

Author:

**Rachel Thelin**

Senior Policy Analyst

Indiana University Public Policy Institute

## In 2020:

- 253,702 passenger vehicle occupants were reported to be involved in Indiana traffic collisions; 87% were wearing seat belts.
- 56% (334 out of 597) of passenger vehicle occupants killed in crashes were not wearing seat belts.
- Unrestrained passenger car occupants crashes were 8 times more likely to be killed than occupants who were wearing seat belts. Unrestrained pickup truck occupants were 12 times more likely to be killed.
- Rates of unrestrained injury among all individuals involved in crashes (15.9 per 1,000) were nearly four times higher among occupants in vehicles with a driver who was speeding (60.0) and more than five times higher with impaired drivers (88.0).
- Male drivers accounted for 55% of all passenger vehicles drivers in collisions and had slightly lower rates of seat belt usage (87%) than female drivers (89%).
- Male drivers, particularly those between the ages of 15 and 44, represented the highest proportion of passenger vehicle drivers in crashes who were not wearing seat belts.

Research has repeatedly demonstrated the safety benefits of seat belts, and the dangerous consequences when people do not use them. In Indiana and elsewhere, individuals who do not wear seat belts are overrepresented in fatal and serious injury crashes, and rates of seat belt use are consistently and significantly lower for people killed in crashes than overall use rates. While the overall seat belt use rate in Indiana is generally high, among the 597 passenger vehicle occupants killed in 2020 Indiana collisions, less than half were wearing seat belts (Figure 1).

This fact sheet summarizes data trends related to seat belt use at state and county levels in Indiana crashes. Restraint use and injury analyses are limited to those occurring in passenger vehicles (defined as passenger cars, pickup trucks, sport utility vehicles (SUVs), and vans). Analyses include data from several sources (see last page for a full list of references, data sources, and definitions). Indiana collision data are collected by Indiana State Police officers and submitted to the Automated Reporting Information Exchange System (ARIES). ARIES data analyzed in this report were extracted March 29, 2021.

### **The pandemic and traffic safety in 2020**

The COVID-19 pandemic affected a traffic safety in 2020. Preliminary analyses of traffic safety fatalities by the National Highway Traffic Safety Administration (NHTSA)— using data from the Fatality Analysis Reporting System (FARS)—estimates that while vehicle miles travelled were down nationally in 2020 from 2019, the number of fatalities and the fatality rate per 100 million VMT were higher (NCSA, 2021a). Fatalities among passenger vehicle occupants, motorists, and pedalcyclists are estimated to be up 5%, 9%, and 5%, respectively (NCSA, 2021b). NHTSA’s analysis also suggests risky traffic behaviors increased in 2020 (OBSR, 2021). For example, national fatality counts for unrestrained occupants of passenger vehicles are estimated to be up 15% and deaths from occupant ejections up 20%.

The 2020 Indiana traffic safety data and analysis should be considered carefully in light of the potentially anomalous effects of the pandemic. Further analysis may be needed to evaluate whether the challenges in Indiana were similar to those identified nationally, whether those challenges continue, and whether the addition or adjustment of countermeasures is warranted.

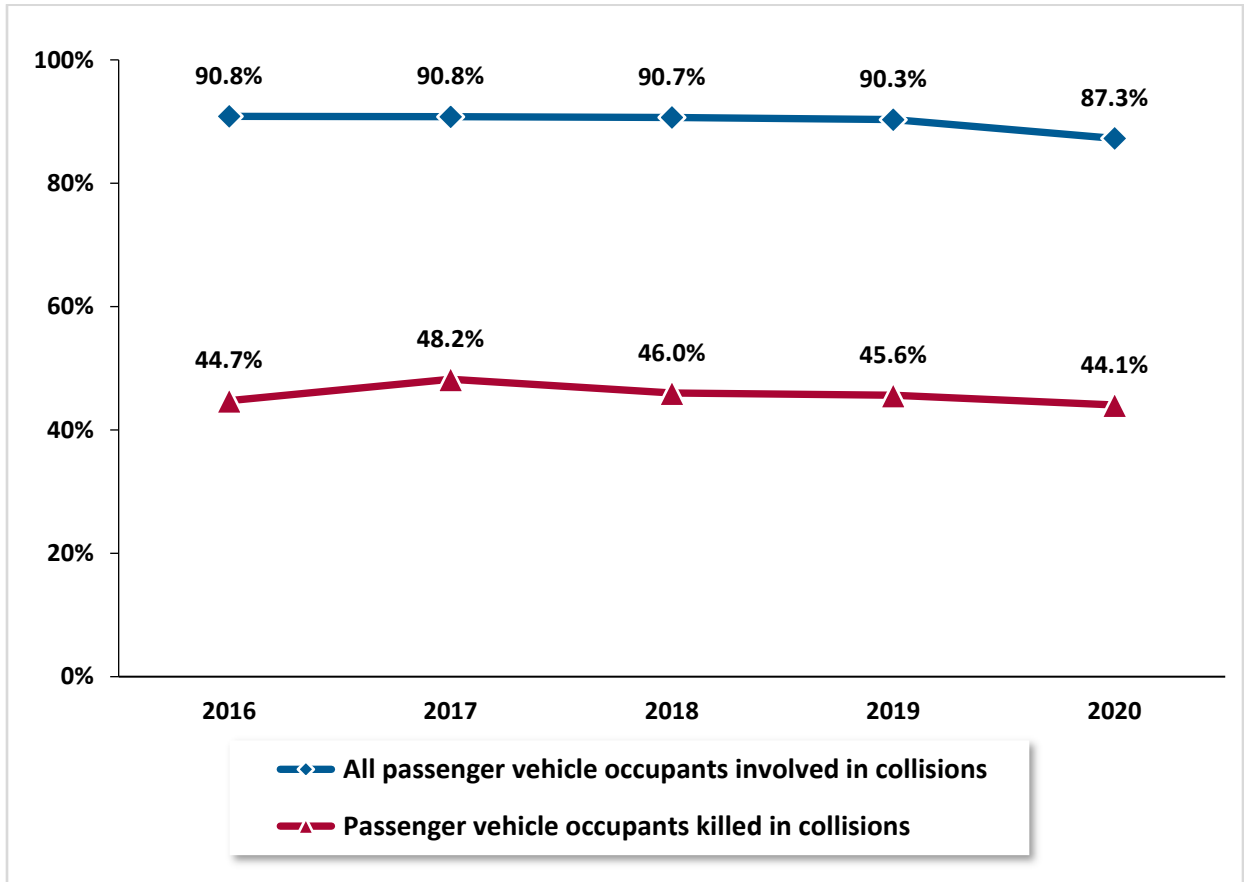
#### **Sources:**

National Center for Statistics and Analysis. (2021a, (revised)). Early estimates of motor vehicle traffic fatalities and fatality rate by sub-categories in 2020 (Crash•Stats Brief Statistical Summary. Report No. DOT HS 813 118). National Highway Traffic Safety Administration.

National Center for Statistics and Analysis. (2021b). Early estimate of motor vehicle traffic fatalities in 2020 (Crash•Stats Brief Statistical Summary. Report No. DOT HS 813 115). National Highway Traffic Safety Administration.

Office of Behavioral Safety Research. (2021, June). Update to special reports on traffic safety during the COVID-19 public health emergency: Fourth quarter data (Report No. DOT HS 813 135). National Highway Traffic Safety Administration.

**Figure 1. Seat belt use among passenger vehicle occupants involved in Indiana collisions, by injury status, 2016–2020**



Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

General notes:

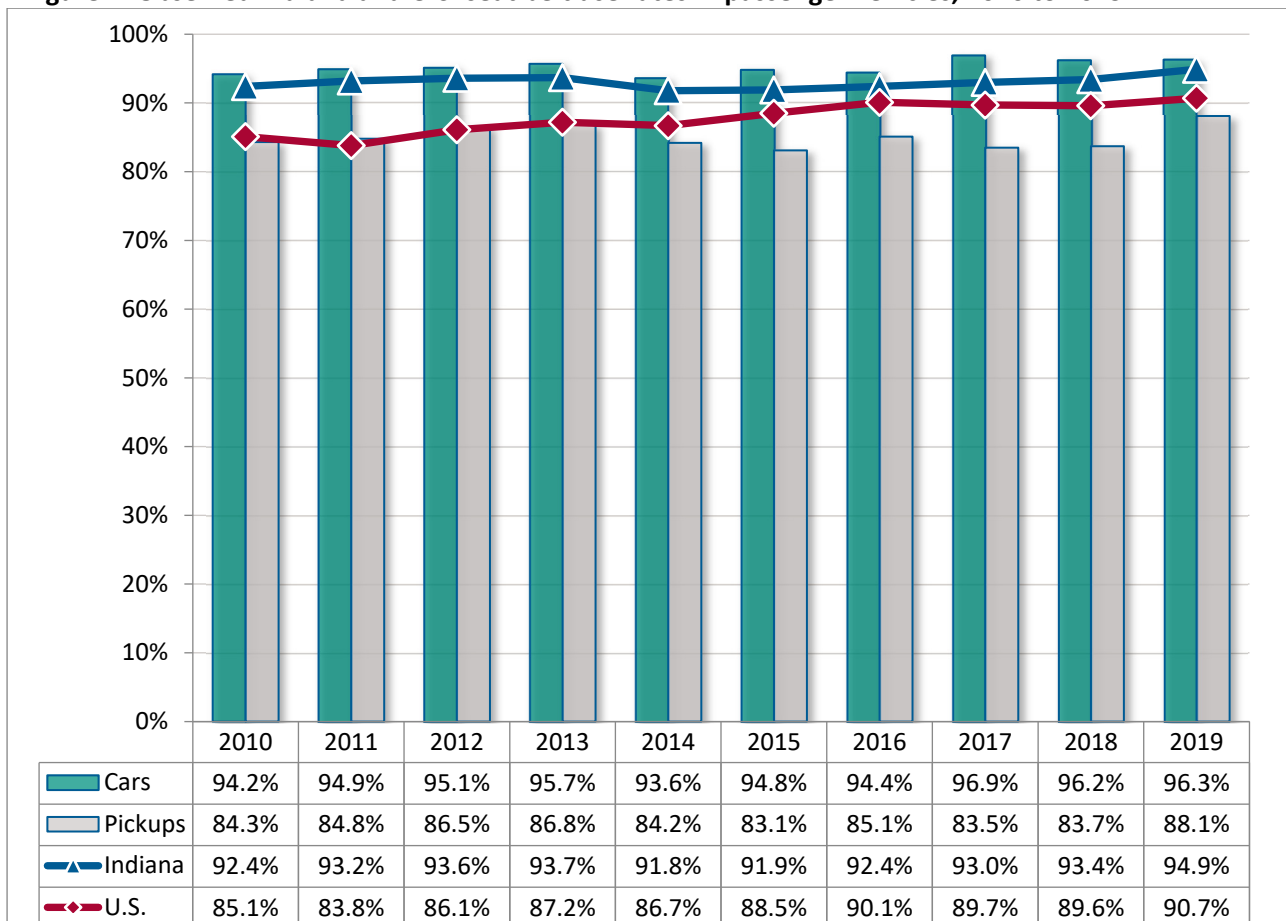
1. Vehicle occupants injured in Indiana collisions are counted as having been restrained when the investigating officer selects any one of the following passenger vehicle safety equipment categories on the Indiana Crash Report: (1) lap belt only; (2) harness; (3) airbag deployed and harness; (4) child restraint; (5) lap and harness; or (6) shoulder belt. For the purposes of this fact sheet, the term seat belt includes all six categories. A summary of Indiana occupant protection laws is included on page 6.
2. Fatality counts reflect current ARIES data as entered by reporting officers and have not yet been verified by the Fatality Analysis Reporting System (FARS).
3. Data discrepancies may exist between the 2021 Indiana traffic safety reports and previous traffic safety publications due to updates to the Indiana State Police ARIES data since the original publication dates.

Indiana observational studies of seat belt use, conducted annually by the Indiana Criminal Justice Institute (ICJI) and the Purdue University Center for Road Safety, show that Indiana’s overall seat belt use rates have exceeded national rates since 2009 (Figure 2). An Indiana observational seat belt use survey was not conducting in 2020. The National Highway Traffic Safety Administration (NHTSA) reports that nationally in 2019, the overall observed seat belt use rate was 91%, a rate slightly higher than 2018. The overall Indiana observed seat belt use rate in passenger vehicles in 2019 was 95%. The observed seat belt use rate among Indiana passenger car occupants in 2019 was 96%, compared to 88% among pickup truck occupants.

NHTSA identifies seat belt use as an essential tool to protecting vehicle occupants from death and injury resulting from traffic collisions. Research shows that rates of restraint use are consistently higher in states with primary enforcement laws that allow a law enforcement officer to stop a vehicle and issue a citation for the sole purpose of observing an unrestrained driver or passenger. As of July 2020, 34 states, including Indiana have primary enforcement laws in effect.

Table 1 shows the overall rate of seat belt use among passenger vehicle occupants involved in Indiana crashes was 87.3% in 2020. Between 2016 and 2020, rates of seat belt use among passenger vehicle occupants involved in Indiana traffic collisions decreased by 8%. The number of passenger vehicle occupants killed in Indiana crashes increased by nearly 5% from 570 in 2019 to 597 in 2020. Approximately 44% of these individuals were wearing seat belts, and 82% of the 14,429 individuals suffering incapacitating injuries were wearing seat belts.

**Figure 2. Observed Indiana and U.S. seat belt use rates in passenger vehicles, 2010 to 2019**



Sources: Indiana—Indiana roadside observational survey of safety belt and motorcycle helmet use, Center for Road Safety, Purdue University, 2019

U.S. - DOT HS 812 875, December 2019

Notes:

- 1) Car and pickup truck restraint usage rates are specific to Indiana only.
- 2) The annual observational seat belt survey was not conducted for Indiana in 2020.

**Table 1. Seat belt use and injury status among passenger vehicle occupants involved in Indiana collisions, 2016-2020**

Injury status	2016	2017	2018	2019	2020	Annual rate of change	
						2019–20	2016–20
<b>All occupants</b>	<b>338,242</b>	<b>332,249</b>	<b>326,461</b>	<b>325,122</b>	<b>253,702</b>	<b>-22.0%</b>	<b>-6.9%</b>
Properly restrained	307,251	301,608	295,954	293,621	221,424	-24.6%	-7.9%
<i>Restraint use rate</i>	<i>90.8%</i>	<i>90.8%</i>	<i>90.7%</i>	<i>90.3%</i>	<i>87.3%</i>	-3.4%	-1.0%
<b>Fatalities</b>	<b>590</b>	<b>618</b>	<b>587</b>	<b>570</b>	<b>597</b>	<b>4.7%</b>	<b>0.3%</b>
Properly restrained	264	298	270	260	263	1.2%	-0.1%
<i>Restraint use rate</i>	<i>44.7%</i>	<i>48.2%</i>	<i>46.0%</i>	<i>45.6%</i>	<i>44.1%</i>	-3.4%	-0.4%
<b>Incapacitating injuries</b>	<b>17,884</b>	<b>17,247</b>	<b>17,174</b>	<b>17,073</b>	<b>14,429</b>	<b>-15.5%</b>	<b>-5.2%</b>
Properly restrained	15,163	14,691	14,685	14,547	11,776	-19.0%	-6.1%
<i>Restraint use rate</i>	<i>84.8%</i>	<i>85.2%</i>	<i>85.5%</i>	<i>85.2%</i>	<i>81.6%</i>	-4.2%	-0.9%
<b>Non-incapacitating injuries</b>	<b>28,438</b>	<b>27,809</b>	<b>25,608</b>	<b>24,014</b>	<b>19,692</b>	<b>-18.0%</b>	<b>-8.8%</b>
Properly restrained	25,893	25,454	23,400	21,991	17,616	-19.9%	-9.2%
<i>Restraint use rate</i>	<i>91.1%</i>	<i>91.5%</i>	<i>91.4%</i>	<i>91.6%</i>	<i>89.5%</i>	-2.3%	-0.4%
<b>Not injured</b>	<b>291,330</b>	<b>286,575</b>	<b>283,092</b>	<b>283,465</b>	<b>218,984</b>	<b>-22.7%</b>	<b>-6.9%</b>
Properly restrained	265,931	261,165	257,599	256,823	191,769	-25.3%	-7.8%
<i>Restraint use rate</i>	<i>91.3%</i>	<i>91.1%</i>	<i>91.0%</i>	<i>90.6%</i>	<i>87.6%</i>	-3.3%	-1.0%

Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

**Notes:**

- 1) Totals include individuals with null and unknown restraint use.
- 2) Non-incapacitating injuries include those injuries reported as non-incapacitating, possible, not reported, unknown, and refused (treatment).

## Seat Belt Use by Vehicle Type

Table 2 shows the relative risk of fatal injury when passenger vehicle occupants in crashes were not wearing seat belts. In 2020, one-tenth of one-percent or less of restrained individuals in passenger cars, pickup trucks, and SUVs involved in collisions were killed. Among unrestrained individuals injured in passenger cars, 1% were killed, making an unrestrained individual 8 times more likely to be killed than a restrained individual. Unrestrained occupants of SUVs were 10 times more likely to be killed than occupants wearing seat belts. Unrestrained occupants of pickup trucks were 12 times more likely to be killed in collisions compared to restrained occupants in the same vehicle type. These relative risk ratios were all statistically significant ( $p < 0.01$ ).

**Table 2. Passenger vehicle occupants involved in Indiana collisions, by vehicle type, seat belt use, and injury status, 2020**

Seat belt use and injury status	Passenger cars		Pickup trucks		SUVs		Vans	
	Count	% Total	Count	% Total	Count	% Total	Count	% Total
<b>Restrained (R)</b>	<b>153,630</b>	<b>100.0%</b>	<b>25,398</b>	<b>100.0%</b>	<b>33,769</b>	<b>100.0%</b>	<b>8,627</b>	<b>100.0%</b>
Fatal	182	0.1%	28	0.1%	39	0.1%	14	0.2%
Incapacitating	8,465	5.5%	995	3.9%	1,828	5.4%	488	5.7%
Non-incapacitating	12,360	8.0%	1,612	6.3%	2,955	8.8%	689	8.0%
No injury	132,623	86.3%	22,763	89.6%	28,947	85.7%	7,436	86.2%
<b>Not restrained (NR)</b>	<b>23,012</b>	<b>100.0%</b>	<b>4,161</b>	<b>100.0%</b>	<b>3,970</b>	<b>100.0%</b>	<b>1,135</b>	<b>100.0%</b>
Fatal	225	1.0%	53	1.3%	44	1.1%	12	1.1%
Incapacitating	1,862	8.1%	332	8.0%	375	9.4%	84	7.4%
Non-incapacitating	1,521	6.6%	257	6.2%	239	6.0%	59	5.2%
No injury	19,404	84.3%	3,519	84.6%	3,312	83.4%	980	86.3%
<b>Relative risk of fatal injury</b>	<b>8.3</b>		<b>11.6</b>		<b>9.6</b>		<b>6.5</b>	

Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

**Notes:**

- 1) Relative risk of fatal injury is calculated as % NR / % R. All relative risk ratios are significant ( $p < 0.01$ ).
- 2) Non-incapacitating injuries include those injuries reported as non-incapacitating, possible, not reported, unknown, and refused (treatment).

### Indiana occupant protection laws

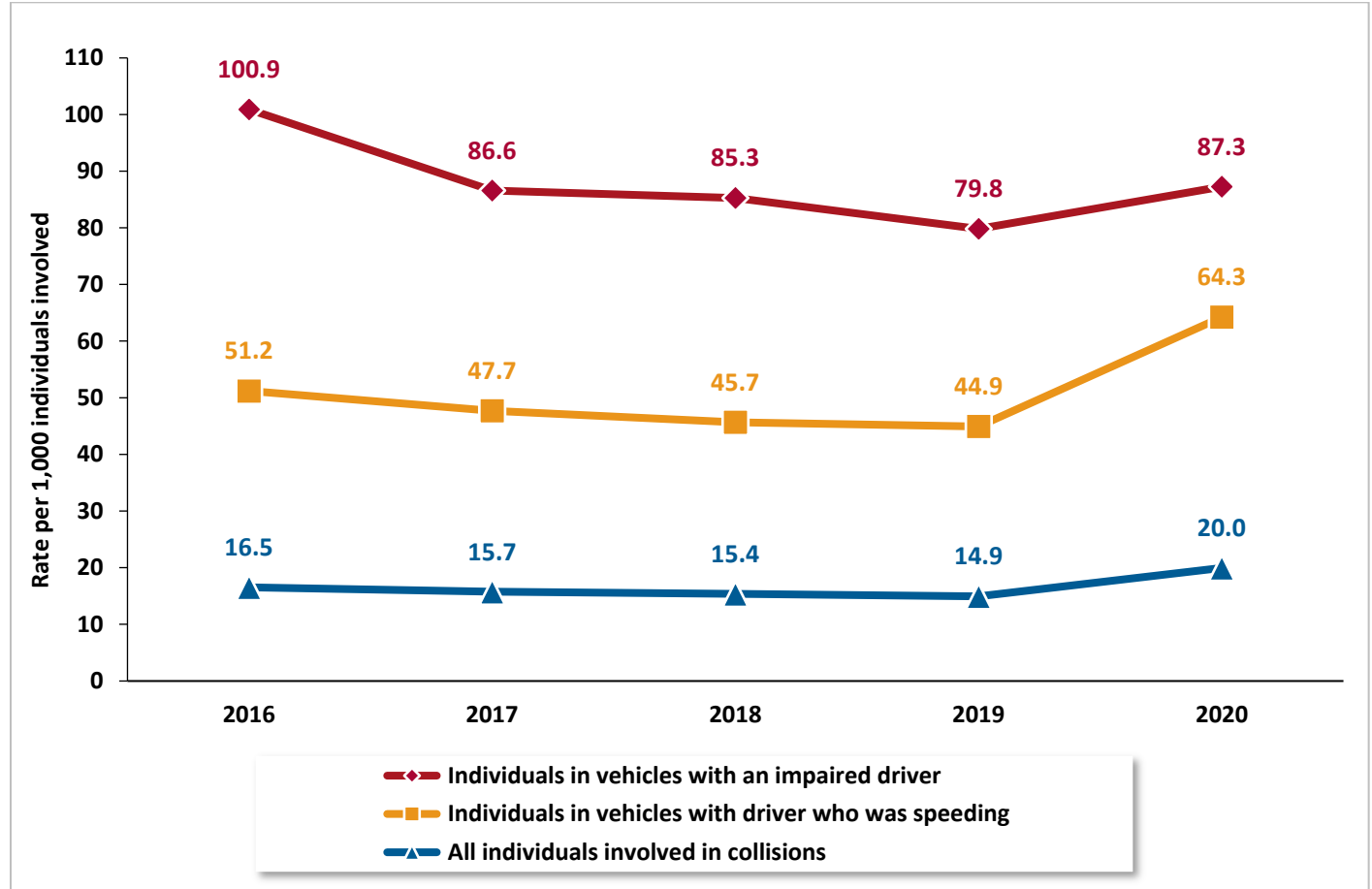
Effective July 1, 2007, Indiana law requires all passenger vehicle occupants ages 16 and older to ride properly restrained in a vehicle. This law applies to all seating positions in all vehicles, including pickup trucks and SUVs. The current Indiana child passenger restraint law requires all child occupants (ages 15 and younger) to be properly restrained in a child restraint device or seat belt in all seating positions in all vehicles. In addition to legislative efforts, child passenger safety experts have developed recommended safety standards and best practices that include the use of rear-facing child safety seats as long as possible, or, at a minimum, until a child is two years old and weighs at least 20 pounds. These guidelines also include the use of booster safety seats for children who have outgrown child safety seats with harnesses. Children then may transition to the use of adult seat belts. It is recommended that all children under the age of 13 ride in the back seat of the vehicle.

Passenger Restraint Systems, IC 9-19-10-2; available at <http://iga.in.gov/legislative/laws/2020/ic/titles/009/#9-19-10-2>

## Speeding, Impaired Driving, and Restraint Use

Between 2016 and 2020, rates of unrestrained injuries in Indiana collisions were consistently higher in vehicles with a driver who was speeding and in vehicles with an impaired driver. In 2020, rates of unrestrained injury among all individuals involved in crashes (15.9 per 1,000) were more than three times higher among occupants in vehicles with a driver who was speeding (60.0) and nearly six times higher with impaired drivers (88.0).

**Figure 3. Unrestrained injury rates per 1,000 passenger vehicle occupants in Indiana collisions, by drivers speeding and driver impairment, 2016-2020**

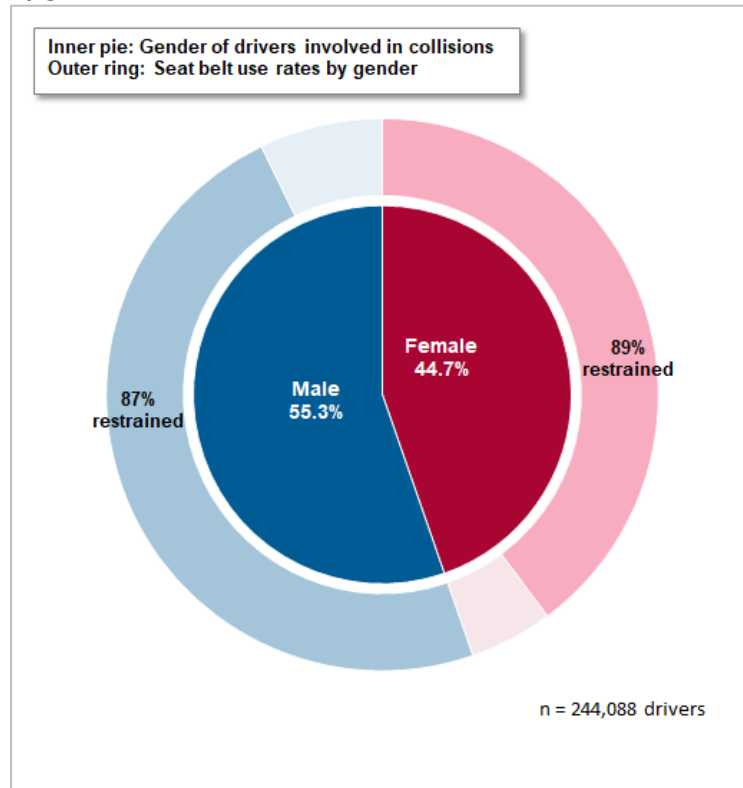


Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

## Seat belt Use by Age and Gender

Male drivers accounted for 55% of all passenger vehicles drivers in collisions and had lower rates of seat belt use than female drivers (87% and 89%, respectively) (Figure 4). When considering restraint use by age and gender between 2016 and 2020, male drivers in collisions were consistently more likely to be unrestrained than females in the same age groups (Table 3). In 2020, male drivers in the 25 to 34 and 35 to 44 age groups represented the highest proportion of passenger vehicle drivers who were not wearing seat belts in collisions. Among female drivers in crashes, the 25 to 34 age group had the highest proportion of unrestrained drivers.

**Figure 4. Seat belt usage among drivers of passenger vehicles in Indiana collisions, by gender, 2020**



Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

Notes:

- 1) Includes drivers of passenger vehicles include vehicles reported as a (passenger car, pickup truck, van, or sport utility vehicle).
- 2) Includes cases with gender reported.

**Table 3. Proportion of passenger vehicle drivers in Indiana collisions who were unrestrained, by age group and gender, 2016–2020**



Age group	2016		2017		2018		2019		2020	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
15-20	9.4%	8.3%	9.7%	8.0%	10.2%	7.5%	10.4%	8.5%	13.2%	10.7%
21-24	10.5%	7.8%	10.2%	8.2%	10.4%	7.8%	10.5%	8.3%	13.3%	11.0%
25-34	10.6%	7.9%	10.5%	8.2%	10.5%	8.6%	10.5%	8.8%	14.5%	11.6%
35-44	9.7%	7.9%	9.8%	7.8%	10.0%	8.3%	10.1%	8.7%	13.6%	11.2%
45-54	8.9%	7.9%	8.9%	7.8%	9.4%	7.8%	9.4%	8.7%	12.9%	10.6%
55-64	8.7%	7.7%	9.1%	7.6%	8.9%	7.7%	9.5%	8.1%	12.1%	10.1%
65-74	8.1%	7.2%	8.8%	8.2%	8.6%	8.0%	9.3%	8.6%	11.9%	10.5%
75 +	9.0%	8.2%	9.6%	8.0%	9.0%	8.3%	9.6%	8.7%	12.0%	10.4%
All ages	9.6%	7.9%	9.7%	8.0%	9.8%	8.1%	10.0%	8.6%	13.2%	10.9%

Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

Notes:

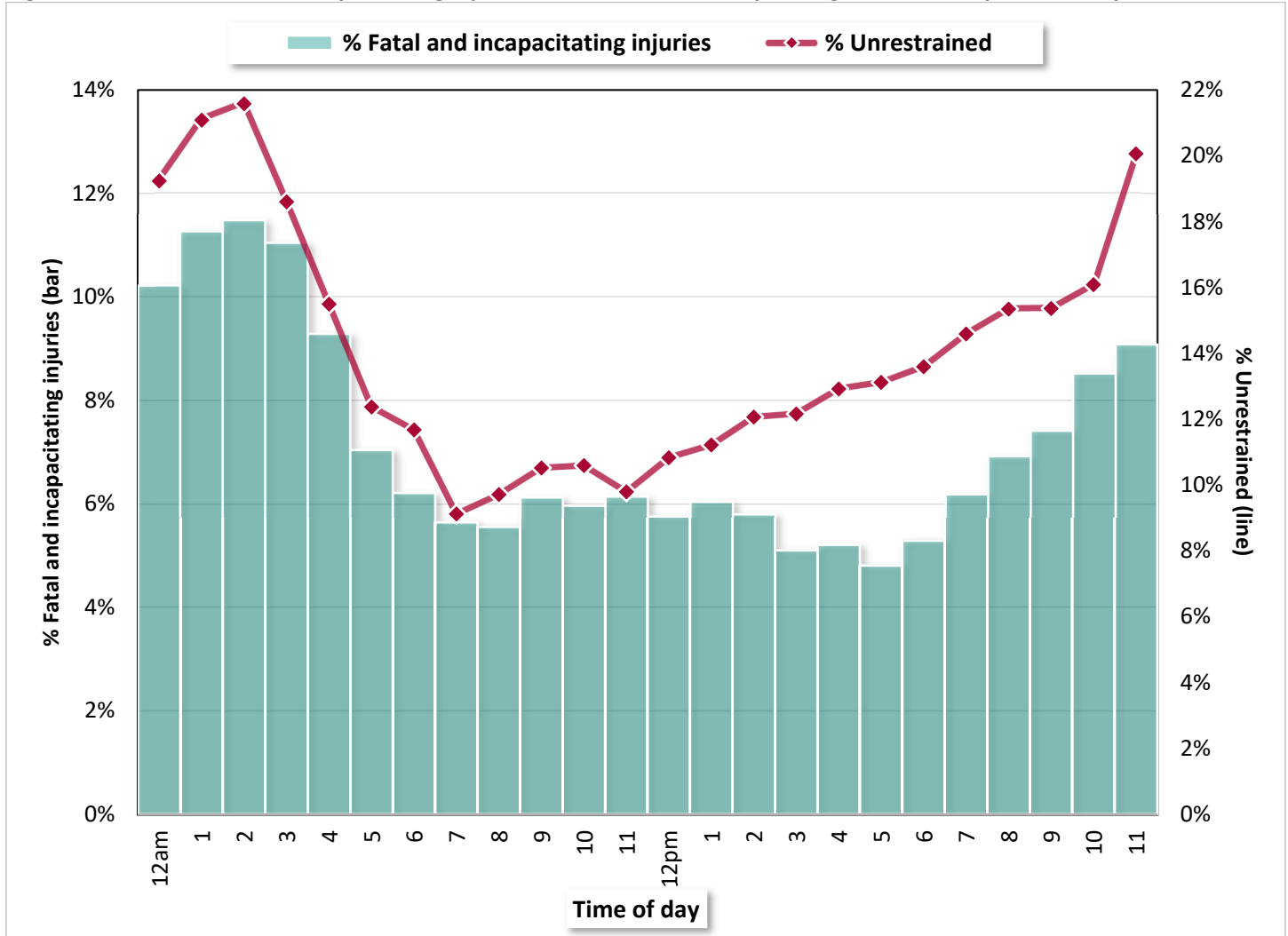
- 1) Data limited to drivers of passenger vehicles with valid gender and age reported.
- 2) Percent unrestrained includes individuals reported with "No restraint" and NULL values in the restraint use code field.



## Time of Day, Day of Week, and Seat Belt Use

In 2020, rates of fatal and incapacitating injuries in crashes were highest between midnight and 4 a.m., a time when the percentage of individuals in crashes who were not wearing a seat belt was also high (Figure 5). The highest percentage of hourly fatal and incapacitating injuries in 2020 occurred between 2 a.m. and 3 a.m. (10%) and the highest hourly rate of unrestrained individuals in crashes occurred during the same time (22%).

Figure 5. Indiana fatal and incapacitating injuries and seat belt use in passenger vehicles, by time of day, 2020



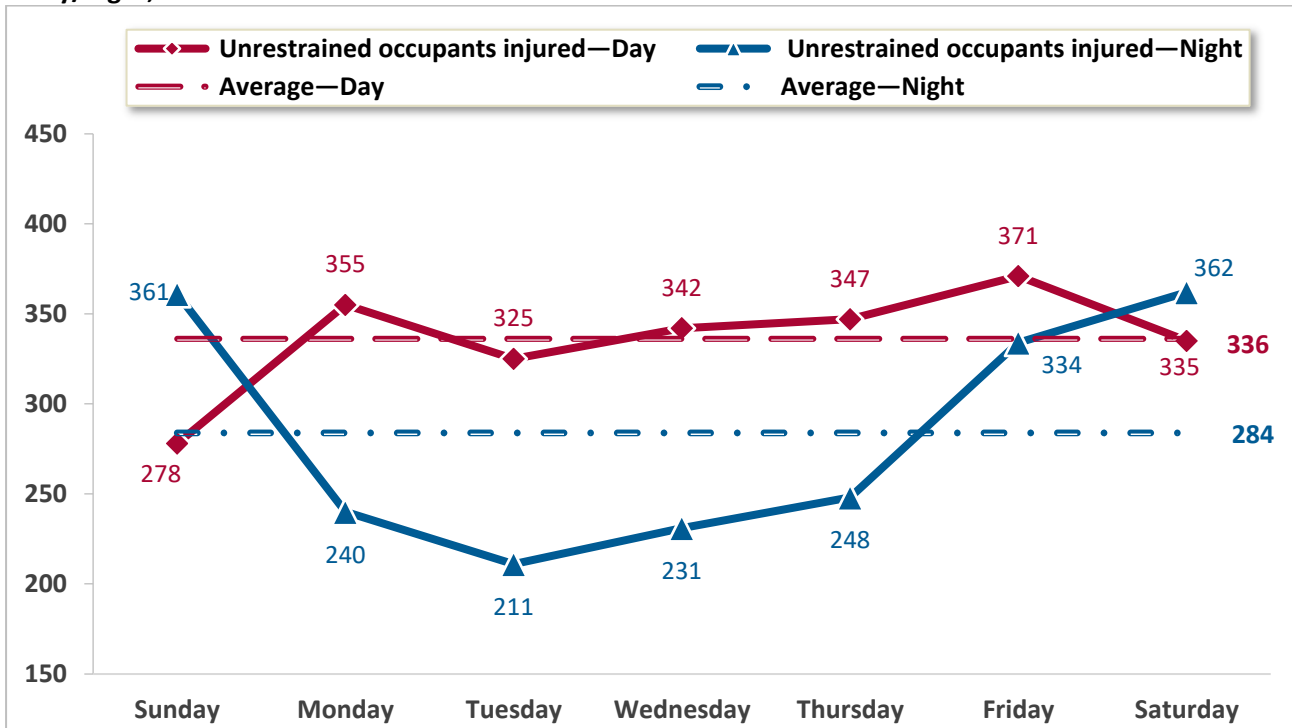
Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

**Notes:**

- 1) Percent fatal and incapacitating injuries represents fatal or incapacitating injuries as a proportion of all individuals involved in collisions.
- 2) Percent not wearing a seat belt includes individuals reported with unknown and invalid safety equipment type.

Figure 6 shows that on average, daily counts of unrestrained passenger vehicle occupants in daytime collisions are higher than counts in nighttime collisions. In 2020, the average daily count of unrestrained passenger vehicle occupants in daytime collisions was 336, compared to 284 in nighttime collisions. Nighttime counts of unrestrained passenger vehicle occupants exceeded daily averages on Fridays, Saturdays, and Sundays.

**Figure 6. Unrestrained passenger vehicle occupants injured in Indiana collisions, by day of week and day/night, 2020**



Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

**Notes:**

- 1) Day is defined as 6 a.m.–5:59 p.m. Night is defined as 6 p.m.–5:59 a.m.
- 2) Includes passenger vehicle occupants with fatal, incapacitating, non-incapacitating, and possible injuries.

## Ejection and Restraint Use

Table 4 shows the rate of seat belt use among passenger vehicle occupants by ejection status over a five-year period. Between 2016 and 2020, restraint use rates among individuals ejected in Indiana traffic collisions increased by 3%. The number of occupants ejected in Indiana crashes decreased by nearly 5% from 747 in 2019 to 711 in 2020. Approximately 45% of these individuals were wearing seat belts in 2020. Similarly, the number of occupants partially ejected declined by 3% over the five-year timeframe as seat belt use increased. Restraint use decreased by 16% between 2019 and 2020, from 71 to 60% as the number of partially ejected rose by 3%.

**Table 4. Seat belt use and ejection status among passenger vehicle occupants involved in Indiana collisions, 2016–2020**

Ejection status	2016	2017	2018	2019	2020	Annual rate of change	
						2019–20	2016–20
<b>All occupants</b>	<b>338,242</b>	<b>332,249</b>	<b>326,461</b>	<b>325,122</b>	<b>253,702</b>	<b>-22.0%</b>	<b>-6.9%</b>
Properly restrained	307,251	301,608	295,954	293,621	221,424	-24.6%	-7.9%
<i>Restraint use rate</i>	90.8%	90.8%	90.7%	90.3%	87.3%	-3.4%	-1.0%
<b>Ejected</b>	<b>763</b>	<b>770</b>	<b>762</b>	<b>747</b>	<b>711</b>	<b>-4.8%</b>	<b>-1.7%</b>
Properly restrained	307	359	364	359	318	-11.4%	0.9%
<i>Restraint use rate</i>	40.2%	46.6%	47.8%	48.1%	44.7%	-6.9%	2.7%
<b>Partially ejected</b>	<b>257</b>	<b>276</b>	<b>233</b>	<b>223</b>	<b>230</b>	<b>3.1%</b>	<b>-2.7%</b>
Properly restrained	148	178	149	159	138	-13.2%	-1.7%
<i>Restraint use rate</i>	57.6%	64.5%	63.9%	71.3%	60.0%	-15.8%	1.0%
<b>Pinned under</b>	<b>54</b>	<b>50</b>	<b>59</b>	<b>45</b>	<b>53</b>	<b>17.8%</b>	<b>-0.5%</b>
Properly restrained	25	20	28	18	25	38.9%	0.0%
<i>Restraint use rate</i>	46.3%	40.0%	47.5%	40.0%	47.2%	17.9%	0.5%
<b>Trapped in</b>	<b>2,778</b>	<b>2,763</b>	<b>2,611</b>	<b>2,630</b>	<b>2,437</b>	<b>-7.3%</b>	<b>-3.2%</b>
Properly restrained	2,206	2,179	2,094	2,093	1,867	-10.8%	-4.1%
<i>Restraint use rate</i>	79.4%	78.9%	80.2%	79.6%	76.6%	-3.7%	-0.9%
<b>Not ejected or trapped</b>	<b>332,943</b>	<b>327,008</b>	<b>321,347</b>	<b>320,028</b>	<b>248,224</b>	<b>-22.4%</b>	<b>-7.1%</b>
Properly restrained	304,425	298,695	293,162	290,838	218,937	-24.7%	-7.9%
<i>Restraint use rate</i>	91.4%	91.3%	91.2%	90.9%	88.2%	-2.9%	-0.9%
<b>Not injured</b>	<b>464</b>	<b>449</b>	<b>468</b>	<b>469</b>	<b>1,112</b>	<b>137.1%</b>	<b>24.4%</b>
Properly restrained	30	34	29	29	39	34.5%	6.8%
<i>Restraint use rate</i>	6.5%	7.6%	6.2%	6.2%	3.5%	-43.3%	-14.2%
<b>Unknown ejection status</b>	<b>983</b>	<b>933</b>	<b>981</b>	<b>980</b>	<b>935</b>	<b>-4.6%</b>	<b>-1.2%</b>
Properly restrained	110	143	128	125	100	-20.0%	-2.4%
<i>Restraint use rate</i>	11.2%	15.3%	13.0%	12.8%	10.7%	-16.1%	-1.1%

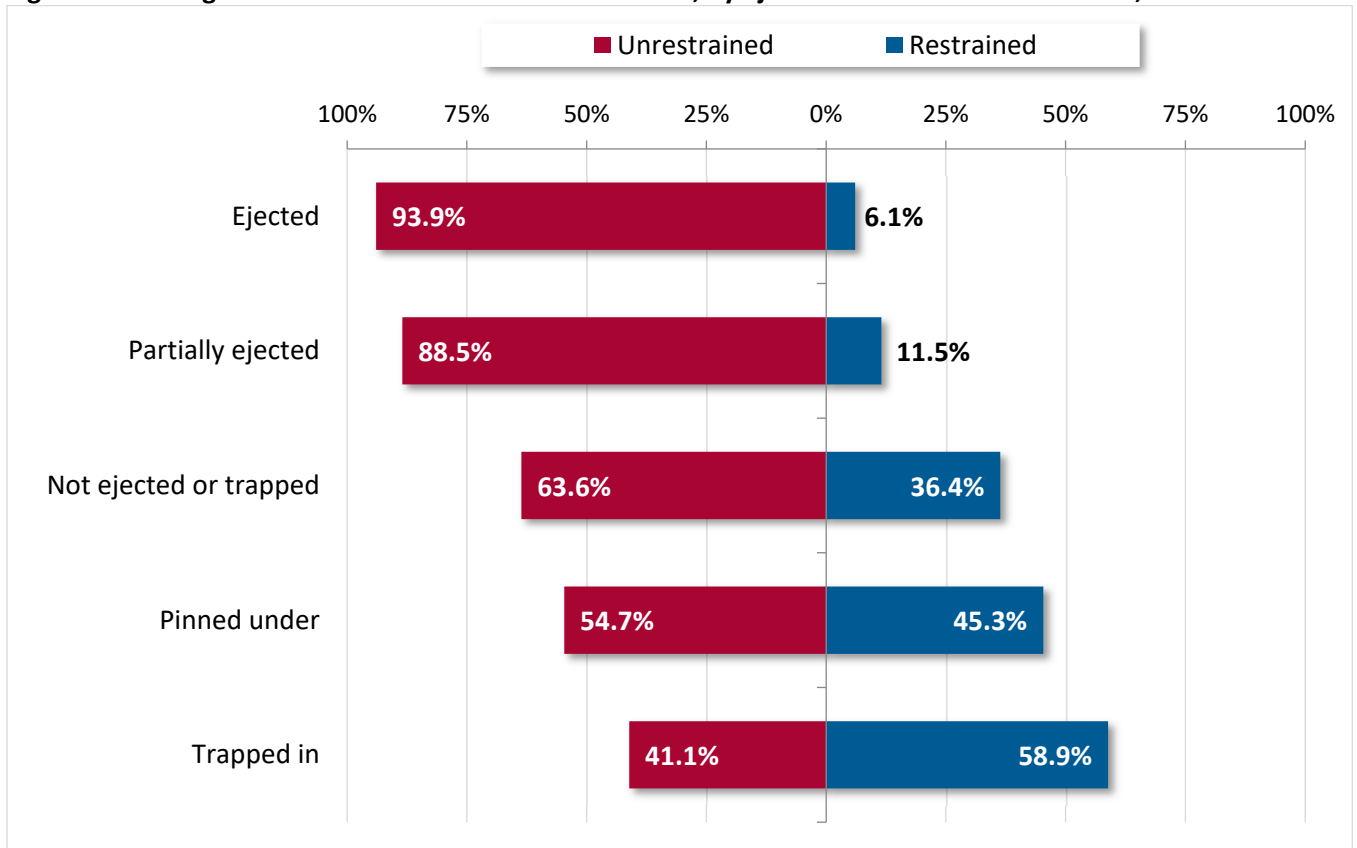
Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

**Notes:**

- 1) Passenger vehicles are defined as passenger cars, pickup trucks, SUVs, and vans.
- 2) Totals include individuals with 'NULL' and unknown restraint use.

Unrestrained individuals are more likely to be ejected and killed. In 2020, the vast majority (94%) of passenger vehicle occupants ejected and killed in collisions were unrestrained (Figure 7). Nearly 90% of individuals partially ejected and sustaining fatal injuries were also not wearing seat belts. When considering road class, the percent of unrestrained passenger vehicle occupants who were ejected was highest for collisions that occurred on county roads (Figure 8). Between 2016 and 2020, two-thirds or more of these passengers were unrestrained. During the same time frame, an average of 39% of passengers ejected during the course of collisions on local/city roads were unrestrained.

**Figure 7. Passenger vehicle fatalities in Indiana collisions, by ejection status and restraint use, 2020**

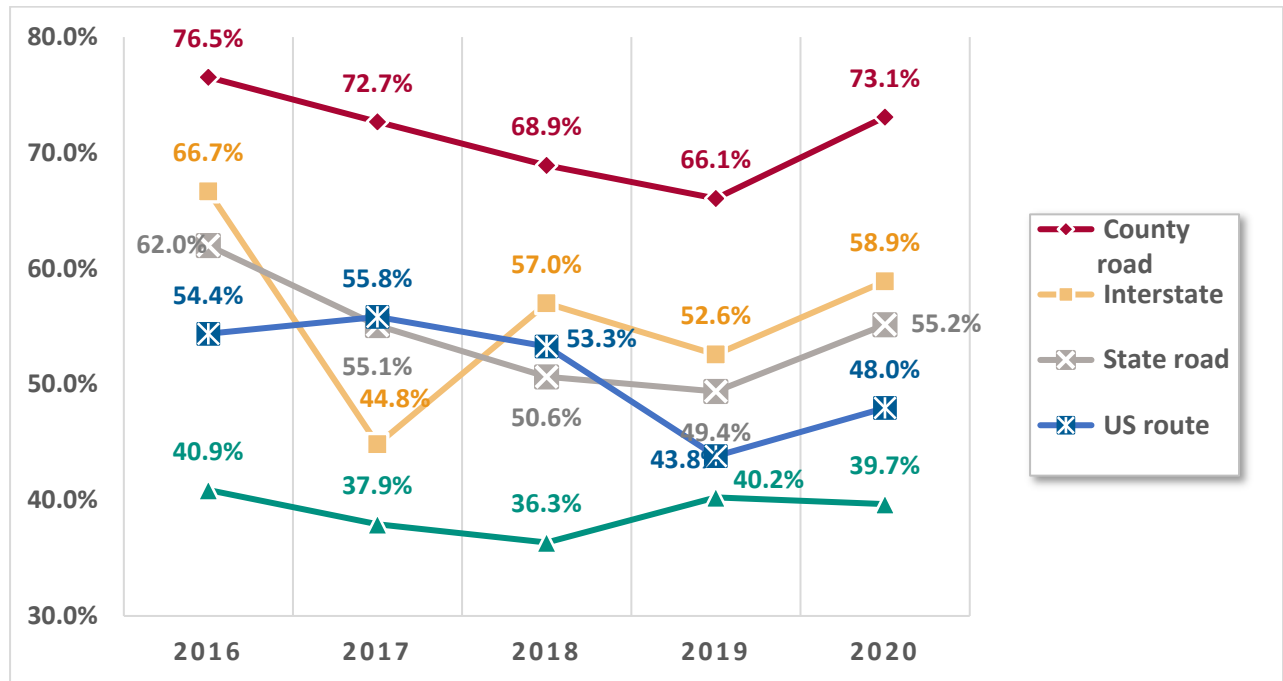


Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

Notes:

- 1) Passenger vehicles are defined as passenger cars, pickup trucks, SUVs, and vans.
- 2) Excludes unknown ejection status.

**Figure 8. Percent unrestrained passenger vehicle occupants ejected in Indiana collisions, by road class, 2016–2020**



Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021

**Notes:**

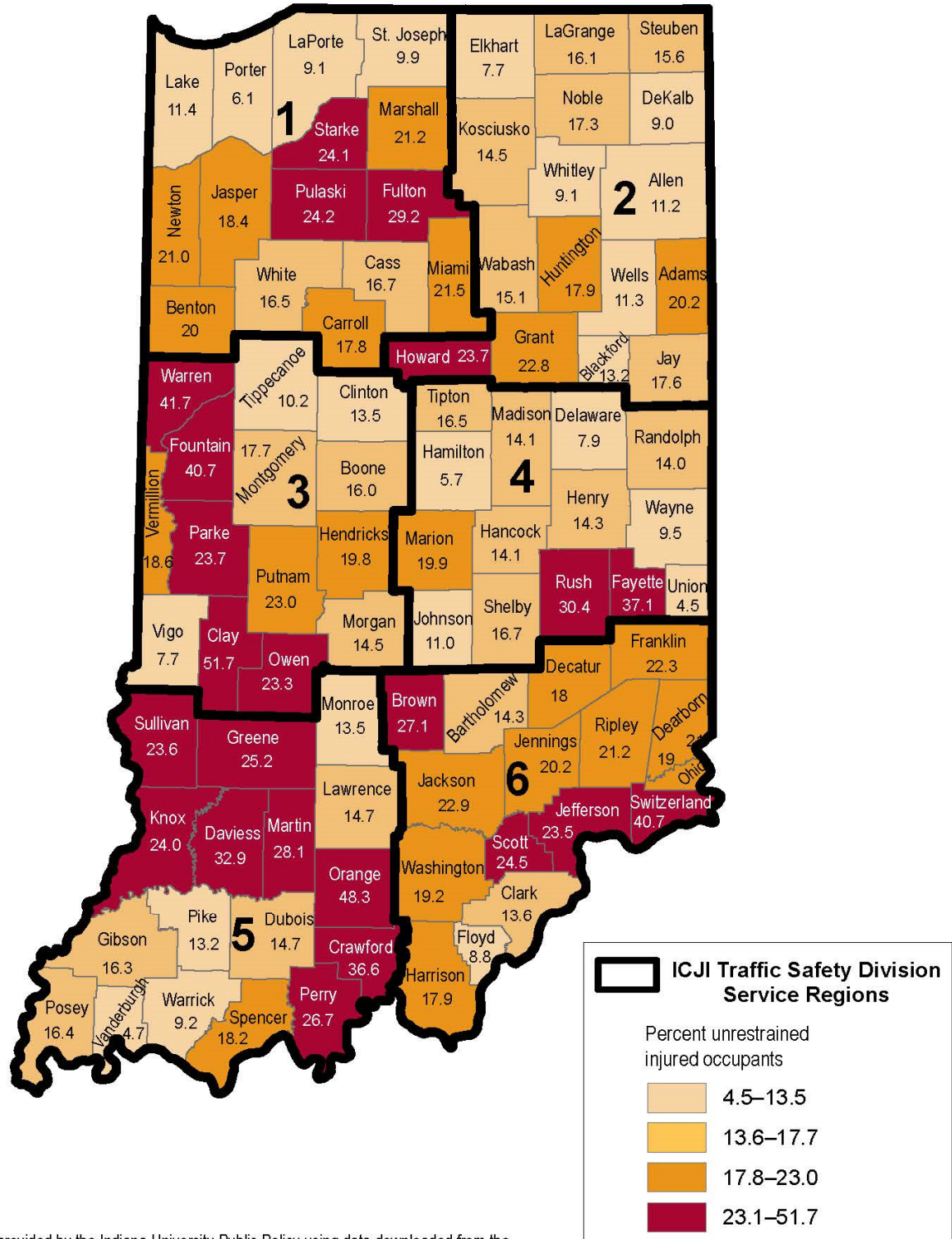
- 1) Passenger vehicles are defined as passenger cars, pickup trucks, SUVs, and vans.
- 2) Excludes unknown ejection status and road class.

### Geography of Indiana Seat Belt Use

Map 1 illustrates the percentage of unrestrained passenger vehicle occupants in collisions in 2020 by county. The median county percentage of injured passenger vehicle occupants in collisions who were unrestrained was 18%, and the mean county percent was 19%. Many counties with higher rates (at or above the median) of unrestrained injured passenger vehicle occupants in crashes are rural. Clay (52%) and Orange (48%) counties had the highest percent of injured passenger vehicle occupants who were not wearing seat belts at the time of the crash, while Union (5%), Vanderburgh (5%), and Hamilton (6%) counties had the lowest percentage of injured occupants who were unrestrained.

**Map 1. Percentage of injured passenger vehicle occupants who were not wearing a seat belt, by county and ICJI Traffic Safety Division Service Region, 2020**

Median percent unrestrained = 17.7  
 Mean percent unrestrained = 19.0  
 n = 34,718 passenger vehicle occupants injured in collisions



Source: Analysis provided by the Indiana University Public Policy using data downloaded from the Indiana State Police Automated Reporting Information Exchange System, March 29, 2021

## Definitions

- **Annual Rate of Change (ARC)** is the rate that a beginning value must increase/decrease each period (e.g., month, quarter, year) in a time series to arrive at the ending value in the time series. ARC is a "smoothed" rate of change because it measures change in a variable as if the change occurred at a steady rate each period with compounding. For example, to measure change in a variable from 2016 to 2020, it is calculated as  $(\text{Value in 2020} / \text{Value in 2016})^{1/4} - 1$ .
- **Not injured** includes individuals involved in collisions reported as null values in the injury status code field. While reporting officers are instructed to enter all drivers in ARIES, passengers are only to be entered in the crash report if an injury occurs. Therefore, counts of those listed as not injured should be interpreted with caution.
- **Non-incapacitating injuries** include those injuries reported as non-incapacitating, possible, not reported, unknown, and refused (treatment) injury status codes.
- **Passenger vehicles** are defined as passengers cars, pickup trucks, sport utility vehicles, and vans.
- **Restraint use:** vehicle occupants injured in Indiana collisions are counted as having been restrained when the investigating officer selects any one of the following passenger vehicle safety equipment categories on the Indiana Crash Report: (1) lap belt only; (2) harness; (3) airbag deployed and harness; (4) child restraint; (5) lap and harness; or (6) shoulder belts.

## References

Center for Road Safety. (2019). *Indiana roadside observational survey of safety belt and motorcycle helmet use*. Purdue University.

National Center for Statistics and Analysis. (2021). *Seat belt use in 2020—Overall results (DOT HS 813 072)*. National Highway Traffic Safety Administration

## Data Sources

Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 29, 2021.

National Center for Statistics and Analysis, National Highway Traffic Safety Administration, *Seat Belt Use in 2020—Overall Results*, DOT HS 813 072, February 2021.