ITSMR Research Note

KEY FINDINGS

Drug-Related Fatal & Personal Injury Crashes (F&PI): 2015-2019

- While less than 1% of all F&PI crashes each year were drug-related, 22%-33% of the fatal crashes each year were drug-related.
- 28% of all fatalities in 2019 were drug-related, down from 34% in 2018 but up from 24%-26% in 2015-2017.

Drug-Involved Drivers in F&PI Crashes

- 74% of the drug-involved drivers in F&PI crashes during the years 2015-2019 were men and 26% were women.
- 40% of the drug-involved drivers were under the age of 30; 26% were ages 30-39.
- 19% of the drug-involved drivers had "unsafe speed" reported as a contributing factor.
- 12% of the drug-involved drivers had "alcohol involvement" reported as a contributing factor.
- 58% of the surviving drug-involved drivers were ticketed for drug-involved driving (VTL 1192.4-4a) and 21% were ticketed for alcohol-impaired driving (VTL 1192.1-3); 15% were ticketed for unsafe speed and 14% were ticketed for aggravated unlicensed operation.

CONCLUSIONS

- In 2019, the involvement of drugs continued to be a serious issue in fatal crashes, with 28% of the fatalities being drug-related.
- More knowledge about the drugs that drivers have tested positive for and the extent to which drugs impair a person's ability to drive safely is warranted.
- The effects of both over-the-counter and prescription drugs on driver behavior, as well as Increased awareness of the combined effects of drugs and alcohol, are required.

Drug Involvement in Fatal and Personal Injury Crashes on New York Roadways: 2015 - 2019

INTRODUCTION

The Institute for Traffic Safety Management and Research (ITSMR) recently completed a study on the involvement of drugs in fatal and personal injury crashes that occurred on New York roadways over the five-year period, 2015-2019. Funded by the Governor's Traffic Safety Committee (GTSC), the study was designed to gather information that could inform the state's Advisory Council on Impaired Driving in its efforts to address the problem of drug-impaired driving on New York's roadways. The primary objectives of the study were to 1) determine the extent to which crashes on New York's roadways involve drugs, 2) identify the key characteristics of those crashes and 3) identify the key characteristics of the drug-involved drivers associated with those crashes. The following information is provided:

- Characteristics of Drug-Related Crashes
  - Number of Crashes, Fatalities and Injuries
  - Time of Day and Day of Week
  - Manner of Collision
  - Fatalities and Injuries by Region
  - Fatalities and Injuries by County
- Characteristics of Drug-Involved Drivers
  - Age and Gender
  - Other Contributing Factors
  - Tickets Issued to Drug-Involved Drivers as Result of the Crash

The data source for the study was the NYS Department of Motor Vehicles (DMV) Accident Information System (AIS). The study involved the analyses of police-reported fatal and personal injury (F&PI) drug-related crashes that occurred during the five years, 2015-2019, and the characteristics associated with the drug-involved drivers in those crashes. The study defines a crash as being drug-related if at least one of the following criteria is met:

1) Contributing factor of "drugs (illegal)" or "prescription medication" was reported on the police accident report form.

2) Ticket was issued for one or more violations of VTL 1192.4 (DWAI Drugs) or 1192.4a (DWAI Drugs & Alcohol) as a result of the crash.

3) Positive drug result is shown in the AIS drug table for a driver, pedestrian or bicyclist killed in the crash. It is important to note that drug involvement as reported by the coroner or medical examiner means only that drugs were found in the person's system and does not imply impairment or indicate that drug use was the cause of the crash.

Since drug testing is generally conducted only on persons killed in crashes, a personal injury crash is defined as drug-related if it meets criterion 1 and/or 2 above, whereas a fatal crash is defined as drug-related if it meets any one of the above three criteria.

Characteristics of Drug-Related Fatal & Personal Injury Crashes

Based on the above definition of a drug-related crash, various analyses of the 2015-2019 data on drug-related fatal and personal injury crashes were conducted. The analyses included an examination of various characteristics associated with drug-related F&PI crashes, including the day of week, time of day, manner of collision (single vs. multiple vehicle involvement) and crash location (i.e., region/county of the state). Since the data fluctuated from year to year, the data were aggregated for the five years, 2015-2019, and analyzed. The results are presented below.

Number of Fatal and Personal Injury Drug-Related Crashes

As indicated in Table 1, both drug-related fatal and drug-related personal injury crashes fluctuated over the five years, 2015-2019. Table 1 shows that while total fatal crashes were down 16% in 2019 compared to 2015, drug-related fatal crashes dropped 2% during those five years. Drug-related personal injury crashes also decreased 2% over the five years, whereas the total number of personal injury crashes rose 11% in 2019 compared to 2015.

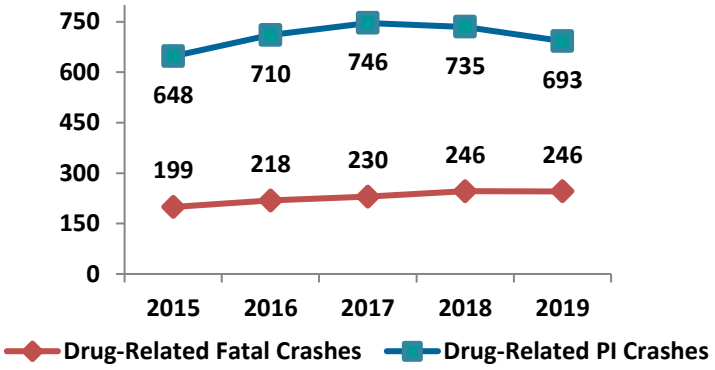
Table 1 also shows that drug-related fatal crashes comprised 27% of all fatal crashes in 2019, up from 23%-25% in the years 2015-2017 and down from 33% in 2018. Personal injury crashes that are drug-related account for less than one percent of the total personal injury crashes each year. When fatal and personal injury crashes are combined, less than one percent of the total F&PI crashes are drug-related.

TABLE 1
NYS Police-Reported Drug-Related Fatal & Personal Injury (F & PI) Crashes

	2015	2016	2017	2018	2019	Change 2015 – 2019 #	Change 2015 – 2019 %
Total Fatal Crashes	**1,045**	**969**	**933**	**882**	**881**	**-164**	**-15.7%**
Drug-Related Fatal Crashes	244	241	205	293	239	-5	-2.0%
% of all fatal crashes	*23.3%*	*24.9%*	*22.0%*	*33.2%*	*27.1%*		
Total Personal Injury Crashes	**102,986**	**112,852**	**113,551**	**115,236**	**114,643**	**11,657**	**11.3%**
Drug-Related PI Crashes	689	800	750	654	674	-15	-2.2%
% of all PI crashes	*0.7%*	*0.7%*	*0.7%*	*0.6%*	*0.6%*		
Total F&PI Crashes	**104,031**	**113,821**	**114,484**	**116,118**	**115,524**	**11,493**	**11.0%**
Drug-Related F&PI Crashes	933	1,041	955	947	913	-20	-2.1%
% of all F&PI crashes	*0.9%*	*0.9%*	*0.8%*	*0.8%*	*0.8%*		

Moving averages are commonly used to smooth out short-term fluctuations in the data and highlight longer-term trends or cycles. As shown in Figure 1, the three-year moving average for drug-related fatal crashes rose from 199 in 2015 to 246 in 2018 and stayed at that level in 2019. In comparison, the three-year moving average for personal injury drug-related crashes rose from 648 in 2015 to 746 in 2017, then declined to 693 in 2019.

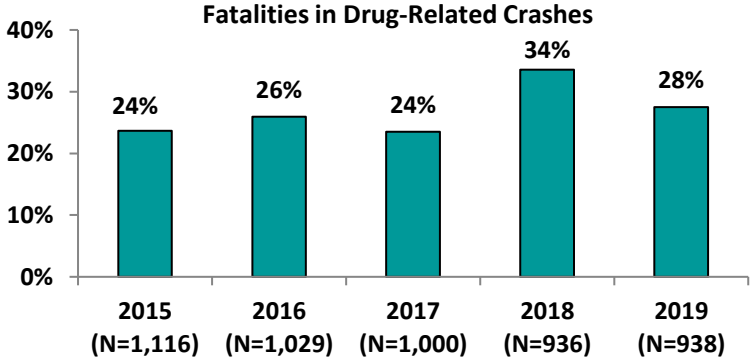
FIGURE 1
Drug-Related F & PI Injury Crashes
3-Year Moving Averages: 2015–2019



Fatalities in Drug-Related Crashes

In 2019, 28% of the fatalities in motor vehicle crashes occurred in drug-related crashes (Figure 2), down from 34% in 2018 and above the levels in 2015-2017 (24%-26%).

FIGURE 2
Fatalities in Drug-Related Crashes



As shown in Table 2, not surprisingly, the majority of fatalities in drug-related crashes each year were the drivers involved (52%-61%). Drivers with drugs in their system accounted for 48%-58% of the fatalities each year. Pedestrians accounted for the second largest proportion of fatalities each year (22%-26%). The proportion of fatalities that were passengers rose from 16% in 2015 and 2016 to 22% in 2017, followed by a drop to 13% in 2018 and 2019. Bicyclists accounted for 2%-5% of the fatalities in drug-related crashes each year.

TABLE 2
Fatalities in Drug-Related Crashes

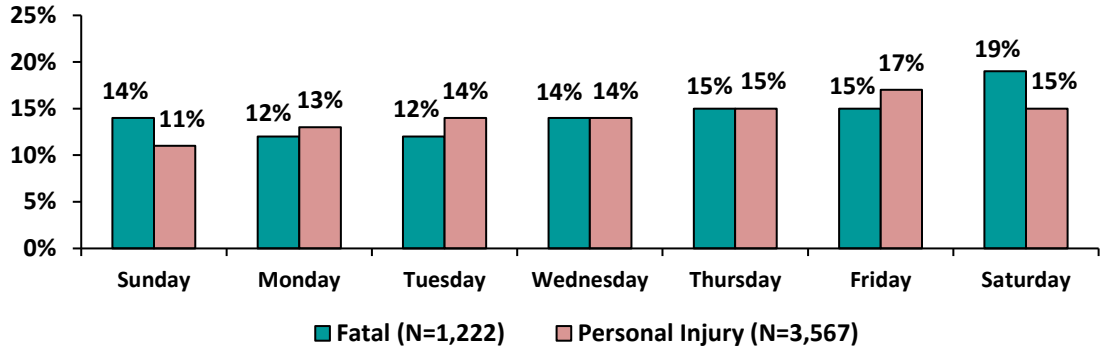
	2015	2016	2017	2018	2019
Drug-Related Fatalities	**N=264**	**N=267**	**N=235**	**N=314**	**N=258**
Drivers	57.6%	55.4%	51.5%	60.8%	56.2%
Drug-Involved drivers	*54.9%*	*53.2%*	*47.7%*	*57.6%*	*53.9%*
Non-drug-involved drivers	*2.7%*	*2.2%*	*3.8%*	*3.2%*	*2.3%*
Passengers	15.5%	15.7%	22.1%	13.4%	12.8%
Pedestrians	22.7%	25.1%	22.1%	23.9%	26.0%
Bicyclists	4.2%	3.7%	4.3%	1.9%	4.7%
Other	0.0%	0.0%	0.0%	0.0%	0.3%

Day of Week and Time of Day

During the five years, 2015-2019, drug-related fatal crashes were more likely to occur on weekends than drug-related personal injury crashes:

- 33% of the drug-related fatal crashes occurred on weekends, with 19% occurring on Saturday and 14% occurring on Sunday, compared to 26% of the drug-related personal injury crashes (Figure 3).

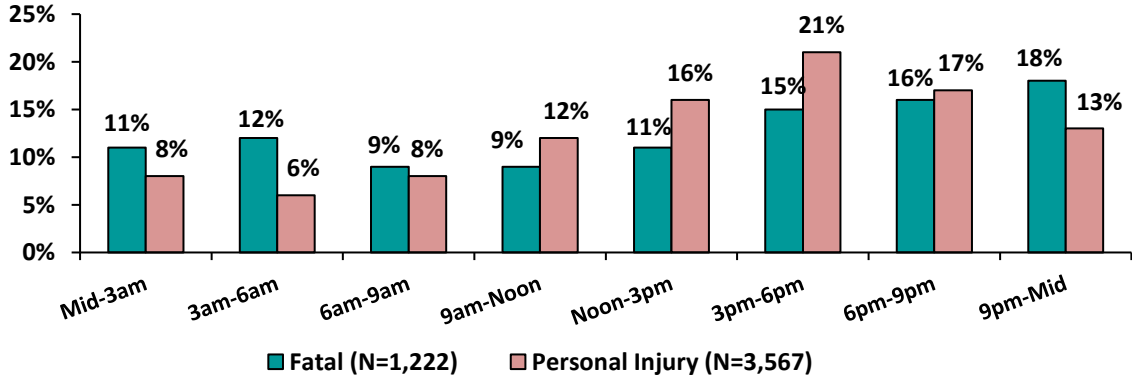
FIGURE 3
Drug-Related F & PI Crashes
Day of Week: 2015-2019



As shown in Figure 4, drug-related fatal crashes were more likely to occur at night, while drug-related personal injury crashes were more likely to occur during the day. During the five years, 2015-2019:

- 41% of the drug-related fatal crashes occurred between 9pm and 6am, compared to 27% of the drug-related personal injury crashes.
- 49% of the drug-related personal injury crashes occurred between 9am and 6pm, compared to 35% of the drug-related fatal crashes.

FIGURE 4
Drug-Related F & PI Crashes
Time of Day: 2015-2019



Manner of Collision

- 60% of the drug-related fatal crashes during the years 2015-2019 involved a single vehicle and 40% involved multiple vehicles; in contrast, 45% of the drug-related personal injury crashes involved a single vehicle and 55% involved multiple vehicles (Table 3).

TABLE 3
Drug-Related F & PI Crashes by Manner of Collision
2015-2019

	Fatal (N=1,222)	Personal Injury (N=3,567)
Single Vehicle Involved	60.0%	45.4%
Multiple Vehicles Involved	40.0%	54.6%

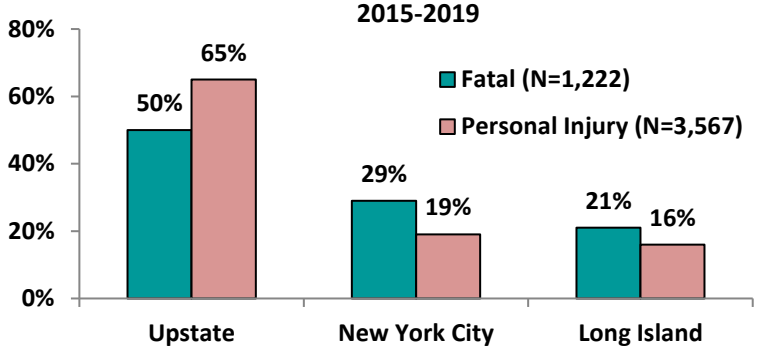
Region and County of the State

In analyzing crash data by area of the state, the state is typically divided into three regions: Upstate, Long Island and New York City. The Upstate region consists of the 55 counties north of New York City, the Long Island region includes the two counties of Nassau and Suffolk and the New York City region is comprised of five counties (Bronx, Kings, New York, Queens and Richmond). As indicated in Figure 5:

- The largest proportions of drug-related fatal and drug-related personal injury crashes occurred upstate (50% and 65%, respectively).

- 29% of the drug-related fatal crashes occurred in NYC and 21% occurred on Long Island, compared to 19% and 16%, respectively, of the drug-related personal injury crashes.

FIGURE 5
Drug-Related F & PI Crashes by Region of the State
2015-2019



Due to the small number of drug-related fatal crashes by county, the data on drug-related fatal and personal injury crashes were combined for the analyses by county. The top counties with the greatest number of drug-related fatal and personal injury crashes in 2019 are shown in Table 4. By a factor of more than two, Suffolk County had the greatest number of drug-related F&PI crashes (132), accounting for almost 15% of the state's total. The top counties accounted for 63% of the total number of drug-related F&PI crashes statewide in 2019.

TABLE 4 Top Ten Counties for Drug-Related F & PI Crashes: 2019		
	Number	**%**
Suffolk	132	14.5%
Nassau	61	6.7%
Kings	55	6.0%
Erie	53	6.0%
Orange	49	5.4%
Monroe	48	5.3%
Westchester	41	4.5%
Queens	40	4.4%
Bronx	38	4.2%
New York	31	3.4%
Onondaga	31	3.4%
Sub-total	579	63.4%
Statewide Total	913	

CHARACTERISTICS OF DRUG-INVOLVED DRIVERS IN F & PI CRASHES

Since the analyses of the data by driver gender and age and by contributing factors showed only small variations from year to year, the data were aggregated for the years 2015-2019. The results of the analyses are summarized below.

Driver Gender and Age

- Over the five-year period, 74% of the drug-involved drivers in fatal and personal injury crashes were men and 26% were women (Figure 6).
- The largest proportion of drug-involved drivers were ages 21-29 (32%), followed by drivers ages 30-39 (26%) (Figure 7).

FIGURE 6
Drug-Involved Drivers in F & PI Crashes by Gender: 2015-2019 (N=4,261)

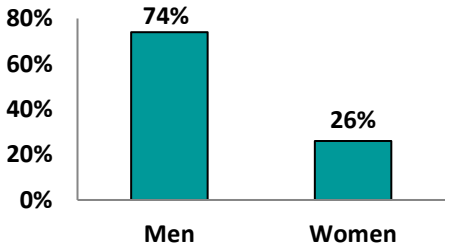
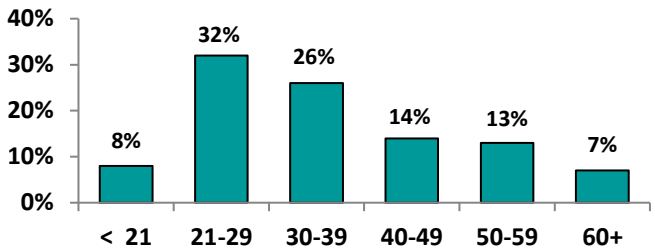


FIGURE 7
Drug-Involved Drivers in F & PI Crashes By Age: 2015-2019 (N=4,261)



Contributing Factors

As shown in Table 5, and not unexpectedly, eight out of ten drug-involved drivers (78%) had "Drugs (Illegal)/Prescription Medication" reported as a contributing factor in F&PI crashes during the five years 2015-2019. Approximately one in five drug-involved drivers had "unsafe speed" (19%) reported as a contributing factor and one in ten (12%) had "alcohol involvement" reported as contributing factor.

TABLE 5
Select Contributing Factors Reported for Drug-Involved Drivers in F & PI Crashes 2015-2019 (N=4,261)

Drugs (Illegal)/Prescription Medication	77.8%
Unsafe Speed	19.3%
Passing/Improper Lane Usage/Unsafe Lane Changing	12.8%
Alcohol Involvement	11.7%
Failure to Keep Right	7.9%

Tickets Issued to Surviving Drug-Involved Drivers in F & PI Crashes

In addition to capturing extensive data on the crash and the drivers involved, the police accident report form also indicates whether any tickets were issued for violation of the state's Vehicle and Traffic Law (VTL) as a result of the crash. Analyses examined the extent to which surviving drug-involved drivers were issued tickets in connection with their crashes. Table 6 provides information on the top violations for which drug-involved drivers were ticketed over the five-year period, 2015-2019.

TABLE 6
Tickets Issued to Surviving Drug-Involved Drivers in F & PI Crashes 2015-2019 (N=3,542)

Drugs & Drugs/Alcohol (VTL 1192.4 & 4a)	58.2%
DWAI & DWI (VTL 1192.1-3)	21.0%
Passing/Improper Lane Usage/Unsafe Lane Changing	28.2%
License-Related Violations	26.3%
Aggravated Unlicensed Operation	*14.4%*
Unlicensed/Out of Class/Outside Restrictions	*11.9%*
Speed-Related	15.4%
Failure to Keep Right	13.1%

- 58% of the surviving drug-involved drivers were ticketed for drug or drug and alcohol-impaired driving (VTL 1192.4 & 4a); 21% received tickets for an alcohol offense (VTL 1192.1-3).
- 28% were ticketed for passing/lane use-related violations.
- 26% were ticketed for some form of license violation: 14% for aggravated unlicensed operation and 12% for being unlicensed or operating out of class or outside the restrictions.
- 15% were ticketed for speed-related violations and 13% were ticketed for failure to keep right.

Summary and Conclusion

The findings from this study show why drugged driving is a serious concern of the state's traffic safety community. Although the total number of drug-related fatal and personal injury crashes (F&PI) has been on a downward trend over the past few years, the number of fatalities has fluctuated from a high of 314 in 2018 to a low of 235 in 2017. The study further found that the proportion of the state's total motor vehicle fatalities that are drug-related remains at an unacceptable level; it was 34% in 2018 and 28% in 2019. Although it may not be surprising, four of ten drug-involved drivers (40%) involved in F&PI crashes over the five-year year study period of 2015-2019 were under the age of 30 and another one-quarter (26%) were ages 30-39. It was also found that multiple drugs were involved in many of these crashes, with one out of ten drug-involved drivers also having "alcohol involvement" cited as a contributing factor.

These study findings support the continuing need for a better understanding of the drugs that drivers have tested positive for and the extent to which such drugs impair a person's ability to drive safely. In addressing drug-involved driving, more awareness of the combined effects of drugs and alcohol, as well as the effects of both over-the-counter and prescription drugs, are also required. More complete information on these issues would enhance efforts to address the problem of drug-impaired driving among motorists in New York State and improve the effectiveness of public awareness efforts to educate the motoring public on the dangers of driving under the influence of drugs.

For further information regarding this *Research Note*, please contact:

Institute for Traffic Safety Management and Research
80 Wolf Road, Suite 607
Albany, NY 12205-2604
Phone 518-453-0291 E-mail info@itsmr.org