

# INDIANA 2009 TRAFFIC SAFETY FACTS

May 2009

A collision produces three levels of data: collision, unit (vehicles), and individual. For this reason, readers should pay particular attention to the wording of statements about the data to avoid misinterpretations.

Designing and implementing effective traffic safety policies requires data-driven analysis of traffic accidents. To help in the policy-making process, the Indiana University Center for Criminal Justice Research is collaborating with the Indiana Criminal Justice Institute to analyze 2008 vehicle crash data from the Automated Reporting Information Exchange System (ARIES), maintained by the Indiana State Police. This marks the third year of this partnership. Research findings will be summarized in a series of Fact Sheets on various aspects of traffic collisions, including alcohol-related crashes, light and large trucks, dangerous driving, children, motorcycles, occupant protection, and drivers. An additional publication will provide information on county and municipality data and the final publication will be the annual Indiana Crash Fact Book. These publications serve as the analytical foundation of traffic safety program planning and design in Indiana.

Indiana collision data are obtained from Indiana Crash Reports, as completed by law enforcement officers. As of December 31, 2008, approximately 98 percent of all collisions are entered electronically through the ARIES. Trends in collisions incidence as reported in these publications could incorporate the effects of changes to data elements on the Crash Report, agency-specific enforcement policy changes, re-engineered roadways, driver safety education programs and other unspecified effects. If you have questions regarding trends or unexpected results, please contact the Indiana Criminal Justice Institute, Traffic Safety Division for more information.

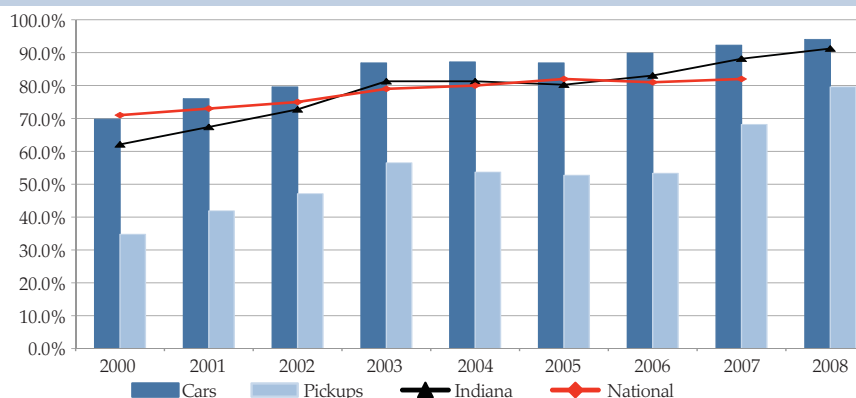


## OCCUPANT PROTECTION 2008

In 2008, 48,499 passenger vehicle occupants were injured or killed in Indiana traffic collisions, 87 percent of whom were wearing proper safety restraints. The National Highway Traffic Safety Administration (NHTSA) identifies safety belt use as the most effective best practices a person can employ to prevent deaths and injuries resulting from traffic collisions (see Text Box 1). This fact sheet summarizes occupant protection data trends, legislation, and public awareness efforts at the national, state, and county levels with a particular emphasis on restraint use and injuries resulting from passenger vehicle collisions between 2004 and 2008. Indiana data were extracted from the Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2009.

NHTSA reports that, nationally in 2007, the overall observed seat belt use rate was 82 percent (Figure 1), and that 54 percent of the 26,642 passenger vehicle occupants killed in 2007 U.S. traffic collisions (where restraint use was known) were unrestrained. According to the Indiana Criminal Justice Institute, Indiana observational studies of seat belt usage show that restraint usage rates continue to climb for all passenger vehicles. Figure 1 shows that restraint usage rates for all passenger vehicles increased 29 percentage points from 62 percent in 2000 to over 91 percent in 2008. Likewise, observed rates of restraint use in passenger cars increased from 70 percent in 2000 to nearly 94 percent in 2008.

**Figure 1: Indiana observational studies of safety belt usage rates by vehicle type, 2000 to 2007**



Sources: Indiana - Indiana Criminal Justice Institute, January 2009

National - National Center for Statistics and Analysis, National Highway Traffic Safety Administration, National Occupant Protection Use Survey, 2007.

**Notes:**

Indiana data represent the average annual rates of observed restraint use among all Indiana passenger vehicle occupants in a study conducted by ICJI twice per year. Car and pickup truck restraint usage rates are specific to Indiana only.

National data represent the rates of observed restraint use among all passenger vehicle occupants. National data were not available for 2008.

Passenger vehicles are defined as *passenger cars, pickup trucks, SUVs, and vans*.

## Text Box 1:

### OCCUPANT PROTECTION LAWS AND BEST PRACTICES

NHTSA identifies safety belt use as the most effective strategy a person can employ to prevent deaths and injuries resulting from traffic collisions.<sup>i</sup> NHTSA reports that states with primary enforcement laws achieve higher restraint usage than states with secondary enforcement laws.<sup>ii</sup> Primary (standard) restraint laws allow a law enforcement officer to stop a vehicle and issue a citation when the officer observes an unrestrained driver or passenger. Secondary enforcement means that a citation for being unrestrained can only be written after the officer stops the vehicle or cites the offender for another infraction.<sup>iii</sup> A recent NHTSA report suggests that states with primary enforcement laws have significantly lower fatality rates than states without primary enforcement.<sup>iv</sup>

### Indiana Occupant Protection Laws and Best Practices

Effective July 1, 2007, Indiana law required all passenger vehicle occupants 16 and older to ride properly restrained in a seat belt. This law provides for primary enforcement and applies to all seating positions in all vehicles, including pick-up trucks and SUVs that were previously exempt.<sup>v</sup> 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.<sup>vi</sup> 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, and, at a minimum, until a child is one year 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 properly fitted adult seat belts, typically when the child reaches the age of 8 years old or 4 feet 9 inches in height. It is recommended that all children under the age of 13 ride in the back seat of the vehicle.

<sup>i</sup>National Highway Traffic Safety Administration, Initiatives to Address Safety Belt Use, Washington, DC. July 2003.

<sup>ii</sup>National Center for Statistics and Analysis, National Highway Traffic Safety Administration, *Traffic Safety Facts: Occupant Protection (2007 data)*, Washington, DC. DOT HS 810 991.

<sup>iii</sup>Automotive Safety Program, Riley Hospital for Children, <http://www.preventinjury.org>, March 2009.

<sup>iv</sup>National Center for Statistics and Analysis, National Highway Traffic Safety Administration, *Traffic Safety Facts: States with Primary Enforcement Laws have Lower Fatality Rates (February 2008)*, Washington, DC. DOT HS 810 921.

<sup>v</sup>Passenger Restraint Systems, IC 9-19-10-2; available at <http://www.ai.org/legislative/ic/code/title9/ar19/ch10.html>

<sup>vi</sup>Passenger Restraint Systems, IC 9-19-10-2; available at <http://www.ai.org/legislative/ic/code/title9/ar19/ch10.htm>

**Table 1: Restraint use and injury status among individuals involved in Indiana passenger vehicles collisions, 2004-2008**

Occupant injury status	2004	2005	2006	2007	2008	Average Annual Change
<b>All injured occupants</b>	<b>323,788</b>	<b>318,219</b>	<b>291,462</b>	<b>304,148</b>	<b>300,718</b>	<b>-1.7%</b>
Properly restrained	275,986	269,263	250,582	271,800	272,154	-0.2%
Restraint use rate	85.2%	84.6%	86.0%	89.4%	90.5%	1.5%
<b>Fatalities</b>	<b>712</b>	<b>711</b>	<b>656</b>	<b>670</b>	<b>587</b>	<b>-4.5%</b>
Properly restrained	292	296	261	295	258	-2.5%
Restraint use rate	41.0%	41.6%	39.8%	44.0%	44.0%	1.9%
<b>Incapacitating injuries</b>	<b>3,107</b>	<b>2,993</b>	<b>2,911</b>	<b>2,691</b>	<b>2,505</b>	<b>-5.2%</b>
Properly restrained	2,019	1,863	1,884	1,767	1,818	-2.5%
Restraint use rate	65.0%	62.2%	64.7%	65.7%	72.6%	2.9%
<b>Non-incapacitating injuries</b>	<b>52,217</b>	<b>50,024</b>	<b>45,957</b>	<b>43,440</b>	<b>39,905</b>	<b>-6.5%</b>
Properly restrained	42,887	40,946	38,118	37,525	35,166	-4.8%
Restraint use rate	82.1%	81.9%	82.9%	86.4%	88.1%	1.8%
<b>Other injuries</b>	<b>27,835</b>	<b>32,365</b>	<b>20,312</b>	<b>7,670</b>	<b>5,502</b>	<b>-27.9%</b>
Properly restrained	23,962	27,529	17,238	6,550	4,896	-27.4%
Restraint use rate	86.1%	85.1%	84.9%	85.4%	89.0%	0.9%
<b>No injuries</b>	<b>239,917</b>	<b>232,126</b>	<b>221,626</b>	<b>249,677</b>	<b>252,219</b>	<b>1.5%</b>
Properly restrained	206,826	198,629	193,081	225,663	230,016	3.0%
Restraint use rate	86.2%	85.6%	87.1%	90.4%	91.2%	1.4%

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2009.

#### Notes:

Injury totals include individuals reported to have an *unknown* or invalid safety equipment type. *Non-incapacitating* injuries include those injuries reported as *non-incapacitating* or *possible*.

*Other injury* status includes *not reported*, *unknown*, and *refused* (treatment) status codes.

*No injury* status includes individuals involved in collisions reported as *null* values in the injury status code field.

Includes only injuries occurring in passenger vehicles (defined as *passenger cars*, *pickup trucks*, *SUVs*, and *vans*). Excludes all other vehicle types including those identified as *pedestrians* and *pedalcyclists*.

For the purposes of this fact sheet, vehicle occupants injured in Indiana collisions are counted as having been restrained when the reporting officer selected any one of the following safety equipment categories on the Indiana Crash Report: (1) *Lap belt only*; (2) *Harness*; (3) *Airbag deployed and harness*; (4) *Child restraint*; or (5) *Lap and harness*.

Pickup truck occupants exhibited the most dramatic improvements in restraint use during this same period, increasing from 35 percent in 2000 to more than 80 percent in 2008. Between December 2006 (52 percent) and December 2008, restraint usage among pickup truck occupants increased by 28 percentage points. Increases are likely due at least in part to the change in the Indiana passenger restraint law in July 2007 requiring all passengers to be properly restrained in all passenger vehicles, including pickup trucks and SUVs (registered as trucks) that were previously exempt from the law.

Vehicle occupants injured in Indiana collisions are counted as having been restrained when the investigating officer selected any one of the following safety equipment categories on the Indiana Crash Report: (1) *Lap belt only*; (2) *Harness*; (3) *Airbag deployed and harness*; (4) *Child restraint*; or (5) *Lap and harness*. By this standard, over 90 percent of passenger vehicle occupants involved in 2008 Indiana traffic collisions were wearing the proper safety restraint (Table 1). The rate of restraint usage among passenger vehicle

**Table 2: Passenger vehicle occupants involved in collisions, by vehicle type, restraint use, and injury status, 2008**

Restraint use and injury status	Passenger cars		Pickup trucks		SUVs		Vans	
	Count	% Total	Count	% Total	Count	% Total	Count	% Total
<b>Restrained ( R )</b>	<b>168,342</b>	<b>100.0</b>	<b>40,555</b>	<b>100.0</b>	<b>41,132</b>	<b>100.0</b>	<b>22,125</b>	<b>100.0</b>
Fatal	203	0.1	21	< 0.1	17	< 0.1	17	< 0.1
Incapacitating	1,176	0.7	221	0.5	243	0.6	178	0.8
Non-incapacitating	23,132	13.7	3,877	9.6	5,210	12.7	2,947	13.3
Other	2,834	1.7	804	2.0	781	1.9	477	2.2
No injury	140,997	83.8	35,632	87.9	34,881	84.8	18,506	83.6
<b>Not restrained ( NR )</b>	<b>2,916</b>	<b>100.0</b>	<b>1,450</b>	<b>100.0</b>	<b>777</b>	<b>100.0</b>	<b>399</b>	<b>100.0</b>
Fatal	153	5.2	56	3.9	44	5.7	14	3.5
Incapacitating	249	8.5	106	7.3	83	10.7	25	6.3
Non-incapacitating	1,396	47.9	593	40.9	392	50.5	184	46.1
Other	49	1.7	30	2.1	14	1.8	7	1.8
No injury	1,069	36.7	665	45.9	244	31.4	169	42.4
<b>Relative risk of serious injury (% NR / % R)</b>								
Fatal		43.5		74.6		137.0		45.7
Incapacitating		12.2		13.4		18.1		7.8

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2009.

**Notes:**

*Non-incapacitating injuries include those injuries reported as non-incapacitating or possible.*

*Other injury status includes not reported, unknown, and refused (treatment) injury status codes.*

*No injury status includes individuals involved in collisions reported as null values in the injury status code field.*

*Includes only injuries occurring in passenger vehicles (defined as passenger cars, pickup trucks, SUVs, and vans). Excludes all other vehicle types including those identified as pedestrians and pedalcyclists.*

*For the purposes of this fact sheet, vehicle occupants injured in Indiana collisions are counted as having been restrained when the reporting officer selected any one of the following safety equipment categories on the Indiana Crash Report: (1) Lap belt only; (2) Harness; (3) Airbag deployed and harness; (4) Child restraint; or (5) Lap and harness.*

**Table 3: Individuals involved in Indiana collisions by age group, injury status, and restraint use, 2008**

Age group	All injuries			Fatal injuries			Incapacitating injuries		
	Total	Property restrained	Restraint use rate	Total	Property restrained	Restraint use rate	Total	Property restrained	Restraint use rate
< 1	791	483	61.1	3	1	33.3	10	7	70.0
1 - 3	462	419	90.7	3	2	66.7	20	17	85.0
4 - 7	859	722	84.1	6	5	83.3	31	23	74.2
8 - 15	2,584	2,092	81.0	15	6	40.0	98	72	73.5
16 - 20	52,240	46,908	89.8	101	39	38.6	426	279	65.5
21 - 24	32,213	28,796	89.4	64	21	32.8	252	161	63.9
25 - 29	32,244	28,787	89.3	57	13	22.8	251	166	66.1
30 - 34	26,401	23,899	90.5	50	18	36.0	199	143	71.9
35 - 39	25,520	23,191	90.9	29	13	44.8	217	164	75.6
40 - 44	24,244	22,015	90.8	34	19	55.9	185	137	74.1
45 - 49	24,005	21,878	91.1	40	13	32.5	176	124	70.5
50 - 54	21,759	20,076	92.3	46	23	50.0	147	124	84.4
55 - 59	17,715	16,359	92.3	31	18	58.1	134	113	84.3
60 - 64	13,182	12,194	92.5	23	14	60.9	116	94	81.0
65 - 69	9,012	8,352	92.7	23	14	60.9	70	61	87.1
70 - 74	6,262	5,742	91.7	13	8	61.5	62	45	72.6
75 and over	11,120	10,180	91.5	49	31	63.3	110	88	80.0
Unknown	105	61	58.1	0	0	na	1	0	0.0
<b>Total</b>	<b>300,718</b>	<b>272,154</b>	<b>90.5</b>	<b>587</b>	<b>258</b>	<b>44.0</b>	<b>2,505</b>	<b>1,818</b>	<b>72.6</b>

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2009.

**Notes:**

*Total columns include individuals reported with unknown and invalid safety equipment type.*

*Includes only injuries occurring in passenger vehicles (defined as passenger cars, pickup trucks, SUVs, and vans). Excludes all other vehicle types including those identified as pedestrians and pedalcyclists.*

*For the purposes of this fact sheet, vehicle occupants injured in Indiana collisions are counted as having been restrained when the reporting officer selected any one of the following safety equipment categories on the Indiana Crash Report: (1) Lap belt only; (2) Harness; (3) Airbag deployed and harness; (4) Child restraint; or (5) Lap and harness.*

occupants injured or killed in Indiana crashes increased steadily between 2004 and 2008, while, with the exception of 2006 to 2007, the overall number of injuries decreased during this same period. Rates of restraint usage among passenger vehicle occupants injured in Indiana traffic collisions were lower for individuals suffering more severe injuries. Among the 587 passenger vehicle occupants killed in 2008 collisions, only 44 percent were properly restrained. The rate of restraint usage among the 2,505 individuals suffering incapacitating injuries was nearly 73 per-

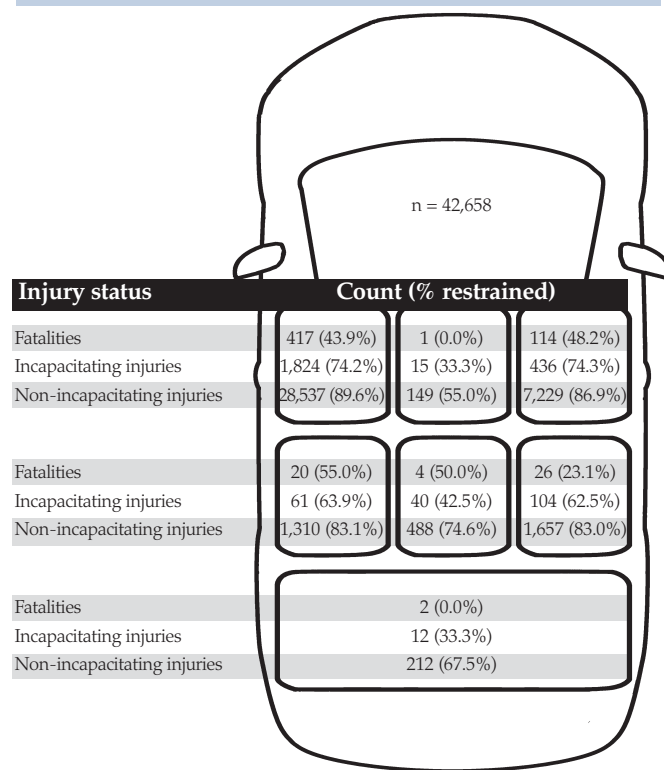
cent. This represents a 7 percentage point increase from 2007 (65.7 percent).

## RESTRAINT USE AND VEHICLE TYPE

The relative risk of serious injury is higher across all passenger vehicle types when vehicle occupants are unrestrained. Table 2 depicts the number and percentage of passenger vehicle occupants injured or killed in Indiana traffic collisions in 2008 by vehicle type, restraint usage, and injury status. Among those



**Figure 2: Individuals in Indiana passenger vehicle collisions by injury status, seating position, and restraint use, 2008**



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2009.

**Notes:**

Injury counts include individuals reported with *unknown* and *invalid* safety equipment type.

Injuries include only individuals obtaining *fatal*, *incapacitating*, *non-incapacitating*, and *possible* injuries where valid seating position was identified.

*Non-incapacitating* injuries include those injuries reported as *non-incapacitating* or *possible*.

Includes only individuals injured in passenger vehicles (defined as *passenger cars*, *pickup trucks*, *SUVs*, and *vans*). Excludes all other vehicle types including those identified as *pedestrians* and *pedalcyclists*.

Includes only those injuries where valid seating position was reported.

individuals wearing proper restraints injured in passenger cars, only one-tenth of a percent were fatally injured, while 5.2 percent of unrestrained passenger car occupants were fatally injured, indicating that an individual is nearly 44 times more likely to be killed in a passenger car when unrestrained. Likewise, unrestrained occupants of pickup trucks were 75 times more likely to be killed and 13 times more likely to suffer incapacitating injuries in traffic collisions than occupants using proper safety restraints. The relative risk of fatal injury to unrestrained occupants of an SUV was 137 times greater than SUV occupants wearing proper restraints.

## INDIANA RESTRAINT USE AND AGE

Rates of restraint usage among passenger vehicle occupants injured in Indiana traffic collisions were lower across all age groups for individuals suffering serious injuries. Table 3 shows that the lowest rates of restraint use occurred among passenger vehicle occupants killed in 2008 collisions in the 21 to 24 (32.8 percent), 25 to 29 (22.8 percent), and 45 to 49 (32.5 percent) age groups. Among passenger vehicle occupants suffer-

ing incapacitating injuries, individuals in the 16 to 20, 21 to 24, and 25 to 29 year old age groups demonstrated the lowest rates of restraint use.

## TRAFFIC INJURIES AND VEHICLE SEATING POSITION

Research shows that vehicle seating position is linked to the risk of injury for all vehicle occupants. NHTSA reports that proper restraint use reduces the risk of fatal injury to passenger car occupants riding in the front seat of the vehicle by 45 percent. The federal Centers for Disease Control and Prevention report that children less than 16 years old, riding in the back seat, are 40 percent less likely to be seriously injured in traffic collisions.<sup>1</sup> NHTSA recommends that all children under the age of 13 ride in the back seat of the vehicle.

Figure 2 shows the number and restraint usage rates for 2008 injuries by injury type and vehicle seating position. The greatest number of fatalities occurred in the driver seating position (417), among which less than 44 percent were properly restrained. Only 48 percent of the 114 individuals killed in the front right passenger seat were properly restrained. Fifty-five percent of individuals killed in the back left seating position (located directly behind the driver) were properly restrained, while 23 percent of individuals killed in the back right seating position were properly restrained.

## EJECTION AND RESTRAINT USE

Research findings suggest that proper restraint usage greatly decreases the likelihood of ejection from passenger vehicles in traffic collisions. Table 4 shows serious injuries occurring in passenger vehicle collisions by restraint use and ejection status in 2008. Nearly 28 percent of all fatal injuries were reported as *ejected*. Among those individuals who were properly restrained, only 7 percent of individuals fatally injured were ejected, while 48 percent of individuals who were unrestrained were ejected from the vehicle. Thirty-one percent of unrestrained passenger vehicle occupants obtaining incapacitating injuries were ejected from the vehicle.

## TIME OF DAY AND RESTRAINT USE

Figure 3 depicts the proportion of serious injury collisions and rates of restraint use by time of day and day of the week. In 2008, most serious injury collisions occurred during morning and afternoon rush hour periods with the highest proportion of serious injury collisions occurring late Wednesday evening and early Thursday morning. Other peaks in late night collisions occur on the weekend. Data also suggest that rates of restraint usage during overnight hours are dramatically lower than during other periods of the day. Figure 3 illustrates the inverse relationship that exists between higher proportions of serious injury collisions and lower rates of restraint use. The lowest rates of restraint use occurred on Saturday (71 percent) and Sunday (73 percent) during the early morning hours.

## GEOGRAPHY OF INDIANA TRAFFIC INJURIES AND RESTRAINT USE

Maps 1 and 2 illustrate the distribution of fatal and incapacitating passenger vehicle occupant injuries and rates of restraint use

**Table 4: Serious injuries occurring in passenger vehicles by restraint use and ejection status, 2008**

	Restrained	%	Unrestrained	%	Unknown	%	Total	%
Fatalities	258	100.0	267	100.0	62	100.0	587	100.0
Ejected	18	7.0	129	48.3	17	27.4	164	27.9
Not Ejected	238	92.2	136	50.9	40	64.5	414	70.5
Unknown	2	0.8	2	0.7	5	8.1	9	1.5
Incapacitating injuries	1,818	100.0	463	100.0	224	100.0	2,505	100.0
Ejected	29	1.6	144	31.1	20	8.9	193	7.7
Not Ejected	1,778	97.8	313	67.6	179	79.9	2,270	90.6
Unknown	11	0.6	6	1.3	25	11.2	42	1.7

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2009.

**Notes:**

Ejected includes individuals reported with an ejection status of *ejected*, *partially ejected*, or *pinned under*.

Not ejected includes individuals reported with an ejection status of *trapped in or not ejected* or *trapped*.

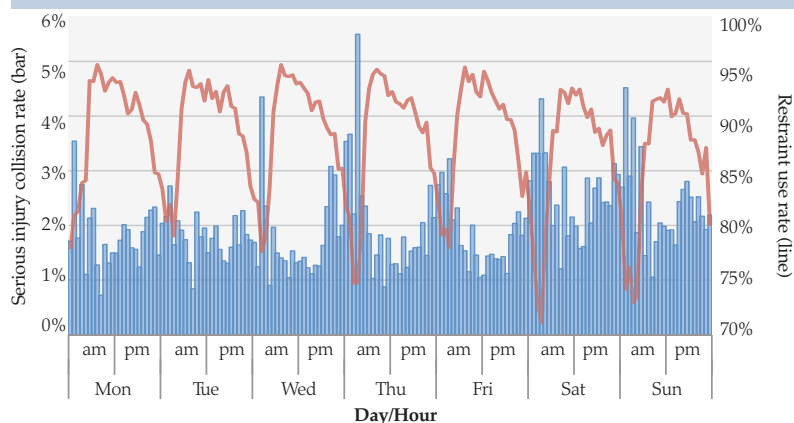
Includes only individuals injured in passenger vehicles (defined as *passenger cars*, *pickup trucks*, *SUVs*, and *vans*). Excludes all other vehicle types including those identified as *pedestrians* and *pedalcyclists*.

Individuals injured counts include only individuals identified as drivers and injured occupants obtaining injuries reported as fatal and incapacitating.

Unknown ejection status includes those injuries reported as *unknown* and *null* values.

For the purposes of this fact sheet, vehicle occupants injured in Indiana collisions are counted as having been restrained when the reporting officer selected any one of the following safety equipment categories on the Indiana Crash Report: (1) *Lap belt only*; (2) *Harness*; (3) *Airbag deployed and harness*; (4) *Child restraint*; or (5) *Lap and harness*.

**Figure 3: Serious injury collisions and restraint use, by hour and day of week, 2008**



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2009.

**Notes:**

Serious injury collision rate is collisions with fatal or incapacitating injuries as a proportion of all collisions.

Data exclude collisions with invalid time reported.

Restraint use rate includes individuals reported with *unknown* and invalid safety equipment type.

For the purposes of this fact sheet, vehicle occupants injured in Indiana collisions are counted as having been restrained when the reporting officer selected any one of the following safety equipment categories on the Indiana Crash Report: (1) *Lap belt only*; (2) *Harness*; (3) *Airbag deployed and harness*; (4) *Child restraint*; or (5) *Lap and harness*.

by county. As suggested by the inverse relationship between these maps, many counties demonstrating lower rates of serious injury per 10,000 county residents (Map 1) tend to have higher rates of restraint use (Map 2). The mean fatal and incapacitating injury rate per 10,000 county residents was 5.6, while the mean rate of county restraint use reported in Indiana collisions was 86.4 percent. Counties with the lowest rates of serious injury included Perry (1.1), Fayette (2.1), Union (2.8), and Hamilton (2.8). Counties with the highest fatal and incapacitating injury rates per 10,000 include Newton (12.8), Jennings (12.5), and Brown (12.3). Forty-two counties had serious injury rates greater

than the mean rate of 5.6. Hamilton County (97.1) had the highest rate of restraint usage, while Owen County (65.6) had the lowest. Restraint usage in collisions appears to be higher in metropolitan (urban and suburban) counties and appears to be lower in the western and southern regions of the state.

### Pickup Trucks and Restraint Use

Map 3 illustrates that restraint usage rates among pickup truck occupants is lower than in other passenger vehicles. In 2008, the mean county restraint use rate of pickup truck occupants was 82.4 percent, a rate nearly four percent lower than the mean county rate of restraint use (86.4) for all passenger vehicles. The lowest rates of restraint use occurred among pickup truck occupants involved in collisions in counties located in the western and southeastern regions of the state. Union County (95.7) had the highest rate of restraint usage in pickup trucks, while Owen County (54.2) had the lowest. Pickup truck restraint usage rates appear to be much lower in predominantly rural counties.

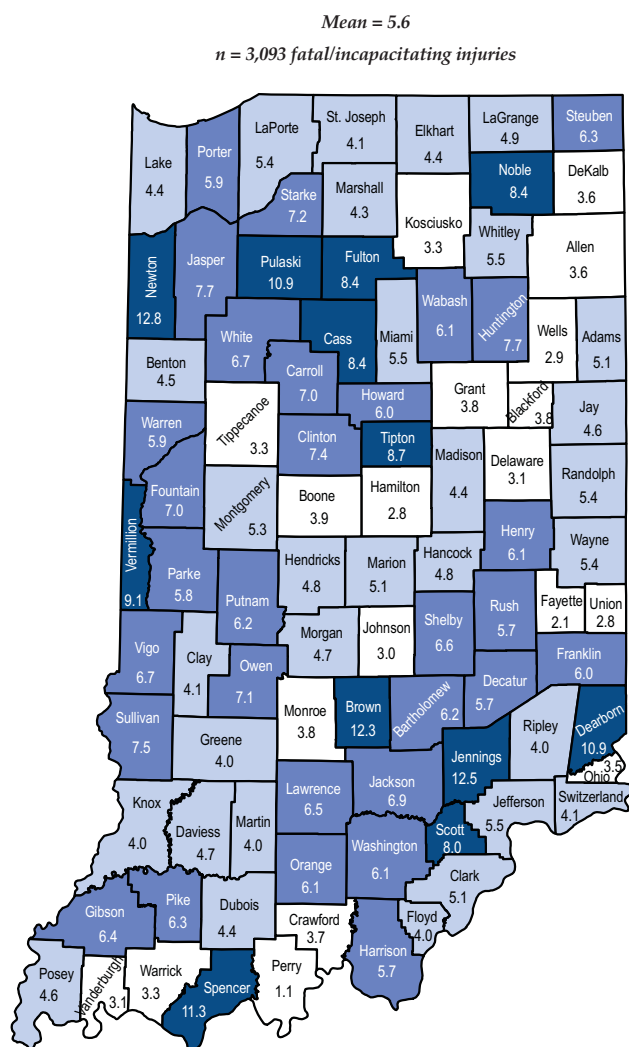
### Conclusion

NHTSA suggests that proper restraint usage is the most effective strategy in preventing deaths or injuries resulting from traffic collisions, and research shows that primary enforcement laws increase rates of restraint use and decrease traffic fatality rates. While restraint use continues to be lower among pickup trucks, preliminary findings suggest that recent changes to the Indiana restraint law may have contributed to increased rates of restraint use in pickup trucks. However, lower rates of restraint use among pickup truck occupants and other passenger vehicle occupants killed or suffering serious injury illustrate a continuing need for targeted law enforcement and public awareness campaigns, particularly in rural areas. Campaigns such as *Click It or Ticket* and higher law enforcement visibility may help reduce the number of traffic fatalities and injuries in

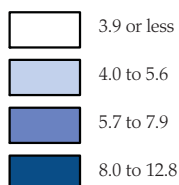
problem areas across Indiana. In the spring of 2009, the Indiana Criminal Justice Institute will partner with state and local law enforcement agencies in the Rural Demonstration Project (RDP), a two-week cooperative effort centering on seat belt enforcement in rural areas. Through grants administered by ICJI, approximately 29 law enforcement agencies, including the Indiana State Police, will participate in the RDP. While officers will be monitoring restraint use among all motorists during the enforcement, planned activities allow for a specific focus on pickup trucks.

## Serious injury and restraint use rates in Indiana traffic collisions by county (2008)

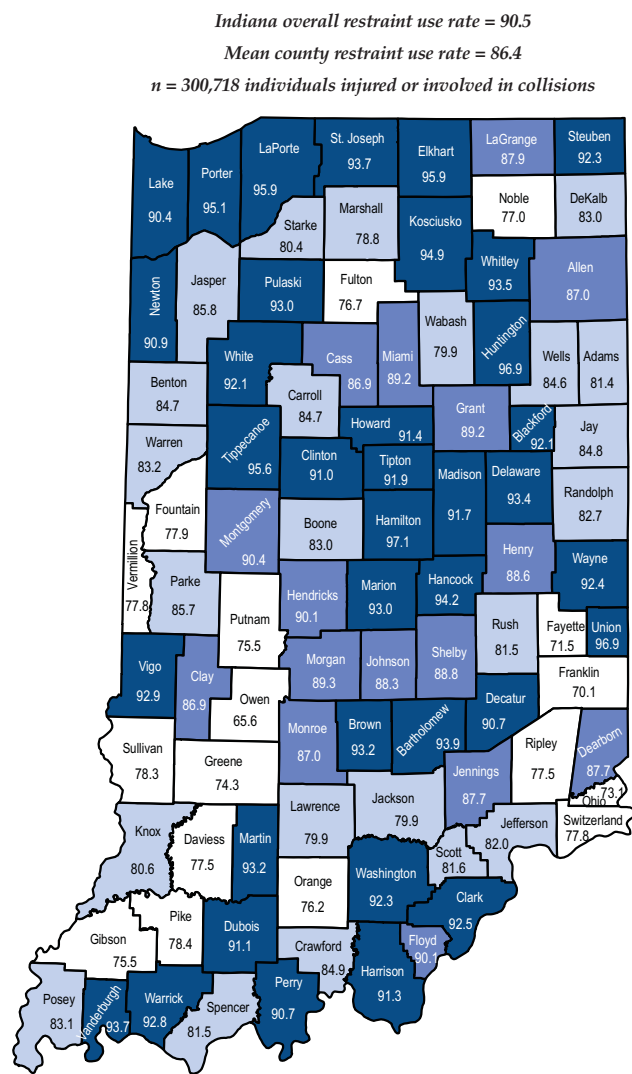
Map 1: County fatal and incapacitating injury rates



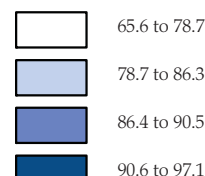
Injury rate per 10k population



Map 2: Restraint use rates



Percent restraint usage



Sources: Injuries — Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2009.

Population — Indiana Business Research Center in collaboration with the National Center for Health Statistics, as of February 23, 2009.

### Notes:

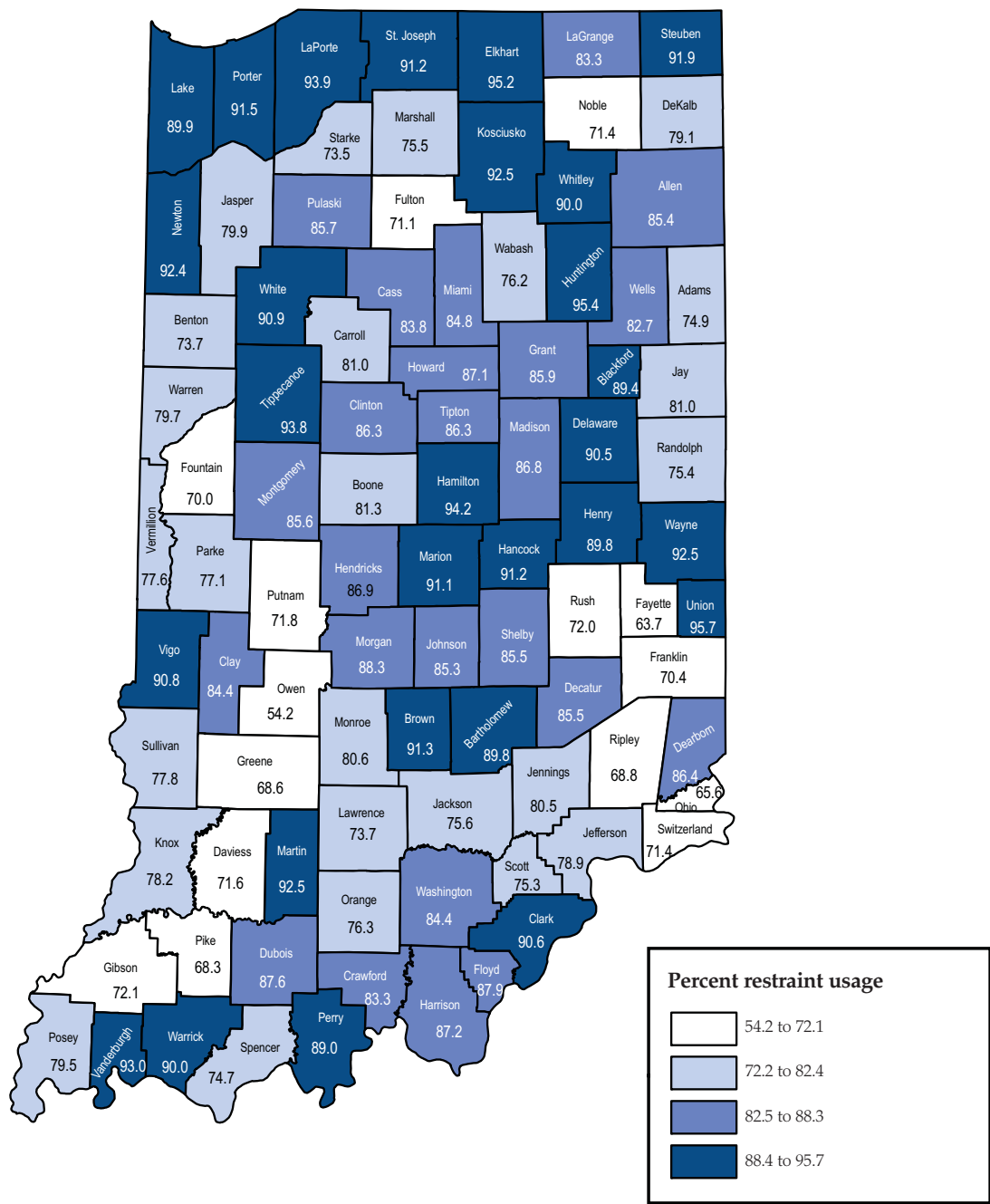
Serious injury rates include only *fatal* and *incapacitating* injuries occurring in passenger vehicles (defined as *passenger cars*, *pickup trucks*, *SUVs*, and *vans*). Excludes all other vehicle types including those identified as *pedestrians* and *pedalcyclists*.

Restraint use rates are calculated based on individuals properly restrained across all injury categories.

Due to the lack of available address-level data on traffic collision victims, it is assumed that individuals injured in collisions live in the county in which they were injured.

Map 3: Pickup truck restraint use rates in Indiana traffic collisions by county (2008)

Indiana overall restraint use rate = 86.9  
 Mean county restraint use rate = 82.4  
 n = 46,648 drivers and injured occupants in pickup trucks



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 1, 2009.

**Note:**

Restraint use rates are calculated based on individuals reported as *drivers* or *injured occupants* of pickup trucks properly restrained across all injury categories.

## Endnotes:

<sup>1</sup>Centers for Disease Control and Prevention, Department of Health and Human Services, *Child Passenger Safety: Fact Sheet*, extracted from website, November 19, 2007, <http://www.cdc.gov/ncipc/factsheets/childpas.htm>



This publication was prepared on behalf of the Indiana Criminal Justice Institute by the Indiana University Center for Criminal Justice Research (CCJR). Please direct any questions concerning data in this document to ICJI at 317-232-1233.

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An electronic copy of this document can be accessed via the CCJR website ([www.criminaljustice.iupui.edu](http://www.criminaljustice.iupui.edu)), the ICJI website ([www.in.gov/cji/](http://www.in.gov/cji/)), or you may contact the Center for Criminal Justice Research at 317-261-3000.

## The Indiana Criminal Justice Institute (ICJI)

Guided by a Board of Trustees representing all components of Indiana's criminal and juvenile justice systems, the Indiana Criminal Justice Institute serves as the state's planning agency for criminal justice, juvenile justice, traffic safety, and victim services. ICJI develops long-range strategies for the effective administration of Indiana's criminal and juvenile justice systems and administers federal and state funds to carry out these strategies.

## The Governor's Council on Impaired & Dangerous Driving

The Governor's Council on Impaired & Dangerous Driving, a division of the Indiana Criminal Justice Institute, serves as the public opinion catalyst and the implementing body for statewide action to reduce death and injury on Indiana roadways. The Council provides grant funding, training, coordination and ongoing support to state and local traffic safety advocates.

## Indiana University Public Policy Institute

The Indiana University (IU) Public Policy Institute is a collaborative, multidisciplinary research institute within the Indiana University School of Public and Environmental Affairs (SPEA), Indianapolis. The Institute serves as an umbrella organization for research centers affiliated with SPEA, including the Center for Urban Policy and the Environment, the Center for Health Policy, and the Center for Criminal Justice Research. The Institute also supports the Office of International Community Development and the Indiana Advisory Commission on Intergovernmental Relations (IACIR).

## The Center for Criminal Justice Research (CCJR)

The Center for Criminal Justice Research, one of three applied research centers currently affiliated with the Indiana University Public Policy Institute, works with public safety agencies and social services organizations to provide impartial applied research on criminal justice and public safety issues. CCJR provides analysis, evaluation, and assistance to criminal justice agencies; and community information and education on public safety questions. CCJR research topics include traffic safety, crime prevention, criminal justice systems, drugs and alcohol, policing, violence and victimization, and youth.

## The National Highway Traffic Safety Administration (NHTSA)

NHTSA provides leadership to the motor vehicle and highway safety community through the development of innovative approaches to reducing motor vehicle crashes and injuries. The mission of NHTSA is to save lives, prevent injuries and reduce economic costs due to road traffic crashes, through education, research, safety standards and enforcement activity.

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