

# OKLAHOMA STATEWIDE CHILD RESTRAINT SURVEY

2017



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## EXECUTIVE SUMMARY

This report compares the use of child restraints (car seats and safety belts) in passenger vehicles in Oklahoma across the past five years: June 2013, June 2014, June 2015, June 2016, and June 2017. Visual observations were made at 100 different locations selected on the basis of geography, population, and urban versus non-urban status. Drivers and all child passengers were observed to determine restraint usage. Twenty-five children were observed at each of the 100 sites on one specified date per site, yielding a statewide total of 2,500 observations in each year.

An amendment to the Child Passenger Restraint System Act became effective November 1, 2015 providing specific restraint requirements for all children. The 2016 and 2017 Child Restraint Survey was modified to address the updated statute. Observers incorporated a new collection report form that removed reference to the age of the child observed and added categories based on the type of restraint being utilized. The chart below reflects this change in the collected information.

Percent Restrained by Year

	2013	2014	2015	2016	2017
Combined Rate	91.0	92.0	90.7	92.0	91.8

The results from 2017 showed generally consistent findings in comparison to the previous four years. Detailed results of all findings are included in the report, but the findings can be summarized as follows:

- Overall, 91.8% of children were restrained during the 2017 survey. This was slightly down from the 2016 rate, but generally consistent with average rates over the past five years.
- Rural use showed a small increase, while metro areas showed a small decrease. As a result, rural areas had higher (93.8%) usage rates than did the metro areas (90.8%).
- In terms of region, the Oklahoma City metro (86.5%), and Tulsa metro areas (87.4%) had the lowest restraint rates. The Southeast (96.0%) and Northwest (98.3%) had the highest rates. These are largely consistent with the 2016 results.
- In terms of the vehicle type, consistent with previous years, pickup trucks were found to have lower restraint rates (90.6%) than other vehicle types (92.0%). This gap, however, has closed significantly over the past few years.
- Examining the child's location in the vehicle yields two separate findings. First, children in the front seat were much less likely (85.9%) than children in the back seat (93.0%) to be restrained. In addition, children who were backward facing (98.9%) were much more likely to be restrained than children who were forward facing (90.7%).
- The largest difference in child restraint rates was whether the driver was restrained or not. When the driver was restrained, 96.4% of the children in those vehicles were also restrained. Children with unrestrained drivers, however, were only restrained 65.2% of the time. While this gap has decreased somewhat in recent years, whether the driver is restrained remains the most reliable predictor of whether or not a child will be restrained.



# OKLAHOMA CHILD RESTRAINT OBSERVATION STUDY: 2017

## INTRODUCTION

This report is the 31st statewide observation study of the use of child restraints in Oklahoma. The study was conducted by the University of Central Oklahoma (UCO), College of Education and Professional Studies (CEPS), Department of Adult Education and Safety Sciences (AESS), Industrial Safety program under contract with the Oklahoma Highway Safety Office (OHSO). Observations occurred during summer 2017.

The Institute for Public Affairs developed the survey instrument (Appendix A) using various sources, including but not limited to the National Highway Traffic Safety Administration's (NHTSA) 1983 Guidelines for Conducting a Survey of the Use of Safety Belts and Child Safety Seats, and NHTSA publications: Are You Using It Right? (IP0040), and Child Transportation Safety Tips (IP0835). The observation survey instrument includes:

- The use or non-use of child restraint devices, the type of restraint in use based upon the position a child is facing in the vehicle, (forward-facing, rear-facing, seat belt ONLY),
- The location of the child in the vehicle, vehicle type, and the driver's use or non-use of a seat belt.

For continuity purposes, the UCO, CEPS, AESS Industrial Safety program used the survey instrument (Appendix A) developed by the Institute of Public Affairs at the University of Oklahoma. Some modifications have occurred based upon amendments to the Oklahoma Child Passenger Restraint System Act.

## BACKGROUND

In March 1983, the Oklahoma Legislature approved H.B. 1005 which required the use of "a passenger restraint system or a properly secured seat belt for children up to the ages of four or five." The law provided that if a motorist with children was observed to be in violation of the law, a law enforcement officer had the discretion to stop the motorist and give the violator a "verbal warning" on the dangers of non-restraint. The statute granted no enforcement or punitive measures for use by the law enforcement officer.

Amendments to the law in 1987 strengthened the 1983 Child Passenger Restraint System Act by providing penalties and fines for violators who failed to properly protect child passengers in their vehicles. The law was amended again in 2004 (S.B.1224) to increase the age of children from four to six years of age who are required to be transported using a child restraint system. The 2004 amendments also state children at least six years of age, but younger than 13 years of age, shall be protected by the use of a child restraint system or a seat belt.

The most recent amendments to the law in 2015 brought the Child Passenger Restraint System Act more in line with recommendations of the American Academy of Pediatrics as follows:

- A child under *eight (8)* must be properly secured in a child passenger restraint system. The law previously applied only to children under age six (6).
- *0-2 years*. Must be in a rear-facing car seat until at least two (2) years of age, or until the

child reaches the weight or height limit of the car seat.

- *2-4 years*: Must be in a car seat until at least four (4) years of age.
- *4-8 years*: Must be in a car seat or child booster seat until at least eight (8) years of age unless the child is taller than 4'9".
- *8 years or taller than 4'9"*: Must be in a seat belt.

The 2017 Child Restraint Survey was conducted in the same manner as previous years. The basic design for the initial study was a variation on cluster sampling in which a random selection of observation sites was made based on population and geographic distribution. Sufficient observations were taken to assure a reasonable level of confidence in the results. In 2016, however, the previous recent years of data were re-analyzed in a way that made the previous results directly comparable to the new results. As a result, the historical data included in this report differs slightly from the values reported in those previous years. The methodology employed is included as Appendix B.

#### Percent Restrained by Metropolitan or Rural Area

	2013	2014	2015	2016	2017
<b>Combined Rate</b>	91.0	92.0	90.7	92.0	91.8
Metropolitan	91.9	91.7	90.0	92.1	90.8
Rural	89.8	92.5	91.5	91.8	93.8

#### Percent Restrained by Region

	2013	2014	2015	2016	2017
<b>Combined Rate</b>	91.0	92.0	90.7	92.0	91.8
Oklahoma City	94.4	86.4	90.0	92.0	91.1
Oklahoma City Metro	86.9	92.7	93.5	92.0	86.5
Tulsa	91.7	96.0	89.9	92.8	94.1
Tulsa Metro	93.7	91.4	87.4	86.9	87.4
Northeast	93.6	92.0	87.6	86.0	91.3
Southwest	78.9	96.0	89.7	94.3	91.1
Southeast	96.0	96.0	95.6	98.8	96.0
Northwest	94.3	92.0	96.0	96.6	98.3

### Percent Restrained by Vehicle Type

	2013	2014	2015	2016	2017
<b>Combined Rate</b>	91.0	92.0	90.7	92.0	91.8
Car/SUV/Van	91.6	93.0	91.4	92.6	92.0
Pickup	87.8	86.6	86.6	87.9	90.6

### Percent Restrained by the Child's Location

	2013	2014	2015	2016	2017
<b>Combined Rate</b>	91.0	92.0	90.7	92.0	91.8
Front Seat	91.0	92.0	80.9	83.3	85.9
Back Seat	91.0	92.0	92.8	93.6	93.0

### Percent Restrained by Direction Child is Facing

	2013	2014	2015	2016	2017
<b>Combined Rate</b>	91.0	92.0	90.7	92.0	91.8
Facing Forward	83.4	86.1	90.0	90.9	90.7
Facing Backward	92.7	93.3	97.5	99.7	98.9

### Percent Restrained by Driver Belted or Not

	2013	2014	2015	2016	2017
<b>Combined Rate</b>	91.0	92.0	90.7	92.0	91.8
Driver Belted	96.2	97.0	96.9	96.5	96.4
Driver not Belted	57.5	59.1	53.6	58.8	65.2

## SUMMARY

The results of the 2017 survey can be summarized as follows:

- The statewide rate for observed child restraint use was 91.8%. This is a small decrease from 2016 but is generally consistent with the usage levels observed across recent years.
- Children traveling in automobiles were more likely to be restrained (92.0%) than those riding in pickup trucks (90.6%), although this difference continued the pattern of shrinking over time.
- Examining the child's location in the vehicle yields two separate findings. First, children in the front seat were much less likely (85.9%) than children in the back seat (93.0%) to be restrained. In addition, children who were backward facing (98.9%) were much more likely to be restrained than children who were forward facing (90.7%)
- Like previous surveys, the most striking distinction was in the difference between the safety of children riding in vehicles when the driver was using a seat belt (96.4% restrained) than when the driver was not belted (65.2% restrained) - a 31.2 % point difference. This gap came down from 37.7% in 2016 but whether or not the driver is restrained remains the best predictor of whether the child will be restrained or not.
- In terms of region, the Oklahoma City metro (86.5%), and Tulsa metro areas (87.4%) had the lowest restraint rates. The Southeast (96.0%) and Northwest (98.3%) had the highest rates. These are largely consistent with the 2016 results.
- Rural use showed a small increase, while metro areas showed a small decrease. As a result, rural areas had higher (93.8%) usage rates than did the metro areas (90.8%).



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APPENDIX A  
Oklahoma Child Restraint Observation Form

County: \_\_\_\_\_

Site # & Location: \_\_\_\_\_

Observer: \_\_\_\_\_ Date: \_\_\_\_\_ Start Time: \_\_\_\_\_ End Time: \_\_\_\_\_

*If location changed, indicate where you were when you observed. If you moved during the observation period to another location, indicate that below, in addition to identifying the site # to which you relocated.*

After 1 hour, I changed location to: \_\_\_\_\_ within 1 mile of the original site locale.

INFANT OR CHILD				DRIVER	
	Location of Child 1=Front 2=Back	Child Protection 1=Car Seat 2=Belted 3=No Protection	Child Facing 1=Front 2=Back	Vehicle 1=Car 2=Pickup	Belted 1=Yes 2=No 9=unknown
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					

INFANT OR CHILD				DRIVER	
	Location of Child 1=Front 2=Back	Child Protection 1=Car Seat 2=Belted 3=No Protection	Child Facing 1=Front 2=Back	Vehicle 1=Car 2=Pickup	Belted 1=Yes 2=No 3=Unknown
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Please add any comments, corrections, or additional observation dates (including start and end times) if applicable:

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## APPENDIX B METHODOLOGY

The methodology employed to conduct the child restraint survey was based on several considerations:

- The approach followed should conform to NHTSA recommendations described in the 1983 Guidelines for Conducting a Survey of the Use of Safety Belts and Child Safety Seats.
- Only privately-owned passenger vehicles (including vans and pickups) were observed, consistent with the requirements of the state law.
- All children were counted. The 2015 amendments to the law require all children from birth to age 8 be in an approved "child passenger restraint system" whether in the front or back seat. Given the limitations of observing children in a few seconds at roadway intersections and shopping malls, no distinction was made between the ages of children or whether the restraint was "proper". Thus, if a child was restrained in the front or back seat, it was recorded as a restrained observance. Observers also recorded the type of device being utilized as forward-facing, rear-facing, or seat belt only.
- Drivers would be counted because of their culpability under the law and to permit a comparison to the statewide surveys of automobile safety belt use.
- In part because of procedures established when earlier child restraint surveys were conducted, the actual mode of observation would follow both a training manual prepared by the Institute for Public Affairs under a previous contract with OHSO and NHTSA's Guidelines.
- A modified random selection of sites was used that assured an adequate dispersion of sites geographically and by a metropolitan/non-metropolitan division.

### General Site Selection

The total number of observation sites selected was first determined by a division of the state by metropolitan statistical area (MSA) and non-MSA classification. Using Census data for 2000, 60.8% of the state's population resides in an MSA.

One hundred randomly chosen sites with 25 observations per site were selected, yielding a sample size of 2,500. Of these 100 sites, 57 were in MSAs and 43 were in non-MSAs. Assignment for sites within the MSAs was based on the weighing of a particular MSA's population against the total metropolitan population in the state (less the Ft. Smith, Arkansas MSA). Using this criterion the Oklahoma City MSA was assigned the greatest number of sites (29). Enid, being the smallest MSA, had the fewest sites (2).

The non-MSA remainder of the state was divided into four quadrants using the two principal north-south and east-west arterial highways bisecting the state, Interstate Highway 35 (I-35, north-south) and Interstate Highway 40 (I-40, east-west). Each quadrant was allotted its proportionate number of the 43 remaining sites based on its share of the state's population. Certain unusual site determinations resulted from the procedure outlined above.

The 100 observation sites were chosen as follows:

Oklahoma City and Metro	29
Tulsa and Metro	22
Enid	2
Lawton	4
Non-MSA	<u>43</u>
	100

### Specific Site Selection

The sites were chosen in the following manner:

- City maps were used to provide a geographical distribution of sites in each city. Further, U.S. Bureau of the Census population data were used to capture an adequate measure of the socioeconomic and racial mix of each city;
- Tentative locations chosen for both their suitability and accessibility by the general population were designated;
- Field checks by survey teams were then made to ascertain the suitability of each tentative site. Shopping malls, fast food restaurant chains, department store chains, and recreation facilities were selected based on the following characteristics:
  - a) accessibility by the general population to the selected site;
  - b) accessibility to vehicular traffic;
  - c) sufficient traffic volume existing to generate 25 observations of children in cars;
  - d) locations represented the regional variations in socioeconomic and racial characteristics;

The observer was advised that upon arrival at a specific observation site a determination should be made as to its suitability following the criteria enumerated above. If the pre-assigned site was not suitable, the observer was permitted to make another selection that would be more satisfactory. In most cases when a change was necessary, a site within one mile of the original site was used.

The following lists the locations where the child restraints were observed:

Site	Location
1	OKC: Walmart Supercenter (NW 136 & Memorial/Penn)
2	OKC: Walmart Supercenter (1801 Belle Isle Blvd)
3	OKC: Academy Sports (I-240 at SW 74th)
4	OKC:Walmart Neighborhood Market (2217 NW 23rd St / Penn)
5	OKC: McDonald's (SW 59th at Penn) & Walmart
6	OKC: WalMart Neighborhoo Market, across from Target (SW 44 <sup>th</sup> at Western)
7	OKC: Walmart Supercenter (I-240 at Santa Fe)
8	OKC: Buy For Less (NW 36 & MacArthur Blvd) or McDonald's (39th & MacArthur)
9	OKC: Target (7012 NW Expressway & Rockwell)
10	OKC: Science Museum (2100 NE 50 <sup>th</sup> @ MLK Blvd.
11	OKC: Sonic/McDonald's (5815 Martin Luther King Blvd.)
12	OKC: McDonald's (6700 N. May)
13	OKC: McDonald's (10809 N. May at Hefner Rd.)
14	OKC: McDonald's (5812 NW Expressway)
15	OKC: McDonald's (113 NW 23)
16	OKC: Braums (I-240 at S. May - 7512 South May Ave.)
17	OKC: Oklahoma City Zoo (2101 NE 50 <sup>th</sup> at Martin Luther King Blvd.)
18	OKC: OnCue (5920 S. Western)
19	Edmond: Braum's/WalMart (15 <sup>th</sup> at I-35)
20	Edmond: Super Target (1200 E. 2 <sup>nd</sup> St.)
21	Norman: WalMart Supercenter (Main at I-35 - 333 N Interstate Dr.)
22	Norman: Super Target (Robinson at I-35) 1400 24th Ave NW
23	Norman: WalMart Supercenter (Main at 601 12th Ave NE)
24	Midwest City: McDonald's (7025 SE 15th)
25	Midwest City: WalMart Supercenter (9001 NE 23rd)
26	Moore: WalMart (501 S.E. 19 <sup>th</sup> at I-35)
27	Mustang: McDonald's (I-40 at Mustang Rd. [4 South Mustang Road])
28	Yukon: McDonald's (31 W Main)
29	Bethany: McDonald's (7061 NW 23rd)
30	El Reno: McDonad's (2424 S Country Club Dr.)
31	Edmond: OnCue (I-35 @ Waterloo Road on east side)
32	Noble: Sonic (U.S. 77 @ N Main St)
33	Tulsa: Walmart (6625 S Memorial Dr)
34	Tulsa: WalMart (81 <sup>st</sup> at Lewis)
35	Tulsa: McDonald's (3106 S Memorial Dr) [31st & Memorial right off the interstate]

36	Tulsa: Quick Trip (12910 E 21st St)
37	Tulsa Promenade Mall (41 <sup>st</sup> Street at Yale)
38	Tulsa: Quick Trip (1302 S Garnett Rd)
39	Tulsa: Reasor's (15th & Lewis [2429 E. 15th Street])
40	Tulsa: Big Splash Water Park/Centennial Wayne Plaza (21 <sup>st</sup> Street at Yale)
41	Tulsa: WalMart (6310 S. Elm Place)
42	Tulsa: Quick Trip (3304 W 42nd Pl)
43	Tulsa: Super Mercado Morelos, 5147 S. Peoria Ave. @ 51st
44	Tulsa: McDonald's ( 4935 S Memorial)
45	Tulsa: McDonald's (4249 S. Yale)
46	Jenks: McDonald's (605 W Main)
47	Tulsa: Wendy's (1905 E 21st @ Utica)
48	Broken Arrow: WalMart (2301 W Kenosha)
49	Broken Arrow: McDonald's (3800 S. Elm Place)
50	Broken Arrow: McDonald's (2525 N Aspen)
51	Bristow: WalMart (Main at SH16)
52	Owasso: Smith Farm Market Place, 9055 N. 121st E. Ave.
53	Sand Springs: Walmart Supercenter (SH 97 @ Marrow Rd.)
54	Sapulpa: WalMart (Hwy 117 & US 66)
55	Cushing: WalMart Supercenter (3100 E Main St)
56	Stroud: McDonald's (801 Ada Webb Dr.)
57	Chandler: IBC Bank (3108 E 1st St) (In front of Wal Mart)
58	Enid: McDonald's (Maine at Van Buren)
59	Enid: McDonald's - Oakwood Mall (4125 W Owen K Garriott Rd)
60	Bartlesville: Braum's (2539 SE Washington)
61	Bartlesville: WalMart (4000 SE Green Country Rd)
62	Muskogee: Braum's (1000 @ Shawnee Bypass) - N. 6th @ Shawnee bypass
63	Muskogee: McDonald's (101 S. 32 <sup>nd</sup> Street)
64	Muskogee:McDonald's (2415 Chandler) Arrowhead Mall (Denison Avenue at Main)
65	Stillwater: McDonald's (920 W. 6 <sup>th</sup> )
66	Stillwater: WalMart (Virginia at Perkins Rd.)
67	Stillwater: YMCA (3 <sup>rd</sup> at Duck) - moved to 4545 W. 6th St. / YMCA under renovation
68	Seminole: Jasmine Moran Children's Museum (1714 OK-9)
69	Claremore: Walmart (1500 Lynn Riggs Blvd.
70	Tecumseh: Sonic (109 E Walnut St) & Fire Lake Grocery
71	Seminole: Sonic (Milt Phillips @ College Road [525 N. Milt Phillips Rd.]
72	Guthrie: WalMart Super Center (1608 S. Division Street)
73	Shawnee: McDonald's (4849 N Kickapoo St)

74	Cushing: Walmart Supercenter (3100 E Main St)
75	Owasso: WalMart & Kohl's (12405 E. 96th St. N.)
76	Okmulgee: McDonald's (480 S. Woods)
77	Okmulgee: WalMart (1800 S. Wood Dr.)
78	Muskogee: McDonald's (140 W. Shawnee bypass)
79	Pawhuska: McDonald's (1900 E Main St) & Sonic
80	Siatook: WalMart (778 W. Rogers Blvd.)
81	Wagoner : WalMart (State Highway 51)
82	Coweta: Walgreen's (14003 S. State Highway 51)
83	Claremore: Ne-Mar Center (1015 W. Will Rogers)
84	Ft. Gibson: Harp's Food Store ( 1010 E Poplar St)
85	Lawton: Central Mall (2 <sup>nd</sup> at C Streets)
86	Lawton: McDonald's (30 SW Sheridan at Gore)
87	Lawton: Shopping Center Strip Mall (Sheridan at Gore) & McDonald's
88	Lawton: WalMart Supercenter (Sheridan at Gore)
89	Ada: North Hills Shopping Center (1106 N. Hills Shopping Center)
90	Shawnee: WalMart Supercenter (196 Shawnee Mall Dr.) [I-40 @ Kickapoo in mall parking lot]
91	Tecumseh: McDonald's (1210 Gordon Cooper Highway) - NE corner Hwy 177 & Hwy 9?
92	Sallisaw: Walmart (1101 W Ruth Ave)
93	Gore: Harp's Grocery (State Hwy 100 at State Hw 10)
94	Claremore: Walmart (1500 S. Lynn Riggs Blvd.)
95	Ada: WalMart (1419 Country Club Rd.)
96	Sulphur: WalMart Supercenter (2705 W. Broadway Ave.)
97	Anadarko: McDonald's (714 W. Petree Rd.)
98	Anadarko: McDonald's (1201 W. Petree Rd.)
99	Enid: Starplex Cinema & McDonald's parking lot (4125 W. Owen K. Garriott Rd.)
100	Enid: WalMart Supercenter (5505 W. Owen K. Garriott Rd.) - west side of town



## Comment on Sampling Procedure

As indicated previously, the procedure followed for selecting locations does not produce a strictly random sample. The design employed for this effort does bear some similarity, however, to a multistage cluster sampling procedure, in which samples are taken of groups of elements (clusters) followed by the selection of elements within each selected cluster. In this case, the initial clusters were MSA/non-MSA. Then a further stratification was employed on the basis of geographical regions of the state. Finally, population size and observation site were incorporated into the final selection process. Strictly speaking, the decision to choose one city or town over another was not completely random; however, the procedure followed in selecting observation locations along with total number of sites and observations collected should, in combination, yield a fairly representative picture of the actual proportion of Oklahoma children covered under the law who may or may not be currently protected by either child safety seats or seat belts. The continued use of the procedure and design employed for the initial survey should permit a reasonably accurate assessment of changes in restraint use over time.

## Observer Selection and Training

The observers participated in a classroom seminar session in which the nature of the project was discussed followed by a detailed briefing of data collection procedures based on the previously mentioned NHTSA Guidelines (1983) and the Institute for Public Affairs Training Manual (2010). The second training phase involved a field exercise, which required the actual observation of child restraint use at a particular location simulating actual field conditions and the completion of the forms for recording those observations.

## Data Collection Procedures

Observers were told to follow the procedures outlined in the Guidelines and Training Manual. The child safety seat observation form was provided for each site (Appendix A). Observers were instructed to:

- 1) Record the date, day of week, and time of observations;
- 2) Record the exact location of each site;
- 3) Record whether or not the child was restrained, the type of restraint, and the direction the child was facing in the vehicle;
- 4) Record the type of vehicle (automobile or pickup); and,
- 5) Record whether or not the driver was belted.

## Comment of Historical Analyses

Due to rule changes in 2015, the 2016 and 2017 surveys were analyzed without regard to the age of the child. In other words, no judgment calls were made by observers as to whether the child observed was 2 years of age or younger. As a result, the data from 2013-2015 was re-analyzed to reflect the methods used in 2016 and 2017 (i.e., age was not utilized). This makes the data from 2013-2015 directly comparable to the 2016 and 2017 results. This re-analysis, however, means that the 2013-2015 results reported during their observation year differ from the original results.