Alcohol- and Drug-Involved Crashes in Michigan: 2015-2019

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1.0 Executive Summary

This report utilizes police-reported crash data in Michigan from 2015 through 2019 to study the impact of both alcohol and drug impaired driving on crash trends. Major findings include:

- The number of alcohol-involved crashes and drug-involved crashes increased each year from 2015 through 2017, but both decreased in 2018. In 2019, alcohol-involved crashes increased by a count of one from the 2018 number and drug-involved crashes decreased by a count of 38.
- The highest percentage of both alcohol and drug-involved crashes are single-vehicle crashes, followed by rear-end crashes, and impaired drivers have a higher risk of head-on crashes and sideswipe crashes that occur when the vehicles are traveling in opposite directions.
- Alcohol-involved crashes have much higher rates on weekends, while drug-involved crashes have higher rates on Friday and Saturday.
- Alcohol-involved crashes are more likely to occur at night, with a peak from 2 AM to 3 AM, while drug-involved crashes peak between 5 PM and 6 PM.
- Both alcohol-involved crashes and drug-involved crashes occur most frequently at the 55 miles per hour posted speed limit.
- Pedestrians account for 2.0% of parties drinking in crashes, while bicyclists account for 0.5%. Among the parties using drugs in crashes, 1.6% are pedestrians and 0.3% are bicyclists.
- Male impaired motor vehicle drivers appear at higher rates than female impaired drivers for both alcohol- and drug-involved crashes.
- Motor vehicle drivers age 21-25 years old have the highest frequencies for both alcohol-involved crashes and drug-involved crashes.
- Compared to no impairment crashes, alcohol only fatal crashes occur at a rate of 10.5 times higher, drugs only fatal crashes at 37.0 times higher, and alcohol and drugs fatal crashes at 42.5 times higher.

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2.0 Introduction

This report analyzes police-reported motor vehicle crashes involving alcohol and/or drug impairment in Michigan from 2015 through 2019. Alcohol-involvement and/or drug-involvement in crashes is defined as impairment by a motor vehicle driver, a pedestrian, or a bicyclist at the time of the crash. Michigan traffic crashes must take place on public roadways in Michigan, involve at least one motor vehicle in transport, and result in death, injury, or property damage of $1,000 or more. Crash data was used to study the impact of both alcohol and drug impaired driving on crash severity and crash type, as well as the other factors that confound and influence impaired driving, including temporal elements, speed limit, and driver demographics. Blood alcohol content (BAC) and drug test results are explored to determine usage trends. A section on combined alcohol and drug involvement in crashes examines differences from single impairment crashes.

3.0 Crash Count Trends

Table 1 displays the number of alcohol-involved and drug-involved total crashes and fatal crashes between 2015 and 2019. Figure 1 and Figure 2 highlight the same crash data. While alcohol-involved and drug-involved crash counts both show an upward trend from 2015 through 2017, the increase in drug-involved crashes is greater. Between 2015 and 2017, drug-involved crashes increased by 29.3%, while alcohol-involved crashes increased by about 7.6%. Alcohol-involved crashes are much higher in number, so a small percentage increase can imply a substantial increase in the number of crashes.

From 2015 to 2017 both drug and alcohol crashes increased, with a decrease in 2018 for both. In 2019, alcohol-involved crashes increased by only one, from 9,786 in 2018 to 9,787 in 2019. Drug-involved crashes decreased from 2017 through 2019. While alcohol-involved fatal crashes fluctuated each year from 2015 to 2019, drug-involved fatal crashes increased each year from 2015 through 2017, with a decrease of one in 2018 and a decrease of six in 2019. Both impairment types showed the highest number of fatal crashes in 2017 during the five-year period.

Table 1. Alcohol- and Drug-Involved Crashes

	Year	All Crashes	Fatal Crashes
Alcohol-Involved Crashes	2015	9,537	271
	2016	9,769	254
	2017	10,265	320
	2018	9,786	287
	2019	9,787	266
	Total	49,144	1,398
Drug-Involved Crashes	2015	2,227	159
	2016	2,667	216
	2017	2,880	221
	2018	2,636	220
	2019	2,598	214
	Total	13,008	1,030

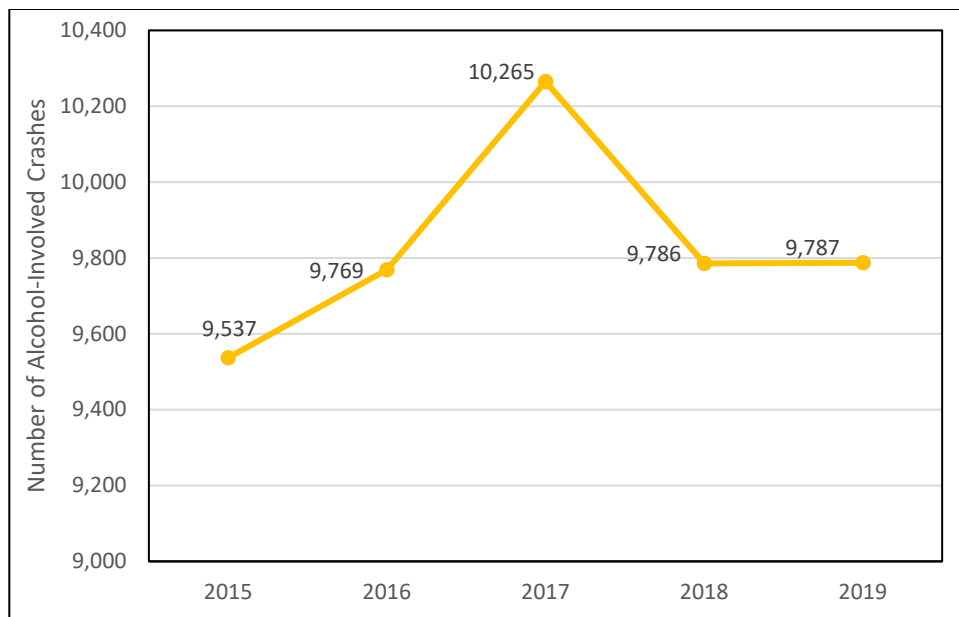Alcohol- and Drug-Involved Crashes in Michigan: 2015-2019

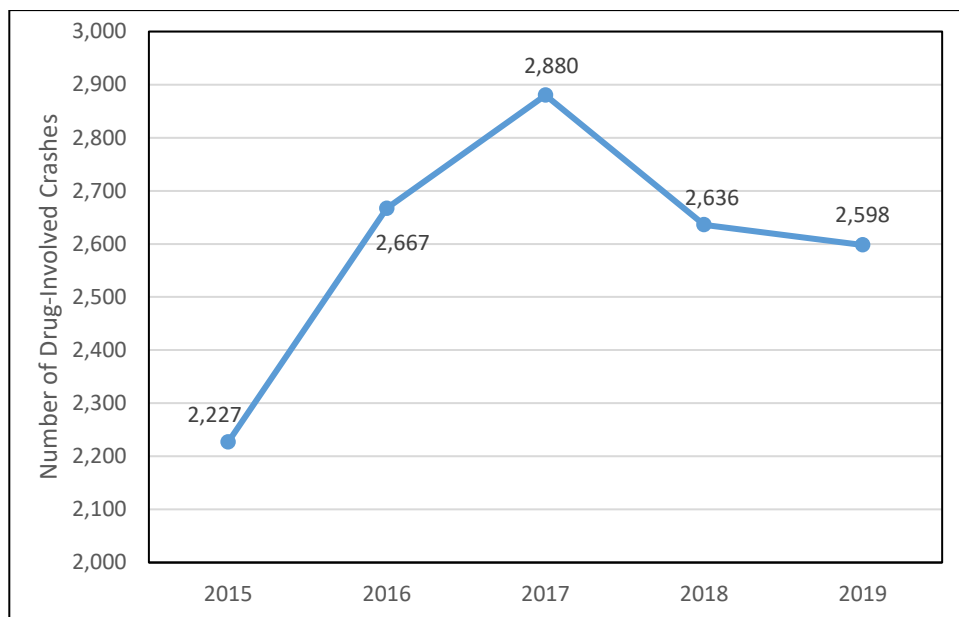Figure 1 – Alcohol-Involved Crashes by Year

Figure 2 – Drug-Involved Crashes by Year

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4.0 Crash and Injury Severity

Table 2 shows severity distributions for alcohol-involved, drug-involved, and all crashes, broken down by worst injury in the crash for the years of 2015 through 2019 combined. Alcohol-involved and drug-involved crashes are not mutually exclusive, so crashes in this table may have involved both alcohol and drugs. Fatal crashes occurred in 2.8% of alcohol-involved crashes and 7.9% of drug-involved crashes, compared to 0.3% for all crashes from 2015 to 2019. Injury proportions for alcohol- and drug-involved crashes are also substantially higher than the overall crash injury rates.

Table 2. Crash Severity Distributions for Alcohol-Involved, Drug-Involved, and
All Motor Vehicle Crashes, 2015-2019

Crash Severity	Alcohol-Involved	Drug-Involved	All
Fatal	2.8%	7.9%	0.3%
Suspected Serious Injury	8.1%	11.3%	1.5%
Suspected Minor Injury	15.1%	15.0%	5.0%
Possible Injury	16.6%	19.9%	11.6%
Property Damage Only (PDO)	57.3%	45.9%	81.7%
Total	100.0%	100.0%	100.0%

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Alcohol-Involved Crashes

Fatal, 2.8%
Injury, 39.8%
PDO, 57.3%

Drug-Involved Crashes

Fatal, 7.9%
Injury, 46.2%
PDO, 45.9%

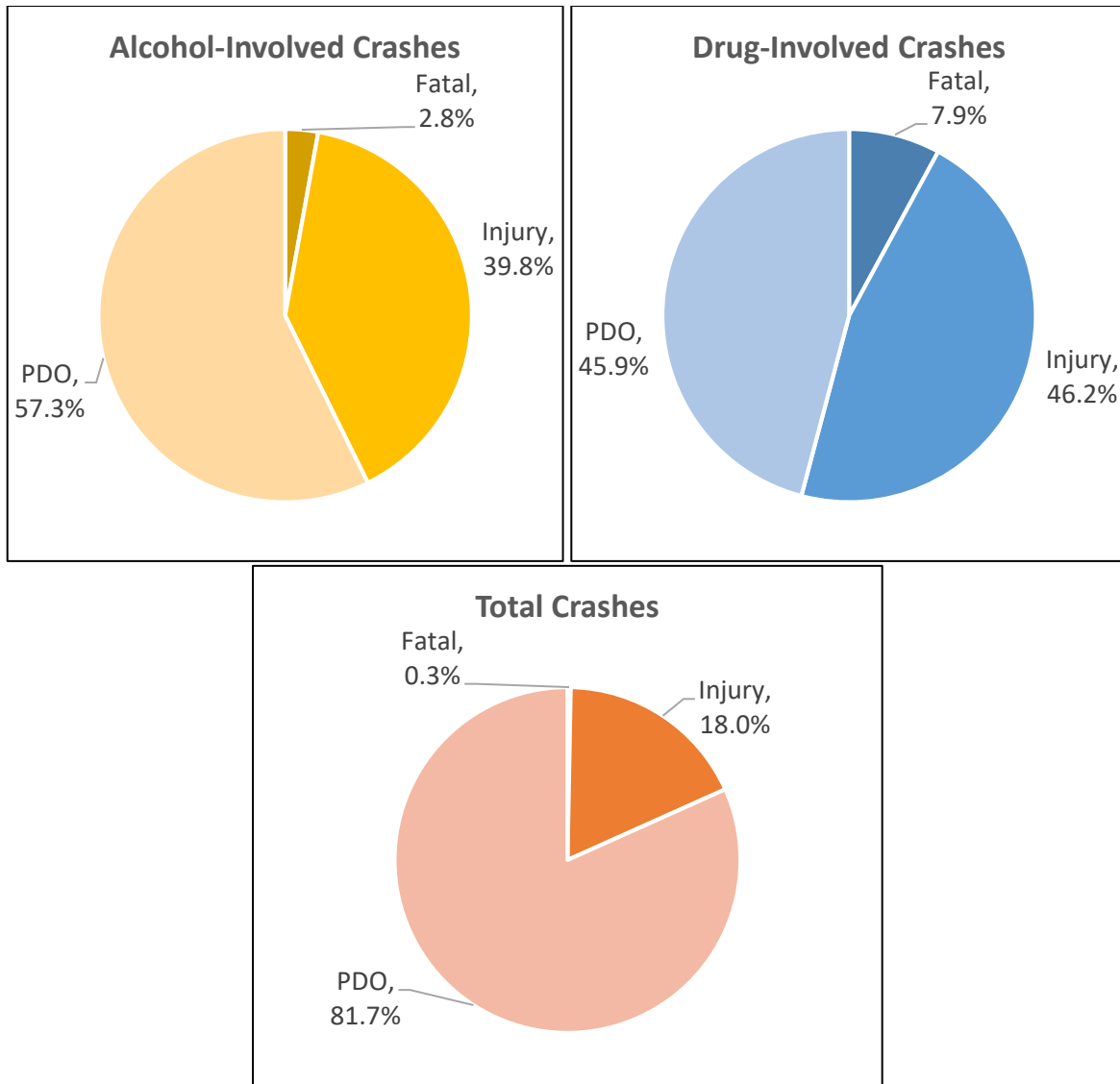**Total Crashes**

Fatal, 0.3%
Injury, 18.0%
PDO, 81.7%

Figure 3 – Crash Severity Comparison, 2015-2019

Figure 3 shows the distribution of fatal crashes, injury crashes (suspected serious injury, suspected minor injury, and possible injury), and property damage only crashes. When looking at all crashes, the proportion of fatal crashes is approximately nine times higher when a driver tests positive for alcohol and over 26 times higher when a driver tests positive for drugs. Injury crashes made up 39.8% of alcohol-involved crashes and 46.2% of drug-involved crashes. The injury rate for all crashes within the five-year period is 18.0%.

Figures 4 and 5 show injured people in crashes with alcohol impairment and drug impairment, respectively. Because the numbers of "no injury" are fairly high, they were excluded from the two graphs. Fatalities in alcohol-involved crashes reached a peak in 2017, with the largest jump from 2016 to 2017, an increase of 85 fatalities. Alcohol-involved crash fatalities decreased from 359 in 2017 to 315 in 2018 and decreased again in 2019 to 295. Both suspected serious and suspected minor injuries

increased each year from 2015 to 2017. Drug-involved fatalities and injuries at all three levels increased each year from 2015 to 2017. While all three injury levels decreased in 2018, fatalities increased by a count of one. The highest jump in drug-involved fatalities occurred from 2015 (179) to 2016 (239). In 2019, drug-involved fatalities and suspected minor injuries decreased, while suspected serious and possible injuries increased.
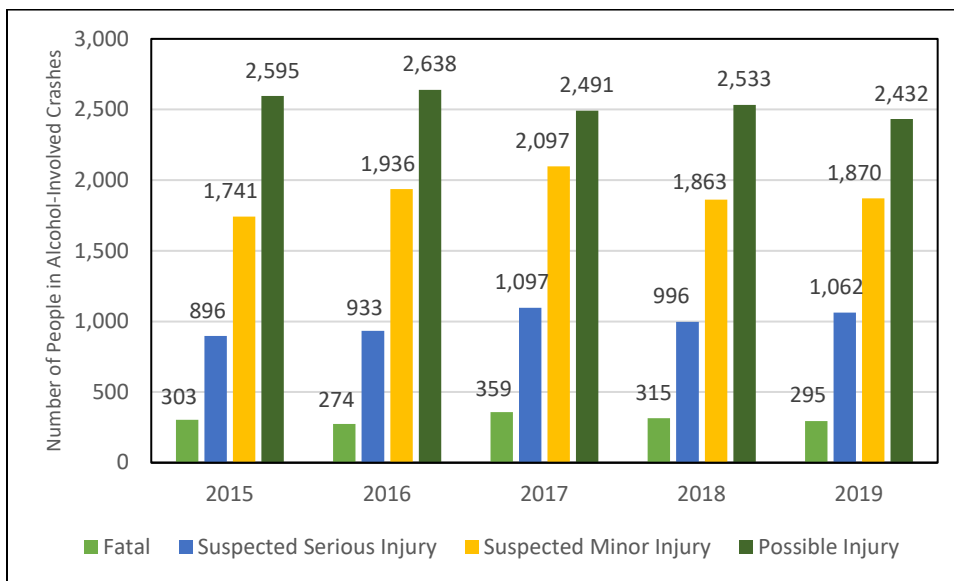

Figure 4 – People in Alcohol-Involved Crashes by Year

Note: People coded as "no injury" or who were missing injury data are excluded from Figure 4.
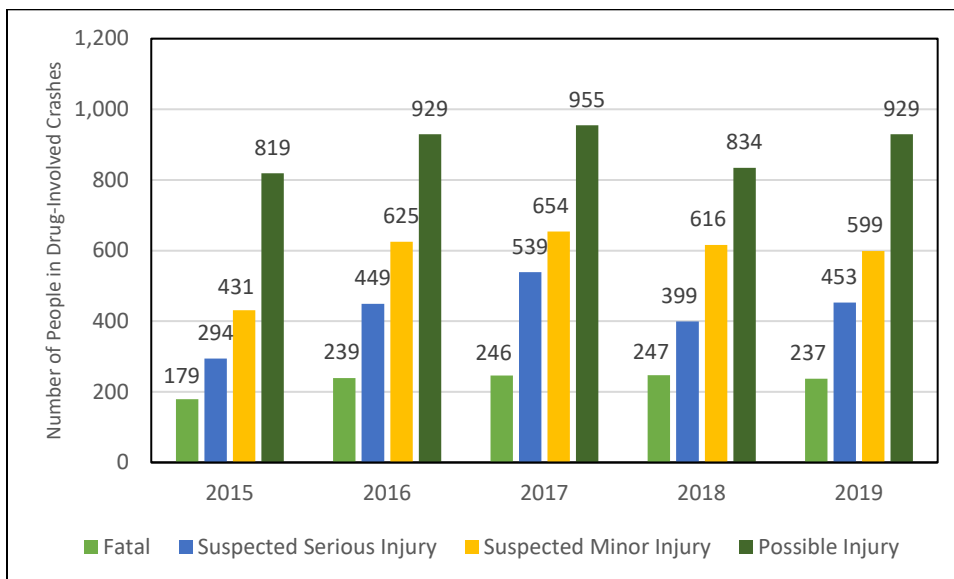

Figure 5 – People in Drug-Involved Crashes by Year

Note: People coded as "no injury" or who were missing injury data are excluded from Figures 5.

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5.0 BAC Test Results for Drivers

BAC for motor vehicle drivers in crashes who were coded as drinking is shown in Figure 6. The graph displays percentages for all valid BAC results within each given crash year to explore the proportion of drivers in four different BAC categories: 0.00, 0.01-0.07, 0.08-0.16, and 0.17 and higher. These cutoffs are based on the Michigan impaired driving law legal limit cutoff at 0.08 and the "super drunk" limit with more severe penalties at 0.17. Unknown BAC levels were excluded from the percentage calculations. All three BAC groups above 0.00 remained at relatively constant percentages over the period from 2015 to 2019. For example, from 2015 to 2019 the 0.08-0.16 group ranged from a high of 40.5% in 2016 to a low of 39.8% in 2018. This indicates that although the counts of drivers in crashes coded drinking varied each year, there was a generally consistent rate across the lower BAC groups. The 0.17 and higher group varied the most, ranging from a low of 43.0% in 2016 to a high of 47.3% in 2019. The 0.17 and higher group increased each year from 2016 through 2019. In 2018, the 0.00 BAC group decreased to 0.2%, while the lowest previous percent during the five-year period occurred in 2017 at 2.4%. This is presumably due to data quality checks implemented for both alcohol and drug elements in the Michigan crash data in recent years. The 0.00 BAC group decreased again in 2019 to 0.1% of the total.
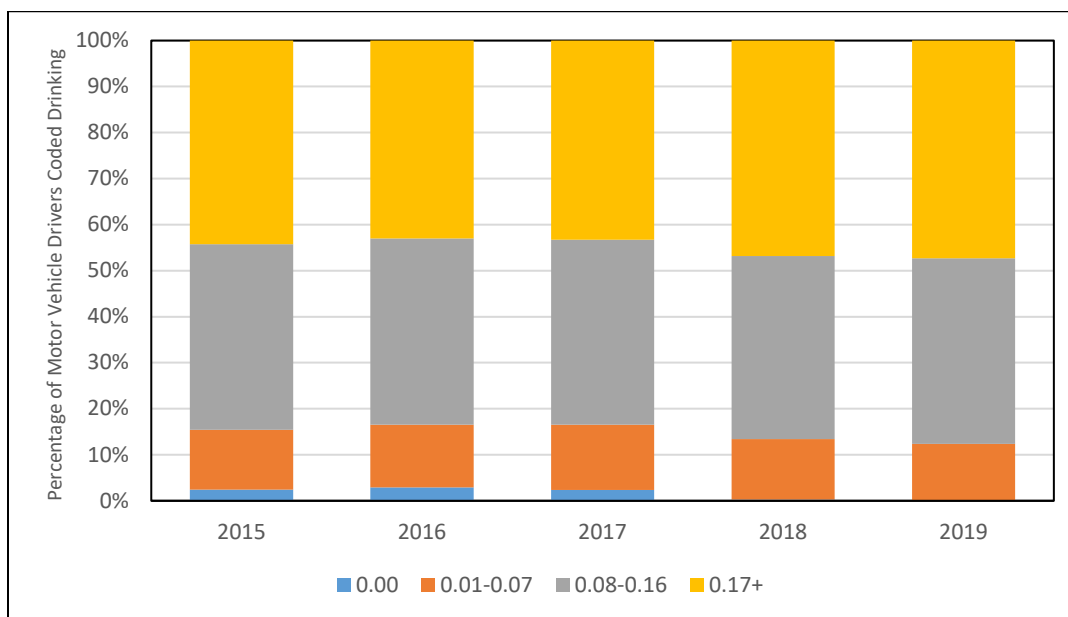

Figure 6 – Motor Vehicle Drivers in Crashes Coded as Drinking by BAC Level

Note: Drivers coded "unknown" or "not entered" for BAC are excluded from Figure 6.

Figures 7 and 8 show the contributions of crash-involved motor vehicle drivers coded as drinking and motor vehicle drivers coded as using drugs by BAC frequency. Drivers coded as having a BAC at 0.00 or above 0.40 are excluded from Figure 7. A cutoff of 0.40 was used for BAC to exclude small extreme values that may have been inadvertently created due to coding errors. Among drivers coded as drinking, the BAC distribution is generally smooth, with a peak at 0.16. In Figure 8, which shows drivers using

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drugs in crashes, drivers coded as having a BAC at 0.00 or above 0.40 are again excluded. This eliminates a peak at 0.00, where drivers were thought to be drinking, but were instead using drugs. Of the total drivers testing positive for drugs during the period from 2015-2019, 15.7% were coded as having a BAC of 0.00. The highest percentage occurred in 2019 at 28.9%, with the next highest percentage at 14.0% in 2018. Counts per BAC level for motor vehicle drivers in crashes coded as using drugs are generally lower than for drivers coded as drinking, though the most common value shown is at 0.16, similar to drivers coded as drinking alcohol.
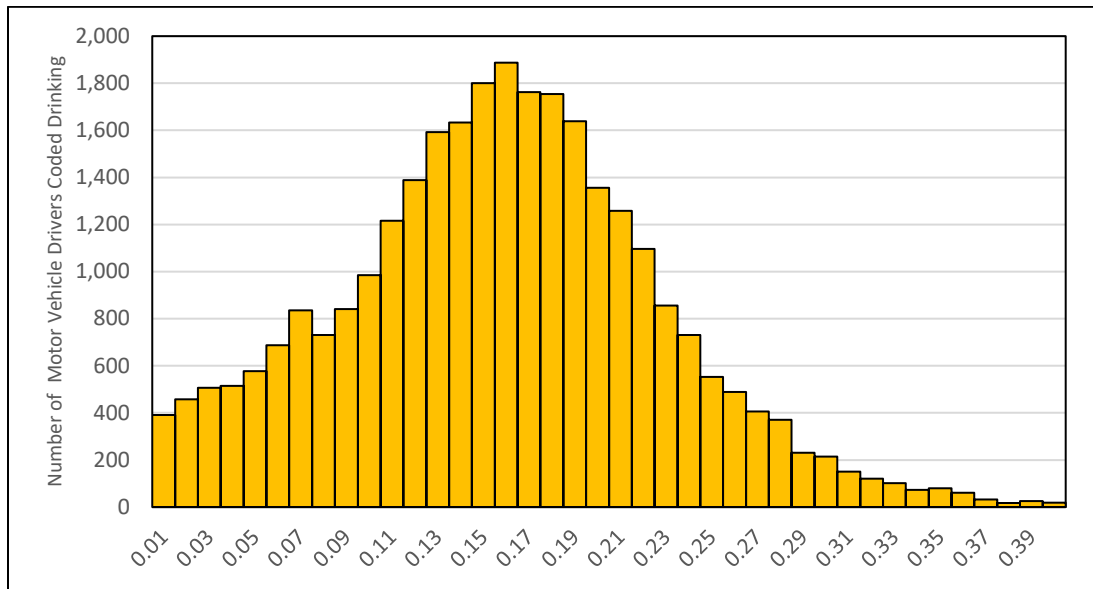

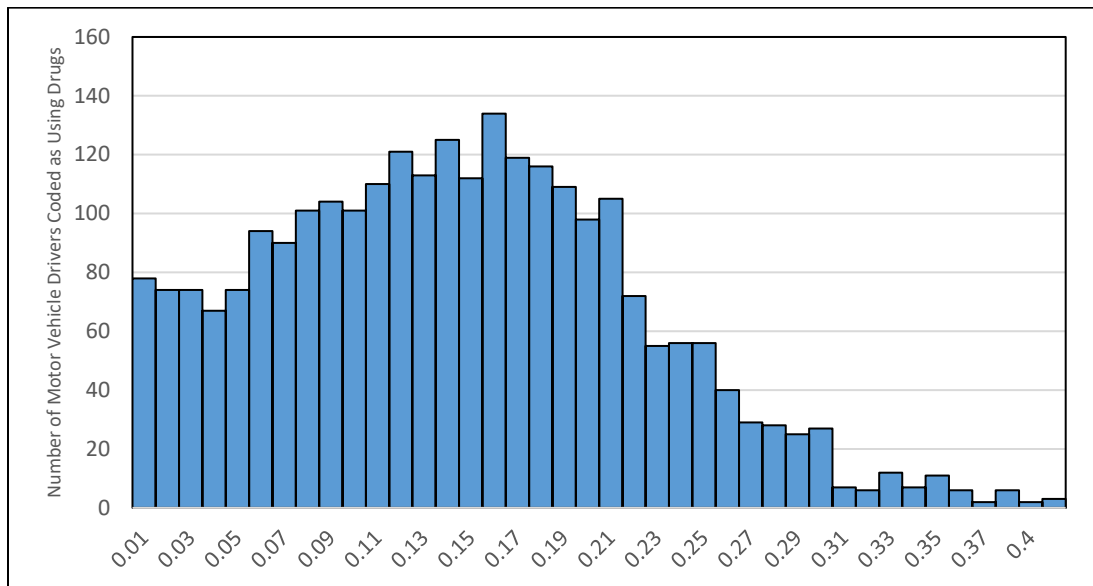Figure 7 – Motor Vehicle Drivers in Crashes Coded as Drinking by BAC Frequency

Figure 8 – Motor Vehicle Drivers in Crashes Coded as Using Drugs by BAC Frequency

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Table 3 explores the drug status of motor vehicle drivers coded with a 0.00 BAC test result, indicating they were tested for alcohol and the test came back negative. The percentage of drivers coded as using drugs in crashes has increased among the 0.00 BAC test result group each year from a low of 12.5% in 2015 to a high of 28.8% in 2019. Drug testing may have also increased, contributing to the percentage increase in recent years.

Table 3. Motor Vehicle Drivers in Crashes with a 0.00 BAC Test Result by Drug Use

	Year	Drugs Suspected	No Drugs Suspected	Percentage Drugs Suspected
Motor Vehicle Drivers	2015	232	1,617	12.5%
	2016	323	1,661	16.2%
	2017	359	1,474	19.6%
	2018	365	1,455	20.1%
	2019	742	1,833	28.8%
	Total	2,021	8,040	20.1%

Note: Specific drug test results for drivers in crashes are not included in this report, with the exception of cannabinoids. At present, the crash dataset contains specific drug test results for only one drug. When a driver tests positive for more than one drug, the one with the highest priority (according to the FARS coding and validation manual) is listed, regardless of the relative levels of the different drugs. For example, since inhalants are relatively low priority, they will generally be undercounted for any drivers who test positive for multiple drugs. As a result, we cannot accurately measure the number of drivers testing positive for specific drugs. This issue is expected to be improved in the future.

6.0 Cannabinoid Drug Test Results for Drivers

Data collection for drug classifications has not been comprehensive in previous data years. Starting with 2018, data for polydrug use has been collected in the crash database. Polydrug impairment occurs when a driver is under the influence of more than one drug (including alcohol). It is important to note that in many cases a positive alcohol result will lead to no further testing for drugs. The top three drug test results for drivers, pedestrians, and bicyclists tested for drug use will now be provided. Law enforcement has up to three years to add drug test results to existing police reports. As part of this new data collection, cannabinoid drug test result data from 2015-2019 was compiled. Possible values of cannabinoids include delta 9, hashish oil, hashish, marijuana/marihuana, marinol, tetrahydrocannabinols (THC), and "cannabinoid, type unknown." At this time, only cannabinoid drug test results are available.

Figure 9 shows the percentages of the different types of cannabinoid drug type for motor vehicle drivers. Across the five years of data, THC is the most common cannabinoid test result and has increased over time. In 2019, 87.2% of motor vehicle drivers who tested positive for a cannabinoid tested positive for THC, the highest result within the five-year period from 2015 to 2019. Figure 10 shows the total crashes where a motor vehicle driver tested positive for any cannabinoid by crash severity. Fatal crashes

are emphasized with counts because those crashes are more likely to provide a more complete picture of drug testing for drivers. Fatal crashes involving a driver who tested positive for cannabinoids were the highest in 2017 at 142, but decreased in 2018 to 129 and 2019 to 117. The testing for drivers in non-fatal crashes has increased over time, with 2019 resulting in the most crashes at each severity level, with the exception of fatal crashes.
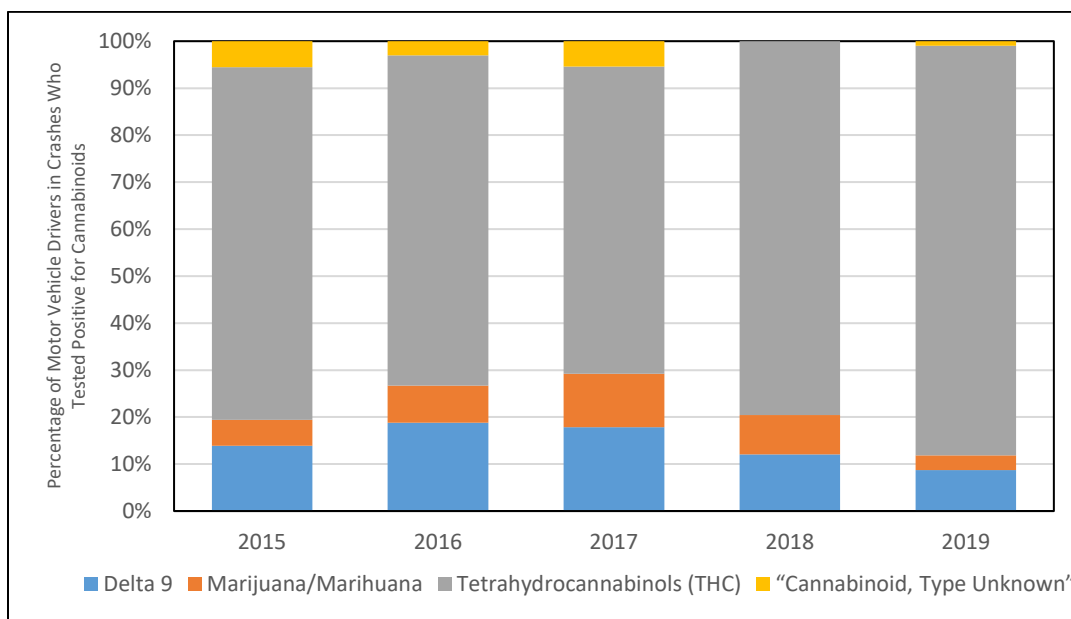

Figure 9 – Motor Vehicle Drivers in Crashes Coded as Using Cannabinoids by Cannabinoid Type
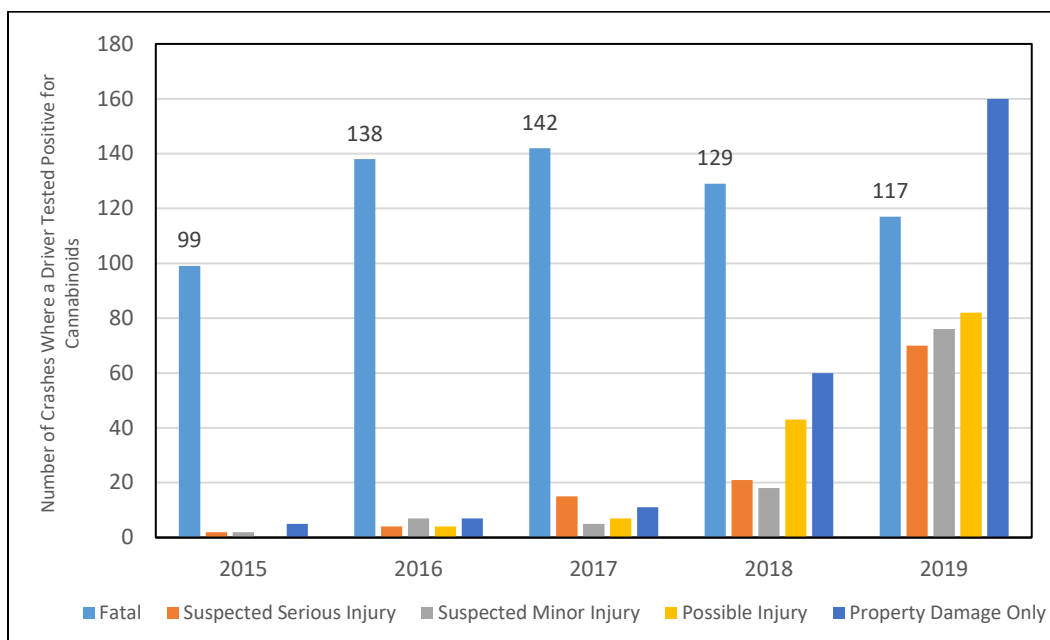

Figure 10 – Crashes Where a Motor Vehicle Driver Tested Positive for Cannabinoids by Worst Injury

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Fatalities in crashes where a driver tested positive for cannabinoids were at the lowest level during the five-year period in 2015 at 111. In 2016, the number of fatalities increased to the highest level at 170 fatalities. It is worth noting that medical marihuana facilities first opened in Michigan in 2016. Each subsequent year from 2016 through 2019 showed a decrease in fatalities, ending with a total of 141 fatalities in 2019. While the number of drug test results collected in the crash data has increased over the five-year period, the number of fatalities has decreased. It is also important to note that the first recreational marihuana facilities opened to the public on December 1, 2019 and future years of crash data will provide more insight.
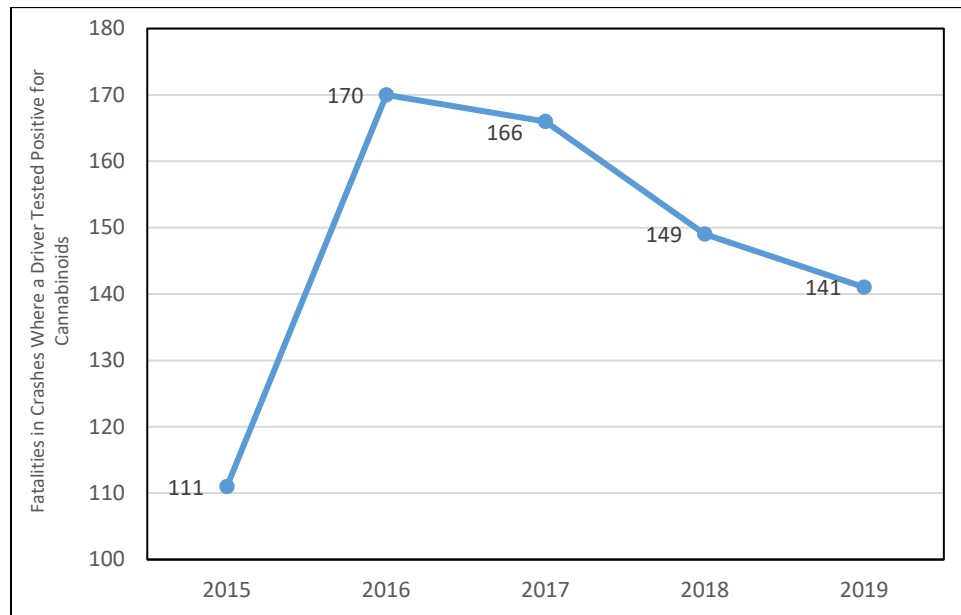

Figure 11 – Fatalities in Crashes Where a Motor Vehicle Driver Tested Positive for Cannabinoids

7.0 Crash Type

As shown in Figure 12 and Figure 13, crash type differs when drivers are not impaired compared to when drivers are using alcohol or drugs. Crash type patterns are similar for the two impairment crash types, with single motor vehicle, rear-end, and angle crashes rounding out the top three most common crash types. However, single vehicle crashes occur at higher percentages than the counterpart crashes for both alcohol-involved and drug-involved crashes. Head-on crashes and sideswipe crashes with the vehicles traveling in opposite directions crashes also occur at higher rates for both impairment types.
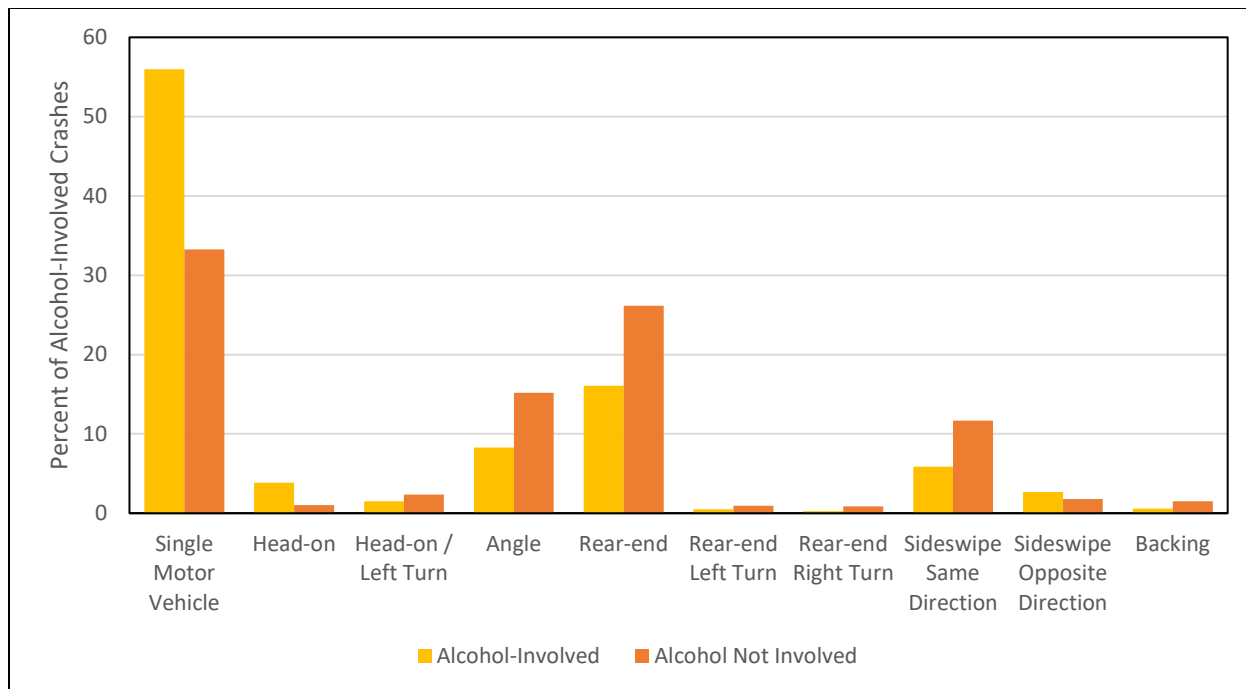
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Figure 12 – Alcohol-Involved Crash Percentages by Crash Type, 2015-2019

Note: Crash types coded as "unknown," "other," or missing are excluded from Figure 12.
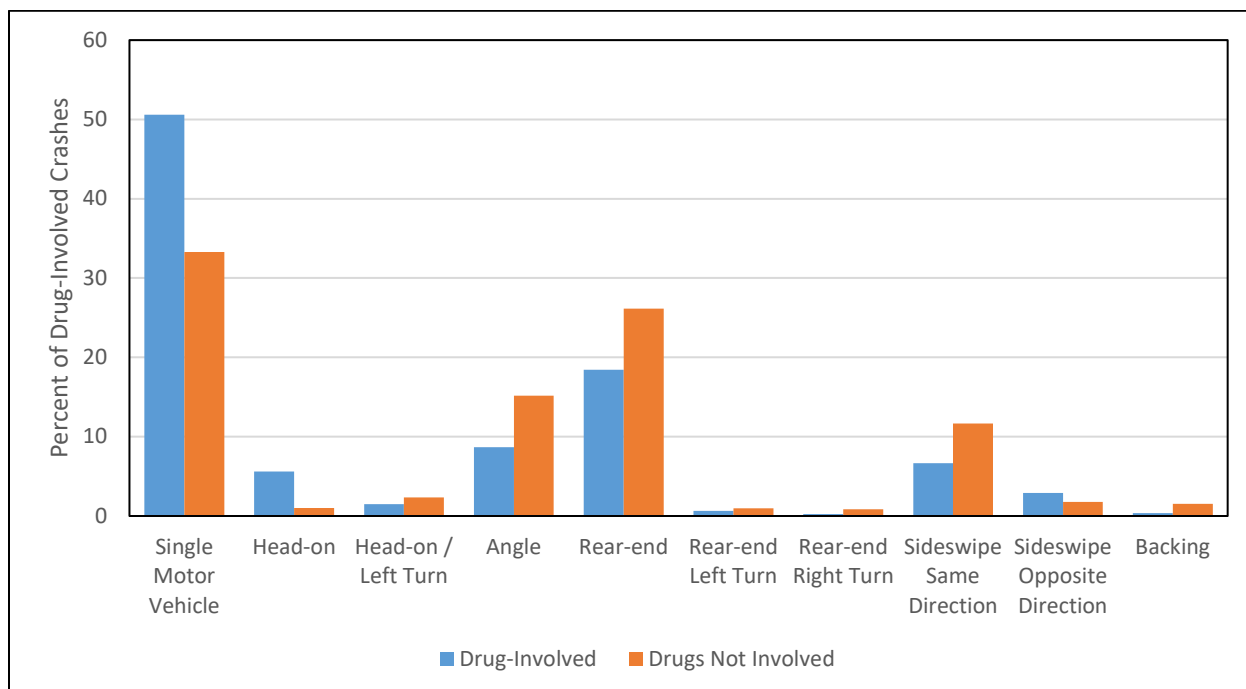

Figure 13 – Drug-Involved Crash Percentages by Crash Type, 2015-2019

Note: Crash types coded as "unknown," "other," or missing are excluded from Figure 13.

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8.0 Temporal Variables

8.1 Month of Year

Figures 14 and 15 show the number of alcohol-involved crashes and drug-involved crashes across the months of the year. There is no clear trend, but alcohol-involved crashes appear to be slightly higher in the months from July through December than January through June. Drug-involved crashes appear to occur at slightly higher numbers during the warmer months of the year, from June through August and have lower counts in January and February.
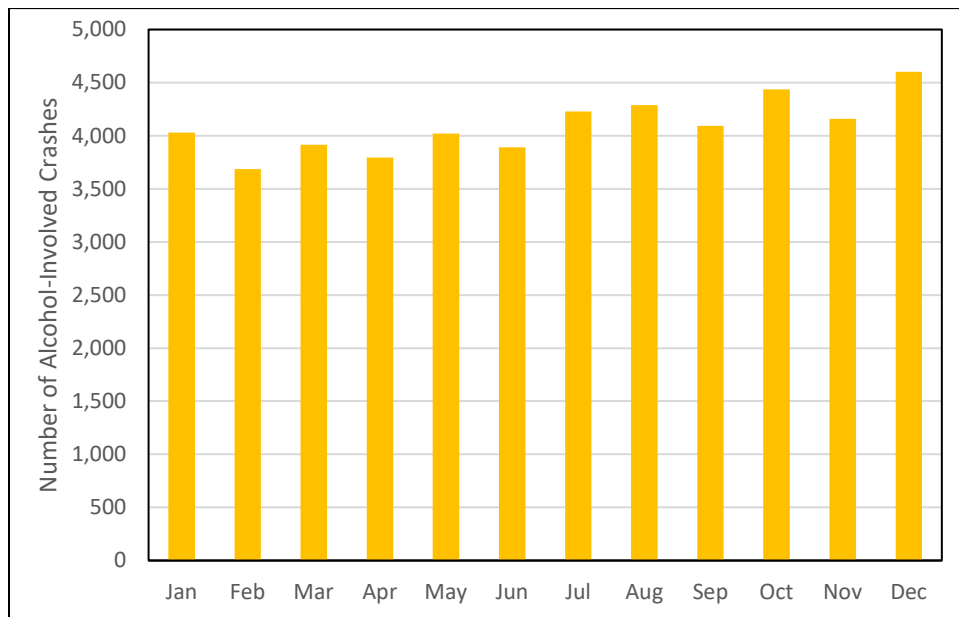

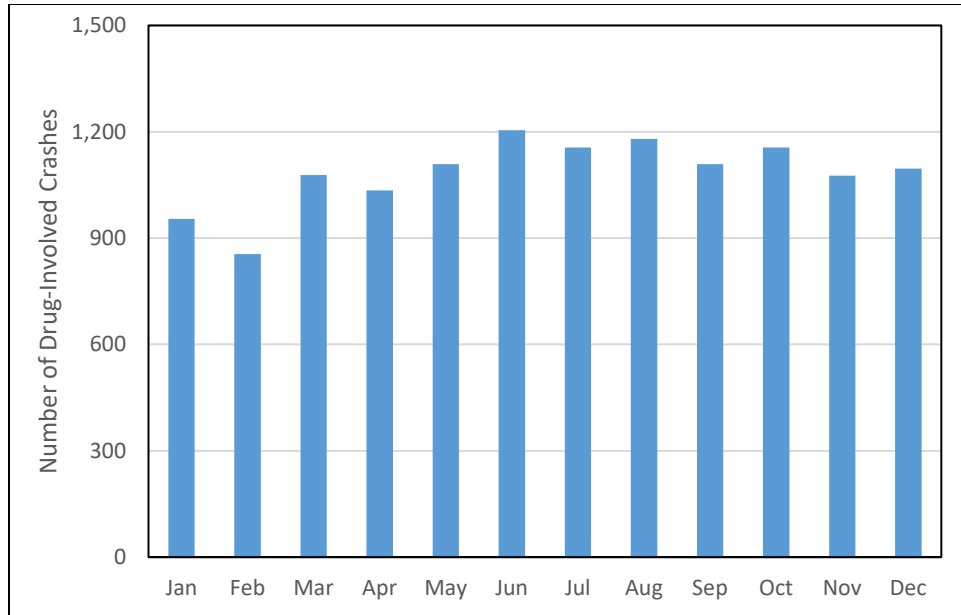Figure 14 – Alcohol-Involved Crashes by Month, 2015-2019

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Figure 15 – Drug-Involved Crashes by Month, 2015-2019

8.2 Day of Week

The number of alcohol-involved crashes on each day of the week is shown in Figure 16. Alcohol-involved crashes occur at much greater frequencies during the weekend with about 43.6% of crashes involving alcohol occurring during weekends.
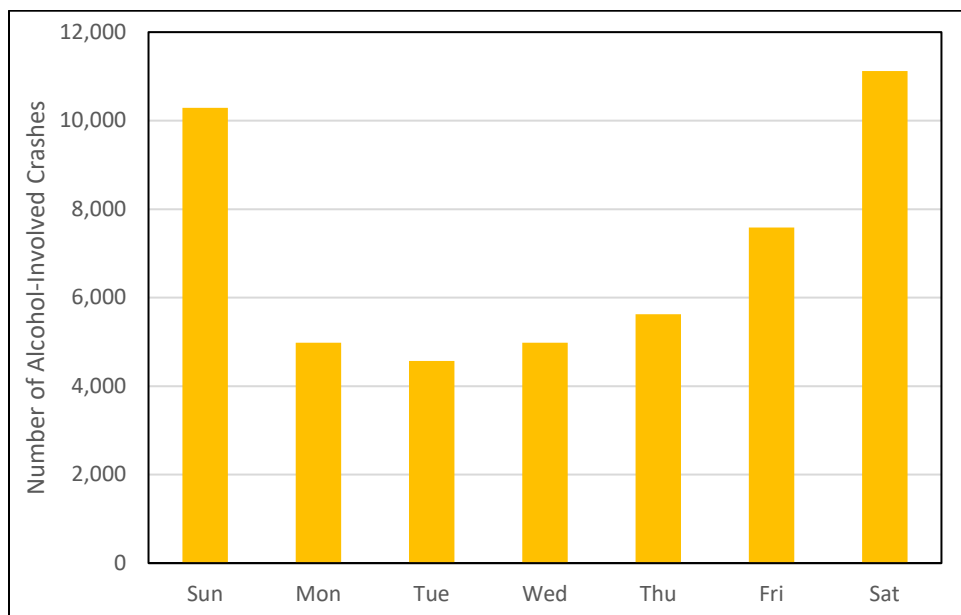

Figure 16 – Alcohol-Involved Crashes by Day of the Week, 2015-2019

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Drug-involved crashes are displayed in Figure 17. Similar to alcohol-involved crashes, drug-involved crashes have higher counts during the weekend, but drug-involved crashes are higher Thursday through Sunday. Drug-involved crashes are generally more uniform during the week than alcohol-involved crashes. Saturday, the day of the week with the highest number of crashes, accounted for 16.3% of drug-involved crashes during the week.
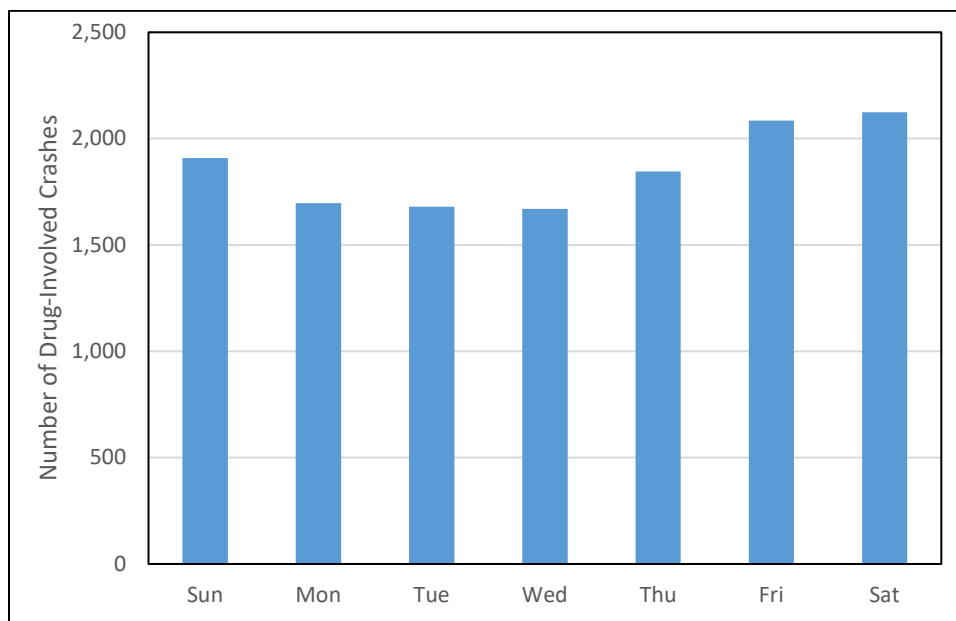

Figure 17 – Drug-Involved Crashes by Day of the Week, 2015-2019

8.3 Time of Day

Figure 18 shows the number of alcohol-involved crashes by hour of the day. The number of alcohol-involved crashes is greatest from midnight-3 AM However, the number of crashes increases steadily throughout the day from the low point at 9-11 AM (both hours have equal crash counts). About 9.4% of alcohol-involved crashes occur during the 2 AM hour.

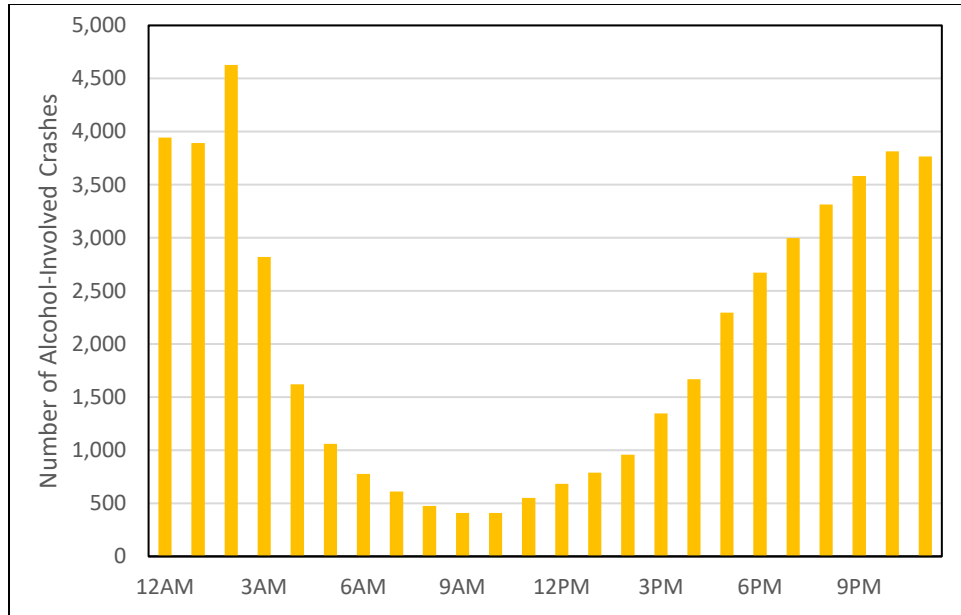Alcohol- and Drug-Involved Crashes in Michigan: 2015-2019

Figure 18 – Alcohol-Involved Crashes by Time of Day, 2015-2019

Figure 19 shows a different crash pattern for drug-involved crashes. The number of drug-involved crashes peaks in the 5 PM hour, when 6.3% of drug-involved crashes occur. Drug-involved crashes begin increasing at 5 AM and increase through 5 PM Although drug-involved crashes peak at 5 PM, they are still elevated throughout the night until 3 AM.
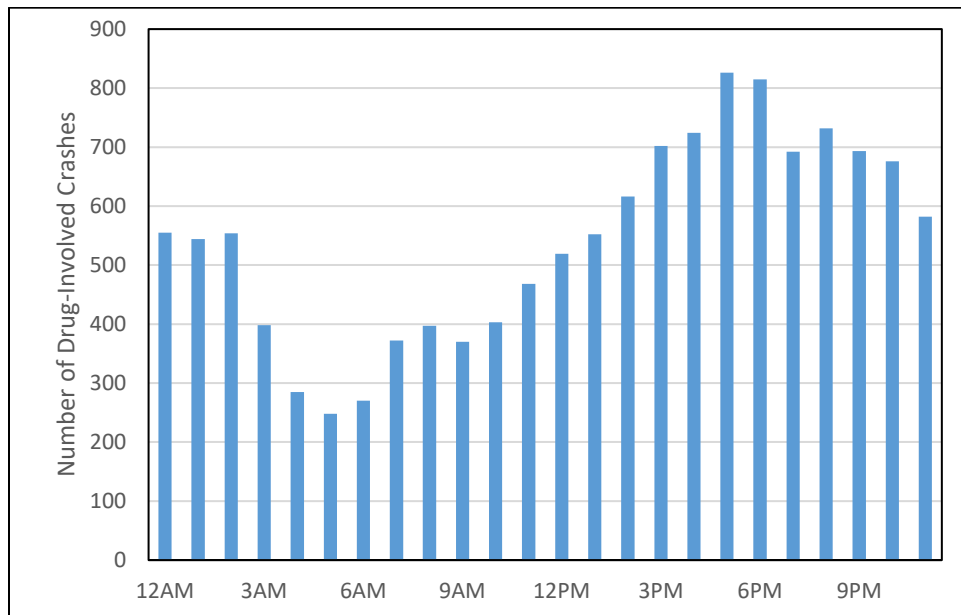

Figure 19 – Drug-Involved Crashes by Time of Day, 2015-2019

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9.0 Speed Limit

Figures 20 and 21 show counts of alcohol-involved and drug-involved crashes according to the posted speed limit at the crash site. Alcohol- and drug-involved crashes both follow the general crash trend for speed limit, but depart slightly from the overall crash trend. Michigan crashes occur most frequently at 55 mph speed limits, followed by 45 mph and 25 mph limits. For alcohol- and drug-involved crashes, 55 mile per hour speed limits had the highest crash counts, followed second by speed limits of 25 and third at 45 mph. For alcohol-involved crashes, the percent of crashes occurring in those three speed limit zones were 31.3%, 19.4%, and 14.4%, respectively. For drug-involved crashes, the percentages were 29.0%, 15.8%, and 15.1%, respectively.
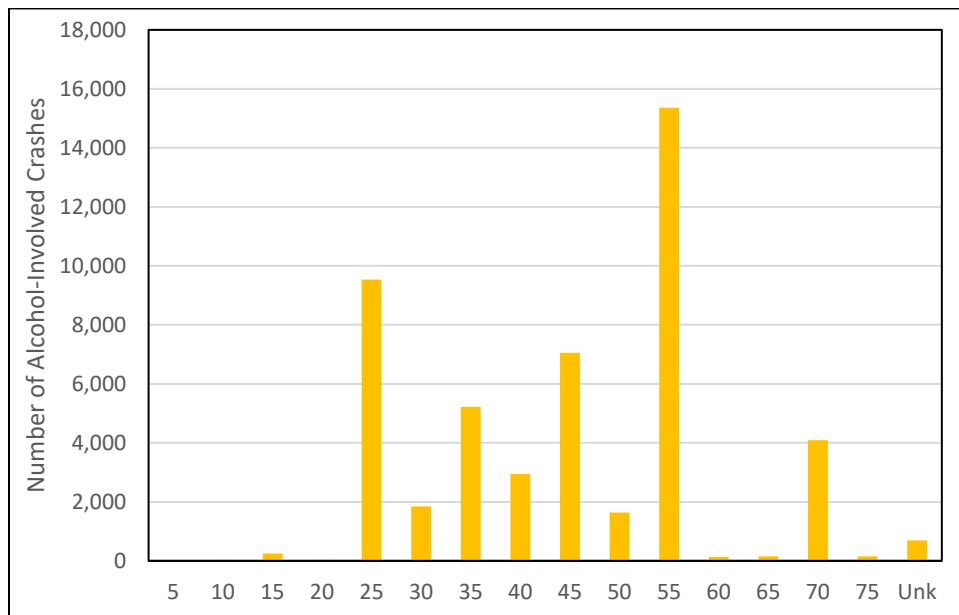

Figure 20 – Alcohol-Involved Crashes by Posted Speed Limit at Crash Site, 2015-2019
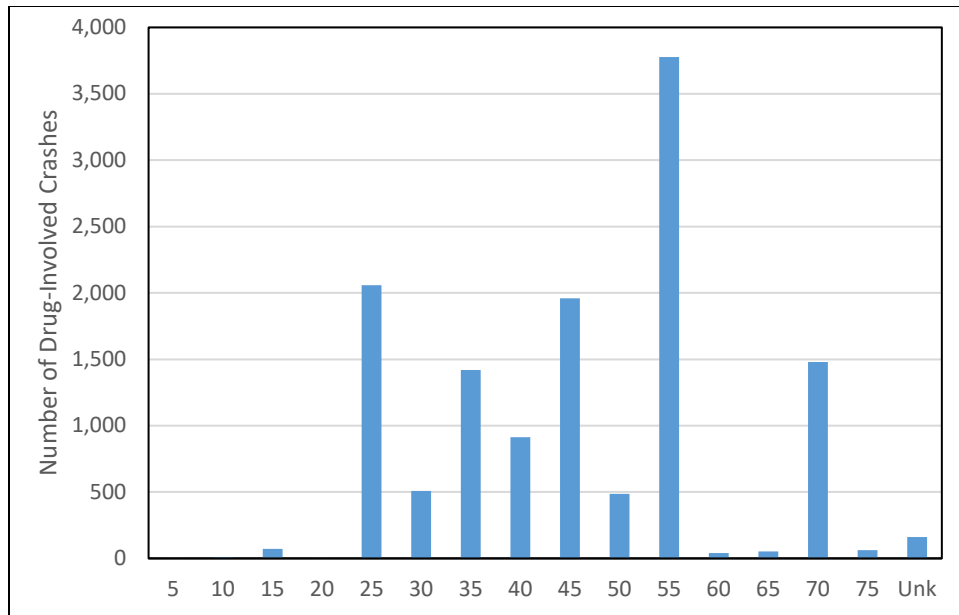
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Figure 21 – Drug-Involved Crashes by Posted Speed Limit at Crash Site, 2015-2019

10.0 Demographics

10.1 Party Type

Table 4 shows the impairment distributions for pedestrian crashes, bicycle crashes, and crashes involving only motor vehicles, where any involved party was drinking and/or using drugs. In pedestrian crashes, 9.2% involved alcohol only, 1.3% involved drugs only, and 1.5% involved both alcohol and drugs. In bicycle crashes, 3.4% involved alcohol only, 0.6% involved drugs only, and 0.4% involved alcohol and drugs. With the exception of alcohol and drug bicycle crashes, where the percentages were the same, each non-motorist impairment distribution percentage was higher than crashes involving only motor vehicles.

Table 4. Impairment Distributions for Pedestrian, Bicycle,
and Motor Vehicle Crashes, 2015-2019

Impairment Type	Pedestrian	Bicycle	Motor Vehicle
Alcohol Only	9.2%	3.4%	2.7%
Drugs Only	1.3%	0.6%	0.4%
Alcohol and Drugs	1.5%	0.4%	0.4%
None	88.0%	95.7%	96.4%
Total	100.0%	100.0%	100.0%

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Table 5. Party Type Drinking or Using Drugs in Crashes, 2015-2019

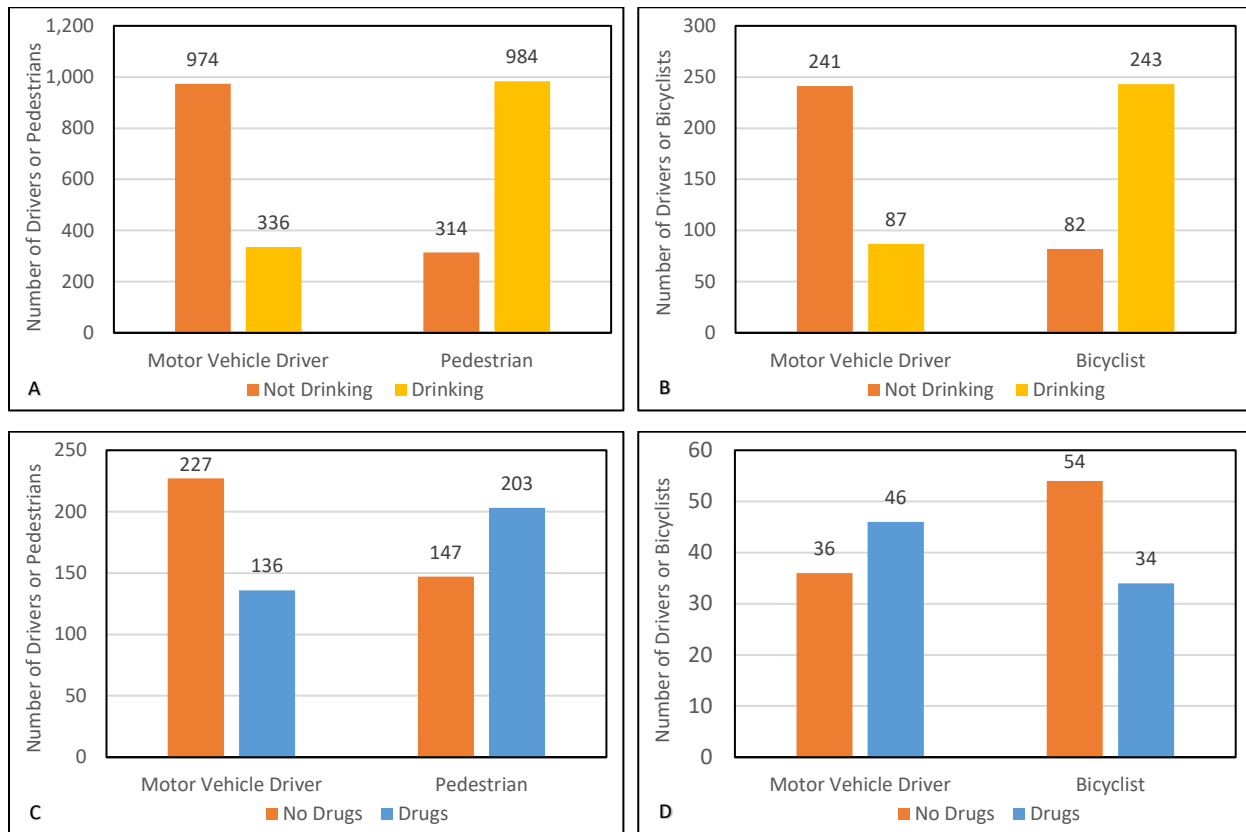|	Party Type	Count	Percentage
Party Drinking	Motor Vehicle Driver	48,314	97.5%
	Pedestrian	984	2.0%
	Bicyclist	243	0.5%
	Train Engineer	1	0.0%
	Total	49,542	100.0%
Party Using Drugs	Motor Vehicle Driver	12,843	98.2%
	Pedestrian	203	1.6%
	Bicyclist	34	0.3%
	Train Engineer	0	0.0%
	Total	13,080	100.0%

Figure 22 – Party Type by Drinking or Drugs Use in Alcohol-Involved and Drug-Involved Pedestrian or Bicyclist Crashes, 2015-2019

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Table 5 on the previous page shows the party drinking or using drugs in each impairment crash type. Motor vehicle drivers understandably account for the highest percentage of crashes for both drinking and drug use. Pedestrians are the party drinking in 2.0% of all parties drinking in crashes and are the party using drugs in 1.6% of the total units using drugs in crashes. Bicyclists have rates of drinking at 0.5% and using drugs at 0.3%.

Figure 22, with graphs labeled A-D, displays the drinking and drug use status for motor vehicle drivers compared to pedestrians and bicyclists in alcohol-involved or drug-involved crashes from 2015 through 2019. The four graphs combine to provide a complete picture of non-motorist impairment in these crashes. There were 29 drivers excluded from Graph A and two drivers excluded from Graph B for unknown alcohol use. There were 18 drivers excluded from Graph C for unknown drug use and no drivers excluded from Graph D. There were 25.1% of motor vehicle drivers drinking in alcohol-involved pedestrian crashes, compared to 75.8% of pedestrians drinking in the same subset of crashes (Graph A). In alcohol-involved bicyclist crashes, similar percentages occurred during the same time period, with 26.4% of drivers drinking and 74.8% of bicyclists drinking (Graph B). The third graph shows that 35.7% of drivers and 58.0% of pedestrians were using drugs in pedestrian drug-involved crashes (Graph C). Finally, in the only deviation from this non-motorist impairment pattern, there were 56.1% of drivers compared to 38.6% of bicyclists using drugs in bicyclist drug-involved crashes (Graph D).

10.2 Gender

Figure 23 shows the proportion of gender for motor vehicle drivers who were drinking and motor vehicle drivers who were using drugs in crashes. Males are represented at higher rates than females for both drinking drivers and drivers using drugs. Females account for a higher percentage of drivers using drugs in crashes than of drivers who drinking in crashes. The percentage of male drivers drinking in crashes is 72.3% and the percentage of females is 27.7%. Male drivers using drugs in crashes occur at 69.2% and female drivers at 30.8%.
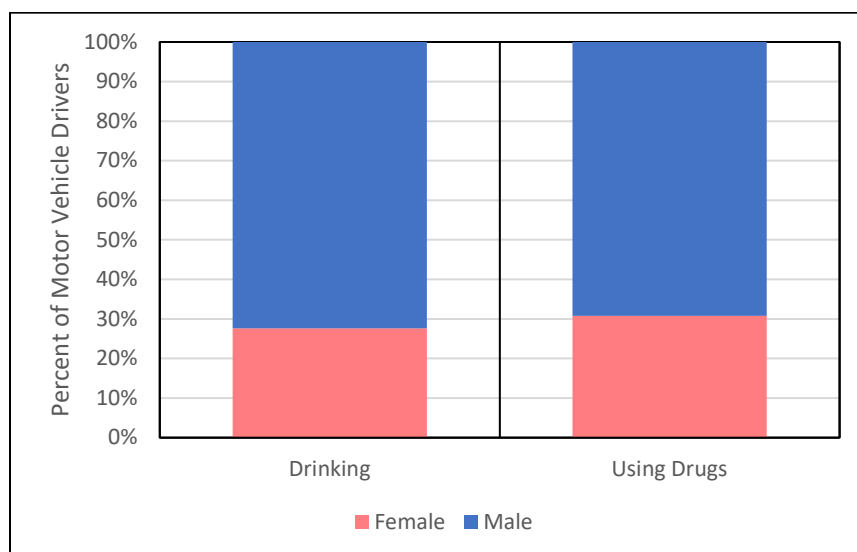

Figure 23 – Impaired Motor Vehicle Drivers in Crashes by Gender, 2015-2019

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10.3 Age Group

Figures 24 and 25 show motor vehicle drivers drinking (Figure 24) and using drugs (Figure 25) by age group. Drivers with an invalid date of birth have been excluded. Both graphs show the same general pattern in which the 21-25-year-old age group has the highest number of drinking drivers and drivers using drugs. Of drivers drinking in crashes, 20.3% are age 21-25, and 18.6% of drivers using drugs in crashes are in the same age group. As the age groups increase, the count of drivers in each group decreases. Among age groups of drivers using drugs in crashes, drivers age 16-20 appear at a higher proportion than they do among drinking drivers, with 10.9% of drivers using drugs age 16-20 and 5.5% of drinking drivers age 16-20.
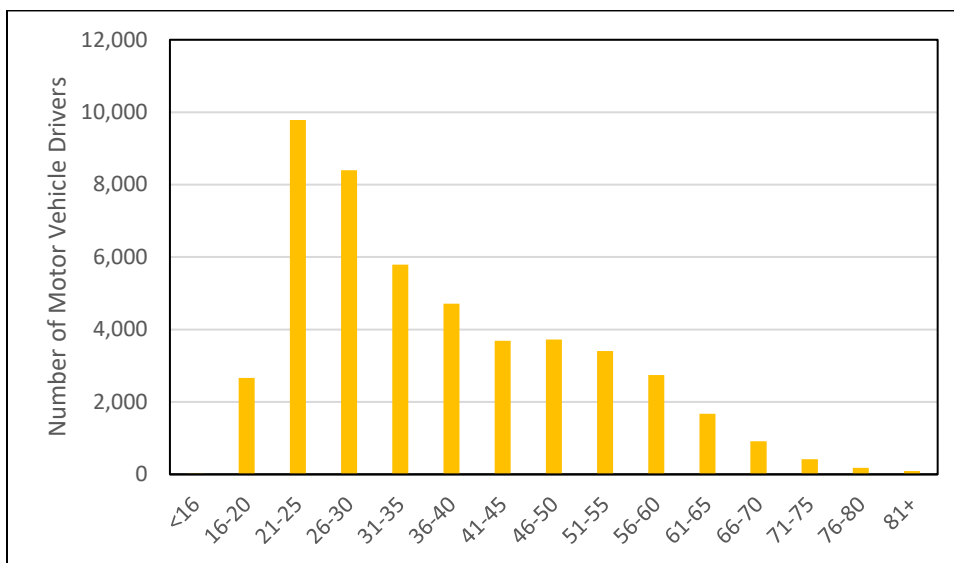

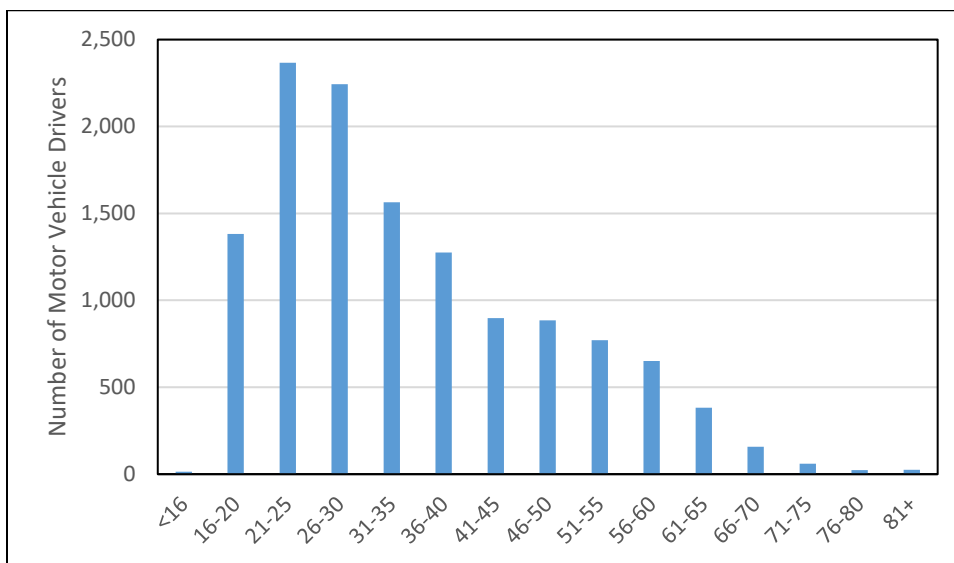Figure 24 – Motor Vehicle Drivers Drinking in Crashes by Age Group, 2015-2019

Figure 25 – Motor Vehicle Drivers Using Drugs in Crashes by Age Group, 2015-2019
Alcohol- and Drug-Involved Crashes in Michigan: 2015-2019

11.0 Alcohol and Drugs Combined

It is important to look at drinking and drug use combined in crashes. There are different characteristics associated with crashes where drivers who are under the influence of more than one impairing substance, a condition referred to as "polydrug impairment." Similar to alcohol-involved crashes (Figure 1) and drug-involved crashes (Figure 2), alcohol-and-drug-involved crashes increased each year from 2015 through 2017 and decreased in 2018 and again in 2019. During the period of five years, there was an overall 20.8% increase in the number of alcohol and drug combined crashes. This increase is illustrated in Figure 26.
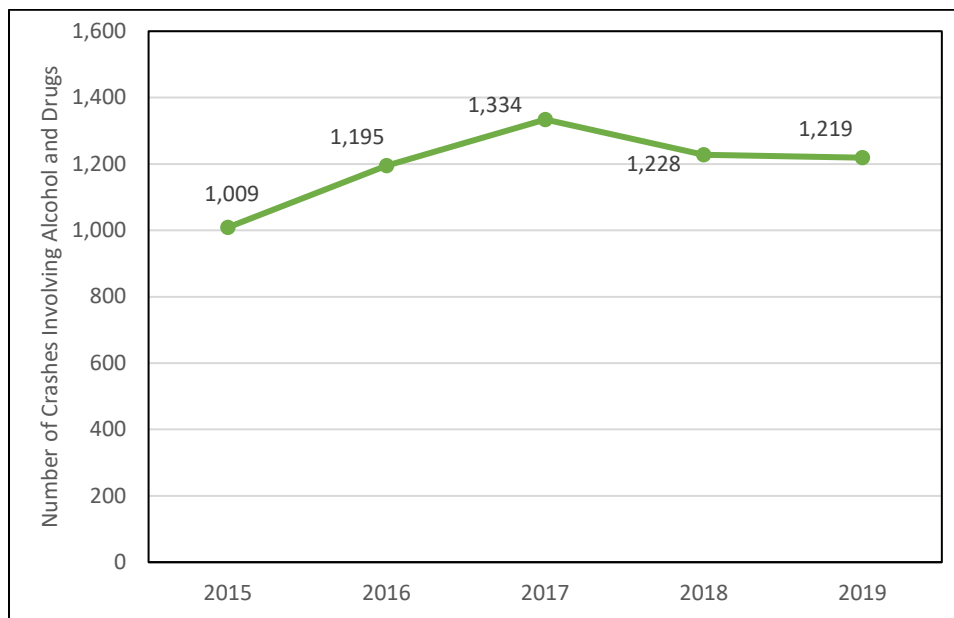

Figure 26 – Crashes Involving Alcohol and Drugs by Year

Table 6 below shows the counts and percentages of alcohol only, drugs only, alcohol and drugs combined, and non-impairment in all crashes and fatal crashes. Among all crashes, alcohol-only crashes make up 2.8%, drugs-only crashes make up 0.5%, and alcohol-and-drug crashes make up 0.4%. However, among fatal crashes, alcohol-only crashes make up 19.3% of crashes, drug-only crashes make up 11.3%, and drug-and-alcohol crashes make up 11.0% of these crashes. The combination of drugs and alcohol is far more common than expected by chance.

Table 6. Impairment Distributions in Crashes, 2015-2019

Impairment Type	All Crashes	Percentage	Fatal Crashes	Percentage
Alcohol Only	43,159	2.8%	891	19.3%
Drugs Only	7,023	0.5%	523	11.3%
Alcohol and Drugs	5,985	0.4%	507	11.0%
None	1,495,123	96.4%	2,696	58.4%
Total	1,551,290	100.0%	4,617	100.0%

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Table 7 shows more detail on crash severity (based on worst injury in crash) across the same four groups. Fatal and all three injury level crashes occur at higher percentages in the three impaired groups than in the non-impaired crash group. For fatal and suspected serious injury crashes, the alcohol and drug combined crashes have the highest rates at 8.5% and 11.7%, respectively, followed by the drugs only crash group with 7.4% and 11.0%, and the alcohol only crash group with 2.1% and 7.6%. In comparison, fatal crashes with no impairment occur at a rate of 0.2% and suspected serious injury crashes appear at 1.2%.

Table 7. Crash Severity Distributions for Alcohol Only, Drugs Only, Alcohol and Drugs, and None Impaired in Crashes, 2015-2019

Crash Severity	Alcohol Only	Drugs Only	Alcohol and Drugs	None
Fatal	2.1%	7.4%	8.5%	0.2%
Suspected Serious Injury	7.6%	11.0%	11.7%	1.2%
Suspected Minor Injury	15.0%	13.8%	16.3%	4.6%
Possible Injury	16.5%	21.9%	17.6%	11.4%
Property Damage Only (PDO)	58.9%	45.8%	45.9%	82.7%
Total	100.0%	100.0%	100.0%	100.0%

Figure 27 on the following page shows pie charts for the four impairment levels and groups the three injury levels into one category. Overall, drugs only crashes have the highest percentage of injury crashes at 46.7%, followed by alcohol- and drug-involved crashes at 45.6%, alcohol only crashes at 39.0%, and non-impairment crashes at 17.1%.
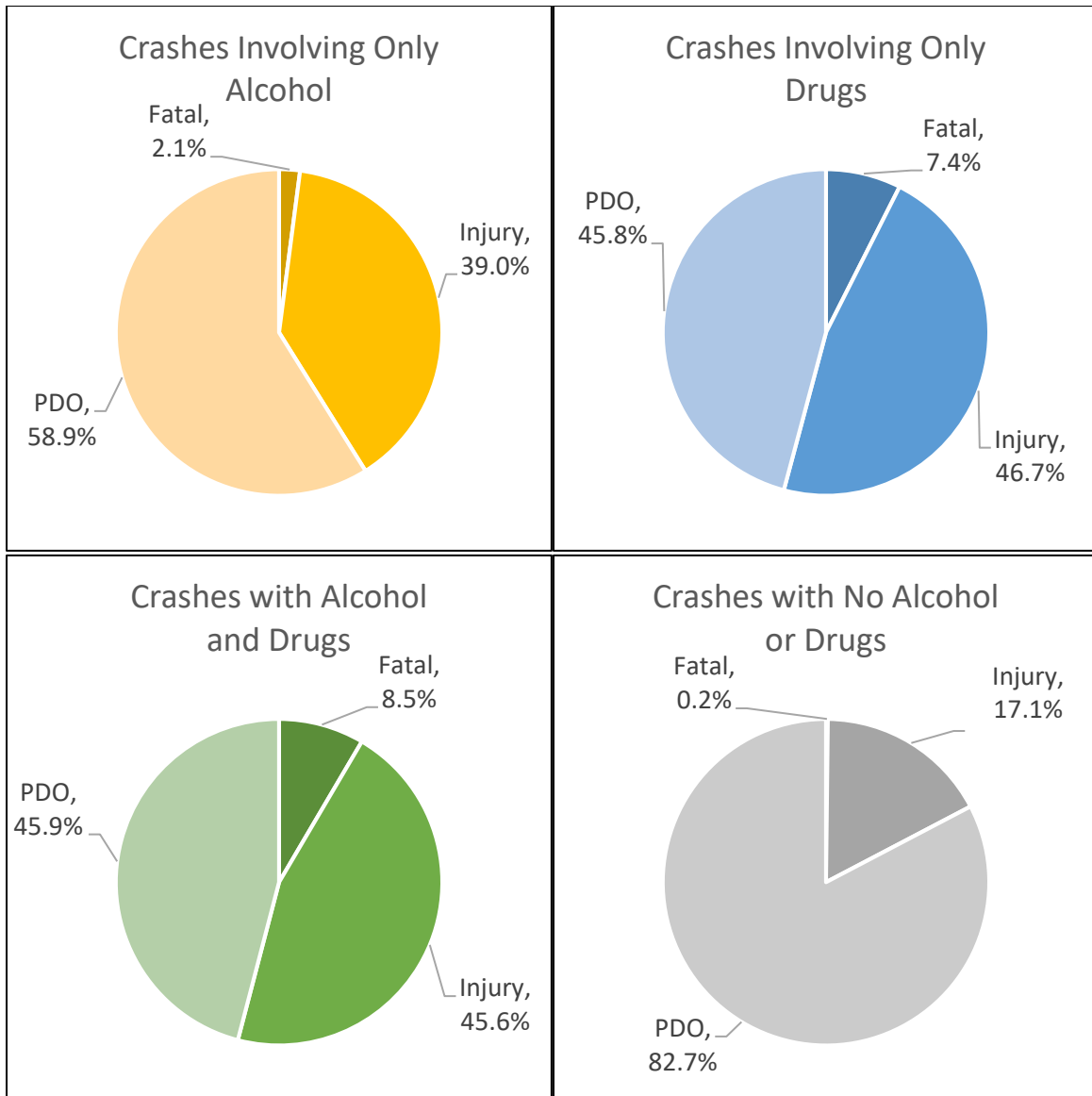
Crashes Involving Only Alcohol

Fatal, 2.1%
Injury, 39.0%
PDO, 58.9%

Crashes Involving Only Drugs

Fatal, 7.4%
PDO, 45.8%
Injury, 46.7%

Crashes with Alcohol and Drugs

Fatal, 8.5%
PDO, 45.9%
Injury, 45.6%

Crashes with No Alcohol or Drugs

Fatal, 0.2%
Injury, 17.1%
PDO, 82.7%

Figure 27 – Crash Severity Comparison

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Figure 28 shows the number of alcohol and drug-involved crashes by month. This crash distribution most closely matches that of the drug-involved crash distribution by month, with higher counts during warmer months. June has the highest percentage of crashes, with 9.4% of the total crashes for the five-year period.
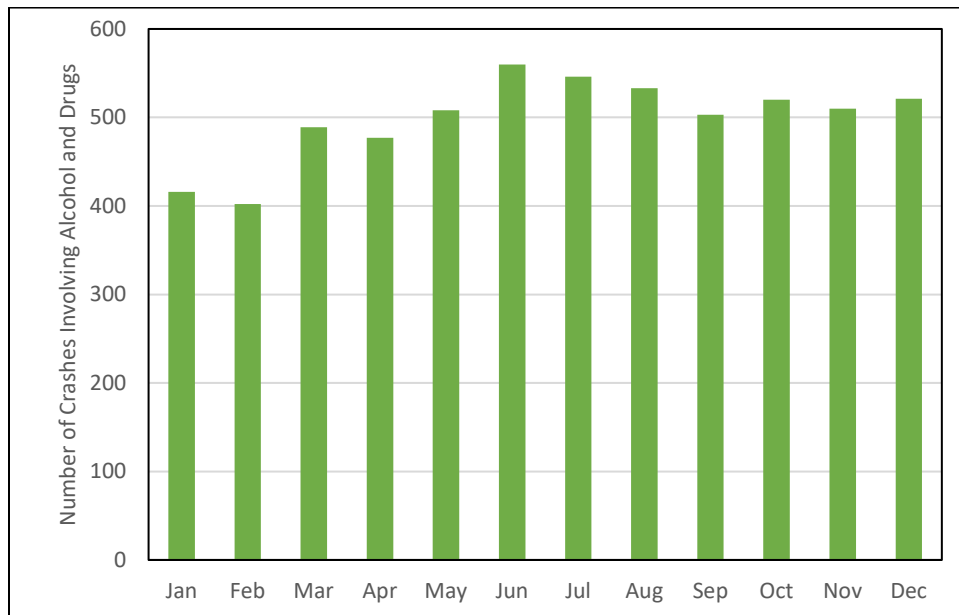

Figure 28 – Crashes Involving Alcohol and Drugs by Month, 2015-2019

Crashes involving both alcohol and drugs by day of the week are shown in Figure 29. Similar to alcohol-involved crashes (compare to Figure 16), weekends have higher counts of alcohol-and-drug-involved crashes than weekdays. A total of 19.2% of these crashes involving both alcohol and drugs took place on Saturdays.
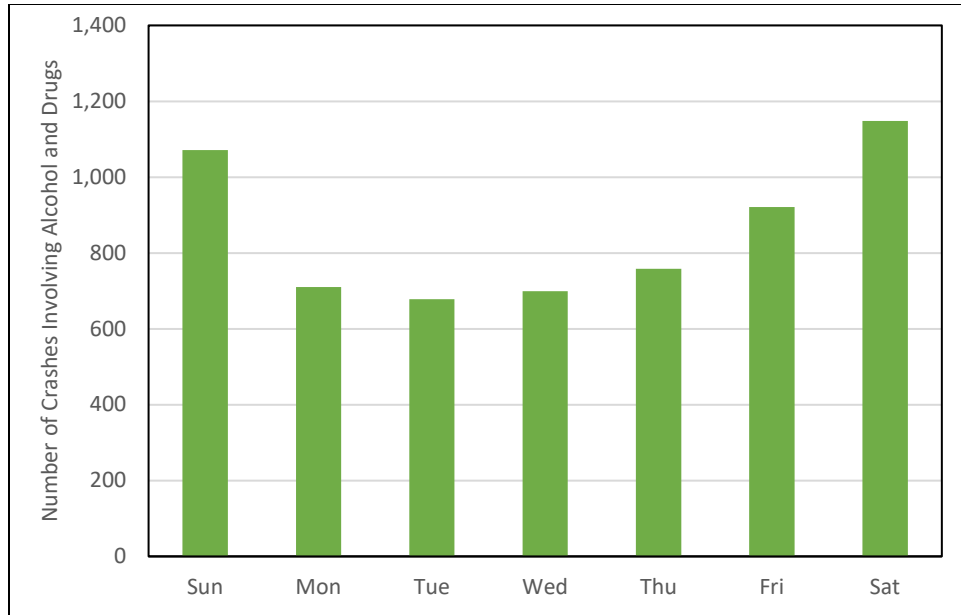
Figure 29 – Crashes Involving Alcohol and Drugs by Day of the Week, 2015-2019

Figure 30 shows crashes involving alcohol and drugs by time of day. This trend appears to be a combination of the patterns for alcohol crashes (Figure 18) and drug crashes (Figure 19). The peak from 2 AM to 3 AM is similar to alcohol crashes, but there is not a clear peak around 6 PM that corresponds to the peak shown for drug-involved crashes. Instead, crashes involving both alcohol and drugs are more uniform between the hours of 6 PM and 2 AM, resembling a mixture of the other two impairment crash types. The 2 AM to 3 AM time period comprised about 6.9% of the total crashes.
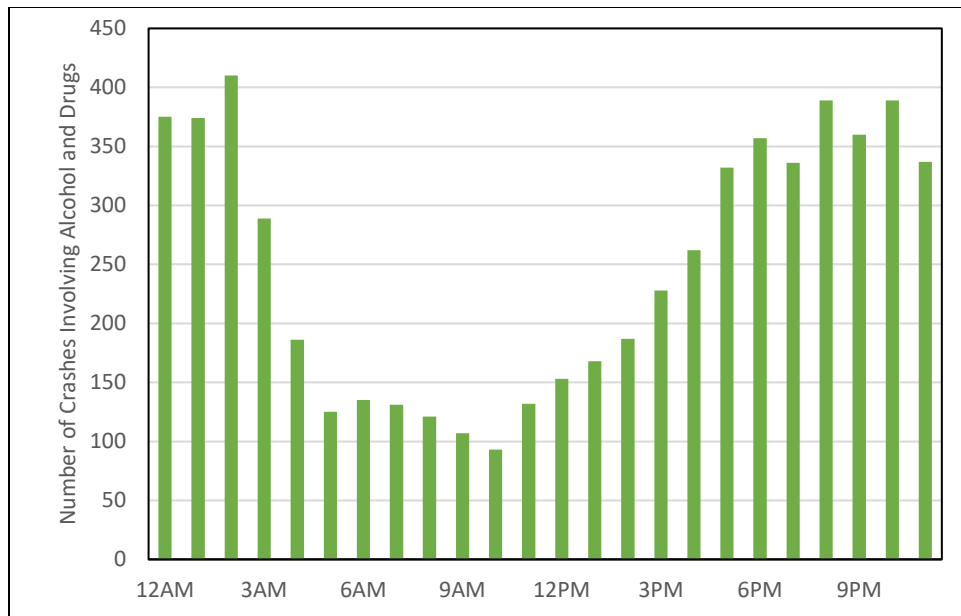

Figure 30 – Crashes Involving Alcohol and Drugs by Time of Day, 2015-2019

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12.0 Summary

Alcohol- and/or drug-related impairment greatly increases the risk of fatal injury in a crash. Drivers between the ages of 21-25 appear in impaired crashes more often than other age groups. In addition, drug-involved crashes have some of the same patterns, but many unique patterns, including differing peak times of the day, and can be targeted separately from alcohol-involved crashes. A growing concern is combined alcohol and drug use, which has even higher fatal crash rates. In order to decrease the risk of impaired crashes and injuries associated with those crashes, proper intervention and awareness campaigns should be focused on those high-risk groups containing individuals who are more likely to drink and drive or engage in drugged driving. Future policies and safety campaigns can be designed to address such needs based on the data that is currently available. Data that examines multiple drugs in a driver's system at the time of a crash is necessary in order to convey a more complete analysis of the overall drugged driver issue.