



COLORADO
Department of Transportation

Colorado Department of Transportation 2020 Problem Identification Report



Colorado Department of Transportation

2020 Problem Identification Report

Report Prepared for:

Highway Safety Office
Colorado Department of Transportation
2829 W Howard Place
Denver, CO 80204

Report Prepared by:

Christine Demont, MPH
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, CO 80246

Contact Information:

Darrell Lingk
Highway Safety Office
Colorado Department of Transportation
2829 W Howard Place
Denver, CO 80204
darrell.lingk@state.co.us
P 303.757.9465

This report is available electronically at:

<https://www.colorado.gov/pacific/cdphe/motor-vehicle-safety>

Table of Contents

Report Highlights	4
Motor Vehicle Crashes and Fatalities Overview	5
Fatal Crashes and Fatalities	6
Injury Crashes and Injuries	11
Injury Hospitalizations	12
Mode of Transportation	14
Urban and Rural Fatalities	16
Occupant Protection	17
Seat Belt Compliance	19
Impaired Driving	21
Speed Enforcement	27
Motorcycle Safety	29
Young Drivers	32
Pedestrian Safety	35
Bicyclist Safety	37
Distracted Driving	39
Older Drivers	44
Data Sources and Acknowledgements	45
State Performance Measures by County	47

Report Highlights

Motor vehicle crashes remain a leading cause of death in Colorado. This report provides an annual description of motor vehicle crash characteristics for crashes that occurred in Colorado to reduce the number and severity of traffic crashes. The Colorado Department of Transportation (CDOT), law enforcement agencies, local government agencies, nonprofit organizations, and health and prevention professionals utilize this document to identify traffic safety issues and develop strategies to improve traffic safety in Colorado.

- The total number of motor vehicle **fatalities** decreased by 2.5% from the previous year, from 648 deaths in 2017 to 632 deaths in 2018. This one-year decrease reverses an increasing trend in fatalities. A similar pattern occurred for fatalities related to speeding, to unrestrained motor vehicle occupants, and pedestrian fatalities.
- **Speeding** was a factor in 33 percent of all fatalities. In 2018, there were 210 speeding-related motor vehicle fatalities, a nine percent decrease from the previous year.
- Among the people who died in an occupant motor vehicle crash, 54% were not wearing a **seat belt**. The number of **unrestrained motor vehicle occupant fatalities** reached 216 deaths in 2018, a three percent decrease from 2017.
- **Alcohol-impaired drivers** were involved in 30% of all fatalities. In 2018, an estimated 188 motor vehicle deaths resulted from crashes that had an **alcohol-impaired driver**, a seven percent increase from 2017.
- In 2018, there were 103 **motorcyclist fatalities**, the same number as the previous year. More than half of the motorcyclists (56%) who died in 2018 were not wearing a helmet.
- The number of **fatalities per vehicle miles traveled (VMT)** in Colorado decreased three percent over the past year but was still higher than the United States fatality rate per 100 million VMT (1.17 and 1.13, respectively).
- Fatalities in **urban areas** increased one percent, from 369 deaths in 2017 to 373 in 2018.
- Fatalities in **rural areas** decreased six percent, from 277 deaths in 2017 to 259 in 2018.

Colorado Department of Transportation Problem ID Dashboard

Motor vehicle crash and fatality data for the state, county, and Regional Emergency Medical and Trauma Services Advisory Council region (RETAC) are available on the Problem Identification Motor Vehicle Dashboard. This motor vehicle data dashboard displays the same type of information that was in the previous county factsheets released publicly with the statewide problem identification report and can be accessed here:

<https://cohealthviz.dphe.state.co.us/t/PSDVIP->

[MHPPUBLIC/views/ColoradoMotorVehicleCrashProblemIDReport/ColoradoMotorVehicleDashboard?iid=1&isGuestRedirectFromVizportal=y&embed=y](https://cohealthviz.dphe.state.co.us/t/PSDVIP-MHPPUBLIC/views/ColoradoMotorVehicleCrashProblemIDReport/ColoradoMotorVehicleDashboard?iid=1&isGuestRedirectFromVizportal=y&embed=y)

Motor Vehicle Crashes and Fatalities Overview

Table 1 presents an overview of motor vehicle crashes across Colorado, including core performance measures for 2014-2018. One-year and five-year percent changes for each measure appear in the last two columns. Green font indicates improvement and red font indicates undesired change. The ↑ symbol indicates a percent increase in the number, rate, or percent. The ↓ symbol indicates a percent decrease in the number, rate, or percent. See the last two pages of this report for the core performance measures of each county.

Table 1. Colorado motor vehicle information and crash outcomes at a glance, 2014-2018							
	2014	2015	2016	2017	2018	1-year % Δ	5-year %Δ
Total crashes (n)	114,752	122,575	121,123	118,842	122,186	↑2.8%	↑6.5%
Colorado population (millions)	5.35	5.46	5.54	5.60	5.70	↑1.8%	↑6.5%
Licensed drivers (millions)	3.79	3.90	3.89	3.90	4.00	↑2.6%	↑5.5%
Seat belt use (%)	82.4	85.2	84.0	83.8	86.3	↑3.0%	↑4.7%
Core Performance Measures:							
Fatalities (n)	488	547	608	648	632	↓2.5%	↑29.5%
Serious injuries (n)	3,224	3,216	2,956	2,884	3,112	↑7.9%	↓3.5%
Injuries (n)	12,570	12,838	11,786	11,668	11,656	↓0.1%	↓7.3%
Fatalities (n/100 million vehicle miles traveled)	1.00	1.08	1.15	1.21	1.17	↓3.3%	↑17.0%
Motor vehicle occupant fatalities, unrestrained all seat positions (n)	156	188	186	222	216	↓2.7%	↑38.5%
Fatalities in crashes where driver/motorcycle operator has blood alcohol content ≥0.08* (n)	160	151	163	176	188	↑6.8%	↑17.5%
Speeding-related fatalities (n)	168	217	211	230	210	↓8.7%	↑25.0%
Motorcyclist fatalities (n)	94	106	125	103	103	0.0%	↑9.6%
Unhelmeted motorcyclist fatalities (n)	61	67	82	72	58	↓19.4%	↓4.9%
Driver 15-20 years old in fatal crashes (n)	73	67	59	91	81	↓11.0%	↑11.0%
Pedestrian fatalities (n)	63	59	79	92	89	↓3.3%	↑41.3%
Bicyclist fatalities (n)	10	13	16	16	22	↑37.5%	↑120.0%
Driver 65+ years old in fatal crashes (n)	78	100	131	125	129	↑3.2%	↑65.4%
Distracted drivers in fatal crashes (n)	59	67	77	61	59	↓3.3%	0.0%
Fatalities involving driver/motorcycle operator testing positive for drugs	52	56	68	93	84	↓9.7%	↑61.5%

Data sources: Traffic crash reports, Colorado Department of Revenue, Division of Motor Vehicles; Fatality Analysis Reporting System (FARS), National Highway Traffic Safety Administration (NHTSA)

Fatal Crashes and Fatalities

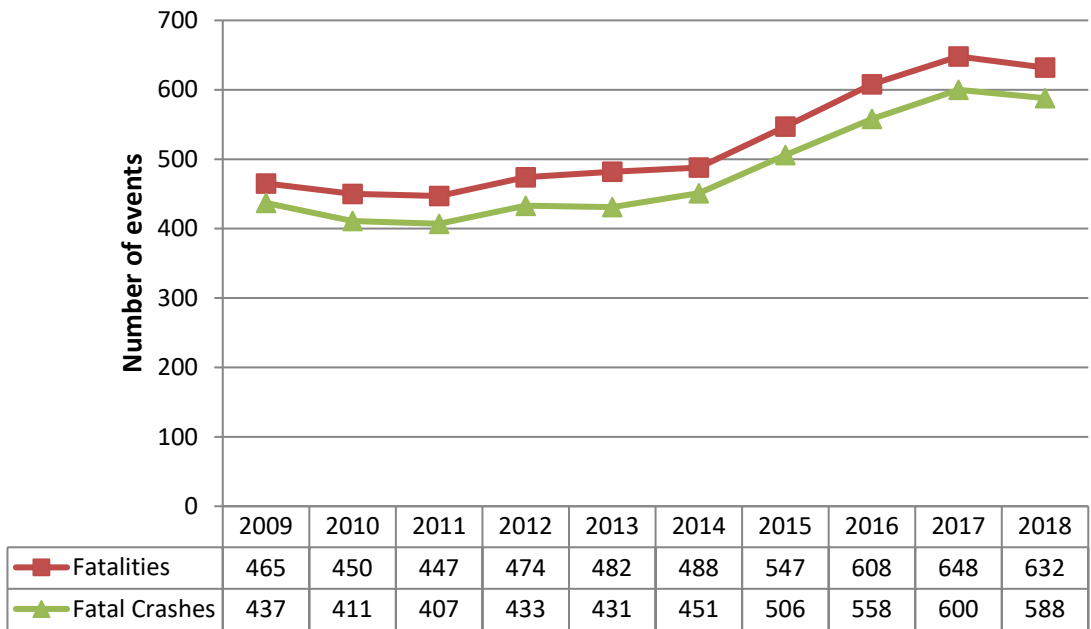
Core Performance Measure (C-1): Reduce the number of traffic fatalities.

This section of the report gives an overview of fatalities from motor vehicle crashes in Colorado over time, including demographics and other characteristics. Between 2017 and 2018, the number of fatal motor vehicle traffic crashes in Colorado decreased by 2.0%, and the number of traffic fatalities decreased by 2.5%. This one-year decrease breaks a six-year upward trend from 2011-2017 after declines in fatalities and fatal crashes between 2004 and 2011.

Figure 1 shows the number of fatal crashes and fatalities in Colorado from 2009-2018. Encouragingly, fatalities and fatal crashes across the nation also decreased between 2017 and 2018. Specifically, there were 37,473 deaths in the United States in 2017 and 36,560 in 2018 (a 2.4% decline), and 34,560 fatal crashes in 2017 and 33,654 fatal crashes in 2018 (a 2.6% decrease).¹ In 2018, 550 (93.5%) of the total 588 fatal crashes in Colorado resulted in one death in each crash, 33 (5.6%) crashes resulted in two deaths per crash, four (0.7%) crashes resulted in three deaths per crash, and one crash (0.2%) resulted in four deaths in the crash. As a result, the number of fatalities was greater than the number of fatal crashes.

C-1 Top Five Counties
 El Paso – 81 fatalities
 Weld – 63 fatalities
 Denver – 60 fatalities
 Adams – 51 fatalities
 Arapahoe – 47 fatalities

Figure 1. Fatal motor vehicle crashes and fatalities in Colorado, 2009-2018

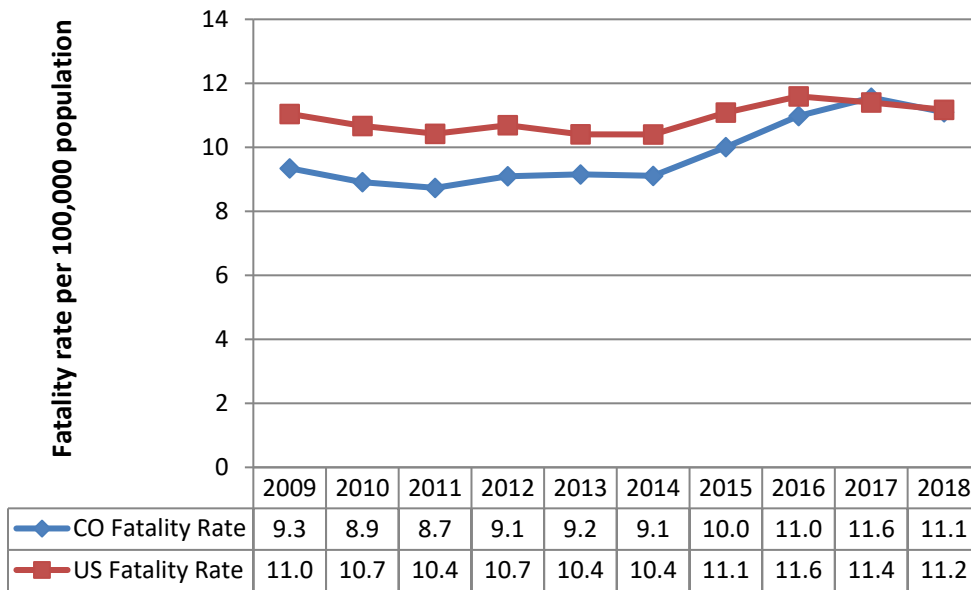


Source: FARS

¹ <http://www-fars.nhtsa.dot.gov/Main/index.aspx> Last accessed January 30, 2020

Colorado’s motor vehicle fatality rate decreased by 0.5% between 2017 and 2018. In 2017, almost 12 people per 100,000 Colorado residents died in motor vehicle crashes, and in 2018, roughly 11 people per 100,000 Colorado residents died. Contrary to 2017, the motor vehicle fatality rate in Colorado was less than the national average during 2018 (Figure 2).

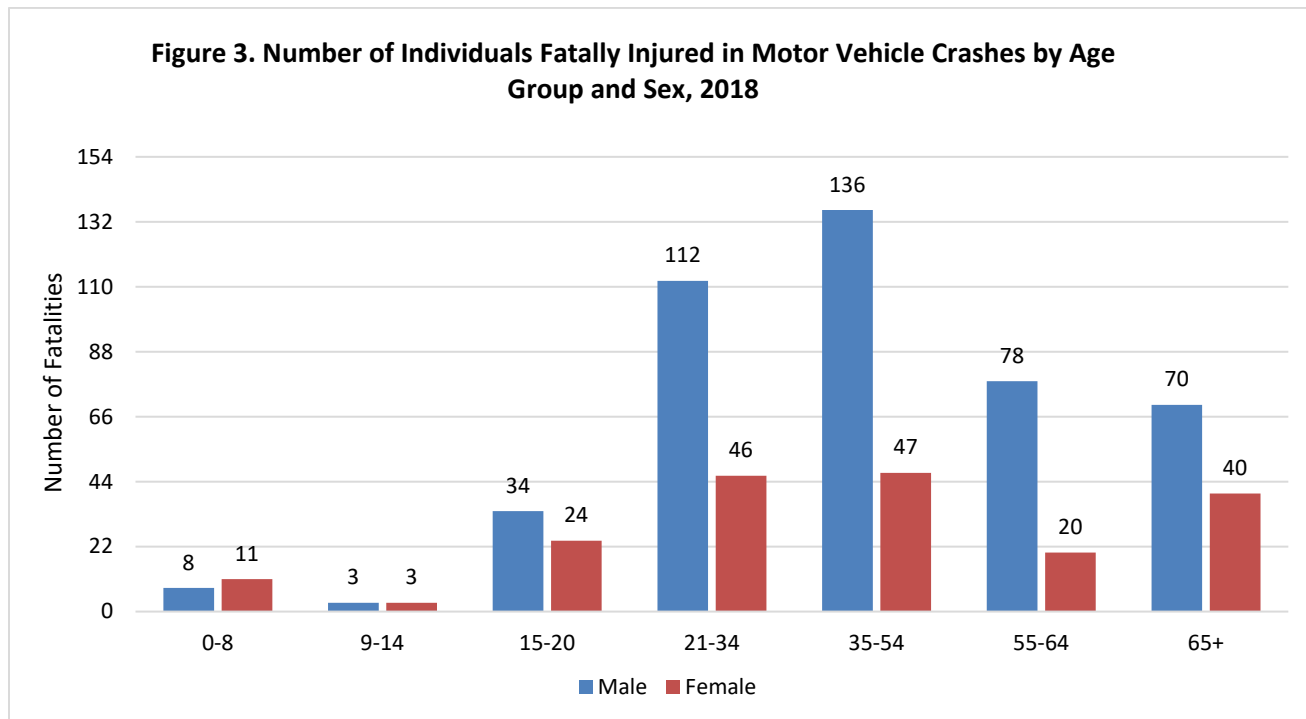
Figure 2. Motor vehicle fatality rate per 100,000 population in Colorado and the United States, 2009-2018



Source: FARS, DOLA and US Census Bureau



Figure 3 depicts the age and sex of the people who died as a result of a motor vehicle crash in 2018. The 35-54 age group had the highest number of fatalities in 2018. Among all adults, more males died in motor vehicle crashes than females during 2018. Table 2 shows the fatality rate by age and sex. Approximately two males died in a crash for every one female who died in a motor vehicle crash.



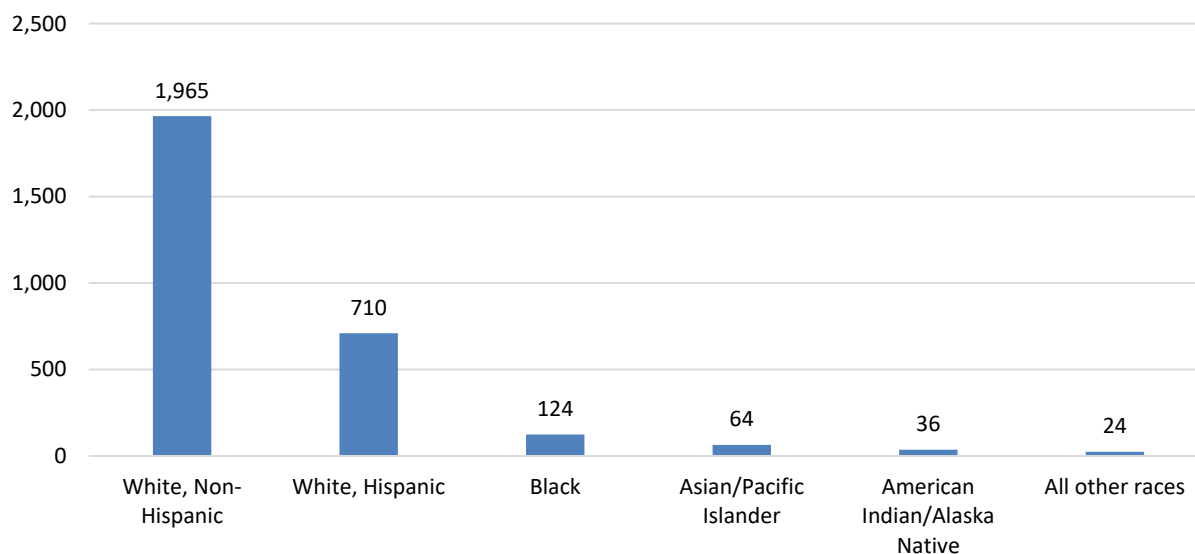
Source: FARS

Age Group	Male	Female	Rate for age group
0-8	2.6	3.7	3.1
9-14	1.3	1.4	1.4
15-20	14.4	10.9	12.7
21-34	18.3	8.0	13.3
35-54	18.1	6.4	12.3
55-64	22.4	5.5	13.8
65+	18.9	9.1	13.6
All Ages	15.5	6.7	11.1

Source: FARS

Not only are there differences in motor vehicle fatalities by age and sex, but there are also differences in motor vehicle fatalities among races and ethnicities. Figure 4 displays the number of fatalities by race and ethnicity for the combined years of 2014 to 2018, due to the small counts in some of the race and ethnicity categories. White, non-Hispanic individuals had the highest number of motor vehicle fatalities. When factoring in population size of racial groups living in Colorado, Asian/Pacific Islanders had the lowest rate of motor vehicle deaths compared to the other race and ethnicity groups (Table 3). Differences in fatality rates for race/ethnicity groups could reflect external differences in geography, access to emergency medical care, access to safe transportation methods and transportation options other than motor vehicles, the built environment, road use design, weather patterns, and cultural factors.

Figure 4. Motor Vehicle Fatalities by Race/Ethnicity, 2014-2018



Source: FARS

Race/Ethnicity	Rate for race/ethnicity
White, Non-Hispanic	10.5
White, Hispanic	12.3
Black	11.8
American Indian/Alaska Native	25.2
Asian/Pacific Islander	7.6
All other races*	3.4
All races and ethnicities	10.8

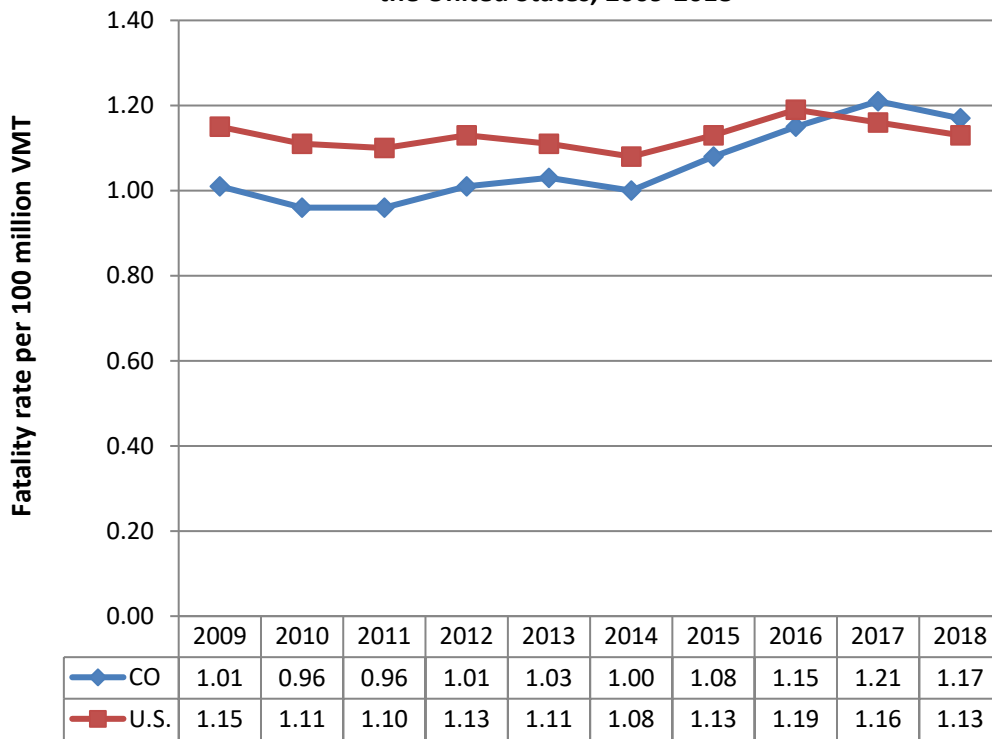
*Includes two or more races and races with small counts

Source: FARS

Core Performance Measure (C-3): Reduce the number of fatalities per Vehicle Miles Traveled (VMT)

Dividing the number of motor vehicle fatalities by the number of vehicle miles traveled (VMT) takes into account changes in the population, as well as changes in fuel prices, driving habits, and distances driven. Fatalities per 100 million VMT can be compared over time and between different geographic areas. Colorado’s 2018 Integrated Safety Plan goal is to reduce the fatality rate per VMT to 1.20 per 100 million in 2018. Figure 5 shows the rate of fatalities per 100 million VMT for Colorado and the United States. The fatality rate declined for the first time in five years but exceeded the United States’ average fatality rate in 2018 (see Figure 5).

Figure 5. Fatalities per 100 million vehicle miles traveled (VMT) in Colorado and in the United States, 2009-2018



Source: FARS and USDOT FHWA

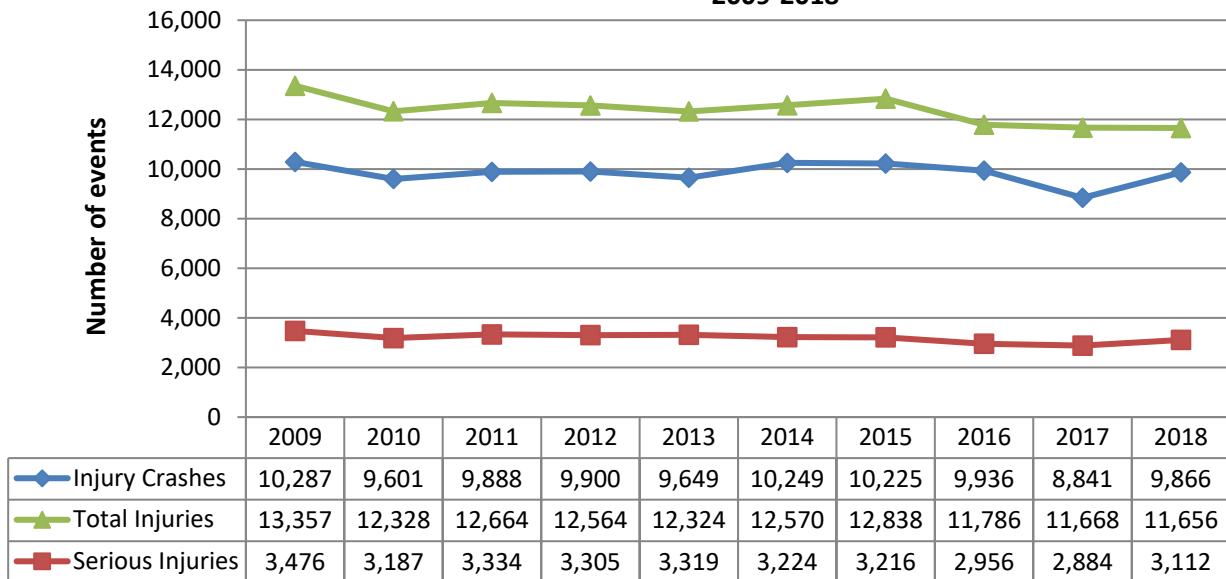
Injury Crashes and Injuries

Core Performance Measure (C-2): Reduce the number of serious injuries in traffic crashes

The number of crashes resulting in injuries decreased over the past 10 years, though, numbers were slightly up in 2018 from 2017 (Figure 6). In this report, there are two types of injuries: “evident non-incapacitating” or “evident incapacitating.” “Evident incapacitating injury” is also called “serious injury” and includes any injury, other than a fatal injury, that prevents the injured person from walking, driving, or normally continuing the activities previously capable of performing prior to being injured. The number of people injured and seriously injured also decreased over the same period. One-quarter of injured people sustained a serious injury (24.7%) in 2018.

C-2 Top Five Counties
 Denver – 508 serious injuries
 Arapahoe – 386 serious injuries
 Adams – 319 serious injuries
 Boulder – 223 serious injuries
 Jefferson – 209 serious injuries

Figure 6. Motor vehicle injury crashes, injuries and serious injuries in Colorado, 2009-2018

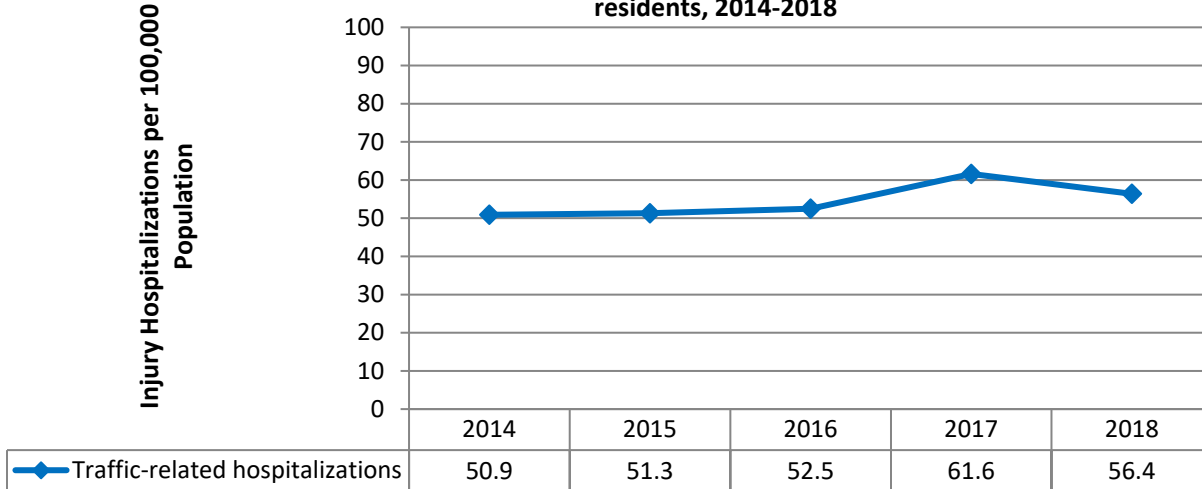


Source: Crash Reports, DOR

Injury Hospitalizations

The age-adjusted rate of hospitalizations for Colorado residents injured in motor vehicle crashes increased by 10.8% from 2014-2018 (Figure 7) and decreased 8.4% in 2018 from 2017. The motor vehicle crashes occurred in traffic or on public roadways, and the hospitalizations occurred in non-federal, acute care hospitals in Colorado.

Figure 7. Motor vehicle injury hospitalization rates over five years among Colorado residents, 2014-2018

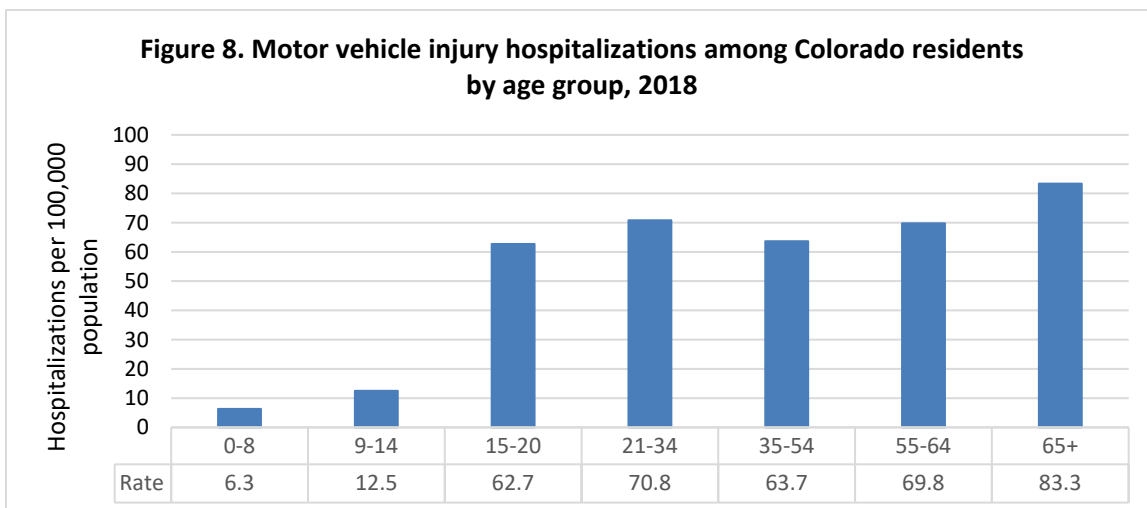


Source: Colorado Hospital Association, Hospital Discharge

*Note: View the rates with caution. Nationally and in Colorado, the coding of hospitalizations changed beginning October 1, 2015. 2015 was calculated using the last quarter of 2014 and the first three quarters of 2015 in order to use the same coding system. For the years 2016 to 2018, the rates were being calculated using the new coding of hospitalizations.

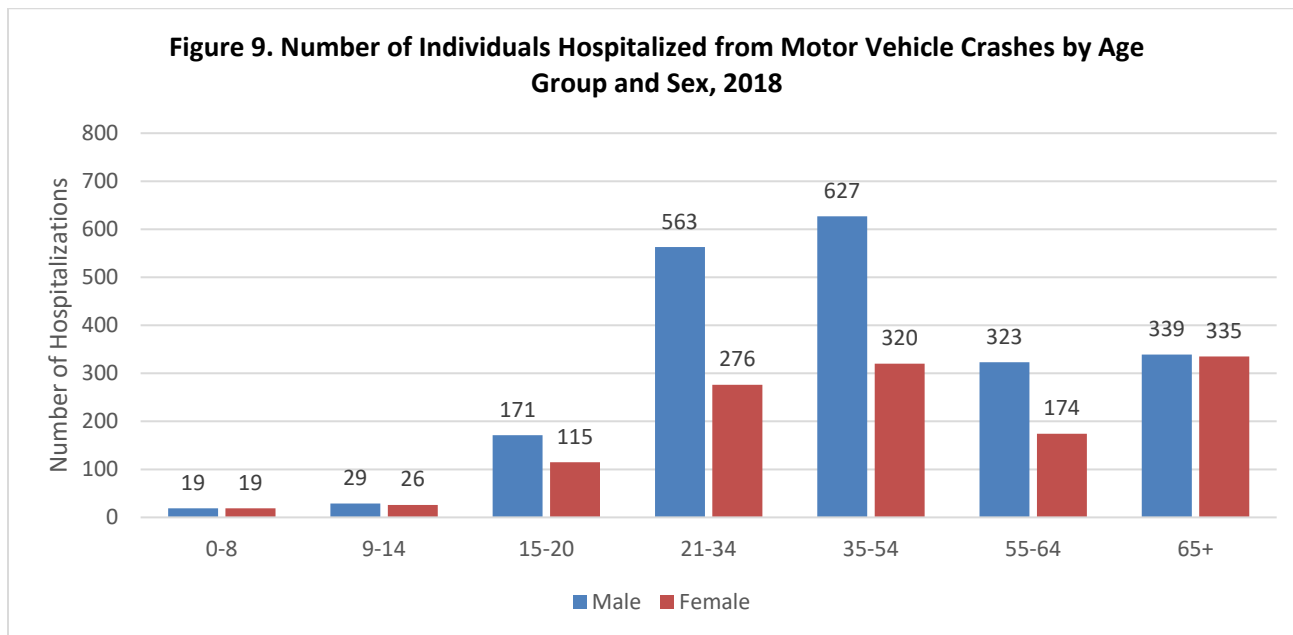
In 2018, there were 3,336 hospitalizations among Colorado residents injured from motor vehicle crashes in traffic or on public roads (Figure 8). The age-specific hospitalization rate for Colorado residents sustaining injuries in motor vehicle crashes varied by age. Adults aged 65 years and older exhibited the highest hospitalization rates related to motor vehicle injuries.

Figure 8. Motor vehicle injury hospitalizations among Colorado residents by age group, 2018



Source: Colorado Hospital Association, Hospital Discharge

Figure 9 shows the number of individuals hospitalized from motor vehicle crashes in Colorado during 2018, including the number of males and females within each age group. The 21-34 and 35-54 year age groups had the highest numbers of people hospitalized from motor vehicle crashes. A greater number of males than females in each age group were hospitalized with the exception of the 0-8 age group. Males accounted for almost two-thirds of those hospitalized from crashes during 2018.



Source: Colorado Hospital Association, Hospital Discharge

Table 4 shows the hospitalization rate per 100,000 population by age group and sex. The 65 and older age group had the highest rate of hospitalizations per 100,000 persons. Males aged 55-64 had the highest rates of hospitalizations from motor vehicle crashes for every 100,000 persons, compared to the other age groups.

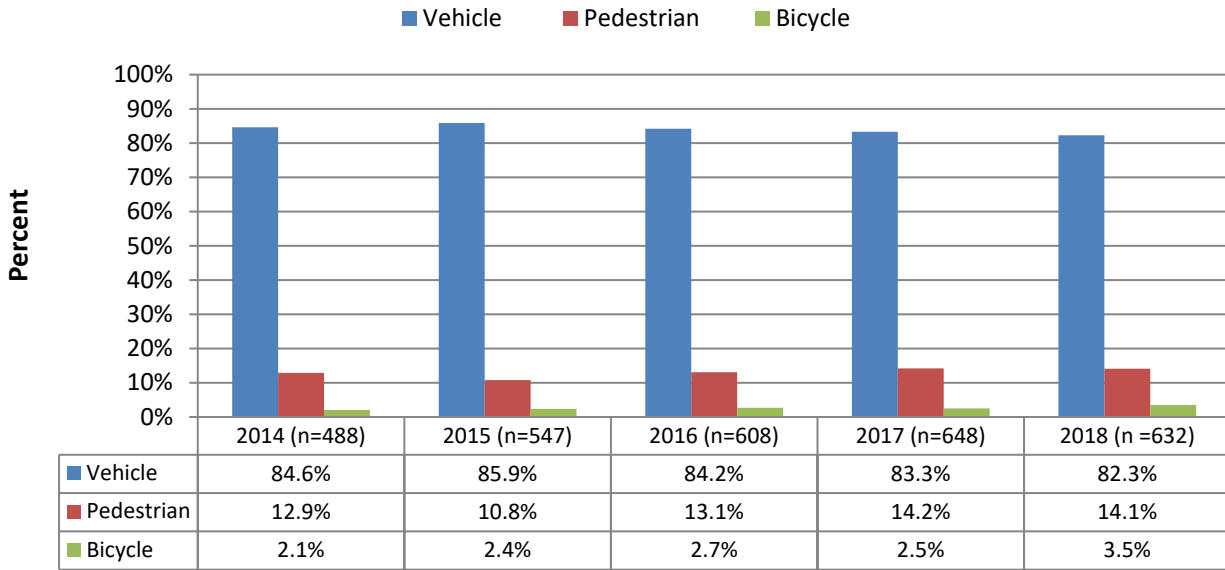
Age Group	Male	Female	Crude Rate for age group
0-8	6.2	6.4	6.3
9-14	12.9	12.1	12.5
15-20	72.6	52.1	62.7
21-34	92.0	48.1	70.8
35-54	83.5	43.4	63.7
55-64	92.9	47.7	69.8
65+	91.6	76.4	83.3
All Ages	72.6	44.5	58.6

Source: Colorado Hospital Association, Hospital Discharge data

Mode of Transportation

In Colorado, individuals driving or riding motorized vehicles made up 85% of the motor vehicle-related fatalities between 2014 and 2018 (Figure 10). Pedestrians accounted for 12% of motor vehicle fatalities, while bicyclists comprised two percent over the five years. The percentage of pedestrian fatalities increased over the five years.

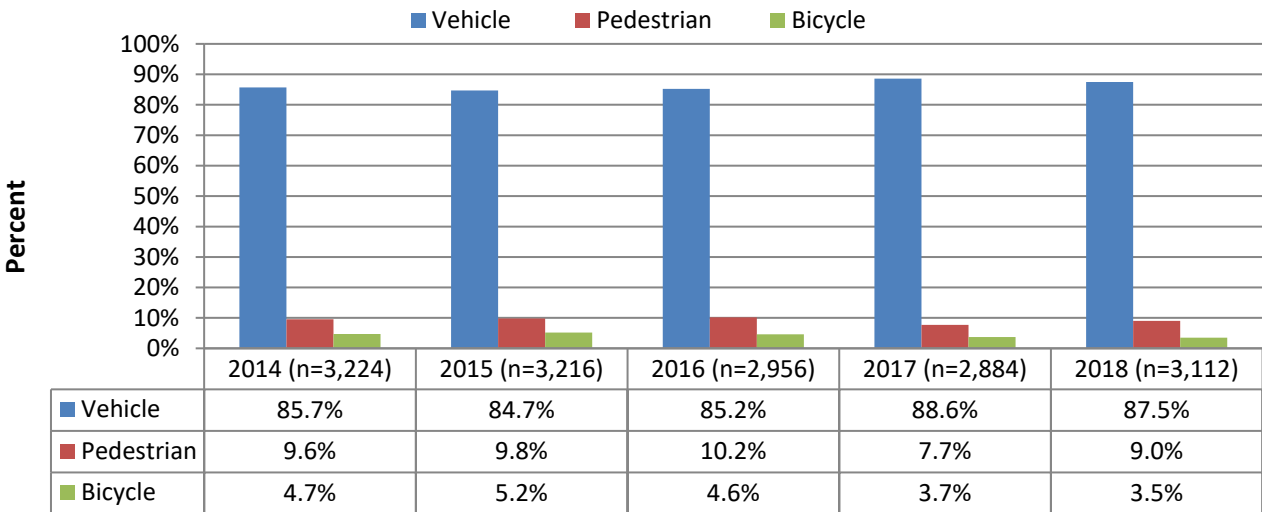
Figure 10. Motor vehicle fatalities by mode of transportation in Colorado, 2014-2018



Source: FARS

The mode of transportation when serious motor vehicle injuries occurred remained relatively stable during 2014-2018 (Figure 11). On average, each year, 86% of people seriously injured in a motor vehicle crash were riding motorized vehicles, pedestrians comprised 10%, and bicyclists made up five percent.

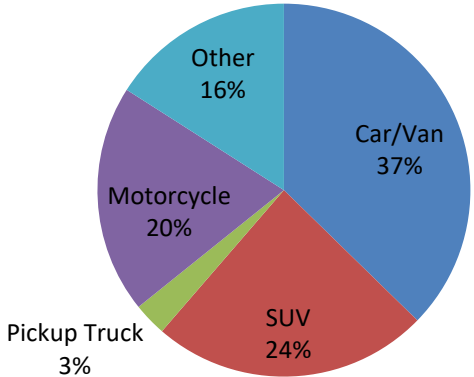
Figure 11. Motor vehicle serious injuries by mode of transportation, Colorado, 2014-2018



Source: Crash reports, DOR

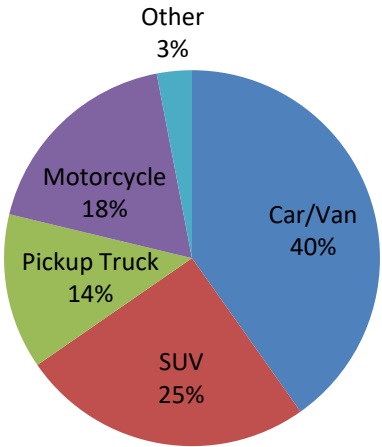
As shown previously in Figure 10 and Figure 11 above, persons riding motorized vehicles accounted for the majority of motor vehicle-related fatalities and serious injuries. A motorized vehicle can be a car/van, motorcycle, pickup truck, SUV, other vehicle type, or unknown vehicle type (such as can occur in a hit-and-run crash). Other vehicle types include a large truck, motor home, bus, or these vehicle types when used on a public road: all-terrain vehicle, snowmobile, and farm or construction equipment. Figure 12 below shows the type of motor vehicle individuals were using when fatally injured. Among the fatally injured, over a third (37%) of the individuals fatally injured were riding in a car/van, 24% were riding in a SUV, and 20% were riding a motorcycle. Of those who were seriously injured, 40% were riding in a car/van, 25% riding in an SUV, and 18% riding a motorcycle (Figure 13).

Figure 12. Type of motor vehicle individuals were riding in when fatally injured, Colorado, 2018



Source: FARS

Figure 13. Type of motor vehicle individuals were riding in when seriously injured, Colorado, 2018

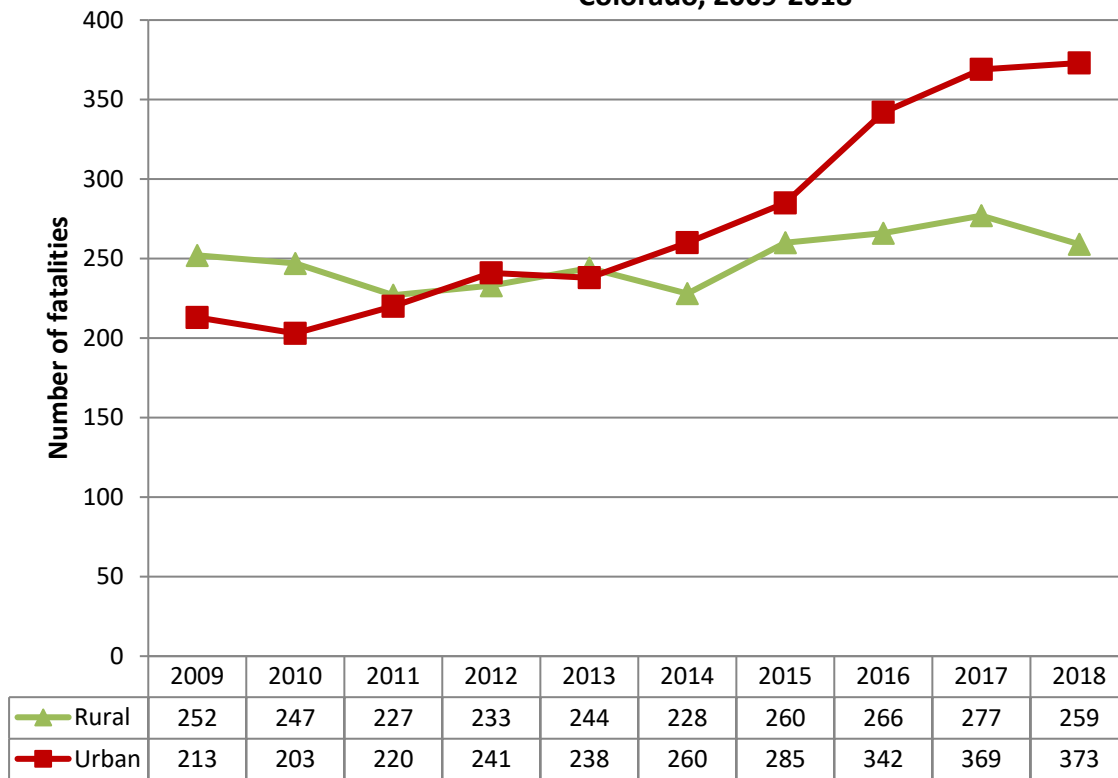


Source: Crash reports, DOR

Urban versus Rural Fatalities

Figure 14 displays the number of motor vehicle fatalities that occurred in urban or rural roadways. The Colorado Department of Transportation defines which roadways are urban or rural in Colorado, and the Federal Highway Administration approves the definitions. While more motor vehicle fatalities occurred on rural roadways during 2009-2011, more fatalities occurred on urban roadways during 2014-2018.

Figure 14. Fatalities from motor vehicle crashes in Urban versus Rural areas in Colorado, 2009-2018



Source: FARS

Occupant Protection

Core Performance Measure (C-4): Reduce the number of unrestrained passenger vehicle occupant fatalities, all seat positions.

In 2018, there were 216 unrestrained passenger vehicle occupant fatalities, a 2.7% decrease from 2017 (Figure 15). Between 2014 and 2018, there was a 38% increase in unrestrained passenger fatalities. In 2018, these 216 unrestrained fatalities represented 54% of the 402 passenger vehicle occupant fatalities (Table 5).

C-4 Top Five Counties
Elbert, Weld – 26 fatalities
Adams – 20 fatalities
Denver – 15 fatalities
Arapahoe, Larimer – 14 fatalities

Figure 15. Unrestrained passenger vehicle occupant fatalities in Colorado, all seat positions, 2014-2018

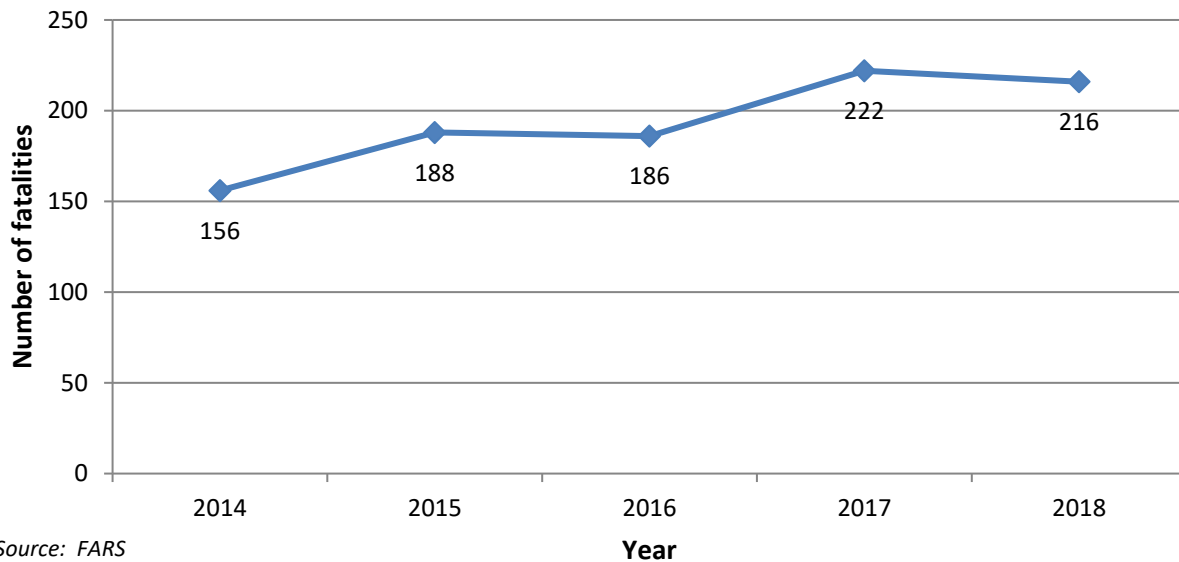


Table 5 shows the number of unrestrained fatalities in Colorado by age and sex for the years 2017 and 2018. More than half of the motor vehicle occupant fatalities were unrestrained for both years (54% in 2017 and 2018). In 2018, the number and percentage of unrestrained fatalities were slightly lower than in 2017. The 15-20 age group had the highest percentage of unrestrained occupants die in a motor vehicle crash in 2018. More males were unrestrained and died than females.

Table 5. Unrestrained motor vehicle occupant fatalities by age and sex, Colorado, 2017 & 2018			
Age Group	Sex	2017	2018
0-4	Male	0	0
	Female	0	1
	Total	0/2 (0.0%)	1/9 (11.1%)
5-8	Male	0	3
	Female	2	2
	Total	2/4 (50.0%)	5/9 (55.6%)
9-14	Male	3	0
	Female	1	2
	Total	4/6 (66.7%)	2/5 (40.0%)
15-20	Male	23	19
	Female	14	12
	Total	37/54 (68.5%)	31/45 (68.9%)
21-34	Male	56	42
	Female	23	27
	Total	79/124(63.7%)	69/108(63.9%)
35-54	Male	43	44
	Female	10	18
	Total	53/101 (52.5%)	62/99 (62.6%)
55-64	Male	18	17
	Female	3	7
	Total	21/41 (51.2%)	21/41 (51.1%)
65+	Male	20	14
	Female	6	8
	Total	26/78 (33.3%)	26/78 (27.5%)
All Ages	Male	163	139
	Female	59	77
	%crashes	222/410 (54.1%)	216/402 (53.7%)

Source: FARS

Seat Belt Compliance

Behavioral Performance Measure (B-1):

Increase the observed seat belt use for passenger vehicles.

Increasing seat belt use is a major initiative of the Office of Transportation Safety (OTS). Each year, OTS funds an observational survey of occupant protection use statewide. Figure 16 shows the steady increase in seat belt use from 2009-2018. In 2018, Colorado's seat belt use rate was 86% and remained lower than the national rate of 90%.



Countermeasures that Work

Increase seat belt use:

Targeting Adults:

Seat Belt Use Laws

- State primary enforcement seat belt use laws
- Local primary enforcement seat belt use laws
- Increased seat belt use law penalties

Seat Belt Law Enforcement

- Short term high-visibility belt law enforcement
- Integrated nighttime seat belt enforcement
- Sustained enforcement

Communications & Outreach

- Supporting enforcement
- Strategies for low-belt-use groups

Targeting Youth:

Child/Youth Occupant Restraint Laws

- Strengthening child/youth occupant restraint laws

Child Restraint/Booster Seat Belt Law Enforcement

- Short term high-visibility CR law enforcement

Communications & Outreach

- Strategies for older children
- Strategies for child restraint and booster seat use

https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812478_v5_countermeasures-that-work-a-highway-safety-countermeasures-guide-9thedition-2017.pdf

- Integrated nighttime seat belt enforcement

- Sustained enforcement

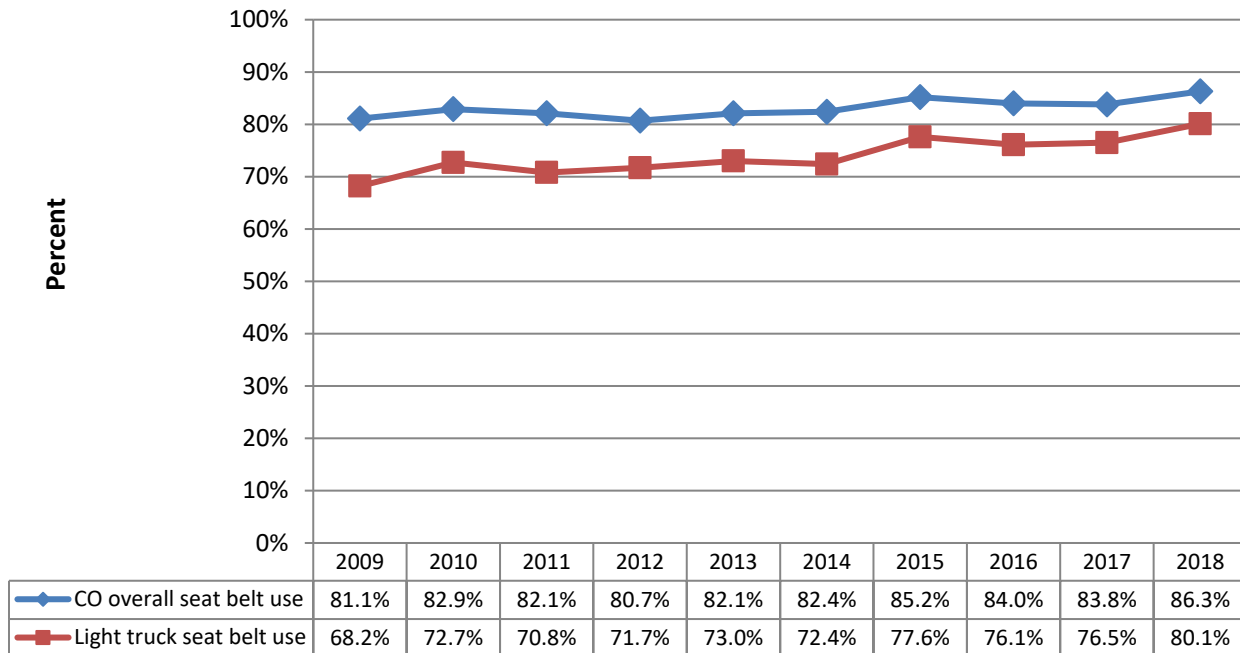
Communications & Outreach

- Supporting enforcement
- Strategies for low-belt-use groups

Listed have a 3-5 star effectiveness rating. For all countermeasures, visit

Historically, fewer occupants in light trucks wear seat belts compared to occupants in other passenger vehicles. In 2009, 73% of light truck occupants wore seat belts. Over the past 10 years, this increased to 80% (a 17% increase). Despite this improvement, light truck occupants still lag behind other motor vehicle occupants (86% overall seat belt use).

Figure 16. Statewide overall and light truck seat belt use in Colorado, 2009-2018



Source: Institute of Transportation Management at Colorado State University



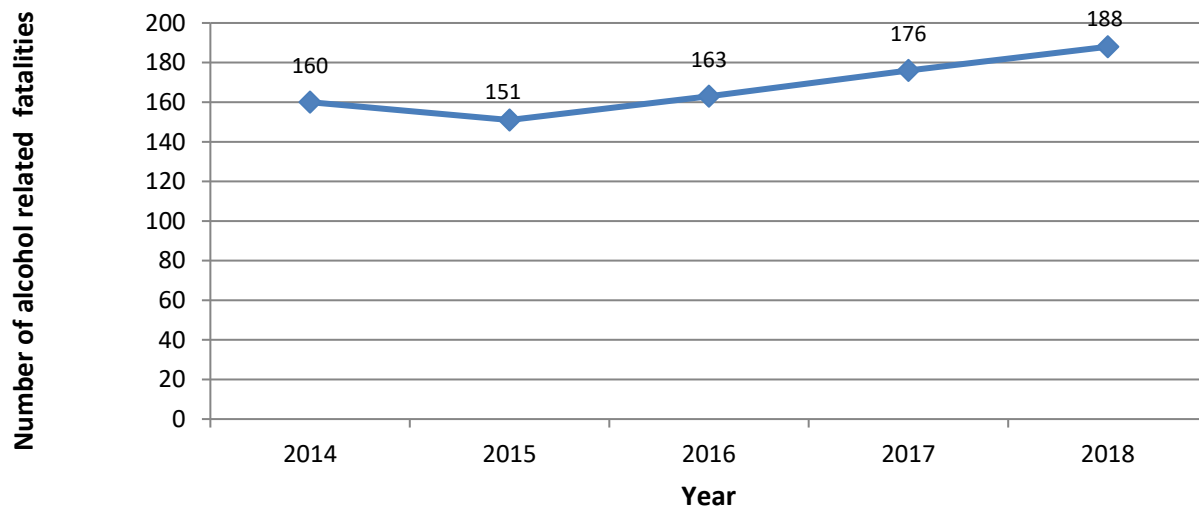
Impaired Driving

Core Performance Measure (C-5): Reduce the number of fatalities in crashes involving a driver or motorcycle operator with Blood Alcohol Content (BAC) of ≥ 0.08 .

Information regarding driving while impaired in Colorado is complex. In fatal crashes, the standard procedure is to test the person who died for alcohol and/or drugs. The law requires an arrested driver to take a chemical test of their breath or blood if the law enforcement officer has probable cause to believe that the driver's impairment is from alcohol or another impairing substance. Drivers who refuse to comply with testing face consequences to their driving privileges. Despite the best efforts of law enforcement, some crash records lack driver's BAC test results. To remedy missing test results on BAC, the National Highway Traffic Safety Administration (NHTSA) uses methods to impute missing BAC values for drivers involved in a crash where a fatality occurred. Imputation is a process of replacing missing data with a probable value based on other available data.

The alcohol-related performance measure in Figure 16 is NHTSA's imputed measure. The number of fatalities involving an alcohol-impaired driver has increased over the past five years (Figure 17).

Figure 17. Fatalities in Colorado motor vehicle crashes involving a driver or motorcycle operator with a BAC ≥ 0.08 , 2014-2018



Source: FARS

A blood alcohol content (BAC) of 0.08 grams of alcohol per deciliter of blood increases crash risk exponentially and therefore is the state and federal standard for legal intoxication. Table 6 shows the number of drivers with a blood alcohol content greater than or equal to 0.08 and who were involved in a fatal crash in 2017 and 2018. Males aged 21-34 had the highest number and percentage of drivers with a BAC at or above legal intoxication and involved in a fatal crash. During 2017, there were 890 drivers involved in a fatal crash in Colorado. The percentage of alcohol-intoxicated drivers involved in a fatal crash increased from 14% in 2017 to 16% in 2018 (see Table 5).



C-5 Top Five Counties
 El Paso – 26 fatalities
 Weld– 14 fatalities
 Denver – 13 fatalities
 Adams, Jefferson – 12 fatalities

Countermeasures that Work

To reduce alcohol- and drug-impaired driving:

Deterrence

1) Laws

- Administrative license revocation/suspension
- Open container
- High-BAC sanctions
- BAC test refusal penalties
- Alcohol-impaired driving law review

2) Enforcement

- Publicized sobriety checkpoints
- High visibility saturation patrols
- Preliminary breath test devices
- Passive alcohol sensors
- Integrated enforcement

3) Prosecution and Adjudication

- DWI Courts
- Limits on diversion and plea agreements
- Court monitoring

4) DWI offender treatment, monitoring, control

- Alcohol problem assessment, treatment
- Alcohol ignition interlocks
- Vehicle and license plate sanctions
- DWI offender monitoring
- Lower BAC limit for repeat offenders

Prevention, intervention, communications & outreach

- Alcohol screening and brief intervention
- Mass-media campaigns

Underage drinking & alcohol-impaired driving

- Minimum drinking age 21 laws
- Zero-tolerance law enforcement
- Alcohol vendor compliance checks
- Other minimum legal drinking age 21 law enforcement

Drugged Driving

- Enforcement of drug-impaired driving

Listed have a 3-5 star effectiveness rating. For all countermeasures, visit

https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812478_v5_countermeasures-that-work-a-highway-safety-countermeasures-guide-9thedition-2017.pdf

Table 6. Drivers with a blood alcohol content ≥ 0.08 in fatal crashes in Colorado, by impaired driver age and sex			
Age Group	Sex	2017	2018
Driver			
15-20	Male	6	7
	Female	1	2
	Total	7/91 (8.5%)	9/81 (11.1%)
21-34	Male	61	57
	Female	5	14
	Total	66/290 (22.8%)	71/266 (26.7%)
35-54	Male	32	45
	Female	7	8
	Total	39/309 (12.6%)	53/285 (18.6%)
55-64	Male	15	4
	Female	1	3
	Total	16/110 (14.5%)	7/111 (6.3%)
65+	Male	3	3
	Female	0	0
	Total	3/125 (2.4%)	3/129 (2.3%)
All Ages	Male	117	116
	Female	14	27
	%crashes	131/940 (13.9%)	143/890 (16.1%)

Source: FARS

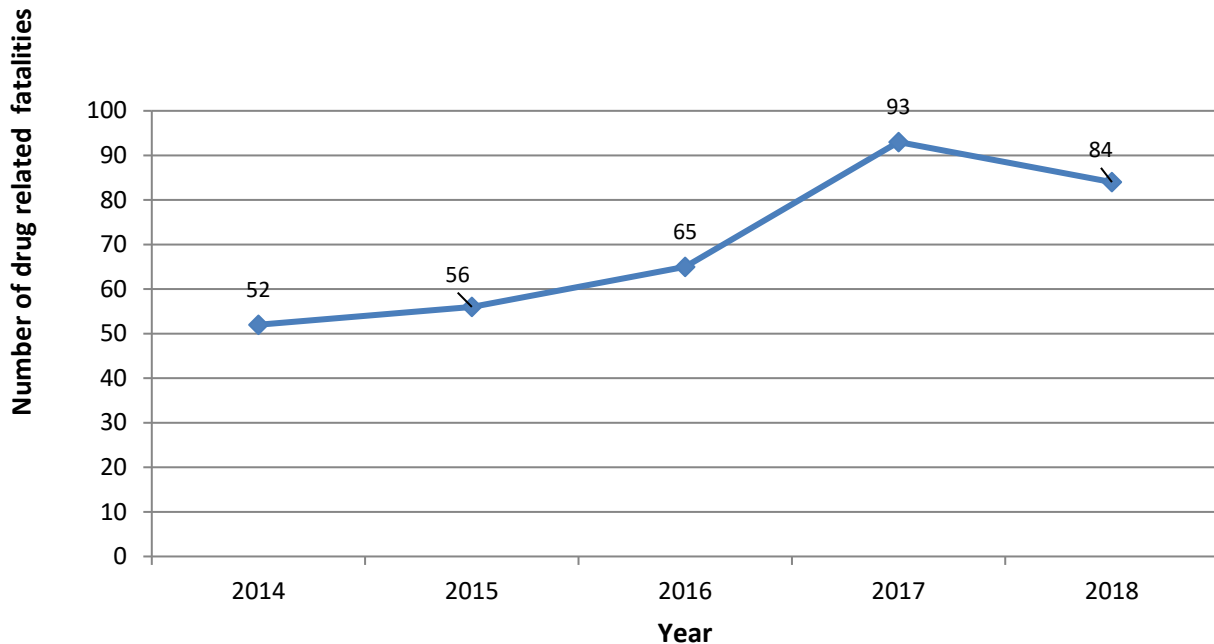


Core Performance Measure (C-14): Reduce the number of drivers or motorcycle operators involved in fatal crashes testing positive for drugs.

Prescription drugs, over-the-counter drugs, and illegal drugs can affect a person’s ability to drive. Taking legal drugs or illegal drugs, alone or in combination with alcohol, can cause impairment. An impaired driver puts the driver, passengers, and other road users at risk. ² Figure 18 shows the trend of motor vehicle fatalities involving a driver under the influence of drugs. After a three-year increase, the number of fatalities involving a driver under the influence of drugs decreased in 2018.

C-14 Top Five Counties
Adams, Larimer – 11 fatalities
El Paso – 7 fatalities
Arapahoe, Weld – 6 fatalities

Figure 18. Fatalities in Colorado motor vehicle crashes involving a driver or motorcycle operator testing positive for drugs, 2014-2018



Source: FARS

² Berning, A., Compton, R., & Wochinger, K. (2015, February). Results of the 2013–2014 National Roadside Survey of alcohol and drug use by drivers. (Traffic Safety Facts Research Note. Report No. DOT HS 812 118). Washington, DC: National Highway Traffic Safety Administration.

Table 7 describes drivers who tested positive for drugs and involved in fatal motor vehicle crashes in 2017 and 2018. The percentage of drivers involved in fatal crashes who were impaired by drugs remained relatively the same from 2017 to 2018. Males in the 15-20 age group had the highest percentage of drug-impaired drivers in 2017 and 2018.

Table 7. Drivers testing positive for drugs in fatal crashes in Colorado, by impaired driver age and sex			
Age Group	Sex	2017	2018
Driver			
15-20	Male	15	10
	Female	1	3
	Total	16/91 (17.6%)	13/81 (16.0%)
21-34	Male	25	25
	Female	9	10
	Total	34/290 (11.7%)	35/266 (13.2%)
35-54	Male	33	22
	Female	4	10
	Total	37/309 (12.0%)	32/285 (11.2%)
55-64	Male	10	15
	Female	1	1
	Total	11/110 (10.0%)	16/111 (14.4%)
65+	Male	9	3
	Female	4	2
	Total	13/125 (10.4%)	5/129 (3.9%)
All Ages	Male	92	75
	Female	19	26
	%crashes	111/940 (11.8%)	101/890 (11.3%)

Source: FARS

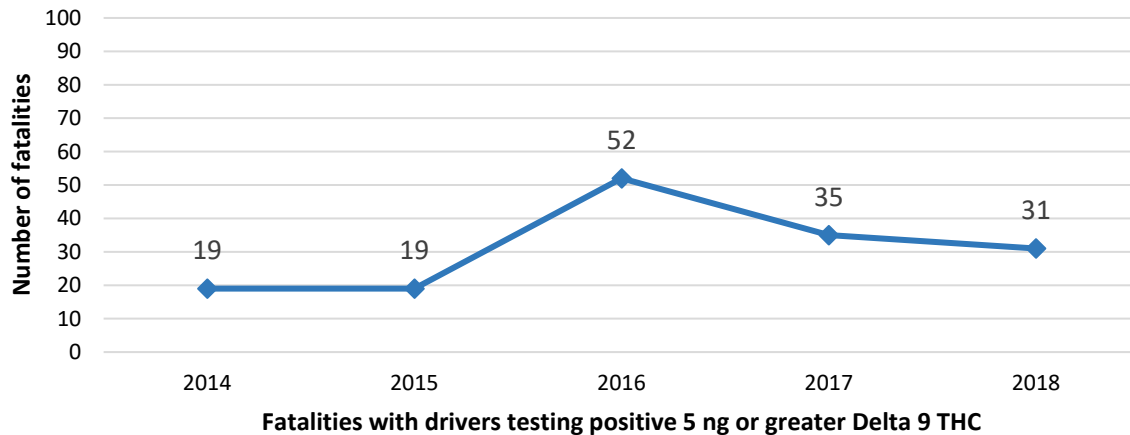
Marijuana Impaired Driving

Like alcohol, marijuana has measurable physiological effects that may impair the ability of a person to drive and react quickly in critical situations.^{3, 4} National Highway Traffic Safety Administration (NHTSA) studies have shown marijuana impairs crucial abilities needed to drive safely.⁵ Impairments include:

- Slowed reaction time
- Difficulties in road tracking and lane-position variability (inability to stay in the driving lane).
- Decreased divided attention
- Impaired cognitive performance
- Impaired executive functions, including route planning, decision-making and risk-taking or a combination

Colorado law allows the prosecution of drivers that show indicia of impairment from marijuana. Five nanograms of active tetrahydrocannabinol (THC) in their blood creates a permissible inference that the driver is under the influence of cannabis. However, there is no roadside device in Colorado to detect THC, so law enforcement officers, including those trained as drug recognition experts (DREs), base arrests on observed impairment. Under Colorado law, officers can arrest someone who uses marijuana for medicinal purposes for DUI if an officer observes impairment. Figure 19 displays the number of fatalities from motor vehicle crashes where the driver who tested positive with five nanograms or higher of Delta 9 THC (the active component in marijuana). Because testing and reporting rates for Delta 9 THC have increased each year since 2016, the cases of drivers testing positive for Delta 9 THC could be the result of improvements to data collection.

Figure 19. Cannabis-involved motor vehicle fatalities, Colorado, 2014-2018



Source: Toxicology results, Colorado Department of Transportation

1. Prior to 2016, data collection on Delta 9 was not complete. Because testing and reporting rates for Delta 9 have increased, the cases of drivers testing positive for Delta 9 could be the results of improved data collection.
2. Data includes fatalities where alcohol or other drugs may also be present.
3. In Colorado, there is a "permissible inference" that a person is under the influence of a) cannabis - if their blood contains 5 nanograms or more of Delta 9-THC per milliliter in whole blood or b) alcohol - if their blood contains .08 grams or more of alcohol per 100 grams in the whole blood.

³ National Academies of Sciences, Engineering, and Medicine. 2017. *The health effects of cannabis and cannabinoids: Current state of evidence and recommendations for research*. Washington, DC: The National Academies Press.

⁴ Monitoring Health Concerns Related to Marijuana in Colorado: 2018 Summary. Colorado Department of Public Health and Environment.

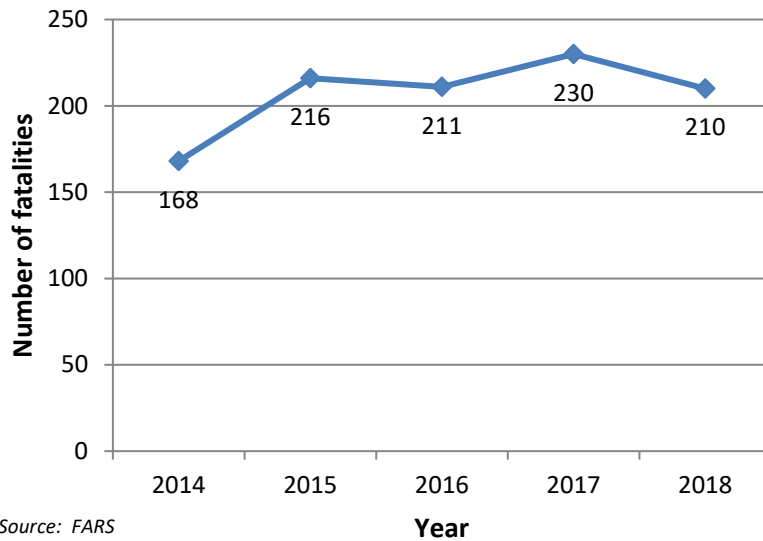
⁵ Compton, R. (2017, July). *Marijuana-Impaired Driving - A Report to Congress*. (DOT HS 812 440). Washington, DC: National Highway Traffic Safety Administration.

Speed Enforcement

Core Performance Measure (C-6): Reduce the number of speeding related fatalities.

Speeding-related motor vehicle fatalities decreased by 8.7% between 2017 and 2018 (Figure 20). Speeding contributed to 33% of all fatalities in 2018.

Figure 20. Speeding Related Fatalities in Colorado, 2014-2018



Countermeasures that Work

Reduce aggressive driving & speeding:

Laws

- Speed Limits

Enforcement

- Automated enforcement

Communications & Outreach

- Public information supporting enforcement

Listed have a 3-5 star effectiveness rating. For all countermeasures, visit https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812478_v5_countermesures-that-work-a-highway-safety-countermeasures-guide-9thedition-2017.pdf



C-6 Top Five Counties

- Elbert – 27 fatalities
- Adams – 20 fatalities
- Arapahoe – 19 fatalities
- Denver, Pueblo – 16 fatalities

Table 8 describes drivers who were documented to be speeding or exceeding the safe or posted speed in fatal crashes in 2017 and 2018. Law enforcement officers indicated that speeding was the driver action, or specific law violation, in 21% of all drivers in a fatal crash. Males ages 15-20 had the highest percentage of drivers speeding among the total number of drivers in fatal crashes in 2017 and 2018. Males ages 21-34 had the highest number of drivers speeding among all drivers in fatal crashes in 2017 and 2018.

Table 8. Drivers who were speeding in fatal crashes in Colorado, by driver age and sex			
Age Group	Sex	2017	2018
Driver			
15-20	Male	27	21
	Female	5	2
	Total	32/91 (35.2%)	32/81 (39.5%)
21-34	Male	69	65
	Female	14	13
	Total	83/290 (28.6%)	78/290 (29.3%)
35-54	Male	46	47
	Female	10	8
	Total	56/309 (18.1%)	55/285 (19.3%)
55-64	Male	15	15
	Female	2	2
	Total	17/110 (15.5%)	17/111 (15.3%)
65+	Male	11	13
	Female	2	3
	Total	13/125 (10.4%)	16/129 (12.4%)
All Ages	Male	168	161
	Female	33	28
	%crashes	201/940 (21.4%)	189/890 (21.2%)

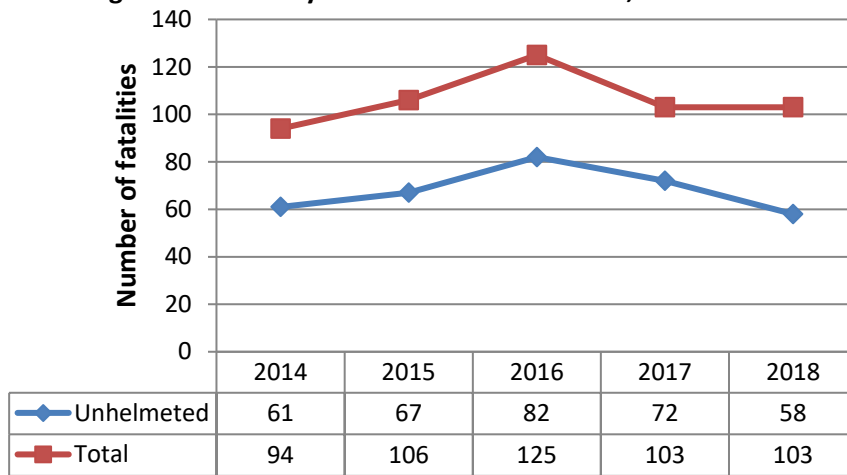
Source: FARS

Motorcycle Safety

Core Performance Measure (C-7): Reduce the number of motorcyclist fatalities.

Motorcyclist fatalities increased by 10% from 2014-2018 (Figure 21). However, the number of motorcyclist fatalities remained the same in 2017 and 2018. In contrast, the number of unhelmeted motorcyclists decreased by 19% during this time. The 103 motorcyclist fatalities in 2018 accounted for 16% of the total motor vehicle fatalities. From 2014-2018, the percentage of motorcyclists who were not wearing helmets when they died ranged from 56% to 70%.

Figure 21. Motorcyclist fatalities in Colorado, 2014-2018



Source: FARS

C-7 Top Five Counties
 El Paso, Jefferson – 12 fatalities
 Adams – 10 fatalities
 Arapahoe, Larimer – 9 fatalities

Countermeasures that Work
 Improve motorcycle safety:

Motorcycle Helmets

- Universal coverage state motorcycle helmet use laws

Alcohol Impairment

- Alcohol-impaired motorcyclists: detection, enforcement, & sanctions

Listed have a 3-5 star effectiveness rating. For all countermeasures, visit https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812478_v5_countermeasures-that-work-a-highway-safety-countermeasures-guide-9thedition-2017.pdf



Core Performance Measure (C-8): Reduce the number of unhelmeted motorcyclist fatalities.

Of the 103 motorcyclist fatalities in 2018, 56% did not wear helmets, compared to 70% of the 103 motorcyclist fatalities in 2017 (Figure 21).

C-8 Top Five Counties
Jefferson – 9 fatalities
Larimer – 8 fatalities
El Paso – 7 fatalities
Adams, Denver, Pueblo – 5 fatalities

Table 9 shows the number of motorcyclists (operators and/or passengers) who died in a motorcycle crash by age, sex, and helmet status in 2017 and 2018. In 2018, 52 (55%) of the 94 male motorcyclist fatalities did not wear a helmet. The 35-54 age group had the most motorcyclist fatalities and the largest percentage (75%) of unhelmeted motorcyclist fatalities in 2018.



Table 9. Motorcyclist fatalities in Colorado by age and sex					
		2017		2018	
		Motorcyclist Fatalities		Motorcyclist Fatalities	
Age group	Sex	No Helmet	Total	No Helmet	Total
<5	Male	0	0	0	0
	Female	0	0	0	0
	Total	0/0 (0.0%)	0	0/0 (0.0%)	0
5-8	Male	0	0	0	0
	Female	0	0	0	0
	Total	0/0 (0.0%)	0	0/0 (0.0%)	0
9-14	Male	0	1	0	0
	Female	0	0	0	0
	Total	0/1 (0.0%)	1	0/1 (0.0%)	1
15-20	Male	2	5	0	4
	Female	0	0	0	0
	Total	2/5 (40.0%)	5	0/4 (0.0%)	4
21-34	Male	17	25	15	29
	Female	3	3	1	1
	Total	20/28 (71.4%)	28	16/30 (53.3%)	30
35-54	Male	23	31	26	35
	Female	3	5	4	5
	Total	26/36 (72.2%)	36	30/40 (75.0%)	40
55-64	Male	12	16	8	13
	Female	2	2	1	3
	Total	14/18 (77.8%)	18	9/16 (56.3%)	16
65+	Male	9	13	3	13
	Female	1	2	0	0
	Total	10/15 (66.7%)	15	3/16 (18.8%)	13
All Ages	Male	63	91	52	94
	Female	9	12	6	9
	Total	72/103 (70.0%)	103	58/103 (56.3%)	103

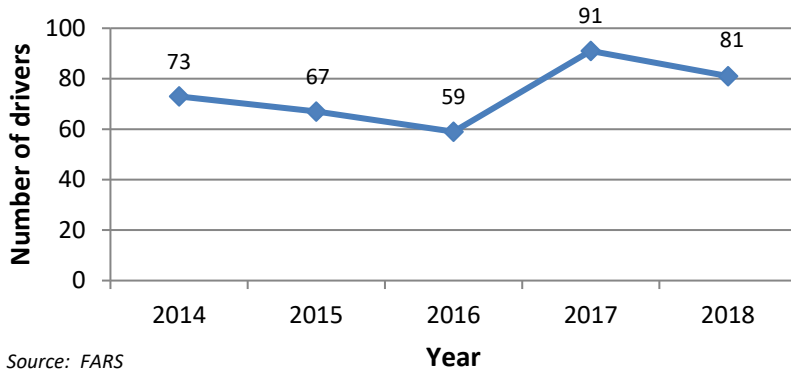
Source: FARS

Young Drivers

Core Performance Measure (C-9): Reduce the number of drivers age 20 or younger involved in fatal crashes.

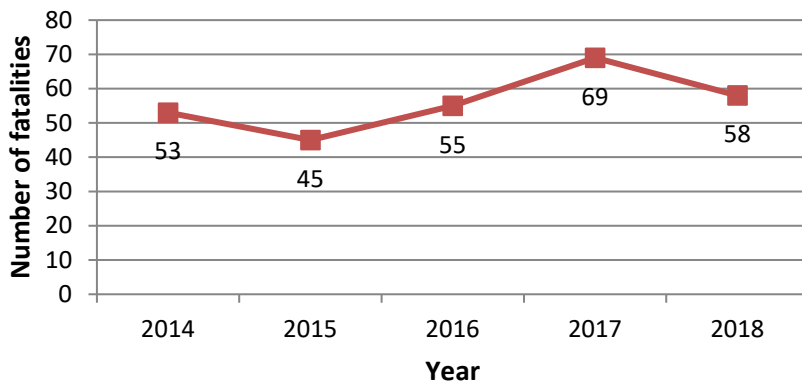
The number of drivers ages 15-20 involved in a fatal motor vehicle crash increased 11% from 2014-2018 (Figure 22). Also, the number of motor vehicle fatalities among people ages 15-20 increased 9% from 2014-2018, regardless of the age of the driver (Figure 23).

Figure 22. Number of drivers aged 15-20 years old involved in a fatal motor vehicle crash, Colorado, 2014-2018



Source: FARS

Figure 23. Motor vehicle fatalities in Colorado among persons aged 15-20 years old, 2014-2018



Source: FARS

C-9 Top Five Counties
 Denver, Weld – 9 drivers
 Pueblo – 8 drivers
 Jefferson – 7 drivers
 El Paso, Larimer – 6 drivers

Countermeasures that Work

Improve young-driver safety:

Graduated Driver Licensing (GDL)

- Graduated driver licensing
- Learner’s permit length, supervised hours
- Intermediate-nighttime restrictions
- Intermediate- passenger restrictions

Traffic Law Enforcement

- Enforcement of GDL & zero-tolerance laws

Listed have a 3-5 star effectiveness rating. For all countermeasures, visit
https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812478v5_countermeasures-that-work-a-highway-safety-countermeasures-guide-9thedition-2017.pdf

Table 10 compares the number of drivers ages 15-20 involved in a fatal crash in 2017 and 2018. Young drivers ages 15-20 accounted for 10% of the 940 drivers involved in fatal crashes in 2017 (N=91/940). That percentage decreased slightly to 9% in 2018 (N=81/890). More young males than females were involved in fatal crashes.

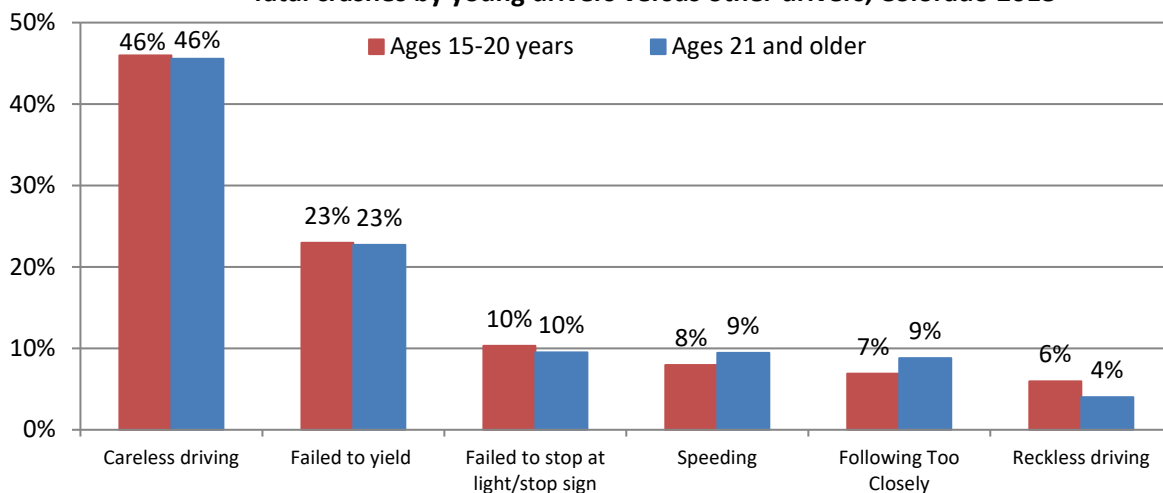
Table 10. Young drivers involved in fatal crashes by age and sex of the driver			
		2017	2018
Age Group	Sex	Drivers in fatal crashes	Drivers in fatal crashes
15-16	Male	10	5
	Female	3	4
	Total	13	9
17-18	Male	28	19
	Female	9	8
	Total	37	27
19-20	Male	33	26
	Female	8	19
	Total	41	45
Total: 15-20	Male	71	50
	Female	20	31
	Total	91	81

Source: FARS



Figure 24 compares the top driver actions that led to an injury or fatal crash for young drivers (ages 15-20) and drivers ages 21 and older in Colorado in 2018. Careless driving was the top driver action among young drivers in 2018 and 2017 (not shown). In 2018, almost half (46%) of drivers ages 15-20 drove carelessly, which resulted in an injury crash or a fatal crash.

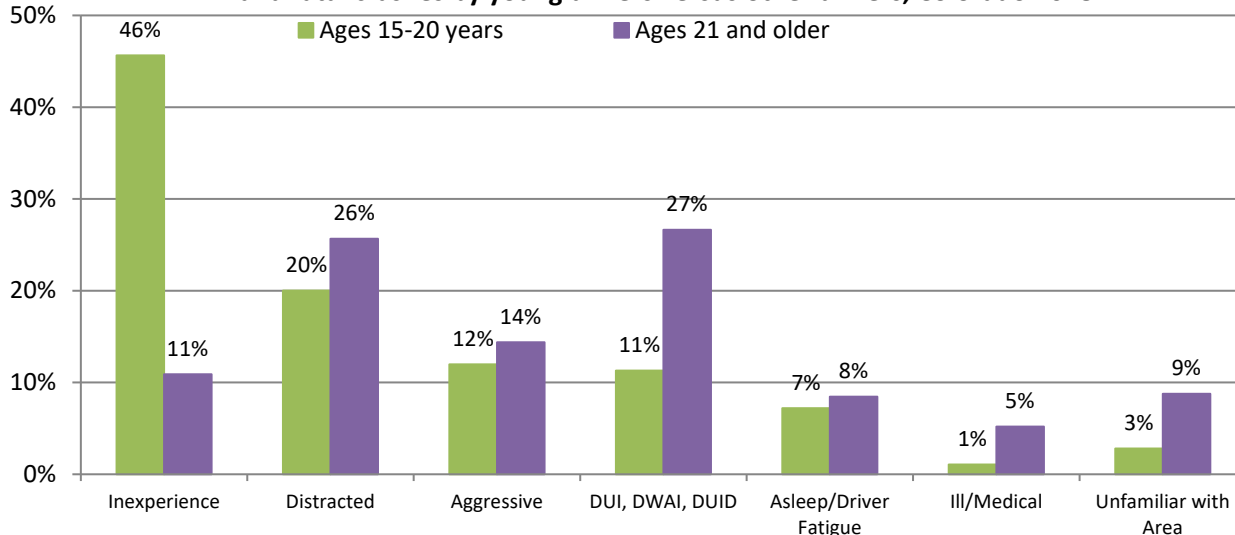
Figure 24. Top driver actions associated with the cause of a crash in injury and fatal crashes by young drivers versus other drivers, Colorado 2018



Source: Crash reports, Colorado Department of Revenue

Law enforcement officers investigating the crash also record the most apparent human factor that contributed to the crash. Figure 25 shows the top contributing factors associated with injury and fatal crashes among young drivers, ages 15 to 20, compared to drivers age 21 or older in 2018. Inexperience was the leading contributing factor in injury/fatal crashes among young drivers.

Figure 25. Top contributing factors associated with the cause of a crash in injury and fatal crashes by young drivers versus other drivers, Colorado 2018



Source: Crash reports, Colorado Department of Revenue

Pedestrian Safety

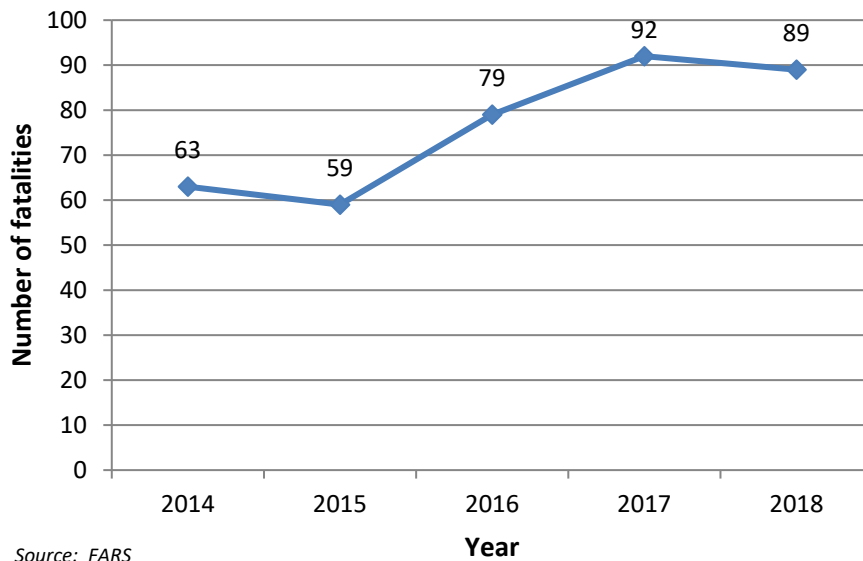
Core Performance Measure (C-10): Reduce the number of pedestrian fatalities.

In 2018, 89 pedestrians died from a motor vehicle collision. The 89 pedestrian fatalities in 2018 accounted for 14% of all 632 motor vehicle fatalities. The pedestrian fatalities increased by 41% from 2014-2018 (Figure 26) and decreased 3% from 2017-2018.

C-10 Top Five Counties

- Denver – 19 fatalities
- El Paso – 15 fatalities
- Jefferson – 10 fatalities
- Adams, Arapahoe – 9 fatalities

Figure 26. Pedestrian fatalities in Colorado, 2014-2018



Source: FARS

Countermeasures that Work

Improve pedestrian and bicycle safety:

Pedestrian

School-aged Children

- Elementary-age child pedestrian training
- Safe routes to school

All Pedestrians

- Pedestrian safety zones
- Reduce and enforce speed limits
- Conspicuity enhancement
- Enforcement strategies

Bicycle

Children

- Bicycle helmet laws for children
- Safe routes to school

Adult Bicyclists

- Bicycle helmet laws for adults

All Bicyclists

- Active lighting and rider conspicuity

Listed have a 3-5 star effectiveness rating. For all countermeasures, visit

https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812478_v5_countermeasures-that-work-a-highway-safety-countermeasures-guide-9thedition-2017.pdf



Table 11 shows pedestrian fatalities from motor vehicle crashes for each age and sex group in 2017 and 2018. The “Total” row within each age group shows the total number of fatalities in that age group. The last row in Table 11 shows pedestrian fatalities as a percentage of all motor vehicle fatalities (of all ages). Most pedestrian fatalities occurred in the 35-54 and 55-64 age groups and among more males than females in 2018. In 2018, 65 males accounted for 73% of the 89 pedestrian fatalities.

Table 11. Pedestrian fatalities by age and sex, Colorado, 2017 & 2018			
Age Group	Sex	2017	2018
0-4	Male	1	0
	Female	0	0
	Total	1	0
5-8	Male	0	0
	Female	0	0
	Total	0	0
9-14	Male	2	1
	Female	1	0
	Total	3	1
15-20	Male	5	4
	Female	2	4
	Total	7	8
21-34	Male	16	9
	Female	3	3
	Total	19	12
35-54	Male	25	21
	Female	7	9
	Total	32	30
55-64	Male	14	21
	Female	2	4
	Total	16	25
65+	Male	11	9
	Female	3	4
	Total	14	13
All Ages	Male	74	65
	Female	18	24
	Total	92/648 (14.2%)	89/632 (14.1%)

Source: FARS

Bicyclist Safety

Core Performance Measure (C-11): Reduce the number of bicyclist fatalities

In 2018, 22 bicyclists died from a motor vehicle crash (Figure 27), a 38% increase from 2017. The number of bicycle fatalities increased by 120% over the past five years (2014-2018).

C-11 Top Counties
Denver – 6 fatalities
El Paso – 4 fatalities
Adams, Arapahoe, Larimer – 2 fatalities

Figure 27. Bicyclist fatalities in Colorado, 2014-2018

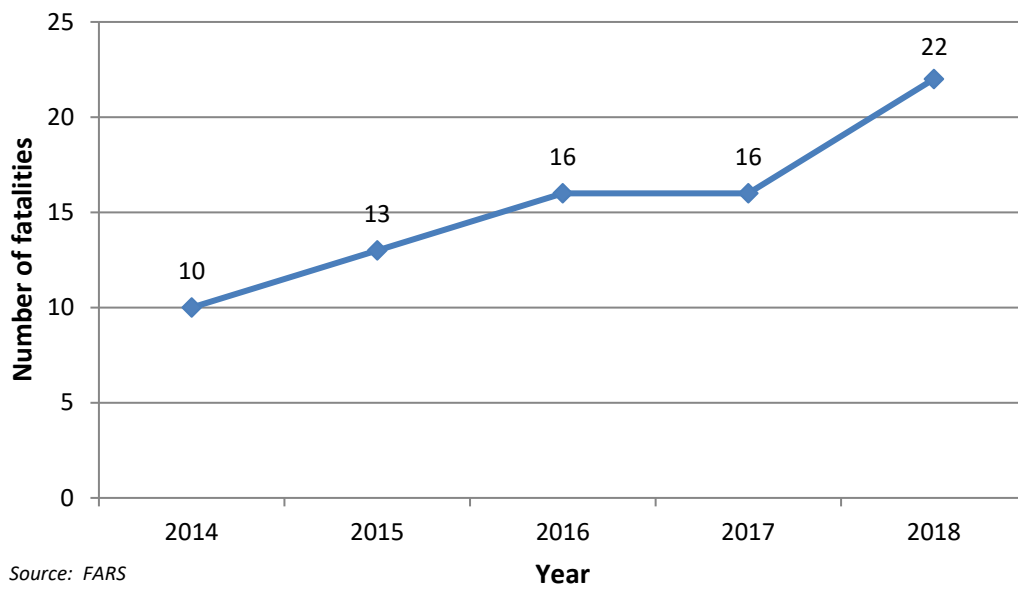


Table 12 shows the number of bicyclist fatalities due to motor vehicle crashes for each age group and sex in 2017 and 2018. Most bicyclist fatalities occurred in the 35-54 and 65 or older age groups in 2018. Significantly more male bicyclists died than female bicyclists.

Table 12. Bicyclist fatalities by age and sex in Colorado, 2017 & 2018			
Age Group	Sex	2017	2018
0-4	Male	0	0
	Female	0	0
	Total	0	0
5-8	Male	0	1
	Female	1	0
	Total	1	0
9-14	Male	0	0
	Female	0	0
	Total	0	0
15-20	Male	1	0
	Female	0	0
	Total	1	0
21-34	Male	1	2
	Female	1	2
	Total	2	4
35-54	Male	3	10
	Female	3	0
	Total	6	10
55-64	Male	0	3
	Female	2	0
	Total	2	3
65+	Male	4	4
	Female	0	0
	Total	4	13
All Ages	Male	9	20
	Female	7	2
	Total	16/648 (2.5%)	22/632 (3.5%)

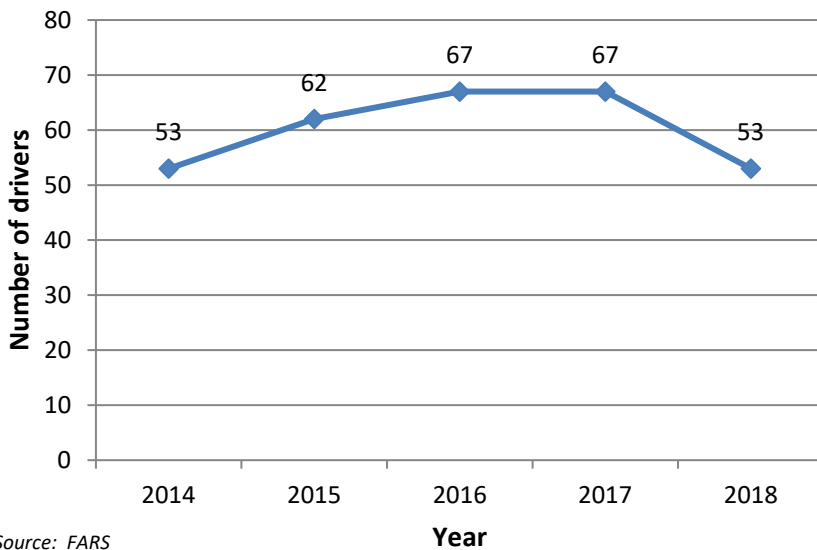
Distracted Driving

Core Performance Measure (C-12): Reduce the number distracted drivers involved in fatal crashes

There are about 15,000 crashes each year attributed to distracted driving in Colorado. In 2018, there were 53 drivers involved in a distracted driving crash, which resulted in 55 fatalities. Figure 28 displays the number of drivers who were involved in a fatal crash and were distracted over the past five years. The number of drivers in a distracted driving fatal crash increased each year from 2014 to 2017 but decreased in 2018. In this report, “distracted” means a passenger, animal, cell phone, radio, food, or other objects in the motor vehicle diverted the driver’s attention from the road.

C-12 Top Five Counties
Weld– 5 drivers
Larimer – 4 drivers
Denver, Douglas, Mesa, Ouray, Pueblo – 3 drivers

Figure 28. Colorado distracted drivers involved in a fatal crash, 2014-2018



Source: FARS
Distracted = passenger, cell phone, radio,

Countermeasures that Work
Reduce distracted and drowsy driving:

Laws and Enforcement

- GDL requirements for beginning drivers
- High visibility cell phone/text messaging enforcement

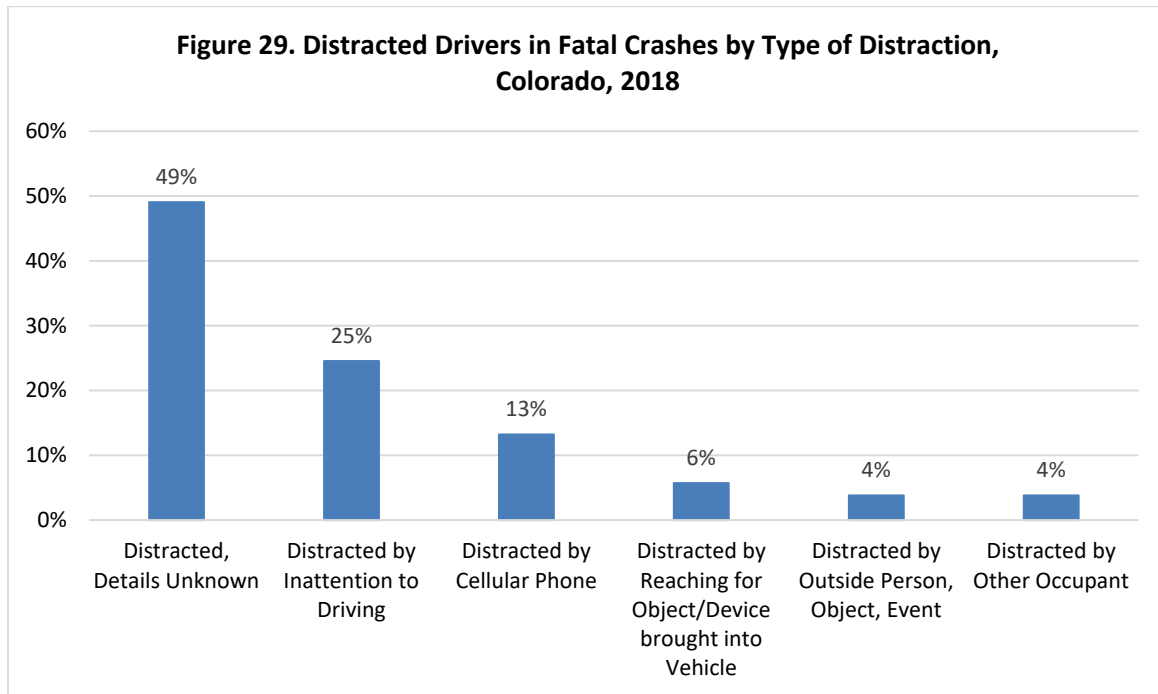
Listed have a 3-5 star effectiveness rating. For all countermeasures, visit https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812478_v5_countermeasures-that-work-a-highway-safety-countermeasures-guide-9thedition-2017.pdf

Table 13 displays the number and percent of distracted drivers involved in fatal crashes for the years 2017 and 2018. Overall, 53 (6%) of the 890 drivers in a fatal crash were distracted in 2018. Seventeen percent of the 81 drivers ages 15-20 and in a fatal crash were distracted in 2018, the highest percentage of distracted drivers for any age group of drivers in a fatal crash.

Table 13: Distracted Drivers in fatal crashes in Colorado, by driver age and sex			
Age Group	Sex	2017	2018
Driver			
15-20	Male	5	5
	Female	3	9
	Total	8/91 (8.8%)	14/81 (17.3%)
21-34	Male	12	8
	Female	7	6
	Total	19/290 (6.6%)	14/266 (5.3%)
35-54	Male	18	7
	Female	6	4
	Total	24/309 (8.7%)	11/285 (3.9%)
55-64	Male	5	5
	Female	1	1
	Total	6/110 (5.5%)	6/111 (5.4%)
65+	Male	8	3
	Female	1	5
	Total	9/125 (7.2%)	8/129 (6.2%)
All Ages	Male	48	28
	Female	18	25
	%crashes	67/940 (7.1%)	53/890 (6.0%)

Source: FARS

Figure 29 shows the type of distraction among drivers involved in a distracted driving fatal crash in Colorado in 2018. Almost half of the drivers who were distracted (49%), had no details known about the type of distraction. One-quarter of drivers were distracted by inattention to driving. Thirteen percent were distracted by a cellular phone. The remaining drivers were distracted by reaching for an object in the vehicle (6%), distracted by something outside of the vehicle (4%), and distracted by another occupant in the vehicle (4%).



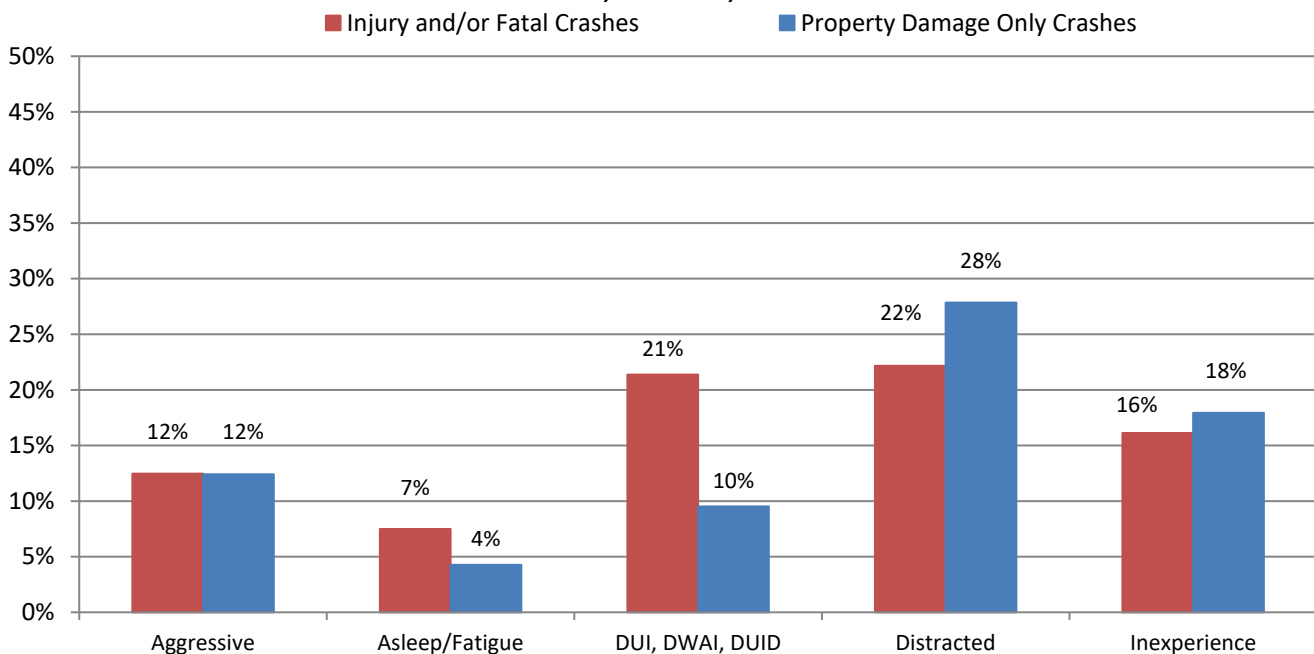
Source: FARS



Human Contributing Factors

Figure 30 shows the top human contributing factors that law enforcement officers noted for motor vehicle crashes resulting in injury or fatality and for crashes resulting in only property damage. Selecting one contributing factor poses a challenge because: 1) a driver's circumstance and contributing factor may fall into one or more categories; 2) the law enforcement officer may mark "Other Factor" and describe the factor in writing instead of checking a factor listed on the crash form; and 3) a driver may not fully reveal their behavior and the circumstances at the time of the crash. The distraction can be a passenger, animal or pets, cell phone, radio, food, or other objects diverting the driver's attention from the road and from the traffic. In 2018, DUI, DWAI or DUID factors were more common among injury and fatal crashes compared to property damage-only crashes. In contrast, driver distraction occurred in a higher percentage of property damage only crashes, compared to injury or fatal crashes in 2018.

Figure 30. Top human factors contributing to motor vehicle crashes by crash outcome, Colorado, 2018

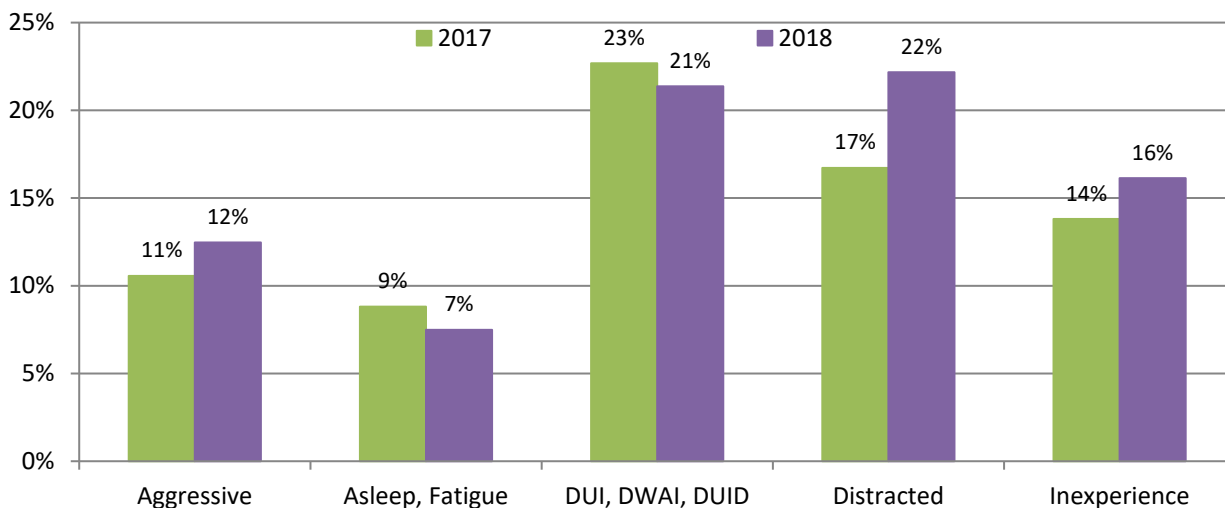


Source: Crash reports, Colorado Department of Revenue

Distracted = passenger, cell phone, radio, food, object, animal, etc.

Figure 31 compares the top five types of driver factors noted in injury/fatal crashes in 2017 and 2018. In 2017 DUI, DWAI or DUID was the most common driver factor associated with an injury and fatal crash (23%). In contrast, both distracted driving (22%) and DUI, DWAI, or DUID factors (21%) were the top driver factors in 2018. Notably, distracted driving in 2018 accounted for a higher proportion of crashes relative to 2017. The percentages of aggressive driving, driver fatigue or asleep, and driver inexperience were similar in 2017 and 2018.

Figure 31. Comparison of top driver factors associated with a motor vehicle crash by year of crash: injury and fatal crashes, Colorado 2017 and 2018



Source: Crash reports, Colorado Department of Revenue
 Distracted = passenger, cell phone, radio, food, object, animal, etc.



Older Drivers

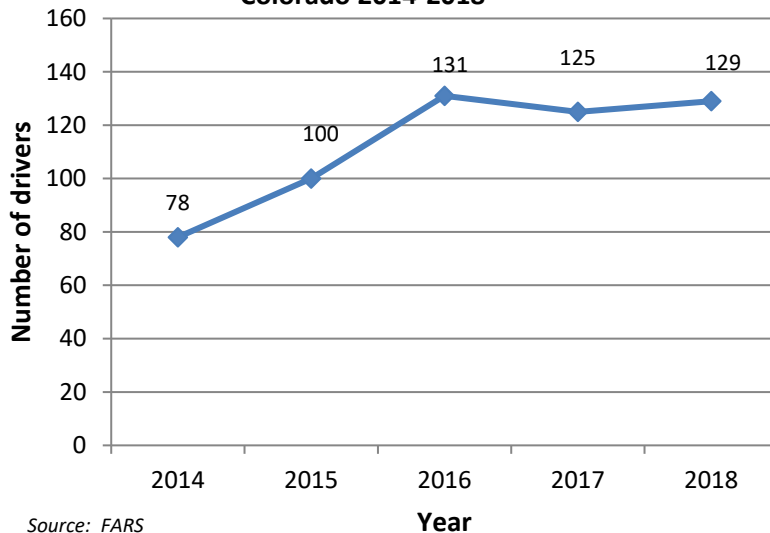
Core Performance Measure (C-13): Reduce the number of drivers age 65 and older involved in fatal crashes

Between 2014 and 2018, the number of drivers age 65 years or older involved in a fatal motor vehicle crash, though not necessarily at fault for the crash, increased 65% (Figure 32). During this same period, the number of Coloradans aged 65 and older increased by 26% from 644,356 persons in 2014 to 808,702 persons in 2018. In 2018, there were 129 drivers ages 65 or older involved in a fatal motor vehicle crash, a three percent increase from the 125 older drivers involved in fatal crashes in 2017.

C-13 Top Five Counties

El Paso – 16 drivers
 Adams – 12 drivers
 Arapahoe, Jefferson – 11 drivers
 Weld – 8 drivers

Figure 32. Number of drivers age 65 years and older involved in a fatal motor vehicle crash, Colorado 2014-2018



Countermeasures that Work

Improve older driver safety:

Licensing

- License screening & testing
- Referring older drivers to licensing agencies
- License restrictions

Traffic Law Enforcement

- Law enforcement roles

Listed have a 3-5 star effectiveness rating. For all countermeasures, visit https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812478_v5_countermeasures-that-work-a-highway-safety-countermeasures-guide-9thedition-2017.pdf

Conclusion

Most motor vehicle crashes are preventable, and there are known effective prevention strategies. Continued action is needed to reduce the rising number of fatalities and serious injuries from motor vehicle crashes. The information provided in this report, including the county results below, can help drive efforts at the state and local level to address modifiable driving behaviors to improve traffic safety. Policy-makers, community organizations, and individuals should use information from this report to identify where and how to focus prevention efforts.

Data Sources and Acknowledgements

Data Sources for the FY 2020 Problem Identification Report

Colorado Performance Measures and Statewide Goals for 2018

This information comes from the 2018 Colorado Integrated Safety Plan by the Colorado Department of Transportation. The 2018 Colorado Integrated Safety Plan includes performance targets that are set for the year 2018.

Countermeasures That Work

For select performance measures of CDOT, this report summarizes countermeasures that have a 3-5 star effectiveness rating from *Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices*, Ninth Edition, published in 2017 and available on the website of the Governors Highway Safety Association.

Crash Reports (Colorado DRIVES)

Colorado Driver License, Record, Identification and Vehicle Enterprise Solution (Colorado DRIVES) provides crash data, defined as an incident where at least one motor vehicle in motion on a traffic way (public road) resulted in an injury or unintentional property damage. This data tracking system originates from the Colorado Department of Revenue.

Fatality Analysis Reporting System (FARS)

FARS provides detailed data about persons who died within 30 days of the crash, including motorcyclists, motor vehicle drivers, motor vehicle passengers, pedestrians, and bicyclists involved in fatal motor vehicle crashes. FARS SAS data files are obtained from the National Highway Traffic Safety Administration website.

Hospital Discharge Data

Hospital discharge data provides data where injury was mentioned as a discharge diagnosis in one of the thirty diagnoses and the mechanism of injury was motor vehicle, traffic for Colorado residents treated in non-federal, acute care hospitals as reported to the Colorado Hospital Association (CHA). National hospital coding rules defines “motor vehicle, traffic” as events involving a motor vehicle that occur entirely or partially on public streets, roadways, and highways. This data source is referenced as “CHA Discharge Data” in figures in this report. The Colorado Department of Public Health and Environment analyzed the CHA Discharge Data in compliance with the data use agreement. CHA was not involved in the analysis or production of this report.

Population Estimates

The Colorado Department of Local Affairs (DOLA) estimates state and county population in Colorado. This report uses that DOLA population estimates accessed from the DOLA website or the Colorado Health Information Dataset website. This data is referenced as DOLA data in the figures of this report. Population estimates for the United States were obtained from the U.S. Census website.

Restraint Use

The prevalence of seat belt use, car seat use, and booster seat use come from observational surveys conducted by the Institute of Transportation Management at Colorado State University and posted on the Colorado Department of Transportation website.

Vehicle Miles Traveled (VMT)

VMT data come from the Office of Highway Policy Information, Highway Statistics Series at the U.S. Department of Transportation (USDOT) Federal Highway Administration (FHA) and are referenced as “USDOT FHA” in figures in this report.

Acknowledgements

The Colorado Department of Transportation, Office of Transportation Safety contracted with the Colorado Department of Public Health and Environment (CDPHE) to prepare the FY2020 Problem Identification Report. CDPHE would like to gratefully acknowledge the leadership and contributions of the following individuals:

Darrell Lingk

Office of Transportation Safety Director

Glenn Davis, M.Ed

Highway Safety Manager

Carol Gould

Highway Safety Manager

Alisa Babler, PE

Traffic and Safety Engineer

Transportation Systems Management & Operations, Staff Traffic

Colorado state performance measures by county, 2018

Performance Measures	Fatalities	Serious injuries	Occupant fatalities, unrestrained all seat positions	Fatalities in crashes where driver/motorcycle operator has BAC ≥ 0.08	Speeding-related fatalities	Unhelmeted motorcyclist fatalities	Motorcyclist fatalities	Driver under 21 years old in fatal crashes	Pedestrian fatalities
Colorado ISP Target	610	3,350	186	150	211	77	125	59	77
Colorado	632	3,112	216	188	210	58	58	81	89
Adams	51	319	20	12	20	5	10	10	9
Alamosa	4	6	2	2	2	0	0	1	0
Arapahoe	47	386	14	11	19	3	9	6	9
Archuleta	4	12	3	2	2	0	0	0	1
Baca	1	5	1	1	0	0	0	0	0
Bent	1	6	1	0	1	0	0	1	0
Boulder	21	223	6	7	5	2	3	2	2
Broomfield	1	2	1	1	0	0	0	0	0
Chaffee	6	16	1	1	0	0	0	0	0
Cheyenne	1	5	1	0	0	0	0	0	0
Clear Creek	2	19	0	0	1	0	0	0	1
Conejos	0	8	0	0	0	0	0	1	0
Costilla	1	4	1	1	1	0	0	0	0
Crowley	3	2	1	1	0	0	0	0	0
Custer	4	6	2	2	2	1	1	0	0
Delta	5	21	1	1	1	0	1	1	0
Denver	60	508	15	13	16	5	7	9	19
Dolores	1	3	1	0	1	0	0	0	0
Douglas	16	92	4	2	5	1	3	4	1
Eagle	4	24	4	2	3	0	0	1	0
El Paso	81	154	2	26	0	7	12	6	15
Elbert	4	31	26	1	27	0	0	0	0
Fremont	9	27	5	5	2	1	1	1	1
Garfield	6	45	1	1	2	1	2	2	1
Gilpin	0	12	0	0	0	0	0	0	0
Grand	2	15	0	0	0	0	1	0	0
Gunnison	5	21	0	0	3	0	5	0	0
Hinsdale	0	2	0	0	0	0	0	0	0
Huerfano	5	13	2	0	0	1	1	0	0
Jackson	1	7	1	1	1	0	0	0	0
Jefferson	38	209	5	12	12	9	12	5	10
Kiowa	1	0	0	0	0	0	0	0	0

Performance Measures	Fatalities	Serious injuries	Occupant fatalities, unrestrained all seat positions	Fatalities in crashes where driver/motorcycle operator has BAC ≥ 0.08	Speeding-related fatalities	Unhelmeted motorcyclist fatalities	Motorcyclist fatalities	Driver under 21 years old in fatal crashes	Pedestrian fatalities
Colorado ISP Target	610	3,350	186	150	211	77	125	59	77
Kit Carson	4	12	1	0	0	0	0	1	0
La Plata	8	30	0	1	3	1	2	2	1
Lake	0	18	0	0	0	0	0	1	0
Larimer	36	164	14	6	10	8	9	8	2
Las Animas	7	8	4	4	4	0	1	0	0
Lincoln	3	11	2	0	2	0	0	0	0
Logan	10	17	3	2	0	0	0	0	1
Mesa	20	41	8	5	9	3	6	3	3
Mineral	3	2	0	0	2	0	0	1	1
Moffat	2	8	1	0	2	0	0	0	0
Montezuma	1	35	1	0	4	0	0	0	0
Montrose	7	27	2	0	4	1	1	1	0
Morgan	4	20	2	0	2	0	0	2	1
Otero	5	17	3	1	1	0	0	0	1
Ouray	5	12	1	0	2	0	0	0	0
Park	2	36	0	0	1	0	1	0	0
Phillips	0	2	0	0	0	0	0	0	0
Pitkin	4	17	2	0	0	0	0	0	1
Prowers	2	3	1	0	0	0	0	0	0
Pueblo	36	80	12	10	16	5	8	5	7
Rio Blanco	1	1	0	0	1	0	0	1	0
Rio Grande	3	14	2	0	0	0	0	0	0
Routt	4	20	2	1	3	0	0	0	0
Saguache	1	12	1	1	1	0	0	0	0
San Juan	1	2	0	0	0	0	1	0	0
San Miguel	0	11	0	0	0	0	0	0	0
Sedgwick	3	2	3	2	3	0	0	1	0
Summit	1	42	0	0	0	0	0	0	0
Teller	5	18	1	0	1	0	1	0	0
Washington	5	7	3	1	0	0	1	0	0
Weld	63	203	26	14	13	3	3	15	2
Yuma	1	17	0	0	0	1	1	2	0

Data sources: Traffic crash reports, Colorado Department of Revenue, Division of Motor Vehicles; Fatality Analysis Reporting System (FARS), National Highway Traffic Safety Administration (NHTSA)

