



ALCOHOL 2018

JUNE 2019 • ISSUE 19-C18

In 2018:

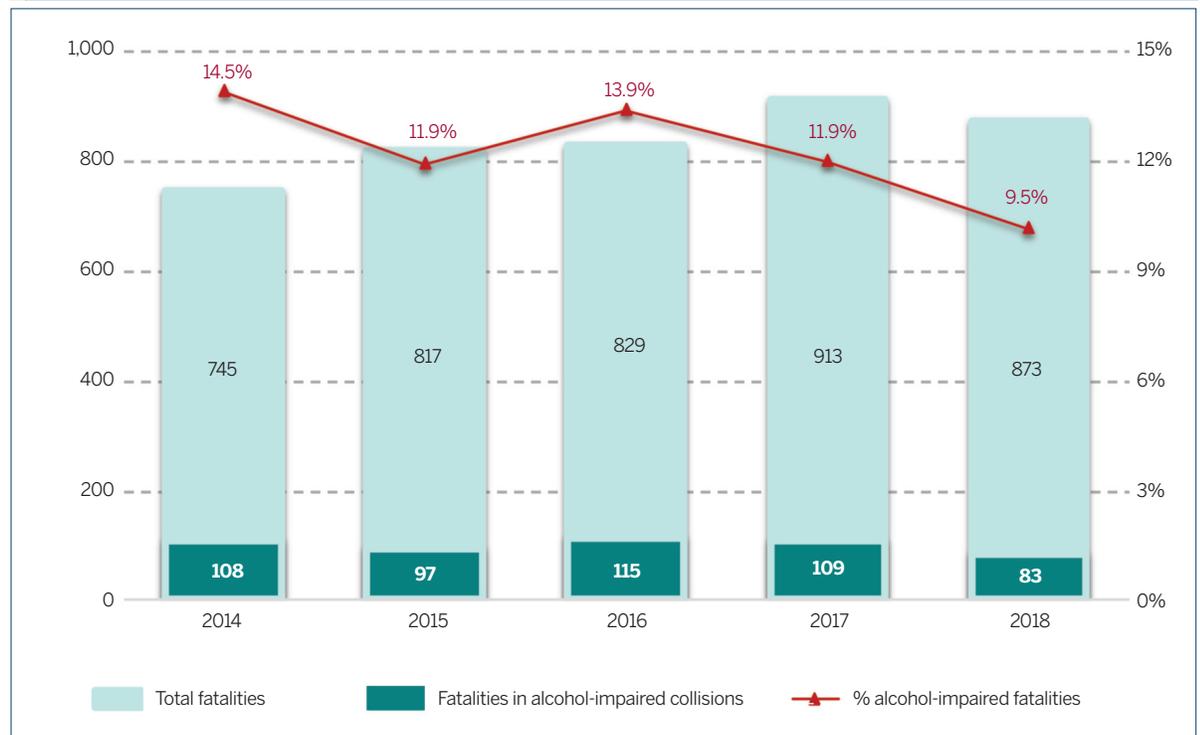
- There were 83 people killed in alcohol-impaired collisions, representing 10 percent of Indiana traffic fatalities.
- Drivers made up two-thirds of all fatalities in Indiana alcohol-impaired collisions.
- Males accounted for 73 percent of all drivers in Indiana fatal crashes, 19 percent of whom were reported to be legally impaired.
- Approximately one-quarter of passenger car drivers and motorcyclists in Indiana fatal collisions were alcohol-impaired.
- Consistent with collision rates involving other types of risky driving behaviors, rates of alcohol-impaired crashes were highest during weekend overnight hours, the same timeframe when crash-related fatality and incapacitating injury rates peaked.
- Among drivers killed in fatal collisions who had reported drug and alcohol test results, 38 percent were alcohol-impaired and 45 percent tested positive for one or more drugs.

According to the National Highway Transportation Safety Administration (NHTSA), one person in the United States dies every 48 minutes in a drunk driving crash, claiming more than 10,000 lives per year. In 2018, 83 people were killed in alcohol-related collisions in Indiana, accounting for 10 percent of the state's traffic fatalities (Figure 1). This fact sheet presents information and trends on alcohol-impaired traffic collisions in Indiana from 2014 to 2018, including driver demographics, the incidence of alcohol testing and blood alcohol content (BAC) test results for involved drivers, and other attributes of alcohol-impaired collisions, injuries, and fatalities.

It is important to note that data discrepancies may exist between this report and previous years' publications due to ongoing data updates in the Indiana State Police

Automated Reporting Information Exchange System (ARIES). All numbers in this report were current as of the March 18, 2019 Indiana State Police ARIES data extract but are likely to change as more BAC test results are finalized and added to the ARIES crash database. For example, according to ARIES data, about 60 percent of drivers involved in Indiana fatal collisions in 2018 were tested for alcohol. Yet at the time of the data extract, the ARIES database only included results for 343 of those 1,228 (28 percent) drivers tested. For this reason, trends related to alcohol-impaired crashes and fatalities in Indiana—as well as reported differences between Indiana and national data—should be interpreted with caution.

Figure 1. Indiana traffic fatalities, by alcohol impairment, 2014–2018



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 18, 2019

Notes:

- 1) Alcohol-impaired fatalities occurred in collisions that involved at least one driver or non-motorist with a BAC of 0.08 g/dL or greater.
- 2) Alcohol-impaired counts are current as of the March 18, 2019 ARIES data extract and are likely to increase as pending BAC test results are finalized and reported into the ARIES crash database; therefore, reported 2018 decreases should be interpreted with caution.

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From 2014 to 2018, the number of all types of fatal crashes in Indiana increased 3 percent annually (Table 1). Yet during this same period, the number of fatal alcohol-impaired collisions—as well as overall alcohol-impaired collisions—declined. Again, it is important to note these numbers are likely to increase as pending BAC test results are finalized and reported into ARIES. Despite that decline, the percentage of fatal crashes linked to alcohol was disproportionately high during the five-year period. In 2018, there were 63 fatal drunk driving collisions in Indiana, claiming 83 lives. That same year, alcohol-impaired crashes represented 8 percent of all fatal collisions, 3 percent of all crashes with non-fatal injuries, and less than 2 percent of all property damage collisions in the state.

Table 1. Indiana collisions, by driver alcohol impairment and collision severity, 2014–2018

Alcohol impairment / collision severity	Count of collisions					Annual rate of change	
	2014	2015	2016	2017	2018	2017-18	2014-18
Total collisions	205,791	216,526	223,954	219,281	217,081	-1.0%	1.3%
Fatal	704	752	776	836	789	-5.6%	2.9%
Non-fatal injury	33,864	34,472	35,342	34,234	32,383	-5.4%	-1.1%
Property damage	171,223	181,302	187,836	184,211	183,909	-0.2%	1.8%
All alcohol-impaired collisions	4,545	4,790	4,846	4,554	3,990	-12.4%	-3.2%
Fatal	101	90	100	96	63	-34.4%	-11.1%
Non-fatal injury	1,283	1,319	1,415	1,267	1,046	-17.4%	-5.0%
Property damage	3,161	3,381	3,331	3,191	2,881	-9.7%	-2.3%
Alcohol-impaired as % of total	2.2%	2.2%	2.2%	2.1%	1.8%	-11.5%	-4.5%
Fatal	14.3%	12.0%	12.9%	11.5%	8.0%	-30.5%	-13.6%
Non-fatal injury	3.8%	3.8%	4.0%	3.7%	3.2%	-12.7%	-3.9%
Property damage	1.8%	1.9%	1.8%	1.7%	1.6%	-9.6%	-4.0%

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 18, 2019

Notes:

- 1) Alcohol-impaired collisions are defined as collisions that involved at least one driver or non-motorist with a BAC of 0.08 g/dL or greater.
- 2) Alcohol-impaired counts are current as of the March 18, 2019 ARIES data extract and are likely to increase as pending BAC test results are finalized and reported into the ARIES crash database; therefore, reported 2018 decreases should be interpreted with caution.

ALCOHOL AND DRUG TESTING RATES IN CRASHES

Indiana law requires police officers offer a portable breath or chemical test to anyone they believe was driving a vehicle involved in a collision that caused a fatality or serious bodily injury. About 60 percent of drivers involved in fatal collisions in 2018 were reportedly tested for alcohol and/or drugs. Less than 30 percent of those had BAC test results in the ARIES database (calculated from Table 2).

Rates of driver alcohol-impairment varied by the severity of driver injuries. From 2014 to 2018, test rates varied significantly by whether the driver survived the crash or died (Table 2). Generally, surviving drivers were tested more often than those who suffered a fatal injury. In 2018, around two-thirds of surviving drivers were tested, compared to fewer than half of those who died. The data shows a significant difference in test results between these two groups, as well. Among drivers with reported BAC results, those who survived crashes had far lower impairment rates (9 percent) than those who were killed (38 percent).

Rates of positive drug test result were higher than alcohol-impairment for both surviving drivers and drivers killed. Among drivers killed in fatal collisions who had reported drug test results, 45 percent tested positive for one or more drugs. The current version of ARIES does not specify the type of drug(s) found during testing. Furthermore, alcohol-impairment and drug-positive are not mutually exclusive—drivers can be one or the other or both.

Table 2. Drivers involved in Indiana fatal collisions, by substance test given and reported results, 2014–2018

	Surviving					Killed				
	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018
Drivers in fatal collisions	602	611	629	669	660	517	536	570	622	568
By test type given										
Alcohol and/or drug	470	439	439	493	448	267	277	269	315	279
None	20	3	0	3	2	32	7	5	5	5
Refused	1	1	2	1	2	0	0	0	0	0
Not reported	111	168	188	172	208	218	252	296	302	284
Tested, as % all	78.1%	71.8%	69.8%	73.7%	67.9%	51.6%	51.7%	47.2%	50.6%	49.1%
By BAC test result										
Alcohol-impaired	27	36	34	29	21	75	55	68	69	43
Not impaired	333	291	306	283	210	110	116	112	104	69
No result reported	242	284	289	357	429	332	365	390	449	456
By drug test result										
Positive	45	53	65	49	47	73	72	83	90	52
Negative	176	188	181	155	86	96	99	98	82	63
Pending	39	26	20	32	64	17	26	15	21	34
No result reported	342	344	363	433	463	331	339	374	429	419
Alcohol-impaired, as % tested	5.7%	8.2%	7.7%	5.9%	4.7%	28.1%	19.9%	25.3%	21.9%	15.4%
Drug-positive, as % tested	9.6%	12.1%	14.8%	9.9%	10.5%	27.3%	26.0%	30.9%	28.6%	18.6%
Alcohol-impaired, as % of drivers with reported results	7.5%	11.0%	10.0%	9.3%	9.1%	40.5%	32.2%	37.8%	39.9%	38.4%
Drug-positive, as % drivers with reported results	20.4%	22.0%	26.4%	24.0%	35.3%	43.2%	42.1%	45.9%	52.3%	45.2%

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 18, 2019

Notes:

- 1) Alcohol-impaired: BAC of 0.08 g/dL or higher.
- 2) Drug-positive: Reported as positive under drug test results in the crash report. ARIES does not currently specify drug type(s).
- 3) Alcohol-impaired and drug-positive are not mutually exclusive (i.e., drivers can be one or the other or both).

Indiana Code Related to Drug/Alcohol Testing of Drivers in Collisions

Indiana Code 9-30-7-3a states in part that a “law enforcement officer shall offer a portable breath test or chemical test to any person who the officer has reason to believe operated a vehicle that was involved in a fatal accident or an accident involving serious bodily injury.” Elsewhere, serious bodily injury is defined in IC 35-31.5-2-292 as “bodily injury that creates a substantial risk of death or that causes: (1) serious permanent disfigurement; (2) unconsciousness; (3) extreme pain; (4) permanent or protracted loss or impairment of the function of a bodily member or organ; or (5) loss of a fetus.” However, ARIES personal injury classifications for drivers do not include an exactly equivalent category (incapacitating injury is the closest), so it is difficult to precisely identify collisions resulting in “serious bodily injury.” Testing rates in this report are presented only for drivers in fatal collisions.

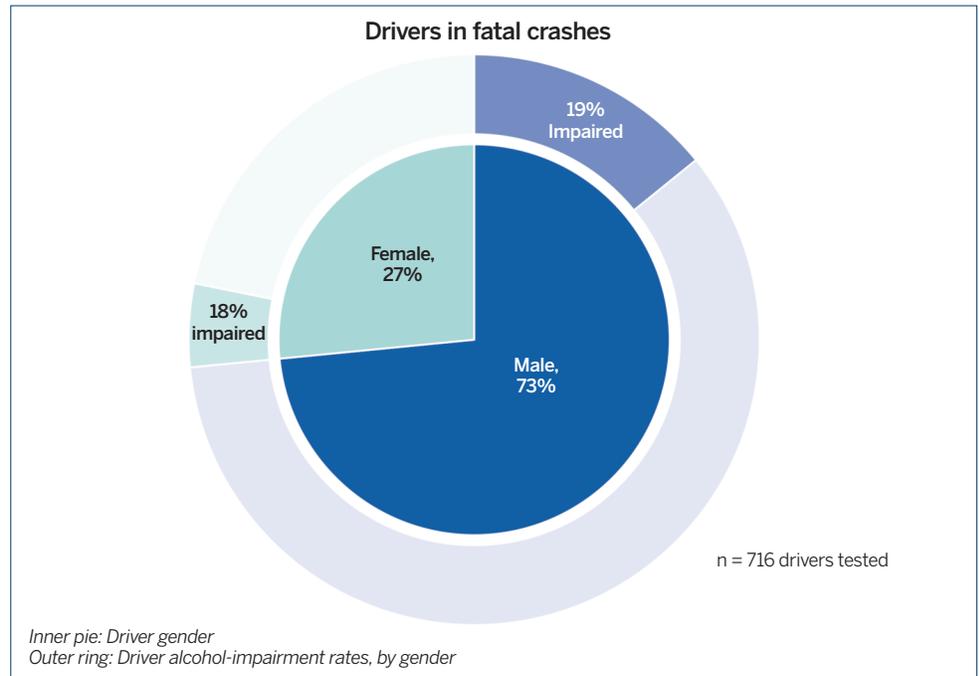
ALCOHOL-IMPAIRMENT, BY DRIVER GENDER

According to the NHTSA, male drivers are consistently more likely to engage in risky driving behaviors than female drivers, including impaired driving. Figure 2 shows that 73 percent of all drivers in fatal collisions in 2018 were male, compared to 27 percent who were female. However, reported rates of alcohol impairment were very similar among the two groups. Among drivers in fatal crashes with reported BAC results, 19 percent of males were alcohol-impaired compared to 18 percent of females.

ALCOHOL-IMPAIRED FATALITIES, BY PERSON TYPE

Drivers represented two-thirds of all fatalities in alcohol-impaired collisions in Indiana in 2018. Among the 83 individuals killed in alcohol-impaired collisions that year, 55 were passenger vehicle drivers, 23 were passengers, three were pedestrians, and two were driving animal-drawn vehicles (Figure 3). No bicyclists died in alcohol-impaired crashes in 2018.

Figure 2. Alcohol impairment among drivers in Indiana fatal collisions, by gender, 2018

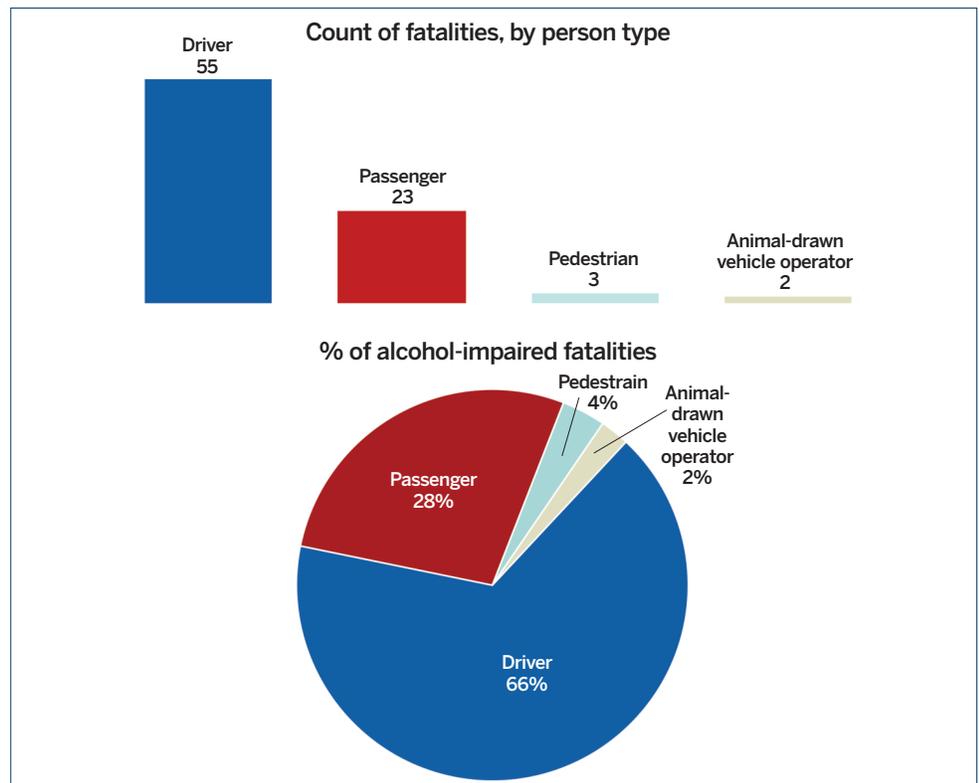


Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 18, 2019

Notes:

- 1) Alcohol-impaired includes drivers with a reported BAC of 0.08 g/dL or higher.
- 2) Limited to drivers tested for blood alcohol content with valid BAC results reported.

Figure 3. Indiana traffic fatalities in alcohol-impaired collisions, by person type, 2018



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 18, 2019

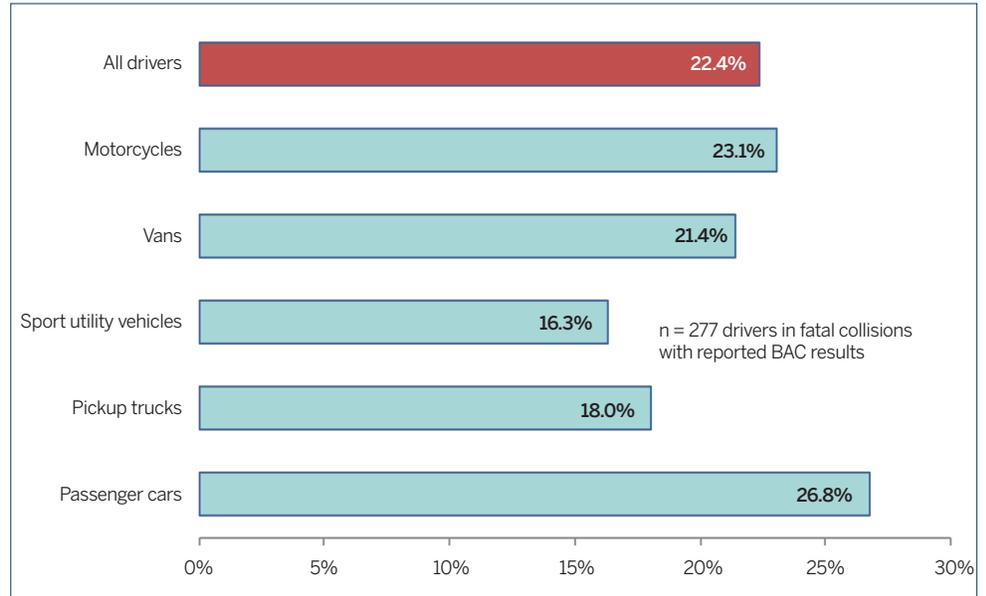
Note: No bicyclists (pedalcyclists) were killed in 2018 alcohol-impaired collisions.

VEHICLES IN ALCOHOL-IMPAIRED COLLISIONS

Rates of driver alcohol impairment vary by vehicle type, specifically passenger vehicles and motorcycles. Figure 4 shows the percentage of drivers in 2018 fatal collisions who were legally impaired, based on reported BAC test results. Passenger car drivers and motorcycle operators had the highest rates of alcohol-impaired driving in 2018, at 27 percent and 23 percent, respectively.

The relative risk of fatal injury was higher for SUVs, vans, and passenger cars when the crash involved one or more drivers who were legally impaired (Table 3). In 2018, people in SUVs and vans were nearly nine times more likely to die when the crash involved an alcohol-impaired driver. Passenger car occupants involved in alcohol-impaired collisions were eight times more likely to be killed than occupants in non-impaired collisions.

Figure 4. Percentage of drivers involved in fatal collisions with reported BAC results who were legally impaired, by vehicle type, 2018



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 18, 2019

Notes:

- 1) Includes only passenger vehicles (passenger cars, pickup trucks, sport utility vehicles, and vans) and motorcycles. Non-motorists and other vehicle types are excluded.
- 2) Motorcycles include motorcycles, Class A and Class B motor driven cycles, mopeds, and motorized bicycles.
- 3) Drivers in fatal collisions who were not tested or for whom no reported BAC results appeared in ARIES are excluded.

Table 3. Individuals involved in Indiana collisions, by vehicle type, alcohol involvement, and injury status, 2018

Collision alcohol involvement and injury status	Passenger cars		Pickup trucks		SUVs		Vans		Motorcycles	
	Count	% total	Count	% total	Count	% total	Count	% total	Count	% total
Not alcohol-impaired (NA)	222,661	100.0%	36,021	100.0%	47,827	100.0%	14,255	100.0%	2,741	100.0%
Fatal	356	0.2%	77	0.2%	58	0.1%	26	0.2%	101	3.7%
Incapacitating	11,672	5.2%	1,501	4.2%	2,507	5.2%	741	5.2%	1,122	40.9%
Non-incapacitating	17,691	7.9%	2,172	6.0%	3,976	8.3%	1,105	7.8%	713	26.0%
No injury	192,942	86.7%	32,271	89.6%	41,286	86.3%	12,383	86.9%	805	29.4%
Alcohol-impaired (A)	3,734	100.0%	753	100.0%	762	100.0%	189	100.0%	130	100.0%
Fatal	48	1.3%	6	0.8%	8	1.0%	3	1.6%	11	8.5%
Incapacitating	493	13.2%	94	12.5%	113	14.8%	38	20.1%	65	50.0%
Non-incapacitating	44	11.9%	88	11.7%	101	13.3%	22	11.6%	30	23.1%
No injury	2,749	73.6%	565	75.0%	540	70.9%	126	66.7%	24	18.5%
Relative risk of fatal injury	8.0		3.7		8.7		8.7		2.3	

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 18, 2019

Notes:

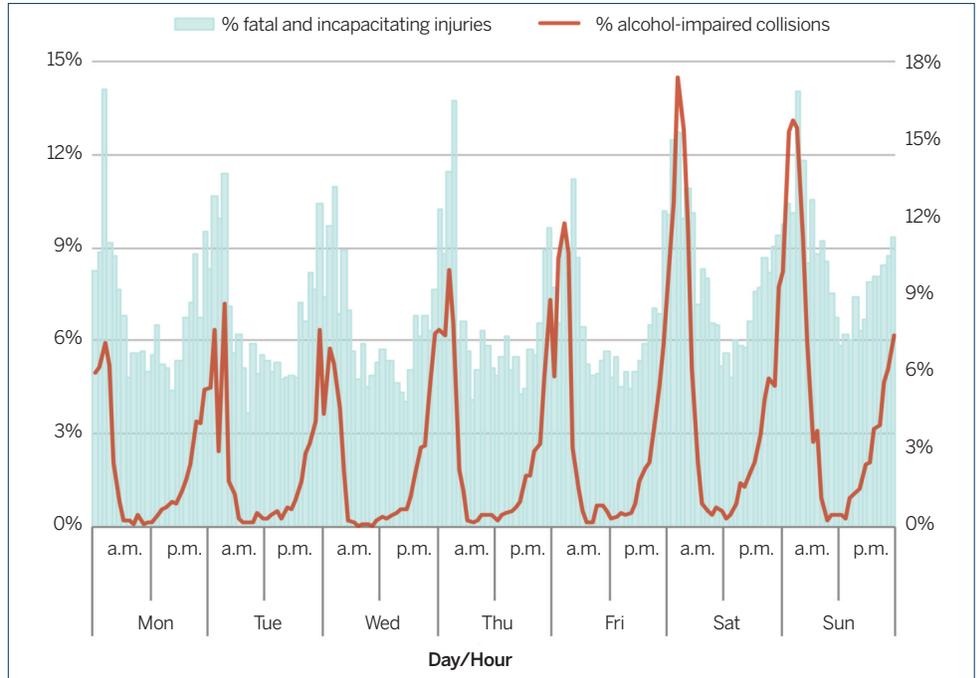
- 1) Alcohol-impaired collisions are defined as collisions that involved at least one driver or non-motorist with a BAC of 0.08 g/dL or greater.
- 2) Relative risk of fatal injury is calculated as % A / % NA. All relative risk ratios are significant (p<0.01). Excludes NULL values.
- 3) Non-incapacitating injuries include those injuries reported as non-incapacitating, possible, not reported, unknown, and refused (treatment) injury status codes.
- 4) Motorcycles includes motorcycles, Class A and Class B motor-driven cycles, and motorized bicycles.

ALCOHOL-IMPAIRED DRIVING AND TIME OF DAY

Consistent with collision rates involving other types of risky driving behaviors, rates of alcohol-impaired crashes were highest during weekend overnight hours, the same timeframe when crash-related fatality and incapacitating injury rates peaked.

In 2018, fatal and incapacitating injuries happened most often between the hours of midnight and 4 a.m., particularly during weekends (Figure 5). The highest hourly rates of alcohol-impaired crashes occurred on Saturdays between 2–3 a.m., while fatal and incapacitating injuries were most likely to happen on Sundays between 3–4 a.m.

Figure 5. Indiana fatal and incapacitating injuries in collisions, and alcohol-impaired collisions, by hour and data of week, 2018



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 18, 2019

Notes:

- 1) Fatal/incapacitating injury rate is the percentage of all hourly injuries in collisions reported as fatal or incapacitating.
- 2) Alcohol-impaired collision rate is the percentage of all hourly collisions that involved one or more alcohol-impaired drivers.

DEFINITIONS

- **Alcohol-impaired:** The National Highway Traffic Safety Administration (NHTSA) defines drivers as being alcohol-impaired when they test for a blood alcohol concentration (BAC) of at least 0.08 grams per deciliter (g/dL). Any fatal crash involving a driver at that BAC level is categorized as an alcohol-impaired-driving crash, thus any fatalities that happen in a crash that meets that criterion is deemed an alcohol-impaired fatality (NHTSA DOT HS 812 450, 2017, p. 1). By law, drivers in Indiana who have a BAC of at least 0.08 g/dL should receive—at minimum—a Class C misdemeanor (IC 9-30-5-1). Indiana Code also says that drivers with BAC of at least 0.15 g/dL should receive a Class A misdemeanor (IC 9-30-5-1). If the driver had a passenger under the age of 18 in the vehicle, they could face a Class D felony. This fact sheet does not explicitly consider these cases but does include them in summary statistics.
- **Annual rate of change (ARC):** The rate that a beginning value must increase/decrease each period (e.g. month, quarter, or 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 2014 to 2018, it is calculated as $(\text{value in 2018} / \text{value in 2014})^{1/4} - 1$.

REFERENCE

National Highway Traffic Safety Administration (NHTSA). (November 2018). Alcohol-impaired driving. *Traffic Safety Facts, 2017 Data*, DOT HS 812 630, National Center for Statistics and Analysis.

National Highway Traffic Safety Administration (NHTSA). Drunk Driving Campaign. <https://www.nhtsa.gov/risky-driving/drunk-driving>, accessed August 3, 2018.

DATA SOURCES

Indiana State Police, Automated Reporting Information Exchange System (ARIES), current as of March 18, 2019

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

This publication is one of a series of publications that form the analytical foundation of traffic safety program planning and design in the state of Indiana. Funding for these publications is provided by ICJI and the National Highway Traffic Safety Administration.

An electronic copy of this document can be accessed via the PPI traffic safety research project site (<http://trafficsafety.iupui.edu>), the ICJI website (www.in.gov/cji/), or you may contact the PPI at 317-278-1305.



INDIANA UNIVERSITY
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Traffic Safety Project

Designing and implementing effective traffic safety policies requires data-driven analysis of traffic collisions. To help in the policy-making process, the Indiana University Public Policy Institute collaborates each year with the Indiana Criminal Justice Institute to analyze vehicle crash data from the Automated Reporting Information Exchange System (ARIES), maintained by the Indiana State Police. This marks the thirteenth year of this partnership. Research findings are summarized in a series of publications on various aspects of traffic collisions, including alcohol-related crashes, commercial vehicles, dangerous driving, child passenger safety, motorcycles, occupant protection, and drivers. An additional publication provides detailed information on county and municipality data. 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. Crash reports for all Indiana collisions are entered electronically through ARIES. Collisions trends as reported in these publications 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. 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. If you have questions regarding trends or unexpected results, please contact the Indiana Criminal Justice Institute, Traffic Safety Division for more information.

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The Indiana Criminal Justice Institute

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 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.

Author: Dona Sapp Senior Policy Analyst