Crashes Involving Young Drivers in Michigan: 2014-2018

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Contents

1.0 Executive Summary

This report examines young drivers, particularly those age 20 and younger, who were involved in police-reported crashes in Michigan from 2014-2018. Key findings include:

- In 2018, 55,298 drivers age 20 and younger were involved in police-reported crashes in Michigan, a 7.0% drop from the 2017 total of 59,461.
- Of all drivers under 21 who were involved in crashes from 2014-2018, just over two-thirds were age 18 to 20 and just under one-third were age 17 and younger.
- A total of 112 people were killed in 2018 in crashes involving drivers age 20 and younger, and 887 received suspected serious injuries. Both of these counts were the lowest in the past five years.
- In 2014, 3.1% of licensed drivers in Michigan were age 15-17 and 4.3% were age 18-20. These percentages decreased to 3.0% and 4.1%, respectively, in 2018.
- From 2014-2018, 5.7% of all crashes involved a driver age 15-17 and 12.3% involved a driver age 18-20.
- Crash-involved drivers under the age of 15 were more likely to have been driving mopeds, go-carts, snowmobiles, and off-road or all-terrain vehicles than older drivers.
- Hazardous actions were reported for drivers age 20 and younger more frequently than older drivers, and failure to stop in assured clear distance, speeding, and failure to yield were the hazardous actions they were most frequently associated with.
- About 34% of the crash involvements of drivers under age 15 took place on the weekends, compared with 20 to 23% for drivers in older age groups.
- Crashes involving alcohol or drugs were examined for single years of age for drivers age 15 to 20. Their involvement in alcohol- and drug-involved crashes increased with each year of age, and they were increasingly likely to be the driver who was impaired given that a crash involved alcohol or drugs.

2.0 Introduction

This report examines young drivers, particularly those under the age of 21, who were involved in police-reported traffic crashes in Michigan from 2014-2018. Michigan traffic crashes are defined as taking place on public roadways in Michigan, involving at least one motor vehicle in transport, and resulting in death, injury, or property damage of $1,000 or more. The crash involvement distributions of young drivers are compared with those of older drivers across different crash types, road conditions, light conditions, and time of day. The report also looks into the different hazardous actions of young drivers in crashes, as well as their alcohol and drug involvement and restraint use.

3.0 Crash Involvement Counts and Injury Severity

3.1 Numbers of Young Drivers in Crashes

Figure 1 shows how many motor vehicle drivers age 20 and younger were involved in police-reported crashes each year from 2014 to 2018. The low number of young drivers in crashes occurred in 2018 with 55,298, similar to the 55,714 young drivers in crashes in 2014. The peak number of crash-involved young drivers over this time was in 2016 with 60,702.

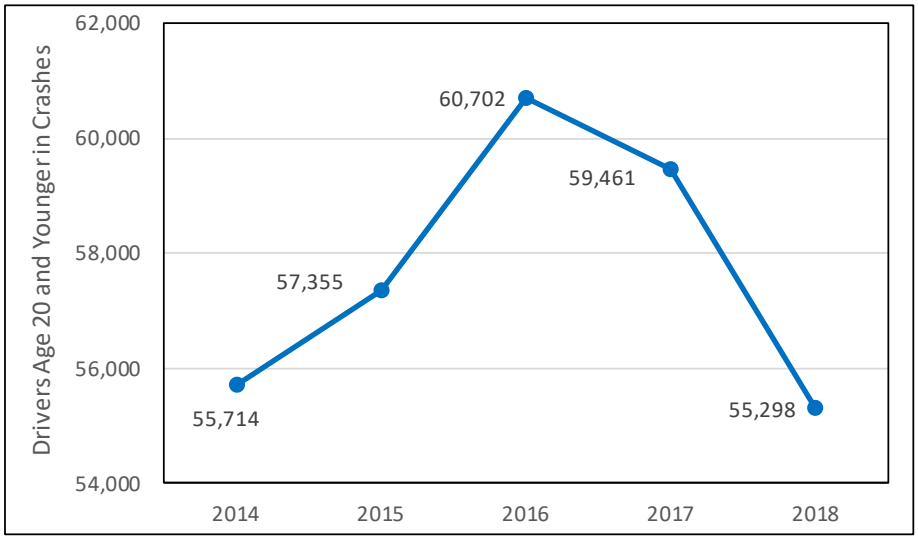

Figure 1 – Drivers Age 20 and Younger Involved in Crashes by Year

Table 1 shows counts of young drivers involved in crashes each year by single year of age and by groups of ages. Of all drivers under the age of 21 who were involved in crashes over the five years, just over two-thirds were age 18-20 and just under one-third were age 17 and younger. Drivers under age 15 made up just 0.4% of all crash involvements of drivers under the age of 21, and drivers age 15 made up just 1.0% of the crash involvements.

Table 1. Young Drivers in Crashes by Driver Age, 2014-2018

Driver Age	2014	2015	2016	2017	2018	Total
Under Age 15	245	250	238	262	245	1,240
Age 15	534	561	599	592	523	2,809
Age 16	6,868	7,232	7,789	7,972	7,193	37,054
Age 17	9,956	10,194	10,961	10,637	9,998	51,746
Age 15-17 Subtotal	17,358	17,987	19,349	19,201	17,714	91,609
Age 18	12,306	12,791	13,486	13,104	12,189	63,876
Age 19	13,024	13,123	13,878	13,475	12,417	65,917
Age 20	12,781	13,204	13,751	13,419	12,733	65,888
Age 18-20 Subtotal	38,111	39,118	41,115	39,998	37,339	195,681
Total	55,714	57,355	60,702	59,461	55,298	288,530

3.2 Injuries to People Involved in Young Driver Crashes

The counts of people who sustained fatal or suspected serious injuries in crashes involving a young driver are plotted by year in Figure 2. Over the last five years, an average of 138 people per year have died in crashes involving drivers age 20 and younger. The number of fatalities ranged from 164 in 2015 down to 112 in 2018. An average of 1,005 people per year sustained suspected serious injuries in young driver crashes. After three straight years of increases, the number of suspected serious injuries fell nearly 24% from 1,162 in 2017 to 887 in 2018.

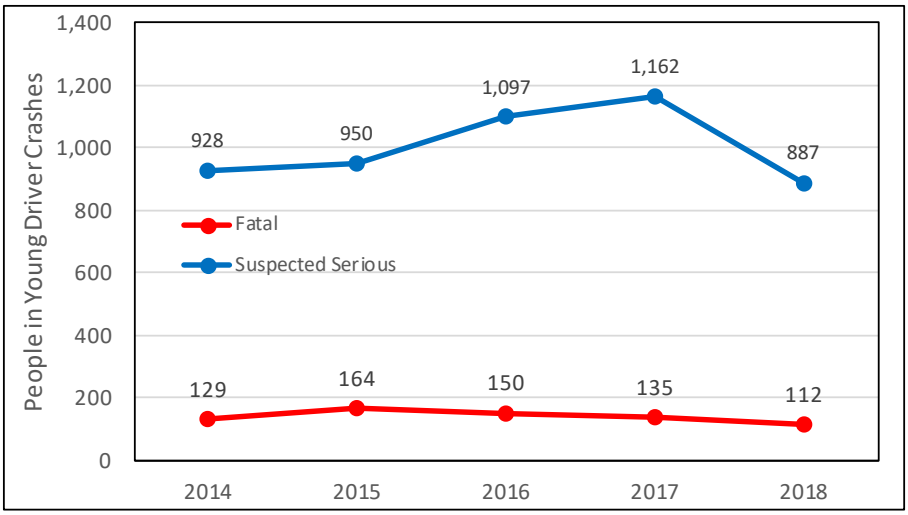

Figure 2 – Number of People with Fatal or Suspected Serious Injuries in Crashes with a Driver Age 20 and Younger

Table 2 shows counts of people with all levels of injury severity in three different groups of young driver crashes: crashes involving a driver under age 15, crashes involving a driver age 15-17, and crashes involving a driver 18-20. One crash could potentially be included in more than one group. For example, if

a crash involved one driver age 16 and another driver age 18, then people involved in that crash were tallied in both the age 15-17 crash group and the age 18-20 crash group.

Table 2. Counts of People by Injury Severity in Crashes with Young Drivers, 2014-2018

Driver Age	Fatal	Suspected Serious	Suspected Minor	Possible	None	Not Entered	Total
Under Age 15	9	102	208	306	2,224	178	3,027
Age 15-17	195	1,482	6,944	18,024	173,912	5,219	205,776
Age 18-20	494	3,536	13,992	39,601	353,505	12,985	424,113

The injury severity distribution is similar for people involved in a crash with a driver 15-17 and those involved in a crash with a driver 18-20. For both groups, 0.1% of the people suffered a fatal injury. About 0.7% of people in a crash with a driver 15-17 sustained a suspected serious injury and 3.4% had a suspected minor injury. The respective percentages for people in a crash with a driver age 18-20 were 0.8% and 3.3%.

4.0 Relative Share of Young Drivers and Their Crash Experience

This section considers the representation of young drivers in terms of number of licensed drivers, number of crashes, and fatal and serious injuries stemming from those crashes. Table 3 shows the number of licensed drivers age 15-17 as a percentage of all licensed drivers in Michigan (source: Michigan Department of State, Office of Information Technology). Drivers age 15-17 made up about 3.1% of the drivers in the state from 2014-2018, and this percentage was consistent from year to year.

Table 3. Licensed Drivers Age 15-17, 2014-2018

Year	Number of Licensed Drivers Age 15-17*	Total Number of Licensed Drivers	Percent of Total Licensed Drivers Age 15-17
2014	219,345	7,130,205	3.1%
2015	224,260	7,158,316	3.1%
2016	221,905	7,176,692	3.1%
2017	221,072	7,200,401	3.1%
2018	218,290	7,222,155	3.0%
Total	1,104,872	35,887,769	3.1%

*Drivers age 15 and younger are grouped together in the licensed driver data. Table shows drivers age 0 to 17.

Table 4 shows similar data for drivers age 18-20. This age group made up 4.2% of all licensed drivers from 2014-2018, but the percentage appears to be decreasing slightly. In 2014, drivers 18-20 were 4.3% of all licensed drivers, but this declined to 4.2% in 2015 and 2016 and 4.1% in 2017 and 2018.

Table 4. Licensed Drivers Age 18-20, 2014-2018

Year	Number of Licensed Drivers Age 18-20	Total Number of Licensed Drivers	Percent of Total Licensed Drivers Age 18-20
2014	304,474	7,130,205	4.3%
2015	302,720	7,158,316	4.2%
2016	300,185	7,176,692	4.2%
2017	298,268	7,200,401	4.1%
2018	295,786	7,222,155	4.1%
Total	1,501,433	35,887,769	4.2%

Table 5 shows the percentage of all crashes involving a driver age 15 to 17 from 2014-2018. Whereas we saw in Table 3 that this age group made up 3.1% of all licensed drivers, Table 5 indicates that 5.7% of all crashes involved a driver age 15-17. The lowest share of crashes involving a driver 15-17 occurred in 2018 with 5.4%.

Table 5. Crashes Involving Drivers Age 15-17, 2014-2018

Year	Total Crashes That Involved a Driver Age 15-17	Total Crashes Involving All Drivers	Percent of Crashes That Involved a Driver Age 15-17
2014	16,532	298,699	5.5%
2015	17,103	297,023	5.8%
2016	18,356	312,172	5.9%
2017	18,248	314,921	5.8%
2018	16,904	312,798	5.4%
Total	87,143	1,535,613	5.7%

The same data is presented in Table 6 for drivers age 18 to 20. Again, 2018 was the low year, with 11.5% of crashes involving drivers 18-20. The average for the five-year period was 12.3% of all crashes involving drivers age 18-20. This is higher than the 4.2% of all licensed drivers who are age 18-20 (Table 4). Note that any crash that involved both a driver age 15-17 and a driver age 18-20 will be tallied in both Table 5 and Table 6.

Table 6. Crashes Involving Drivers Age 18-20, 2014-2018

Year	Total Crashes That Involved a Driver Age 18-20	Total Crashes Involving All Drivers	Percent of Crashes That Involved a Driver Age 18-20
2014	36,621	298,699	12.3%
2015	37,581	297,023	12.7%
2016	39,576	312,172	12.7%
2017	38,452	314,921	12.2%
2018	36,002	312,798	11.5%
Total	188,232	1,535,613	12.3%

Tables 7 and 8 shows the number of fatalities resulting from crashes involving drivers age 15-17 and 18-20, respectively. Note that the fatality count reflects anyone who may have died in the crashes, not necessarily the young drivers themselves. The tables also show the percentage of these fatalities out of all traffic fatalities for each year. Fatalities are rare events and the numbers of fatalities in young driver crashes are low, so the percentages vary from year to year. Overall 4.0% of all fatalities occurred in crashes with drivers age 15-17, which is only slightly higher than the share of drivers age 15-17 (3.1%). On the other hand, 10.1% of all fatalities resulted from crashes with drivers age 18-20, which is notably higher than the percentage of licensed drivers who are 18-20 (4.2%).

Table 7. Traffic Fatalities Involving Drivers Age 15-17, 2014-2018

Year	Traffic Fatalities Involving Drivers Age 15-17	Total Traffic Fatalities Involving All Drivers	Percent of Total Traffic Fatalities That Involved a Driver Age 15-17
2014	34	876	3.9%
2015	58	963	6.0%
2016	40	1,064	3.8%
2017	39	1,028	3.8%
2018	24	974	2.5%
Total	195	4,905	4.0%

Table 8. Traffic Fatalities Involving Drivers Age 18-20, 2014-2018

Year	Traffic Fatalities Involving Drivers Age 18-20	Total Traffic Fatalities Involving All Drivers	Percent of Total Traffic Fatalities That Involved a Driver Age 18-20
2014	96	876	11.0%
2015	107	963	11.1%
2016	107	1,064	10.1%
2017	99	1,028	9.6%
2018	85	974	8.7%
Total	494	4,905	10.1%

Similar data is presented in Tables 9 and 10 but for suspected serious injuries, rather than fatalities, resulting from crashes with young drivers. Overall, 5.5% of people with suspected serious injuries were injured in crashes involving a driver 15-17, and 13.1% were injured in crashes involving a driver 18-20. For both age groups these percentages are higher than were observed for fatalities and for the age groups' shares of all licensed drivers.

Table 9. Suspected Serious Traffic Injuries Involving Drivers Age 15-17, 2014-2018

Year	Suspected Serious Injuries Involving Drivers Age 15-17	Total Suspected Serious Injuries Involving All Drivers	Percent of Total Suspected Serious Injuries That Involved a Driver Age 15-17
2014	251	4,909	5.1%
2015	312	4,865	6.4%
2016	320	5,634	5.7%
2017	339	6,084	5.6%
2018	260	5,586	4.7%
Total	1,482	27,078	5.5%

Table 10. Suspected Serious Traffic Injuries Involving Drivers Age 18-20, 2014-2018

Year	Suspected Serious Injuries Involving Drivers Age 18-20	Total Suspected Serious Injuries Involving All Drivers	Percent of Total Suspected Serious Injuries That Involved a Driver Age 18-20
2014	672	4,909	13.7%
2015	638	4,865	13.1%
2016	764	5,634	13.6%
2017	833	6,084	13.7%
2018	629	5,586	11.3%
Total	3,536	27,078	13.1%

5.0 Vehicle Type, Crash Type, and Hazardous Action

5.1 Vehicle Type

Table 11 shows counts of drivers in crashes by age group and the type of vehicle they were driving. About 63% of the youngest drivers, those under age 15, were driving a passenger car, SUV, or van, compared with 87-88% of drivers in the next three older age groups (15-17, 18-20, and 21-24). Drivers under 15 were relatively more likely to have been driving mopeds, go-carts, snowmobiles, and off-road or all-terrain vehicles (ORVs and ATVs). The ORV/ATV category was the most striking—about 13% of all crash-involved drivers under 15 were driving ORVs/ATVs, compared with 0.2% or less of drivers in any of the other four age groups. Since these youngest drivers are not allowed to drive cars without an adult in the vehicle, it is not surprising that a greater percentage of their crash involvements were in vehicles that (depending on the exact vehicle type and age of the operator) they are legally allowed to drive at younger ages.

Table 11. Drivers in Crashes by Vehicle Type and Age Group, 2014-2018

Vehicle Type	<15	15-17	18-20	21-24	25+
Passenger car/SUV/van	780	80,700	173,067	222,944	1,484,537
Motor home	21	882	1,838	2,809	41,916
Pickup truck	72	8,679	17,247	22,507	223,800
Small truck	7	562	1,377	2,118	18,614
Motorcycle	30	115	719	1,488	12,316
Moped/goped	60	259	277	217	1,152
Go-cart/golf cart	23	20	14	18	93
Snowmobile	20	35	38	53	463
ORV/ATV	165	194	141	138	812
Truck/bus	8	9	542	2,681	61,010
Other	39	114	308	663	7,802
Not entered	15	40	113	164	974
Total	1,240	91,609	195,681	255,800	1,853,489

5.2 Crash Type

Figure 3 shows distributions of crash involvements by the type of crash for passenger vehicle drivers in five different age groups: under 15, 15-17, 18-20, 21-24, and 25 and older. Restricting the analysis to passenger vehicle drivers allows for a more equal comparison across driver age groups. The categories of crash type are single-vehicle, head-on, head-on/left turn, angle, rear-end (includes general rear-end crashes as well as rear-end/right turn and rear-end/left turn), sideswipe/same direction, sideswipe/opposite directions, and backing. Crash involvements where crash type was coded "other," "unknown," or "not entered" have been excluded.

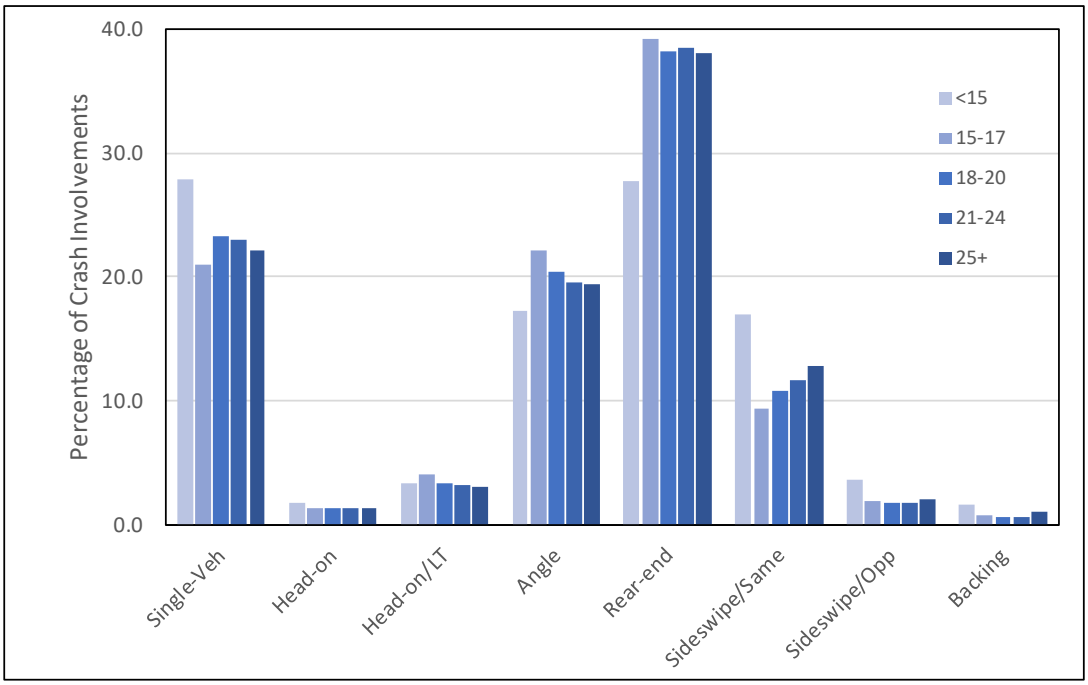

Figure 3 – Crash Type Distributions for Passenger Vehicle Drivers by Age Group, 2014-2018

The crash type distribution for drivers under the age of 15 is different than the crash type distributions of the other four driver age groups. About 28% of the crash involvements of the youngest drivers were in single-vehicle collisions, compared with 21% to 23% for the other driver age groups. Conversely, only 28% of the crash involvements of the youngest drivers were in rear-end crashes, compared with 38% to 39% for the other driver age groups. Sideswipe/same direction, sideswipe/opposite direction, and head-on crashes made up higher percentages of the crash involvements of drivers under 15 compared with the other age groups, suggesting that the youngest drivers may have difficulties with lane control.

Differences in crash type distributions among the other four driver age groups are more subtle. About 4.0% of the crash involvements for drivers 15-17 were in head-on/left turn crashes, compared with 3.4% for drivers 18-20, 3.3% for drivers 21-24, and 3.0% for drivers 25 and older. These percentages are consistent with the idea that the judgment involved when turning left across opposing traffic is something that improves with age and driving experience. The benefit of driving experience may also be connected with the observed decrease in the relative share of angle collisions as the age of the driver groups increases.

5.3 Hazardous Action

The hazardous action variable indicates whether the reporting officer thought a driver's actions contributed to the crash. Younger drivers were more likely than older drivers to have been assigned a hazardous action. No hazardous action was coded for just 23.8% of drivers under 15, 32.0% of drivers 15-17, 35.7% of drivers 18-20, 42.2% of drivers 21-24, and 57.4% of drivers 25 and older.

Figure 4 shows hazardous action distributions for drivers of all types of vehicles in five different age groups, excluding drivers who were not assigned a hazardous action and drivers coded "unknown" for

hazardous action. The “other” category in the chart includes the coded levels of speed too slow, drove wrong way, drove left of center, improper passing, improper turn, improper/no signal, improper backing, as well as cases coded “other.”

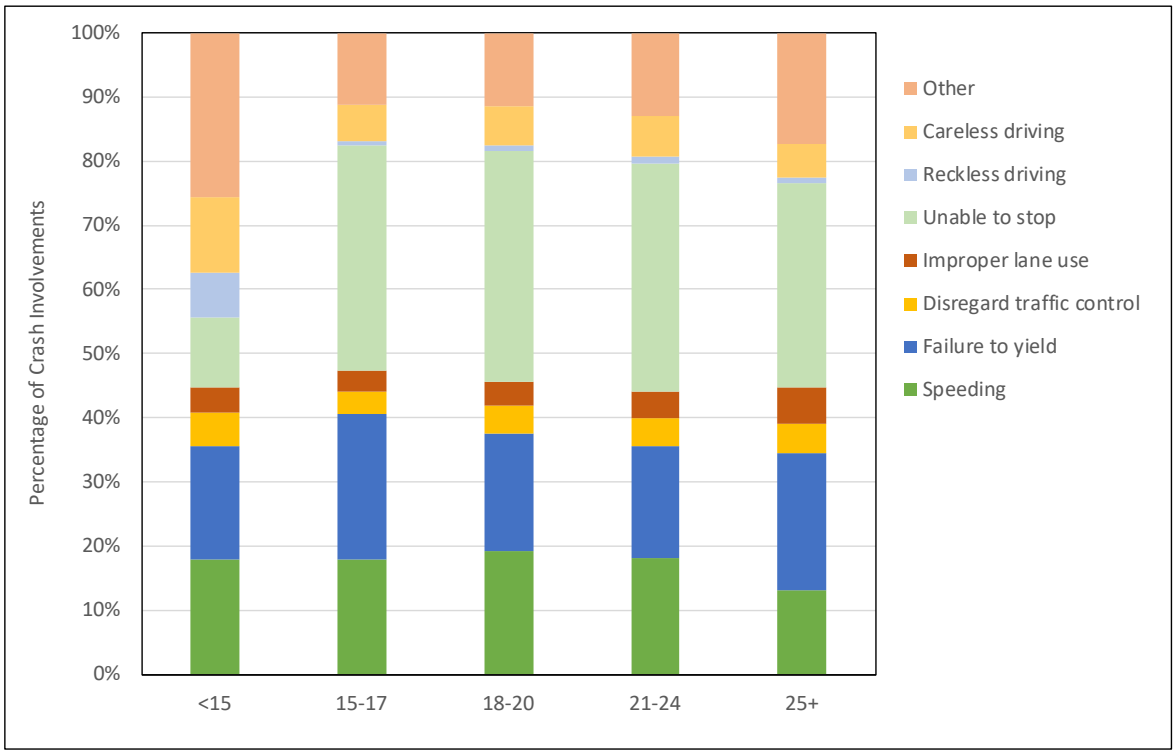

Figure 4 – Hazardous Action Distributions for Drivers by Age Group, 2014-2018

For these known hazardous action cases, 18.8% of the drivers age 20 and younger were coded as speeding, compared with just 13.1% of the drivers 25 and older (Table 12). Unable to stop in assured clear distance shows a similar pattern, coded for 35.6% of drivers 20 and younger and 31.9% of drivers 25 and older. In contrast, failure to yield was slightly more common for drivers 25 and older (21.4%) than drivers 20 and younger (19.8%), and “other” hazardous actions, which include several of the less frequently coded hazardous actions, were also more common among drivers 25 and older (17.4%) than drivers 20 and younger (11.5%).

Table 12. Drivers in Crashes by Hazardous Action and Age Group, 2014-2018

Hazardous Action	Age Group						Total
	Below 15	15-17	18-20	21-24	25 and Above	Unknown	
None	295 (23.8%)	29,312 (32.0%)	69,827 (35.7%)	107,872 (42.2%)	1,063,783 (57.4%)	72,839 (30.9%)	1,343,928 (51.0%)
Speed too fast	150 (12.1%)	10,888 (11.9%)	23,328 (11.9%)	25,712 (10.1%)	97,406 (5.3%)	4,560 (1.9%)	162,044 (6.2%)
Speed too slow	1 (0.1%)	78 (0.1%)	139 (0.1%)	207 (0.1%)	1,058 (0.1%)	140 (0.1%)	1,623 (0.1%)
Failure to yield	146 (11.8%)	13,750 (15.0%)	22,427 (11.5%)	24,444 (9.6%)	158,766 (8.6%)	8,677 (3.7%)	228,210 (8.7%)
Disregard traffic control	43 (3.5%)	2,150 (2.3%)	5,134 (2.6%)	6,191 (2.4%)	33,278 (1.8%)	4,584 (1.9%)	51,380 (2.0%)
Drove wrong way	5 (0.4%)	56 (0.1%)	154 (0.1%)	233 (0.1%)	1,340 (0.1%)	349 (0.1%)	2,137 (0.1%)
Drove left of center	14 (1.1%)	505 (0.6%)	954 (0.5%)	1,250 (0.5%)	8,248 (0.4%)	1,455 (0.6%)	12,426 (0.5%)
Improper passing	10 (0.8%)	435 (0.5%)	1,037 (0.5%)	1,276 (0.5%)	8,516 (0.5%)	2,109 (0.9%)	13,383 (0.5%)
Improper lane use	33 (2.7%)	2,037 (2.2%)	4,589 (2.3%)	5,836 (2.3%)	41,621 (2.2%)	7,949 (3.4%)	62,065 (2.4%)
Improper turn	24 (1.9%)	1,040 (1.1%)	2,129 (1.1%)	2,460 (1.0%)	18,152 (1.0%)	1,790 (0.8%)	25,595 (1.0%)
Improper/No signal	0 (0.0%)	127 (0.1%)	221 (0.1%)	305 (0.1%)	2,147 (0.1%)	199 (0.1%)	2,999 (0.1%)
Improper backing	41 (3.3%)	1,464 (1.6%)	2,432 (1.2%)	2,907 (1.1%)	29,004 (1.6%)	3,232 (1.4%)	39,080 (1.5%)
Unable to stop	91 (7.3%)	21,309 (23.3%)	43,810 (22.4%)	50,253 (19.6%)	236,118 (12.7%)	15,693 (6.7%)	367,274 (13.9%)
Reckless driving	58 (4.7%)	443 (0.5%)	1,106 (0.6%)	1,779 (0.7%)	6,845 (0.4%)	2,347 (1.0%)	12,578 (0.5%)
Careless/Negligent	99 (8.0%)	3,345 (3.7%)	7,168 (3.7%)	8,922 (3.5%)	38,670 (2.1%)	6,661 (2.8%)	64,865 (2.5%)
Other	118 (9.5%)	3,148 (3.4%)	6,960 (3.6%)	9,580 (3.7%)	60,167 (3.2%)	5,696 (2.4%)	85,669 (3.3%)
Unknown/not entered	112 (9.0%)	1,522 (1.7%)	4,266 (2.2%)	6,573 (2.6%)	48,370 (2.6%)	97,083 (41.2%)	157,926 (6.0%)
Total	1,240 (100.0%)	91,609 (100.0%)	195,681 (100.0%)	255,800 (100.0%)	1,853,489 (100.0%)	235,363 (100.0%)	2,633,182 (100.0%)

All of the comparisons made in Figure 4 were for drivers who were assigned known hazardous actions. So given that a driver committed a hazardous action, the figure compares the types of hazardous actions among different driver age groups. As mentioned above, a lower share of older drivers were assigned

hazardous actions than younger drivers. Table 4 on the previous page shows the distributions of all the code levels of the hazardous action variable in each driver age group, including "none" and "unknown." The table also has complete counts for all the individually coded hazardous actions that were included in the "other" category in the figure.

6.0 Temporal Factors

6.1 Day of Week

Figure 5 shows the distribution of crash-involved drivers by driver age group and day of the week. Drivers under 15 had a much higher share of their crashes on Saturdays and Sundays compared with all of the other age groups. About 34% of the crash involvements of drivers under age 15 took place on the weekends, whereas 20-23% of crash involvements of drivers in each of the older age groups were on weekends. The difference is likely partially due to relatively more driving of ATVs and similar vehicles by the youngest drivers compared with older drivers since ATV-riding is likely concentrated on the weekend. If only passenger vehicles are considered, weekend crash involvements represent about 31% of the driver under age 15 crash involvements and again about 20-23% of crash involvements of drivers in each of the older age groups, so the difference is more than can be explained by the fact that ATV-driving is concentrated among the youngest drivers.

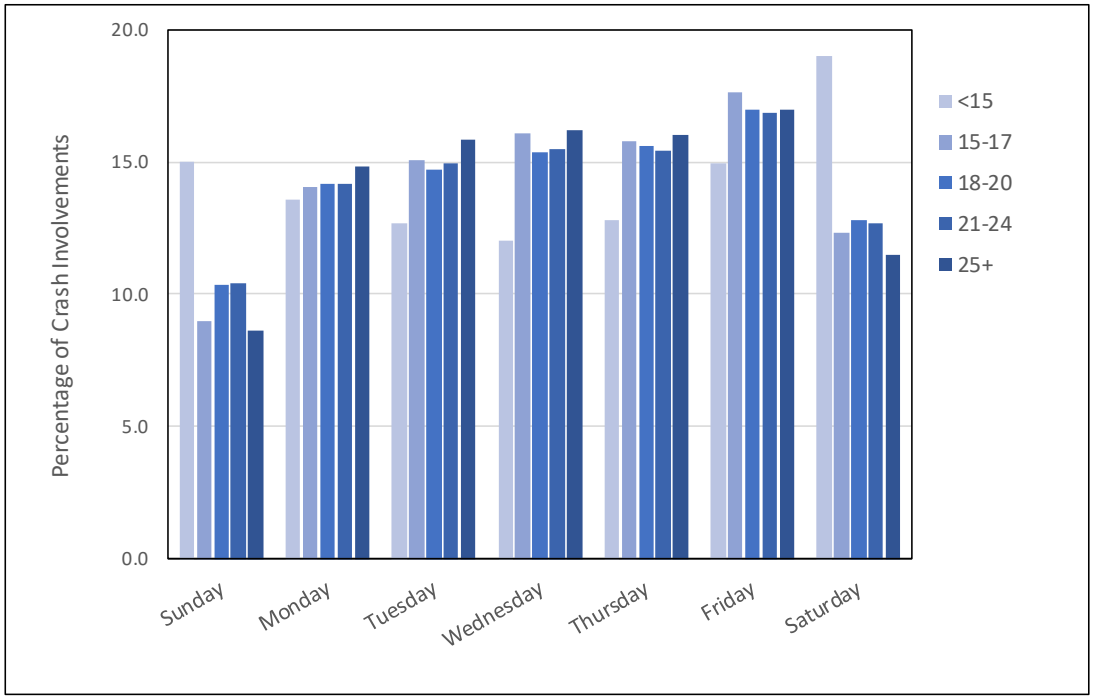

Figure 5 – Distribution of Crash Involvements by Day of Week for Drivers in Different Age Groups, 2014-2018

The crash involvement distributions by day of week were nearly identical between the 18-20 and 21-24 driver age groups. Both of those groups had relatively more crash involvements on the weekends and fewer on the weekdays compared with the 15-17 group and the 25 and older group. These differences were less pronounced than what was observed for drivers under age 15.

6.2 Time of Day

Figure 6 shows the distribution of crash involvements of the different driver age groups across three-hour time blocks. The peak period for crash involvements for all of the age groups was from 3:00-5:59 p.m., especially for drivers under 15 (27.5% of their involvements) and drivers 15-17 (30.1% of their involvements). Drivers 18-20 and 21-24 had relatively more crashes in the three hours prior to midnight than drivers of other ages.

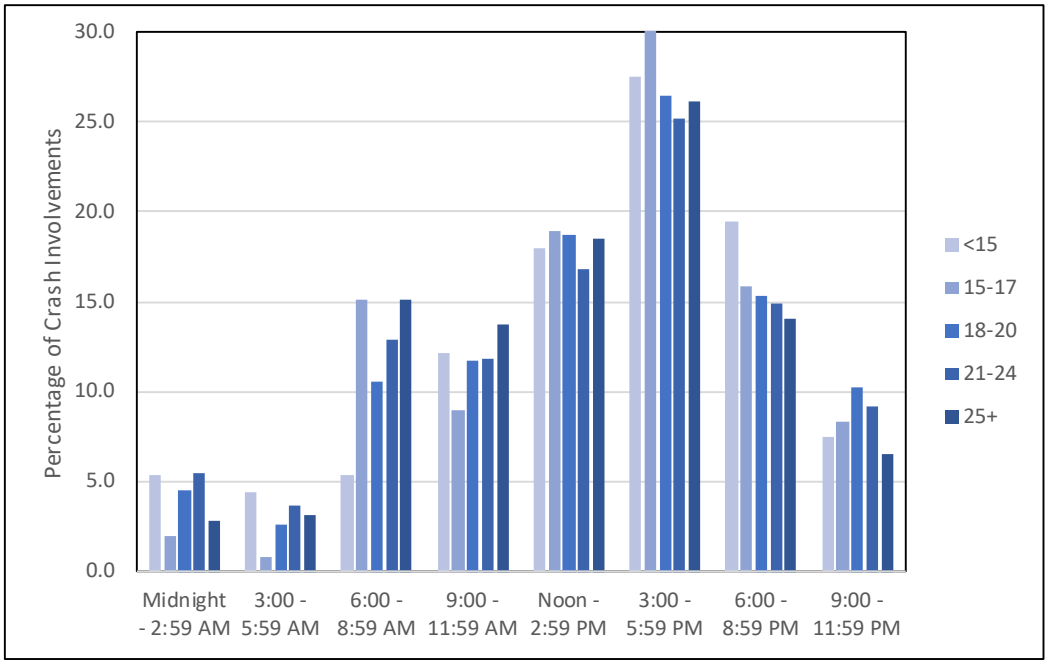

Figure 6 – Distribution of Crash Involvements by Time of Day for Drivers in Different Age Groups, 2014-2018

7.0 External/Environmental Conditions

7.1 Light Conditions

Figure 7 presents the distribution of crash-involved drivers by light condition within five driver age groups. Cases coded other or unknown light condition (about 0.5% of the total) have been excluded. The youngest group of drivers, those under 15, had the highest percentage of crash involvements in daylight (73.1% of their involvements). The percentage of daylight involvements decreased with each of the next three older age groups, down to 65.7% of the crash involvements of drivers 21-24. The percentage of daylight crash involvements was about 70.3% for drivers 25 and older, on par with the 15-17 driver age group.

The pattern for crash involvements in dark, unlighted conditions was the reverse of the daylight pattern. The percentage of dark, unlighted involvements rose from 7.7% for drivers under 15 up to 14.3% of the crash involvements of drivers 21-24. Crash involvements in dark, unlighted conditions accounted for 13.1% of the crash involvements of drivers 25 and older. Exposure likely accounts for most of these

differences—driver age groups with relatively fewer daytime crash involvements were probably doing more of their driving in dark conditions.

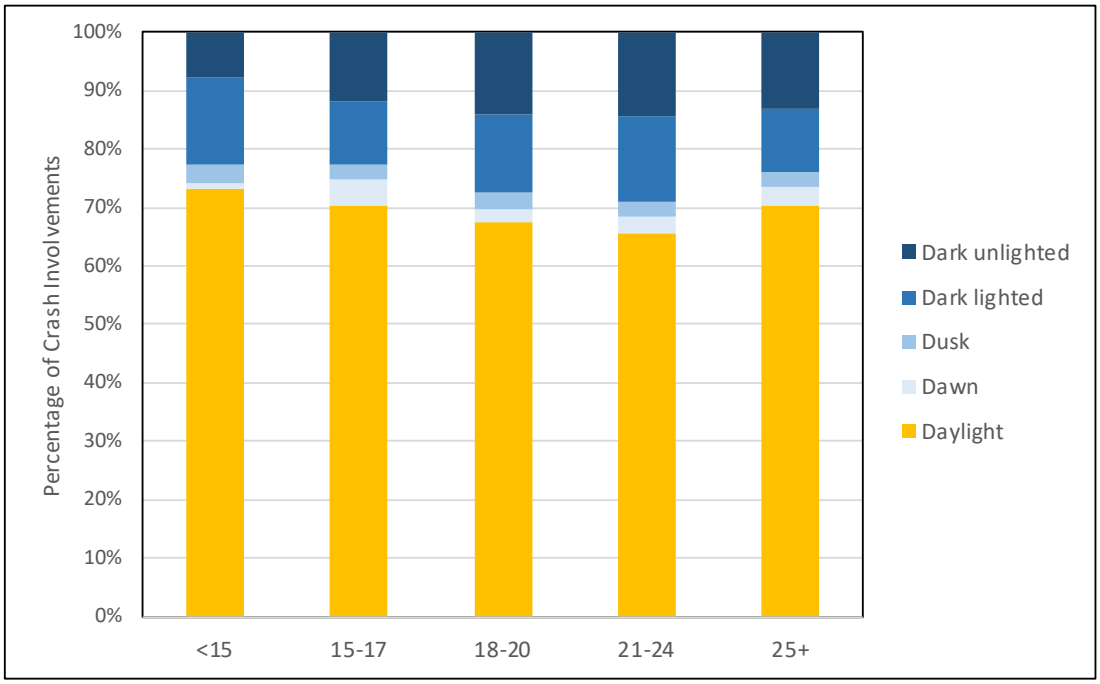

Figure 7 – Distribution of Crash Involvements by Light Condition for Drivers in Different Age Groups, 2014-2018

7.2 Road Conditions

The distributions of the five most commonly coded road conditions—dry, wet, ice, snow, and slush—are shown for five driver age groups in Figure 8 on the following page. Cases coded with other or unknown road conditions (about 1.2% of the total) are excluded from the chart. Road condition distributions were virtually identical for crash involvements of drivers 15-17, 18-20, and 21-24. About 66% of crash involvements for drivers in those age groups were on dry roads, compared with 77.4% of the involvements for the youngest drivers and 69.9% of the involvements for drivers 25 and older. Conversely, drivers between 15 and 24 had higher shares of crash involvements on wet, icy, snowy, and slushy roads compared with the youngest drivers or those 25 and older.

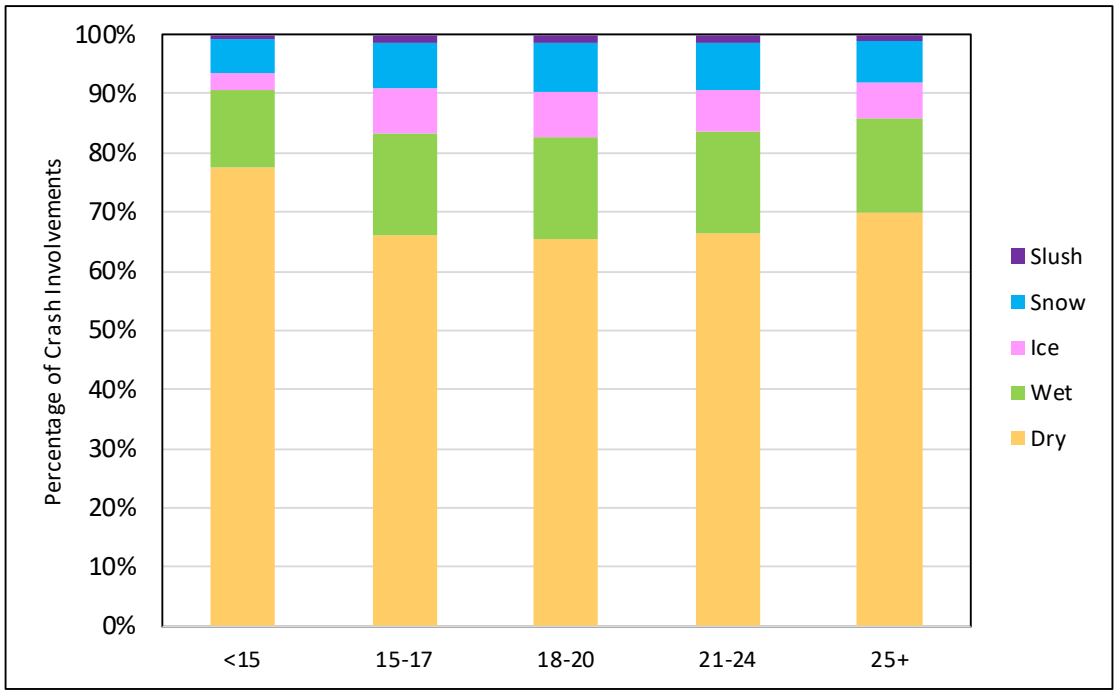

Figure 8 – Distribution of Crash Involvements by Road Condition for Drivers in Different Age Groups, 2014-2018

Both exposure and experience may be factors in the observed road condition distributions for drivers of different ages. The high percentage of dry road crash involvements for drivers under 15 may indicate they were not driving as much during unfavorable road conditions. The higher percentages of crash involvements on wet, icy, snowy, and slushy roads for drivers 15-24 compared with 25 and older may reflect the experience the older group of drivers has driving on non-dry roads.

8.0 Driver Factors

8.1 Impairment

Table 13 provides statistics to illuminate the scope of young drivers' involvement in alcohol-involved crashes. Taking the first row as an example, drivers age 15 were involved in 52 alcohol-involved crashes over the last five years out of a total 2,803 crashes, so 1.9% of crashes involving 15-year-old drivers involved alcohol. Next, 21 of the 2,809 15-year-old drivers in crashes were reported to have been drinking, which is 0.7% of all 15-year-old drivers in crashes. Since there were 53 15-year-old drivers in alcohol-involved crashes and 21 of them were drinking, this means 39.6% of 15-year-old drivers who were in alcohol-involved crashes were drinking, which indicates that the remainder of the 15-year-old drivers in alcohol-involved crashes (60.4%) were not themselves drinking.

Table 13. Young Drivers and Alcohol, 2014-2018

Driver Age	Alcohol-Involved Crashes	Total Crashes	Percent Alcohol-Involved Crashes	Drinking Drivers	Total Drivers	Percent Drinking Drivers	Drivers in Alcohol-Involved Crashes	Pct. Drinking Drivers in Alcohol-Involved Crashes
15	52	2,803	1.9%	21	2,809	0.7%	53	39.6%
16	226	36,089	0.6%	93	37,054	0.3%	226	41.2%
17	538	50,298	1.1%	268	51,746	0.5%	543	49.4%
18	939	62,990	1.5%	554	63,876	0.9%	944	58.7%
19	1,319	65,002	2.0%	870	65,917	1.3%	1,329	65.5%
20	1,574	64,933	2.4%	1,113	65,888	1.7%	1,587	70.1%

With each successive year of driver age from age 16 to 20, the drivers were in more alcohol-involved crashes, a higher percentage of the crashes they were in involved alcohol, higher numbers of the drivers were drinking, and a higher percentage of the drivers were drinking. The final column in Table 5 is particularly interesting. It indicates that less than half of the drivers age 15 and 16 who were in alcohol-involved crashes were themselves drinking, but the percentage increased in each older age group. About 70% of drivers age 20 who were in alcohol-involved crashes were themselves drinking. In other words, the closer drivers were to age 21 (the legal drinking age), the greater their percentage of drinking drivers in alcohol-involved crashes.

Table 14 has similar breakdowns for crashes involving drugs and drug use by young drivers. Drivers age 15-20 were involved in fewer crashes involving drugs than alcohol, and fewer young drivers were reported to have been using drugs than alcohol. However, the numbers of drug-involved crashes and drivers who used drugs increased with each year of driver age from 15 through 20. The majority of the drivers in each age group who were in drug-involved crashes were themselves reported to have been using drugs. The percentage ranged from 63.6% of drivers age 15 in drug-involved crashes to 79.6% of drivers age 19 and 20.

Table 14. Young Drivers and Drugs, 2014-2018

Driver Age	Drug-Involved Crashes	Total Crashes	Percent Drug-Involved Crashes	Drugged Drivers	Total Drivers	Percent Drugged Drivers	Drivers in Drug-Involved Crashes	Pct. Drugged Drivers in Drug-Involved Crashes
15	11	2,803	0.4%	7	2,809	0.2%	11	63.6%
16	121	36,089	0.3%	77	37,054	0.2%	121	63.6%
17	224	50,298	0.4%	157	51,746	0.3%	225	69.8%
18	401	62,990	0.6%	294	63,876	0.5%	407	72.2%
19	490	65,002	0.8%	390	65,917	0.6%	492	79.3%
20	536	64,933	0.8%	430	65,888	0.7%	540	79.6%

8.2 Restraint Use

To look at restraint use patterns, crash-involved drivers were restricted to those driving passenger vehicles. Drivers were considered to be restrained if they were coded as using a shoulder belt only, lap belt only, both lap and shoulder belt, or restraint failure. Unrestrained drivers were those coded as "no belts available" or "no belts used" on the restraint use variable. All other levels of the restraint use variable (e.g. child restraint used, helmet used, other, unknown) were excluded from the results shown in Table 15.

Table 15. Crash-Involved Drivers of Passenger Vehicles by Restraint Use and Age Group, 2014-2018

Restraint Use	<15	15-17	18-20	21-24	25+
Restrained	540	88,091	185,133	237,065	1,689,445
	87.4%	99.3%	99.1%	98.9%	99.2%
Unrestrained	78	612	1,770	2,570	13,969
	12.6%	0.7%	0.9%	1.1%	0.8%
Total	618	88,703	186,903	239,635	1,703,414
	100.0%	100.0%	100.0%	100.0%	100.0%

The data indicate relatively low restraint usage for drivers under 15, and this is despite the fact that only drivers of passenger vehicles were included in the analysis. About 12.6% of the drivers under 15 were coded as unrestrained. In contrast, only about 1% of crash-involved drivers of passenger vehicles in each the other four driver age groups were unrestrained. This low restraint use among crash-involved drivers under 15 may be partly due to coding anomalies and unusual circumstances, however. A review of a sample of 20 police reports involving drivers coded as under age 15 and unrestrained indicated that in nine cases the driver's age was likely unknown rather than under age 15. Additionally, there were three instances of a teen taking the family car without permission and two of a small child in a parked vehicle who managed to get the car to take off.

9.0 Summary

In 2018, 55,298 drivers age 20 and younger were involved in police-reported crashes in Michigan, a 7.0% drop from the 2017 total. Of all drivers 20 and younger who were involved in crashes from 2014-2018, just over two-thirds were age 18 to 20 and just under one-third were age 17 and younger. A total of 112 people were killed in 2018 in crashes involving drivers age 20 and younger, and 887 received suspected serious injuries. Both of these counts were the lowest in the 2014-2018 time period.

Hazardous actions were reported for younger drivers more frequently than older drivers, and failure to stop in assured clear distance, speeding, and failure to yield were the hazardous actions they were most frequently associated with.

Crashes involving alcohol or drugs were examined for single years of age for drivers age 15 to 20. Their involvement in alcohol- and drug-involved crashes increased with each year of age, and they were increasingly likely to be the driver who was impaired given that a crash involved alcohol or drugs.