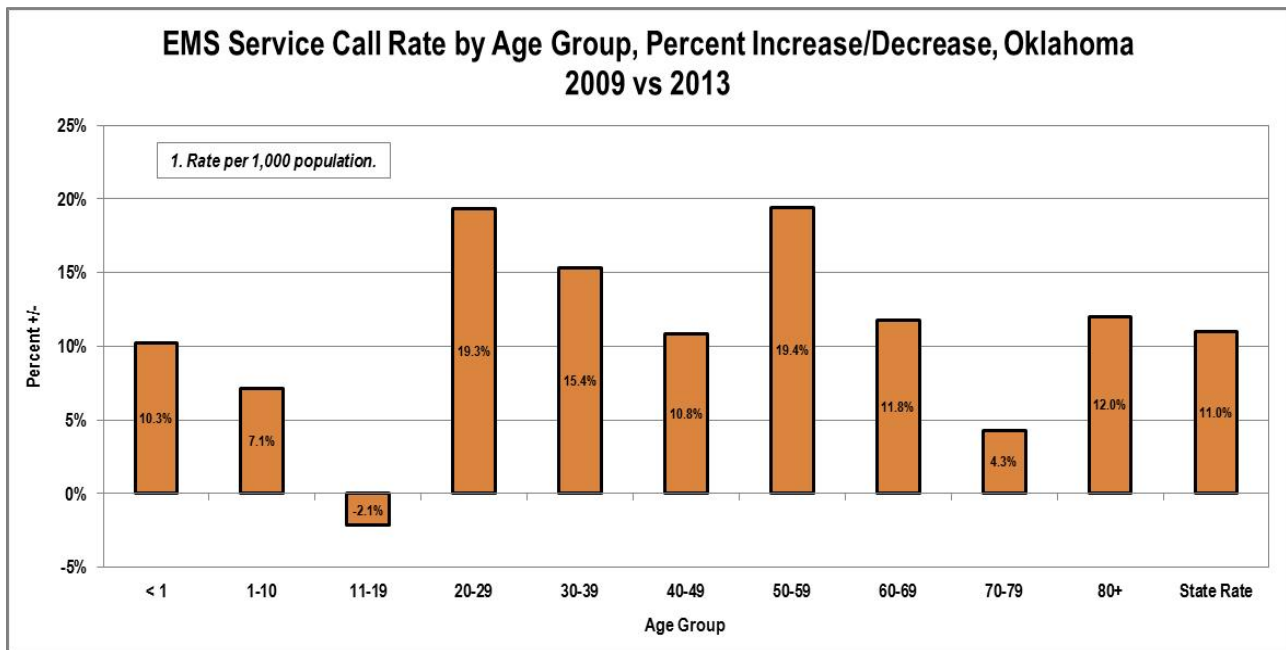


Figure 21: EMS service calls by age and percentage increase/decrease, Oklahoma 2009–2013.

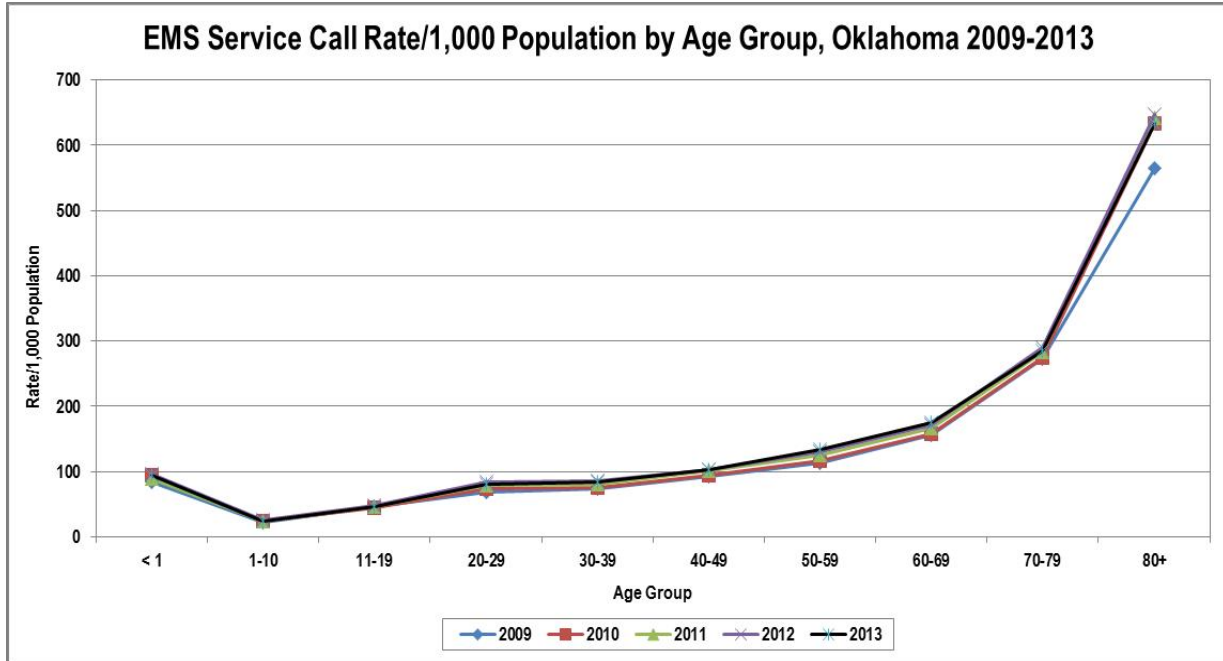


Figure 22: EMS service calls by age and gender, Oklahoma 2009–2013.

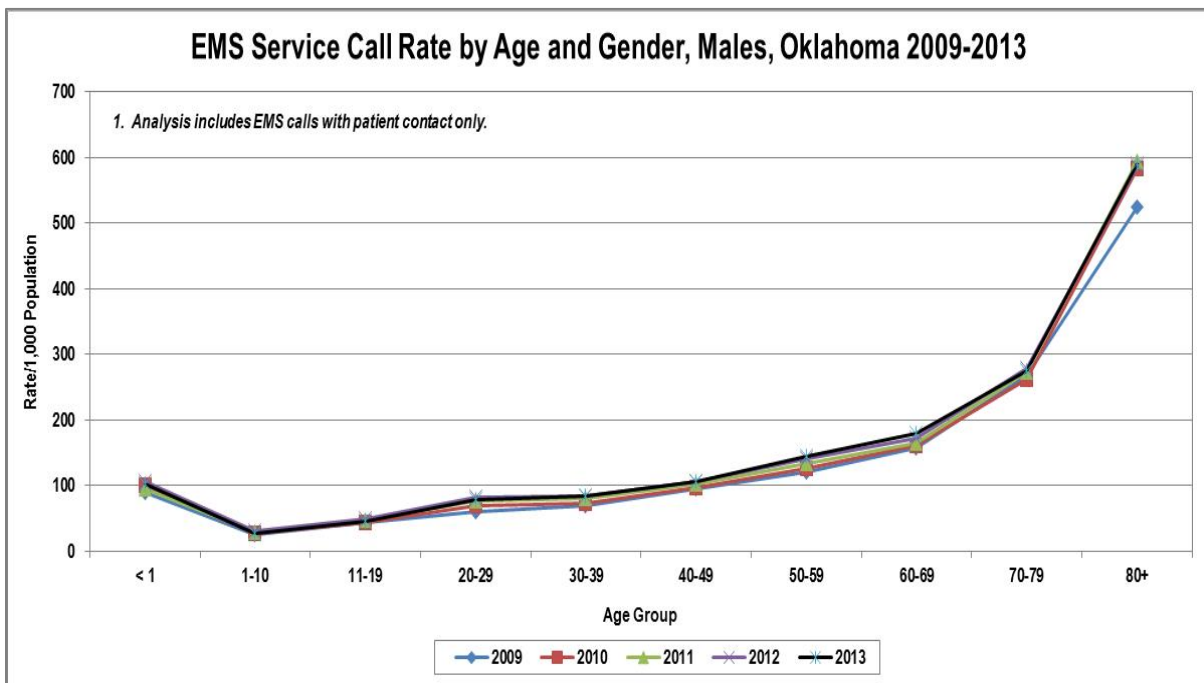


Figure 23: EMS service call rate by age and gender, Males, Oklahoma 2009–2013.

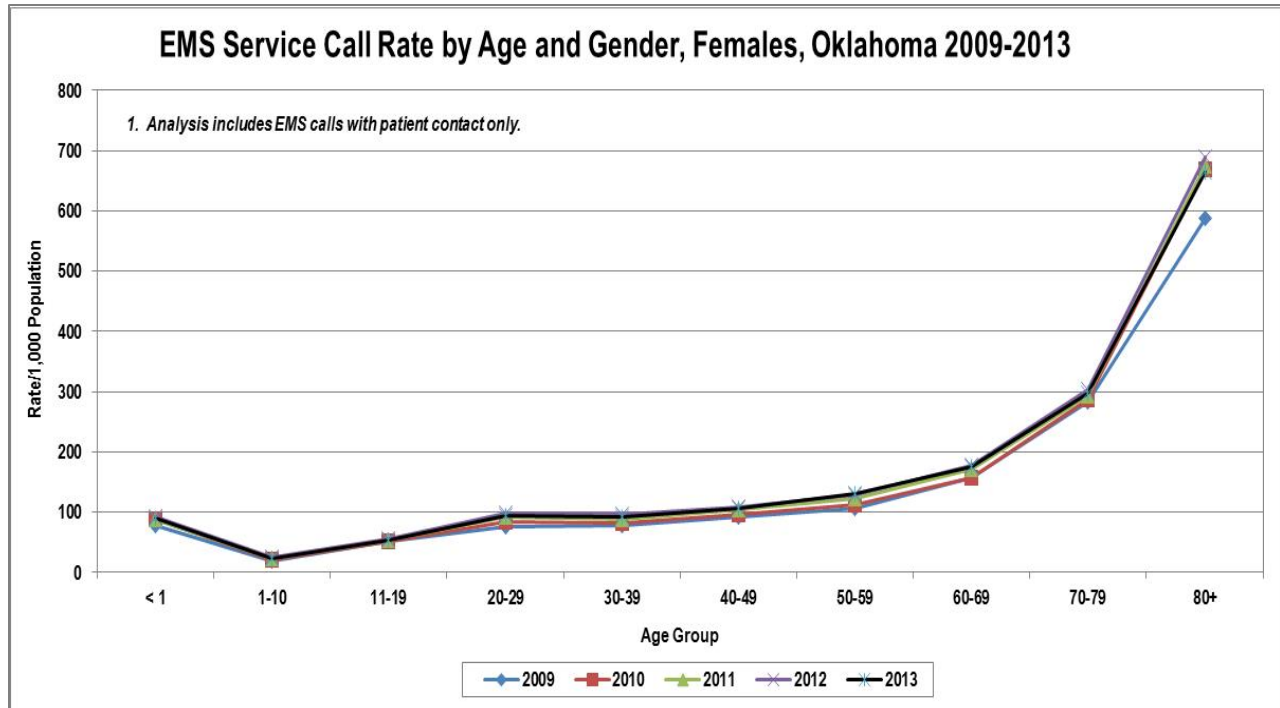


Figure 24: EMS service call rate by age and gender, Females, Oklahoma 2009–2013.

Run Times for EMS Service Calls in Oklahoma—Air and Ground Services

Run times in Oklahoma are effected by several factors including geography, level of service, urban areas versus rural areas, and the type of EMS agency (air vs. ground) requested. Oklahoma has all the above factors listed and the following statistics should be interpreted with these factors in mind. *Response Time* is defined as the time interval between the time the ambulance was dispatched and the time the ambulance arrived on scene. *Scene Time* is defined as the time interval between the time the ambulance arrived on scene and the time the ambulance left the scene. *Total Time* is defined as the time interval between the time the ambulance was dispatched and the time it reached its destination (ex. hospital, nursing home). Also, because of the differing nature of air and ground services, run times will be shown separately for each type of EMS agency (Figure 25, Figure 124). Fixed Wing aircraft have been analyzed separately from the rotor wing aircraft due to the unique circumstances under which they are used.

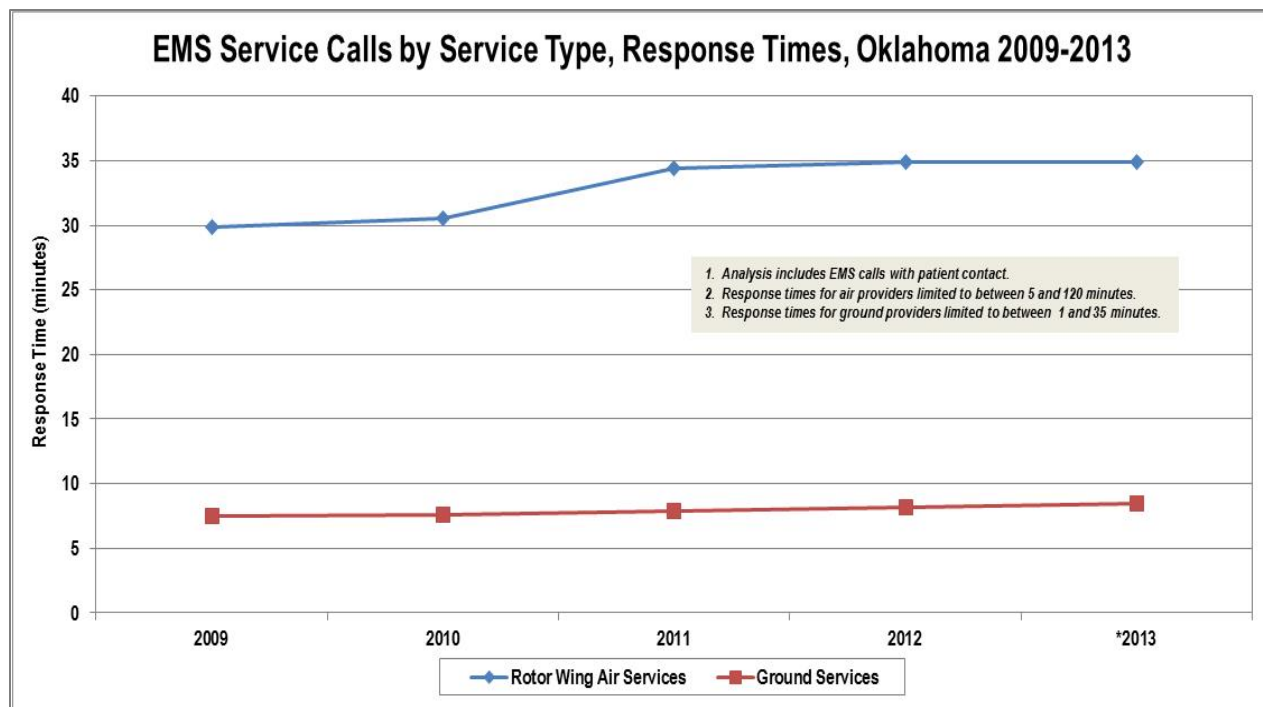
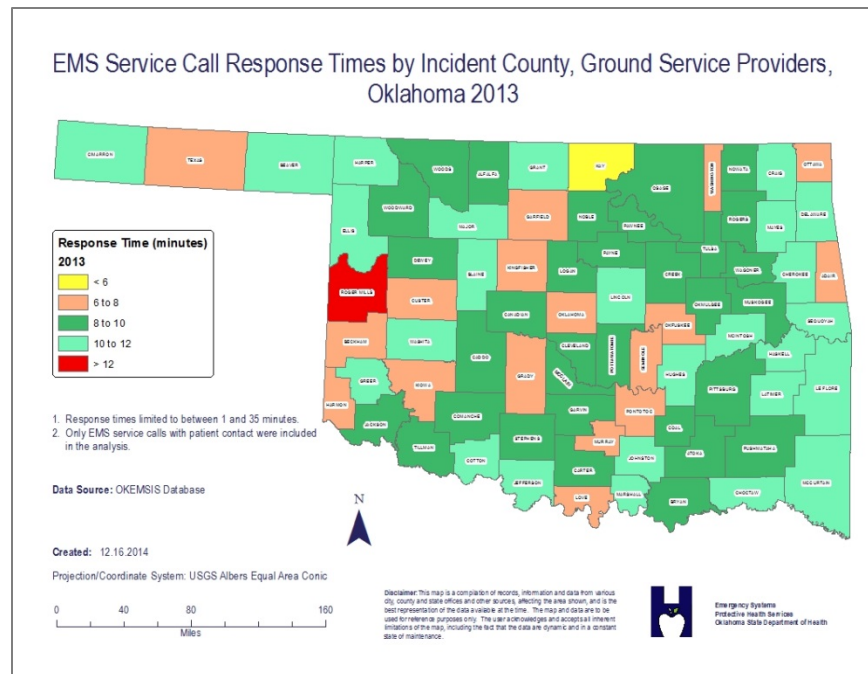


Figure 25: EMS service calls response time by service type, air vs ground service providers, Oklahoma 2009–2013.

EMS Run Times for Ground Services (Excludes “No Patient Contact” Calls)

- The overall average **response time** for Oklahoma ground EMS providers in 2013 was 8.5 minutes ([Map 5](#)), an 11.8% increase compared to 2009 (7.5 minutes).
- Roger Mills County had the longest response time at 13.7 minutes followed by Sequoyah County at 12.9 minutes in 2013.
- Kay County (5.7 minutes) had the shortest response time followed by Murray County (6.3 minutes) in 2013.
- Region 5 (9.9 minutes) had the longest response time followed by Region 4 (9.4 minutes).
- Region 8 had the shortest response time followed by Region 1 in 2013 (7.7 and 8.2 minutes, respectively).
- Mutual Aid (13.7 minutes) had the longest response times for call types followed by inter-facility transfers (12.9 minutes).

- 911 responses (7.9 minutes) had the shortest response times followed by medical transports (11.3 minutes).
- The overall average **scene time** for ground EMS providers in 2013 was 19.7 minutes ([Map 6](#)), a 6.1% increase compared to 2009 (18.5 minutes).
- Tulsa County had the longest scene time in 2013 at 23.5 minutes followed by Oklahoma County at 22.5 minutes.
- Tillman County (11.9 minutes) had the shortest scene time followed by Greer County (13.3 minutes) in 2013.
- Region 7 (Tulsa County, 23.5 minutes) had the longest scene time followed by Region 8 (Oklahoma County, 22.5 minutes).
- Region 3 (15.9 minutes) had the shortest scene time followed by Region 1 (16.3 minutes) in 2013.
- Inter-facility transfers (20.9 minutes) had the longest scene times for call types followed by 911 responses (19.6 minutes).
- Intercepts (15.9 minutes) had the shortest scene times followed by mutual aid (17.5 minutes).
- The overall average **total time** for ground EMS providers in 2013 was 46.6 minutes, a 10.1% increase compared to 2009 (41.9 minutes).
- Cotton County had the longest total time in 2013 at 71.8 minutes followed by Alfalfa County at 70.5 minutes ([Map 7](#)).
- Beckham County (30.1 minutes) had the shortest total time followed by Kay County (30.6 minutes) in 2013.
- Region 4 (50.4 minutes) had the longest total time followed by Region 7 (Tulsa County, 49.8 minutes).
- Region 3 (40.2 minutes) had the shortest total time followed by Region 1 (41.0 minutes) in 2013.
- Inter-facility transfers (62.2 minutes) had the longest total times for call types followed by mutual aid (54.7 minutes).
- 911 responses (43.7 minutes) had the shortest total times followed by intercepts (46.7 minutes).



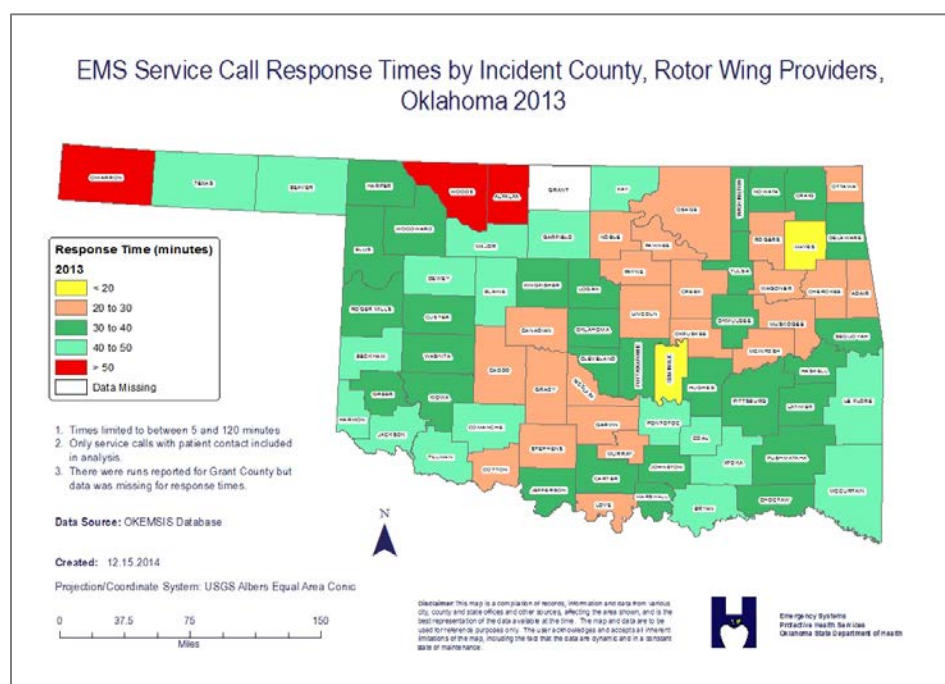
Map 5: EMS service call response times by incident county, ground services, Oklahoma 2013.

EMS Run Times for Rotor Wing Air Services (Excludes “No Patient Contact” Calls)

- The overall average **response time** for Oklahoma for rotor wing air EMS providers in 2013 ([Map 8](#)) was 34.9 minutes, a 14.3% increase compared to 2009 (29.9 minutes).
- In counties with 20 or more rotor wing service calls in 2013, Woods County had the longest response time at 53.2 minutes followed by Garfield County at 50.6 minutes (Map 8).
- Mayes County (18.8 minutes) had the shortest response time followed by Seminole County (19.7 minutes) in 2013.
- Region 1 (43.1 minutes) had the longest response time followed by Region 5 (39.5 minutes).
- Region 4 had the shortest response time followed by Region 2 in 2013 (28.4 and 29.7 minutes, respectively).
- Inter-facility transfers (38 minutes) had the longest response times for call types followed by medical transports (30.3 minutes).

- 911 responses (28.6 minutes) had the shortest response time. Other call types were not analyzed due to low numbers.
- The overall average **scene time** for rotor wing air EMS providers in 2013 was 31 minutes which was consistent when compared to 2009 (30.4 minutes).
- In counties with 20 or more rotor wing service calls in 2013, Texas County had the longest scene time in 2013 at 54.6 minutes followed by Oklahoma County at 47.1 minutes ([Map 9](#)).
- Ottawa County (16.9 minutes) had the shortest scene time followed by Love County (18.5 minutes) in 2013.
- Region 8 (Oklahoma County, 47.1 minutes) had the longest scene time followed by Region 7 (Tulsa County, 37.3 minutes).
- Region 4 (24.9 minutes) had the shortest scene time followed by Region 2 (26.8 minutes) in 2013.
- Inter-facility transfers (36.2 minutes) had the longest scene times among call types followed by medical transports (30.3 minutes).
- 911 responses (17.4 minutes) had the shortest scene times followed by intercepts (23.9 minutes).
- The overall average **total time** for rotor wing air EMS providers in 2013 was 102.6 minutes, a 9% increase compared to 2009 (93.4 minutes).
- In counties with 20 or more rotor wing service calls in 2013, Harper County had the longest total time in 2013 at 149.2 minutes followed by Ellis County at 147.8 minutes ([Map 10](#)).
- Wagoner County (62.2 minutes) had the shortest total time followed by Mayes County (65.2 minutes) in 2013.
- Region 1 (129.8 minutes) had the longest total time followed by Region 5 (116.5 minutes).
- Region 4 (79.9 minutes) had the shortest total time followed by Region 6 (84.1 minutes) in 2013.
- Inter-facility transfers (114.4 minutes) had the longest total times among call types followed by medical transports (91.1 minutes).

- Intercepts (69.4 minutes) had the shortest total times followed by 911 responses (76.7 minutes).



Map 8: EMS service call response times by Incident County, rotor wing air services, Oklahoma 2013.

Fixed Wing Air Service Providers

Fixed wing EMS providers performed less than 1% of the total EMS service calls (ground and air) between 2009 and 2013 while only performing 1.5% of all the air EMS service calls during the same period. Due to the small number of fixed wing service calls and variant nature of those calls analysis was limited.

- There were a total of 703 EMS service calls performed with fixed wing aircraft during the 5 year time period with 80.4% occurring in 2012 and 2013.
- Inter-facility transfers made up 86.2% of the fixed wing service calls followed by medical transports (12.7%).
- Approximately 99% of the fixed wing service calls were treated and transported.
- 35.1% had a destination of “care transfer to another ambulance service”, 17.2% were delivered to an out-of-state facility not listed in

the OKEMIS database, and 21.8% were delivered to Trade Wind Airport, an airfield in Amarillo, Texas. The remaining fixed wing service calls were delivered to various hospitals and locations inside the State of Oklahoma and outside of the state.

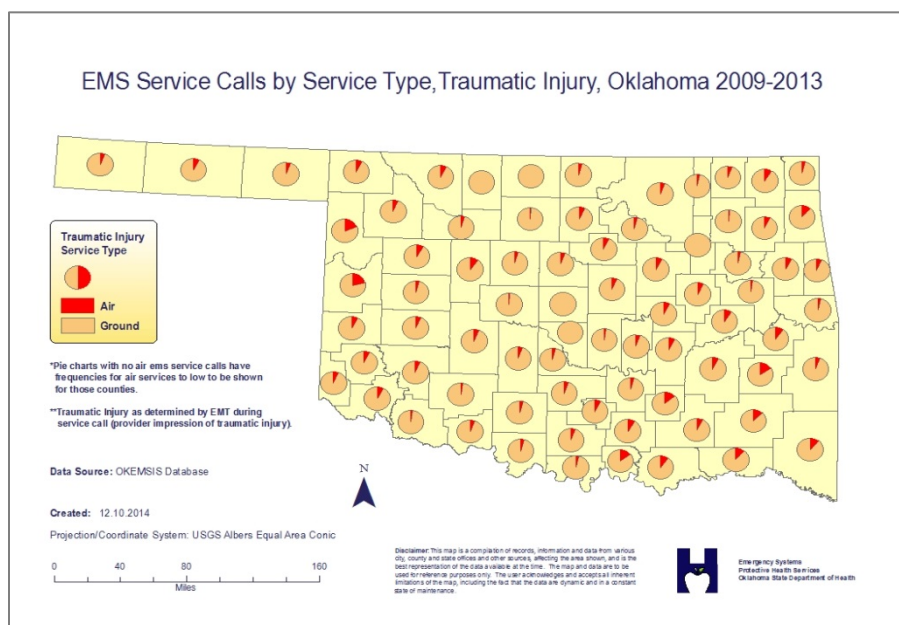
- Approximately 61% had an incident county of Texas followed by Tulsa County (15.5%) and Oklahoma County (10.7%).
- Run times were not calculated due to the variant nature of fixed wing service calls.

EMS Service Calls: Traumatic Injury

Traumatic Injury in the pre-hospital setting is defined as any injury caused by an extrinsic (outside) agent, force, or mechanism. The following statistics were calculated by analyzing EMS service calls with a first or second provider impression of “traumatic injury” as assessed (using the above definition) by the EMT during the service call.

- Traumatic injuries made up 15.9% of the total EMS service call volume between 2009 and 2013 ([Figure 26](#), [Map 4](#)).
- Falls (34.4%) followed by Motor Vehicle Traffic Accidents (16.1%) and Assault (5.3%) were the major causes of traumatic injury during the specified time period ([Figure 27](#)).
- The mechanism of injury field was missing or a null value almost 61% of the time with blunt (32.1%) having the highest non-null value percentage over the 5 year period. Because of the high percentage of null values, analysis of this field could not be fully explored ([Figure 28](#)).
- Just over 31% of all traumatic injury service calls occurred on Friday and Saturday between 2009 and 2013 with 45.4% occurring on Thursday, Friday, and Saturday ([Figure 31](#), [Figure 121](#)).
- Sunday had the lowest percentage for traumatic injury calls at 13.4%.
- Nineteen percent of Traumatic injury calls occurred between 3:00pm and 6:00pm with 52.4% occurring between noon and 9:00pm ([Figure 32](#), [Figure 120](#)).

- St. Francis Hospital (7.2%) received the highest percentage of traumatic injuries from EMS service providers during the 5 year period followed by OU Medical Center (6.8%) and St. John Medical Center (5.8%, [Figure 33](#)).
- St. Anthony Hospital (69%) showed the biggest increase in traumatic injury call volume between 2009 and 2013 followed by Integris Southwest Medical Center (31%) and Mercy Hospital–OKC (26%, [Figure 34](#)).



Map 4: EMS service calls by service type, traumatic injury, Oklahoma 2009–2013.

Traumatic Injury– Ground EMS Providers

- Traumatic injuries made up 15.7% of the total EMS service call volume for Ground EMS providers between 2009 and 2013 ([Figure 29](#), [Map 4](#)).
- Traumatic injury calls on a Thursday, Friday, or Saturday 45.1% of the time for ground EMS providers with Saturday (15.6%) having the highest percentage followed by Friday (15.6%, [Figure 118](#)).
- Traumatic Injury calls for ground service providers occurred 52.2% of the time between 12:00pm and 9:00pm with the 3:00pm to 6:00pm time group having the highest percentage (19%, [Figure 119](#)).

- Falls (35.2%) followed by Motor Vehicle Traffic Accidents (15.8%) and Assault (7.7%) were the major causes of traumatic injury during the specified time period for ground EMS providers ([Figure 30](#)).
- St. Francis Hospital (6.8%) received the highest percentage of traumatic injuries from ground EMS service providers during the 5 year period followed by OU Medical Center (6.1%) and St. John Medical Center (5.7%, [Figure 35](#)).

Traumatic Injury– Air EMS Providers

- Traumatic injuries made up 25.9% of the total EMS service call volume for air EMS providers during the same period ([Figure 29](#), [Map 4](#)).
- Traumatic injury calls occurred on a Friday, Saturday, or Sunday 49.6% of the time for air EMS providers with Saturday (18.58%) having the highest percentage followed by Sunday (16.2%, [Figure 118](#)).
- Traumatic Injury calls for air service providers occurred 56.9% of the time between 12:00pm and 9:00pm with the 3:00pm to 6:00pm time group having the highest percentage (20.8%, [Figure 119](#)).
- Motor Vehicle Traffic Accidents (25.4%) followed by falls (11%) and Motor Vehicle Non–Traffic Accidents (5.81%) were the major causes of traumatic injury during the specified time period for air EMS providers ([Figure 30](#)).
- 56.7% of all traumatic injury service calls for air EMS providers were delivered to 3 hospitals: OU Medical Center (29.1%), St. Francis Hospital (18.5%), and St. John Medical Center (9.2%, [Figure 35](#)).

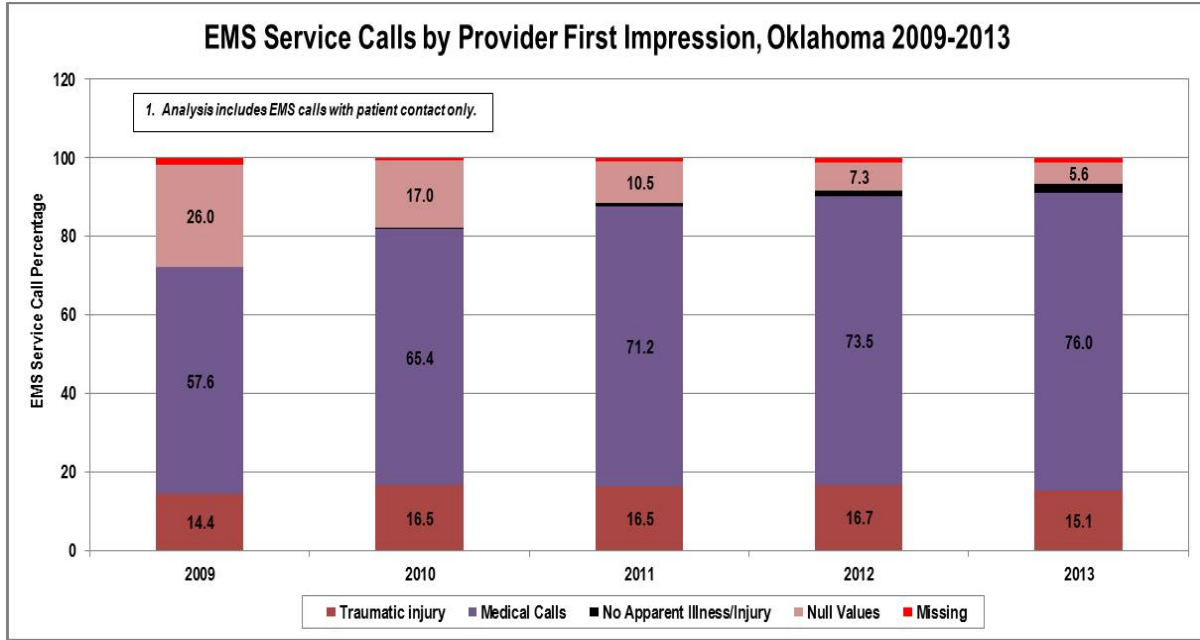


Figure 26: EMS service calls by provider first impression, Oklahoma 2009–2013.

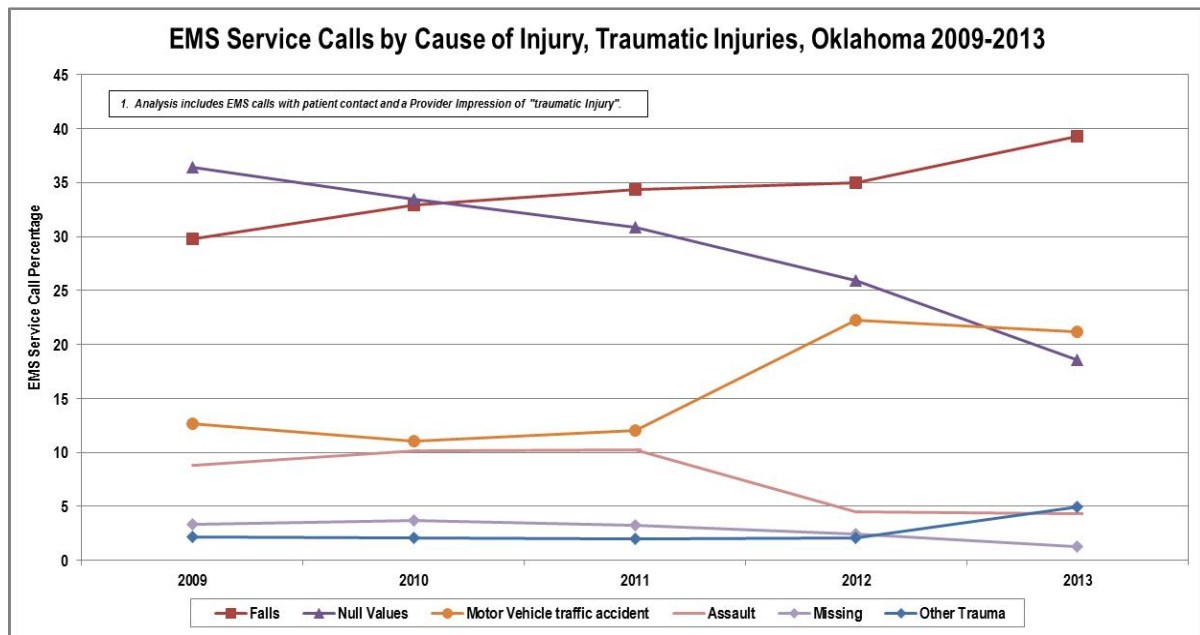


Figure 27: EMS service calls by cause of injury, traumatic Injuries, Oklahoma 2009–2013.

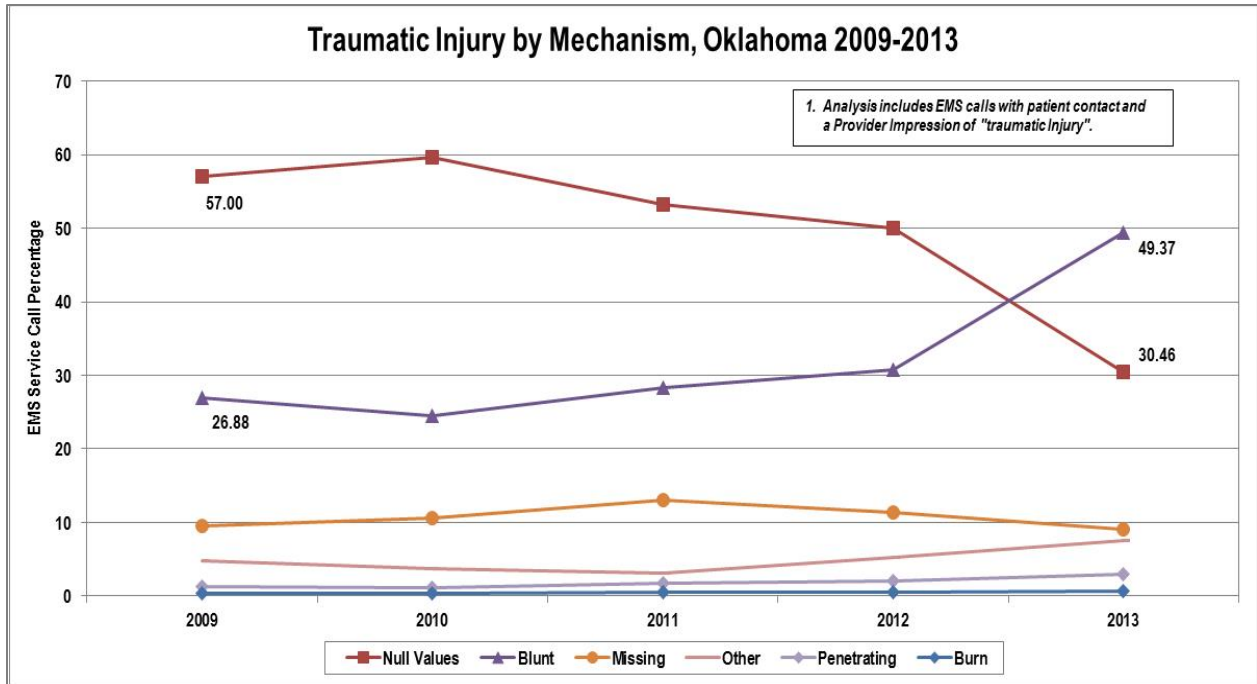


Figure 28: EMS service call rate by mechanism of injury, traumatic injury, Oklahoma 2009–2013.

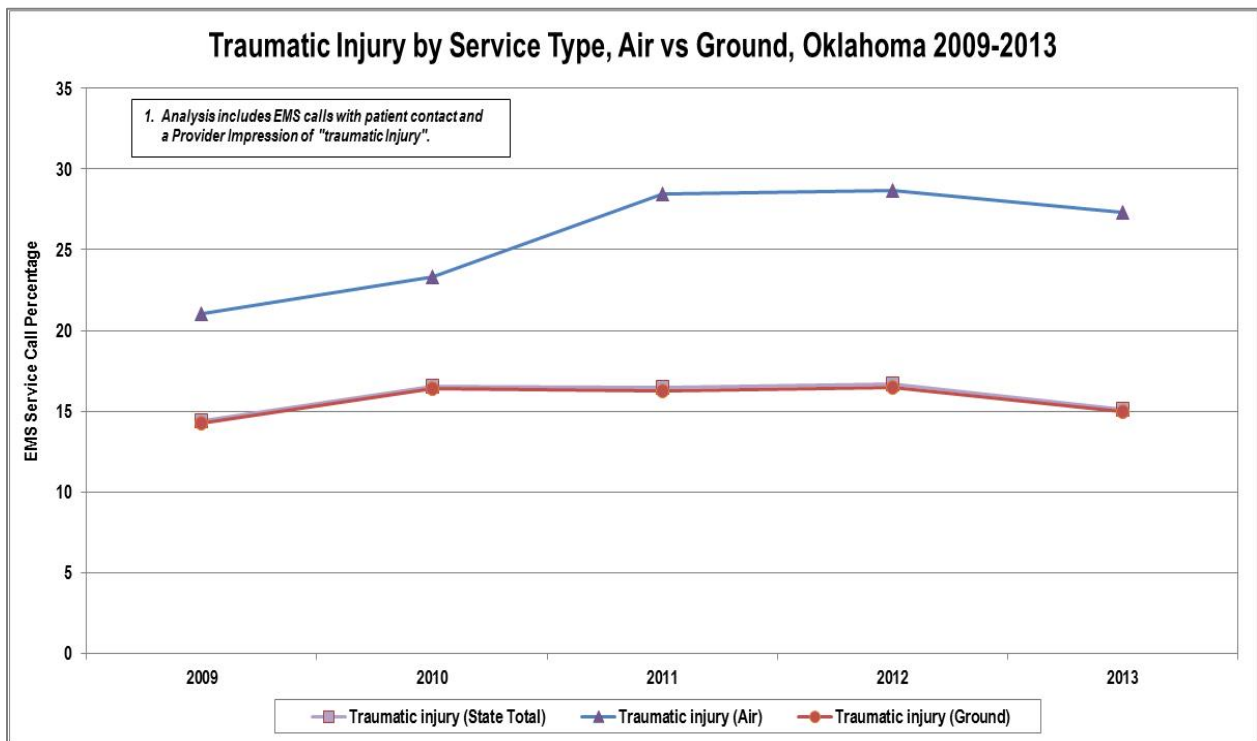


Figure 29: EMS service calls by service type, traumatic injury, Oklahoma 2009–2013.

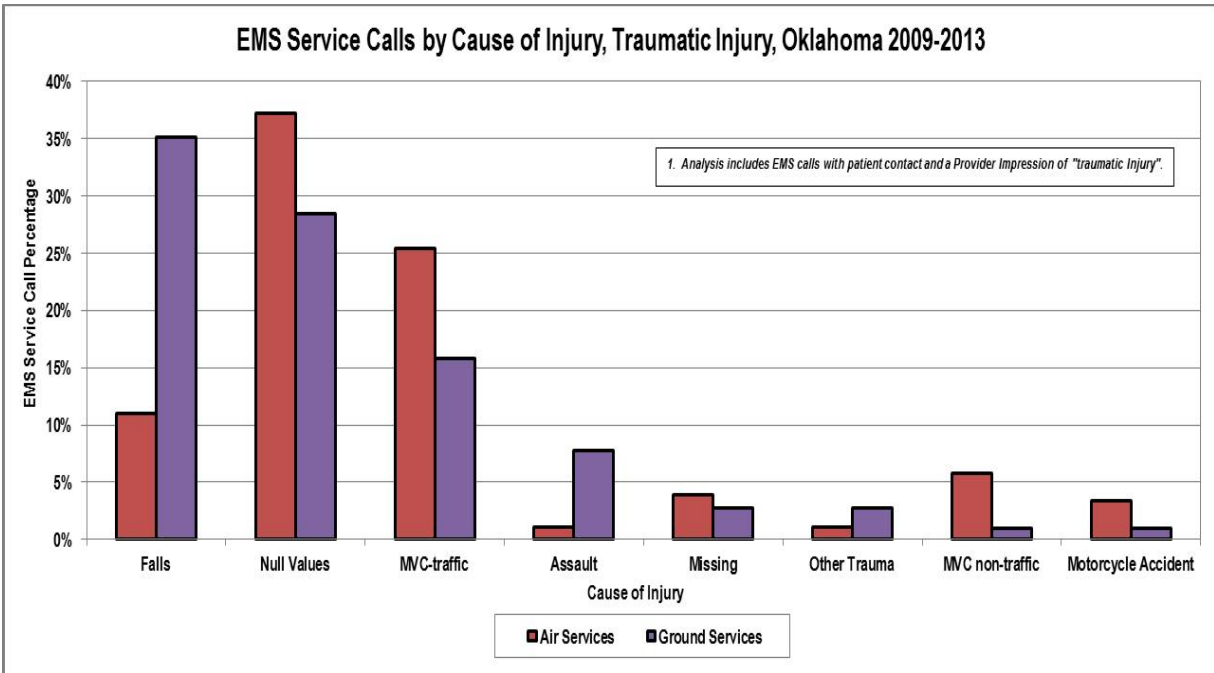


Figure 30: EMS service calls by traumatic injury and cause of injury, air vs ground, Oklahoma 2009–2013.

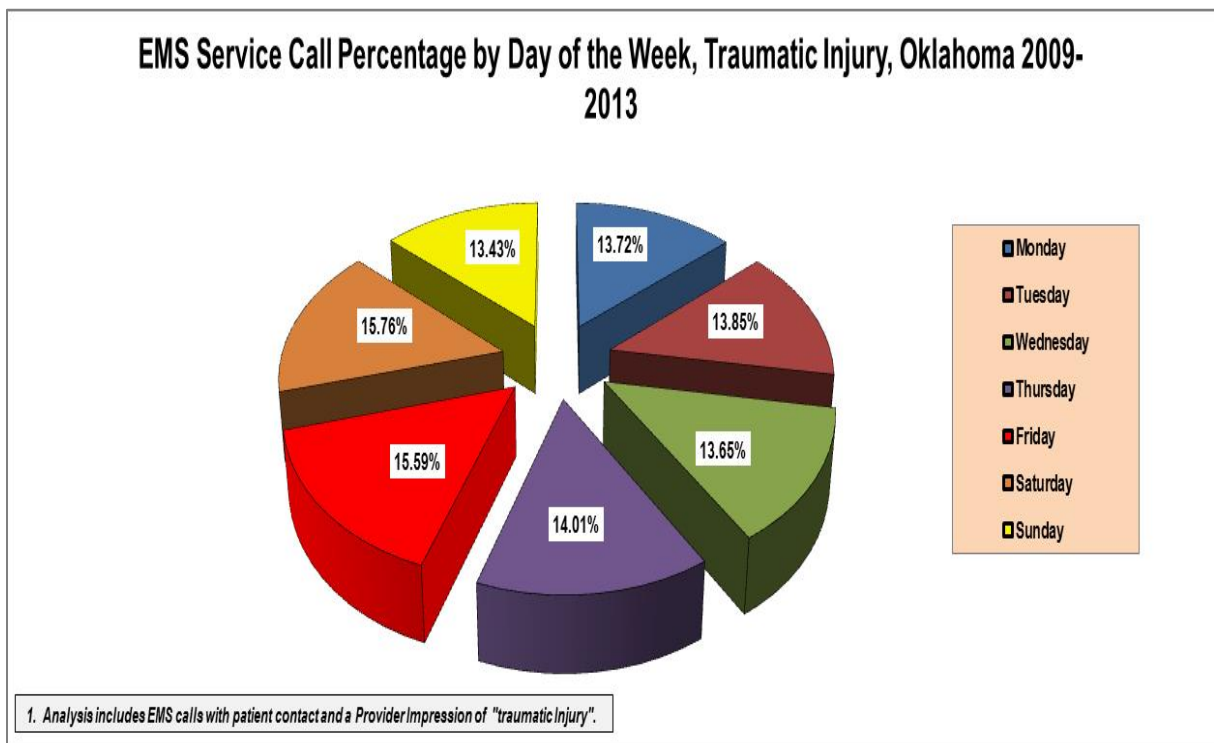


Figure 31: EMS service calls by day of the week, traumatic injury, Oklahoma 2009–2013.

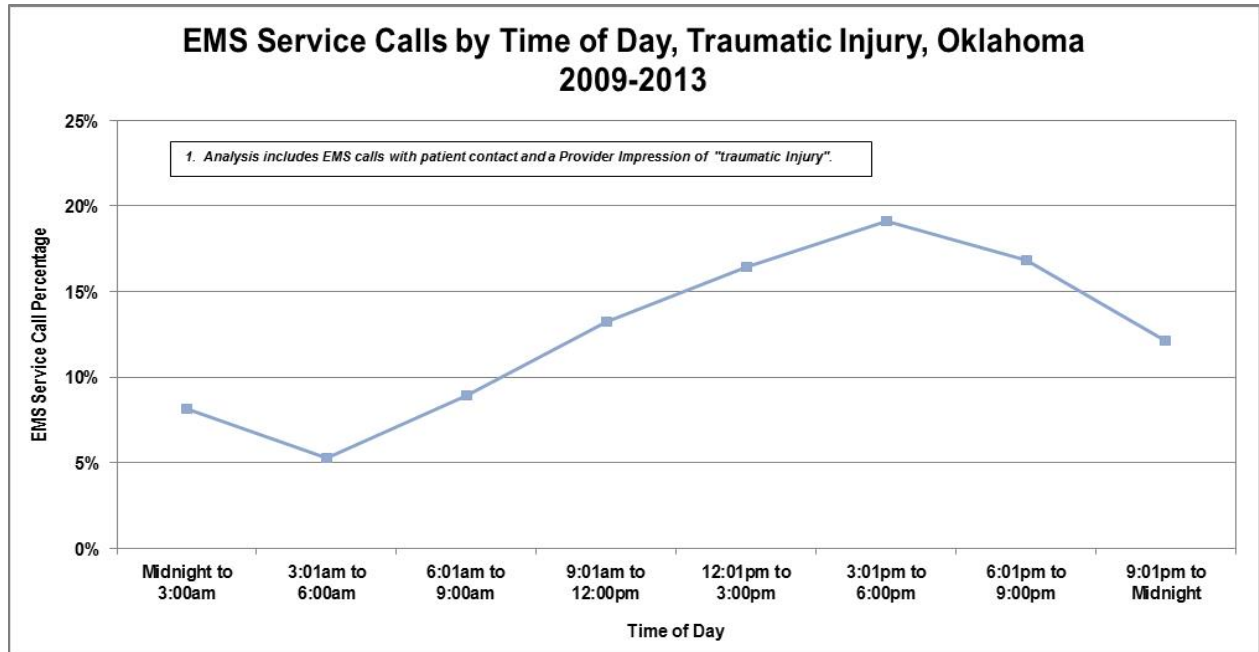


Figure 32: EMS service calls by time of day, traumatic injury, Oklahoma 2009–2013.

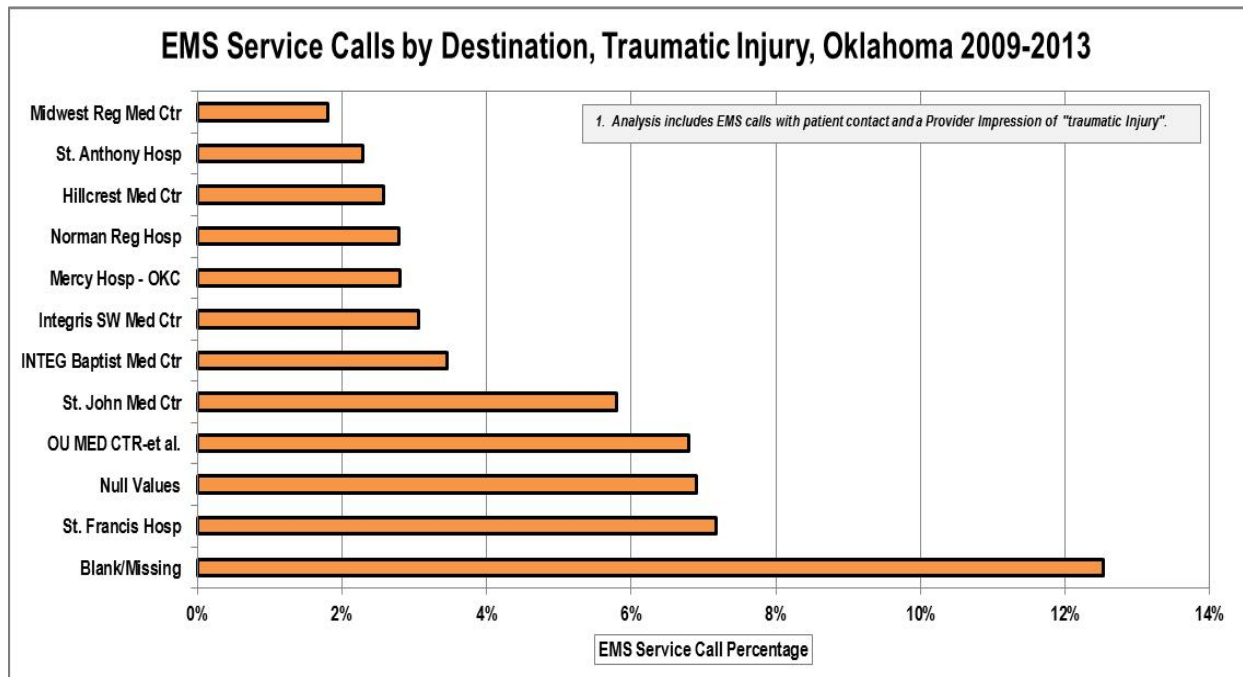


Figure 33: EMS service calls by traumatic injury and destination, Oklahoma 2009–2013(not all destinations shown).

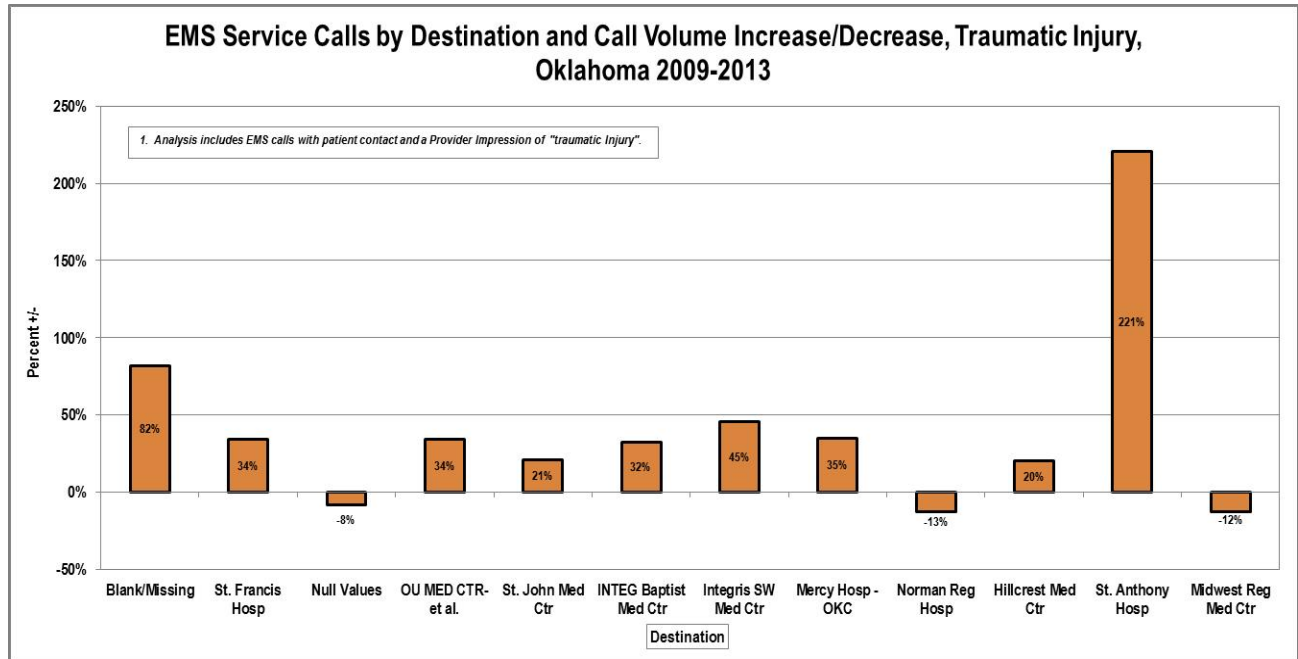


Figure 34: EMS service calls by traumatic injury and destination, Oklahoma 2009–2013 (not all destinations shown).

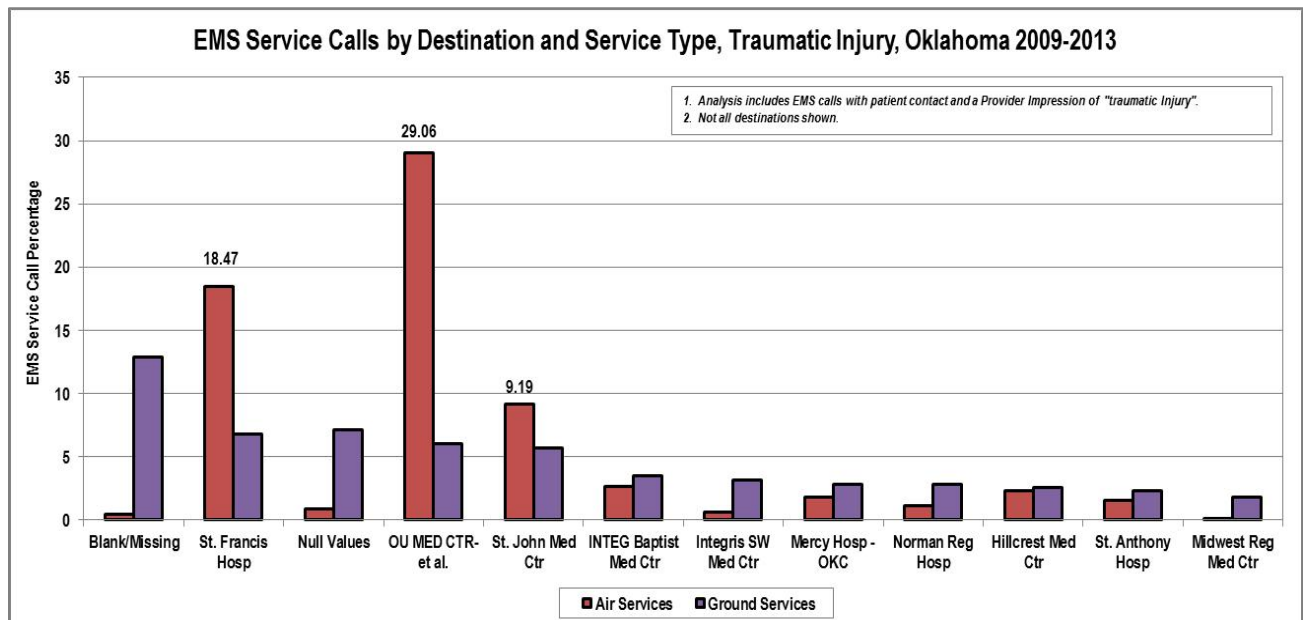


Figure 35: EMS service calls by destination and service type, traumatic injury, Oklahoma 2009–2013.

EMS Service Calls by Region

Region 1

- Region 1 saw a 13.3% increase in the number of EMS calls from 2009 to 2013, the smallest increase of all the Oklahoma regions ([Figure 36](#), [Figure 122](#)).
- 73.2% of all the service calls occurred in super rural areas with another 26.6% occurring in rural areas ([Figure 37](#)).
- Garfield County (26.6%) had the highest percentage of calls in Region 1 followed by Custer (15.9%), Beckham (10.3%), and Woodward (9.4%) counties ([Table 3](#)).
- 25% of the service calls occurred in the City of Enid followed by Clinton (9.3%) and Woodward (8.4%, [Table 4](#)).
- Ninety-five percent of all service calls were transported by ground with 4.8% transported by an air service.
- Life EMS (25.6%) responded to the highest percentage of calls followed by Sinor EMS–Clinton (9.5%, [Table 5](#)) in Region 1
- The majority of calls occurred between 9:00am and 9:00pm ([Figure 38](#)) with a higher occurrence of calls between the months of May and July.
- 15.8% of the service calls occurred on Friday with Sunday having the lowest percentage (12.8%).
- 67.92% were 911 calls followed by inter-facility transfers (15.8%, [Figure 39](#)).
- 74.5% were treated and transported followed by patient refusals (8%, [Figure 40](#)).
- 63.1% of all the service calls for Region 1 were in the 50+ age groups with the 80+ age group having the highest percentage (22.3%, [Figure 41](#)).
- 48.6% were female with 44.4% being male (6.9% unknown).
- 75.9% of the patients were reported as White followed by Hispanic (5.1%), American Indian/Alaska Native (3.4%) and Black/African American (2.5%, [Figure 42](#)).

- 37.5% of the EMS service calls with patient contact had an incident location type of “Home/Residence” followed by “Healthcare Facility” (35.30%) and “Street or Highway” (11.8%).
- Almost 84% of all Region 1 EMS service calls with patient contact had a destination type of “hospital” followed by “nursing home” (7.5%).
- Saint Mary’s Regional Medical Center received the highest percentage of treated and transported calls followed by Integris Bass Baptist Health Center and Integris Clinton Regional Hospital ([Table 6 and 7](#)).
- For destinations that received greater than 1,500 total service calls from Region 1 between 2009 and 2013, Mercy Hospital–Oklahoma City had the highest percentage increase at 101.7% followed by OU Medical Center (all campuses) at 57.5% ([Table 6](#)).
- “Care Transfer to Another Ambulance Service” showed a 358.6% increase but is a generic destination code and is associated with a call type of “Intercept” (no hospital destination for transferring service). The massive increase for this generic code was due to better reporting by EMS providers in the state.
- Sayre Memorial Hospital had the biggest service call volume decrease (–12.7%) followed by Integris Clinton Regional Hospital (–9.2%, [Table 6](#)).
- “Closest facility” was the reason for choosing the destination 34% of the time followed by “patient choice” (28.9%) and “specialty resource center” (10.3%).
- Traumatic Injury made up 19.1% of the total calls in Region 1 from 2009 to 2013 ([Figure 123](#)), the highest among all regions.
- 94.7% of the traumatic injuries in region 1 were transported by a ground provider and 5.3% by air.
- Sixty percent of the traumatic injury service calls occurred in Garfield, Custer, Woodward, and Beckham counties.
- 33.9% of the traumatic injuries were caused by falls followed by Motor Vehicle Traffic Accidents at 21.6% ([Figure 43](#)).

- 62.1% of the traumatic injuries had a mechanism of injury of “blunt” followed by “penetrating” (2.7%) and “burn” (0.7%). 30.9% were missing/null values (Figure 44).

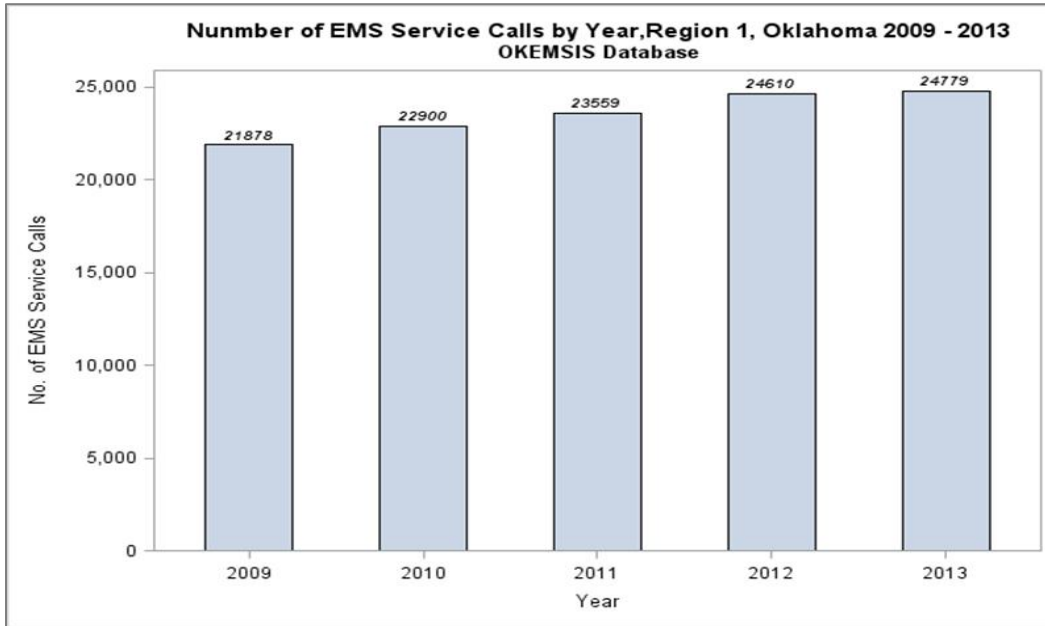


Figure 36: EMS service calls by year, region 1, Oklahoma 2009–2013.

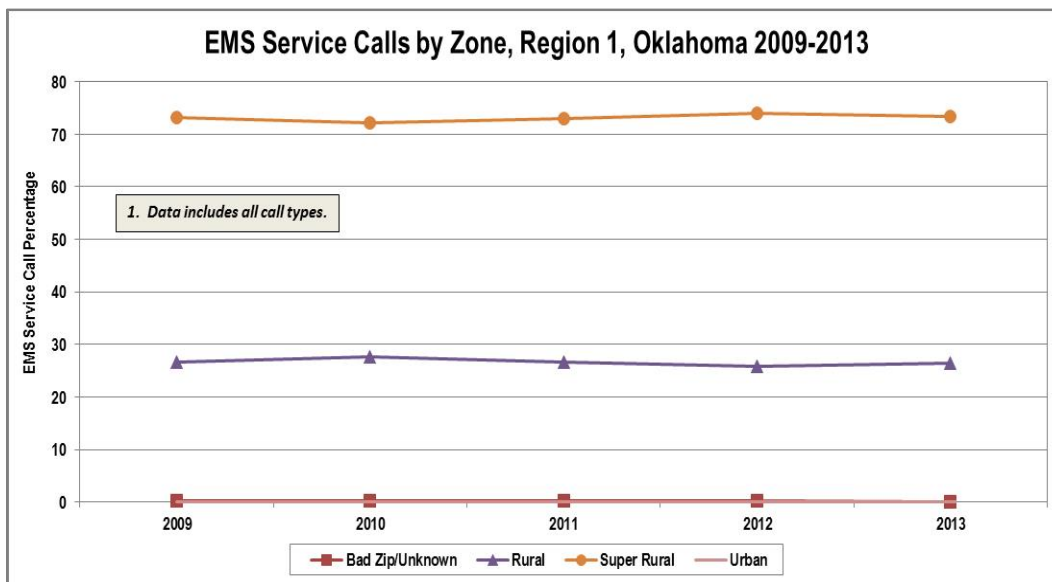


Figure 37: EMS service calls by zone, region 1, Oklahoma 2009–2013.

Table 4: EMS Service Calls by Incident City, Region 1, Oklahoma 2009-2013

*Not All Cities shown.	Year					Total # of Calls	% of Calls
Incident City	2009	2010	2011	2012	2013		
Enid, OK	5,515	5,968	5,910	5,914	6,120	29,427	25.0%
Clinton, OK	2,106	2,343	2,332	1,980	2,181	10,942	9.3%
Woodward, OK	1,969	1,874	1,972	2,080	1,940	9,835	8.4%
Elk City, OK	1,387	1,355	1,545	1,775	2,035	8,097	6.9%
Weatherford, OK	1,136	1,195	1,210	1,354	1,259	6,154	5.2%
Guymon, OK	942	1,091	1,232	1,373	1,388	6,026	5.1%
Alva, OK	836	775	753	973	959	4,296	3.7%
Kingfisher, OK	648	685	814	789	827	3,763	3.2%
Sayre, OK	655	655	662	680	600	3,252	2.8%
Watonga, OK	547	583	565	681	619	2,995	2.5%

1. Data includes all call types.

Table 5: EMS Service Calls by Agency, Region 1, Oklahoma 2009-2013

*Not All Agencies shown.	Year					Total # of Calls	% of Calls
EMS Agency Name	2009	2010	2011	2012	2013*		
Life EMS	5,664	6,196	6,270	5,949	6,101	30,180	25.6%
Sinor EMS-Clinton	2,213	2,421	2,380	2,026	2,104	11,144	9.5%
Woodward County EMS	1,800	1,799	2,172	2,214	2,046	10,031	8.5%
Elk City Fire Department EMS	1,261	1,184	1,371	1,467	1,745	7,028	5.9%
Sinor EMS-Weatherford	1,225	1,256	1,253	1,351	1,222	6,307	5.4%
Guymon Fire Dept Ambulance	833	1,021	1,074	1,142	1,167	5,237	4.5%
Kingfisher Fire & Ambulance Service	673	709	871	816	895	3,964	3.4%
Alva Ambulance Service	742	655	689	856	886	3,828	3.3%
Alfalfa County EMS Inc.	457	464	505	559	654	2,639	2.2%
Major County Ambulance	475	440	433	598	505	2,451	2.1%

1. Data includes all call types.

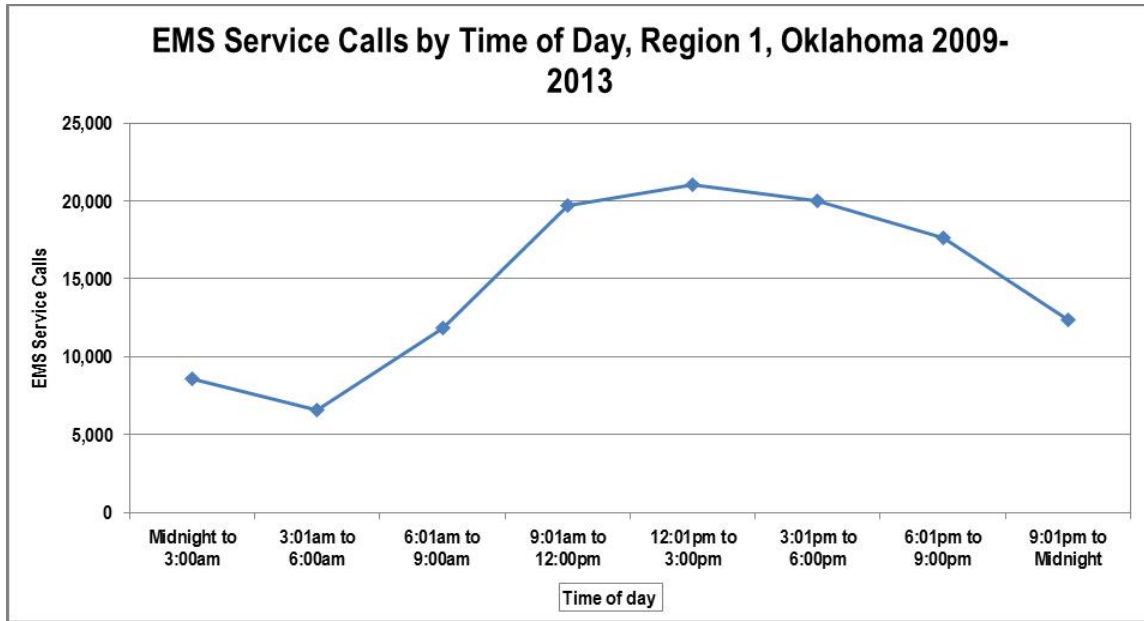


Figure 38: EMS service calls by time of day (all call types), region 1, Oklahoma 2009-2013.

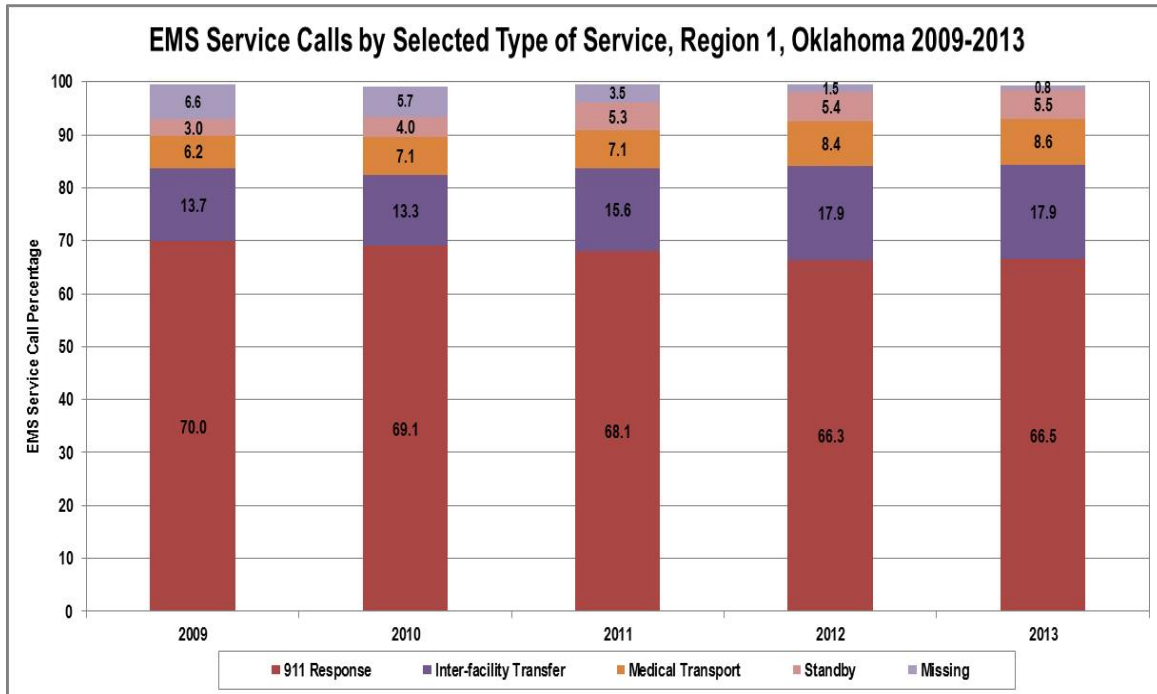


Figure 39: EMS service calls by type of service requested, region 1, Oklahoma 2009-2013.

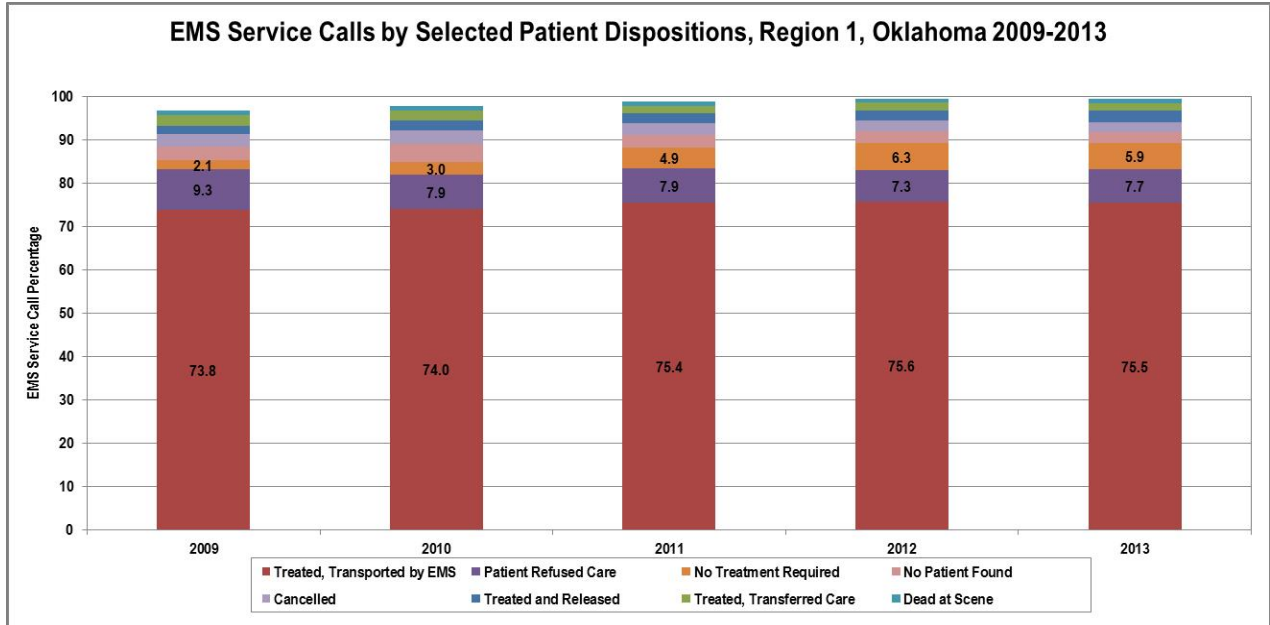


Figure 40: EMS service calls by patient disposition, region 1, Oklahoma 2009–2013.

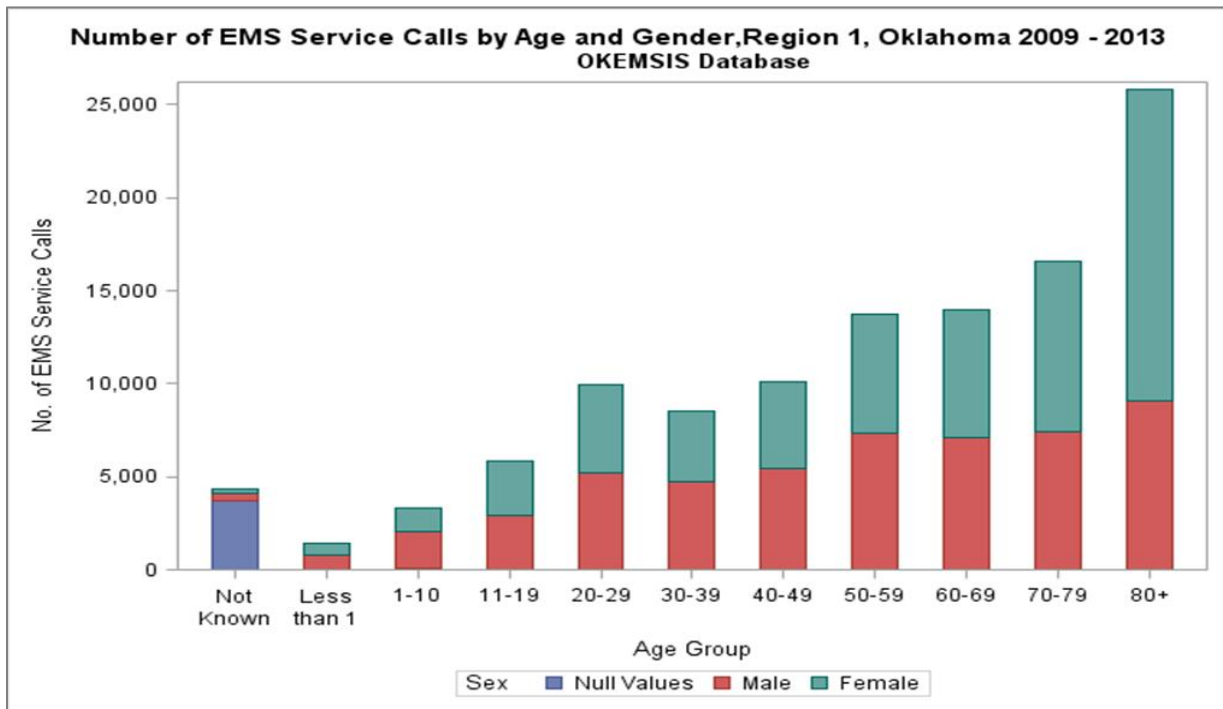


Figure 41: EMS service calls by age and gender, region 1, Oklahoma 2009–2013.

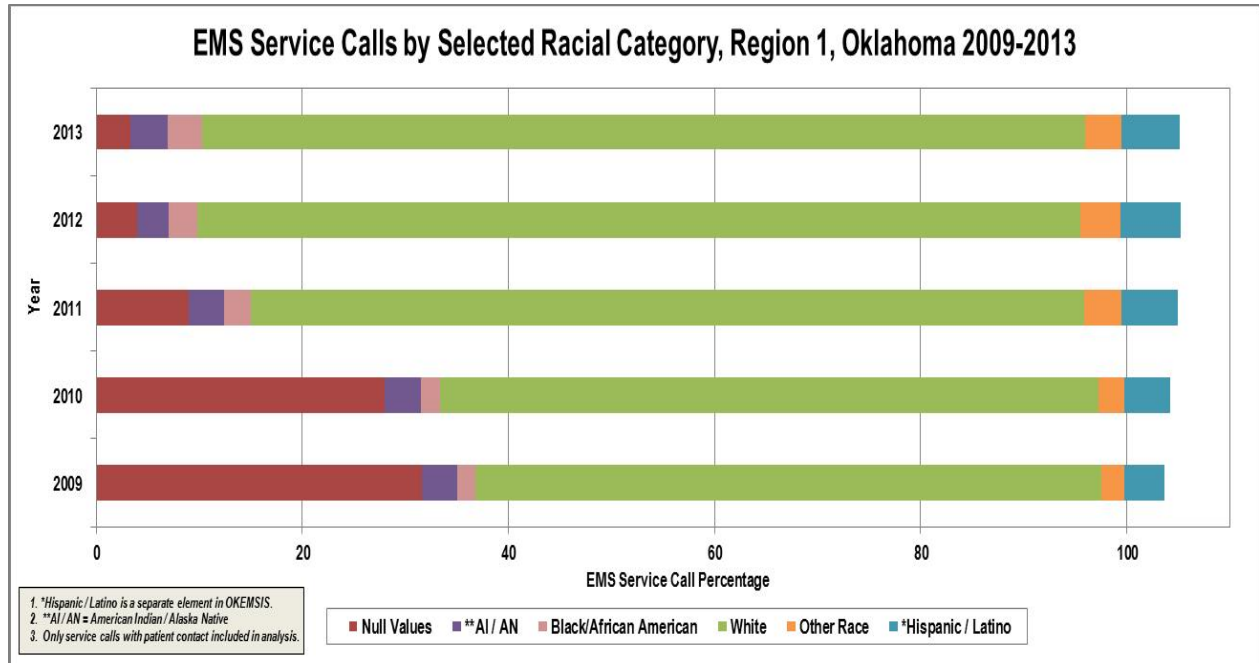


Figure 42: EMS service calls by racial category, region 1, Oklahoma 2009–2013.

Table 6: EMS Service Calls by Destination and Incident Region, Region 1 Treated and Transported Patients, Oklahoma 2009-2013

*Destination Facility	Year					Total # of Calls	% of Total Calls	% Increase/Decrease
	2009	2010	2011	2012	2013			
Saint Marys Regional Medical Center Enid	2,520	2,750	2,692	2,813	2,779	13,554	15.1%	10.28%
Integrus Bass Bapt Hlth Ctr	2,194	2,481	2,312	2,476	2,602	12,065	13.4%	18.60%
Integrus Clinton Reg Hosp	1,269	1,266	1,356	1,171	1,152	6,214	6.9%	-9.22%
Great Plains Reg Med Ctr	1,188	1,108	1,197	1,255	1,373	6,121	6.8%	15.57%
Woodward Reg Hosp & Hlth Ctr	1,050	972	1,167	1,224	1,140	5,553	6.2%	8.57%
Nursing Home/Rest Home/Long Term Care	1,031	939	814	906	1,038	4,728	5.3%	0.68%
OU MED CTR- Presbyterian, Children's, Edmond	536	641	702	744	844	3,467	3.9%	57.46%
Weatherford Reg Hosp	564	666	773	731	726	3,460	3.8%	28.72%
INTEGRIS Bapt Med Ctr- OKC	504	514	500	517	600	2,635	2.9%	19.05%

Share Mem Hosp	508	451	486	566	571	2,582	2.9%	12.40%
Mem Hosp of Texas County	431	486	493	501	502	2,413	2.7%	16.47%
Care Transfer to Another Ambulance Service	174	299	349	423	798	2,043	2.3%	358.62%
Sayre Mem Hosp	385	394	421	387	336	1,923	2.1%	-12.73%
Saint Anthony Hosp	309	341	377	405	397	1,829	2.0%	28.48%
Oklahoma Heart Hosp-OKC	309	357	328	378	378	1,750	1.9%	22.33%
Kingfisher Reg Hosp	367	347	313	325	397	1,749	1.9%	8.17%
Mercy Hosp - OKC	242	207	282	416	488	1,635	1.8%	101.65%
Mercy Hospital-Watonga	274	308	241	347	359	1,529	1.7%	31.02%

1. Only treated and transported patients included in this table.

2. *Only destinations with greater than 1,500 EMS service calls between 2009 and 2013 are shown.

Table 7: EMS Service Calls by Destination and Incident Region, Region 1 Treated and Transported Patients, Oklahoma 2009-2013

*Destination	Year										Total Count
	2009		2010		2011		2012		2013		
	Service Type		Service Type		Service Type		Service Type		Service Type		
	Air	Ground	Air	Ground	Air	Ground	Air	Ground	Air	Ground	
Saint Marys Regional Medical Center Enid	24	2,496	29	2,721	17	2,675	22	2,791	22	2,757	13,554
Integris Bass Bapt Hlth Ctr	**	2,188	15	2,466	13	2,299	32	2,444	18	2,584	12,065
Integris Clinton Reg Hosp	**	1,268	**	1,266	**	1,356	**	1,169	**	1,151	6,214
Great Plains Reg Med Ctr	**	1,186	**	1,108	**	1,195	**	1,253	**	1,372	6,121
Woodward Reg Hosp & Hlth Ctr	**	1,048	**	972	**	1,166	**	1,224	**	1,138	5,553
Nursing Home/Rest Home/Long Term Care	0	1,031	0	939	0	814	0	906	0	1,038	4,728
OU MED CTR- Presbyterian, Children's, Edmond	188	348	206	435	231	471	278	466	293	551	3,467
Weatherford Reg Hosp	**	564	**	664	**	770	**	730	**	725	3,460
INTEGRIS Bapt Med Ctr-OKC	85	419	75	439	63	437	36	481	20	580	2,635
Share Mem Hosp	**	507	**	450	**	486	**	564	**	571	2,582
Mem Hosp of Texas County	**	426	**	481	**	493	**	501	**	501	2,413
Care Transfer to Another Ambulance Service	**	174	**	299	**	348	**	410	328	470	2,043
Sayre Mem Hosp	**	384	**	394	**	421	**	387	**	336	1,923
Saint Anthony Hosp	56	253	60	281	36	341	100	305	91	306	1,829

Oklahoma Heart Hosp-OKC	64	245	60	297	24	304	**	368	**	371	1,750
Kingfisher Reg Hosp	0	367	0	347	0	313	0	325	0	397	1,749
Mercy Hosp - OKC	41	201	21	186	61	221	93	323	72	416	1,635
Mercy Hospital-Watonga	0	274	0	308	0	241	0	347	0	359	1,529

1. Only treated and transported patients included in this table.
2. *Only destinations with greater than 1,500 EMS service calls between 2009 and 2013 are shown.
3. Any cell represented by an asterisk (**) not shown due to privacy concerns.

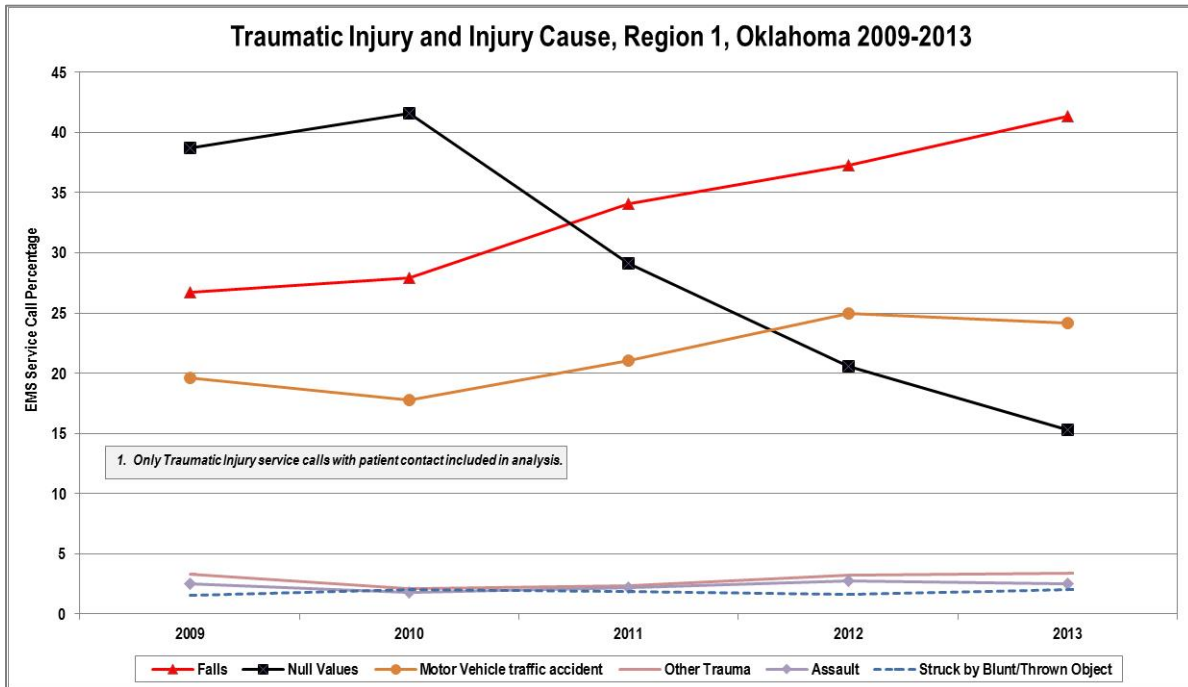


Figure 43: Traumatic injury EMS service calls by cause of injury, region 1, Oklahoma 2009–2013 (Only top six, by run volume, injury causes shown).

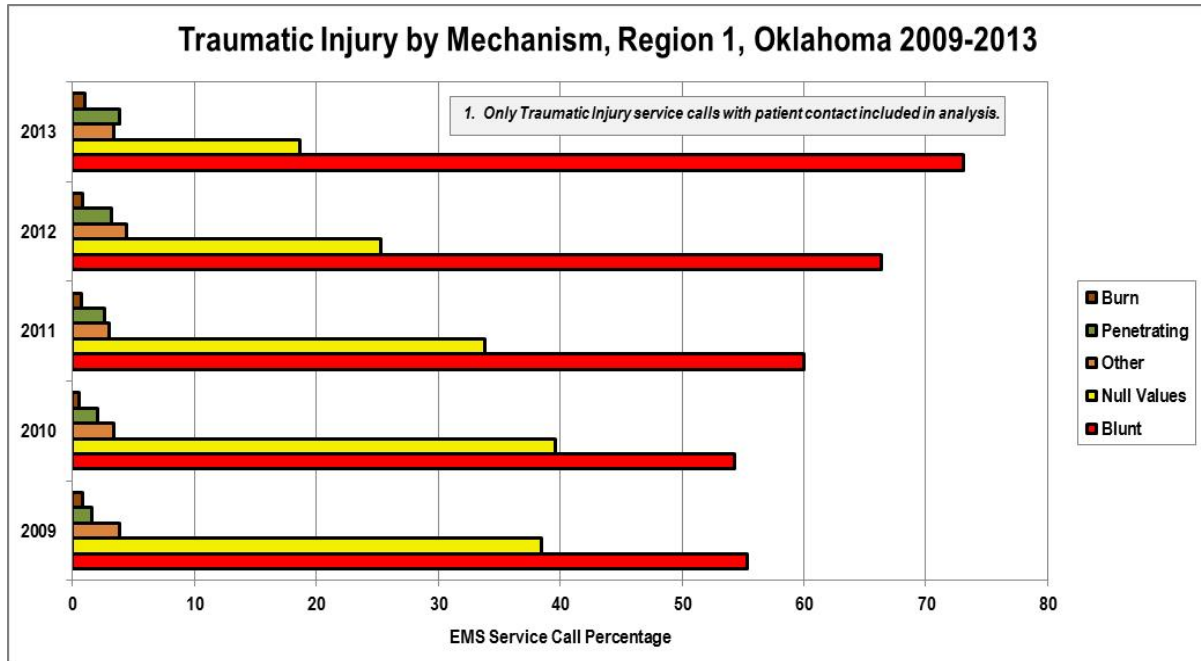


Figure 44: Traumatic Injury EMS service calls by mechanism, region 1, Oklahoma 2009-2013.

Region 2

- Region 2 saw an 15.5% increase in the number of EMS calls from 2009 to 2013 ([Figure 45](#), [Figure 122](#)).
- 70.5% of all the service calls occurred in rural areas, 20.1% in urban areas, and 9.3% in super rural areas ([Figure 46](#)).
- Osage County (16.6%) had the highest percentage of calls in Region 2 followed by Rogers (14.4%), Payne (13.8%), and Mayes (9.9%) counties ([Table 3](#)).
- 10.3% of the service calls occurred in the City of Claremore followed by Owasso (9.9%) and Stillwater (8.8%, [Table 8](#)).
- 96.9% of all service calls were transported by ground with 3.1% transported by an air service.
- Pafford EMS (12.9%) responded to the highest percentage of calls followed by Mercy Regional EMS (9%, [Table 9](#)) in Region 2.
- The majority of calls occurred between 9:00am and 9:00pm ([Figure 47](#)) with a higher occurrence of calls between the months of May and July.
- 15.3% of the service calls occurred on Friday with Sunday having the lowest percentage (13.1%).
- 74.4% were 911 calls followed by inter-facility transfers (15.8%, [Figure 48](#)).
- 76.8% were treated and transported followed by patient refusals (10.7%, [Figure 49](#)).
- 64.4% of all the service calls for Region 2 were in the 50+ age groups with the 80+ age group having the highest percentage (21.9%, [Figure 50](#)).
- 51.5% were female with 43.3% being male (5.2% unknown).
- 73.5% of the patients were reported as White followed by American Indian/Alaska Native (6.5%) and Black/African American (2.3%, [Figure 51](#)).
- 36.3% of the EMS service calls with patient contact had an incident location type of “Home/Residence” followed by “Healthcare Facility” (34.9%) and “Street or Highway” (13.1%).

- 84.8% of all Region 2 EMS service calls with patient contact had a destination type of “hospital” followed by “nursing home” (8%).
- Jane Phillips Medical Center received the highest percentage of treated and transported calls followed by St. John Medical Center and St. Francis Hospital ([Table 10 and 11](#)).
- For destinations that received greater than 1,500 total service calls between 2009 and 2013, Hillcrest Medical Center–Tulsa had the highest percentage increase at 104.4% followed by OU Medical Center (all campuses) at 56.6% ([Table 10](#)).
- Hillcrest Hospital–South had the biggest service call volume decrease (–45%) followed by Integris Grove General Hospital (–22.3%).
- “Closest facility” was the reason for choosing the destination 35.1% of the time followed by “patient choice” (21.4%) and “Patients Physicians Choice” (11.8%).
- Traumatic Injury made up 14.7% of the total calls in Region 2 from 2009 to 2013 ([Figure 123](#)).
- 94.5% of the traumatic injuries in region 2 were transported by a ground provider and 5.5% by air.
- Fifty five percent of the traumatic injury service calls occurred in Payne, Osage, Rogers, and Ottawa counties with Payne having the highest percentage (16.4%).
- 29.2% of the traumatic injuries were caused by falls followed by Motor Vehicle Traffic Accidents at 20.4% ([Figure 52](#)).
- 49.1% of the traumatic injuries had a mechanism of injury of “blunt” followed by “penetrating” (2.9%) and “burn” (0.8%). 30.9% were missing/null values ([Figure 53](#)).

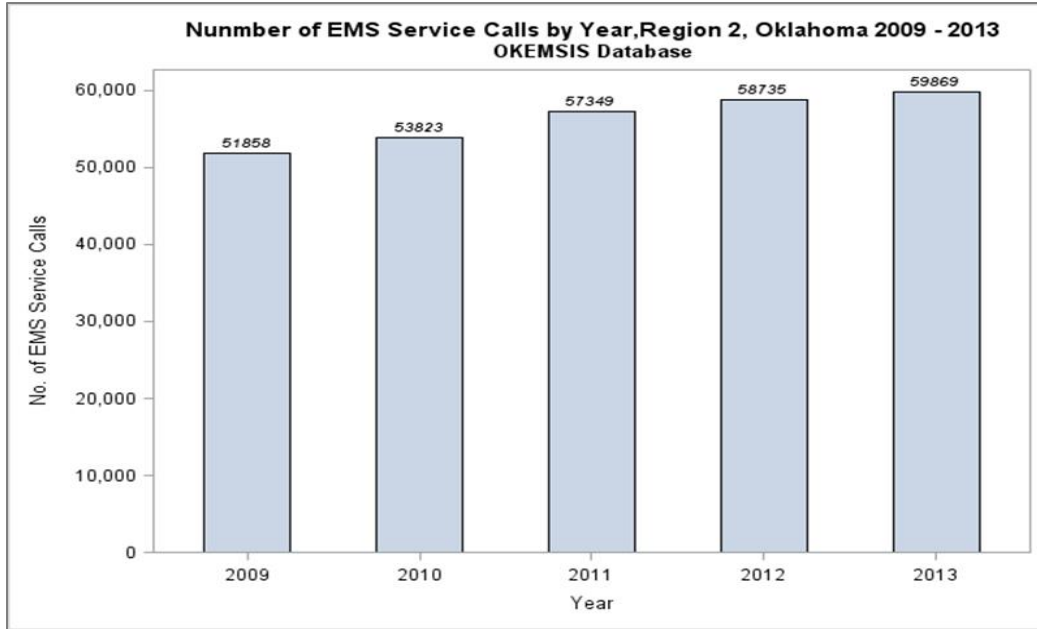


Figure 45: EMS service calls by year, region 2, Oklahoma 2009–2013.

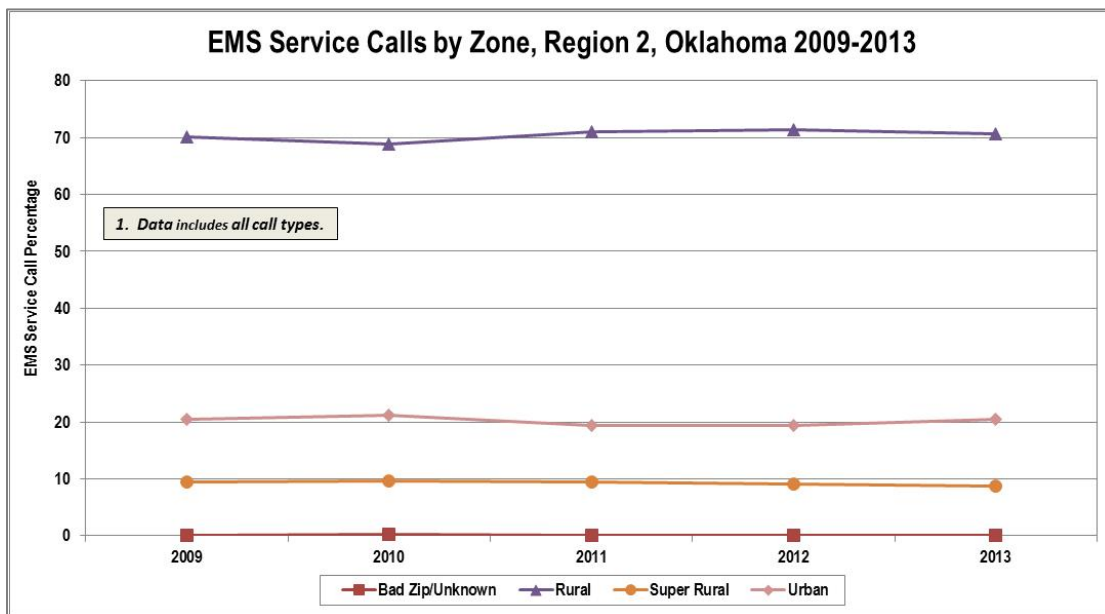


Figure 46: EMS service calls by zone, region 2, Oklahoma 2009–2013.

Table 8: EMS Service Calls by Incident City, Region 2, Oklahoma 2009-2013

*Incident City	Year					Total # of Calls	% of Total Calls
	2009	2010	2011	2012	2013		
Claremore, OK	5,620	5,400	5,527	5,993	6,390	28,930	10.3%
Owasso, OK	5,124	5,722	5,417	5,775	5,707	27,745	9.9%
Stillwater, OK	4,405	4,898	4,725	5,140	5,612	24,780	8.8%
Bartlesville, OK	4,223	2,367	4,356	4,438	4,102	19,486	6.9%
Ponca City, OK	2,272	3,515	3,846	3,707	3,538	16,878	5.9%
Grove, OK	3,115	3,162	3,276	3,403	3,286	16,242	5.8%
Pryor, OK	2,684	3,068	3,395	3,153	3,051	15,351	5.5%
Miami, OK	2,964	2,993	3,095	3,091	3,028	15,171	5.4%
Cushing, OK	2,000	2,145	2,058	2,222	2,296	10,721	3.8%
Vinita, OK	1,378	1,677	1,835	1,958	1,835	8,683	3.1%

1. Data includes all call types.

2. *Only top ten cities by run volume shown in table.

Table 9: EMS Service Calls by Agency, Region 2, Oklahoma 2009-2013

EMS Agency Name	Year					Total # of Calls	% of Total Calls
	2009	2010	2011	2012	2013		
Pafford EMS of Oklahoma	7,105	6,868	7,071	7,468	7,925	36,437	12.9%
Mercy Reg of Oklahoma	4,912	5,058	4,961	5,125	5,279	25,335	9.0%
Mayes Emergency Serv Trust Auth	4,193	4,790	5,125	5,297	5,480	24,885	8.8%
Bartlesville Ambulance Service	4,965	2,770	5,065	5,160	4,883	22,843	8.1%
Grove EMS	3,109	3,150	3,350	3,226	3,104	15,939	5.7%
Ponca City Fire Dept Ambulance	2,034	3,320	3,630	3,532	3,349	15,865	5.6%
INTEGRIS Bapt. Reg EMS	2,910	2,857	3,180	3,134	3,126	15,207	5.4%
LifeNet, Inc.	N/A	N/A	3,439	5,471	5,968	14,878	5.3%
Owasso Fire Dept EMS	2,806	2,983	2,744	2,974	3,151	14,658	5.2%
Quapaw Tribe Fire and Ambulance	1,679	1,856	2,215	2,229	2,243	10,222	3.6%

1. Data includes all call types.

2. Only top ten EMS providers by run volume shown in table.

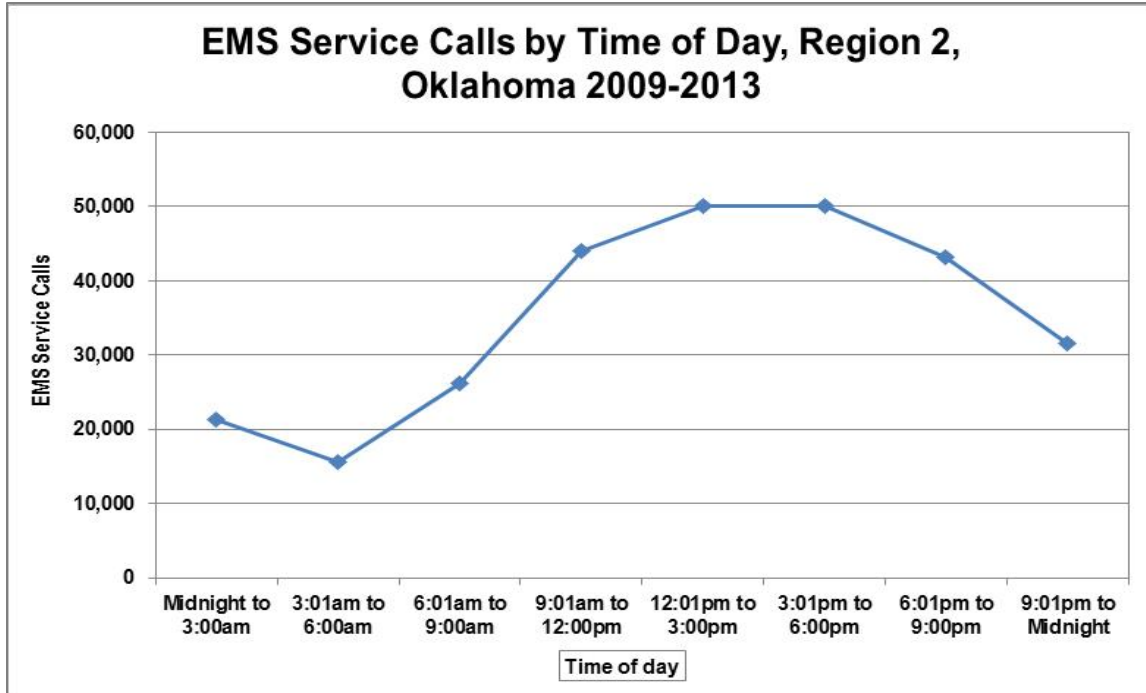


Figure 47: EMS service calls by time of day (all call types), region 2, Oklahoma 2009–2013.

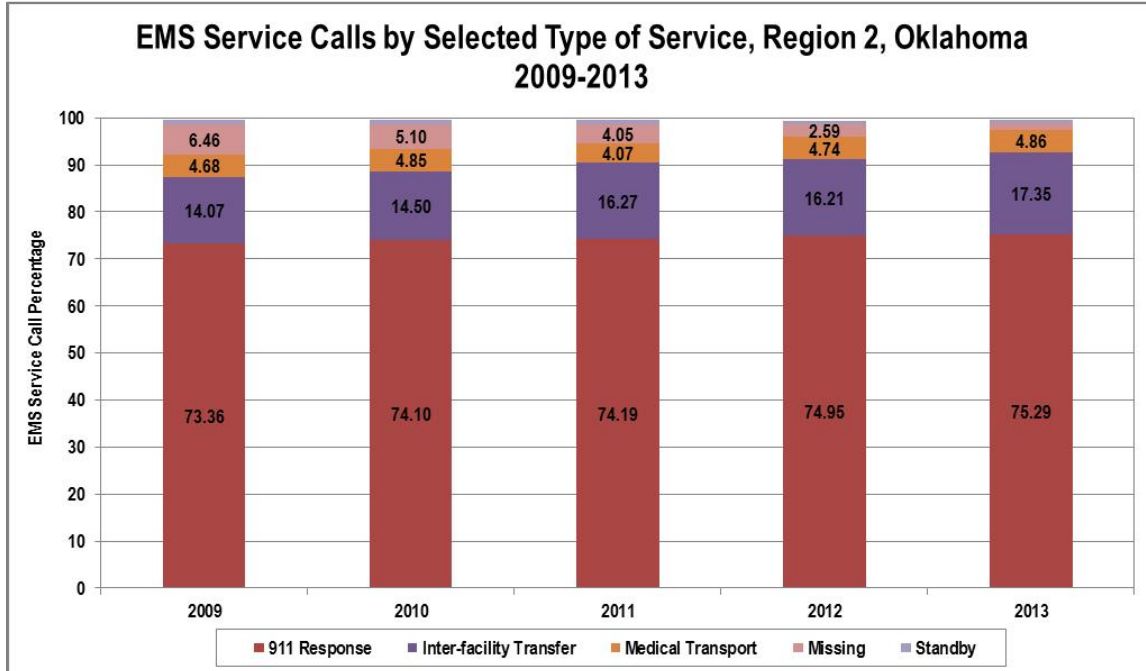


Figure 48: EMS service calls by type of service requested, region 2, Oklahoma 2009–2013.

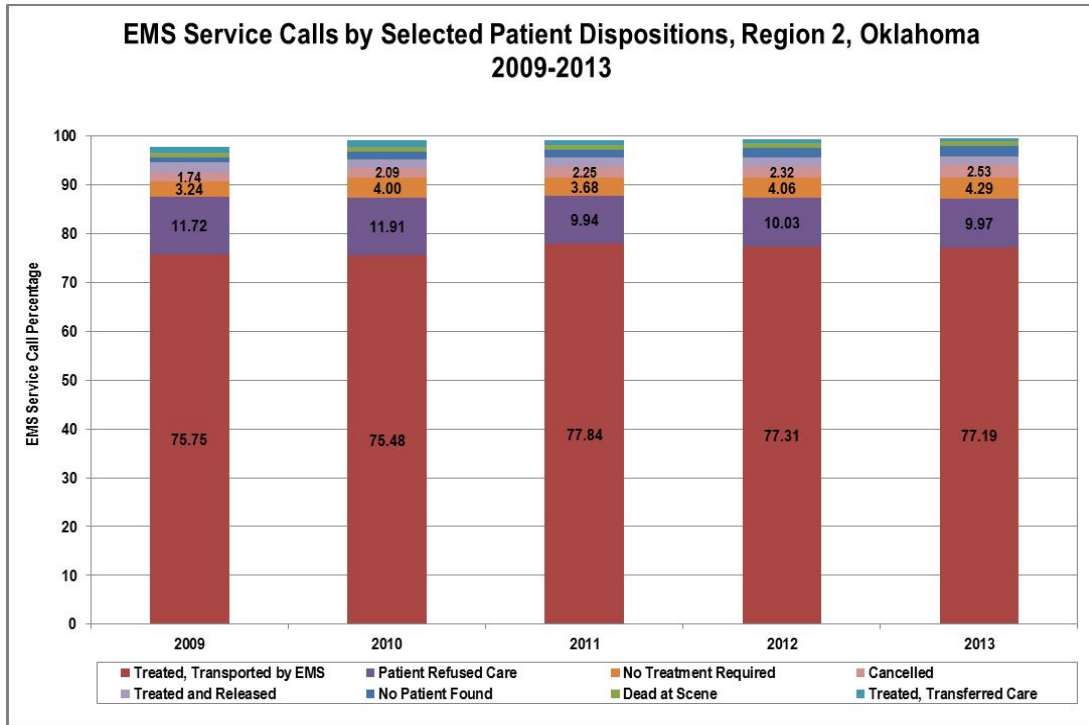


Figure 49: EMS service calls by selected patient disposition, region 2, Oklahoma 2009–2013.

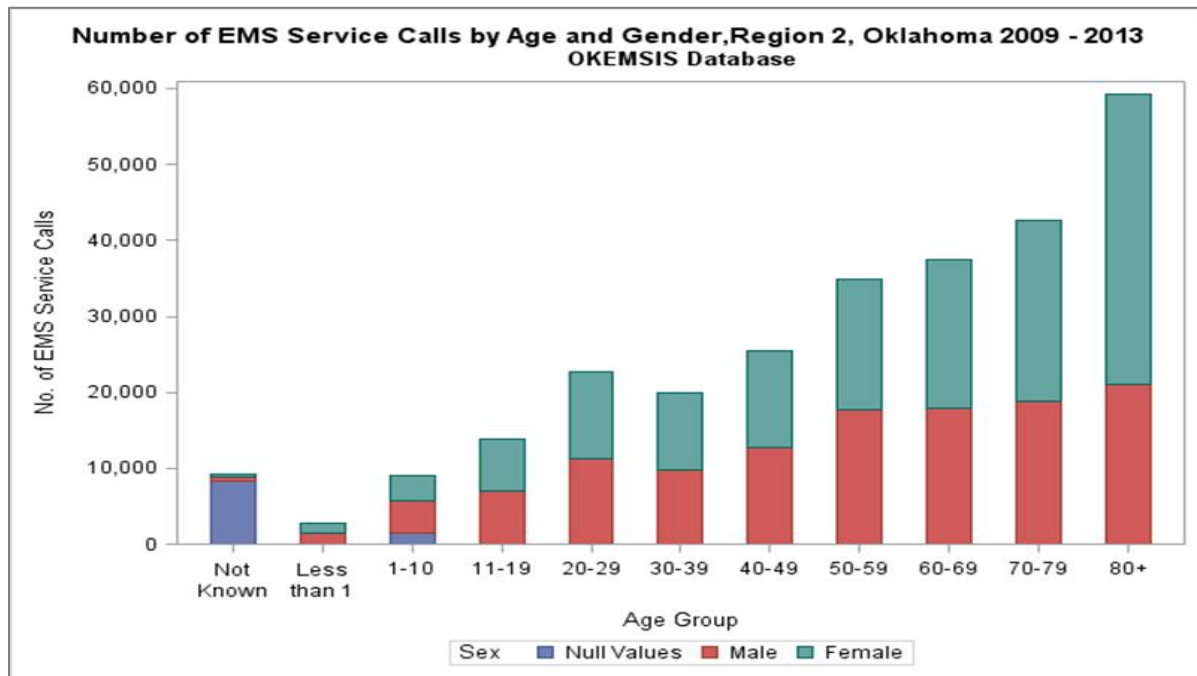


Figure 50: EMS service calls by age and gender, region 2, Oklahoma 2009–2013.

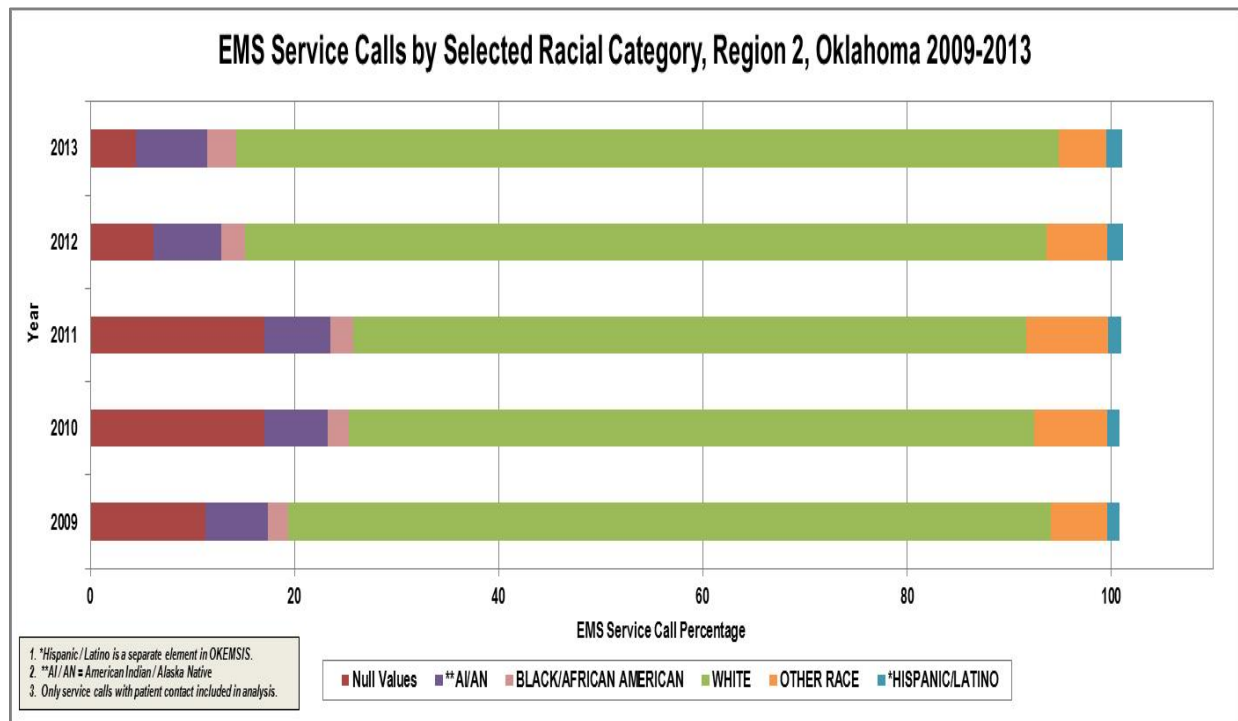


Figure 51: EMS service calls by racial category, region 2, Oklahoma 2009–2013.

Table 10: EMS Service Calls by Destination and Incident Region, Region 2 Treated and Transported Patients, Oklahoma 2009-2013

*Not All Destinations Shown Destination Facility	Year					Total # of Calls	% of Total Calls	% Increase/Decrease
	2009	2010	2011	2012	2013			
Jane Phillips Med Ctr	4,435	2,871	4,466	4,484	4,330	20,586	9.9%	-2.4%
St. John Med Ctr	3,239	3,363	3,524	4,021	4,247	18,394	8.9%	31.1%
St. Francis Hospital, Inc.	2,975	3,153	3,377	3,745	3,796	17,046	8.2%	27.6%
Stillwater Med Ctr	2,541	2,825	2,893	3,369	3,591	15,219	7.3%	41.3%
Hillcrest Med Ctr- Tulsa	1,881	2,537	2,851	3,216	3,845	14,330	6.9%	104.4%
Ponca City Med Ctr	1,739	2,608	2,739	2,747	2,617	12,450	6.0%	50.5%
Nursing Home/Rest Home/Long Term Care	2,161	1,999	1,998	1,877	1,981	10,016	4.8%	-8.3%
Hillcrest Hospital-Claremore	1,711	1,765	1,908	2,077	2,228	9,689	4.7%	30.2%
Integris Bapt Reg Health Ctr- Miami	1,916	1,871	1,966	1,918	1,940	9,611	4.6%	1.3%
Saint Johns-Owasso	1,597	1,680	1,508	1,647	1,612	8,044	3.9%	0.9%

Integris Mayes Cty Med Ctr	1,502	1,647	1,707	1,378	1,216	7,450	3.6%	-19.0%
Craig General Hosp	948	1,110	1,152	1,194	1,100	5,504	2.7%	16.0%
Hillcrest Hospital-Cushing	925	1,004	1,015	1,069	1,001	5,014	2.4%	8.2%
Out of State Facility-MO	806	1,028	862	940	1,067	4,703	2.3%	32.4%
Bailey Med Ctr-Owasso	924	992	896	813	734	4,359	2.1%	-20.6%
Integris Grove General Hosp	1,151	589	708	806	894	4,148	2.0%	-22.3%
OSU Med Ctr	710	652	711	669	656	3,398	1.6%	-7.6%
Null Values	836	602	905	582	391	3,316	1.6%	-53.2%
Integris Blackwell Reg Hosp	560	657	650	673	718	3,258	1.6%	28.2%
Private Residence	415	365	556	562	600	2,498	1.2%	44.6%
Cleveland Area Hospital Inc	409	495	479	416	515	2,314	1.1%	25.9%
Hillcrest Hospital-South	604	474	480	412	332	2,302	1.1%	-45.0%
Perry Memorial Hospital	369	337	351	374	389	1,820	0.9%	5.4%
Invalid Code	73	336	663	521	100	1,693	0.8%	36.9%
USPHS Indian Hosp- Claremore (IHS)	339	353	367	325	305	1,689	0.8%	-10.0%
OU MED CTR- Presbyterian,Children's, Edmond	267	263	334	394	418	1,676	0.8%	56.6%

1. Only treated and transported patients included in this table.

2. *Only destinations with greater than 1,500 EMS service calls between 2009 and 2013 are shown.

Table 11: EMS Service Calls by Destination and Incident Region, Region 2 Treated and Transported Patients, Oklahoma 2009-2013

Destination	Year										Total Count
	2009		2010		2011		2012		2013		
	Service Type		Service Type		Service Type		Service Type		Service Type		
	Air	Ground	Air	Ground	Air	Ground	Air	Ground	Air	Ground	
Jane Phillips Med Ctr	**	4,433	**	2,870	**	4,466	**	4,483	**	4,329	20,586
St. John Med Ctr	406	2,569	517	2,636	314	3,063	361	3,384	314	3,482	17,046
St. Francis Hospital, Inc.	317	2,922	411	2,952	282	3,242	288	3,733	248	3,999	18,394
Stillwater Med Ctr	**	2,536	**	2,823	**	2,890	**	3,367	**	3,589	15,219
Hillcrest Med Ctr- Tulsa	223	1,658	393	2,144	244	2,607	297	2,919	280	3,565	14,330
Ponca City Med Ctr	**	1,738	**	2,608	**	2,739	**	2,746	**	2,617	12,450
Nursing Home/Rest Home/Long Term Care	0	2,161	0	1,999	0	1,998	0	1,877	0	1,981	10,016
Hillcrest Hospital-Claremore	**	1,709	**	1,764	**	1,907	**	2,076	**	2,226	9,689
Integris Bapt Reg Health Ctr- Miami	**	1,914	**	1,871	**	1,966	**	1,918	**	1,940	9,611
Saint Johns-Owasso	**	1,595	**	1,680	**	1,508	**	1,647	**	1,612	8,044

Integrus Mayes Cty Med Ctr	**	1,500	**	1,644	**	1,706	**	1,378	**	1,215	7,450
Craig General Hosp	**	946	**	1,109	**	1,152	**	1,194	**	1,099	5,504
Hillcrest Hospital-Cushing	**	924	**	1,002	**	1,015	**	1,068	**	1,000	5,014
Out of State Facility-MO	92	714	122	906	125	737	143	797	127	940	4,703
Bailey Med Ctr-Owasso	0	924	0	992	0	896	0	813	0	734	4,359
Integrus Grove General Hosp	**	1,149	**	587	**	707	**	805	**	894	4,148
OSU Med Ctr	**	676	**	625	**	698	**	646	**	647	3,398
Null Values	**	822	**	586	**	882	**	581	**	391	3,316
Integrus Blackwell Reg Hosp	**	560	**	656	**	650	**	673	**	718	3,258
Private Residence	**	415	**	365	**	556	**	560	**	600	2,498
Cleveland Area Hospital Inc	**	409	**	495	**	479	**	415	**	515	2,314
Hillcrest Hospital-South	46	558	45	429	26	454	44	368	15	317	2,302
Perry Memorial Hospital	**	368	**	336	**	351	**	374	**	389	1,820
Invalid Code	**	61	**	334	**	634	**	489	**	80	1,693
USPHS Indian Hosp-Claremore (IHS)	0	339	0	353	0	367	0	325	0	305	1,689
OU MED CTR- Presbyterian, Children's, Edmond	119	148	109	154	132	202	148	246	136	282	1,676

1. Only treated and transported patients included in this table.
2. *Only destinations with greater than 1,500 EMS service calls between 2009 and 2013 are shown.
3. Any cell represented by an asterisk (**) not shown due to privacy concerns.

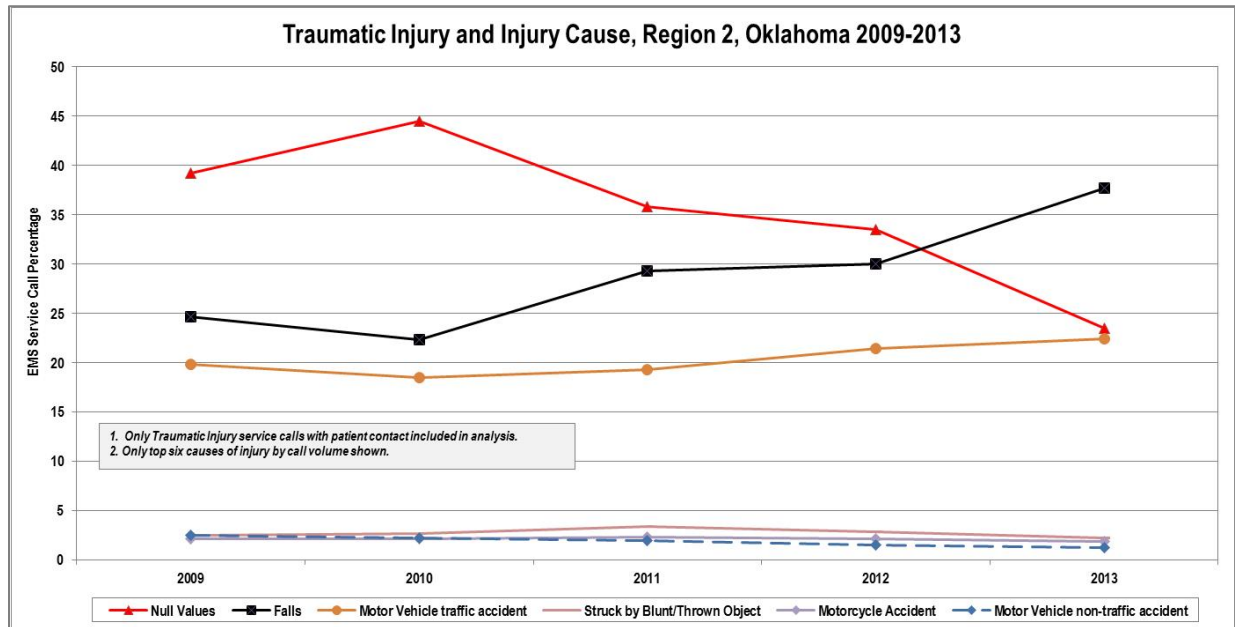


Figure 52: Traumatic Injury EMS service calls by cause of injury, region 2, Oklahoma 2009–2013 (Only top six, by run volume, injury causes shown).

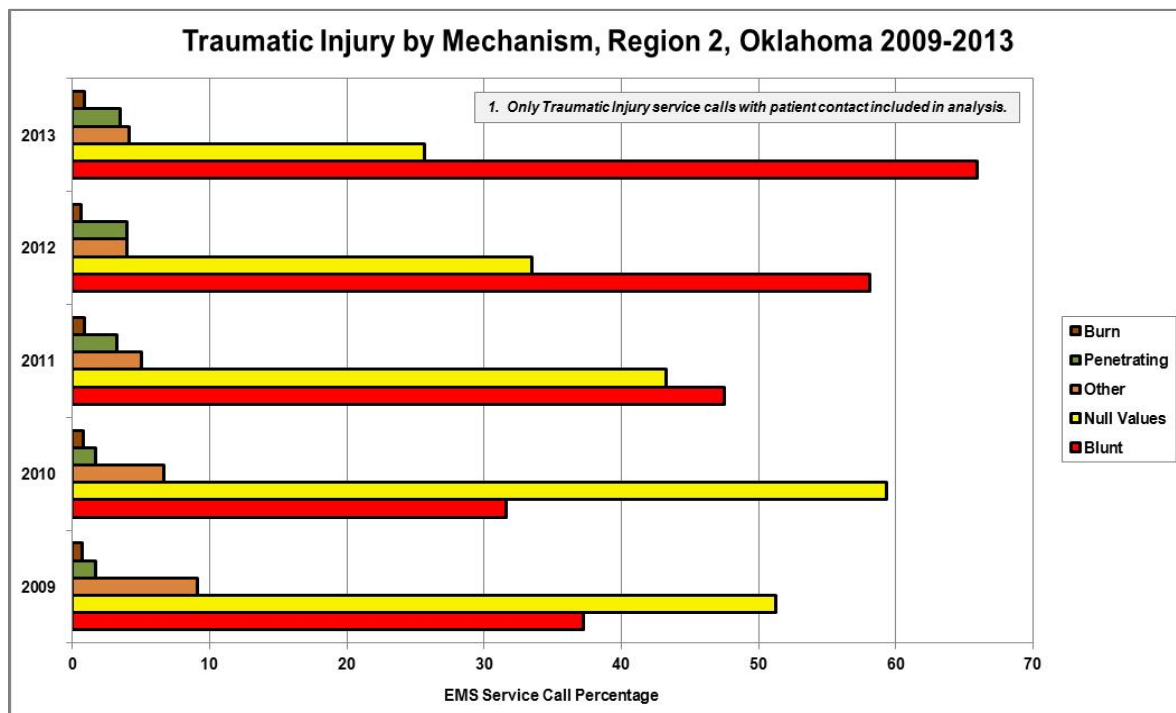


Figure 53: Traumatic Injury EMS service calls by mechanism, region 2, Oklahoma 2009–2013.

Region 3

- Region 3 saw an 18.8% increase in the number of EMS calls from 2009 to 2013 ([Figure 54](#), [Figure 122](#)).
- 53.2% of all the service calls occurred in rural areas, 27.7% in urban areas, and 18.3% in super rural areas ([Figure 55](#)).
- Comanche County (25.9%) had the highest percentage of calls in Region 3 followed by Carter (13.1%), Pontotoc (9.9%), and Grady (8.9%) counties ([Table 3](#)).
- Stephens County (57.5%) showed the biggest service call volume increase between 2009 and 2013 while Jackson County had the biggest decrease (-18.8%).
- 21.5% of the service calls occurred in the City of Lawton followed by Ardmore (10.6%) and Ada (9.2%, [Table 12](#)).
- 97.2% of all service calls were transported by ground with 2.9% transported by an air service.
- Southern Oklahoma Ambulance Service (12.8%) responded to the highest percentage of calls followed by Kirks Emergency Service (11.5%, [Table 13](#)) in Region 3.
- The majority of service calls occurred between 9:00am and 9:00pm ([Figure 56](#)) with a higher occurrence during the months of July and August.
- 15.5% of the service calls occurred on Friday with Sunday having the lowest percentage (12.7%).
- 76.3% were 911 calls followed by inter-facility transfers (7.1%, [Figure 57](#)). 10.8% were missing type of service for Region 3.
- 72.7% were treated and transported followed by patient refusals (12.7%, [Figure 58](#)).
- 60.9% of all the service calls for Region 3 were in the 50+ age groups with the 80+ age group having the highest percentage (18.5%, [Figure 59](#)).
- 49.8% were female with 42.3% being male (7.8% unknown).

- 75.1% of the patients were reported as White followed by Black/African American (7.9%) and American Indian/Alaska Native (7.6%, [Figure 60](#)).
- 45.9% of the EMS service calls with patient contact had an incident location type of “Home/Residence” followed by “Healthcare Facility” (29.5%) and “Street or Highway” (10.2%).
- 83.1% of all Region 3 EMS service calls with patient contact had a destination type of “hospital” followed by “nursing home” (2.1%).
- Comanche County Memorial Hospital received the highest percentage of treated and transported calls followed by Mercy Hospital–Ardmore and Duncan Regional Hospital ([Table 14 and 15](#)).
- For destinations that received greater than 1,500 total service calls between 2009 and 2013, Mercy Hospital–OKC had the highest percentage increase at 203.4% followed by Reynolds Army Community Hospital–Fort Sill at 96.3% ([Table 14](#)).
- Pauls Valley General Hospital had the biggest service call volume decrease (-27.3%) followed by Mercy Hospital–ADA (-20.7%).
- “Closest facility” was the reason for choosing the destination 35.1% of the time followed by “patient choice” (21.4%) and “Patient’s Physician Choice” (11.8%).
- Traumatic Injury made up 15.3% of the total calls in Region 3 from 2009 to 2013 ([Figure 123](#)).
- 95.4% of the traumatic injuries in region 3 were transported by a ground provider and 4.7% by air.
- Fifty six percent of the traumatic injury service calls occurred in Comanche, Carter, Pontotoc, and Stephens counties with Comanche having the highest percentage (24.3%).
- 29.9% of the traumatic injuries were caused by falls followed by Motor Vehicle Traffic Accidents at 22.2% ([Figure 61](#)).
- 41.7% of the traumatic injuries had a mechanism of injury of “blunt” followed by “penetrating” (3.1%) and “burn” (0.7%). 44.4% were missing/null values ([Figure 62](#)).

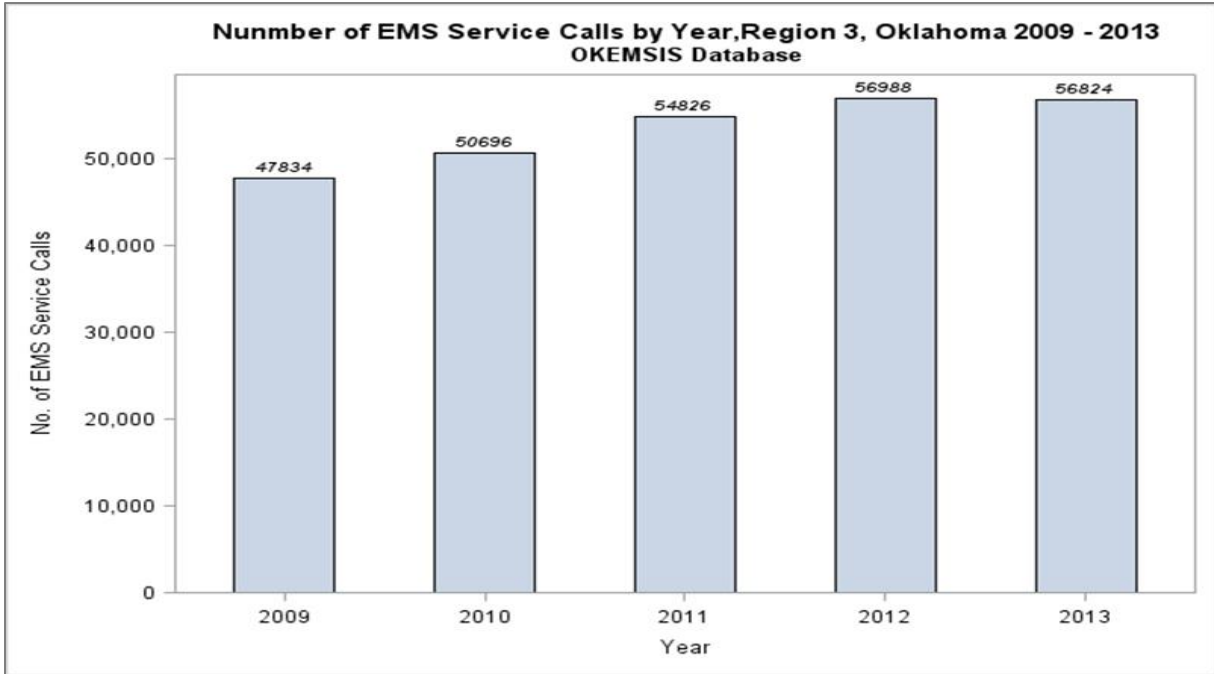


Figure 54: EMS service calls by year, region 3, Oklahoma 2009–2013.

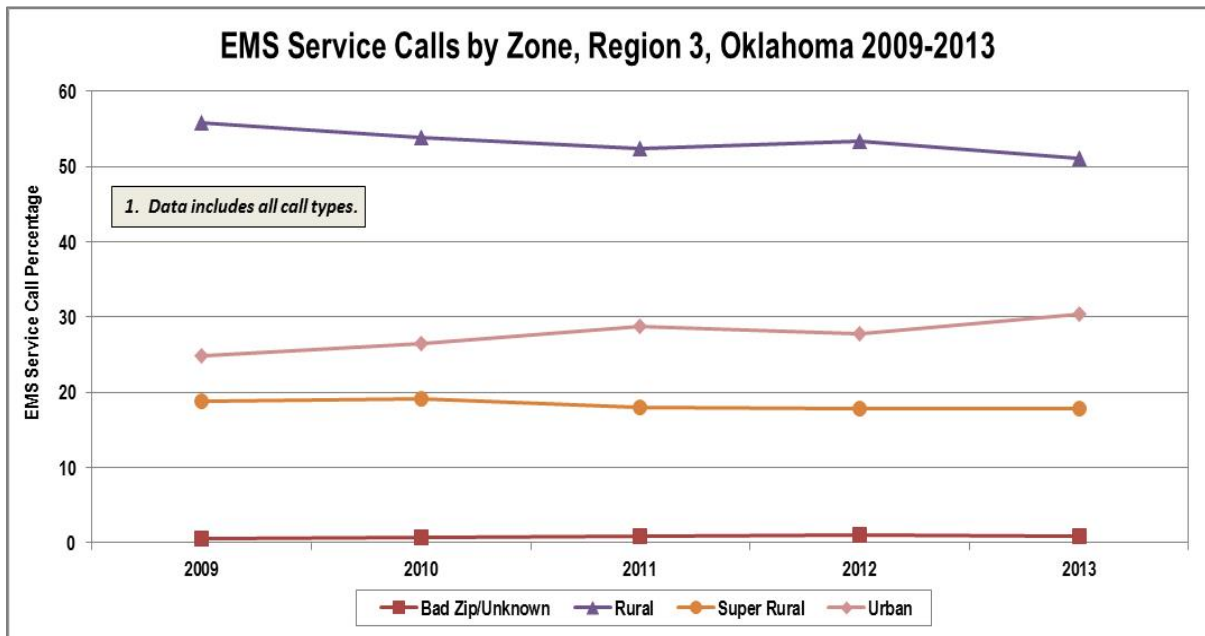


Figure 55: EMS service calls by zone, region 3, Oklahoma 2009–2013.

Table 12: EMS Service Calls by Incident City, Region 3, Oklahoma 2009-2013

Incident City	Year					Total # of Calls	% of Total Calls
	2009	2010	2011	2012	2013		
Lawton, OK	9,678	10,912	12,520	12,004	12,224	57,338	21.5%
Ardmore, OK	5,088	5,319	5,745	6,022	6,073	28,247	10.6%
Ada, OK	4,770	4,814	4,901	5,118	5,076	24,679	9.2%
Duncan, OK	2,742	3,075	2,799	4,186	4,100	16,902	6.3%
Chickasha, OK	2,962	3,326	3,221	3,039	2,978	15,526	5.8%
Altus, OK	2,403	1,979	2,355	2,727	1,986	11,450	4.3%
Paul's Valley, OK	1,706	1,668	1,831	1,463	1,241	7,909	2.9%
Sulphur, OK	1,245	1,243	1,480	1,400	1,395	6,763	2.5%
Anadarko, OK	1,197	1,243	1,139	1,199	1,251	6,029	2.3%
Tishomingo, OK	738	806	986	895	984	4,409	1.7%

1. Data includes all call types.

2. Only top ten cities by run volume shown in table.

Table 13: EMS Service Calls by Agency, Region 3, Oklahoma 2009-2013

EMS Agency Name	Year					Total # of Calls	% of Total Calls
	2009	2010	2011	2012	2013		
Southern Oklahoma Ambulance Service	6,219	6,494	7,132	7,242	7,119	34,206	12.80%
Kirks Emergency Service	5,183	5,980	7,278	6,124	6,224	30,789	11.52%
Comanche Co Mem Hosp EMS	4,371	4,985	5,239	5,502	5,311	25,408	9.51%
Mercy Hospital EMS - Ada	4,096	4,058	4,290	4,294	4,454	21,192	7.93%
Chickasha Fire EMS	3,072	3,421	3,285	3,063	3,055	15,896	5.95%
American Medical Response-Duncan	2,509	3,104	2,451	3,924	3,795	15,783	5.91%
Jackson County EMS	2,523	2,106	2,528	2,855	2,034	12,046	4.51%
Murray County EMS	1,792	1,733	2,041	1,921	1,972	9,459	3.54%
Pauls Valley Ambulance	1,979	1,979	2,129	1,652	1,428	9,167	3.43%
Cache EMS	1,378	1,337	1,833	1,937	2,121	8,606	3.22%

1. Data includes all call types.

2. Only top ten EMS providers by run volume shown in table.

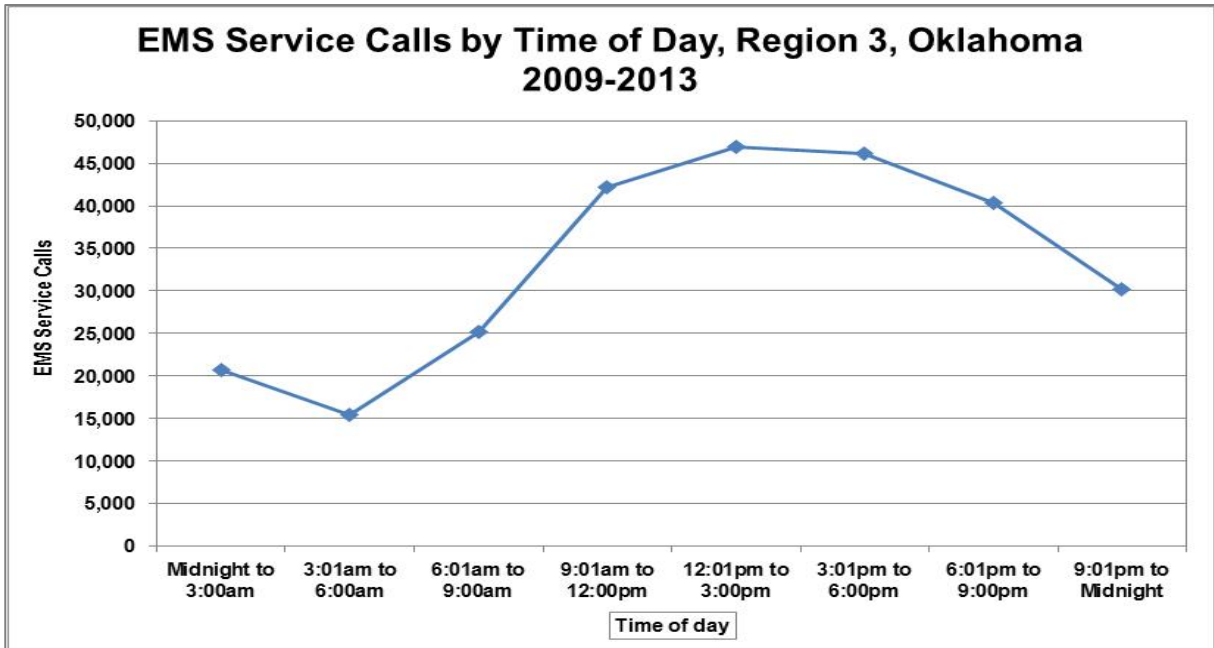


Figure 56: EMS service calls by time of day (all call types), region 3, Oklahoma 2009–2013.

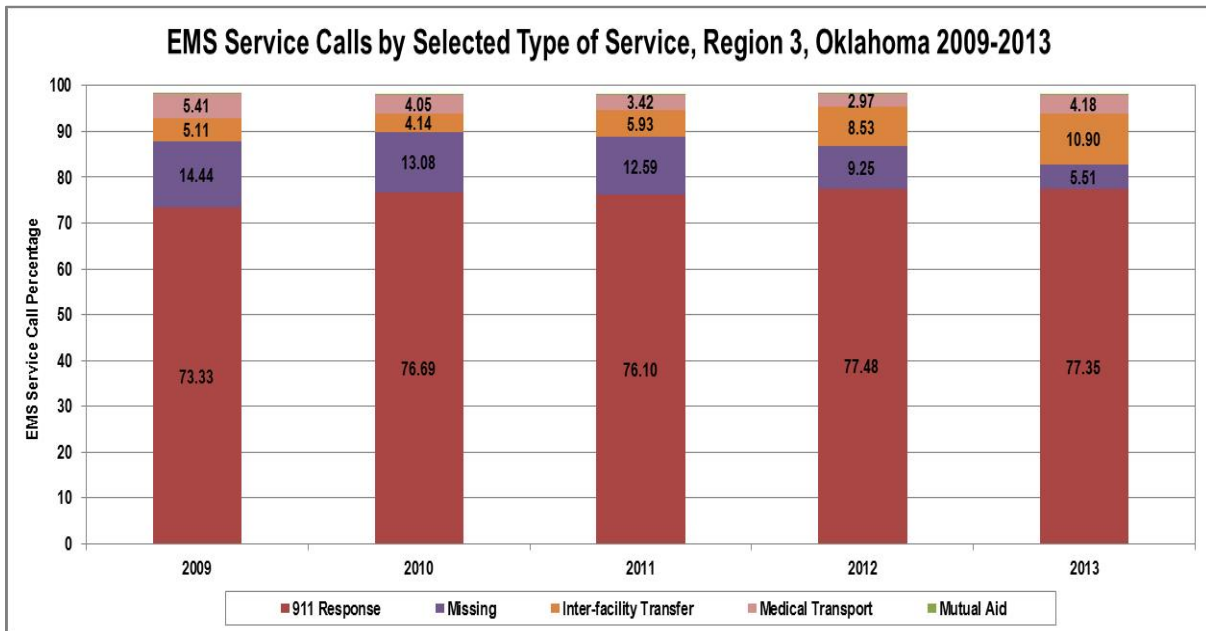


Figure 57: EMS service calls by type of service requested, region 3, Oklahoma 2009–2013.

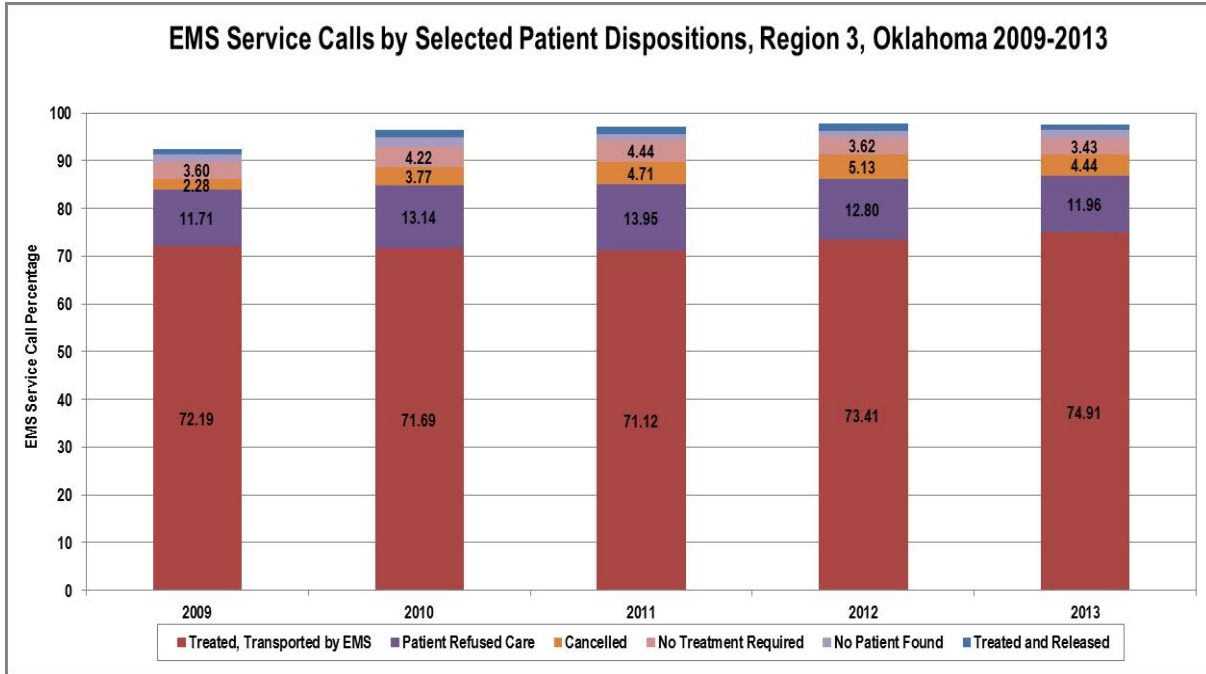


Figure 58: EMS service calls by selected patient disposition, region 3, Oklahoma 2009–2013.

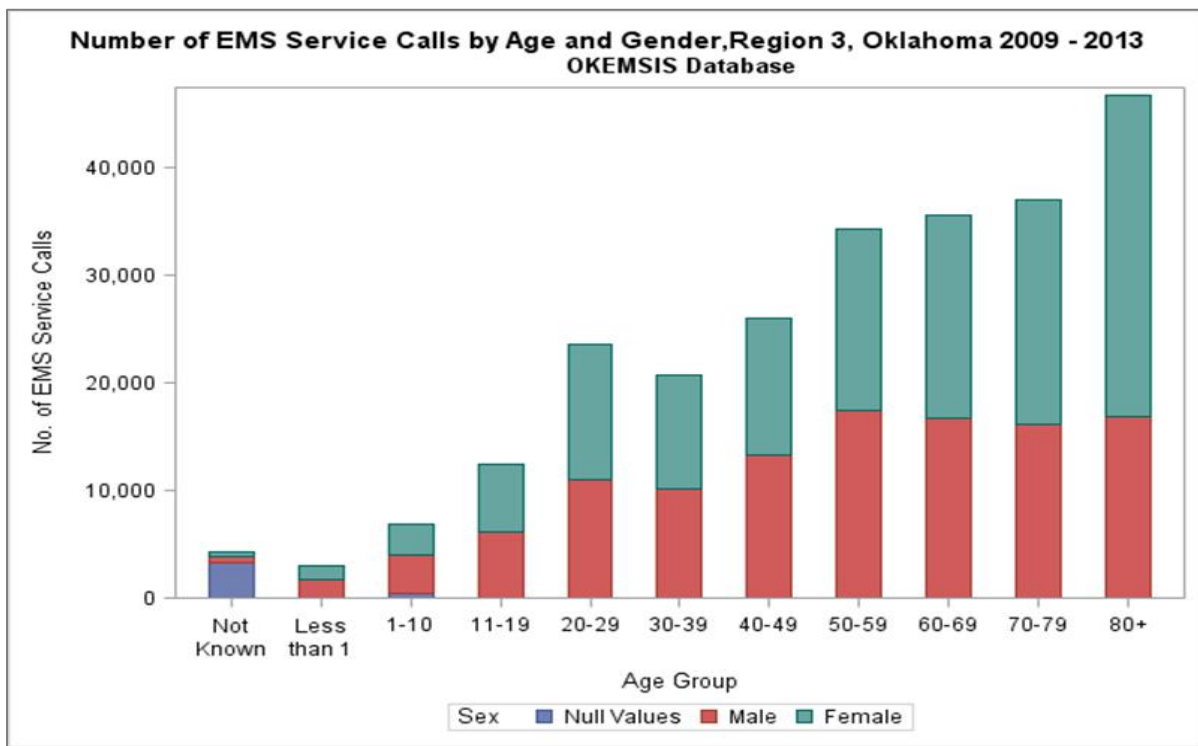


Figure 59: EMS service calls by age and gender, region 3, Oklahoma 2009–2013.

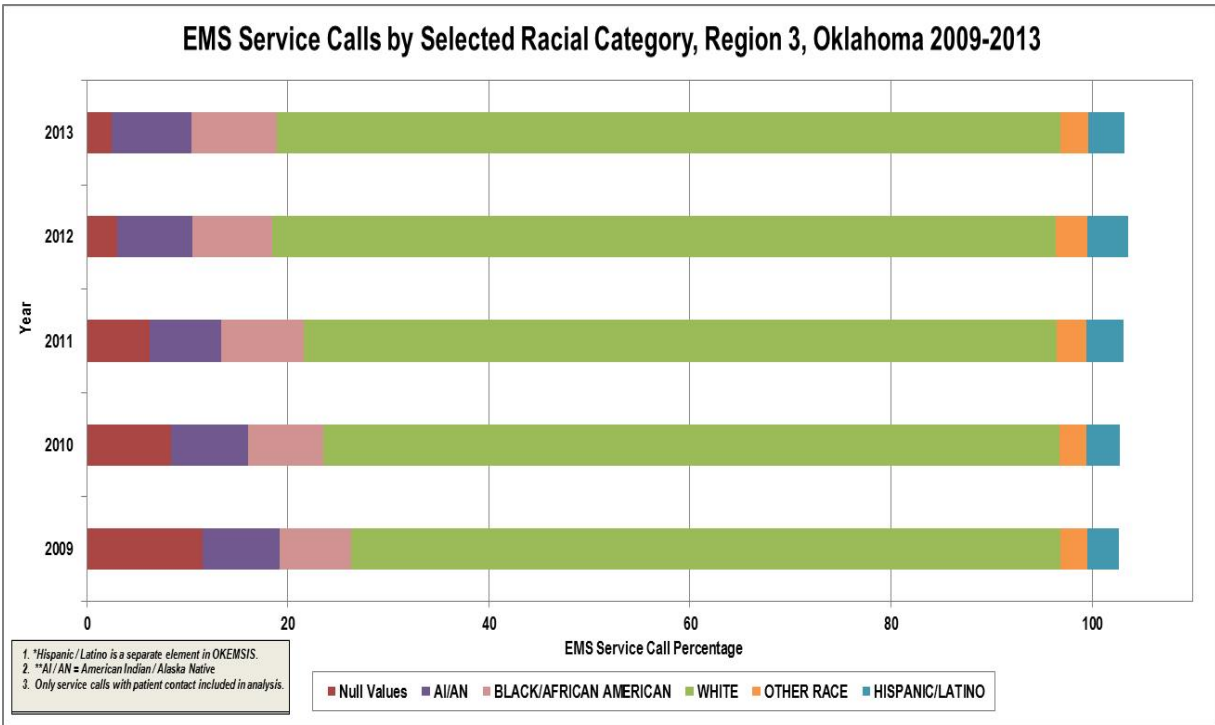


Figure 60: EMS service calls by racial category, region 3, Oklahoma 2009–2013.

Table 14: EMS Service Calls by Destination and Incident Region, Region 3 Treated and Transported Patients, Oklahoma 2009-2013

*Not All Destinations Shown	Year					Total # of Calls	% of Total Calls	% Increase/Decrease
	2009	2010	2011	2012	2013			
Comanche Cty Mem Hosp	5,974	6,410	7,118	8,030	8,194	35,726	18.2%	37.2%
Mercy Hosp - Ardmore	4,175	4,355	4,677	4,890	4,961	23,058	11.7%	18.8%
Duncan Reg Hosp	2,443	2,716	2,369	3,362	3,343	14,233	7.2%	36.8%
Mercy Hosp- Ada	2,933	2,686	2,423	2,327	2,325	12,694	6.5%	-20.7%
OU MED CTR- Presbyterian, Children's, Edmond	1,456	1,674	1,866	2,126	2,353	9,475	4.8%	61.6%
Grady Mem Hosp	1,781	1,992	1,733	1,869	1,818	9,193	4.7%	2.1%
Southwestern Med Ctr- Lawton	1,284	1,458	1,445	1,707	1,891	7,785	3.9%	47.3%
Nursing Home/Rest Home/Long Term Care	1,327	1,405	1,853	1,493	1,654	7,732	3.9%	24.6%
Jackson Cty Mem Hosp	1,629	1,624	1,271	1,097	1,466	7,087	3.6%	-10.0%
Pauls Valley General Hosp	1,226	1,243	1,296	1,143	891	5,799	2.9%	-27.3%

INTEGRIS Bapt Med Ctr, Inc. - OKC	786	763	1,419	1,685	984	5,637	2.9%	25.2%
Oklahoma Heart Hosp - OKC	655	862	949	1,044	1,070	4,580	2.3%	63.4%
Arbuckle Mem Hosp	745	811	1,005	934	956	4,451	2.3%	28.3%
Private Residence	530	431	501	835	926	3,223	1.6%	74.7%
The Physicians Hosp in Anadarko	525	548	579	655	659	2,966	1.5%	25.5%
Norman Reg Hosp	588	461	517	475	468	2,509	1.3%	-20.4%
Reynolds Army Community Hosp- Fort Sill	326	285	461	794	640	2,506	1.3%	96.3%
Carl Albert Indian Hosp-Ada (IHS)	410	514	513	504	501	2,442	1.2%	22.2%
Mercy Health- Love Cty	436	506	482	488	434	2,346	1.2%	-0.5%
Elkview General Hosp	461	435	477	454	401	2,228	1.1%	-13.0%
Mercy Hosp - OKC	266	300	391	410	807	2,174	1.1%	203.4%
Mercy Hosp-Tishomingo	409	353	400	415	497	2,074	1.1%	21.5%
Saint Anthony Hosp	368	367	352	452	448	1,987	1.0%	21.7%
Null Values	658	463	452	129	181	1,883	0.9%	-72.5%
Integris Southwest Med Ctr	188	342	331	310	345	1,516	0.8%	83.5%

1. Only treated and transported patients included in this table.

2. *Only destinations with greater than 1,500 EMS service calls between 2009 and 2013 are shown.

Table 15: EMS Service Calls by Destination and Incident Region, Region 3 Treated and Transported Patients, Oklahoma 2009-2013

Destination	Year										Total Count
	2009		2010		2011		2012		2013		
	Service Type		Service Type		Service Type		Service Type		Service Type		
	Air	Ground	Air	Ground	Air	Ground	Air	Ground	Air	Ground	
Comanche Cty Mem Hosp	59	5,915	46	6,364	27	7,091	72	7,958	86	8,108	35,726
Mercy Hosp - Ardmore	**	4,166	**	4,342	**	4,657	**	4,871	**	4,956	23,058
Duncan Reg Hosp	**	2,443	**	2,714	**	2,366	**	3,362	**	3,341	14,233
Mercy Hosp- Ada	**	2,932	**	2,686	**	2,421	**	2,326	**	2,323	12,694
OU MED CTR- Presbyterian, Children's, Edmond	431	1,025	517	1,157	592	1,274	755	1,371	709	1,644	9,475
Grady Mem Hosp	**	1,779	**	1,990	**	1,731	**	1,868	**	1,817	9,193
Southwestern Med Ctr- Lawton	**	1,282	**	1,448	**	1,444	**	1,704	**	1,888	7,785
Nursing Home/Rest Home/Long Term Care	**	1,327	**	1,405	**	1,853	**	1,493	**	1,654	7,732
Jackson Cty Mem Hosp	**	1,628	**	1,623	**	1,271	**	1,097	**	1,462	7,087
Pauls Valley General Hosp	**	1,226	**	1,243	**	1,292	**	1,143	**	891	5,799

INTEGRIS Bapt Med Ctr, Inc. - OKC	161	625	143	620	121	1,298	68	1,617	57	927	5,637
Oklahoma Heart Hosp - OKC	143	512	152	710	105	844	96	948	79	991	4,580
Arbuckle Mem Hosp	**	742	**	810	**	1,005	**	934	**	956	4,451
Private Residence	**	529	**	431	**	501	**	835	**	926	3,223
The Physicians Hosp in Anadarko	**	524	**	548	**	574	**	654	**	659	2,966
Norman Reg Hosp	66	522	45	416	56	461	29	446	11	457	2,509
Reynolds Army Community Hosp- Fort Sill	**	326	**	285	**	461	**	793	**	640	2,506
Carl Albert Indian Hosp- Ada (IHS)	**	410	**	514	**	512	**	501	**	501	2,442
Mercy Health- Love Cty	**	435	**	506	**	482	**	488	**	434	2,346
Elkview General Hosp	**	461	**	435	**	477	**	451	**	400	2,228
Mercy Hosp - OKC	67	199	65	235	123	268	160	250	132	675	2,174
Mercy Hosp-Tishomingo	**	409	**	353	**	400	**	415	**	497	2,074
Saint Anthony Hosp	50	318	48	319	30	322	70	382	41	407	1,987
Null Values	**	612	**	456	**	426	**	128	**	178	1,883
Integris Southwest Med Ctr	23	165	35	307	**	322	19	291	35	310	1,516

1. Only treated and transported patients included in this table.

2. *Only destinations with greater than 1,500 EMS service calls between 2009 and 2013 are shown.

3. Any cell represented by an asterisk (**) not shown due to privacy concerns.

Table 15: EMS service calls by destination, Region 3, Oklahoma 2009–2013.

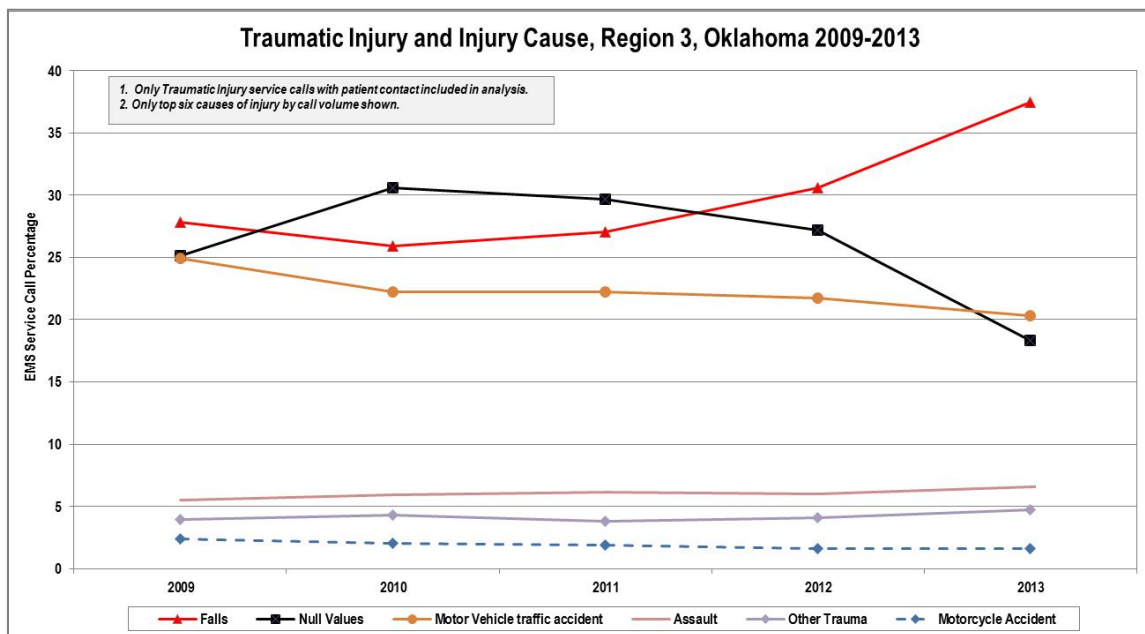


Figure 61: Traumatic injury EMS service calls by cause of injury, region 3, Oklahoma 2009–2013 (Only top six, by run volume, injury causes shown).

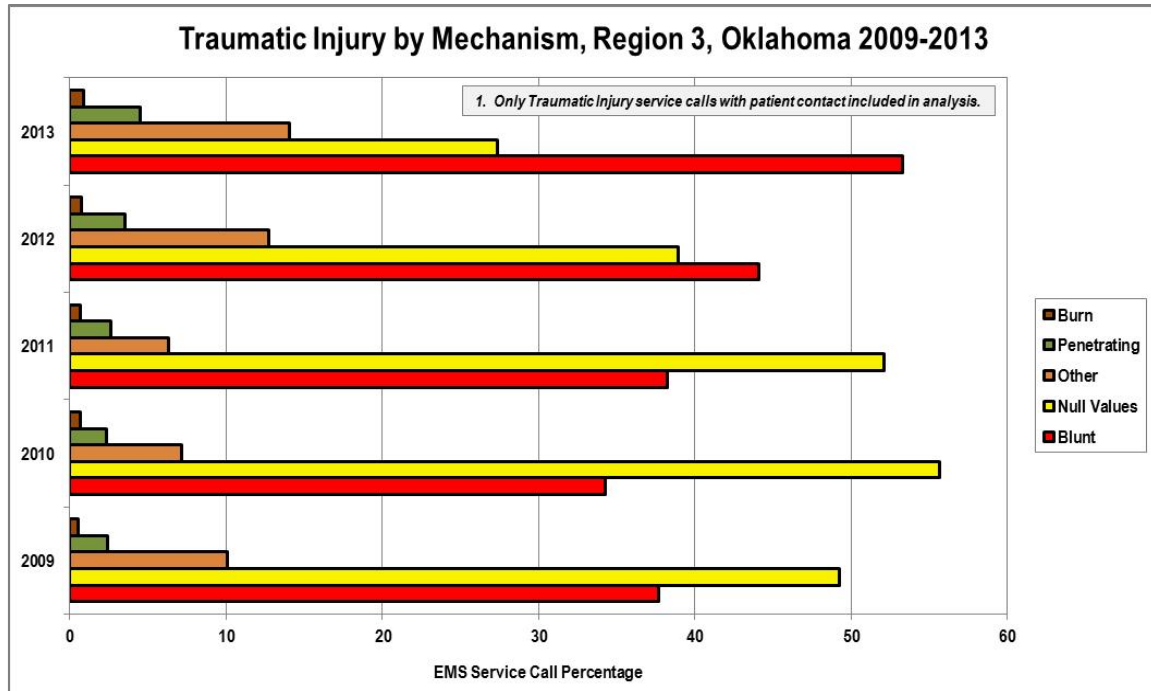


Figure 62: Traumatic injury EMS service calls by mechanism, region 3, Oklahoma 2009–2013.

Region 4

- Region 4 saw an 16.5% increase in the number of EMS calls from 2009 to 2013 ([Figure 63](#), [Figure 122](#)).
- 77.4% of all the service calls occurred in rural areas, 20% in urban areas, and 2.4% in super rural areas ([Figure 64](#)).
- Muskogee County (32.3%) had the highest percentage of calls in Region 4 followed by Creek (13.9%), Cherokee (13.3%), and Okmulgee (10.7%) counties ([Table 3](#)).
- Adair County (53.2%) showed the biggest service call volume increase between 2009 and 2013 while Okmulgee County had the smallest increase (7.3%).
- 26.6% of the service calls occurred in the City of Muskogee followed by Tahlequah (11.4%) and Sapulpa (7.7%, [Table 16](#)).
- 97.5% of all service calls were transported by ground with 2.5% transported by an air service.
- Muskogee County EMS (33.1%) responded to the highest percentage of calls followed by Creek County Emergency Ambulance Service (11.3%, [Table 17](#)) in Region 4.
- The majority of service calls occurred between 9:00am and 9:00pm ([Figure 65](#)) with a higher occurrence during the months of July and August.
- 15.6% of the service calls occurred on Friday with Sunday having the lowest percentage (12.4%).
- 76.3% were 911 calls followed by inter-facility transfers (7.1%, [Figure 66](#)). 10.8% were missing type of service for Region 4.
- 72.7% were treated and transported followed by patient refusals (12.7%, [Figure 67](#)).
- 64.1% of all the service calls for Region 4 were in the 50+ age groups with the 80+ age group having the highest percentage (18.3%, [Figure 68](#)).
- 51.6% were female with 44.2% being male (4.2% unknown).

- 73.8% of the patients were reported as White followed by American Indian/Alaska Native (10.5%) and Black/African American (7.5%, [Figure 69](#)).
- 40.5% of the EMS service calls with patient contact had an incident location type of “Home/Residence” followed by “Healthcare Facility” (34.9%) and “Street or Highway” (8.6%).
- 80.3% of all Region 4 EMS service calls with patient contact had a destination type of “hospital” followed by “nursing home” (7.4%).
- Muskogee Regional Medical Center received the highest percentage of treated and transported calls followed by St. Francis Hospital and Nursing home/Long Term Care facilities ([Table 18](#), [Table 19](#)).
- For destinations that received greater than 1,500 total service calls between 2009 and 2013, Hillcrest Hospital–Cushing had the highest percentage increase at 154.9% followed by Wagoner Community Hospital at 118.6% ([Table 18](#)).
- Muskogee Community Hospital had the biggest service call volume decrease (–82.4%) followed by Hillcrest Hospital–South (–7.7%). There was also a general decline in OKEMSIS generic destination codes as well for Region 4.
- “Closest facility” was the reason for choosing the destination 31.5% of the time followed by “patient choice” (22.5%).
- Traumatic Injury made up 12.1% of the total calls in Region 4 from 2009 to 2013 ([Figure 123](#)), the lowest percentage of all the regions.
- 95.1% of the traumatic injuries in region 4 were transported by a ground provider and 4.9% by air.
- Seventy-two percent of the traumatic injury service calls occurred in Muskogee, Cherokee, Wagoner, and Okmulgee counties with Muskogee having the highest percentage (35.6%).
- 27.1% of the traumatic injuries were caused by falls followed by Motor Vehicle Traffic Accidents at 21.8% ([Figure 70](#)).
- 45.4% of the traumatic injuries had a mechanism of injury of “blunt” followed by “penetrating” (2.6%) and “burn” (0.8%). 42.9% were missing/null values ([Figure 71](#)).

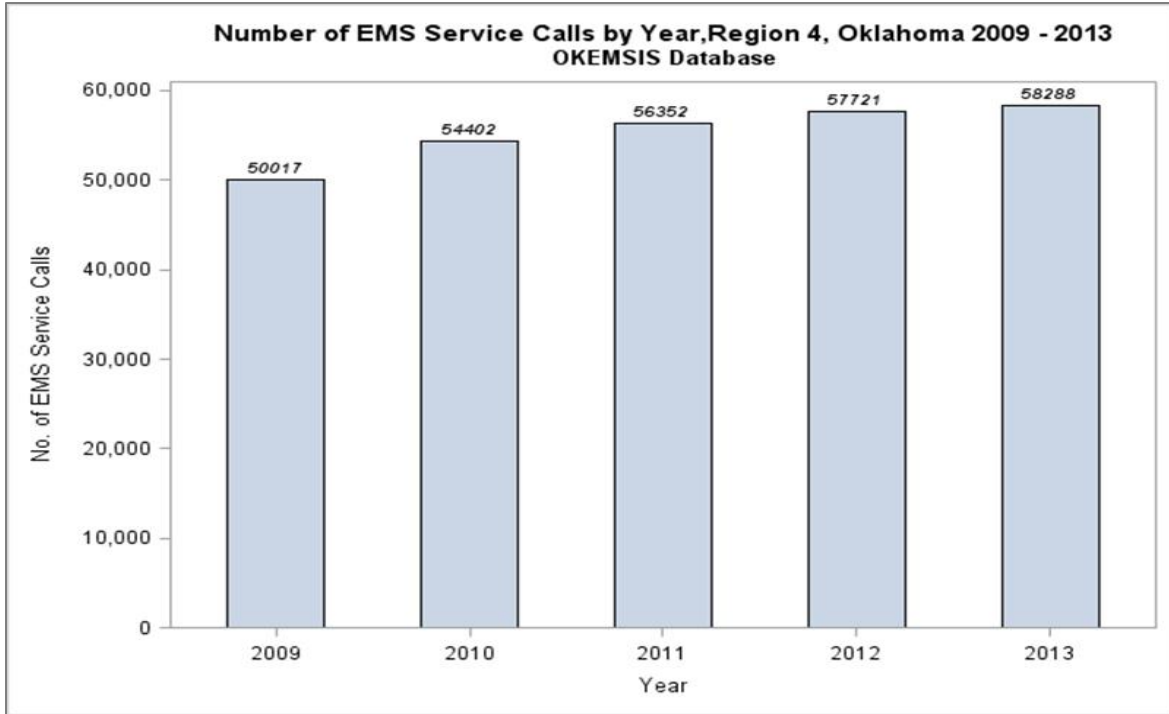


Figure 63: EMS service calls by year, region 4, Oklahoma 2009–2013.

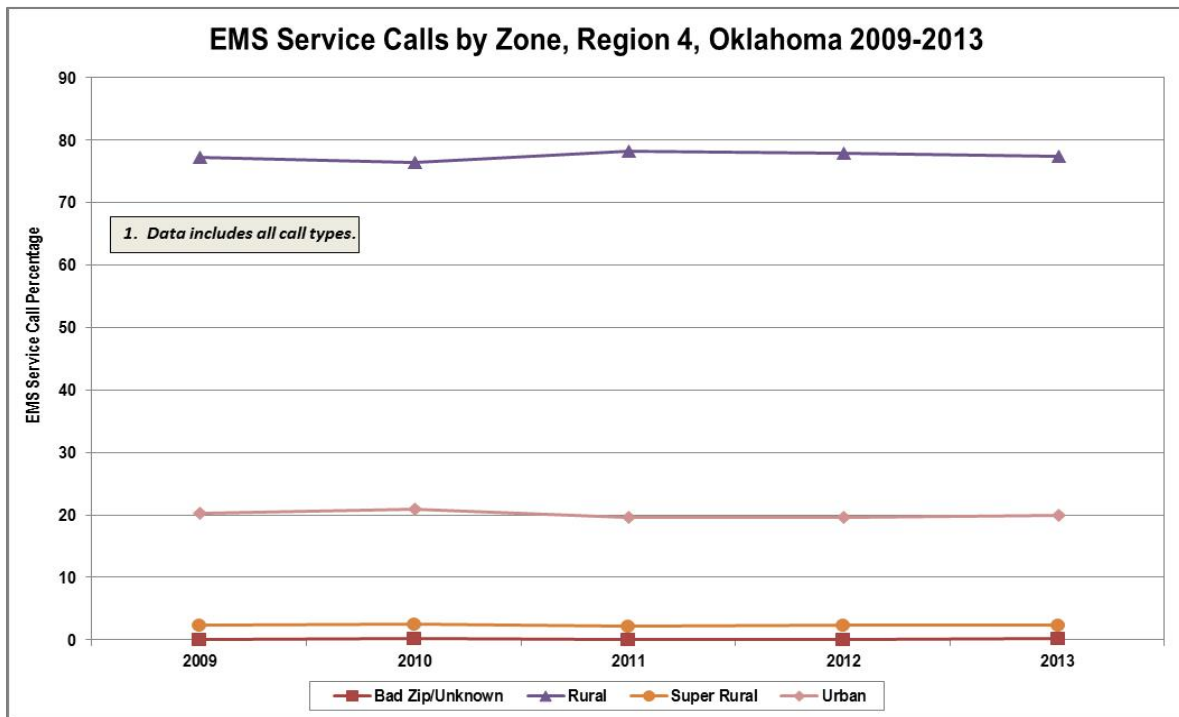


Figure 64: EMS service calls by zone, region 4, Oklahoma 2009–2013.

Table 16: EMS Service Calls by Incident City, Region 4, Oklahoma 2009-2013

Incident City	Year					Total # of Calls	% of Total Calls
	2009	2010	2011	2012	2013		
Muskogee, OK	14,348	13,996	14,932	14,738	15,549	73,563	26.6%
Tahlequah, OK	5,390	6,107	6,358	6,997	6,691	31,543	11.4%
Sapulpa, OK	4,143	4,472	4,072	4,351	4,320	21,358	7.7%
Okmulgee, OK	3,468	3,433	3,363	3,418	3,496	17,178	6.2%
Sallisaw, OK	2,338	2,052	2,024	2,223	2,320	10,957	3.9%
Eufaula, OK	1,704	1,919	1,919	2,038	2,120	9,700	3.5%
Henryetta, OK	1,655	1,937	1,847	2,071	2,009	9,519	3.4%
Wagoner, OK	932	2,017	2,327	2,096	2,129	9,501	3.4%
Coweta, OK	1,600	1,770	1,588	1,530	1,784	8,272	2.9%
Stilwell, OK	598	1,561	1,859	1,952	1,568	7,538	2.7%

1. Data includes all call types.

2. Only top ten cities by run volume shown in table.

Table 17: EMS Service Calls by Agency, Region 4, Oklahoma 2009-2013

EMS Agency Name	Year					Total # of Calls	% of Total Calls
	2009	2010	2011	2012	2013		
Muskogee County EMS	17,972	17,608	18,576	18,269	19,076	91,501	33.1%
Creek County Emergency Ambulance Service District	5,938	6,108	5,943	6,469	6,700	31,158	11.3%
Okmulgee County EMS	5,165	5,334	5,413	5,504	5,487	26,903	9.7%
Pafford EMS of Oklahoma	3,919	3,745	3,887	4,314	4,596	20,461	7.4%
Northeastern Health System EMS	3,222	3,569	3,603	3,909	3,790	18,093	6.5%
Cherokee Nation EMS	2,611	3,102	3,400	3,760	3,754	16,627	6.0%
Wagoner EMS	774	1,969	2,353	2,159	2,192	9,447	3.4%
Coweta Fire Dept	1,615	1,787	1,629	1,478	1,751	8,260	2.9%
Stilwell Ambulance Service	514	1,524	1,830	1,971	1,468	7,307	2.6%
Westville EMS	1,246	1,218	1,374	1,371	1,263	6,472	2.3%

1. Data includes all call types.

2. Only top ten EMS providers by run volume shown in table.

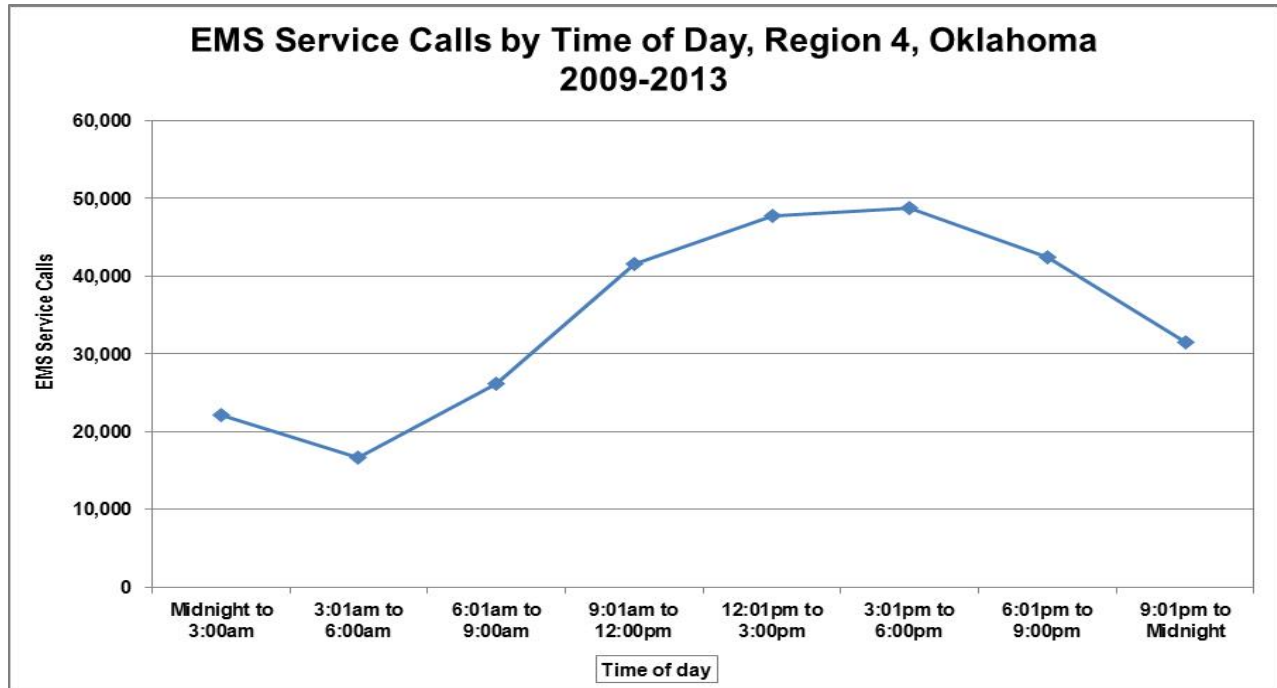


Figure 65: EMS service calls by time of day (all call types), region 4, Oklahoma 2009–2013.

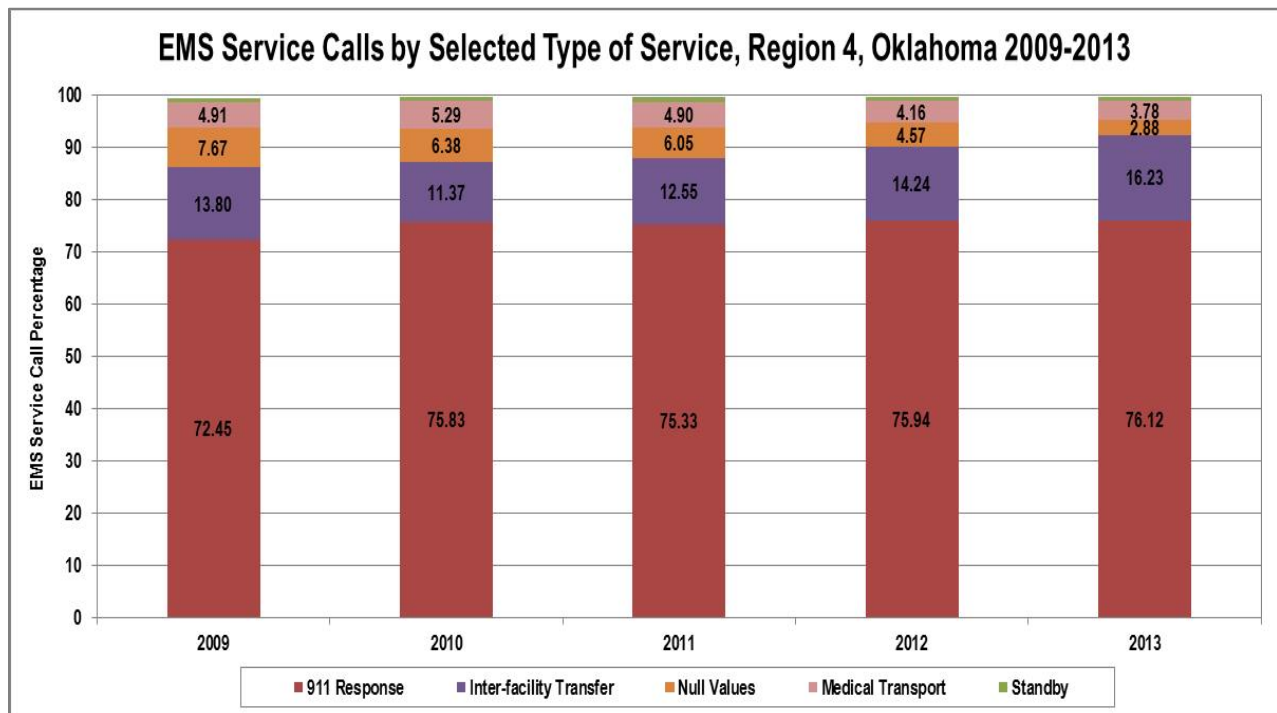


Figure 66: EMS service calls by type of service requested, region 4, Oklahoma 2009–2013.

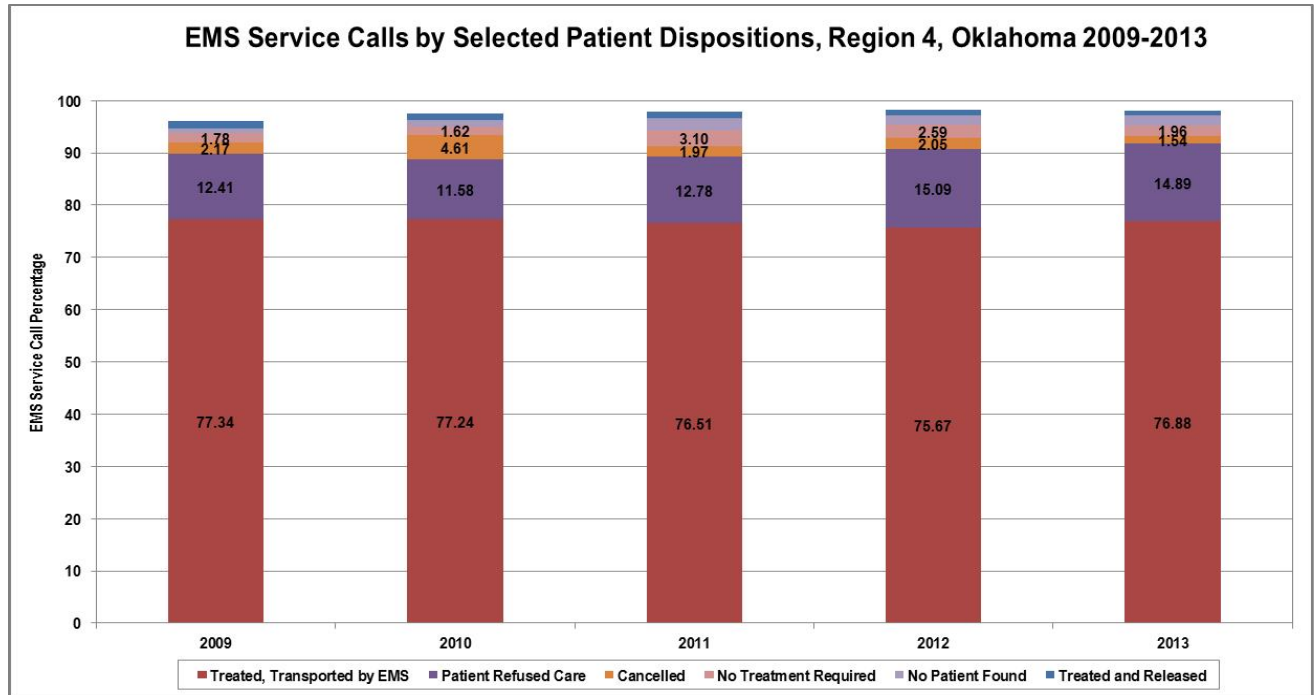


Figure 67: EMS service calls by selected patient disposition, region 4, Oklahoma 2009–2013.

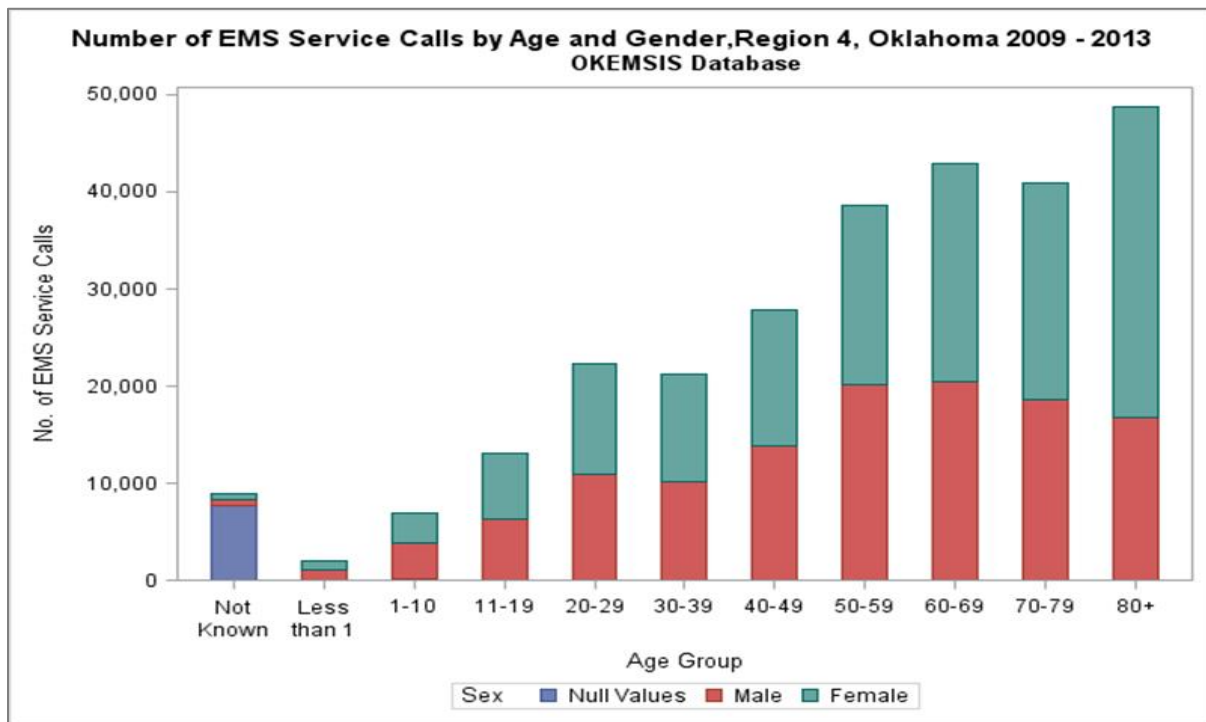


Figure 68: EMS service calls by age and gender, region 4, Oklahoma 2009–2013.

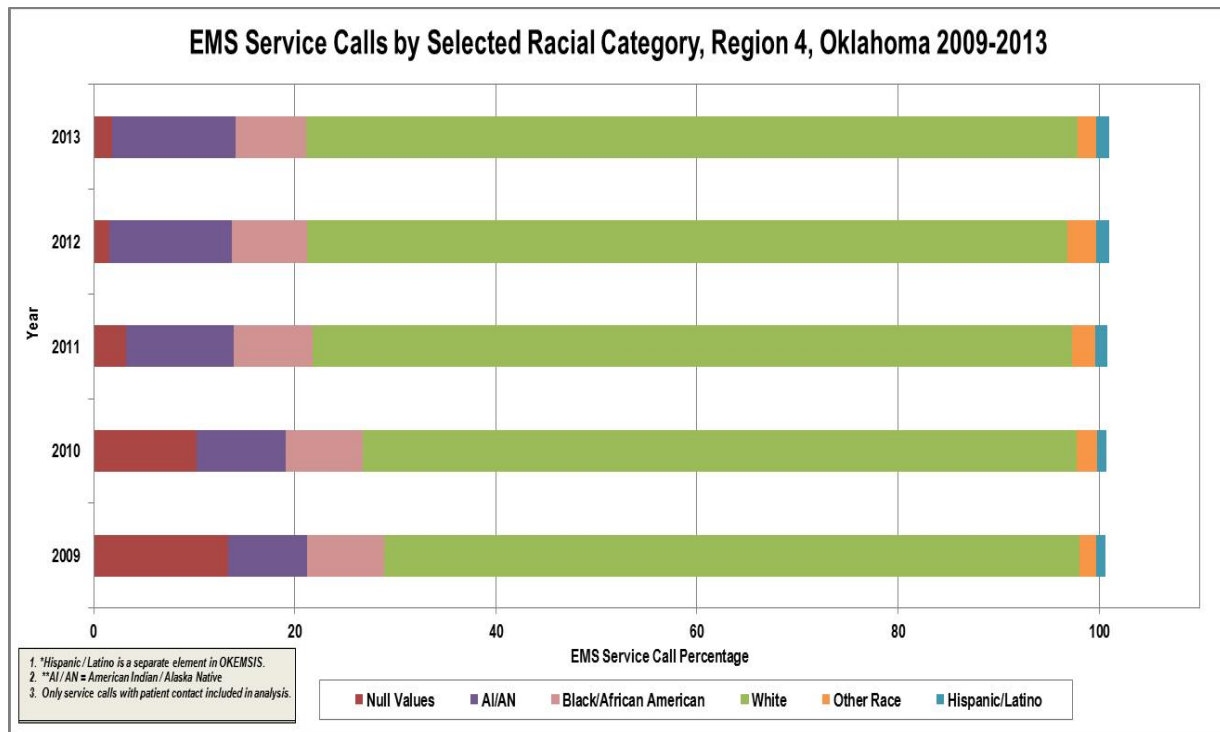


Figure 69: EMS service calls by racial category, region 4, Oklahoma 2009–2013.

Table 18: EMS Service Calls by Destination and Incident Region, Region 4 Treated and Transported Patients, Oklahoma 2009-2013

*Not All Destinations Shown Destination Facility	Year					**Generic OKEMSIS Destination Code		
	2009	2010	2011	2012	2013	Total # of Calls	% of Total Calls	% Increase/Decrease
Muskogee Reg Med Ctr	7,449	7,242	7,649	8,898	9,701	40,939	19.1%	30.2%
St. Francis Hospital, Inc.	3,681	4,255	3,715	4,297	4,487	20,435	9.6%	21.9%
Nursing Home/Rest Home/Long Term Care**	3,514	3,344	3,722	3,327	3,229	17,136	8.0%	-8.1%
Tahlequah City Hospital	2,676	2,883	2,470	2,869	3,236	14,134	6.6%	20.9%
St. John Med Ctr, Inc. Tulsa	2,436	2,722	2,329	2,649	2,880	13,016	6.1%	18.2%
Out of State Facility-AR	2,174	2,412	2,584	2,781	2,930	12,881	6.0%	34.8%
Okmulgee Mem Hosp	1,799	1,796	1,750	1,859	1,859	9,063	4.2%	3.3%
Hillcrest Med Ctr-Tulsa	1,434	1,794	1,764	2,018	1,697	8,707	4.1%	18.3%
Sequoyah Mem Hosp	1,278	1,106	1,139	1,204	1,216	5,943	2.8%	-4.9%
Hastings Indian Hosp (IHS)	942	1,023	837	1,046	1,414	5,262	2.5%	50.1%
Private Residence	948	919	1,006	890	908	4,671	2.2%	-4.2%
Muskogee VA Med Ctr	797	986	1,003	868	976	4,630	2.2%	22.5%

Saint John- Sapulpa	757	938	962	970	898	4,525	2.1%	18.6%
Hillcrest Hosp-Henryetta	756	824	866	977	839	4,262	1.9%	10.9%
Hillcrest Hosp-South	757	905	825	788	699	3,974	1.9%	-7.7%
Invalid Code	634	1,210	1,530	365	88	3,827	1.8%	-5.9%
Memorial Hospital	411	790	834	782	748	3,565	1.7%	82.0%
OSU Med Ctr	639	693	708	702	722	3,464	1.6%	12.9%
Wagoner Community Hosp	350	686	819	765	765	3,385	1.6%	118.6%
Muskogee Community Hosp	364	1,044	1,212	608	64	3,292	1.5%	-82.4%
Solara Hosp- Muskogee	572	651	599	657	713	3,192	1.5%	24.7%
Haskell Cty Hosp	457	518	454	507	510	2,446	1.1%	11.6%
Community Hosp- Lakeview	453	486	463	319	419	2,140	1.0%	-7.5%
St. Francis Hosp- South Tulsa	374	328	403	495	422	2,022	0.9%	12.8%
Null Values	725	431	402	198	171	1,927	0.9%	-76.4%
Hillcrest Hosp-Cushing	251	195	265	297	640	1,648	0.8%	154.9%
Clinics/Doctor's Offices**	602	285	338	210	210	1,645	0.8%	-65.1%
Bristow Med Ctr	299	257	340	359	320	1,575	0.7%	7.0%

*Only destinations with greater than 1,500 EMS service calls between 2009 and 2013 are shown.

Table 19: EMS Service Calls by Destination and Incident Region, Region 4 Treated and Transported Patients, Oklahoma 2009-2013

Destination	Year										Total Count
	2009		2010		2011		2012		2013		
	Service Type		Service Type		Service Type		Service Type		Service Type		
	Air	Ground	Air	Ground	Air	Ground	Air	Ground	Air	Ground	
Muskogee Regional Med Ctr	**	7,444	**	7,223	**	7,637	**	8,889	**	9,687	40,939
St. Francis Hospital, Inc.	497	3,184	674	3,581	328	3,387	511	3,786	491	3,996	20,435
Nursing Home/Rest Home/Long Term Care	**	3,514	**	3,343	**	3,722	**	3,327	**	3,229	17,136
Tahlequah City Hospital	**	2,674	**	2,879	**	2,466	**	2,868	**	3,232	14,134
St. John Med Ctr, Inc. Tulsa	306	2,130	332	2,390	170	2,159	164	2,485	107	2,773	13,016
Out of State Facility-AR	47	2,127	57	2,355	78	2,506	55	2,726	66	2,864	12,881
Okmulgee Mem Hosp	**	1,798	**	1,796	**	1,748	**	1,858	**	1,859	9,063
Hillcrest Med CtrTulsa	163	1,271	245	1,549	186	1,578	220	1,798	195	1,502	8,707
Sequoyah Mem Hosp	**	1,278	**	1,106	**	1,139	**	1,204	**	1,216	5,943
Hastings Indian Hosp (IHS)	**	942	**	1,023	**	837	**	1,046	**	1,414	5,262
Private Residence	**	947	**	919	**	1,006	**	890	**	908	4,671
Muskogee VA Med Ctr	**	797	**	986	**	1,003	**	868	**	976	4,630

Saint John- Sapulpa	**	756	**	936	**	961	**	970	**	898	4,525
Hillcrest Hosp-Henryetta	**	755	**	823	**	866	**	977	**	838	4,262
Hillcrest Hosp-South	51	706	61	844	44	781	65	723	38	661	3,974
Invalid Code	**	631	**	1,210	**	1,526	**	356	**	77	3,827
Memorial Hospital	**	411	**	789	**	834	**	782	**	748	3,565
OSU Med Ctr	58	581	50	643	33	675	31	671	19	703	3,464
Wagoner Community Hosp	**	350	**	686	**	819	**	764	**	763	3,385
Muskogee Community Hosp	**	364	**	1,044	**	1,212	**	608	**	64	3,292
Solara Hosp- Muskogee	**	572	**	651	**	599	**	657	**	713	3,192
Haskell Cty Hosp	**	456	**	517	**	454	**	506	**	510	2,446
Community Hosp- Lakeview	**	453	**	486	**	462	**	318	**	419	2,140
St. Francis Hosp- South Tulsa	36	338	36	292	153	250	88	407	11	411	2,022
Null Values	**	709	**	424	**	393	**	197	**	170	1,927
Hillcrest Hosp-Cushing	**	251	**	195	**	265	**	297	**	640	1,648
Clinics or Doctors Offices	**	602	**	285	**	338	**	210	**	210	1,645
Bristow Med Ctr	**	299	**	257	**	339	**	359	**	320	1,575

1. Only treated and transported patients included in this table.

2. *Only destinations with greater than 1,500 EMS service calls between 2009 and 2013 are shown.

3. Any cell represented by an asterisk (**) not shown due to privacy concerns.

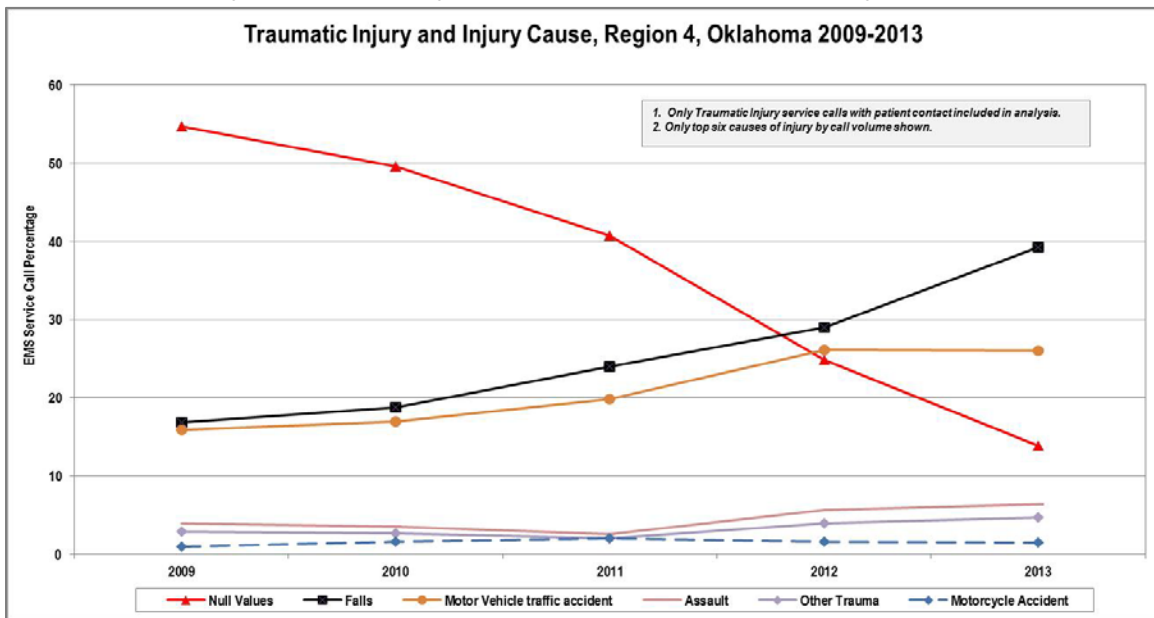


Figure 70: Traumatic injury EMS service calls by cause of injury, region 4, Oklahoma 2009–2013 (Only top six, by run volume, injury causes shown).

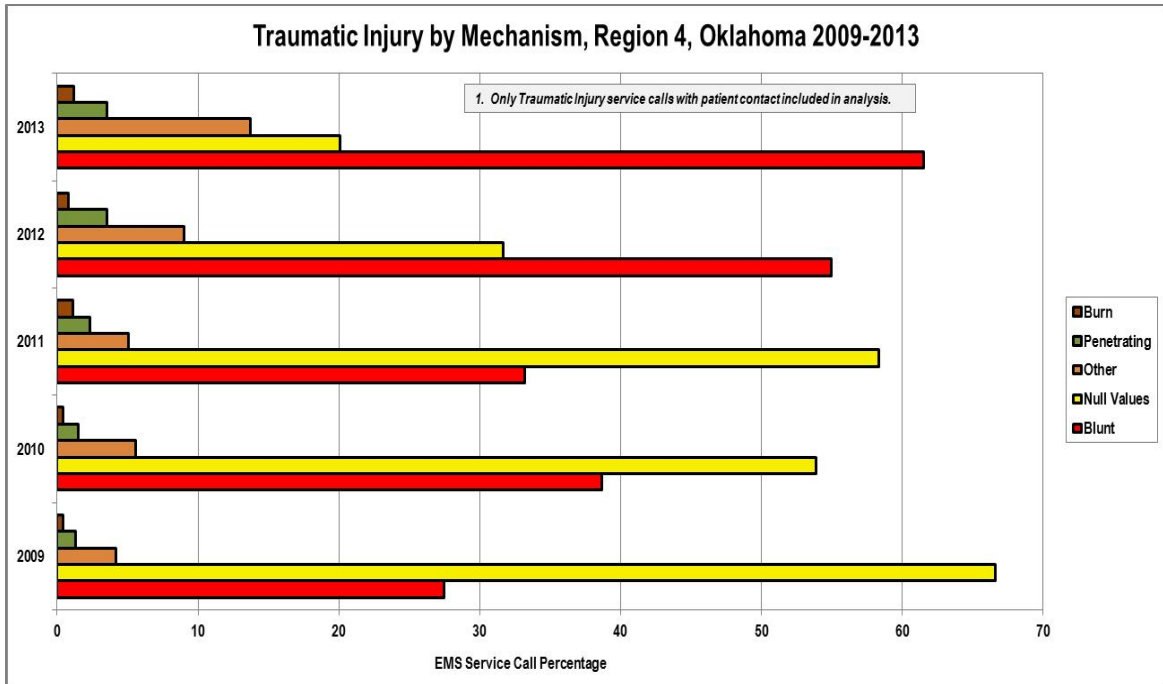


Figure 71: Traumatic injury EMS service calls by mechanism, region 4, Oklahoma 2009–2013.

Region 5

- Region 5 saw a 14.3% increase in the number of EMS calls from 2009 to 2013 ([Figure 72](#), [Figure 122](#)).
- 52% of all the service calls occurred in rural areas, 42.9% in super rural areas, and 4.9% in urban areas ([Figure 73](#)).
- Bryan County (17.4%) had the highest percentage of calls in Region 5 followed by Pittsburg (16.1%), Le Flore (14.5%), and McCurtain (11.8%) counties ([Table 3](#)).
- Hughes County (47.7%) showed the biggest service call volume increase between 2009 and 2013 while Choctaw County had the only decrease (-0.9%).
- 13.2% of the service calls occurred in the City of McAlester followed by Durant (12.2%) and Idabel (6.2%, [Table 20](#)).
- 95.3% of all service calls were transported by ground with 4.66% transported by an air service.
- Bryan County EMS (13.7%) responded to the highest percentage of calls followed by EMS of LeFlore County (12.9%, [Table 21](#)).
- The majority of service calls occurred between 9:00am and 9:00pm ([Figure 74](#)) with a higher occurrence during the months of August and December.
- 15.2% of the service calls occurred on Friday with Sunday having the lowest percentage (13.1%).
- 69.3% were 911 calls followed by inter-facility transfers (10.9%, [Figure 75](#)). 9.6% were missing type of service for Region 5.
- 78% were treated and transported followed by patient refusals (10.9%, [Figure 76](#)).
- 66.3% of all the service calls for Region 5 were in the 50+ age groups with the 80+ age group having the highest percentage (21.2%, [Figure 77](#)).
- 51.9% were female with 43.4% being male (4.7% unknown).
- 68.9% of the patients were reported as White followed by American Indian/Alaska Native (8.9%) and Black/African American (4.6%, [Figure 78](#)).

- 38.9% of the EMS service calls with patient contact had an incident location type of “Home/Residence” followed by “Healthcare Facility” (37.2%) and “Street or Highway” (11.9%).
- 81.5% of all Region 5 EMS service calls with patient contact had a destination type of “hospital” followed by “nursing home” (4.5%).
- Medical Center of Southeastern Oklahoma received the highest percentage of treated and transported calls followed by McAlester Regional Health Center and Out of State Facility–Arkansas ([Table 22](#), [Table 23](#)).
- For destinations that received greater than 1,500 total service calls between 2009 and 2013, Out of State Facility Not Listed had the highest percentage increase at 300% followed by St. Francis Hospital at 133.6% ([Table 22](#)).
- Integris Marshall Memorial Hospital had the biggest service call volume decrease (-13.6%) followed by Atoka Memorial Hospital (-9.2%).
- “Closest facility” was the reason for choosing the destination 45.7% of the time followed by “patient choice” (13.8%).
- Traumatic Injury made up 14.4% of the total calls in Region 5 from 2009 to 2013 ([Figure 123](#)).
- 91.2% of the traumatic injuries in Region 5 were transported by a ground provider and 8.9% by air.
- Fifty-Four percent of the traumatic injury service calls occurred in Pittsburg, Le Flore, McCurtain, and Bryan counties with Pittsburg having the highest percentage (16.2%).
- 29.3% of the traumatic injuries were caused by falls followed by Motor Vehicle Traffic Accidents at 18.4% ([Figure 79](#)).
- 45.8% of the traumatic injuries had a mechanism of injury of “blunt” followed by “penetrating” (3%) and “burn” (0.8%). 45.1% were missing/null values ([Figure 80](#)).

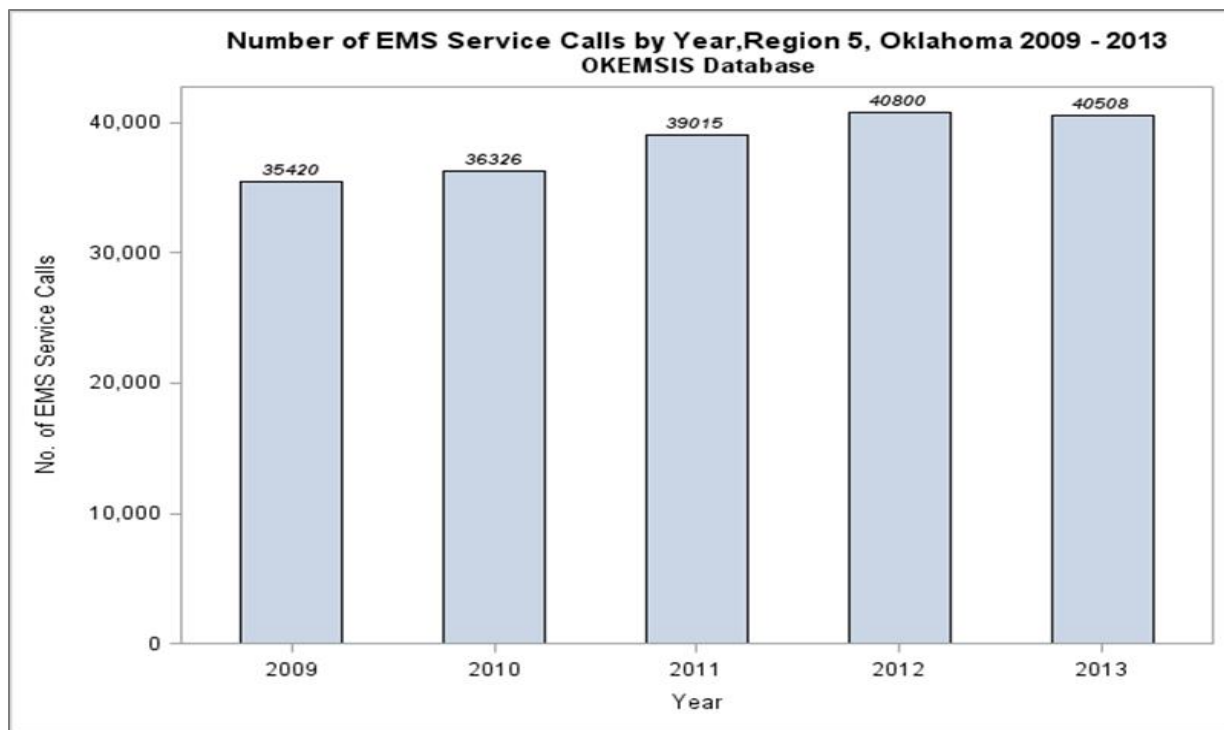


Figure 72: EMS service calls by year, region 5, Oklahoma 2009–2013.

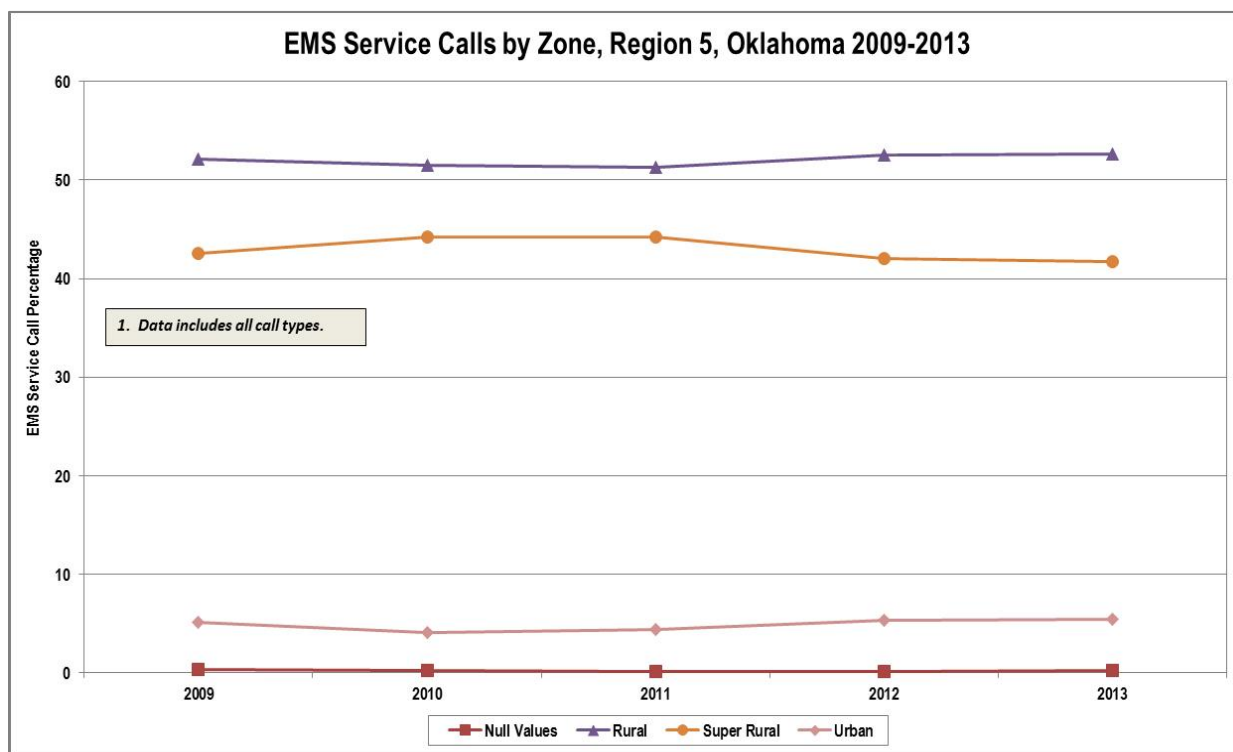


Figure 73: EMS service calls by zone, region 5, Oklahoma 2009–2013.

Table 20: EMS Service Calls by Incident City, Region 5, Oklahoma 2009-2013

Incident City	Year					Total # of Calls	% of Total Calls
	2009	2010	2011	2012	2013		
McAlester, OK	4,685	4,849	5,348	5,308	5,144	25,334	13.2%
Durant, OK	4,544	4,627	4,734	4,814	4,744	23,463	12.2%
Idabel, OK	2,061	2,381	2,539	2,482	2,369	11,832	6.2%
Hugo, OK	2,013	2,205	2,122	1,993	1,886	10,219	5.3%
Seminole, OK	1,676	2,064	1,946	2,020	2,110	9,816	5.1%
Atoka, OK	1,705	1,790	1,870	1,681	1,750	8,796	4.6%
Poteau, OK	1,520	1,031	1,149	1,793	1,914	7,407	3.9%
Broken Bow, OK	1,367	1,357	1,415	1,557	1,561	7,257	3.8%
Okemah, OK	1,064	1,388	1,729	1,399	1,360	6,940	3.6%
Holdenville, OK	983	1,306	1,378	1,347	1,343	6,357	3.3%

1. Data includes all call types.

2. Only top ten cities by run volume shown in table.

Table 21: EMS Service Calls by Agency, Region 5, Oklahoma 2009-2013

EMS Agency Name	Year					Total # of Calls	% of Total Calls
	2009	2010	2011	2012	2013		
Bryan County EMS	5,192	5,282	5,339	5,335	5,180	26,328	13.7%
EMS of LeFlore County	4,778	3,683	4,329	5,870	6,026	24,686	12.9%
McCurtain County EMS	3,969	4,214	4,392	4,457	4,354	21,386	11.1%
Choctaw County Ambulance Auth	2,310	2,464	2,503	2,353	2,270	11,900	6.2%
McAlester Fire Dept EMS	2,026	2,157	2,497	2,349	2,294	11,323	5.9%
Para Med, Inc	2,435	2,384	2,534	1,796	981	10,130	5.3%
Atoka County Ambulance	1,874	1,876	2,006	1,709	1,973	9,438	4.9%
Seminole Fire Department	1,567	1,915	1,819	1,901	2,053	9,255	4.8%
Marshall County EMS District	1,205	1,125	1,447	1,903	1,776	7,456	3.9%
Hughes County EMS	1,100	1,388	1,550	1,485	1,566	7,089	3.7%

1. Data includes all call types.

2. Only top ten EMS providers by run volume shown in table.

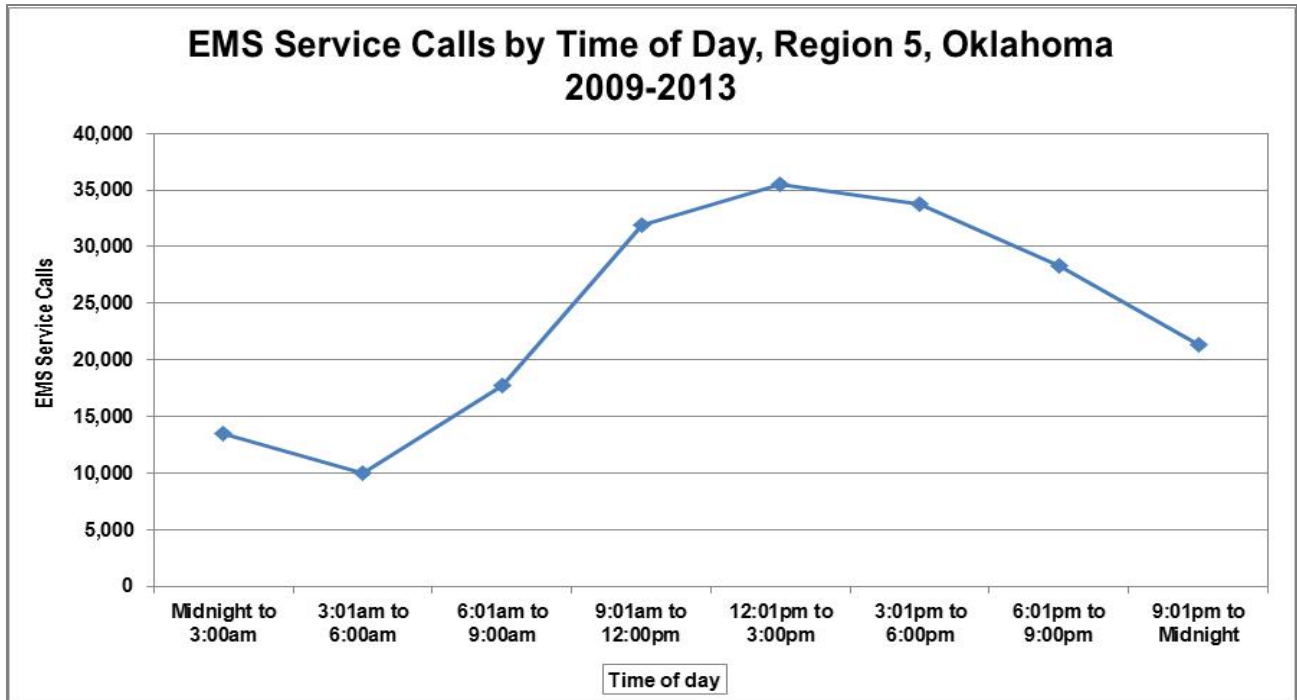


Figure 74: EMS service calls by time of day (all call types), region 5, Oklahoma 2009–2013.

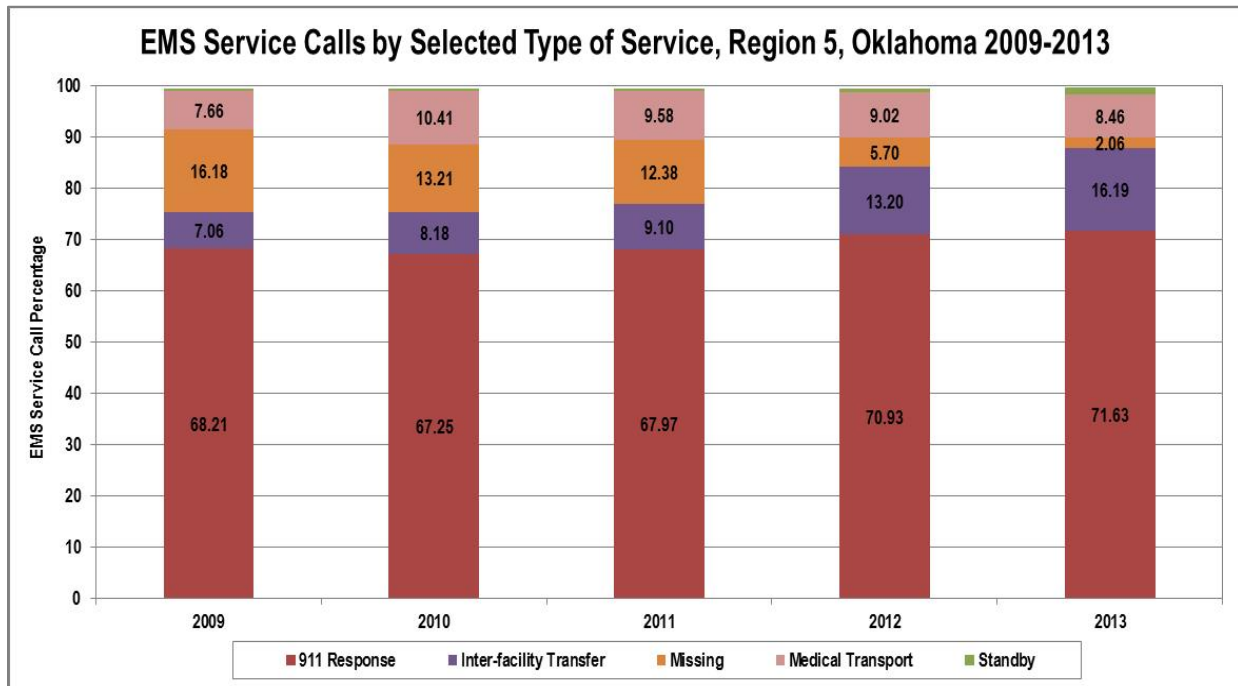


Figure 75: EMS service calls by type of service requested, region 5, Oklahoma 2009–2013.

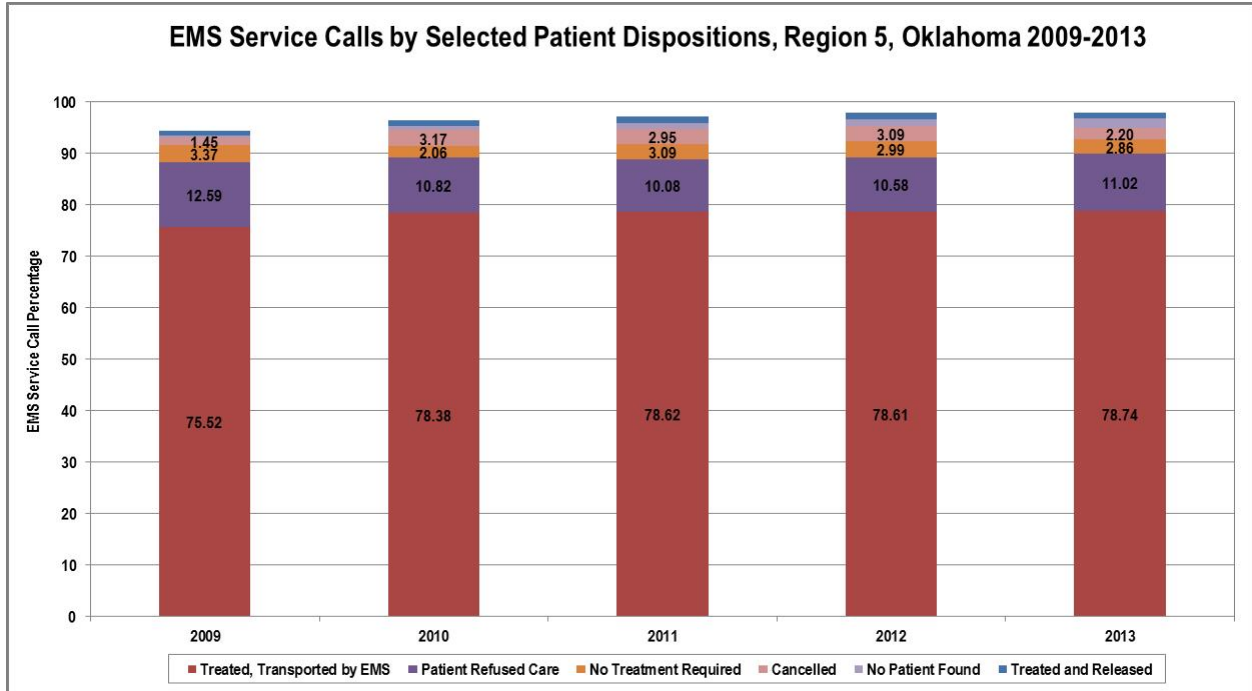


Figure 76: EMS service calls by selected patient disposition, region 5, Oklahoma 2009–2013.

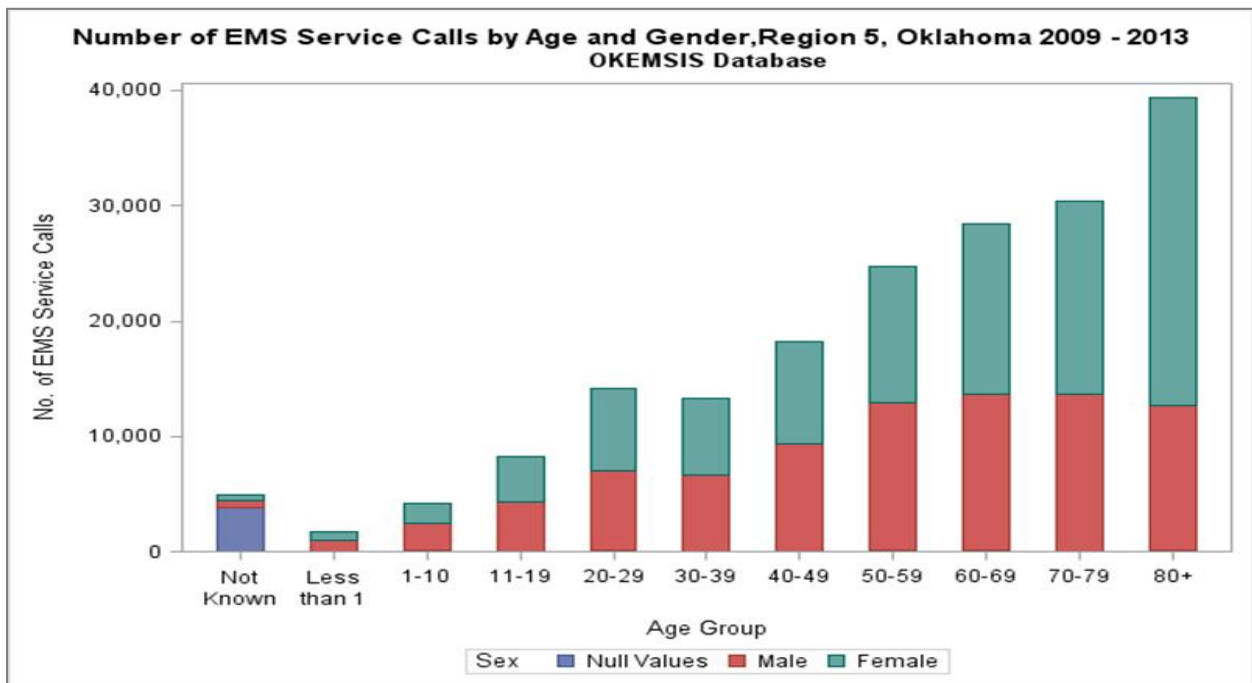


Figure 77: EMS service calls by age and gender, region 5, Oklahoma 2009–2013.

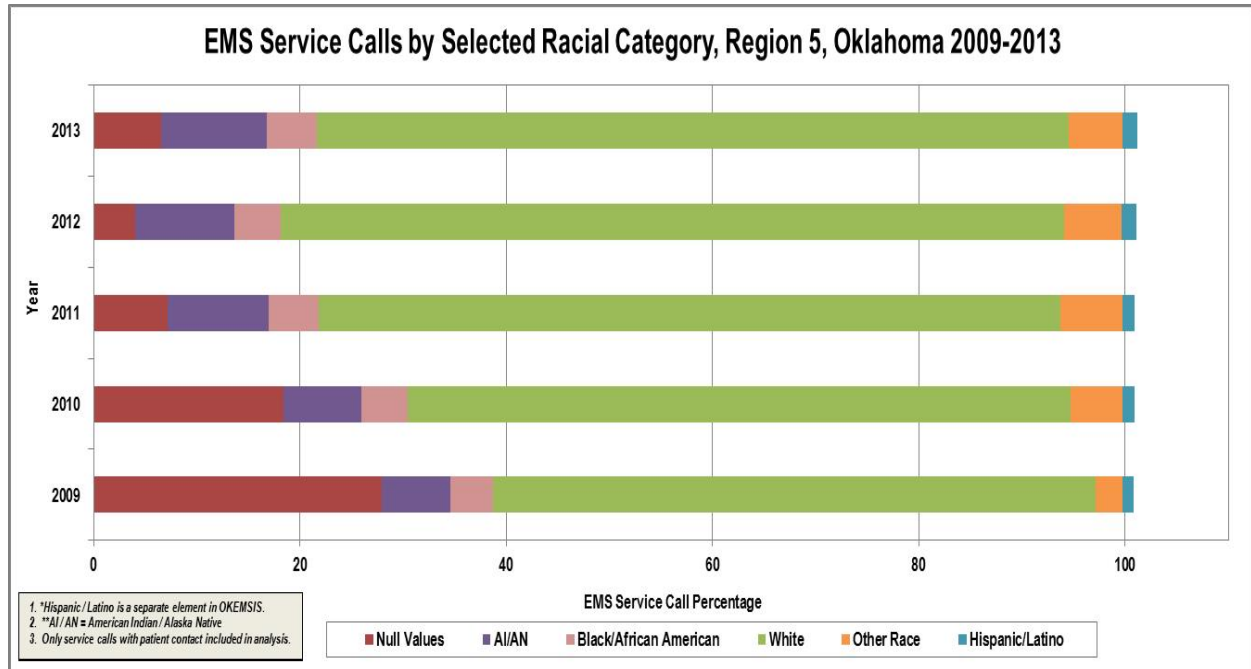


Figure 78: EMS service calls by racial category, region 5, Oklahoma 2009–2013.

Table 22: EMS Service Calls by Destination and Incident Region, Region 5 Treated and Transported Patients, Oklahoma 2009-2013

*Not All Destinations Shown	Year					Total # of Calls	% of Total Calls	% Increase/Decrease
Destination Facility	2009	2010	2011	2012	2013			
Med Ctr of Southeastern Oklahoma	3,161	3,432	3,575	3,649	3,751	17,568	11.6%	18.7%
McAlester Reg Hlth Ctr	3,133	3,441	3,622	3,690	3,402	17,288	11.4%	8.6%
Out of State Facility-AR	2,104	1,647	2,019	2,749	2,855	11,374	7.5%	35.7%
McCurtain Mem Hosp	1,913	2,141	2,350	2,432	2,299	11,135	7.3%	20.2%
Nursing Home/Rest Home/Long Term Care	1,756	2,043	1,944	2,122	2,160	10,025	6.6%	23.0%
Out of State Facility-TX	1,409	1,134	1,519	1,379	1,425	6,866	4.5%	1.1%
Choctaw Mem Hosp	1,182	1,284	1,298	1,301	1,238	6,303	4.2%	4.7%
Eastern Oklahoma Med Ctr	1,345	1,032	1,096	1,355	1,356	6,184	4.1%	0.8%
Seminole Med Ctr	893	1,043	994	1,038	1,110	5,078	3.4%	24.3%
Null Values/Invalid Code	695	652	1,727	1,051	700	4,825	3.2%	0.7%
St. Francis Hosp- Tulsa	587	843	809	1,169	1,371	4,779	3.2%	133.6%
Holdenville Gen Hosp	625	888	676	923	903	4,015	2.7%	44.5%
Atoka Mem Hosp	828	820	875	720	752	3,995	2.6%	-9.2%
Pushmataha Cty Hosp- Antlers	598	706	646	684	622	3,256	2.2%	4.0%

Integrus Marshall Mem Hosp	634	644	664	666	548	3,156	2.1%	-13.6%
Oklahoma Heart Hosp - OKC	528	719	640	519	552	2,958	1.9%	4.6%
OU MED CTR- Presbyterian,Children's, Edmond	504	557	577	648	591	2,877	1.9%	17.3%
Creek Nation Community Hosp	481	564	565	510	548	2,668	1.8%	13.9%
Out of State Facility Not Listed	185	640	510	553	740	2,628	1.7%	300.0%
Choctaw Nation Hlth Care Ctr (IHS)	521	306	476	569	546	2,418	1.6%	4.8%
Latimer County Gen Hosp	369	279	325	379	353	1,705	1.1%	-4.3%
Private Residence	310	331	305	343	408	1,697	1.1%	31.6%

1. Only treated and transported patients included in this table.

2. *Only destinations with greater than 1,500 EMS service calls between 2009 and 2013 are shown.

Table 23: EMS Service Calls by Destination and Incident Region, Region 5 Treated and Transported Patients, Oklahoma 2009-2013

Destination	Year										Total Count
	2009		2010		2011		2012		2013		
	Service Type		Service Type		Service Type		Service Type		Service Type		
	Air	Ground	Air	Ground	Air	Ground	Air	Ground	Air	Ground	
Med Ctr of Southeastern Oklahoma	3	3,158	4	3,428	9	3,566	15	3,634	10	3,741	17,568
McAlester Reg Hlth Ctr	11	3,122	12	3,429	19	3,603	14	3,676	11	3,391	17,288
Out of State Facility-AR	50	2,054	45	1,602	106	1,913	94	2,655	87	2,768	11,374
McCurtain Mem Hosp	**	1,911	**	2,138	**	2,350	**	2,430	**	2,299	11,135
Nursing Home/Rest Home/Long Term Care	**	1,756	**	2,043	**	1,944	**	2,122	**	2,160	10,025
Out of State Facility-TX	132	1,277	137	997	248	1,271	386	993	342	1,083	6,866
Choctaw Mem Hosp	**	1,179	**	1,284	**	1,298	**	1,300	**	1,238	6,303
Eastern Oklahoma Med Ctr	**	1,345	**	1,031	**	1,096	**	1,355	**	1,355	6,184
Seminole Med Ctr	**	888	**	1,024	**	990	**	1,031	**	1,109	5,078
Null Values/Invalid Code	28	667	23	629	139	1,588	176	875	26	674	4,825
St. Francis Hosp- Tulsa	221	366	373	470	222	587	304	865	354	1,017	4,779
Holdenville Gen Hosp	**	624	**	886	**	676	**	921	**	903	4,015
Atoka Mem Hosp	**	828	**	819	**	875	**	720	**	752	3,995
Pushmataha Cty Hosp- Antlers	**	598	**	706	**	646	**	684	**	622	3,256
Integrus Marshall Mem Hosp	**	634	**	643	**	664	**	666	**	548	3,156
Oklahoma Heart Hosp - OKC	191	337	245	474	171	469	49	470	79	473	2,958
OU MED CTR- Presbyterian,Children's, Edmond	171	333	176	381	238	339	268	380	183	408	2,877
Creek Nation Community Hosp	**	481	**	564	**	565	**	510	**	548	2,668
Out of State Facility Not Listed	62	123	97	543	**	501	**	548	**	730	2,628
Choctaw Nation Hlth Care Ctr (IHS)	**	520	**	306	**	476	**	568	**	546	2,418

Latimer County Gen Hosp	**	368	**	278	**	325	**	379	**	352	1,705
Private Residence	**	310	**	330	**	305	**	342	**	408	1,697

1. Only treated and transported patients included in this table.
2. *Only destinations with greater than 1,500 EMS service calls between 2009 and 2013 are shown.
3. Any cell represented by an asterisk (**) not shown due to privacy concerns.

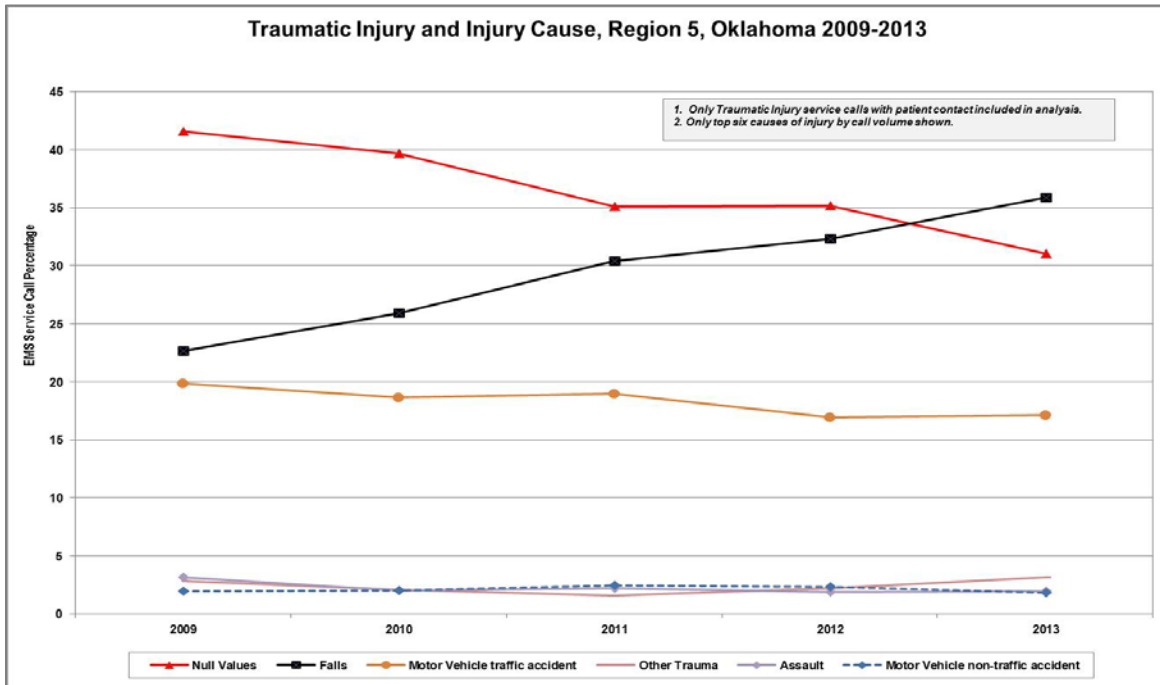


Figure 79: Traumatic injury EMS service calls by cause of injury, region 5, Oklahoma 2009–2013 (Only top six, by run volume, injury causes shown).

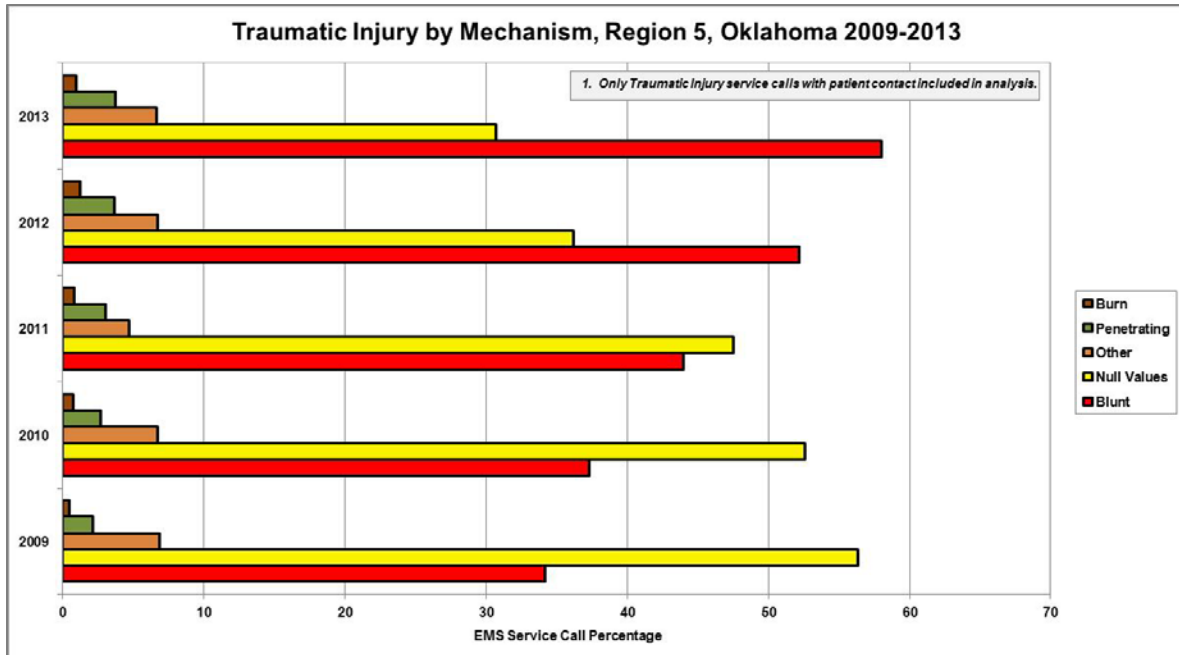


Figure 80: Traumatic injury EMS service calls by mechanism, region 5, Oklahoma 2009–2013.

Region 6

- Region 6 saw a 51.2% increase in the number of EMS calls from 2009 to 2013 ([Figure 81](#), [Figure 122](#)), the highest 5 year increase among all the Oklahoma regions.
- 62.5% of all the service calls occurred in urban areas, 36.9% in rural areas, and less than one percent in super rural areas ([Figure 82](#)).
- Cleveland County (42.6%) had the highest percentage of calls in Region 6 followed by Pottawatomie (21.6%), and Canadian (14.9%) counties ([Table 3](#)).
- Canadian County (271.6%) showed the biggest service call volume increase between 2009 and 2013 while McClain County had the smallest increase (5.2%).
- 29.7% of the service calls occurred in the City of Norman followed by Shawnee (16.8%) and Oklahoma City (8.8%, [Table 24](#)).
- 99.2% of all service calls were transported by ground with 0.9% transported by an air service.
- EMSSTAT–Norman Regional Hospital EMS (13.7%) responded to the highest percentage of calls followed by React EMS (22.9%, [Table 25](#)).
- The majority of service calls occurred between 9:00am and 9:00pm ([Figure 83](#)) with a higher overall occurrence during the months of July and August.
- 15.5% of the service calls occurred on Friday with Sunday having the lowest percentage (12.8%).
- 77.5% were 911 calls followed by inter-facility transfers (17.8%, [Figure 84](#)).
- 77.7% were treated and transported followed by patient refusals (10.5%, [Figure 85](#)).
- 56.8% of all the service calls for Region 6 were in the 50+ age groups with the 80+ age group having the highest percentage (17.1%, [Figure 86](#)).
- 50% were female with 41.4% being male (8.6% unknown).

- 79.3% of the patients were reported as White followed by Black/African American (4.3%) and American Indian/Alaska Native (3.8%, [Figure 87](#)).
- 41.1% of the EMS service calls with patient contact had an incident location type of “Home/Residence” followed by “Healthcare Facility” (31.5%) and “Street or Highway” (12.3%).
- 79.7% of all Region 6 EMS service calls with patient contact had a destination type of “hospital” followed by “nursing home” (3.1%).
- Norman Regional Hospital received the highest percentage of treated and transported calls followed by St. Anthony–Shawnee and OU Medical Center ([Table 26](#), [Table 27](#)).
- For destinations that received greater than 1,500 total service calls between 2009 and 2013, Integris Canadian Valley Regional Hospital had the highest percentage increase at 989.1% followed by Mercy Hospital–OKC at 242.9% ([Table 26](#)).
- Mercy Hospital–Logan County had the biggest service call volume decrease (–81.9%) followed by Moore Medical Center (–54.8%).
- “Closest facility” was the reason for choosing the destination 41.9% of the time followed by “patient choice” (21.6%).
- Traumatic Injury made up 16.8% of the total calls in Region 5 from 2009 to 2013 ([Figure 123](#)).
- 98.3% of the traumatic injuries in Region 6 were transported by a ground provider and 1.8% by air.
- Seventy-eight percent of the traumatic injury service calls occurred in Cleveland, Pottawatomie, and Canadian counties with Cleveland having the highest percentage (40.8%).
- 37.9% of the traumatic injuries were caused by falls followed by Motor Vehicle Traffic Accidents at 19.5% ([Figure 88](#)).
- 54.5% of the traumatic injuries had a mechanism of injury of “blunt” followed by “penetrating” (3.1%) and “burn” (0.6%). 33.9% were missing/null values ([Figure 89](#)).

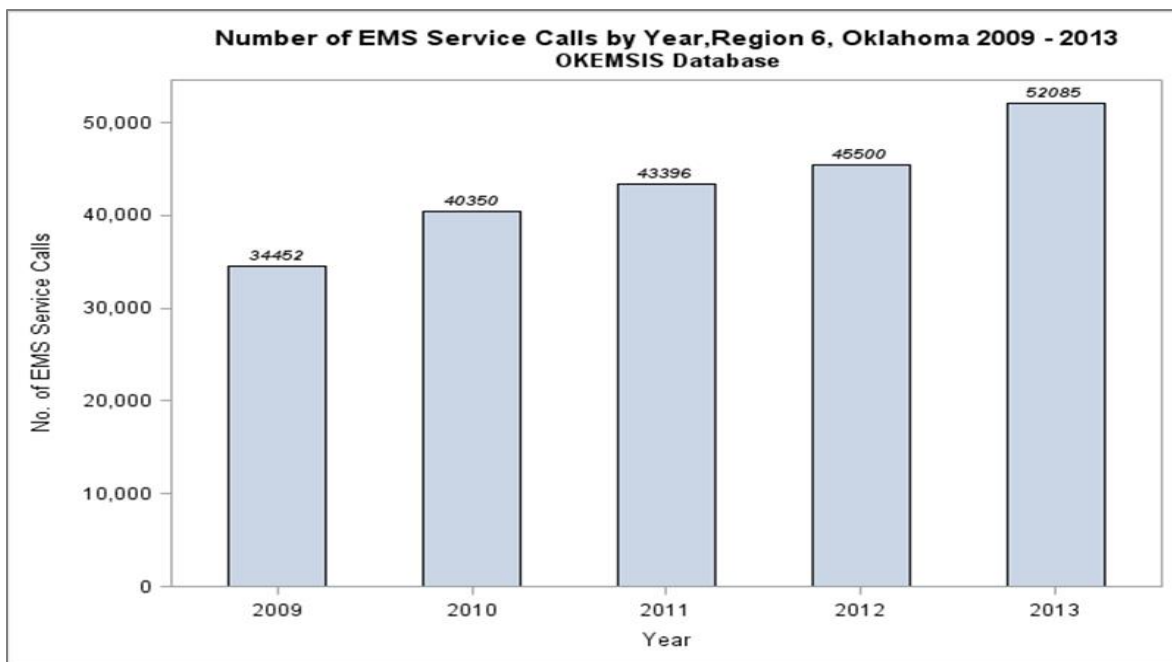


Figure 81: EMS service calls by year, region 6, Oklahoma 2009–2013.

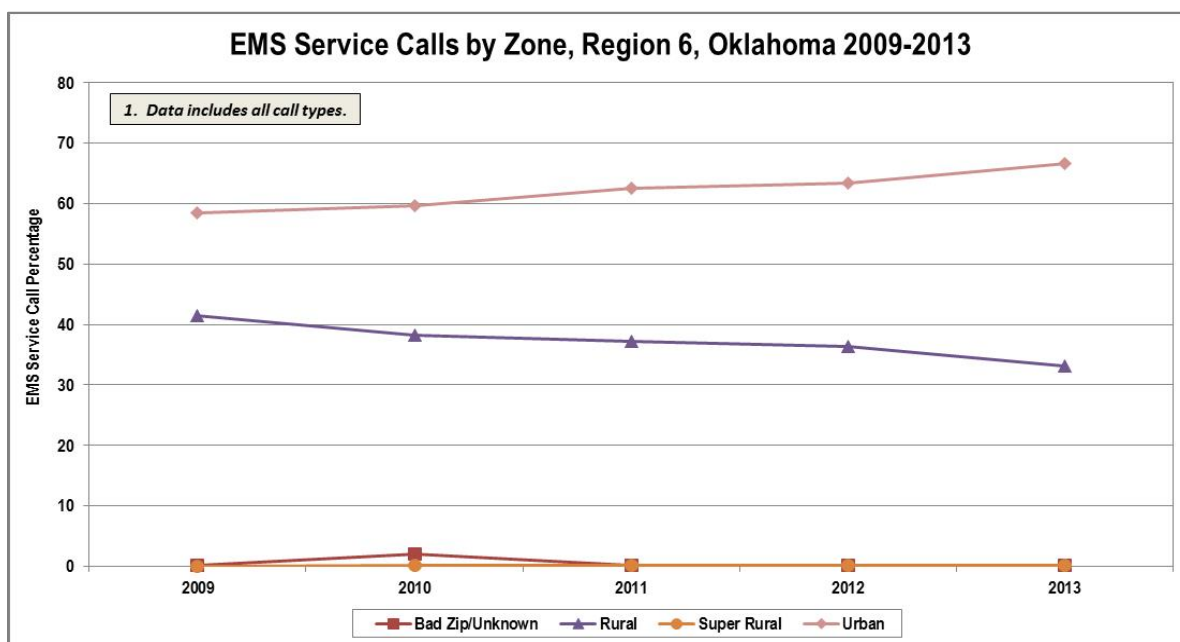


Figure 82: EMS service calls by zone, region 6, Oklahoma 2009–2013.

**Table 24: EMS Service Calls by Incident City, Region 6, Oklahoma
2009-2013**

Incident City	Year					Total # of Calls	% of Total Calls
	2009	2010	2011	2012	2013		
Norman, OK	10,505	11,996	12,875	14,090	14,631	64,097	29.7%
Shawnee, OK	6,806	7,242	7,040	7,294	7,906	36,288	16.8%
Oklahoma City, OK	3,130	3,236	3,775	3,521	5,257	18,919	8.8%
El Reno, OK	2,230	2,469	3,056	3,023	2,860	13,638	6.3%
Yukon, OK	104	1,670	2,416	2,693	4,123	11,006	5.1%
Guthrie, OK	1,734	1,578	1,678	1,832	2,049	8,871	4.1%
Purcell, OK	1,482	1,397	1,386	1,551	1,488	7,304	3.4%
Noble, OK	1,016	1,044	1,121	1,073	1,132	5,386	2.5%
Tecumseh, OK	876	991	1,042	1,050	1,064	5,023	2.3%
Mustang, OK	3	732	1,114	1,251	1,509	4,609	2.1%

1. Data includes all call types.

2. Only top ten cities by run volume shown in table.

Table 25: EMS Service Calls by Agency, Region 6, Oklahoma 2009-2013

EMS Agency Name	Year					Total # of Calls	% of Total Calls
	2009	2010	2011	2012	2013		
EMSSTAT-Norman Reg Hosp EMS	11,293	12,914	14,223	15,639	15,438	69,507	32.2%
React EMS	9,086	9,733	9,757	10,059	10,685	49,320	22.9%
EMSA-West Division	.	3,320	3,918	4,264	9,857	21,359	9.9%
Midwest Reg Hosp EMS	2,565	2,390	2,522	2,415	2,516	12,408	5.8%
Wadley's EMS, Inc.	2,159	2,045	2,136	2,314	2,230	10,884	5.0%
Mercy EMS - El Reno	.	1,222	3,157	3,141	2,971	10,491	4.9%
Guthrie EMS	1,630	1,519	1,562	1,733	1,882	8,326	3.9%
McClain-Grady County EMS Dist #1	1,366	1,435	1,565	1,464	1,493	7,323	3.4%
Chandler Ambulance Service	653	943	1,117	1,311	1,290	5,314	2.5%
Noble Fire Dept EMS	1,005	1,040	1,072	984	1,091	5,192	2.4%

1. Data includes all call types.

2. Only top ten EMS providers by run volume shown in table.

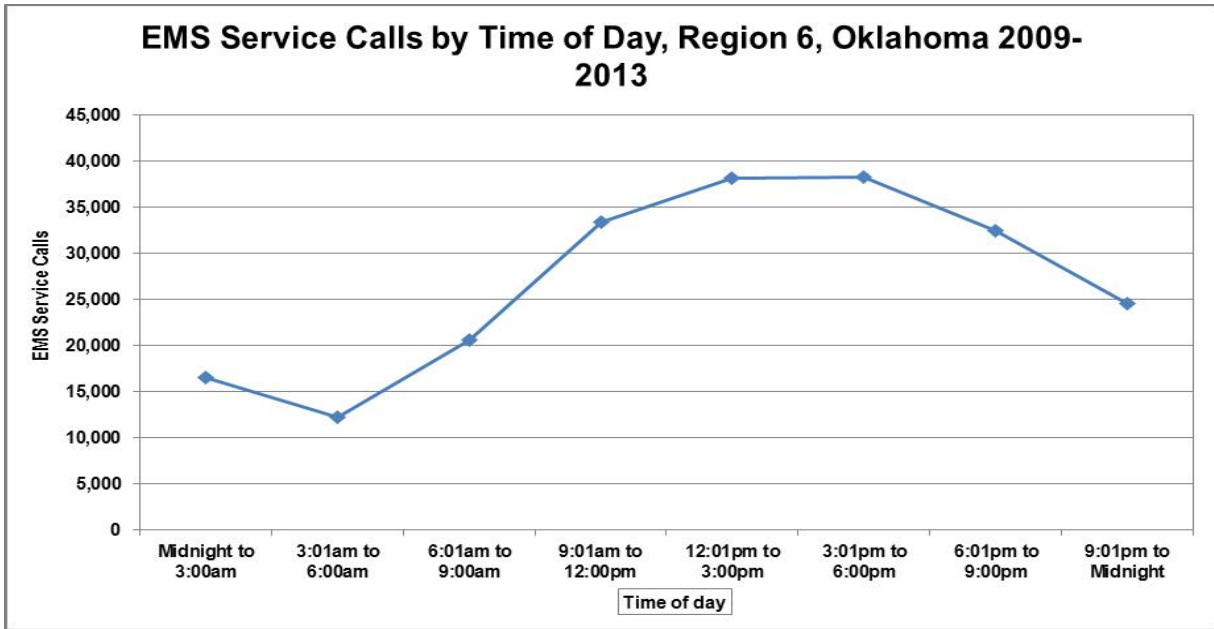


Figure 83: EMS service calls by time of day (all call types), region 6, Oklahoma 2009–2013.

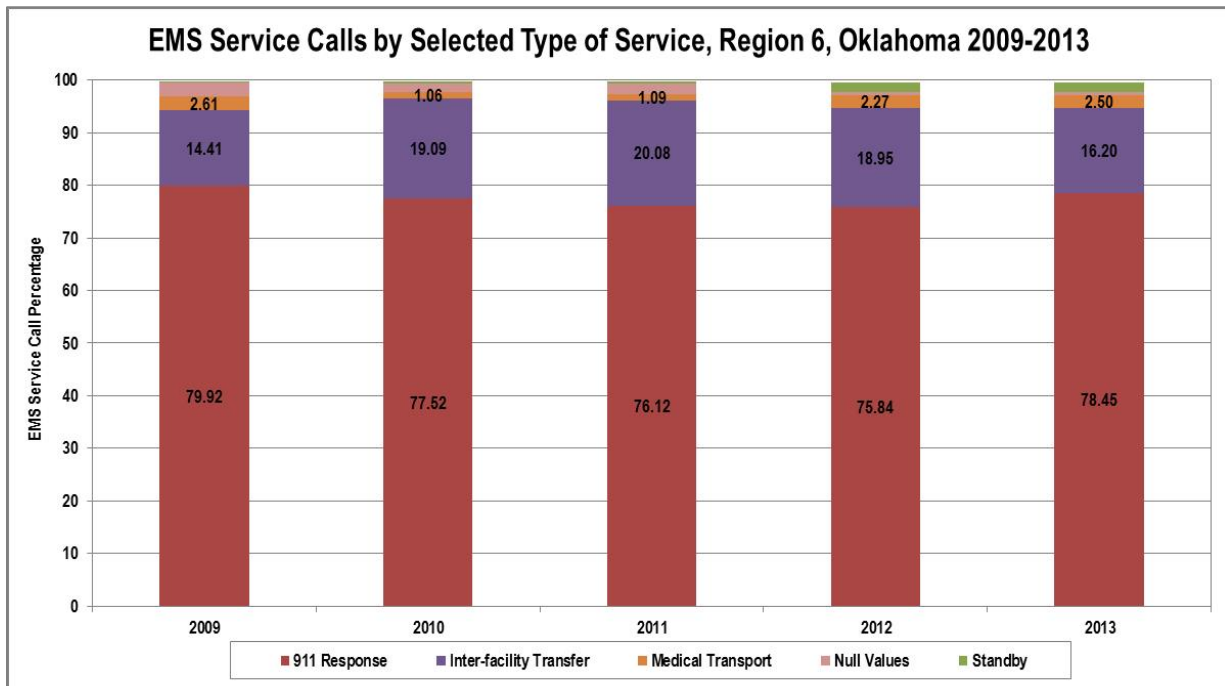


Figure 84: EMS service calls by type of service requested, region 6, Oklahoma 2009–2013.

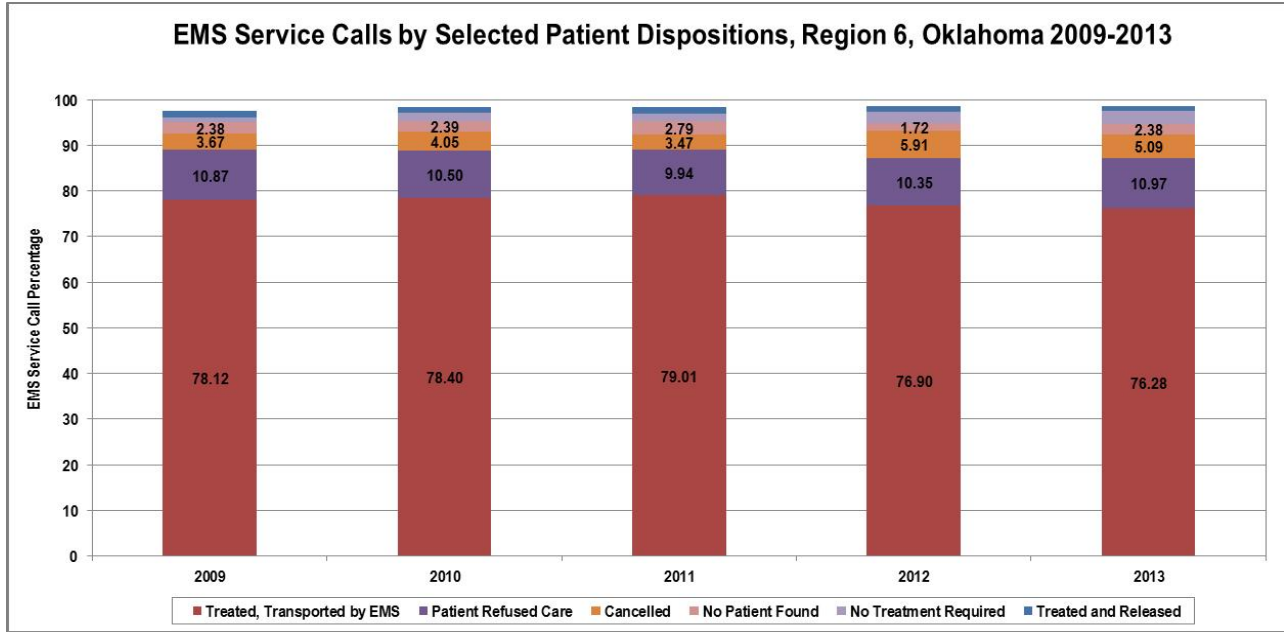


Figure 85: EMS service calls by selected patient disposition, region 6, Oklahoma 2009–2013.

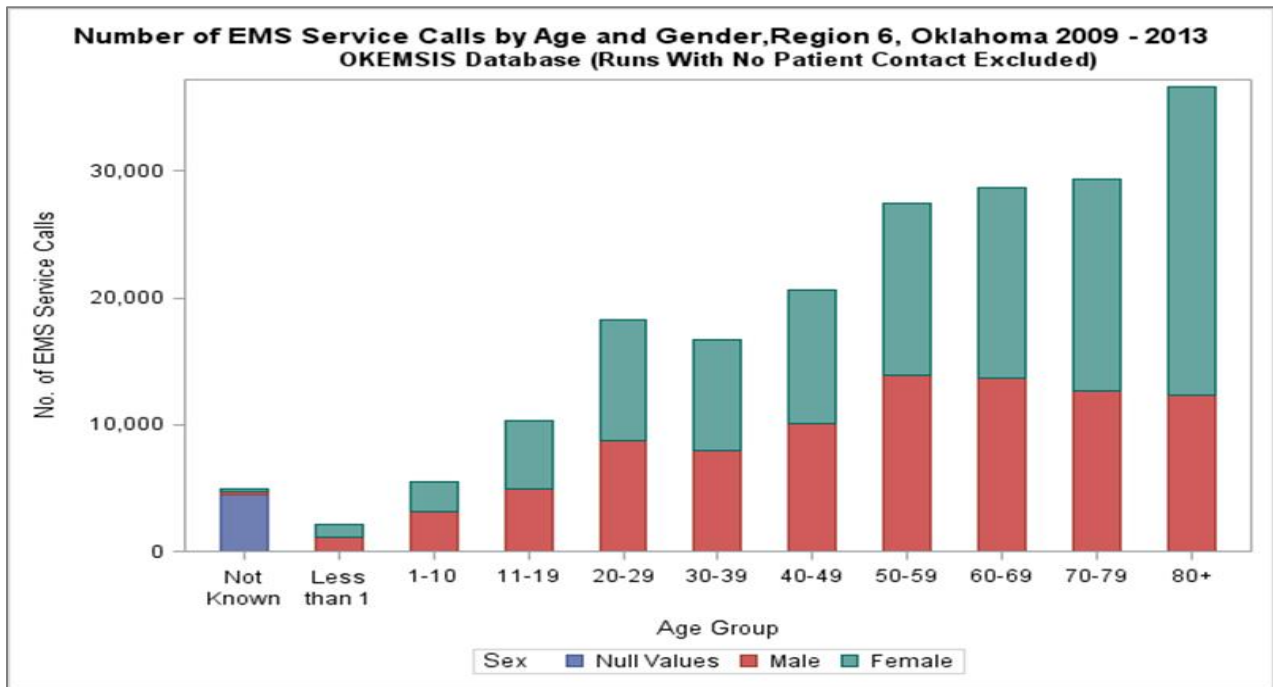


Figure 86: EMS service calls by age and gender, region 6, Oklahoma 2009–2013.

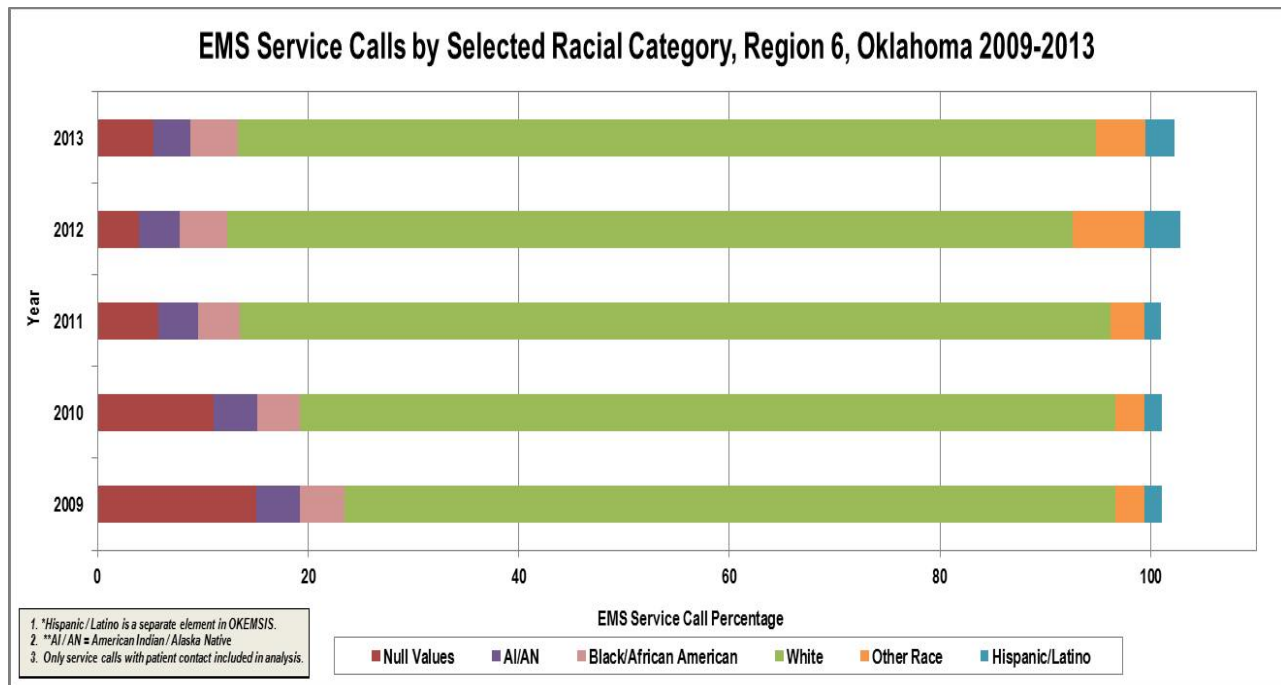


Figure 87: EMS service calls by racial category, region 6, Oklahoma 2009–2013.

Table 26: EMS Service Calls by Destination and Incident Region, Region 6 Treated and Transported Patients, Oklahoma 2009-2013

*Not All Destinations Shown Destination Facility	Year					Total # of Calls	% of Total Calls	% Increase/Decrease
	2009	2010	2011	2012	2013			
Norman Reg Hosp	8,475	8,262	9,146	9,719	9,982	45,584	27.1%	17.8%
St. Anthony-Shawnee	4,928	5,302	5,171	2,523	5,532	23,456	13.9%	12.3%
Null Values	1,991	3,036	3,336	5,268	2,903	16,534	9.8%	45.8%
OU MED CTR- Presbyterian, Children's, Edmond	1,263	1,627	1,854	1,840	2,471	9,055	5.4%	95.7%
INTEGRIS Baptist Med Ctr- OKC	682	1,322	1,466	1,484	2,014	6,968	4.1%	195.3%
Integris Canadian Valley Reg Hosp	156	1,041	1,227	1,240	1,699	5,363	3.2%	989.1%
Saint Anthony Hosp	944	1,045	958	1,079	1,317	5,343	3.2%	39.5%
Mercy Hosp-El Reno	892	911	1,175	1,171	1,152	5,301	3.2%	29.2%
Moore Med Ctr	1,148	1,218	1,319	1,094	519	5,298	3.1%	-54.8%
Purcell Municipal Hosp	1,053	956	1,041	1,094	1,095	5,239	3.1%	3.9%
Nursing Home/Rest Home/Long Term Care	757	946	1,050	1,162	1,078	4,993	2.9%	42.4%
Mercy Hosp- OKC	456	800	1,002	1,054	1,564	4,876	2.9%	242.9%
Integris Southwest Med Ctr	677	758	848	707	1,637	4,627	2.8%	141.8%

Oklahoma Heart Hosp- OKC	425	644	808	1,048	1,276	4,201	2.5%	200.2%
Mercy Hosp-Logan County	733	844	740	145	133	2,595	1.5%	-81.9%
Norman Specialty Hosp	305	574	571	572	546	2,568	1.5%	79.0%
Out of State Facility Not Listed*	146	3	55	929	957	2,090	1.2%	555.5%
Stroud Regional Med Ctr	275	378	408	401	397	1,859	1.1%	44.4%
Midwest Regional Med Ctr	276	264	313	373	526	1,752	1.0%	90.6%

1. Only treated and transported patients included in this table.

2. *Only destinations with greater than 1,500 EMS service calls between 2009 and 2013 are shown.

Table 27: EMS Service Calls by Destination and Incident Region, Region 6 Treated and Transported Patients, Oklahoma 2009-2013

Destination	Year										Total Count
	2009		2010		2011		2012		2013		
	Service Type		Service Type		Service Type		Service Type		Service Type		
	Air	Ground	Air	Ground	Air	Ground	Air	Ground	Air	Ground	
Norman Reg Hosp	**	8,466	**	8,258	**	9,141	**	9,717	**	9,981	45,584
St. Anthony-Shawnee	**	4,928	**	5,301	**	5,170	**	2,523	**	5,531	23,456
Null Values	**	1,987	**	3,033	**	3,329	**	5,251	**	2,888	16,534
OU MED CTR- Presbyterian, Children's, Edmond	139	1,124	175	1,452	178	1,676	177	1,663	131	2,340	9,055
INTEGRIS Baptist Med Ctr- OKC	25	657	27	1,295	36	1,430	24	1,460	**	2,004	6,968
Integris Canadian Valley Reg Hosp	**	156	**	1,041	**	1,227	**	1,239	**	1,699	5,363
Saint Anthony Hosp	63	881	43	1,002	31	927	17	1,062	14	1,303	5,343
Mercy Hosp-El Reno	**	892	**	910	**	1,175	**	1,171	**	1,152	5,301
Moore Med Ctr	**	1,148	**	1,218	**	1,319	**	1,094	**	519	5,298
Purcell Municipal Hosp	**	1,053	**	956	**	1,041	**	1,093	**	1,095	5,239
Nursing Home/Rest Home/Long Term Care	**	757	**	946	**	1,050	**	1,162	**	1,078	4,993
Mercy Hosp- OKC	22	434	15	785	29	973	43	1,011	21	1,543	4,876
Integris Southwest Med Ctr	**	672	**	751	**	846	**	703	**	1,630	4,627
Oklahoma Heart Hosp- OKC	55	370	36	608	**	797	**	1,042	**	1,270	4,201
Mercy Hosp-Logan County	**	732	**	844	**	740	**	145	**	133	2,595
Norman Specialty Hosp	**	305	**	573	**	571	**	572	**	546	2,568
Out of State Facility Not Listed*	**	143	**	**	**	55	**	929	**	957	2,090
Stroud Regional Med Ctr	**	275	**	378	**	408	**	401	**	397	1,859
Midwest Regional Med Ctr	**	271	**	263	**	313	**	372	**	525	1,752

1. Only treated and transported patients included in this table.

2. *Only destinations with greater than 1,500 EMS service calls between 2009 and 2013 are shown.

3. Any cell represented by an asterisk (**) not shown due to privacy concerns.

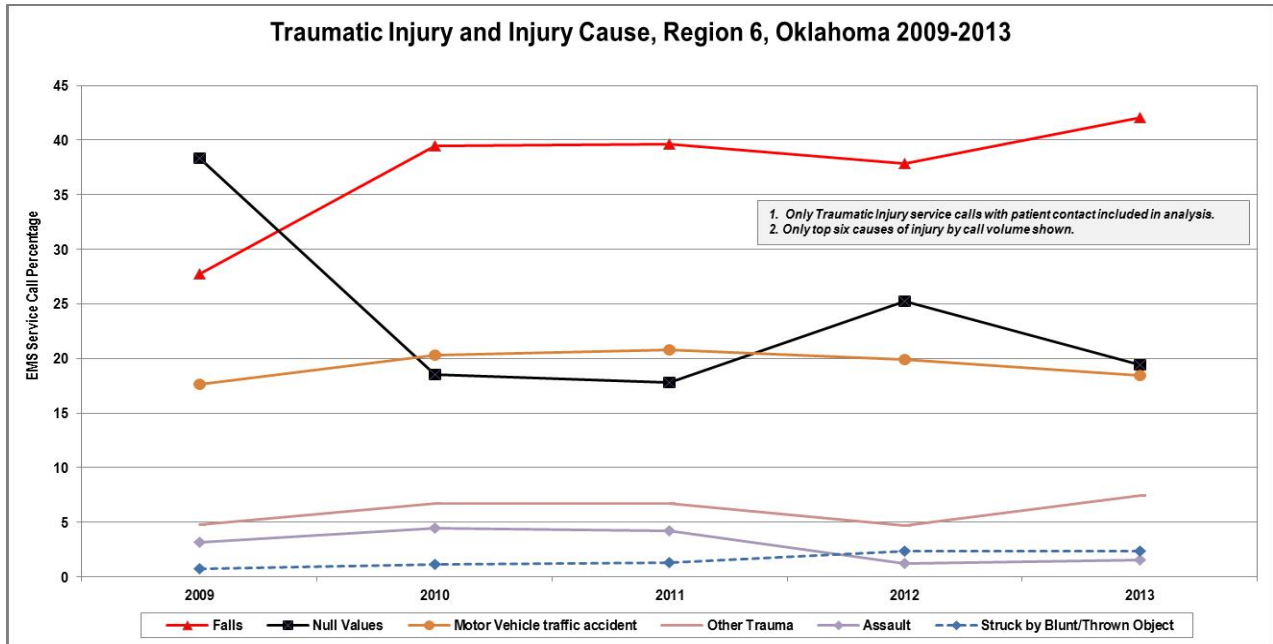


Figure 88: Traumatic injury EMS service calls by cause of injury, region 6, Oklahoma 2009–2013 (Only top six, by run volume, injury causes shown).

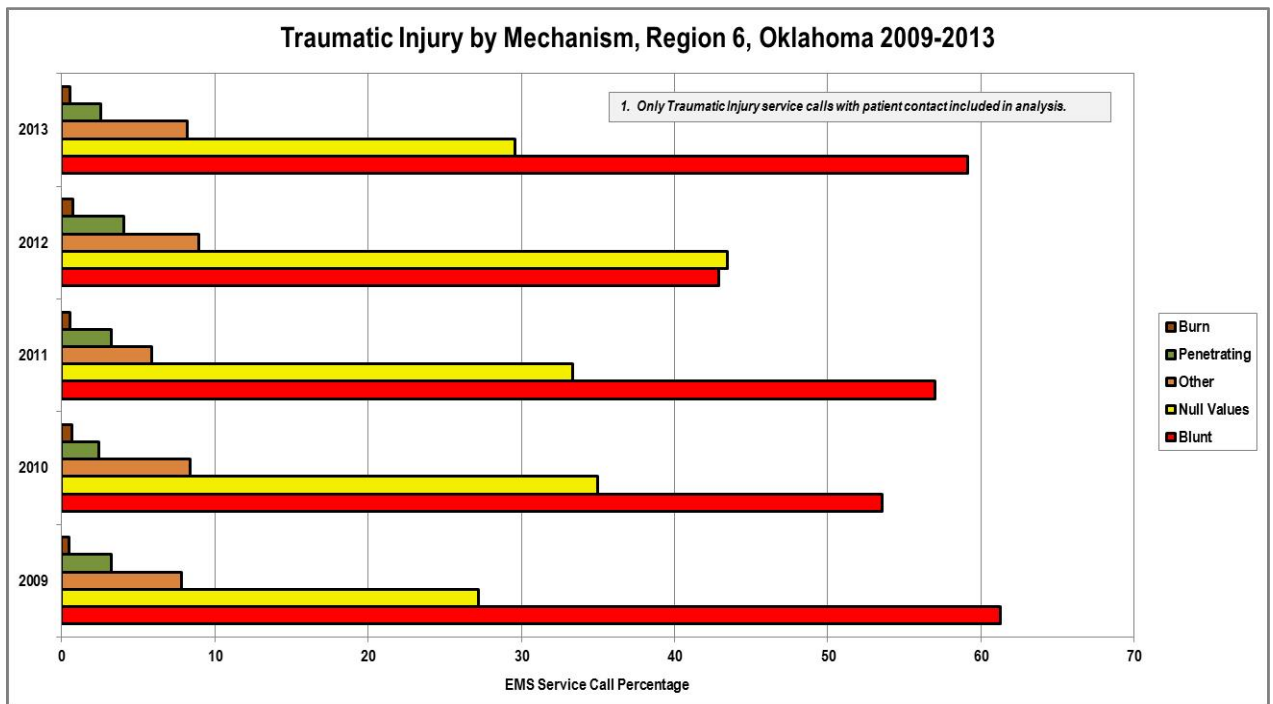


Figure 89: Traumatic injury EMS service calls by mechanism, region 6, Oklahoma 2009–2013.

Region 7

- Region 7 saw a 20.9% increase in the number of EMS calls from 2009 to 2013 ([Figure 90](#), [Figure 122](#)).
- 94.9% of all the service calls occurred in urban areas with less than one percent occurring in rural and super rural areas ([Figure 91](#)).
- Tulsa County is the only county in region 7 ([Table 3](#)).
- 76.4% of the service calls occurred in the City of Tulsa followed by Broken Arrow (6.8%) and Sand Springs (2.9%, [Table 28](#)).
- 99.9% of all service calls were transported by ground with 0.1% transported by an air service.
- EMSA–East Division (85.9%) responded to the highest percentage of calls followed by Broken Arrow Fire Department EMS (5.6%, [Table 29](#)).
- The majority of service calls occurred between 9:00am and 9:00pm ([Figure 92](#)) with a higher occurrence during the months of May through August and November.
- 15.8% of the service calls occurred on Friday with Sunday having the lowest percentage (12.1%).
- 85.3% were 911 calls followed by inter–facility transfers (8.9%, [Figure 93](#)).
- 73.2% were treated and transported followed by no patient found (9.9%, [Figure 94](#)).
- 58.5% of all the service calls for Region 7 were in the 50+ age groups with the 80+ age group having the highest percentage (18.4%, [Figure 95](#)).
- 50.9% were female with 41.6% being male (7.5% unknown).
- 70.5% of the patients were reported as White followed by Black/African American (16.4%) and Hispanic/Latino (2.9%, [Figure 96](#)).
- 44.5% of the EMS service calls with patient contact had an incident location type of “Home/Residence” followed by “Healthcare Facility” (26.2%) and “Street or Highway” (11.4%).
- 84.8% of all Region 7 EMS service calls with patient contact had a destination type of “hospital” followed by “nursing home” (9.2%).

- St. Francis Hospital received the highest percentage of treated and transported calls followed by St. John Medical Center and Hillcrest Medical Center ([Table 30](#), [Table 31](#)).
- For destinations that received greater than 1,500 total service calls between 2009 and 2013, “Private Residence” had the highest percentage increase at 441.9% followed by St. Francis Hospital– South Tulsa at 46.9% ([Table 30](#)). “Out of state facility not listed” also saw an increase but was due mostly to coding error.
- Hillcrest Hospital–South had the biggest service call volume decrease (–38.1%) followed by Saint Johns–Owasso (–25%).
- “Patient Choice” was the reason for choosing the destination 74.5% of the time followed by “Other” (13.5%).
- Traumatic Injury made up 16.5% of the total calls in Region 7 from 2009 to 2013 ([Figure 123](#)).
- 99.8% of the traumatic injuries in Region 7 were transported by a ground provider and 0.2% by air.
- Region 7 has one county therefore all traumatic injuries within that region occurred in Tulsa County.
- 36.4% of the traumatic injuries were caused by falls followed by Motor Vehicle Traffic Accidents at 11.2% ([Figure 97](#)).
- 11.9% of the traumatic injuries had a mechanism of injury of “blunt” followed by “penetrating” (0.6%) and “burn” (0.2%). 85.2% were missing/null values ([Figure 98](#)) therefore no further analysis was done for mechanism in Region 7.

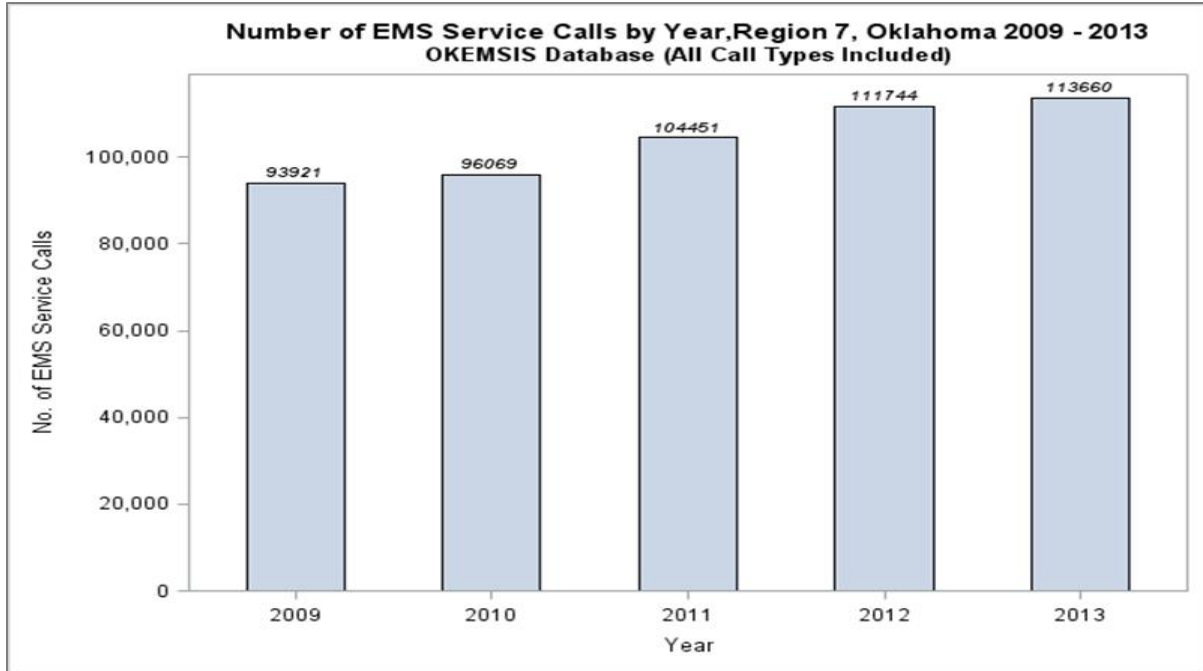


Figure 90: EMS service calls by year, region 7, Oklahoma 2009–2013.

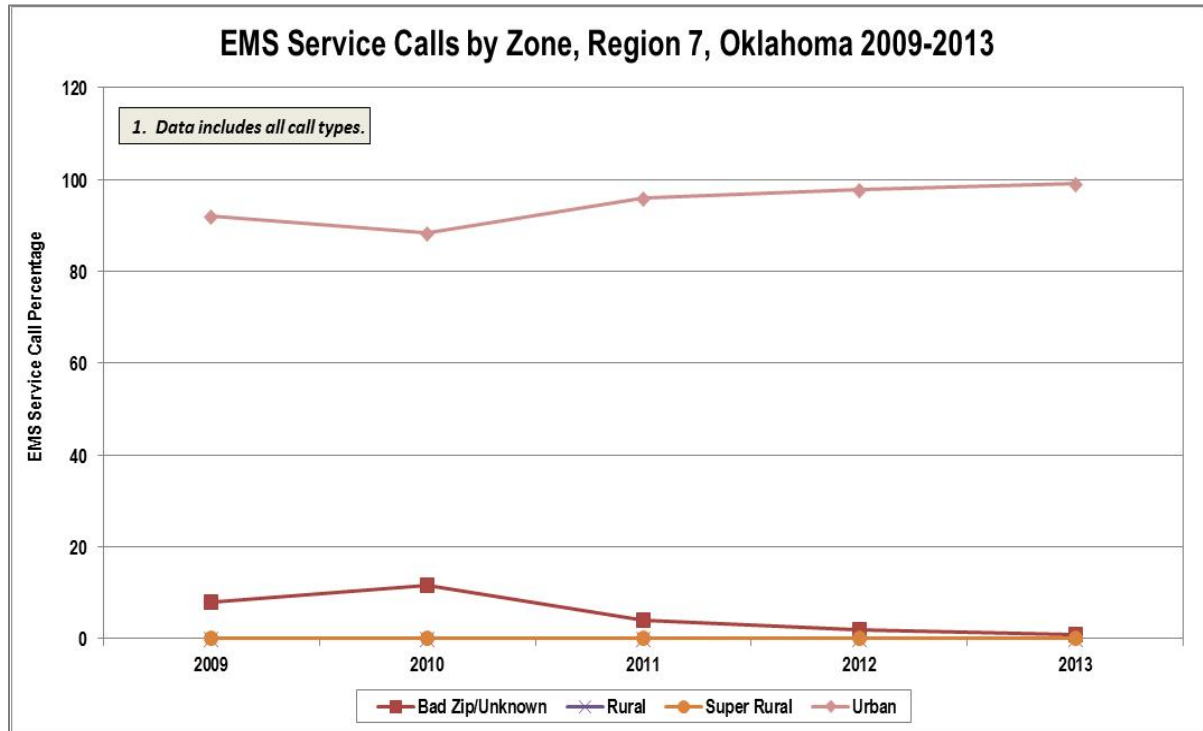


Figure 91: EMS service calls by zone, region 7, Oklahoma 2009–2013.

Table 28: EMS Service Calls by Incident City, Region 7, Oklahoma 2009-2013

Incident City	Year					Total # of Calls	% of Total Calls
	2009	2010	2011	2012	2013		
Tulsa, OK	69,548	56,595	84,333	92,182	94,484	397,142	76.4%
Null Values	7,448	27,208	4,222	2,346	1,129	42,353	8.2%
Broken Arrow, OK	5,722	5,730	7,275	7,738	8,631	35,096	6.8%
Sand Springs, OK	2,881	2,030	3,282	3,679	3,557	15,429	2.9%
Bixby, OK	1,284	1,077	1,565	1,756	1,763	7,445	1.4%
Glenpool, OK	1,215	1,109	1,185	1,345	1,306	6,160	1.2%
Jenks, OK	1,133	873	1,158	1,259	1,379	5,802	1.1%
Collinsville, OK	999	963	1,003	978	1,007	4,950	0.9%
Oklahoma City, OK	2,618	2	4	6	27	2,657	0.5%
Sperry, OK	285	281	281	295	146	1,288	0.3%

1. Data includes all call types.

2. Only top ten cities by run volume shown in table.

Table 29: EMS Service Calls by Agency, Region 7, Oklahoma 2009-2013

EMS Agency Name	Year					Total # of Calls	% of Total Calls
	2009	2010	2011	2012	2013		
EMSA-East Division	81,817	83,454	89,842	95,611	95,895	446,619	85.9%
Broken Arrow Fire Dept EMS	5,196	5,113	5,822	6,135	6,675	28,941	5.6%
EMS Plus - Glenpool	2,705	2,538	2,352	2,468	2,325	12,388	2.4%
Mercy Regional of Oklahoma	543	805	2,647	2,974	4,014	10,983	2.1%
Miller EMS	.	87	1,074	1,566	1,699	4,426	0.9%
Collinsville Fire Department	879	837	866	837	849	4,268	0.8%
Creek County Emergency Ambulance Service District	231	150	167	620	746	1,914	0.4%
Integrity EMS of Oklahoma, LLC	882	959	.	.	.	1,841	0.4%
Muskogee County EMS	284	379	378	364	355	1,760	0.3%
Pafford EMS of Oklahoma	325	253	217	203	204	1,202	0.2%

1. Data includes all call types.

2. Only top ten EMS providers by run volume shown in table.

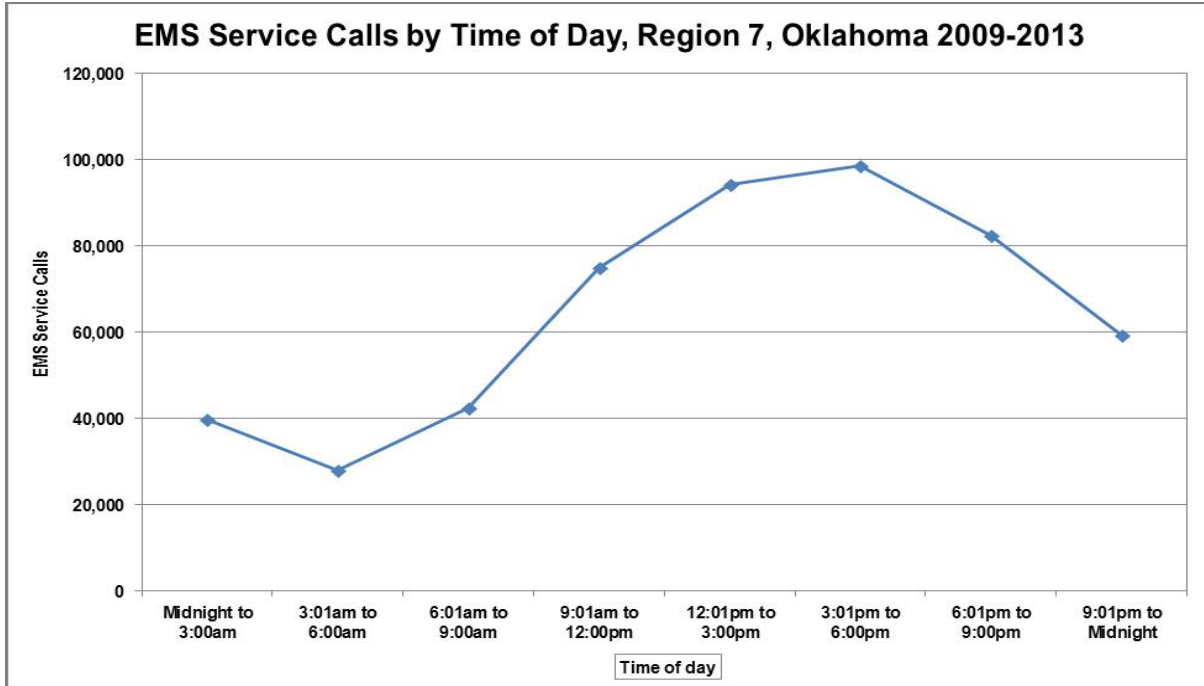


Figure 92: EMS service calls by time of day (all call types), region 7, Oklahoma 2009–2013.

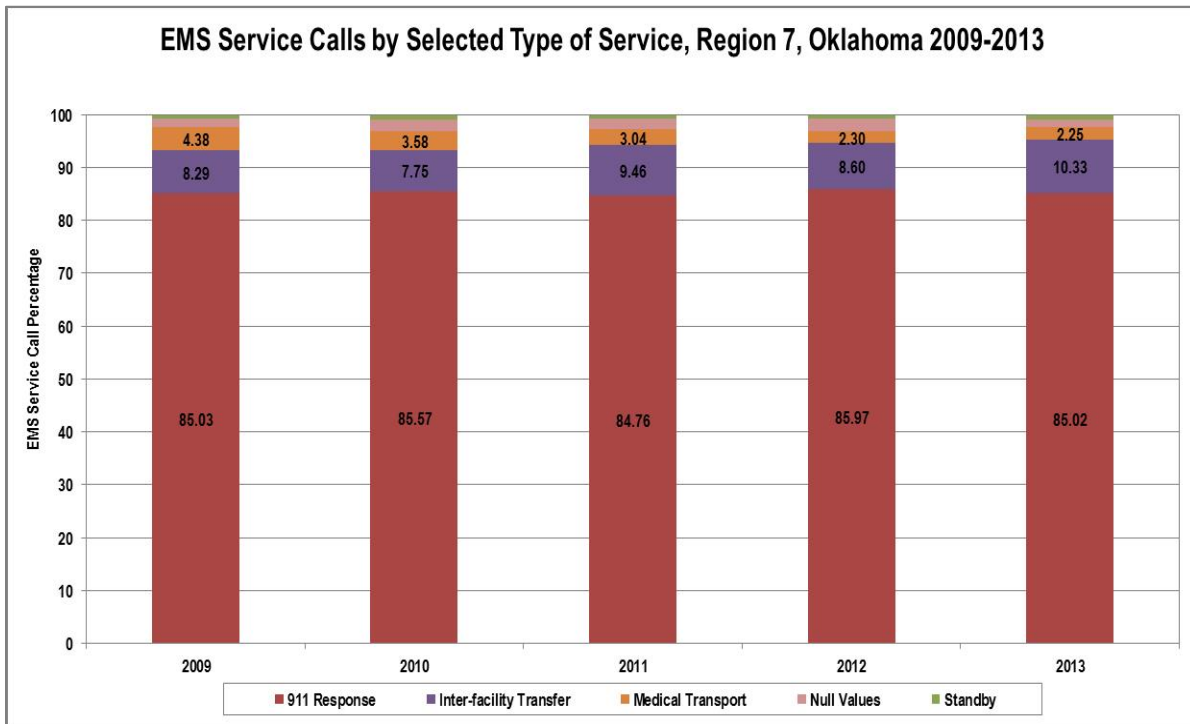


Figure 93: EMS service calls by type of service requested, region 7, Oklahoma 2009–2013.

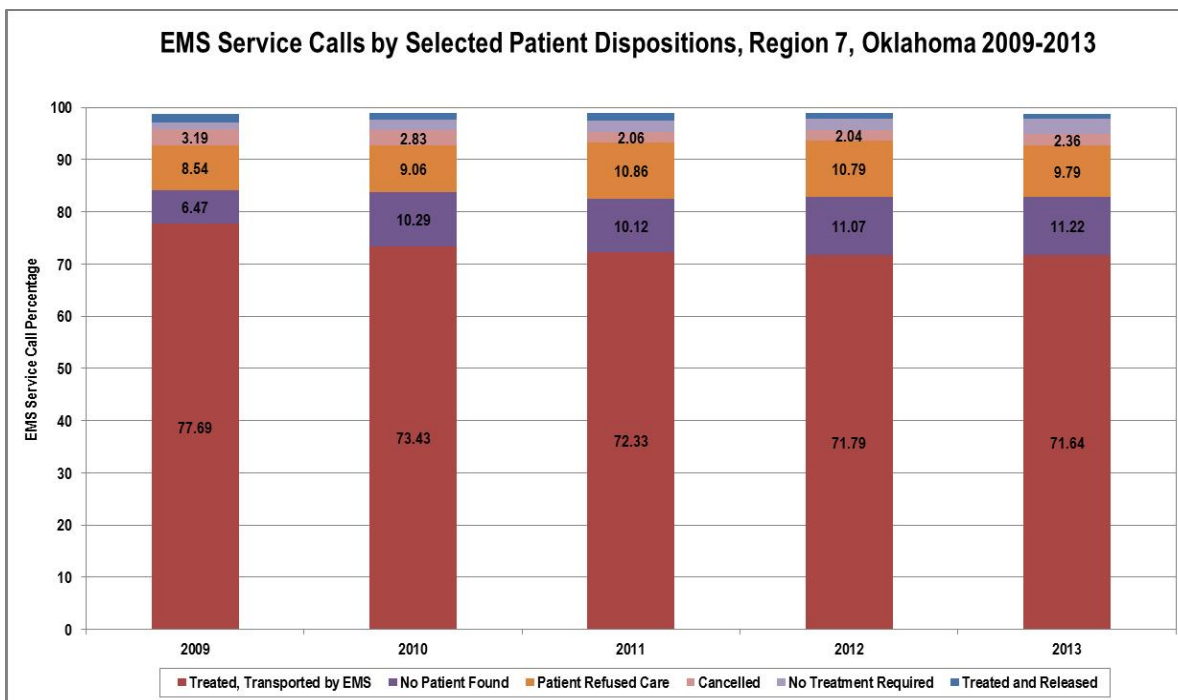


Figure 94: EMS service calls by selected patient disposition, region 7, Oklahoma 2009–2013.

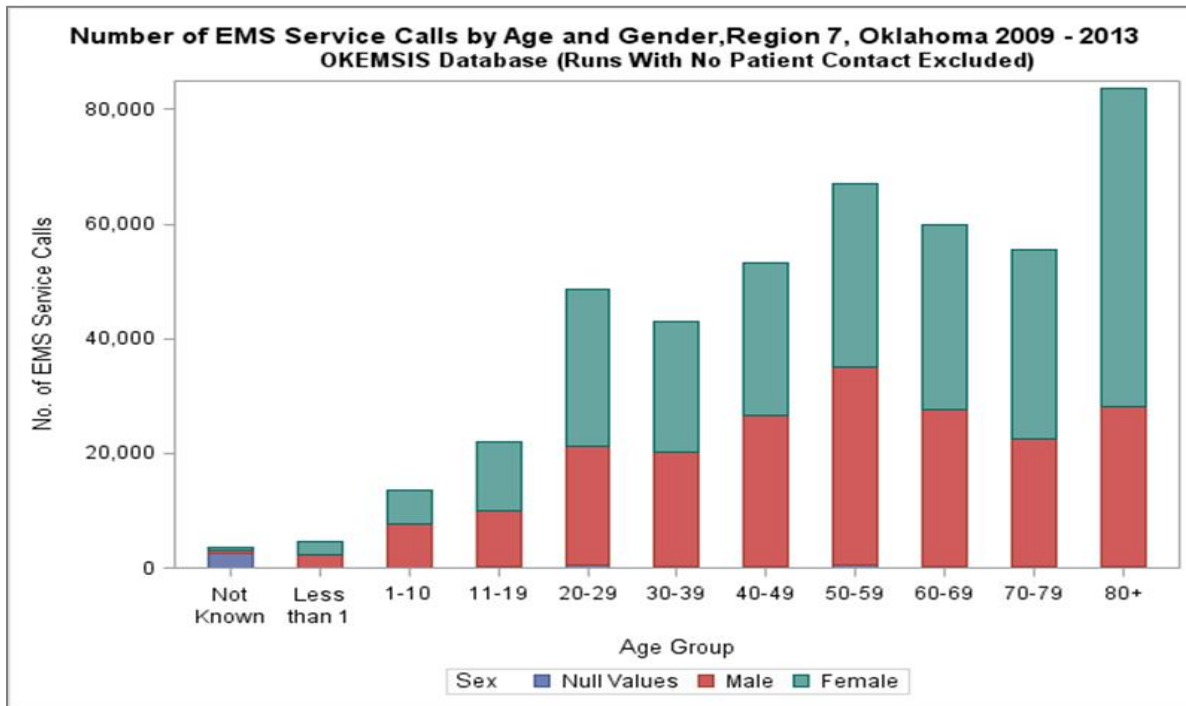


Figure 95: EMS service calls by age and gender, region 7, Oklahoma 2009–2013.

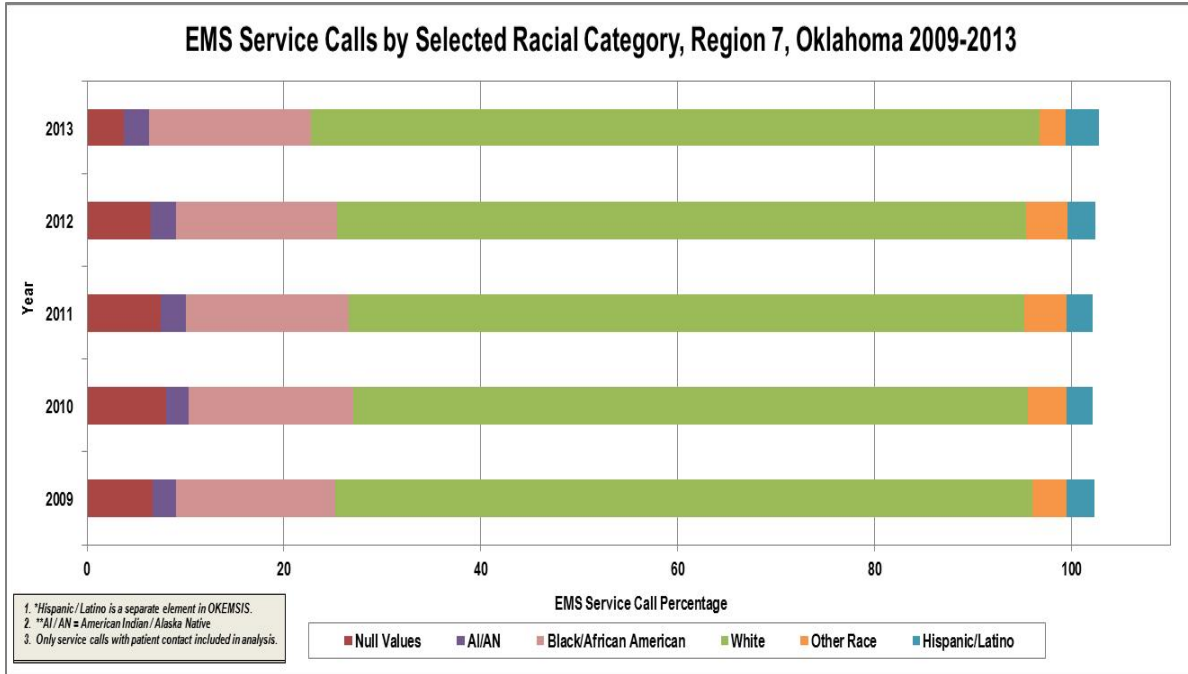


Figure 96: EMS service calls by racial category, region 7, Oklahoma 2009–2013.

Table 30: EMS Service Calls by Destination and Incident Region, Region 7 Treated and Transported Patients, Oklahoma 2009-2013

*Not All Destinations Shown	Year					Total # of Calls	% of Total Calls	% Increase/Decrease
Destination Facility	2009	2010	2011	2012	2013			
St. Francis Hosp	19,439	19,337	20,054	21,587	21,657	102,074	26.8%	11.4%
St. John Med Ctr	17,001	17,029	18,167	19,952	19,605	91,754	24.1%	15.3%
Hillcrest Med Ctr	10,407	10,572	11,887	11,710	11,685	56,261	14.8%	12.3%
Nursing Home/Rest Home/Long Term Care	6,978	6,644	7,214	7,348	7,054	35,238	9.3%	1.1%
OSU Med Ctr	4,654	4,703	5,183	6,069	6,544	27,153	7.1%	40.6%
Hillcrest Hosp-South	3,874	3,675	3,363	2,937	2,400	16,249	4.3%	-38.1%
Null Values	4,075	3,961	3,909	3,579	2,851	18,375	4.8%	-30.0%
St. Francis Hosp-South Tulsa	1,463	1,777	1,720	2,148	2,149	9,257	2.4%	46.9%
Private Residence	343	406	672	766	1,859	4,046	1.1%	441.9%
Out of State Facility Not Listed	200	218	834	1,416	1,051	3,719	0.9%	425.5%
Saint Johns-Owasso	420	408	471	465	315	2,079	0.6%	-25.0%
Muskogee VA Med Ctr	270	337	366	420	391	1,784	0.5%	44.8%

1. Only treated and transported patients included in this table.

2. *Only destinations with greater than 1,500 EMS service calls between 2009 and 2013 are shown.

Table 31: EMS Service Calls by Destination and Incident Region, Region 7 Treated and Transported Patients, Oklahoma 2009-2013

Destination	Year										Total Count
	2009		2010		2011		2012		2013		
	Service Type		Service Type		Service Type		Service Type		Service Type		
	Air	Ground	Air	Ground	Air	Ground	Air	Ground	Air	Ground	
St. Francis Hosp	29	19,410	20	19,317	15	20,039	15	21,572	**	21,647	102,074
St. John Med Ctr	16	16,985	15	17,014	14	18,153	13	19,939	14	19,591	91,754
Hillcrest Med Ctr	**	10,402	**	10,566	**	11,882	**	11,709	**	11,681	56,261
Nursing Home/Rest Home/Long Term Care	**	6,978	**	6,643	**	7,214	**	7,348	**	7,054	35,238
OSU Med Ctr	**	4,653	**	4,703	**	5,183	**	6,068	**	6,543	27,153
Hillcrest Hosp-South	**	3,874	**	3,675	**	3,363	**	2,937	**	2,400	16,249
Null Values	**	4,071	**	3,961	**	3,909	**	3,578	**	2,851	18,375
St. Francis Hosp-South Tulsa	**	1,462	**	1,776	**	1,720	**	2,148	**	2,149	9,257
Private Residence	**	341	**	405	**	671	**	766	**	1,859	4,046
Out of State Facility Not Listed	24	176	26	192	22	812	19	1,397	15	1,036	3,719
Saint Johns-Owasso	**	420	**	408	**	471	**	465	**	315	2,079
Muskogee VA Med Ctr	**	270	**	337	**	366	**	420	**	391	1,784

1. *Only destinations with greater than 1,500 EMS service calls between 2009 and 2013 are shown.
2. Any cell represented by an asterisk (**) not shown due to privacy concerns.

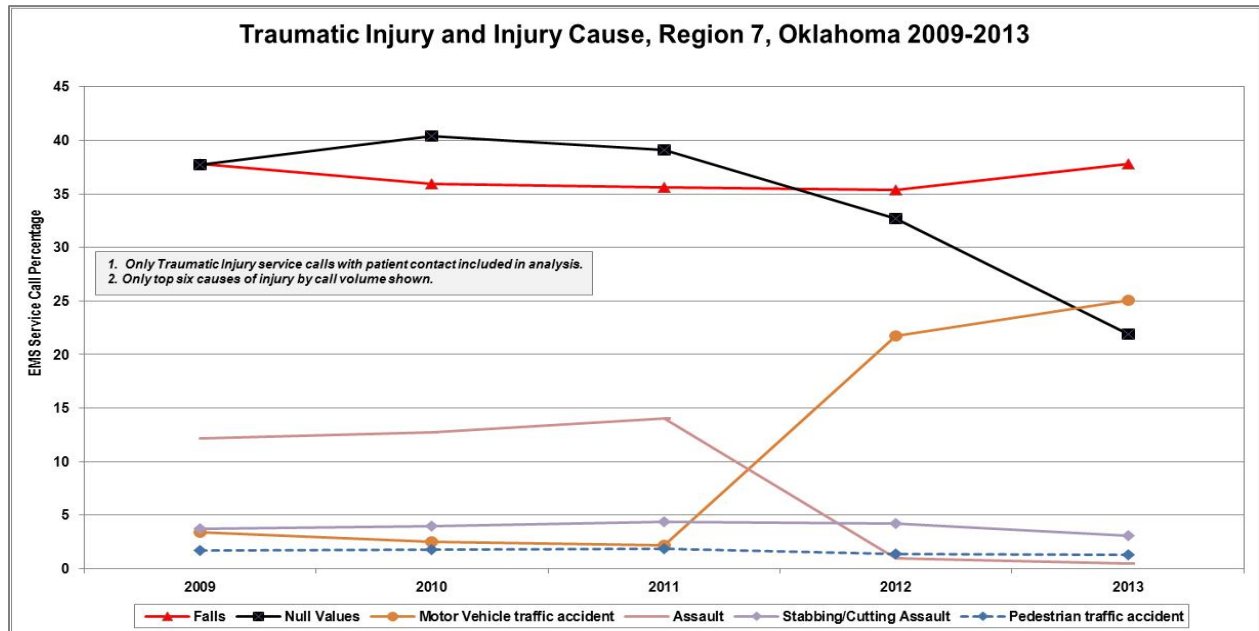


Figure 97: Traumatic injury EMS service calls by cause of injury, region 7, Oklahoma 2009–2013 (Only top six, by run volume, injury causes shown).

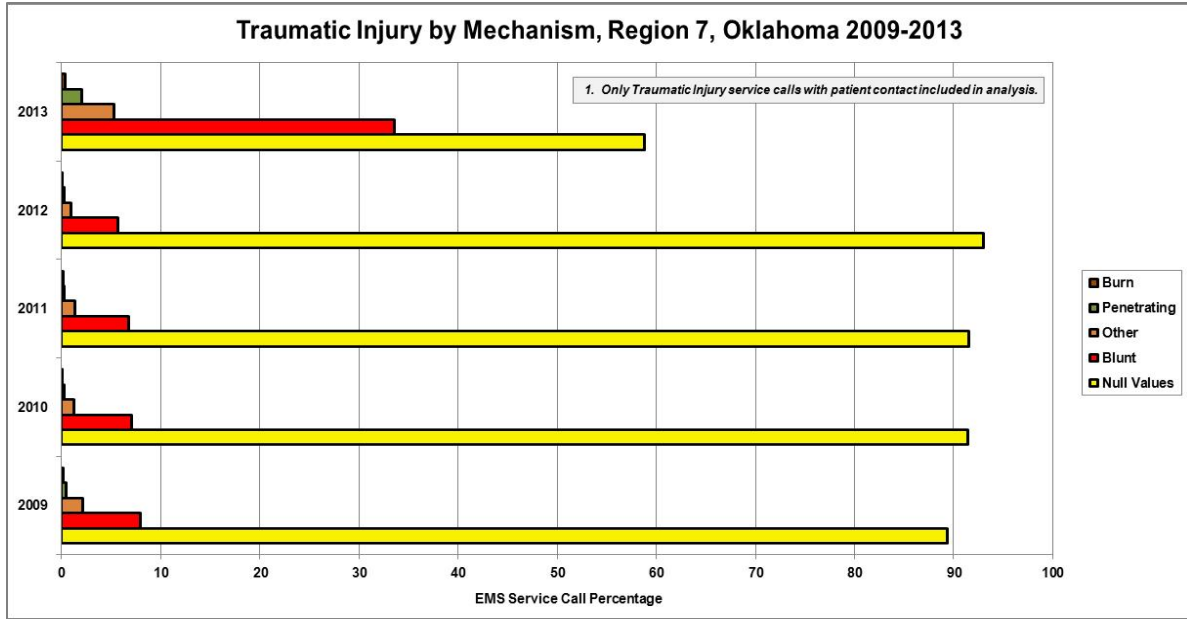


Figure 98: Traumatic injury EMS service calls by mechanism, region 7, Oklahoma 2009–2013.

Region 8

- Region 8 saw a 21.1% increase in the number of EMS calls from 2009 to 2013 ([Figure 99](#), [Figure 122](#)).
- 94.9% of all the service calls occurred in urban areas with less than one percent occurring in rural and super rural areas ([Figure 100](#)).
- Oklahoma County is the only county in region 8 ([Table 3](#)).
- 77.2% of the service calls occurred in Oklahoma City followed by Edmond (6.5%) and Midwest City (5.4%, [Table 32](#)).
- 99.9% of all service calls were transported by ground with 0.1% transported by an air service.
- EMSA–West Division (84.7%) responded to the highest percentage of calls followed by Midwest Regional Hospital EMS (10.7%, [Table 33](#)).
- The majority of service calls occurred between 9:00am and 9:00pm ([Figure 101](#)) with a higher occurrence during the months of May through August and December.
- 15.3% of the service calls occurred on Friday with Sunday having the lowest percentage (12.9%).
- 91.6% were 911 calls followed by inter–facility transfers (4.2%, [Figure 102](#)).
- 78.6% were treated and transported followed by Patient Refusals (8.7%, [Figure 103](#)).
- 57.4% of all the service calls for Region 8 were in the 50+ age groups with the 80+ age group having the highest percentage (17%, [Figure 104](#)).
- 51.5% were female with 42% being male (6.5% unknown).
- 61.7% of the patients were reported as White followed by Black/African American (17.4%) and Hispanic/Latino (4.4%, [Figure 105](#)).
- 48.6% of the EMS service calls with patient contact had an incident location type of “Home/Residence” followed by “Healthcare Facility” (17.9%) and “Street or Highway” (8.9%).
- 95.9% of all Region 8 EMS service calls with patient contact had a destination type of “hospital” followed by “nursing home” (0.7%).

- OU Medical Center (all campuses) received the highest percentage of treated and transported calls followed by Integris Baptist Medical Center and Integris Southwest Medical Center ([Table 34](#), [Table 35](#)).
- For destinations that received greater than 1,500 total service calls between 2009 and 2013, Saint Anthony Hospital had the highest percentage increase at 418.4% followed by Kindred Hospital at 77.3% ([Table 34](#)).
- Nursing Home/Rest Home/Long Term Care (generic code) had the biggest service call volume decrease (-89.5%) followed by Integris Canadian Valley Regional Hospital (-74.1%).
- “Patient Choice” was the reason for choosing the destination 84.3% of the time followed by “Other” (7.1%).
- Traumatic Injury made up 17.9% of the total calls in Region 8 from 2009 to 2013 ([Figure 123](#)).
- 99.8% of the traumatic injuries in Region 8 were transported by a ground provider and 0.2% by air.
- Region 8 has one county therefore all traumatic injuries within that region occurred in Oklahoma County.
- 41% of the traumatic injuries were caused by falls followed by Motor Vehicle Traffic Accidents at 9.6% ([Figure 106](#)).
- 11.9% of the traumatic injuries had a mechanism of injury of “blunt” followed by “penetrating” (0.5%) and “burn” (0.1%). 85.5% were missing/null values ([Figure 107](#)) therefore no further analysis was done for mechanism in Region 8.

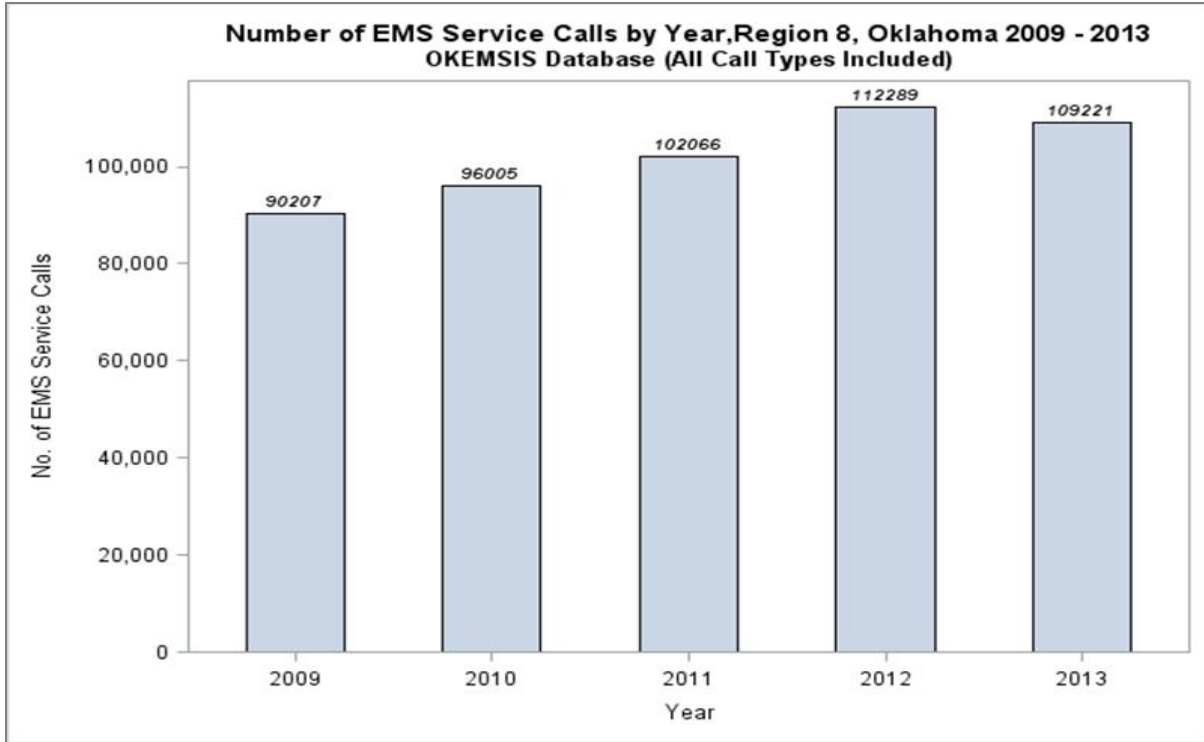


Figure 99: EMS service calls by year, region 8, Oklahoma 2009–2013.

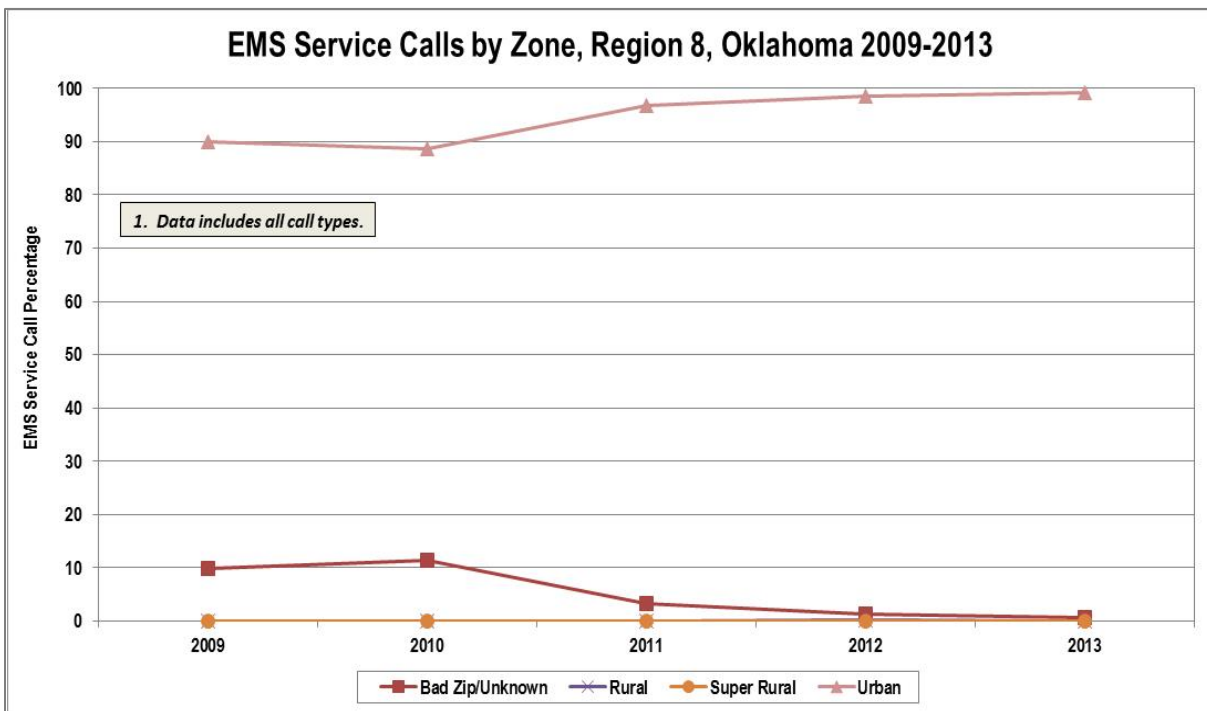


Figure 100: EMS service calls by zone, region 8, Oklahoma 2009–2013.

Table 32: EMS Service Calls by Incident City, Region 8, Oklahoma 2009-2013

Incident City	Year					Total # of Calls	% of Total Calls
	2009	2010	2011	2012	2013		
Oklahoma City, OK	58,415	52,086	72,762	85,348	86,967	355,578	69.8%
Null Values	8,933	25,035	3,524	1,564	736	39,792	7.8%
Edmond, OK	5,628	4,960	7,818	8,675	5,897	32,978	6.5%
Midwest City, OK	5,546	5,368	5,527	5,467	5,847	27,755	5.4%
Bethany, OK	2,334	1,981	2,771	3,064	3,045	13,195	2.6%
Del City, OK	1,868	2,120	2,013	1,977	2,130	10,108	1.9%
Yukon, OK	3,004	999	1,542	1,969	724	8,238	1.6%
Choctaw, OK	817	908	862	1,105	1,014	4,706	0.9%
Harrah, OK	731	756	825	728	756	3,796	0.7%
Spencer, OK	553	556	675	680	738	3,202	0.6%

1. Data includes all call types.

2. Only top ten cities by run volume shown in table.

Table 33: EMS Service Calls by Agency, Region 8, Oklahoma 2009-2013

*SC = Specialty Care	Year					Total # of Calls	% of Total Calls
EMS Agency Name	2009	2010	2011	2012	2013		
EMSA-West Division	76,887	79,614	88,129	95,051	91,902	431,583	84.7%
Midwest Reg Hosp EMS	10,497	10,684	10,728	10,998	11,747	54,654	10.7%
Trinity Health Transit-SC*	1,849	1,788	1,736	1,595	382	7,350	1.4%
St. Anthony Healthplex Transport Team	.	.	.	1,809	2,383	4,192	0.8%
EMSA-East Division	.	3,061	.	.	59	3,120	0.6%
Eaglemed - Oklahoma City(Ground SC*)	.	.	.	1,233	1,109	2,342	0.5%
Oklahoma Critical Care Transport	.	121	688	730	636	2,175	0.4%
EMSSTAT-Norman Reg Hosp EMS	133	106	171	123	182	715	0.1%
Guthrie EMS	88	83	106	127	90	494	0.1%
Air Kids One(Air) SC*	**	85	109	148	138	**	**

1. Data includes all call types.

2. Only top ten EMS providers by run volume shown in table.

3. Any cell marked by an asterisk (**) not shown due to privacy concerns.

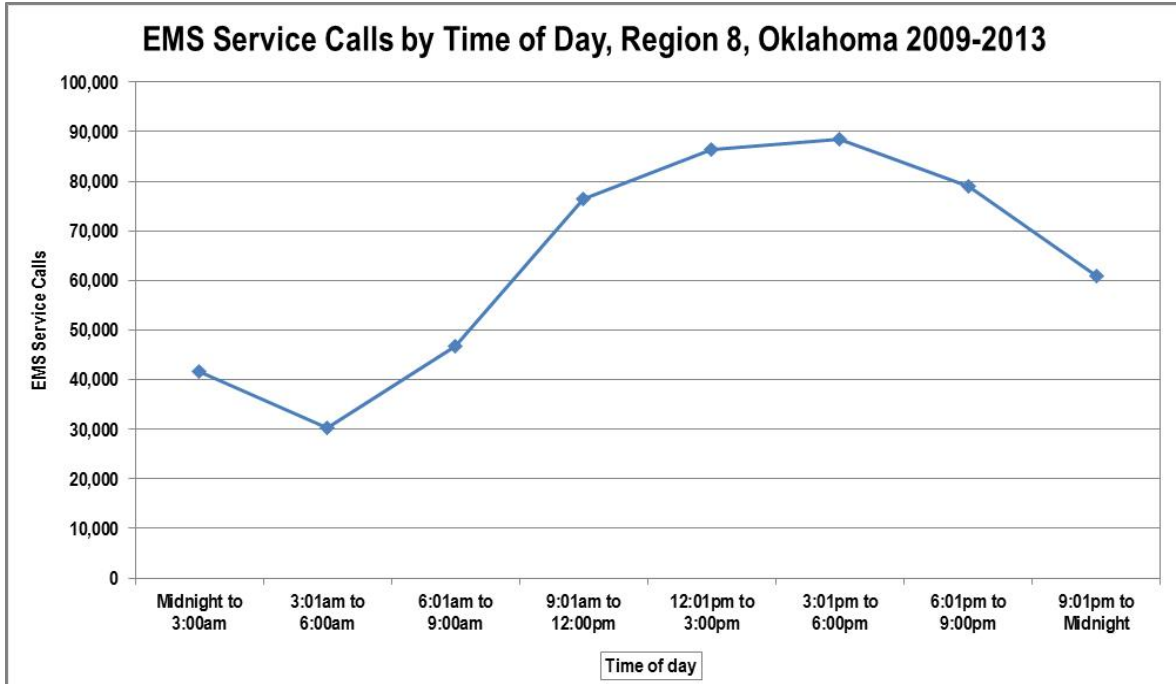


Figure 101: EMS service calls by time of day (all call types), region 8, Oklahoma 2009–2013.

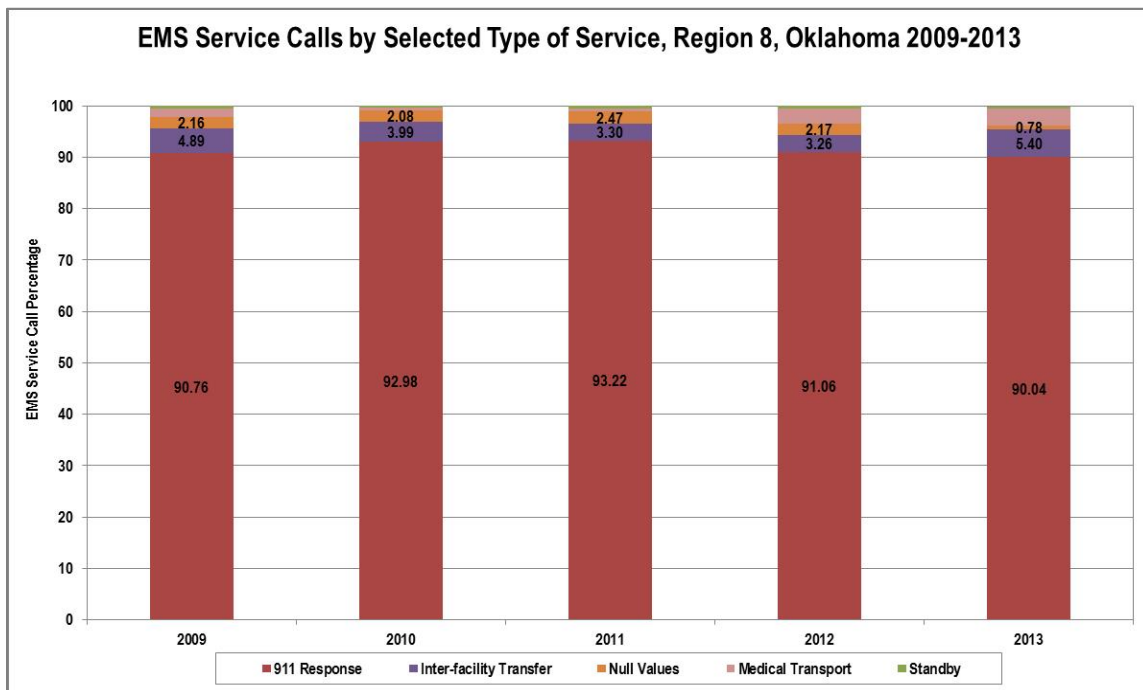


Figure 102: EMS service calls by type of service requested, region 8, Oklahoma 2009–2013.

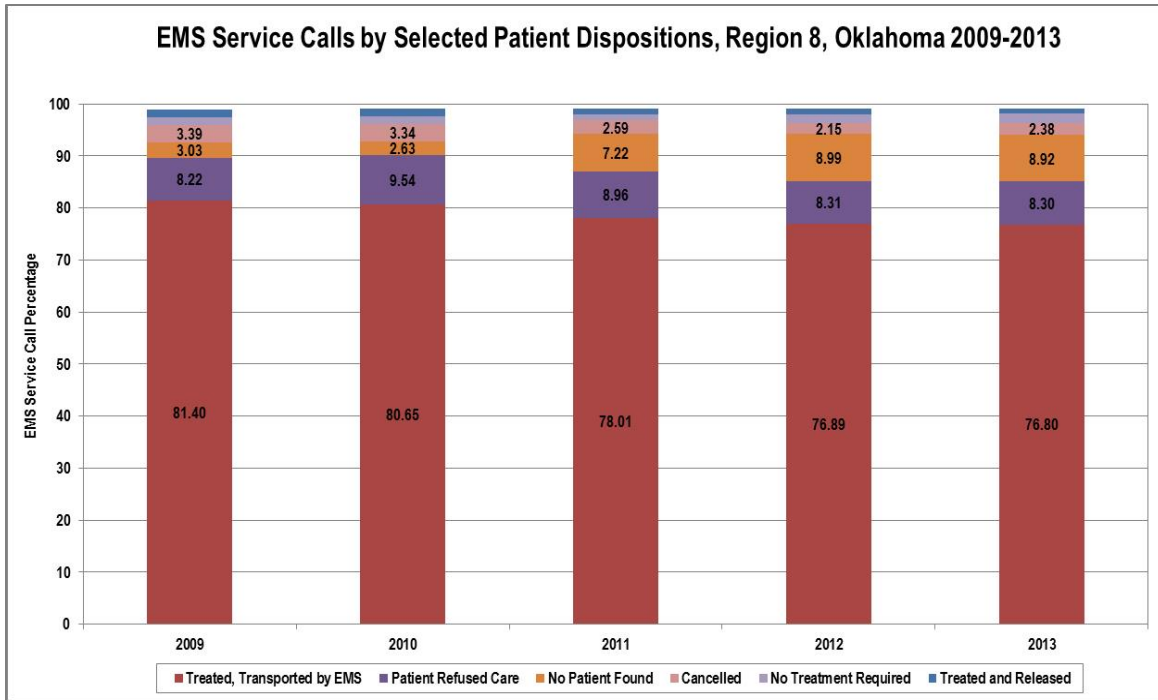


Figure 103: EMS service calls by selected patient disposition, region 8, Oklahoma 2009–2013.

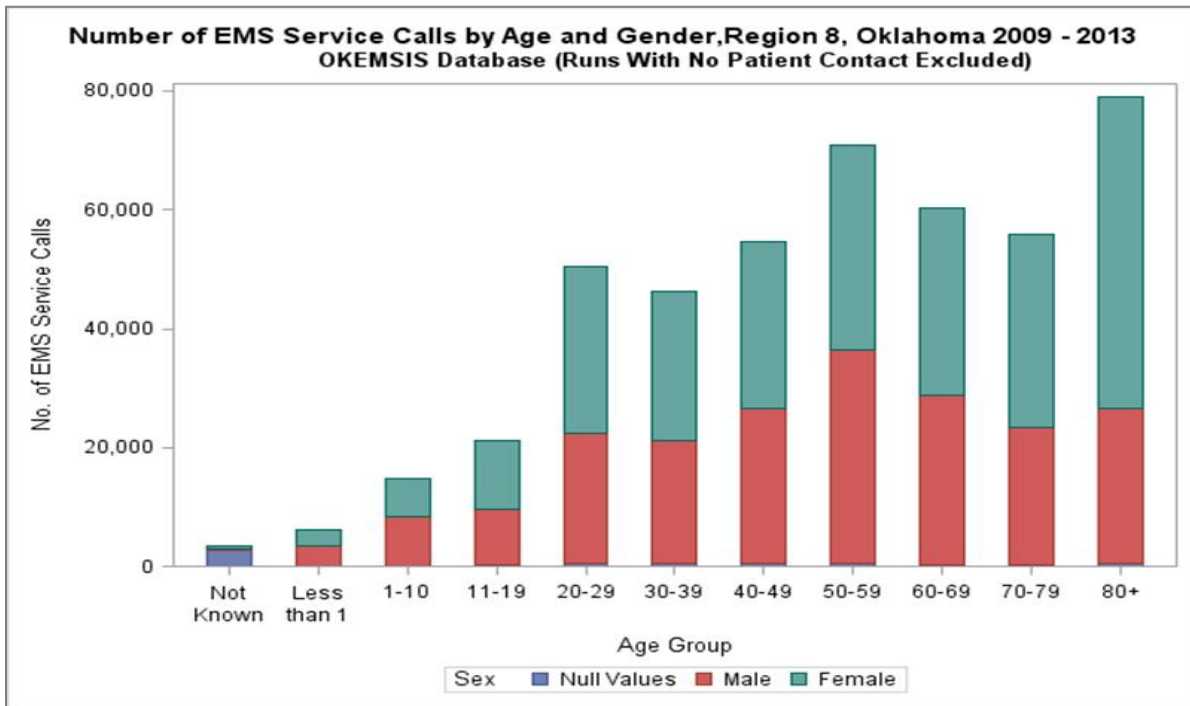


Figure 104: EMS service calls by age and gender, region 8, Oklahoma 2009–2013.

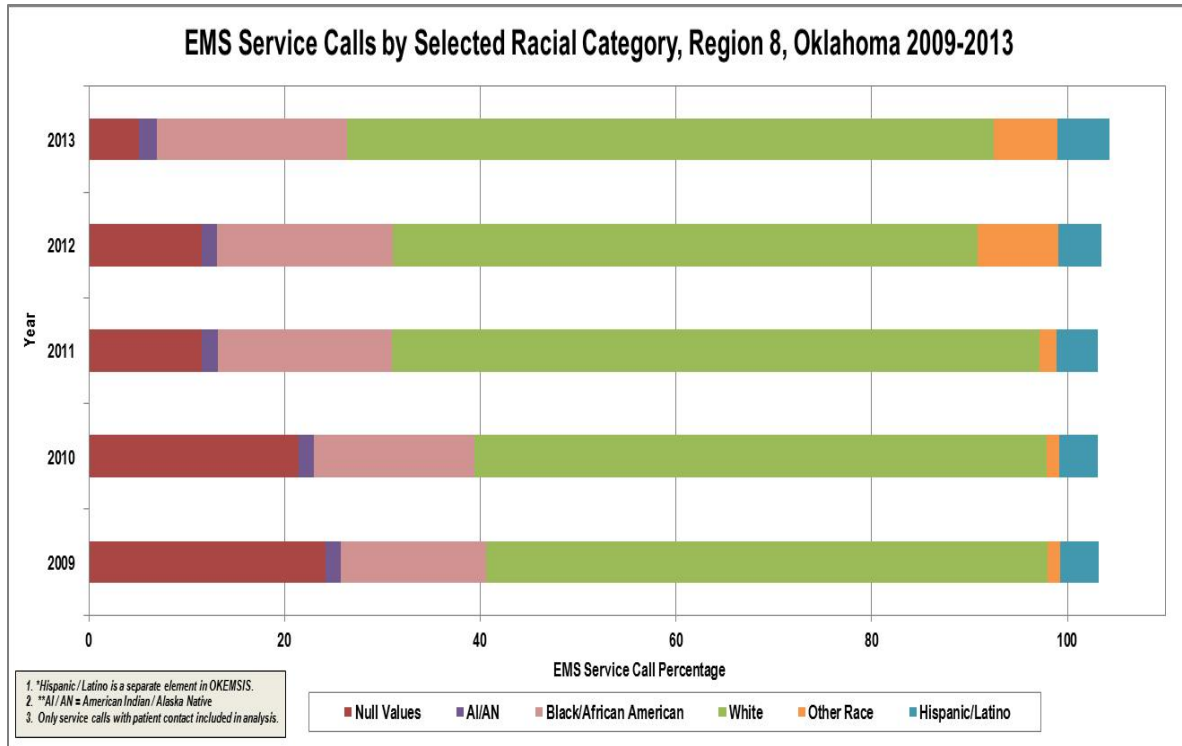


Figure 105: EMS service calls by racial category, region 8, Oklahoma 2009–2013.

Table 34: EMS Service Calls by Destination and Incident Region, Region 8 Treated and Transported Patients, Oklahoma 2009-2013

*Not All Destinations Shown	Year					Total # of Calls	% of Total Calls	% Increase/Decrease
Destination Facility	2009	2010	2011	2012	2013			
OU MED CTR- Presbyterian, Children's, Edmond	13,959	14,991	14,374	14,882	13,054	71,260	17.8%	-6.5%
INTEGRIS Baptist Med Ctr- OKC	11,177	11,535	11,960	12,734	12,640	60,046	14.9%	13.1%
Integris Southwest Med Ctr	9,314	10,685	10,850	10,764	10,906	52,519	13.1%	17.1%
Saint Anthony Hosp	2,752	8,610	10,425	13,604	14,266	49,657	12.4%	418.4%
Mercy Hospital - OKC	6,988	7,658	7,607	8,228	7,677	38,158	9.5%	9.9%
Midwest Reg Med Ctr	7,291	7,347	7,069	7,428	8,002	37,137	9.3%	9.8%
Deaconess Hosp	5,549	5,681	5,519	5,767	5,322	27,838	6.9%	-4.1%
Oklahoma Heart Hosp- OKC	2,488	2,651	2,829	3,683	3,695	15,346	3.8%	48.5%
Nursing Home/Rest Home/Long Term Care	7,409	1,948	862	695	778	11,692	2.9%	-89.5%
VA Med Ctr- OKC	1,686	2,152	2,021	1,879	1,947	9,685	2.4%	15.5%
Null Values	836	1,103	1,504	2,516	1,800	7,759	1.9%	115.3%
Integris Canadian Valley Reg Hosp	1,507	698	631	754	390	3,980	0.9%	-74.1%
Select Specialty Hosp	553	556	563	419	407	2,498	0.6%	-26.4%

Norman Reg Hosp	331	282	372	304	446	1,735	0.4%	34.7%
Moore Med Ctr	363	356	390	491	105	1,705	0.4%	-71.1%
Kindred Hosp	308	273	272	254	546	1,653	0.4%	77.3%
St Anthony-East	.	.	40	812	716	1,568	0.4%	NA

1. Only treated and transported patients included in this table.

2. *Only destinations with greater than 1,500 EMS service calls between 2009 and 2013 are shown.

Table 35: EMS Service Calls by Destination and Incident Region, Region 8 Treated and Transported Patients, Oklahoma 2009-2013

Destination	Year										Total Count
	2009		2010		2011		2012		2013		
	Service Type		Service Type		Service Type		Service Type		Service Type		
	Air	Ground	Air	Ground	Air	Ground	Air	Ground	Air	Ground	
OU MED CTR- Presbyterian, Children's, Edmond	53	13,906	108	14,883	108	14,266	150	14,732	139	12,915	71,260
INTEGRIS Baptist Med Ctr- OKC	**	11,165	**	11,526	**	11,955	**	12,727	**	12,629	60,046
Integris Southwest Med Ctr	**	9,313	**	10,683	**	10,850	**	10,763	**	10,903	52,519
Saint Anthony Hosp	**	2,750	**	8,605	**	10,421	**	13,603	**	14,264	49,657
Mercy Hospital - OKC	**	6,984	**	7,648	**	7,601	**	8,221	**	7,667	38,158
Midwest Reg Med Ctr	**	7,291	**	7,346	**	7,069	**	7,428	**	7,993	37,137
Deaconess Hosp	**	5,549	**	5,681	**	5,519	**	5,766	**	5,322	27,838
Oklahoma Heart Hosp- OKC	**	2,487	**	2,646	**	2,829	**	3,681	**	3,685	15,346
Nursing Home/Rest Home/Long Term Care	**	7,407	**	1,948	**	861	**	695	**	778	11,692
VA Med Ctr- OKC	**	1,684	**	2,152	**	2,021	**	1,879	**	1,947	9,685
Null Values	**	831	**	1,101	**	1,489	**	2,158	**	1,794	7,406
Integris Canadian Valley Reg Hosp	**	1,507	**	698	**	631	**	754	**	390	3,980
Select Specialty Hosp	**	553	**	556	**	563	**	419	**	407	2,498
Norman Reg Hosp	**	331	**	282	**	370	**	301	**	444	1,735
Moore Med Ctr	**	363	**	356	**	390	**	491	**	105	1,705
Kindred Hosp	**	308	**	273	**	272	**	254	**	546	1,653
St Anthony-East	**	**	**	**	**	40	**	812	**	715	1,568

1. Only treated and transported patients included in this table.

2. *Only destinations with greater than 1,500 EMS service calls between 2009 and 2013 are shown.

3. Any cell represented by an asterisk (**) not shown due to privacy concerns.

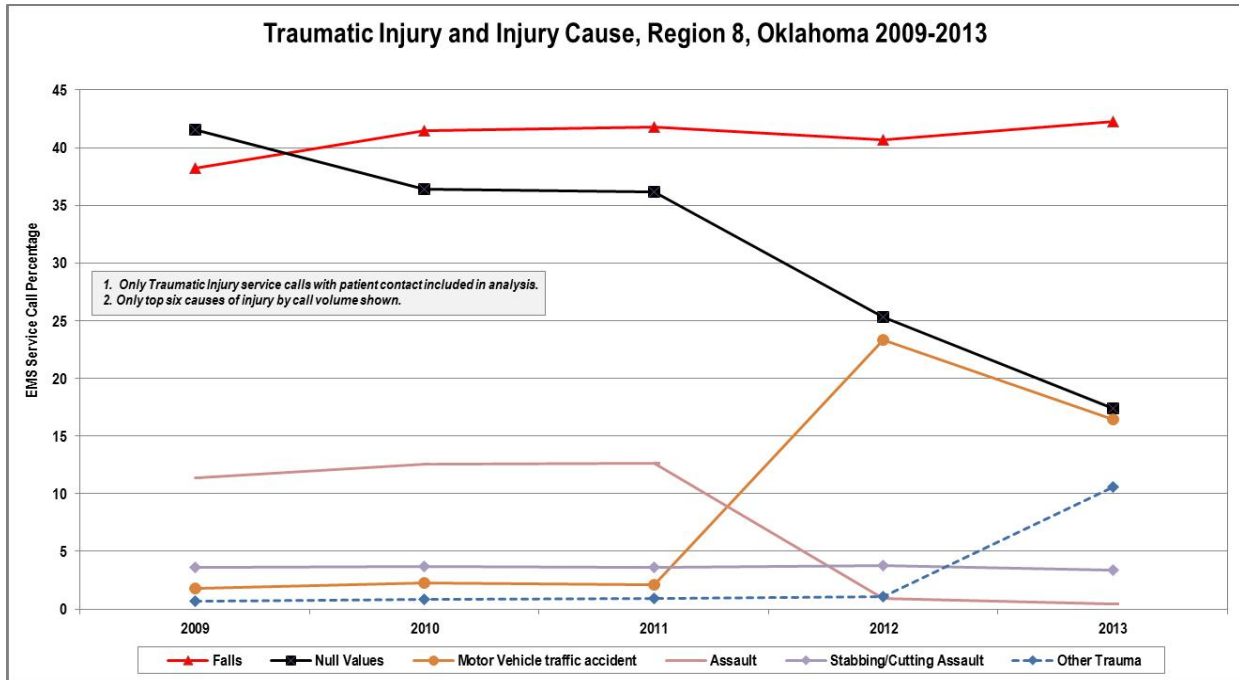


Figure 106: Traumatic injury EMS service calls by cause of injury, region 8, Oklahoma 2009–2013 (Only top six, by run volume, injury causes shown).

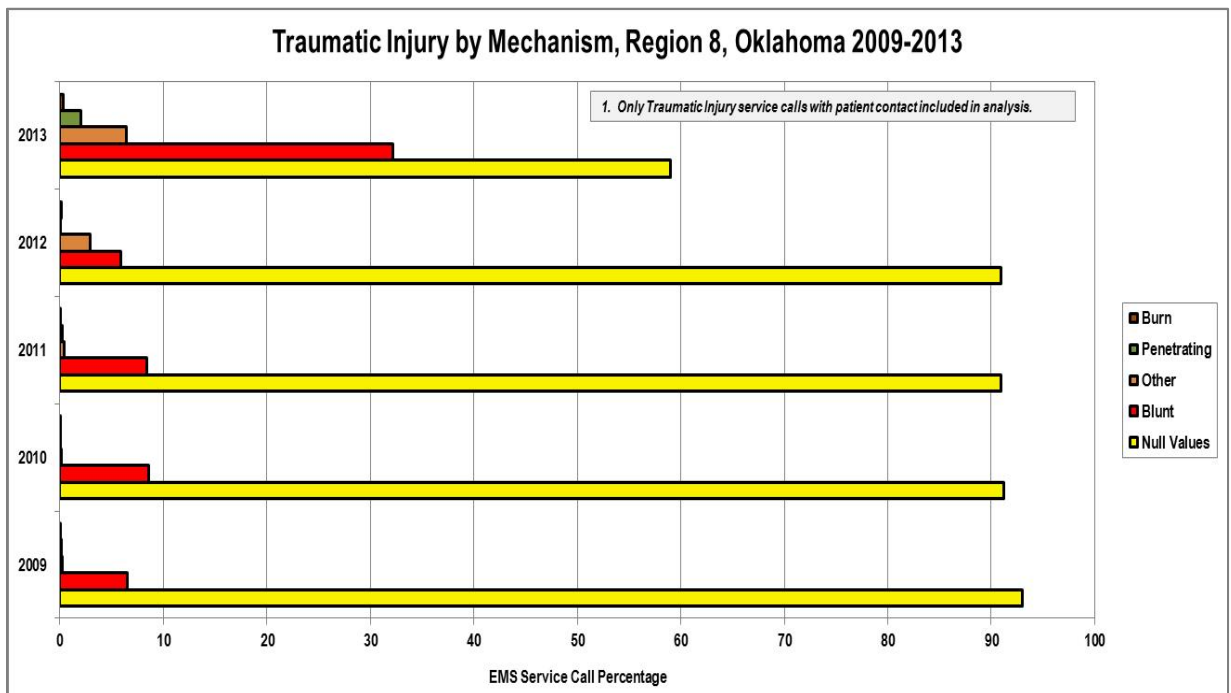


Figure 107: Traumatic injury EMS service calls by mechanism, region 8, Oklahoma 2009–2013.

OKEMSIS Data Quality

Data quality is an important issue concerning any database as it is vital to analysis and research. Data quality can be affected by primarily two issues, data validity and null values. The following sections of this report will look at the OKEMSIS database (between 2009 and 2014) for data quality using a sub-set of required data elements as described in the OKEMSIS data dictionary.

OKEMSIS Sub-Set Elements: Type of Service Requested, Patient Disposition, Incident Location Type, Incident City, Incident County, Incident State, Incident Zip Code, Crew Member Level, Crew Member Role, Provider Primary Impression, Cause of Injury for traumatic injury patients, Mechanism of Injury for traumatic injury patients, Patient Priority Status for traumatic injury patients, Trauma Triage Criteria for traumatic injury patients, Incident Facility Code for inter-facility transfers, and Destination Transferred to Code for treated and transported patients.

Validity

Data validity is the process of checking data coming into a system or database to make sure it conforms to a set of specifications (*validation rules*), in this case as defined by the OKEMSIS data dictionary. One way to assess this is by looking at the *validation scores* (a number based on validation rules between 0 and 100, 100 being the highest score) for a database or EMS agency to look for data completeness/accuracy. Although there has been an overall increase in validity score for the OKEMSIS database between 2011 and 2014 (85 to 93), there are still issues with data completeness/accuracy. If data validity is poor in a database, research and analysis of the data can be limited or cause inaccurate results. The following section looks at validation scores for the OKEMSIS database. Validation rules in the OKEMSIS database before 2011 were very limited therefore analysis was done for the years 2011 to 2014, after new validation rules were put in place.

- Since the introduction of new validation rules in June of 2011, OKEMSIS validation scores have increased 17.7% from 85 in 2011 to 93 in 2014 ([Figure 108](#), [Table 37](#)).

- Validity scores for ground providers increased 11.8% (85 to 95) from 2011 to 2014 while scores have decreased 6.7% for air providers (80 to 75, [Figure 109](#)).
- Region 3 and region 4 (both 97) had the highest validity scores in 2014 with Region 6 having the lowest score (88).
- Region 8 (27.8%) had the highest validity score increase followed by region 7 (26%).
- 142 EMS providers had validation scores between 90 and 100, 25 providers between 80 and 89, and 31 less than 80 including 11 providers having scores less than 70 (all air providers, [Figure 110](#)).

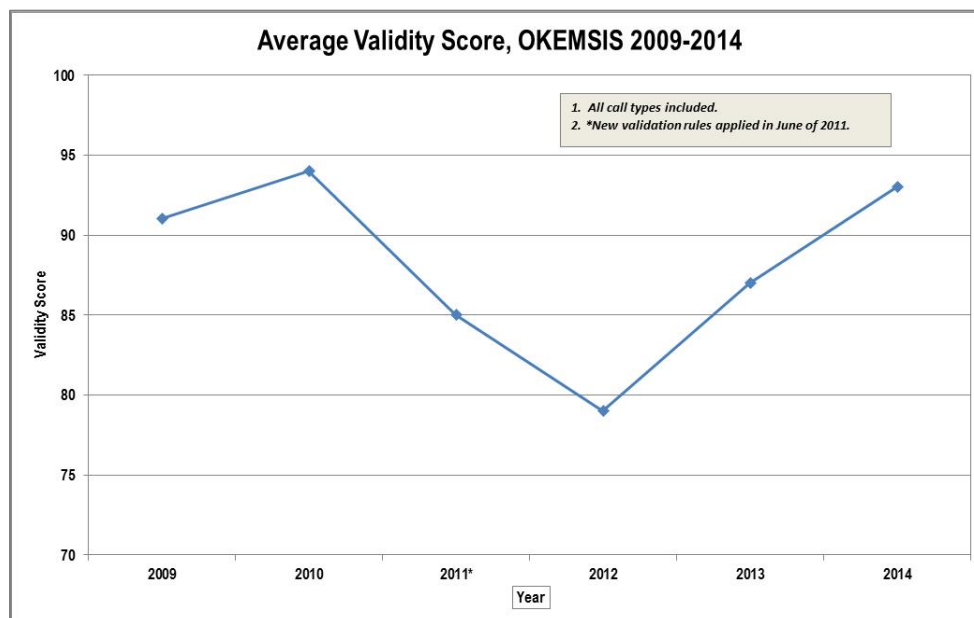


Figure 108: Average validity score, OKEMSIS database 2009–2014.

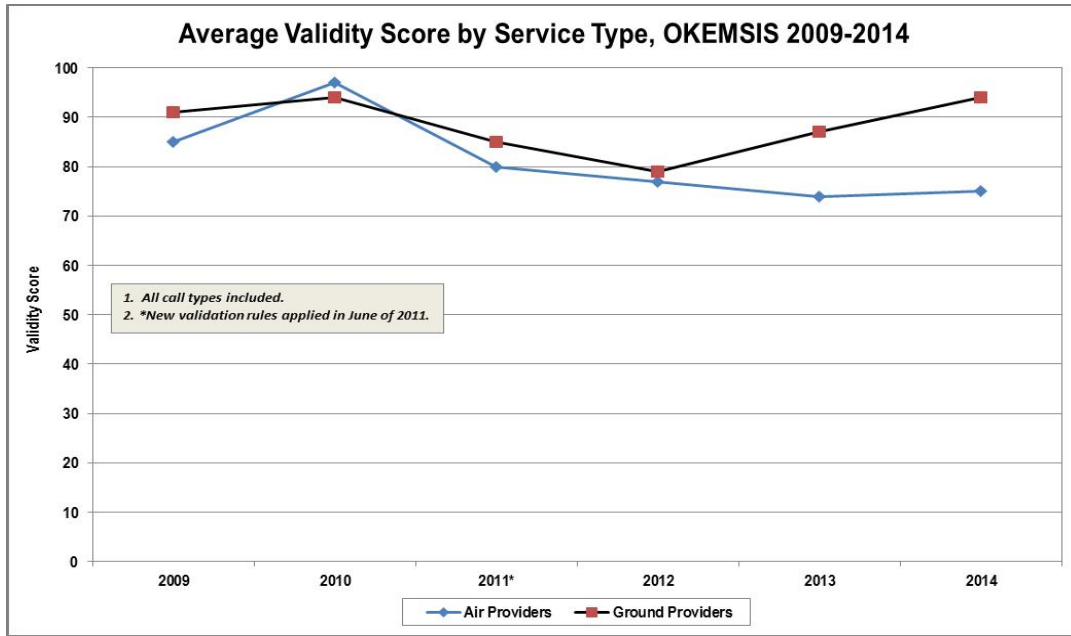


Figure 109: Average validity score by service type, OKEMSIS database 2009–2014.

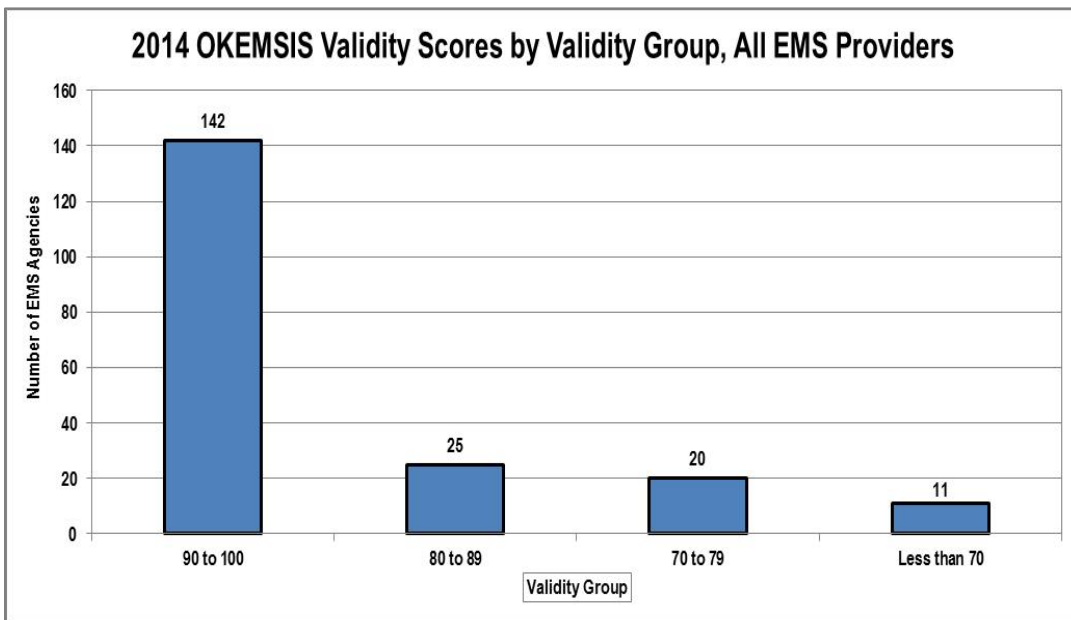


Figure 110: Average validity score by validity group, OKEMSIS database 2014.

Null Values

Null Values are defined as a data value or set of data values that represent an unknown or missing quantity in a database. OKEMSIS allows 4 null values: blank (missing), Not Applicable, Not Known, and Not Available. Excessive use of null values for a data element (as well as “other”) can render it unusable for analysis because of its non-specific nature. The following section looks at the use of null values as well as the use of “other” in the OKEMSIS database ([see OKEMSIS sub-set elements](#)).

- The use of null values/missing decreased to less than 2% for 7 of the sub-set elements between 2009 and 2014: type of service requested, response disposition, incident location type, incident city, incident county, incident state, and incident zip code ([Figure 111](#)).
- Provider primary impression ([Figure 112](#)), crew member level, and crew member role all saw decreases in the use of null values but saw increases in missing values and the use of “other” ([Table 36](#)).
- Cause of injury, mechanism of injury, patient priority status, and trauma triage criteria for EMS service calls with a provider first impression of “traumatic Injury” all saw big decreases in the use of null values ([Figure 113](#)). Although there was improvement in these traumatic injury elements, all need to be much closer to 100% specific response.
- Incident facility code saw an 10.8% increase in valid facility codes for inter-facility transfers between 2009 and 2014 while null values increased 1.1% ([Figure 114](#)). Missing values saw an 11.7% decrease during the same time period.
- Although the overall percentage of valid destination codes for treated and transported patients remained steady between 2009 and 2014, there was a 6.1% increase in valid codes between 2011 and 2014. Missing and invalid codes (codes not accepted by OKEMSIS) decreased 7.9% between 2011 and 2014 with null values increasing 1.8% ([Figure 115](#)).

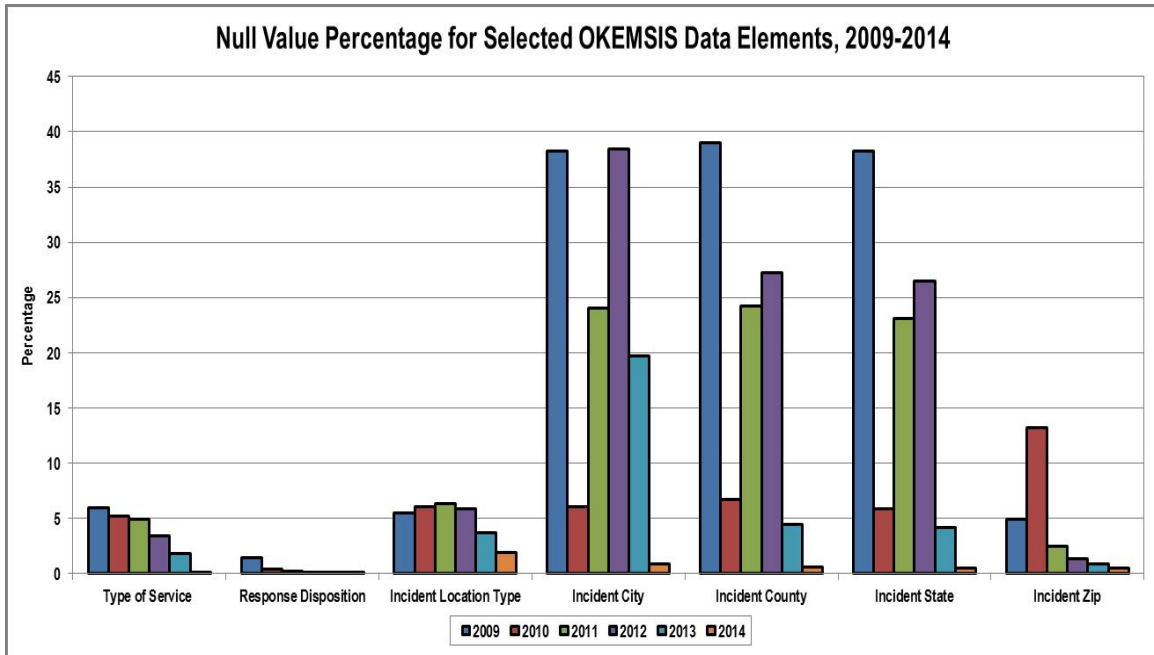


Figure 111: Null value percentage for selected OKEMSIS elements, 2009–2014.

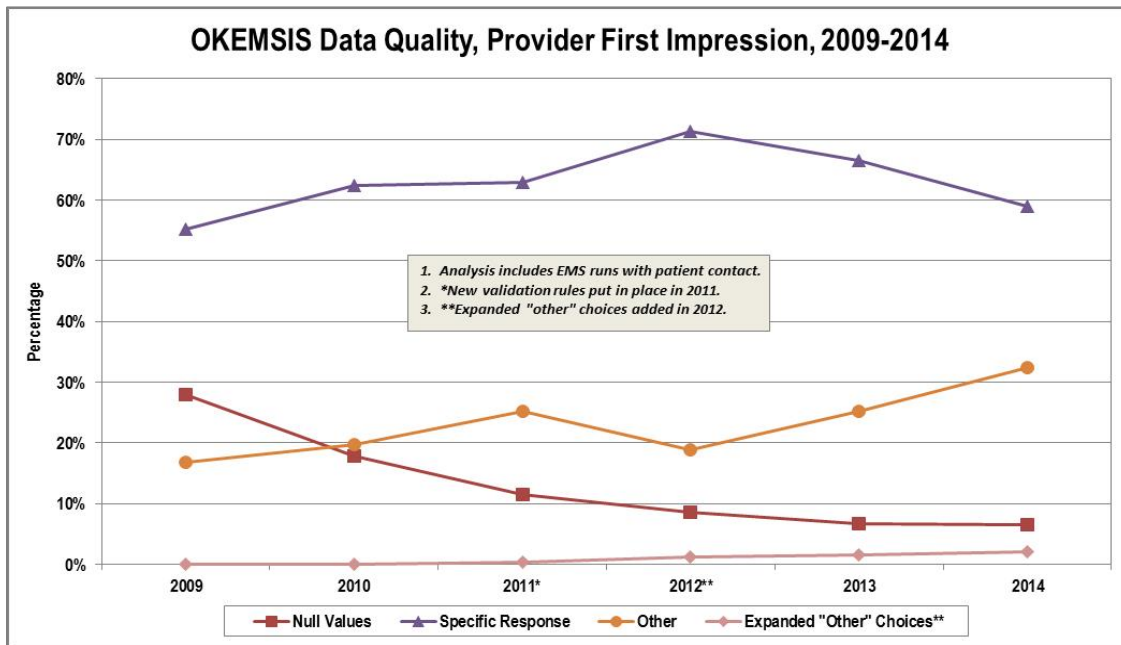


Figure 112: OKEMSIS data quality for provider first impression, EMS service calls with patient contact, 2009–2014.

Table 36: Null Value Percent Difference for Selected OKEMSIS Data Elements, 2009 and 2014

Element Category	First Impression*	Crew Level 1	Crew Role 1	Crew Level 2	Crew Role 2
Missing	N/A	2.2	2.1	2.3	2.1
Null Values	-21.45%	-2.2	-6.0	-2.9	-6.9
Specific Response	3.78%	-0.9	3.2	0.6	4.3
Other	15.65%	0.9	0.7	-0.03	0.5

1. *First Impression includes only EMS service calls with patient contact.

2. Crew level and Role includes all call types (at least 2 crew members required for all service calls in OKEMSIS).

3. Specific Response defined as any choice other than a null or missing value.

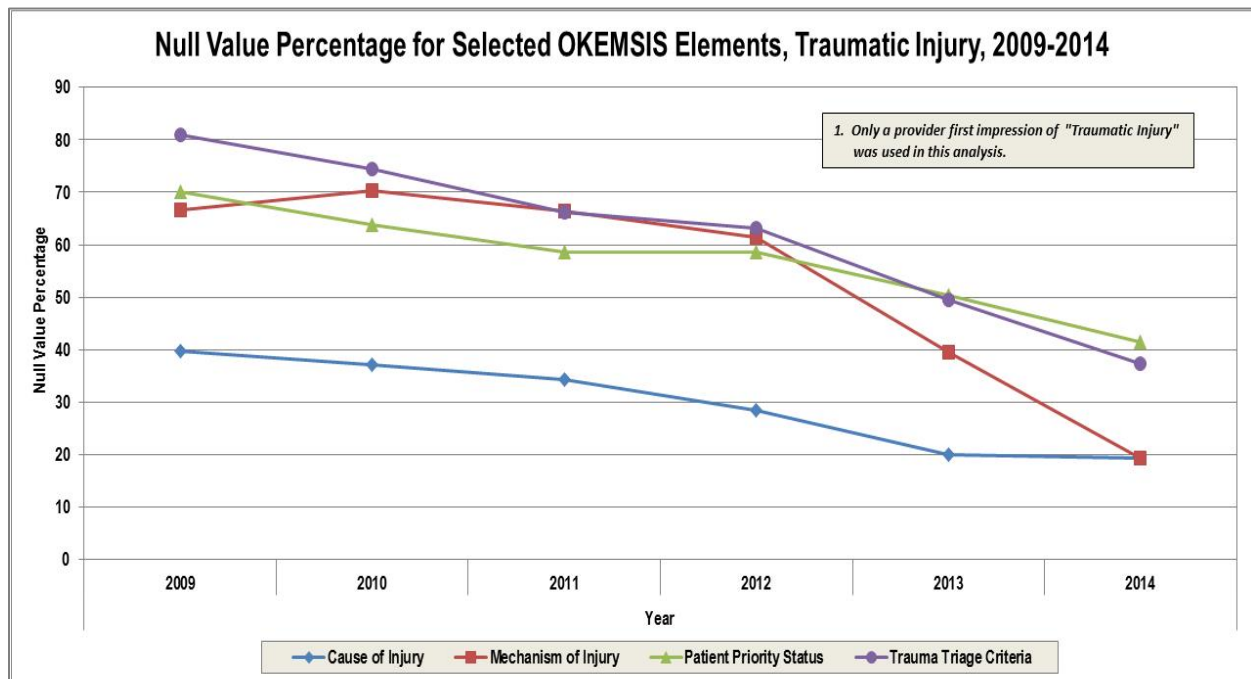


Figure 113: OKEMSIS data quality for selected OKEMSIS elements, traumatic injuries, 2009–2014.

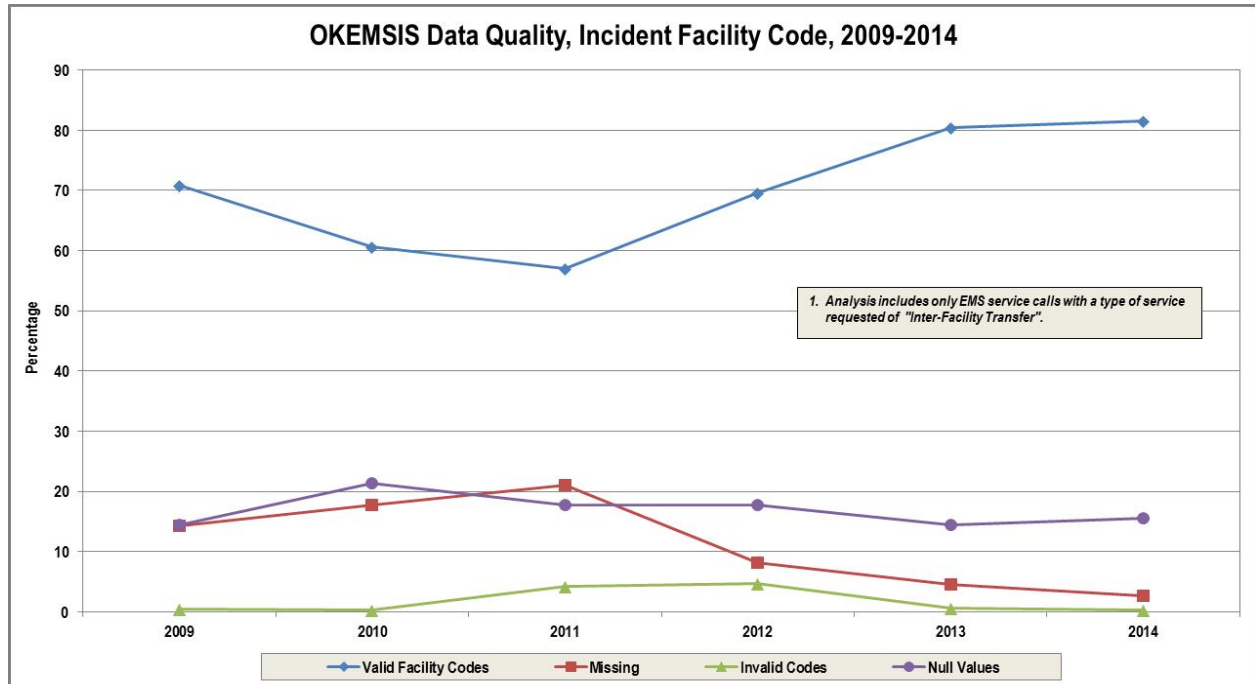


Figure 114: OKEMSIS data quality for selected OKEMSIS elements, incident facility code, 2009–2014 (inter-facility transfers only).

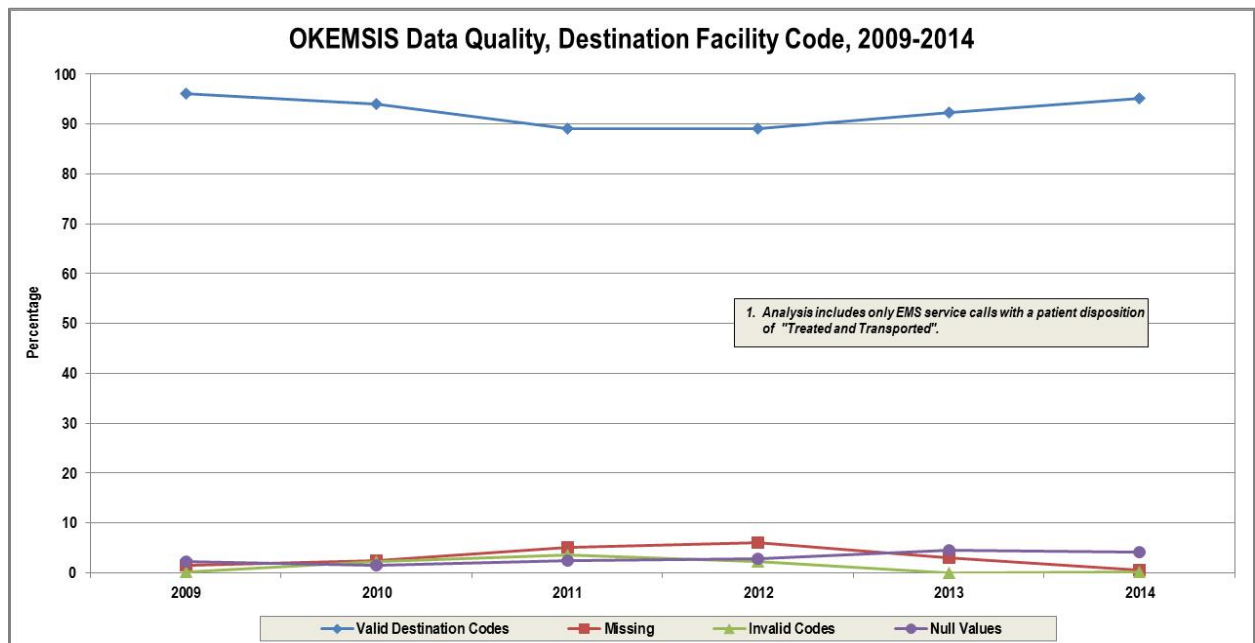


Figure 115: OKEMSIS data quality for selected OKEMSIS elements, destination facility code, 2009–2014 (inter-facility transfers only).

Overall there was improvement in data quality and validity for the OKEMSIS database between 2009 and 2014 (also see Table 37; NEMSIS Submission) but the overuse of “other” and null/missing values still occurs at a percentage that is too high for many of the data elements in OKEMSIS. In an effort to increase data quality, several steps have been taken by OSDH staff:

- Currently the OKEMSIS data dictionary is based off the NEMSIS (National Emergency Medical Services Information System) v 2.2.1 data dictionary. The OKEMSIS data dictionary has been upgraded to NEMSIS v3.3.4 and the new dictionary, timeline for conversion, state v3 run form, and validation rules are available on the OKEMSIS website and OSDH website: [OSDH, Emergency Systems Website](#) .
- The OKEMSIS website will be upgraded to work more efficiently with new software upgrades and a new web form for data entry (for web entry agencies).
- A validation report is currently available for agencies that import their data on the OKEMSIS website that tells that agency what elements are required by patient disposition.
- Links are available on the OKEMSIS website for validation rules, destination codes, and any updates to data elements.
- Free regional trainings are provided for EMS agencies on how to set-up and use the OKEMSIS database, including looking for errors during import, how to make web entry easier, and how to make or use the available reports with the OKEMSIS report writer. A presentation on data quality is given as well at the end of the training.
- Individual agency trainings can be performed when necessary (pending approval by OSDH staff).

In conclusion, all agencies have access to their data in the OKEMSIS database. To ensure accuracy, agencies can use the various reports on the OKEMSIS website to check what data is being entered by their respective 3rd party vendors or EMT's (<https://okemsis.health.ok.gov>). Communication between the agencies, 3rd party vendors, and OSDH Emergency Systems is paramount for improving statewide EMS data.

*Miscellaneous Tables, Figures, and Maps***Table 3: EMS Service Calls by County, Oklahoma 2009-2013**

Incident County	Year					Total # of Calls	% of Calls	% Change, 2009 to 2013
	2009	2010	2011	2012	2013			
ADAIR	1,872	2,866	3,359	3,384	2,867	14,348	0.59%	53.2%
ALFALFA	410	441	472	534	624	2,481	0.10%	52.2%
ATOKA	1,923	1,979	2,046	1,834	2,011	9,793	0.41%	4.6%
BEAVER	252	246	269	269	278	1,314	0.05%	10.3%
BECKHAM	2,259	2,139	2,362	2,609	2,741	12,110	0.50%	21.3%
BLAINE	1,111	1,257	1,177	1,253	1,170	5,968	0.25%	5.3%
BRYAN	6,372	6,590	6,814	6,894	6,661	33,331	1.4%	4.5%
CADDO	2,961	3,149	2,783	3,105	3,758	15,756	0.65%	26.9%
CANADIAN	2,470	5,919	7,093	7,434	9,178	32,094	1.3%	271.6%
CARTER	6,322	6,605	7,302	7,506	7,363	35,098	1.5%	16.5%
CHEROKEE	6,151	7,062	7,424	8,150	7,948	36,735	1.5%	29.2%
CHOCTAW	2,435	2,643	2,627	2,522	2,411	12,638	0.52%	-0.99%
CIMARRON	168	185	186	152	132	823	0.03%	-21.4%
CLEVELAND	15,280	16,951	18,434	19,565	21,711	91,941	3.8%	42.1%
COAL	599	595	592	702	680	3,168	0.13%	13.5%
COMANCHE	11,189	12,665	15,064	15,130	15,075	69,123	2.9%	34.7%
COTTON	422	233	355	438	556	2,004	0.08%	31.8%
CRAIG	1,633	1,959	2,108	2,218	2,099	10,017	0.41%	28.5%
CREEK	7,113	7,832	7,526	7,808	8,241	38,520	1.6%	15.9%
CUSTER	3,621	3,911	3,844	3,589	3,707	18,672	0.77%	2.4%
DELAWARE	4,261	4,359	5,017	5,208	5,240	24,085	1.0%	23.0%
DEWEY	414	368	443	472	479	2,176	0.09%	15.7%
ELLIS	273	324	379	421	316	1,713	0.07%	15.8%
GARFIELD	5,806	6,361	6,292	6,310	6,525	31,294	1.3%	12.4%
GARVIN	3,476	3,504	3,844	3,331	3,202	17,357	0.72%	-7.9%
GRADY	4,327	4,905	5,010	4,712	4,715	23,669	0.98%	9.0%
GRANT	251	379	433	489	486	2,038	0.08%	93.6%
GREER	90	380	713	564	415	2,162	0.09%	361.1%
HARMON	307	294	283	263	308	1,455	0.06%	0.33%
HARPER	247	325	317	336	298	1,523	0.06%	20.6%
HASKELL	1,219	1,335	1,214	1,403	1,397	6,568	0.27%	14.6%
HUGHES	1,236	1,617	1,760	1,711	1,825	8,149	0.34%	47.7%
JACKSON	2,711	2,257	2,658	3,030	2,202	12,858	0.53%	-18.8%

JEFFERSON	653	737	692	685	701	3,468	0.14%	7.4%
JOHNSTON	1,202	1,254	1,452	1,449	1,499	6,856	0.28%	24.7%
KAY	3,693	4,973	5,505	5,498	5,385	25,054	1.0%	45.8%
KINGFISHER	1,076	992	1,166	1,211	1,214	5,659	0.23%	12.8%
KIOWA	1,325	1,409	1,309	1,299	1,255	6,597	0.27%	-5.3%
LATIMER	971	811	993	1,095	1,046	4,916	0.20%	7.7%
LE FLORE	5,414	4,270	4,946	6,517	6,668	27,815	1.2%	23.2%
LINCOLN	2,474	2,858	2,951	3,032	3,400	14,715	0.61%	37.4%
LOGAN	2,138	2,024	2,167	2,304	4,074	12,707	0.53%	90.6%
LOVE	1,359	1,548	1,609	1,774	1,802	8,092	0.33%	32.6%
MAJOR	508	477	489	627	570	2,671	0.11%	12.2%
MARSHALL	1,249	1,197	1,529	2,046	1,836	7,857	0.33%	47.0%
MAYES	4,868	5,591	5,982	5,837	5,787	28,065	1.2%	18.9%
MCCLAIN	3,429	3,377	3,583	3,726	3,606	17,721	0.73%	5.2%
MCCURTAIN	4,128	4,478	4,662	4,738	4,640	22,646	0.94%	12.4%
MCINTOSH	2,709	3,076	3,208	3,302	3,294	15,589	0.65%	21.6%
MURRAY	1,818	1,787	2,123	1,974	2,002	9,704	0.40%	10.1%
MUSKOGEE	17,321	17,166	18,159	17,922	18,757	89,325	3.7%	8.3%
NOBLE	830	750	865	931	977	4,353	0.18%	17.7%
NOWATA	1,047	1,079	1,061	906	894	4,987	0.21%	-14.6%
NULL VALUES	8,692	8,928	8,271	3,251	2,916	32,058	1.3%	-66.5%
OKFUSKEE	1,426	1,740	2,128	1,750	1,693	8,737	0.36%	18.7%
OKLAHOMA	90,207	96,005	102,066	112,289	109,221	509,788	21.1%	21.1%
OKMULGEE	5,682	5,904	5,809	6,149	6,098	29,642	1.2%	7.3%
OSAGE	4,233	4,284	3,675	3,561	4,297	20,050	1.9%	9.2%
OTTAWA	5,233	5,341	5,394	5,298	5,235	26,501	1.1%	0.04%
Out of State-Arkansas	241	226	264	316	400	1,447	0.06%	66.0%
Out of State-Colorado	**	**	**	**	**	33	0.00%	N/A
Out of State-Kansas	81	84	86	127	126	504	0.02%	55.6%
Out of State-Missouri	74	37	87	43	34	275	0.01%	-54.1%
Out of State-New Mexico	**	**	**	**	**	**	0.00%	N/A
Out of State-Texas	113	110	136	107	96	562	0.02%	-15.0%
PAWNEE	1,684	1,836	2,005	1,898	2,138	9,561	0.40%	27.0%
PAYNE	6,911	7,709	7,384	8,201	8,690	38,895	1.6%	25.7%
PITTSBURG	5,781	5,932	6,460	6,378	6,272	30,823	1.3%	8.5%
PONTOTOC	5,255	5,221	5,295	5,474	5,432	26,677	1.1%	3.4%
POTTAWATOMIE	8,661	9,221	9,168	9,439	10,116	46,605	1.9%	16.8%
PUSHMATAHA	1,214	1,307	1,245	1,325	1,245	6,336	0.26%	2.6%
ROGER MILLS	257	290	298	299	301	1,445	0.06%	17.1%
ROGERS	12,414	13,060	13,229	13,999	14,392	67,094	1.7%	16.3%
SEMINOLE	2,672	3,167	3,213	3,288	3,520	15,860	0.66%	31.7%

SEQUOYAH	4,485	4,191	4,302	4,637	4,823	22,438	0.93%	7.5%
STEPHENS	3,713	4,068	3,673	5,489	5,848	22,791	0.94%	57.5%
TEXAS	1,132	1,309	1,472	1,565	1,610	7,088	0.29%	42.2%
TILLMAN	704	680	662	765	694	3,505	0.15%	-1.4%
TULSA	93,921	96,069	104,451	111,744	113,660	519,845	21.5%	21.0%
WAGONER	3,465	4,970	5,351	4,966	4,864	23,616	0.98%	40.4%
WASHINGTON	5,051	2,882	5,124	5,180	4,736	22,973	0.95%	-6.2%
WASHITA	793	746	692	808	820	3,859	0.16%	3.4%
WOODS	1,128	1,048	1,037	1,299	1,291	5,803	0.24%	14.5%
WOODWARD	2,172	2,102	2,231	2,367	2,218	11,090	0.46%	2.1%
TOTALS	434,791	459,957	489,890	512,235	518,813	2,415,686	100.0%	19.3%

1. Any cell represented by an asterisk (**) is not shown due to privacy concerns.

2. Data includes all call types.

Year	Quarter	Total Cases	Eligible Cases	Percent Eligible	Average Eligible/Year
2009	1	101,609	83,487	82.2	83.2
	2	107,324	89,479	83.4	
	3	108,394	90,928	83.9	
	4	111,635	93,090	83.4	
2010	1	108,603	89,118	82.1	82.6
	2	115,877	95,193	82.2	
	3	120,087	99,039	82.5	
	4	115,092	96,278	83.7	
2011	1	119,008	99,626	83.7	85.6
	2	119,213	100,256	84.1	
	3	122,428	106,573	87.1	
	4	115,533	101,170	87.6	
2012	1	119,814	110,930	92.6	93.4
	2	125,519	117,209	93.4	
	3	126,632	118,239	93.4	
	4	123,927	116,614	94.1	
2013	1	121,585	114,641	94.3	95.6
	2	124,845	118,264	94.7	
	3	130,978	125,560	95.9	
	4	123,202	119,928	97.3	
2014	1	125,886	122,479	97.3	97.2
	2	128,654	125,093	97.2	
	3	136,210	132,269	97.1	
	4	131,928	128,340	97.3	
% Increase from 2009	N/A	N/A	N/A	N/A	16.9%

Table 38: EMS Service Calls by Incident City, Oklahoma 2009-2013

Incident City	2009	2010	2011	2012	2013	Total # of Calls	% of Total Calls
Oklahoma City	71,621	62,906	84,173	96,325	97,791	412,816	17.1%
Tulsa	69,765	57,228	86,636	92,283	95,543	401,455	16.6%
Missing	21,681	61,038	12,852	7,573	5,317	108,461	4.5%
Muskogee	14,362	14,006	15,044	14,742	15,555	73,709	3.1%
Norman	11,270	12,920	13,868	14,113	14,658	66,829	2.8%
Lawton	9,683	10,924	12,628	12,027	12,227	57,489	2.4%
Broken Arrow	6,429	6,664	8,284	8,676	9,197	39,250	1.6%
Shawnee	6,812	7,246	7,044	7,297	7,892	36,291	1.5%
Edmond	5,873	4,981	7,843	8,691	8,786	36,174	1.5%
Tahlequah	5,406	6,122	6,396	7,016	6,704	31,644	1.3%
Enid	5,516	5,970	5,930	5,960	6,283	29,659	1.2%

Table 39: EMS Service Calls by Destination, Treated and Transported Service Calls, Oklahoma 2009-2013

*Only Destinations with > 10,000 Runs Shown	Year					Total # of Calls	% of Total Calls	% Increase/Decrease
*Destination Facility	2009	2010	2011	2012	2013			
St. Francis Hosp, Inc. Tulsa	27,029	27,874	28,978	31,001	31,544	146,426	8.1%	16.7%
St. John Med Ctr, Inc. Tulsa	23,102	23,697	24,482	26,214	26,090	123,585	6.8%	12.9%
Nursing Home/Rest Home/Long Term Care	25,066	19,526	19,597	19,021	19,081	102,291	5.7%	-23.9%
OU Med Ctr (All)	18,729	19,994	20,225	20,854	19,979	99,781	5.5%	6.7%
Hillcrest Med Ctr- Tulsa	13,935	15,152	17,154	17,111	17,387	80,739	4.5%	24.8%
Integris Baptist Med Ctr, Inc. - OKC	14,190	14,743	16,136	16,977	16,816	78,862	4.4%	18.5%
Integris Southwest Med Ctr	10,740	11,988	12,236	11,923	13,062	59,949	3.3%	21.6%
St. Anthony Hosp	4,525	10,522	12,500	15,744	16,641	59,932	3.3%	267.8%
Norman Reg Hosp	9,490	9,087	10,133	10,553	10,937	50,200	2.8%	15.2%
Mercy Hosp- OKC	8,474	9,158	9,690	10,346	10,865	48,533	2.7%	28.2%
Null Values	10,397	8,803	9,549	10,662	6,785	46,196	2.3%	29.7%
Muskogee Reg Med Ctr	7,551	7,300	7,742	8,982	9,790	41,365	2.2%	15.2%
Midwest Reg Med Ctr	7,766	7,717	7,479	7,966	8,950	39,878	2.0%	36.5%
Comanche Cty Mem Hosp	6,032	6,453	7,211	8,080	8,234	36,010	2.0%	30.3%
OSU Med Ctr	6,330	6,355	7,060	7,789	8,249	35,783	1.7%	53.4%
Oklahoma Heart Hosp- OKC	4,750	5,489	5,946	6,855	7,285	30,325	1.7%	-4.1%
Deaconess Hosp	6,073	6,136	6,007	6,256	5,827	30,299	1.6%	-47.1%
Out of State Facility-AR	4,652	4,852	5,485	5,957	6,181	27,127	1.5%	32.9%
St. Anthony- Shawnee	5,208	5,574	5,379	2,668	5,693	24,522	1.4%	9.3%

Mercy Hosp- Ardmore	4,315	4,494	4,838	5,089	5,188	23,924	1.3%	20.2%
Hillcrest Hosp-South	5,331	5,120	4,863	4,176	3,464	22,954	1.3%	-35.0%
Jane Phillips Med Ctr	4,473	3,864	4,527	4,537	4,346	21,747	1.2%	-2.8%
Private Residence	3,128	3,089	3,749	4,124	5,673	19,763	1.1%	81.4%
Invalid Code	666	3,497	6,470	4,933	3,973	19,539	1.0%	10.5%
McAlester Reg Hlth Ctr	3,441	3,752	3,916	4,050	3,803	18,962	1.0%	18.1%
Med Ctr of Southeastern Oklahoma	3,256	3,542	3,660	3,731	3,844	18,033	0.88%	41.7%
Stillwater Med Ctr	2,631	2,949	3,025	3,485	3,729	15,819	0.83%	18.2%
Tahlequah City Hosp	2,891	3,027	2,592	3,125	3,416	15,051	0.81%	20.1%
Duncan Reg Hosp Inc	2,793	2,729	2,377	3,372	3,354	14,625	0.81%	27.9%
VA Med Ctr- OKC	2,365	3,092	3,179	2,941	3,024	14,601	0.79%	-18.1%
Mercy Hosp- Ada	3,281	3,051	2,733	2,610	2,686	14,361	0.77%	12.6%
St. Marys Reg Med Ctr Enid	2,567	2,844	2,781	2,903	2,891	13,986	0.70%	27.3%
St. Francis Hosp South Tulsa	2,140	2,382	2,526	2,925	2,725	12,698	0.69%	21.8%
Integriss Bass Baptist Hlth Ctr	2,254	2,548	2,403	2,556	2,746	12,507	0.69%	50.5%
Ponca City Med Ctr	1,745	2,616	2,742	2,754	2,627	12,484	0.67%	106.8%
Out of State Facility Not Listed	1,595	1,612	2,076	3,570	3,298	12,151	0.62%	20.1%
McCurtain Mem Hosp	1,917	2,146	2,356	2,433	2,302	11,154	0.57%	-3.2%
St. Johns- Owasso	2,026	2,145	2,069	2,126	1,962	10,328	8.1%	16.7%

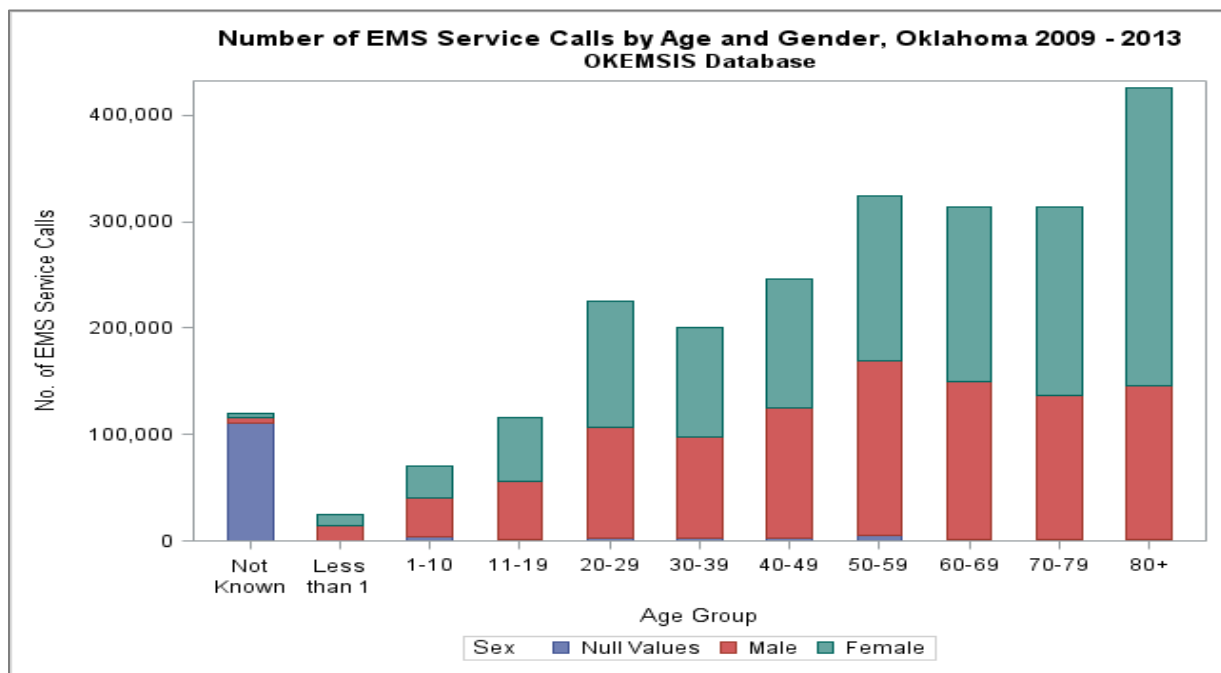


Figure 116: EMS service calls by age and gender, Oklahoma 2009–2013.

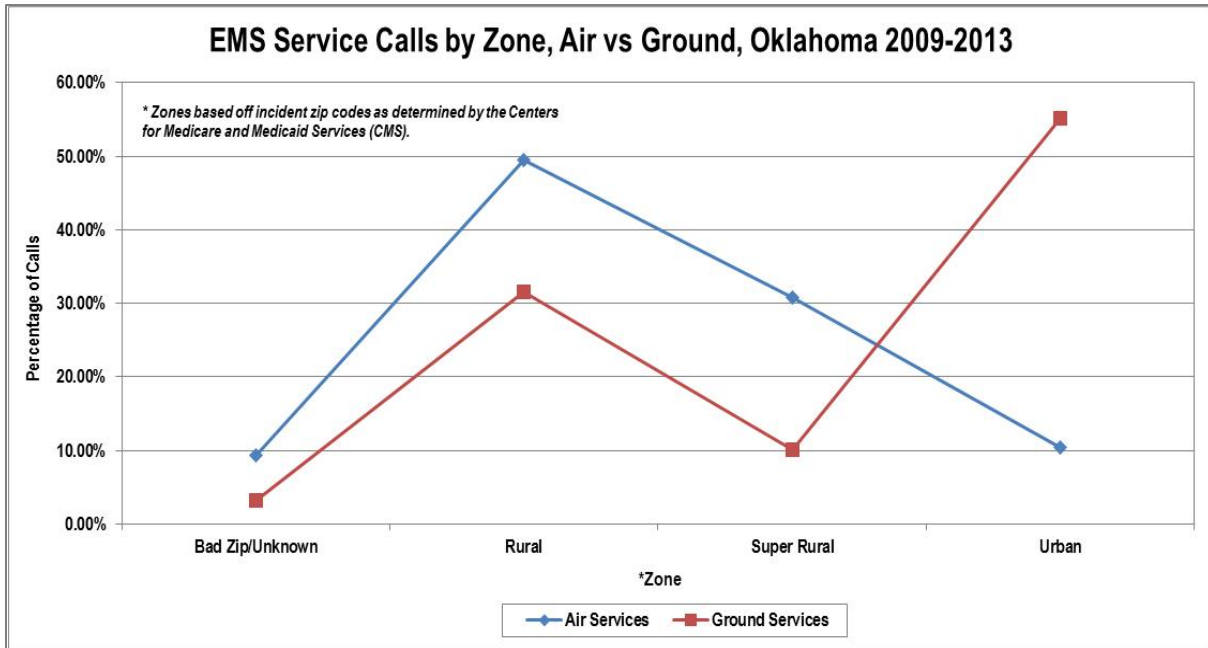


Figure 117: EMS service calls by zone, air vs ground, Oklahoma 2009–2013.

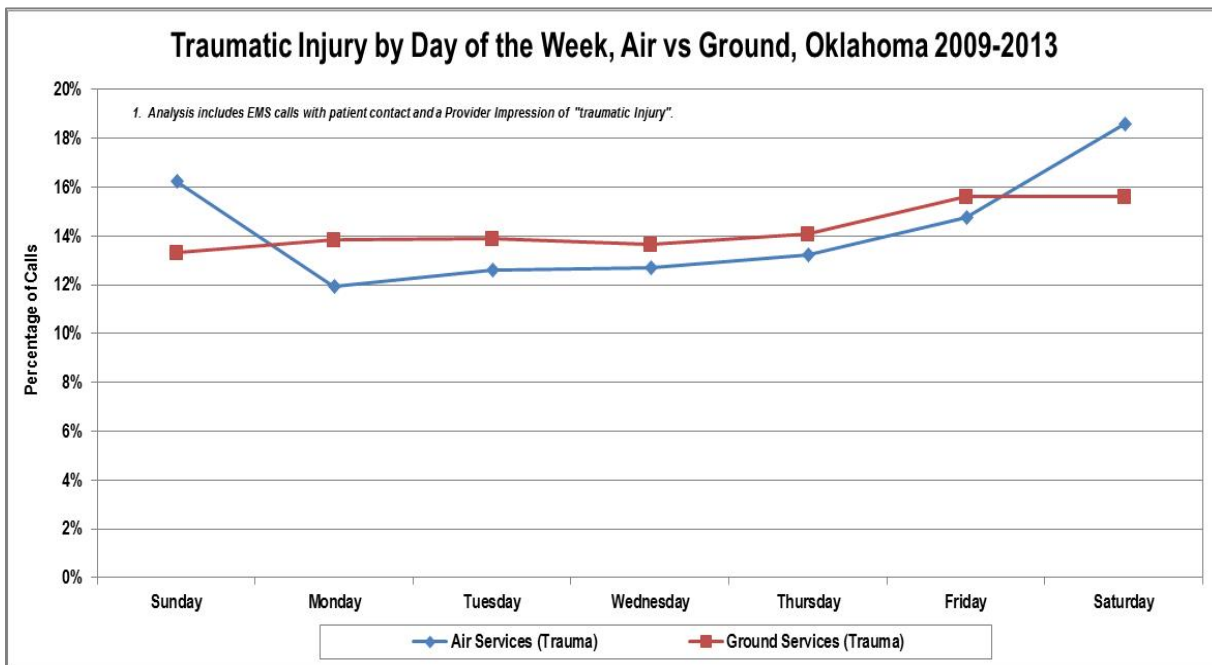


Figure 118: EMS service calls by day of the week and service type, traumatic injury, Oklahoma 2009–2013.

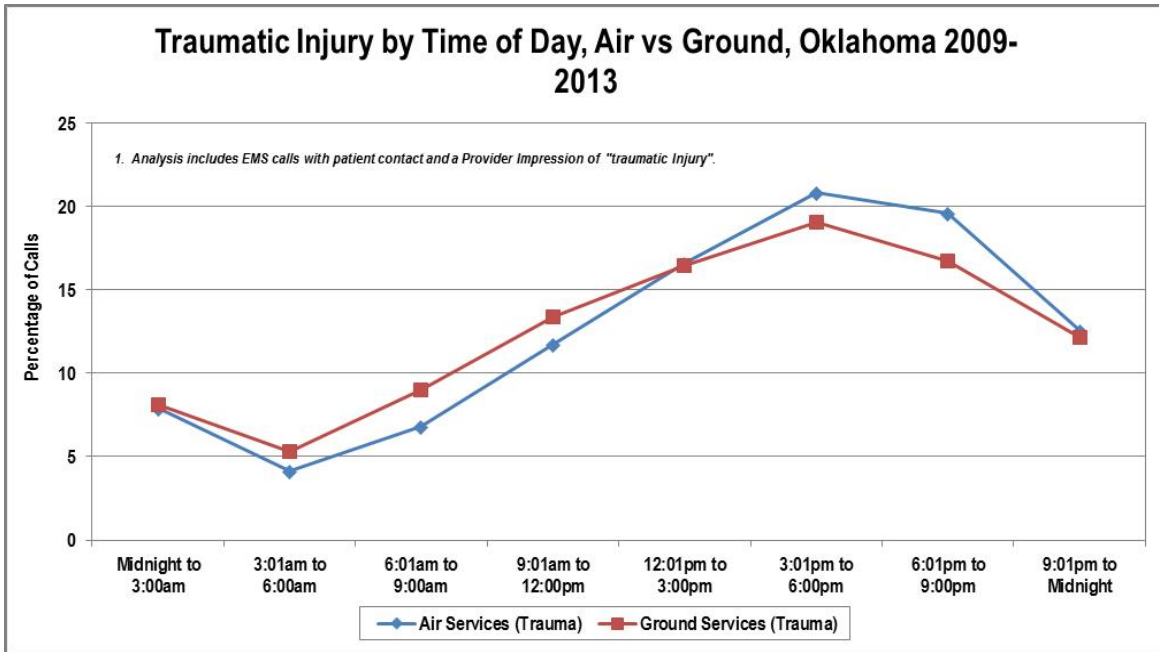


Figure 119: EMS service calls by time of day and service type, traumatic injury, Oklahoma 2009–2013.

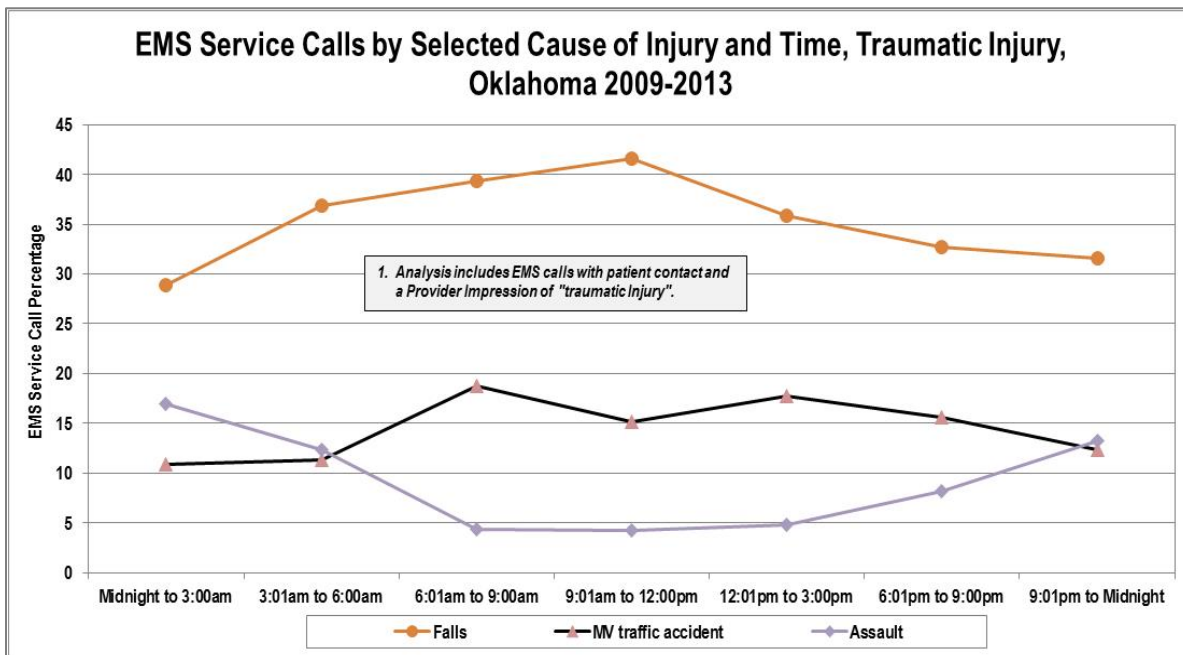


Figure 120: EMS service calls by cause of injury and time, traumatic injury, Oklahoma 2009–2013.

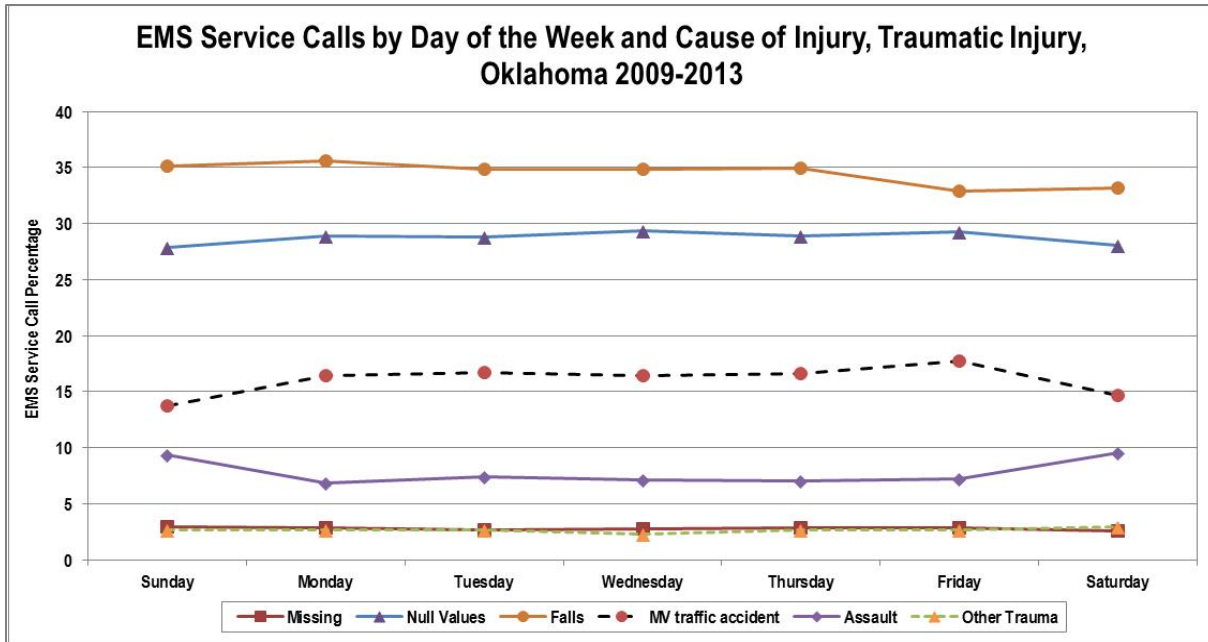


Figure 121: EMS service calls by cause of injury and day of the week, traumatic injury, Oklahoma 2009–2013.

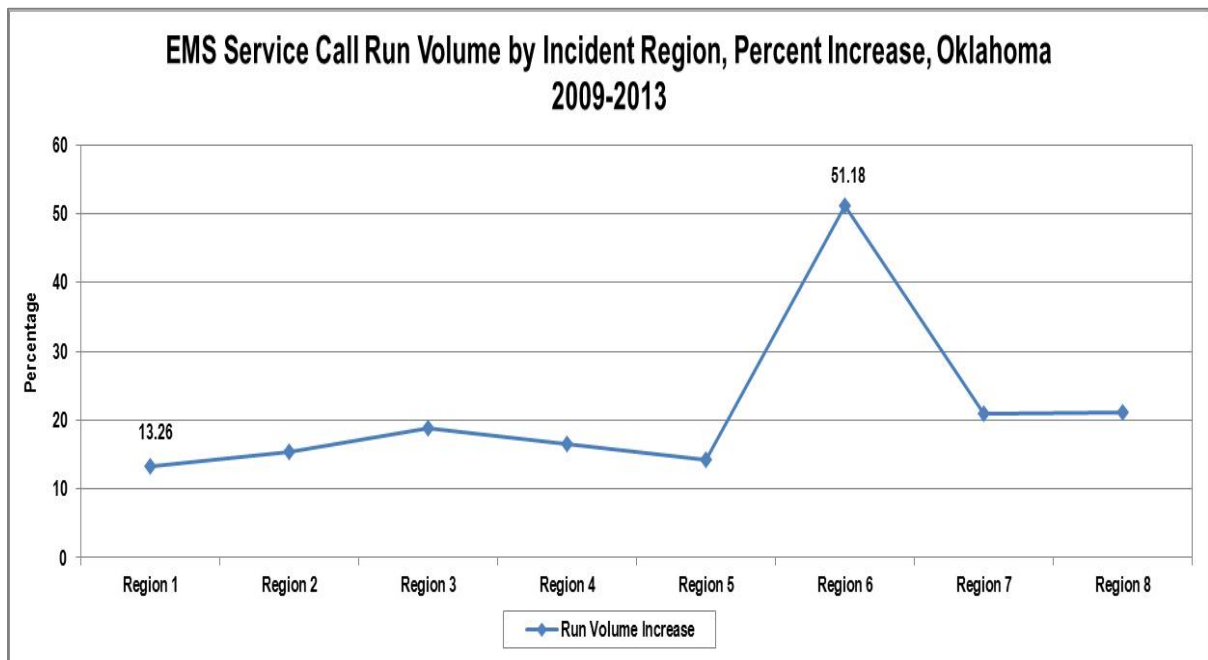


Figure 122: EMS service call run volume by region, all call types, Oklahoma 2009–2013.

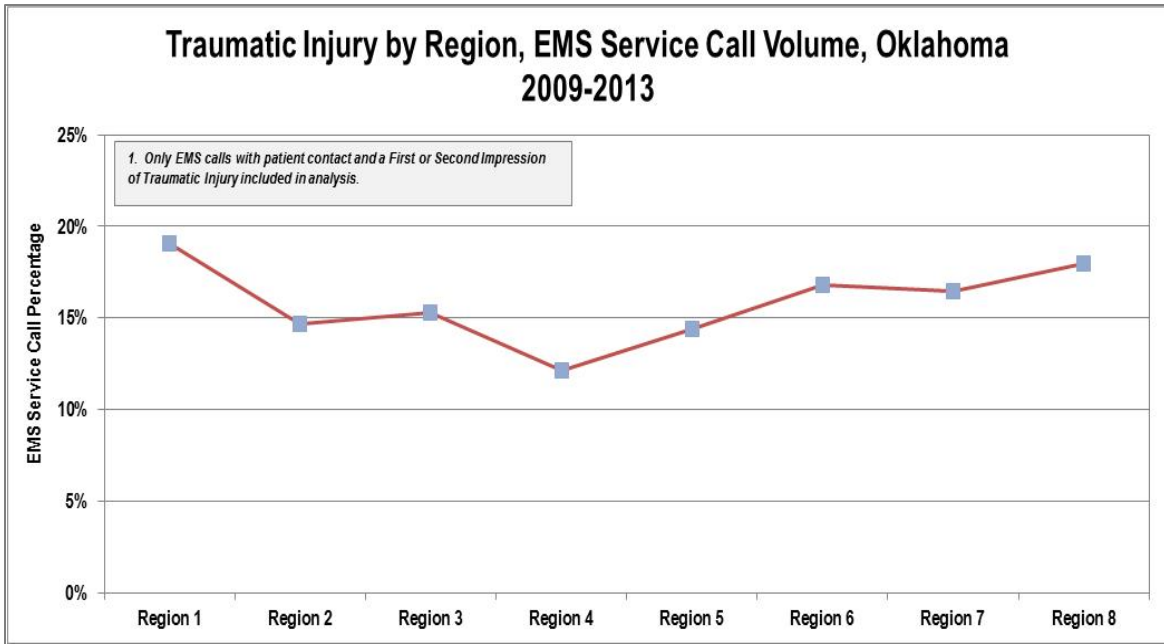


Figure 123: Traumatic injury by incident region, EMS service call volume, Oklahoma 2009–2013.

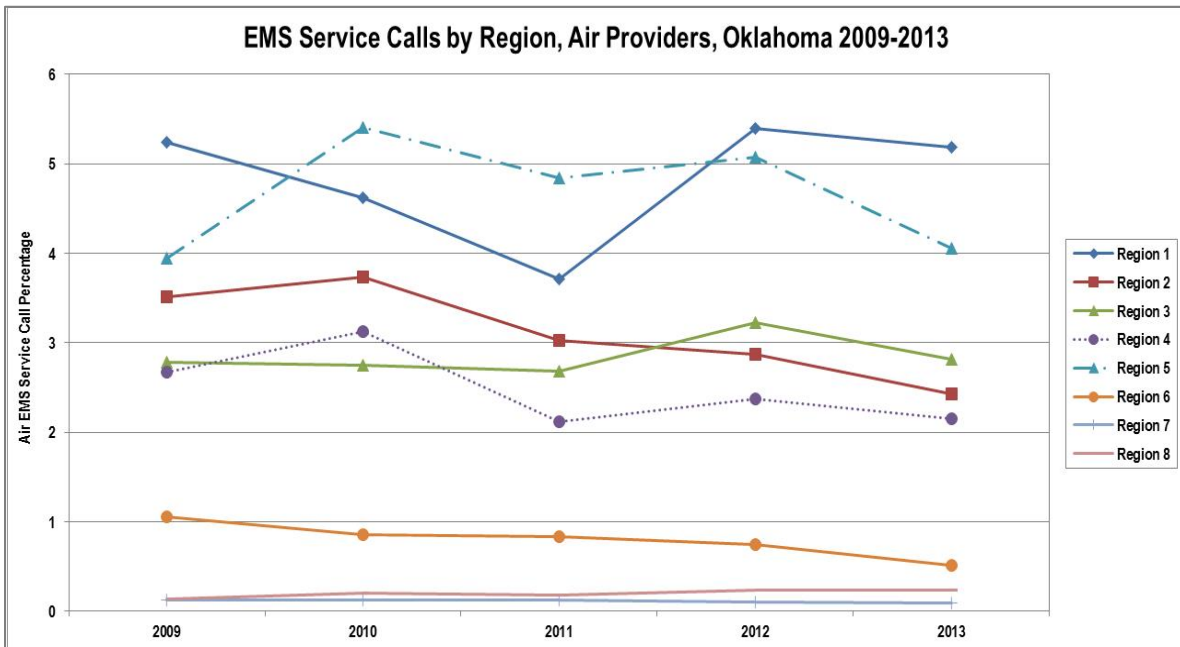


Figure 124: EMS service call volume by region, air services, Oklahoma 2009–2013 (percentage of air calls by region).

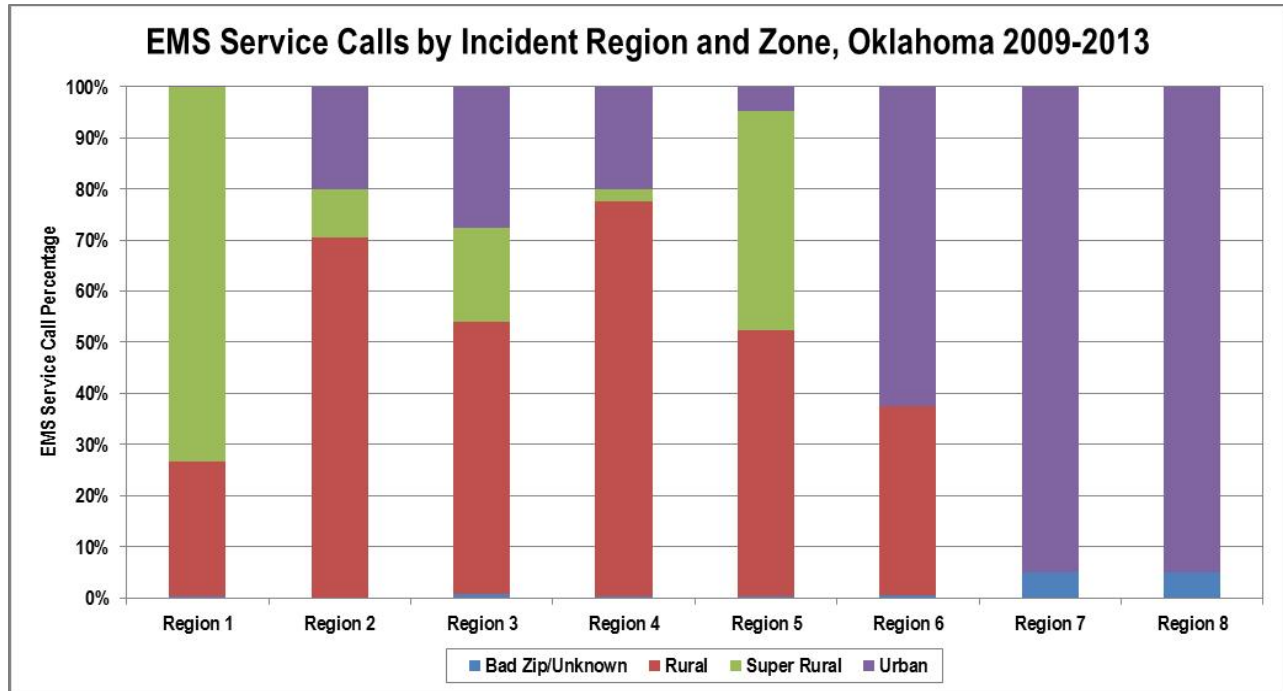
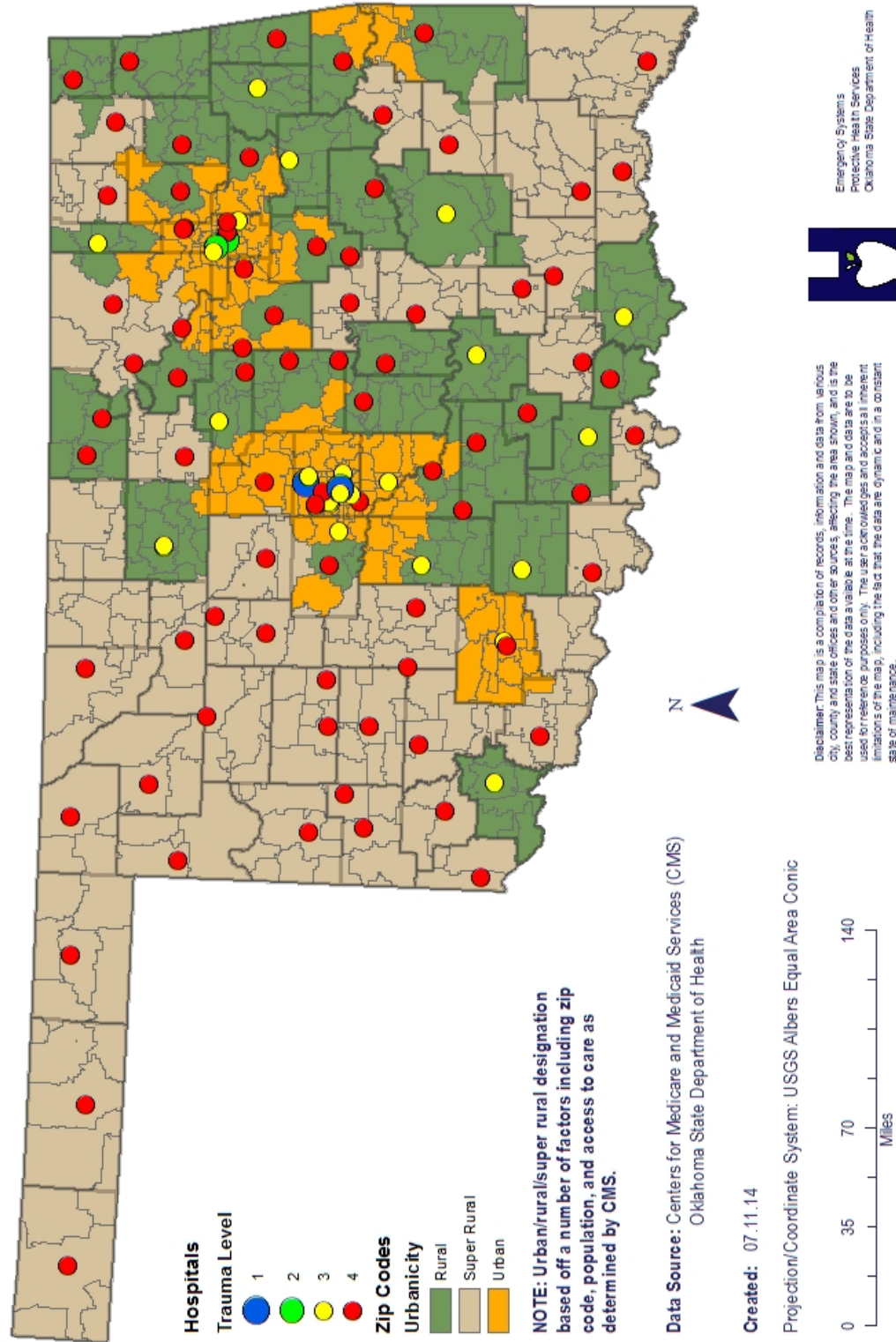


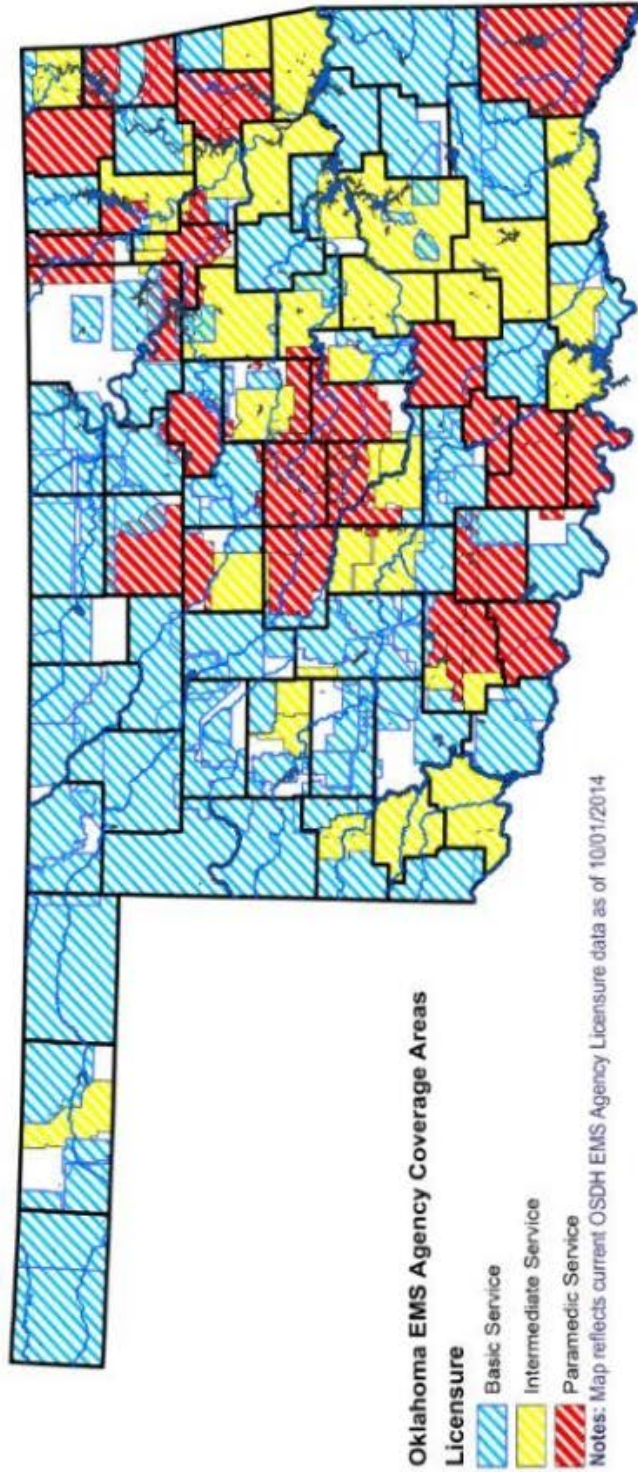
Figure 125: EMS service calls by incident region and zone, Oklahoma 2009–2013.

CMS Zip Codes and Hospital Trauma Level, Oklahoma 2014



Map 2: CMS Zip codes and Hospital Trauma Levels, Oklahoma 2014.

Oklahoma EMS Agency Coverage Areas, 2014



Data Source: OSDH Emergency Systems EMS Agency Licensure data

Created: 10.08.2014

Created by: Johnnie L. Gilpen Jr. MS NREMT-I (johnnieg@health.ok.gov)

Projection/Coordinate System: NAD 1983 State Plane Oklahoma North FIPS 3501

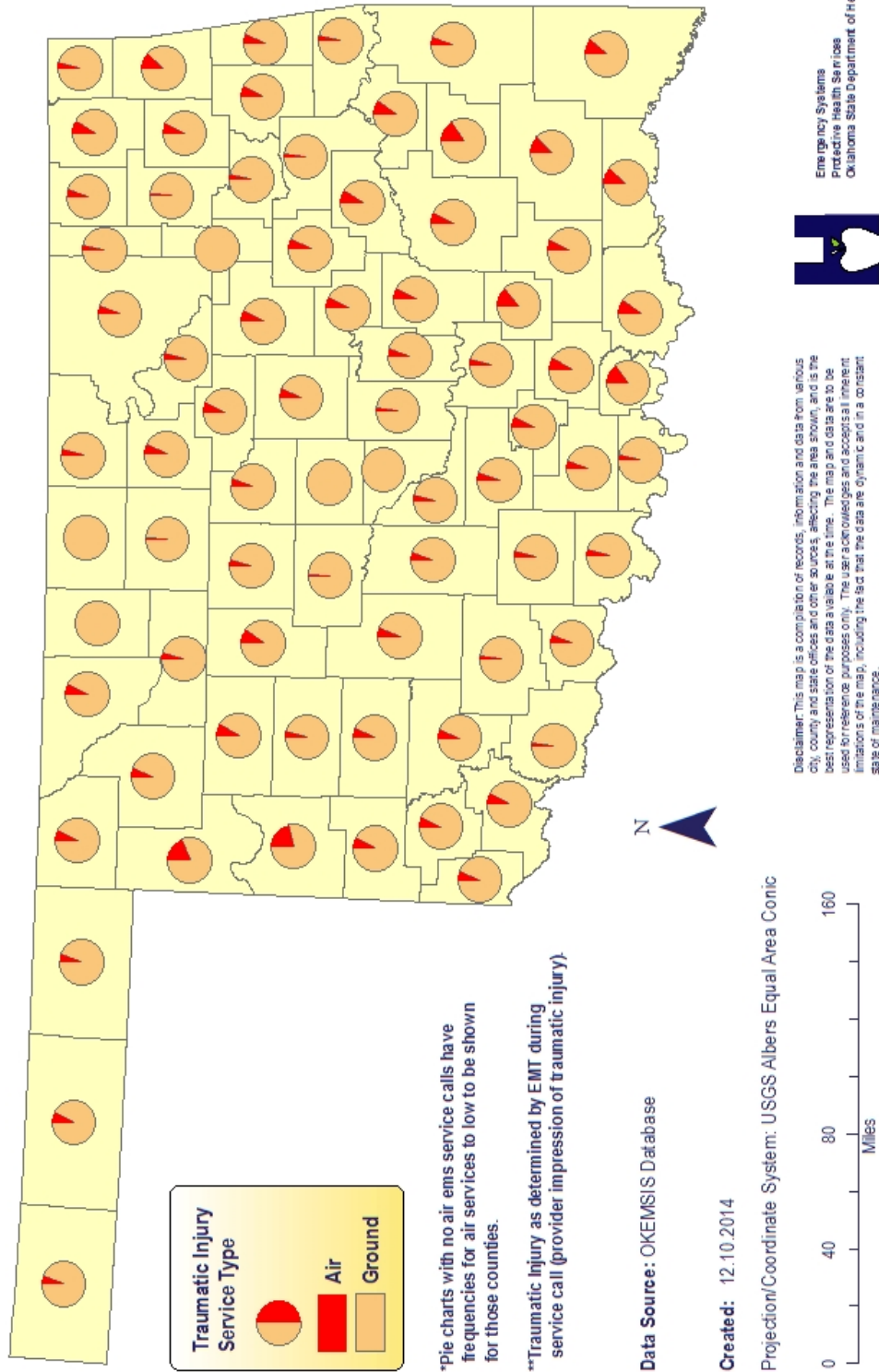


Disclaimer: This map is a compilation of records, information and data from various city, county and state offices and other sources, reflecting the areas shown, and is the best representation of the data available at the time. The map and data are to be used for reference purposes only. The user acknowledges and accepts all inherent limitations of the map, including the fact that the data are dynamic and in a constant state of maintenance.

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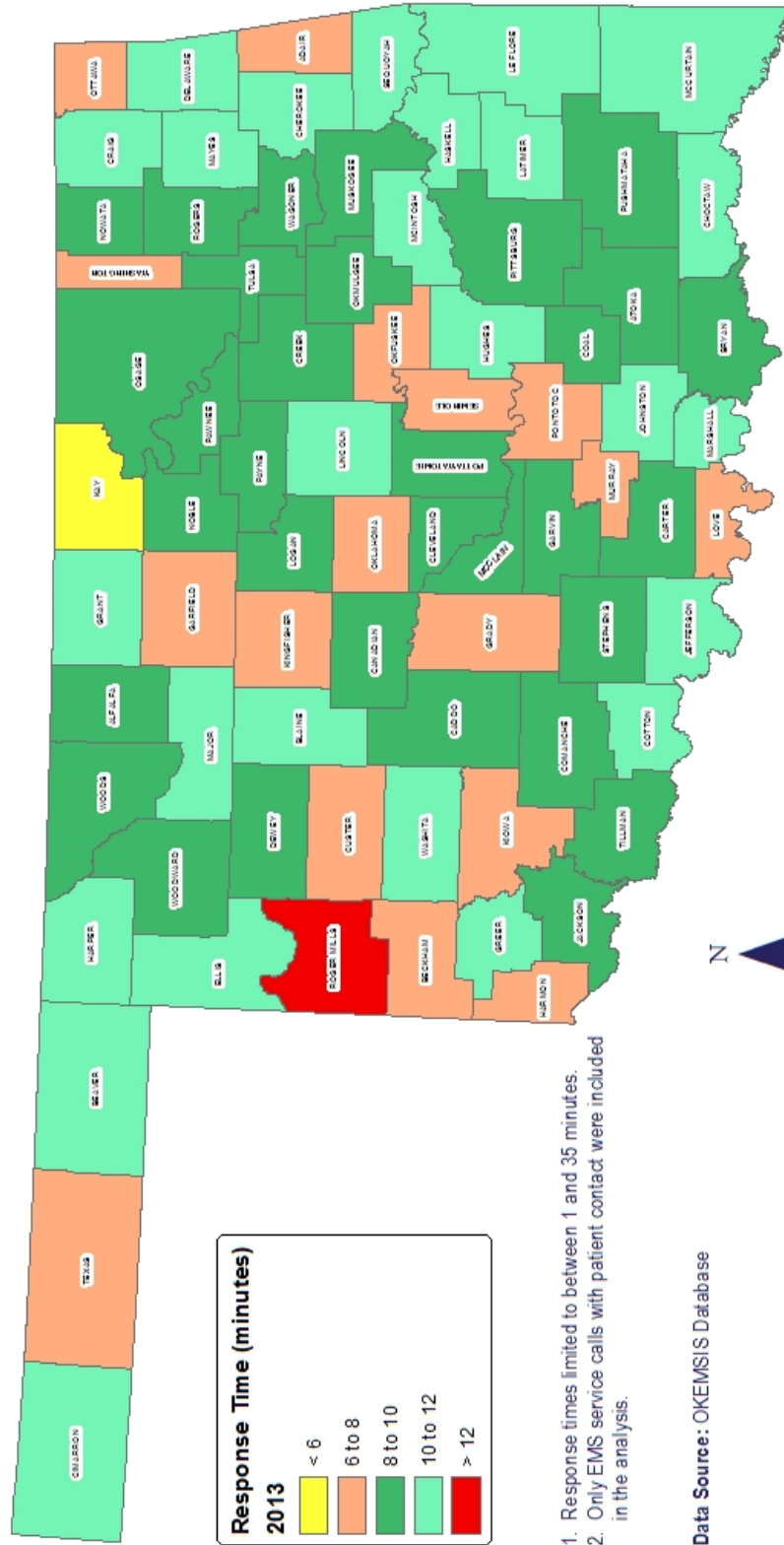
Map 3: EMS agency coverage areas as reported by the EMS agencies. Coverage gaps do not imply that there is no EMS coverage and the gaps are usually covered by several EMS agencies (not part of official coverage area).

EMS Service Calls by Service Type, Traumatic Injury, Oklahoma 2009-2013



Map 4: EMS service calls by service type, traumatic injury, Oklahoma 2009–2013.

EMS Service Call Response Times by Incident County, Ground Service Providers, Oklahoma 2013

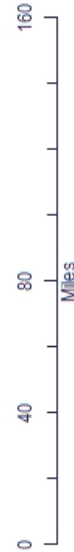


1. Response times limited to between 1 and 35 minutes.
2. Only EMS service calls with patient contact were included in the analysis.

Data Source: OKEMIS Database

Created: 12.16.2014

Projection/Coordinate System: USGS Albers Equal Area Conic



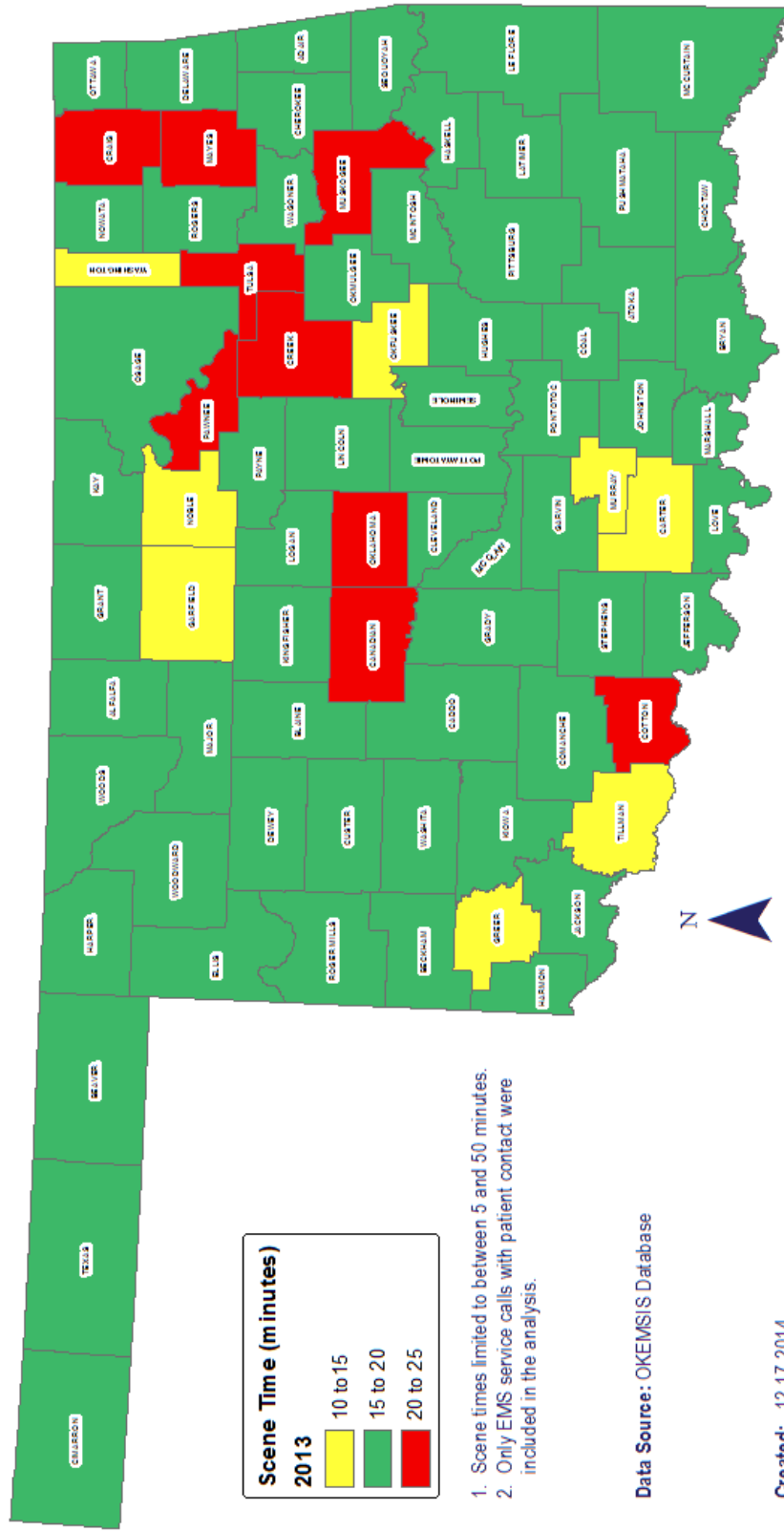
Disclaimer: This map is a compilation of records, information and data from various city, county and state offices and other sources, reflecting the area shown, and is the best representation of the data available at the time. The map and data are to be used for reference purposes only. The user acknowledges and accepts all inherent limitations of the map, including the fact that the data are dynamic and in a constant state of maintenance.



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Map 5: EMS service call response times by Incident County, ground services, Oklahoma 2013.

EMS Service Call Scene Times by Incident County, Ground Service Providers, Oklahoma 2013

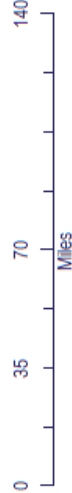


1. Scene times limited to between 5 and 50 minutes.
2. Only EMS service calls with patient contact were included in the analysis.

Data Source: OKEMSIS Database

Created: 12.17.2014

Projection/Coordinate System: USGS Albers Equal Area Conic



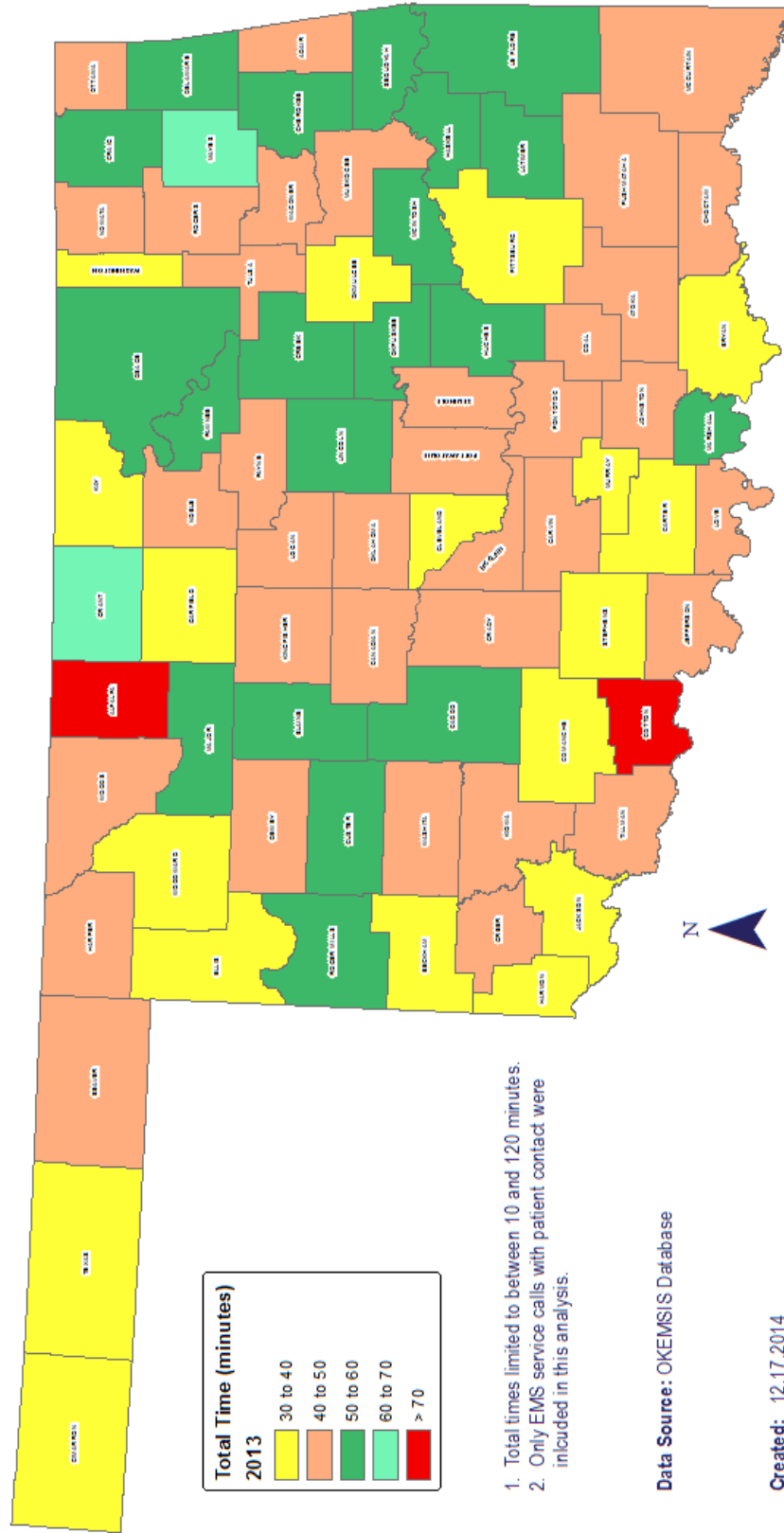
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Map 6: EMS service call scene times by Incident County, ground services, Oklahoma 2013.

EMS Service Call Total Times by Incident County, Ground Service Providers, Oklahoma 2013



1. Total times limited to between 10 and 120 minutes.
2. Only EMS service calls with patient contact were included in this analysis.

Data Source: OKEMIS Database

Created: 12.17.2014

Projection/Coordinate System: USGS Albers Equal Area Conic



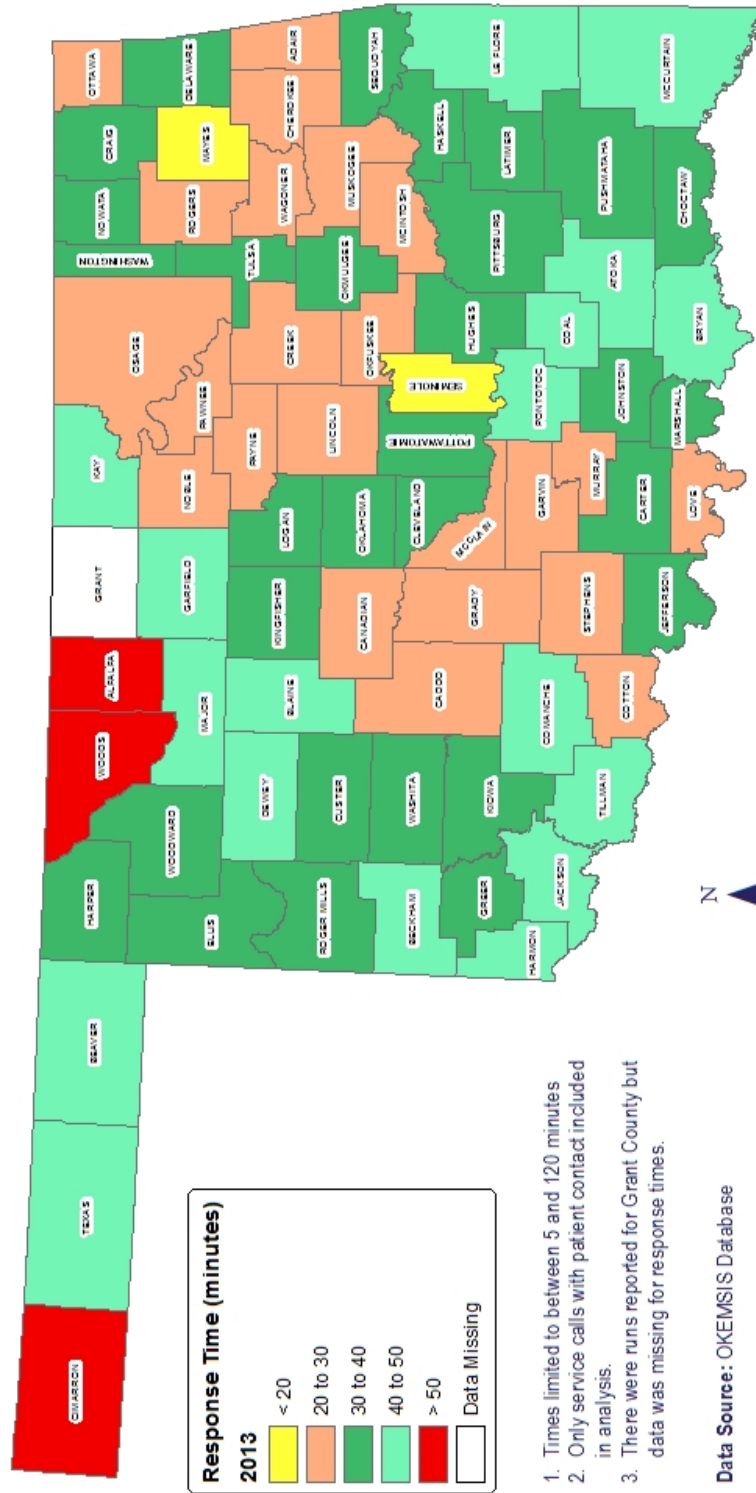
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Map 7: EMS service call total times by Incident County, ground services, Oklahoma 2013.

EMS Service Call Response Times by Incident County, Rotor Wing Providers, Oklahoma 2013



1. Times limited to between 5 and 120 minutes
2. Only service calls with patient contact included in analysis.
3. There were runs reported for Grant County but data was missing for response times.

Data Source: OKEMIS Database

Created: 12.15.2014

Projection/Coordinate System: USGS Albers Equal Area Conic

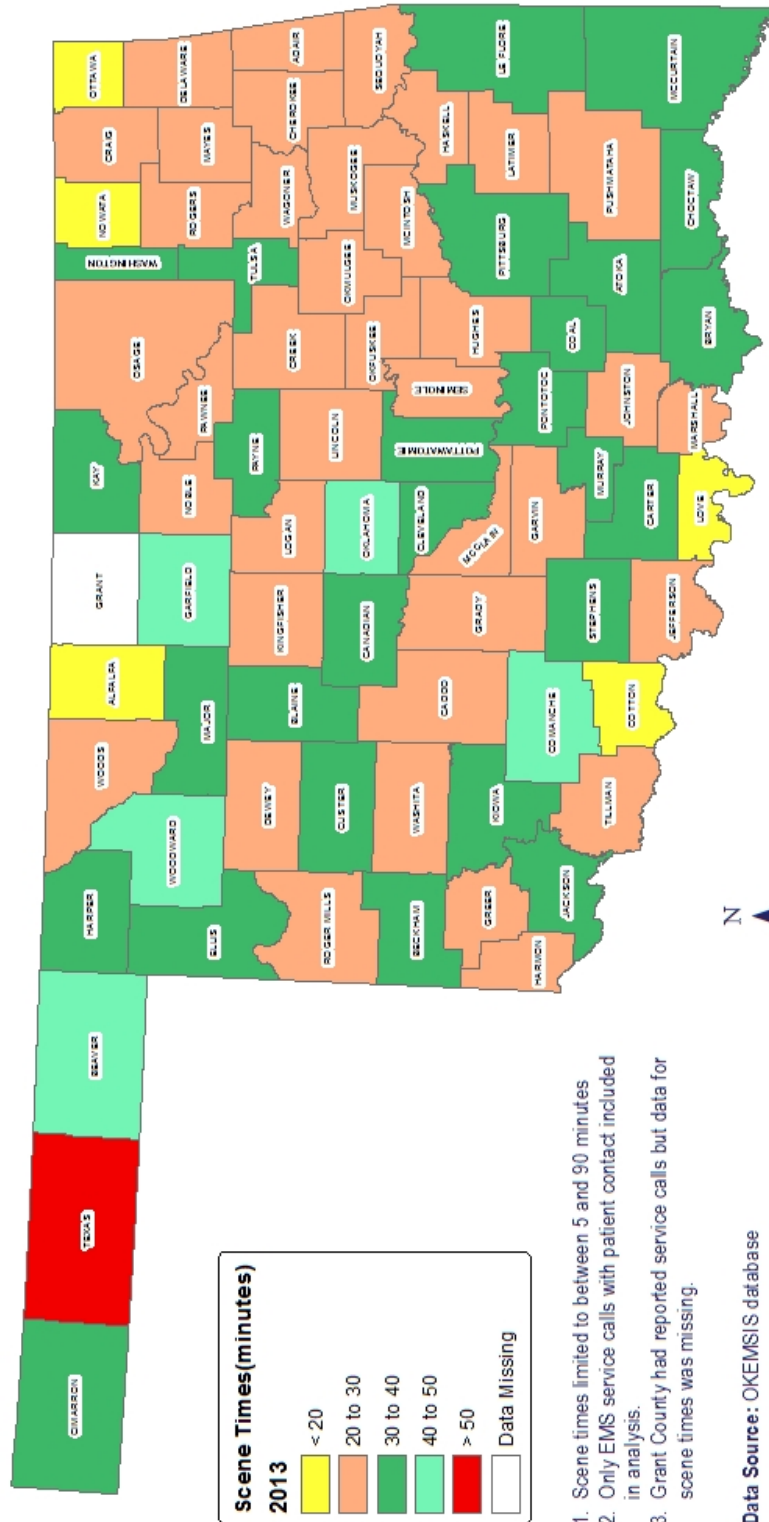


Disclaimer: This map is a compilation of records, information and data from various city, county and state offices and other sources, reflecting the area shown, and is the best representation of the data available at the time. The map and data are to be used for reference purposes only. The user acknowledges and accepts all inherent limitations of the map, including the fact that the data are dynamic and in a constant state of maintenance.

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Map 8: EMS service call response times by Incident County, rotor wing services, Oklahoma 2013.

EMS Service Call Scene Times by Incident County, Rotor Wing Providers, Oklahoma 2013



Scene Times(minutes)
2013

Yellow	< 20
Orange	20 to 30
Green	30 to 40
Light Green	40 to 50
Red	> 50
White	Data Missing

1. Scene times limited to between 5 and 90 minutes
2. Only EMS service calls with patient contact included in analysis.
3. Grant County had reported service calls but data for scene times was missing.

Data Source: OKEMESIS database

Created: 12.15.2014

Projection/Coordinate System: USGS Albers Equal Area Conic



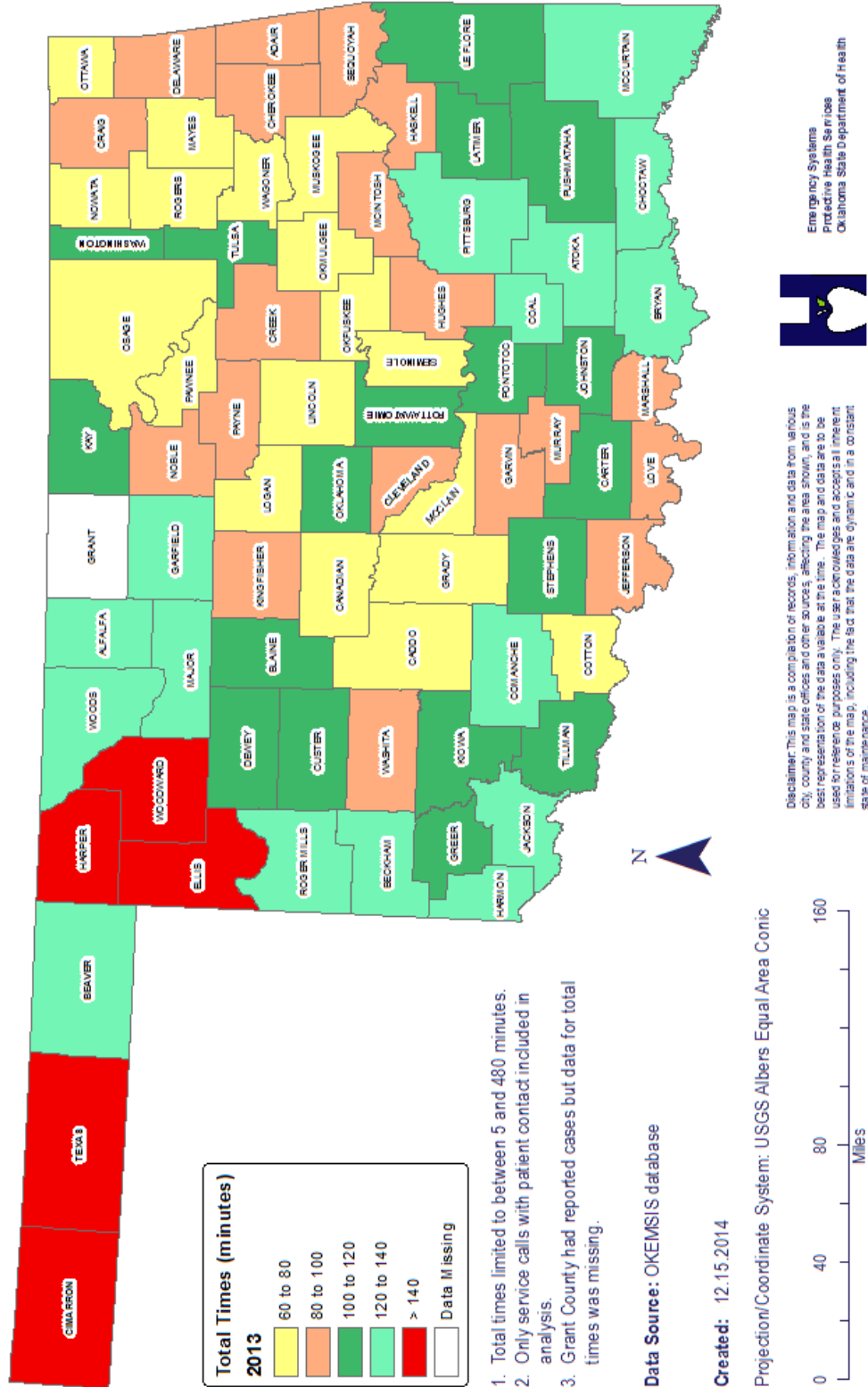
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Map 9: EMS service call scene times by Incident County, rotor wing services, Oklahoma 2013.

EMS Service Call Total Times by Incident County, Rotor Wing Providers, Oklahoma 2013



Total Times (minutes)	
60 to 80	Yellow
80 to 100	Orange
100 to 120	Green
120 to 140	Light Green
> 140	Red
Data Missing	White

1. Total times limited to between 5 and 480 minutes.
2. Only service calls with patient contact included in analysis.
3. Grant County had reported cases but data for total times was missing.

Data Source: OKEMISIS database

Created: 12.15.2014

Projection/Coordinate System: USGS Albers Equal Area Conic

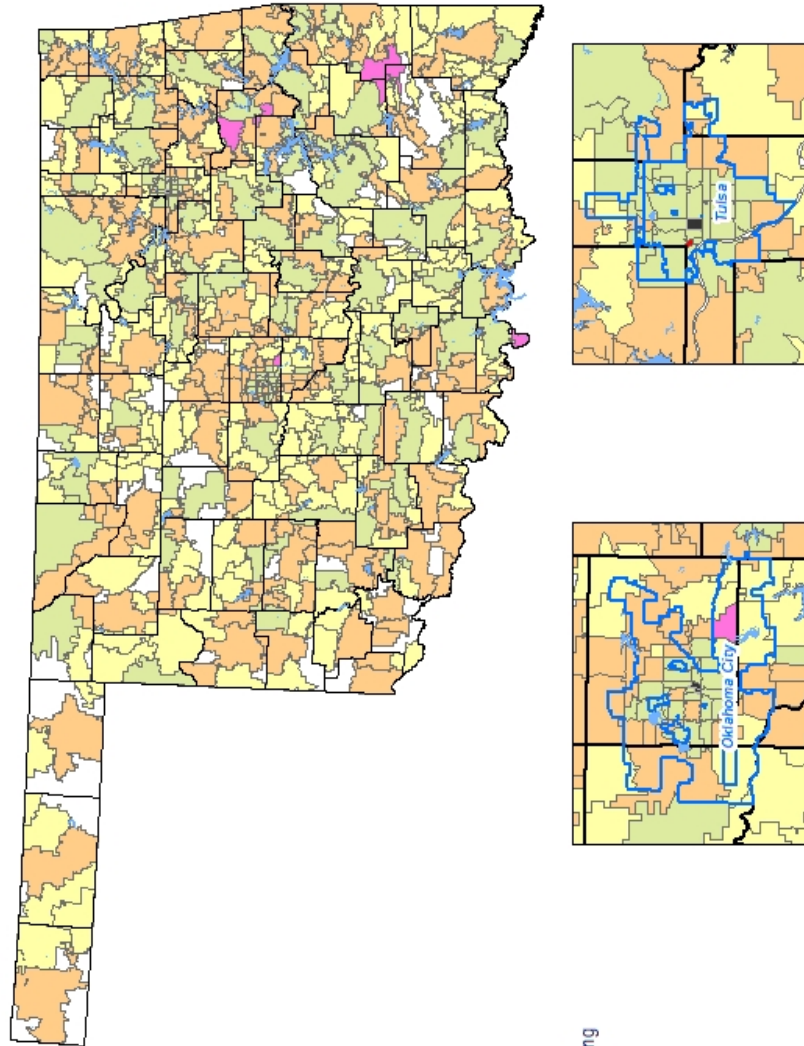
Disclaimer: This map is a compilation of records, information and data from various city, county and state offices and other sources, reflecting the area shown, and is the best representation of the data available at the time. The map and data are to be used for reference purposes only. The user acknowledges and accepts all inherent limitations of the map, including the fact that the data are dynamic and in a constant state of maintenance.



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Map 10: EMS service call total times by Incident County, rotor wing services, Oklahoma 2013.

EMS Service Calls by Zip Code, Incident Rate, Oklahoma 2013



Zip Codes

Incident Rate/1,000 People

- 2 - 50
- 51 - 100
- 101 - 300
- 301 - 600
- 601 - 900
- 901 - 1262
- Lakes
- Counties
- City Boundaries

1. Incident rates for some zip codes not shown due to privacy concerns or population data was missing for that zip.
2. Analysis includes only treated and transported EMS service calls.

Data Source: OKEMIS Database
2010 US Census



Created: 04.21.2015

Projection/Coordinate System: USGS Albers Equal Area Conic



Disclaimer: This map is a compilation of records, information and data from various city, county and state offices and other sources, reflecting the area shown, and is the best representation of the data available at the time. The map and data are to be used for reference purposes only. The user acknowledges and accepts all inherent limitations of the map, including the fact that the data are dynamic and in a constant state of maintenance.

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Map 11: EMS service calls by Zip code, Incident Rate, Oklahoma 2013

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