

Wake County Human Services Public Health Report

Injuries 2019

NEED
HELP?

OVERDOSE?
OVERDOSE?
OVERDOSE?



Human
Services



Regina Petteway, Human Services Director
Kim McDonald, Medical Director/Deputy Director for Public Health
Editor-in chief: Paige Bennett, Operations Analyst for PH and Clinics
Content Editor: Nicole Mushonga, Public Health Epidemiologist



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Overview

Information about the many types of injuries is complex and is gathered from several data sources such as death certificates, medical examiner reports, law enforcement reports, hospital admissions and emergency department visits. This report describes injuries and their impact on the health of those who live, work, play and learn in Wake County. Deaths are the most severe outcome from injuries but are the “tip of the iceberg” (Figure 1) when evaluating the burden of injuries. Many injuries are either treated by medical providers during outpatient visits and not reported or no medical treatment is sought for the injury. Thus, the total societal burden of injuries from all causes is unknown.



Source: Injury and Violence Prevention Branch, NC DHHS, 8/24/15.

The term "intentional" is used to refer to injuries resulting from purposeful human action, whether directed at oneself or others. Intentional injuries include self-inflicted and interpersonal acts of violence intended to cause harm.

“Unintentional” is used to refer to injuries that were unplanned and can be defined as events in which:

- the injury occurs in a short period of time (seconds or minutes)
- a harmful outcome was not sought
- the outcome was the result of one of the forms of physical energy in the environment or normal body functions being blocked by external means. (1)

Also described in the report are measures taken by Wake County Human Services, Wake County and community partners to prevent and limit the impacts of injury.

As mentioned in Wake County’s previous injury reports, the October 2015 transition in the International Classification of Diseases (ICD) from ICD-9 to ICD-10 has limited the ability to analyze injury trends. Therefore, 2015 data is currently not being analyzed. Pre-transition data (2014 and before) is not comparable to post-transition data (2016 and after). As a result, only the leading causes of injury hospitalizations and emergency department (ED) visits from 2016-2018 are discussed in this report. (The ICD-9 to ICD-10 transition for deaths occurred in 1998, so death trend analysis is done in this report.)

This report analyzes the three leading causes of injury death in Wake County (motor vehicle traffic (MVT), falls and poisonings). Since poisonings surpassed falls and MVT as the number one cause of injury death in 2016 and remained so in 2017 and 2018.

Leading Causes of Hospitalization and ED Visits by Injury, 2016 and 2018

Table 1 shows unintentional falls were the top cause of injury ED visits in 2018, while *motor vehicle transport-occupant-unintentional* was the top cause in both 2016 and 2017.

Table 1

Top Five Causes of Emergency Department Visits by Injury (All Ages), Wake County, 2016-2018									
Cause of Injury	2016			2017			2018 ¹		
	Cases	Rate ²	Rank	Cases	Rate ²	Rank	Cases	Rate ²	Rank
<i>Fall-Unintentional</i>	7,736	739.0	2	9,941	927.2	2	11,774	1077.9	1
<i>Motor Vehicle Transport³ (MVT) – Occupant – Unintentional</i>	10,566	1,009.4	1	11,153	1,040.2	1	11,620	1063.8	2
<i>Bite and Stings - Nonvenomous – Unintentional</i>	2,092	199.8	3	2,367	220.8	3	2,321	212.5	3
<i>Unspecified – Unintentional</i>							1,927	176.4	4
<i>Unspecified -- Assault</i>	1,041	96.9	5	1,158	108.0	5			
<i>Other Specified Foreign Body⁴ - Unintentional</i>	1,537	146.8	4	1,790	166.9	4	1,668	152.7	5

¹2018 data is provisional.

²Rate is per 100,000 population.

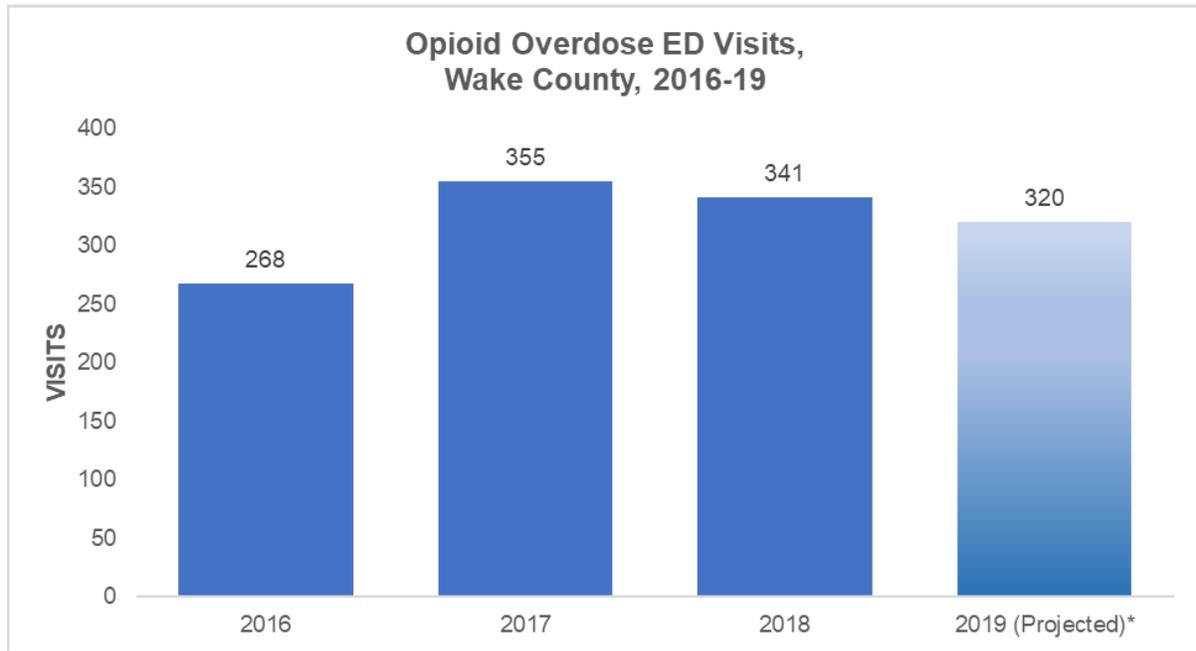
³In the ICD-10-CM data, *Motor Vehicle Transport* is more specific and has separate categories for *MVT- Pedestrian, MVT Pedal Cyclist, MVT-Occupant, MVT-Unspecified, and MVT-Other*.

⁴*Other specified foreign body* is an injury resulting from entrance of a foreign body into or through the eye or other natural body opening that does not block an airway or cause suffocation (asphyxia). Examples include pebble or dirt in eye, BB in ear, or small children's toys in esophagus.

Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/18/19.

Opioid overdoses are not among the top five causes of injury ED visits and opioid overdose ED visits are starting to decrease (Figure 2). Opioid overdoses are discussed in more detail later in this report.

Figure 2



*2019 projection is based on the number of visits in the first 3 quarters of 2019

Source: <https://injuryfreenc.shinyapps.io/OpioidActionPlan/>, 1/13/2020.

Table 2 shows that unintentional falls were the top cause of injury hospitalizations in Wake County from 2016 to 2018 by a significant margin.

Table 2

Top Five Causes of Hospitalizations by Injury (All Ages), Wake County, 2016-2018									
Cause of Injury	2016			2017			2018 ¹		
	Cases	Rate ²	Rank	Cases	Rate ²	Rank	Cases	Rate ²	Rank
<i>Fall - Unintentional</i>	1714	163.7	1	1793	167.2	1	1849	169.3	1
<i>MVT-Occupant - Unintentional</i>	335	32.0	2	304	28.4	2	347	31.8	2
<i>Poisoning: Drug - Unintentional</i>	257	24.6	3	250	23.3	3	253	23.2	3
<i>Poisoning: Drug - Self-Harm</i>	207	19.8	4	197	18.4	4	198	18.1	4
<i>Unspecified - Unintentional</i>	122	11.7	5						
<i>Hot Object/ Substance³ - Unintentional</i>				110	10.3	5	138	12.6	5

¹2018 data is provisional.

²Rate is per 100,000 population.

³Injury results from contact with a hot object, steam, hot fluids, or fire (source: <http://erd.dli.mt.gov/work-comp-claims/definitions-for-cause-of-injury>, 10/8/19).

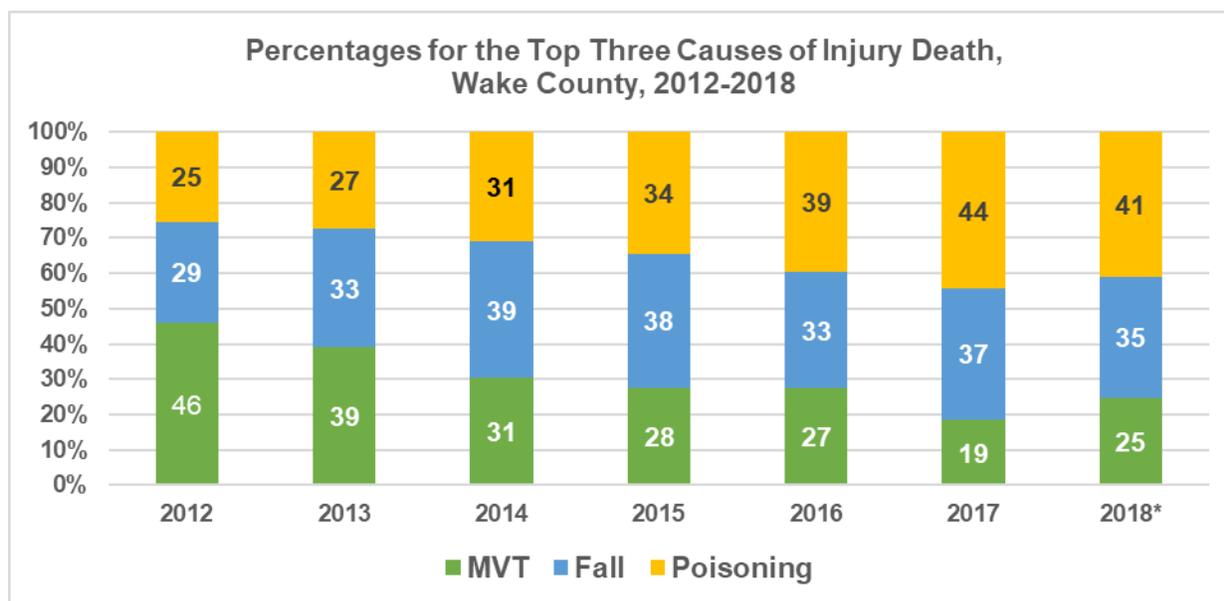
Source: NC DHHS DPH, Injury and Violence Prevention Branch, 8/20/19.

Leading Causes of Injury Death

As in previous years, the top three causes of injury death in Wake County have not changed. However, the trend in the proportion of the top three causes has shifted for the first time since 2012:

- MVT deaths have decreased overall, but had a slight increase in 2018
- Poisoning and fall injury deaths have both increased since 2012 but have decreased slightly from 2017 (Figure 3).

Figure 3



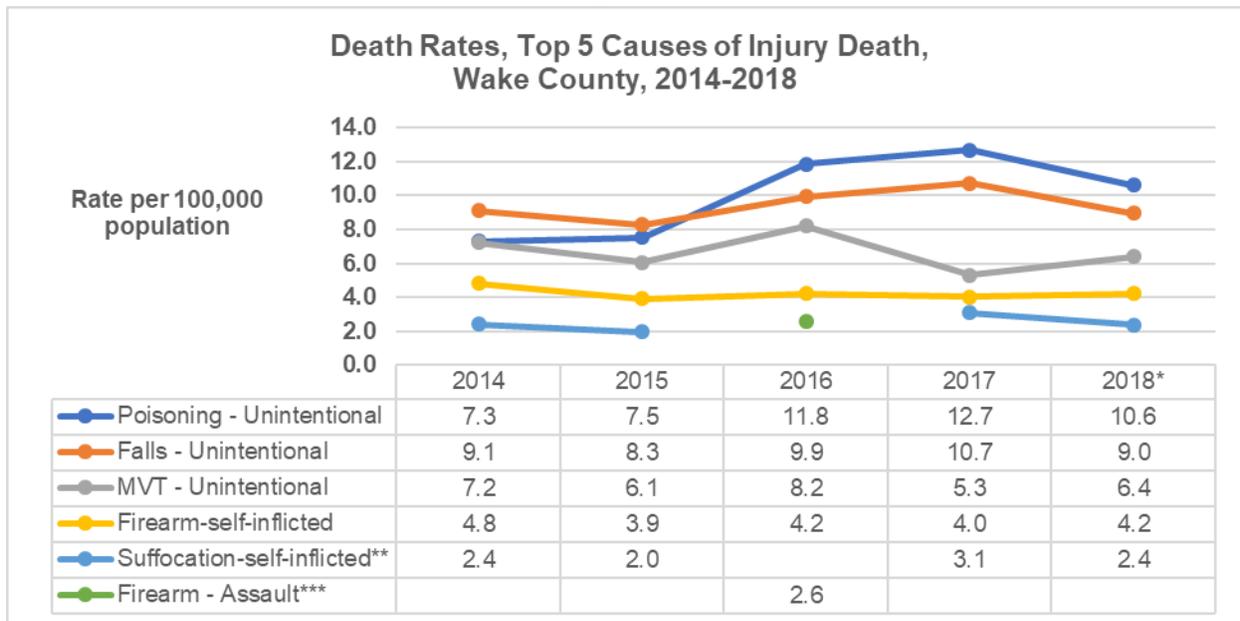
*2018 data is provisional.

Source: NC DHHS DPH, Injury and Violence Prevention Branch, 8/20/19.

Figure 4 shows the 2018 rankings for the top five causes of injury death were the same as in 2017. Unintentional poisonings had the highest death rate in Wake County. It must be noted, however, that for the first time in five years, the unintentional poisoning death rate decreased. This decrease may be a sign that the opioid epidemic is slowing, at least locally.

Unintentional falls ranked second in Wake County, but after increasing in 2016 and 2017, the fall death rate decreased in 2018. Unintentional MVT ranked third in 2018, with the MVT death rate increasing slightly in 2018. Firearm self-inflicted and suffocation self-inflicted ranked fourth and fifth, respectively, with the firearm self-inflicted death rate holding steady and the suffocation rate decreasing.

Figure 4



*2018 data is provisional.

**“Suffocation-Self-inflicted” was not among the top 5 causes of injury death in 2016, so no data is shown for that year.

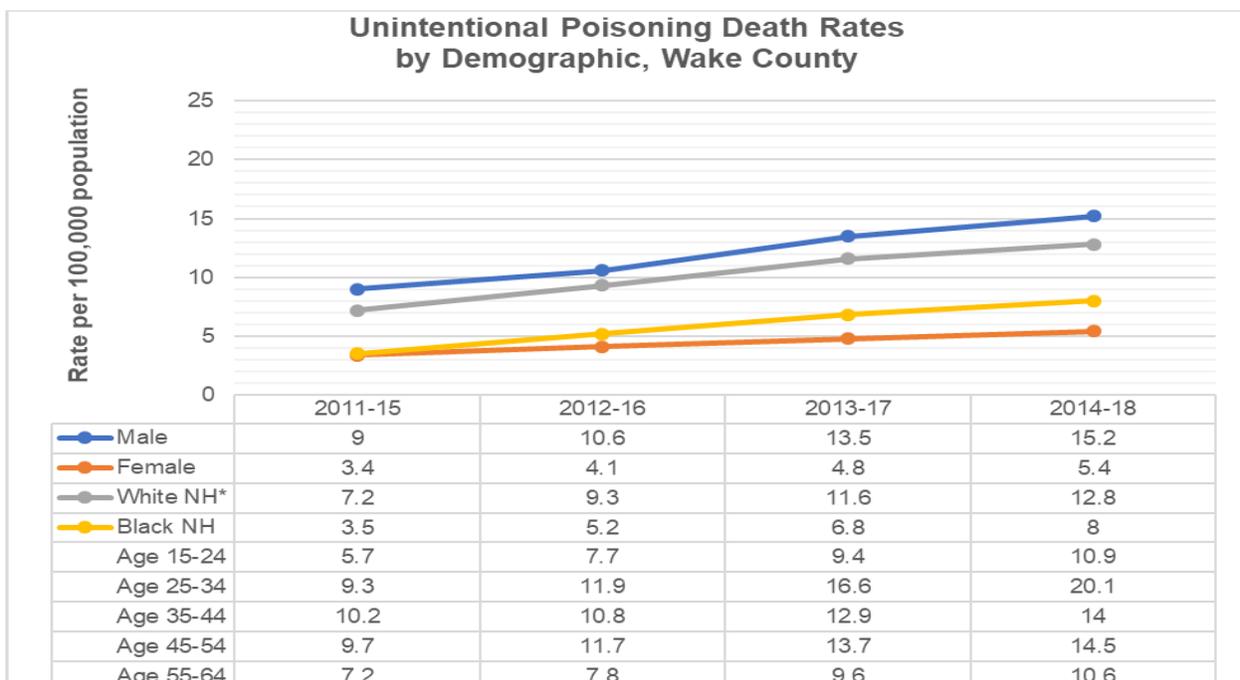
***“Firearm-Assault” was only among the top 5 causes of injury death in 2016, so no data is shown for other years.

Source: NC DHHS DPH, Injury and Violence Prevention Branch, 8/20/19.

Poisoning Deaths

There were 531 unintentional poisoning deaths in Wake County in 2014-18, up from 461 (an increase of 15.2%--data not shown) in 2013-17. As in previous years, males, white non-Hispanics and people ages 25-54 had the highest percentages of poisoning deaths (72.4%, 78% and 71.5% respectively—data not shown). The upward trend in death rates occurred across all demographic groups, as Figure 5 shows.

Figure 5



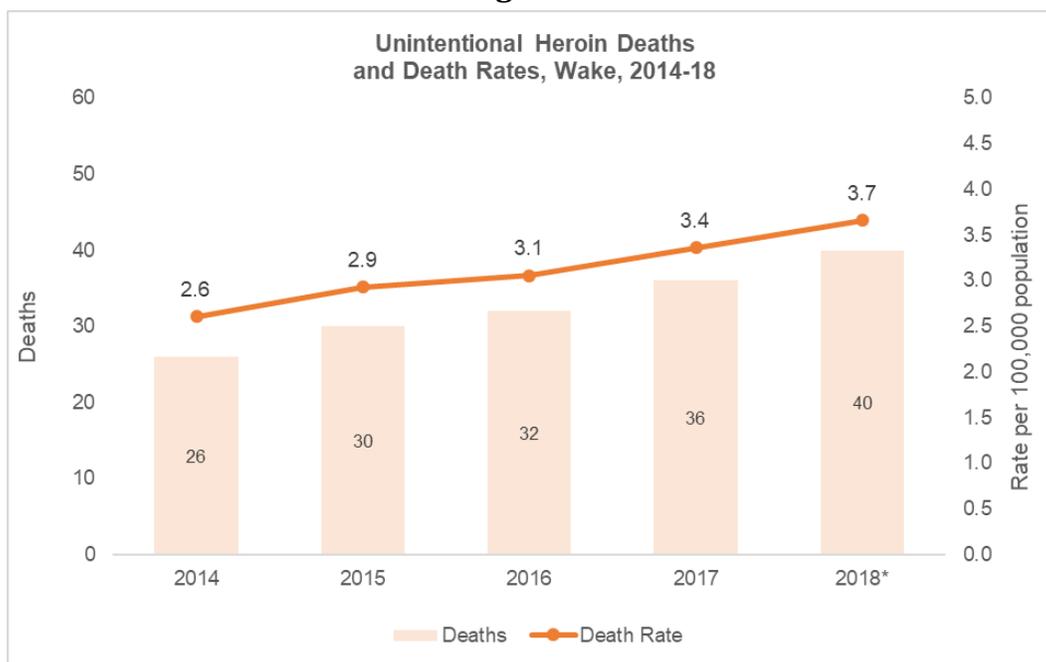
*Non-Hispanic

Source: NC DHHS DPH, Injury and Violence Prevention Branch, 8/20/19.

Figures 6-9 show deaths and death rates by drug overdose type from 2014-18:

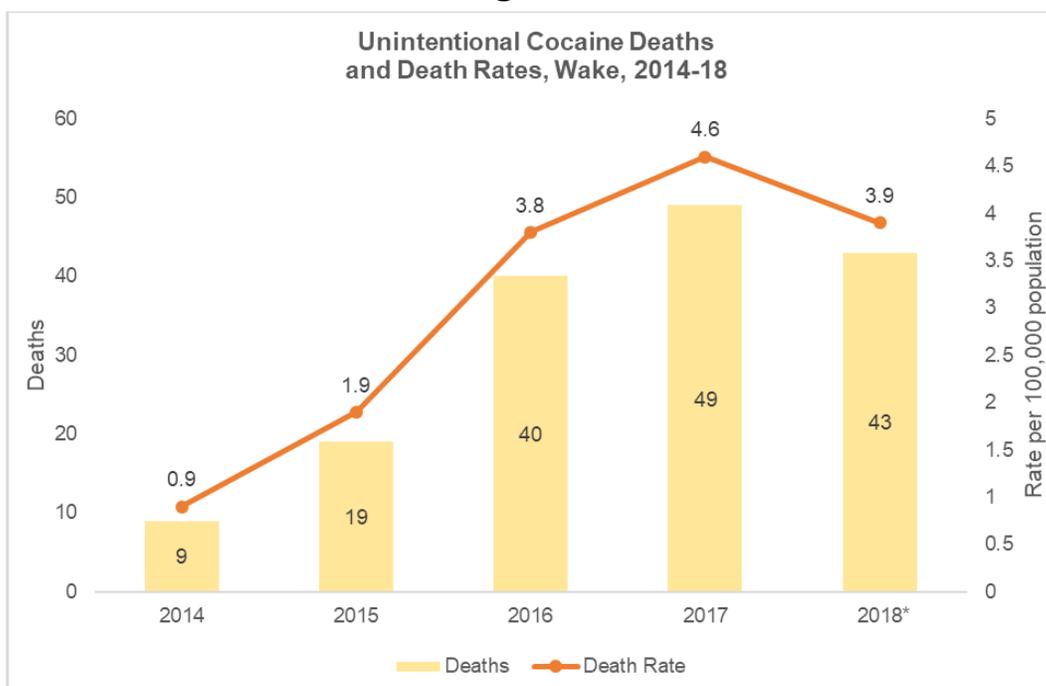
- The heroin death rate (Figure 6) increased on average 9.2% per year between 2014 and 2018
- Cocaine deaths and death rates (Figure 7) increased dramatically between 2014 and 2017, but declined in 2018
- Similar to cocaine, other synthetic opioid (such as illegally manufactured fentanyl) deaths and death rates increased significantly between 2014 and 2017, but decreased in 2018
- Deaths and death rates for commonly prescribed opioids were much lower in 2014 and 2015 than in 2016 and 2017; the death rate dropped almost 58% from 2017 to 2018

Figure 6



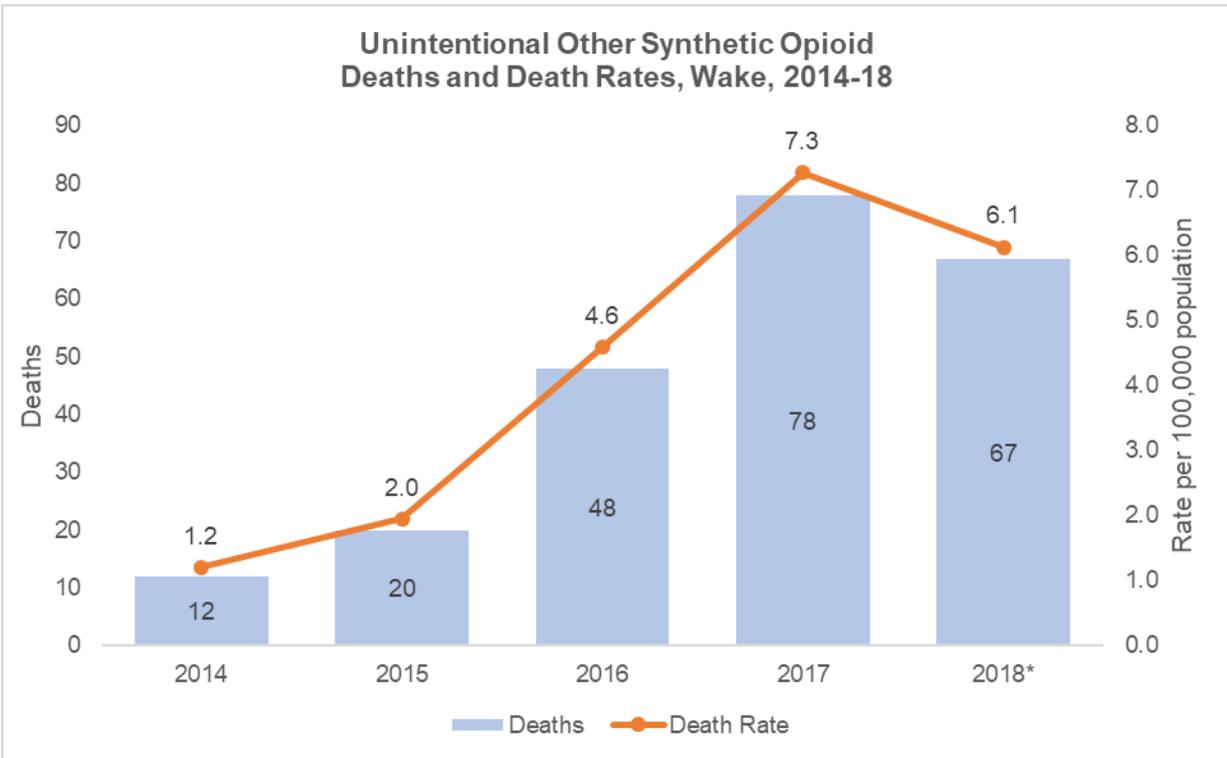
*2018 data is provisional. Source: NC DHHS DPH, Injury and Violence Prevention Branch, 8/20/19.

Figure 7



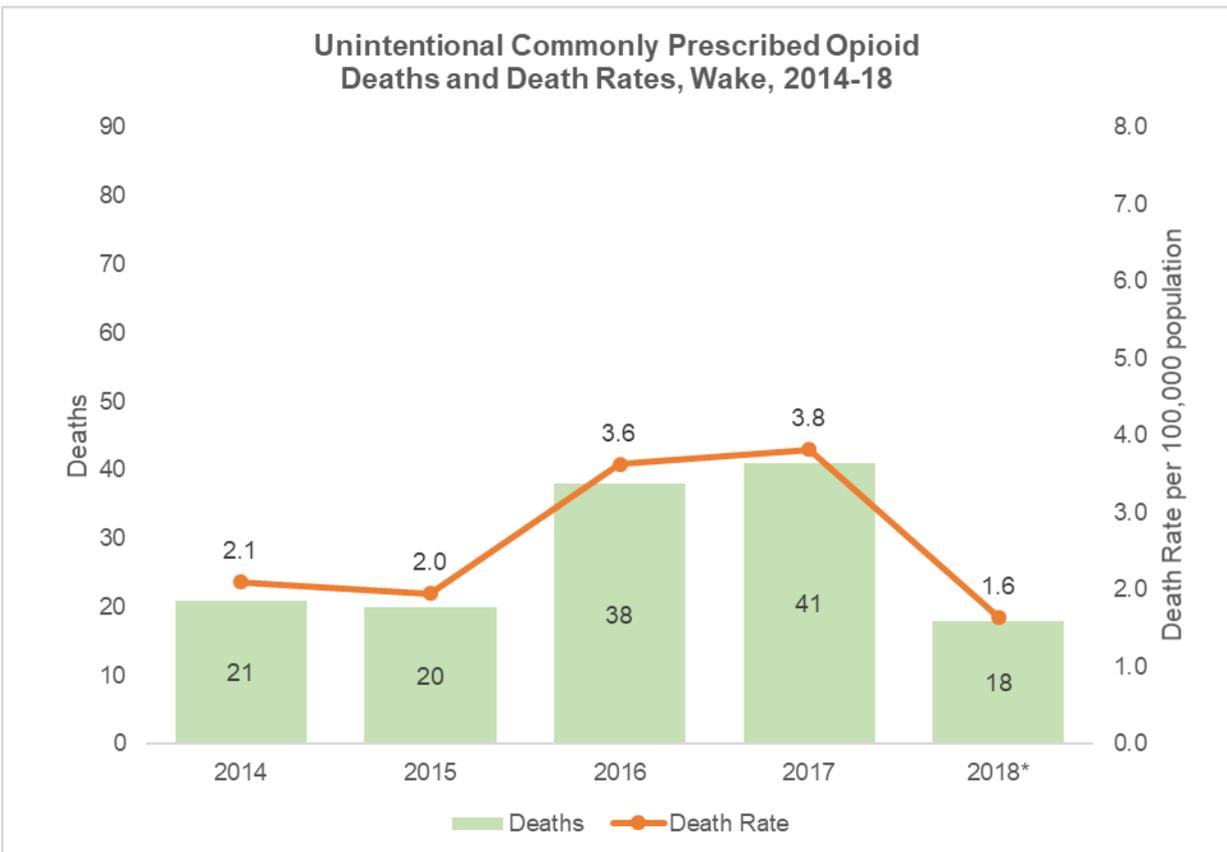
*2018 data is provisional. Source: NC DHHS DPH, Injury and Violence Prevention Branch, 8/20/19.

Figure 8



*2018 data is provisional. Source: NC DHHS DPH, Injury and Violence Prevention Branch, 8/20/19.

Figure 9



*2018 data is provisional. Source: NC DHHS DPH, Injury and Violence Prevention Branch, 8/20/19.

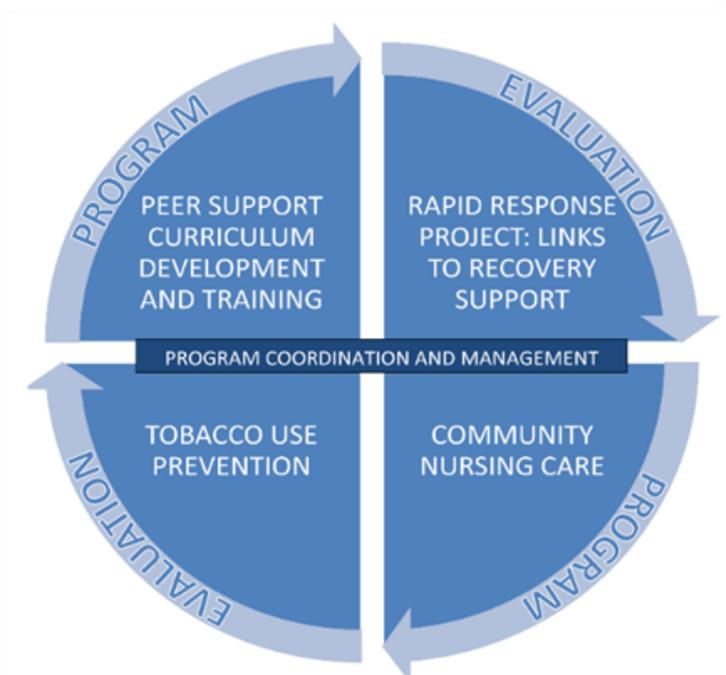
The Wake County Drug Overdose Prevention and Tobacco Use Initiative

From 2010 to 2014, injury surveillance data showed a large increase in heroin overdose deaths in Wake County. In late 2015, Wake County Human Services (WCHS) and the Wake County Sheriff's Office proactively convened a community coalition in response to the opioid overdose problem. The Wake County Drug Overdose Prevention Coalition represents the cornerstone for the county's strategic thinking and long-range planning on the opioid issue that took place in 2016 and 2017. The work led to a three-year, \$950,000 allocation of ABC funds from the Wake County Board of Commissioners to create the Wake County Drug Overdose Prevention and Tobacco Use Initiative (Initiative).

The Initiative is both multi-agency and interdisciplinary by design, and leverages resources found in the larger Wake County community. Figure 10 illustrates the programmatic components of the Initiative. At the center lies overall coordination and program management for the Initiative. Program evaluation touches and cycles through all areas to ensure adherence to program standards. The purpose of evaluation is to gain insight into this program's effectiveness by determining if the activities and objectives were achieved and by assessing the impact on participants' lives. The four quadrants represent the areas where the key capacity-building, prevention and treatment activities occur. They are:

- Peer Support Recovery-Focused Curriculum Development and Training
 - Training curriculum approved by UNC School of Social Work in October 2019
- Rapid Response Project linking individuals to recovery support services
 - 495 incoming clients have been linked from January 2018-June 2019
- Injury and Drug Prevention Community Nursing Care
 - 895 contacts (phone calls, texts, face-to-face interviews) from January 2018-June 2019
- Tobacco Use Prevention and Support
 - 1,122 registered callers to Quitline NC seeking tobacco cessation services from January 2018-June 2019

Figure 10



Fall Deaths

Table 3 shows there were 496 fall deaths in Wake County from 2014-18. Notably, the 65+ led all age groups in number of deaths, yet the 65+ death rate only slightly increased, going from 73.9 in 2013-17 to 74.8 in 2014-18 (an increase of 1.2%--see Figure 11). White non-Hispanics had the highest death rate among racial and ethnic groups, and females had a slightly higher death rate than males.

Table 3

Fall Deaths by Key Demographic, Wake County, 2014-18¹			
	Number	Percent (%)	Rate (per 100,000)
Sex			
Female	267	53.8	9.9
Male	229	46.2	9.0
Race/Ethnicity			
White (NH²)	426	85.9	13.2
Black (NH²)	55	11.1	5.0
American Indian (NH²)	0	0.0	0.0
Asian (NH²)	1	0.2	**
Hispanic	12	2.4	2.3
Other/Unknown	2	0.4	NA
Age Group			
0-14	0	0.0	0.0
15-24	4	0.8	**
25-34	5	1.0	0.6
35-44	8	1.6	1.0
45-54	22	4.4	2.9
55-64	35	7.1	6.0
65+	422	85.1	74.8
TOTAL	496	100	9.5

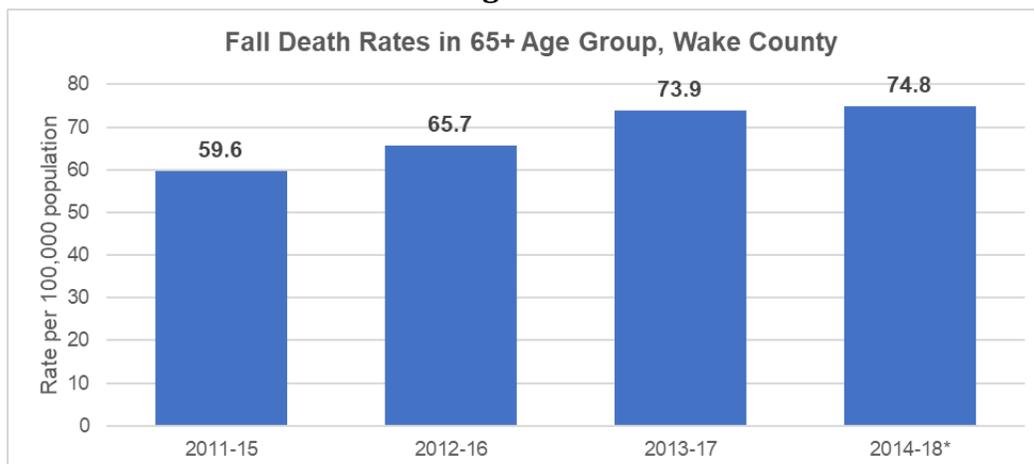
¹Data is provisional.

²Non-Hispanic

**Rates suppressed for death counts <5.

Source: NC DHHS DPH, Injury and Violence Prevention Branch, 8/20/19.

Figure 11



*2018 data is provisional. Source: NC DHHS DPH, Injury and Violence Prevention Branch, 8/20/19.

As Wake County’s senior population (65+) continues to grow, fall injury prevention becomes more important. The Wake Network of Care has a *Preventing Falls in Older Adults* section on its website (<http://wake.nc.networkofcare.org/mh/library/article.aspx?hwid=ug2329spec>). Also available at this website is a “Checklist for Preventing Falls at Home”, (http://wake.nc.networkofcare.org/media/pdf/hw/form_av2494.pdf) which goes room by room in a house to show hazards and how those hazards can be eliminated.

Motor Vehicle Traffic (MVT) Deaths

There were 363 MVT deaths in Wake County from 2014-18 (Table 4), slightly higher (2.8%) than in 2013-17 (data not shown). Males continued to die at a higher rate than females, though the male death rate was unchanged and the female rate increased since 2013-17 (data not shown). Death rates increased for black non-Hispanics and Hispanics, while rates fell for white non-Hispanics. The 15-24 age group once again had the highest death rate, though the 2014-18 death rate was down 8.6% from 2013-17 (12.8/100,000 to 11.7/100,000). The 65+ age group had the largest death rate increase (14.6%), going from 9.6 in 2013-17 to 11.0 in 2014-18.

Table 4

MVT Deaths, Wake County, 2014-18¹			
	Number	Percent (%)	Rate (per 100,000)
Sex			
Female	107	29.5	4.0
Male	256	70.5	10.1
Race/Ethnicity			
White (NH²)	186	51.2	5.8
Black (NH²)	125	34.4	11.4
American Indian(NH²)	1	0.3	*
Asian (NH²)	7	1.9	1.9
Hispanic	36	9.9	6.8
Other/Unknown	8	2.2	NA
Age Group			
0-14	20	5.5	1.9
15-24	82	22.6	11.7
25-34	62	17.1	8.0
35-44	43	11.8	5.4
45-54	52	14.3	6.9
55-64	42	11.6	7.2
65+	62	17.1	11.0
TOTAL	363	100	6.9

¹2018 data is provisional.

² Non-Hispanic

* Rates suppressed for death counts <5.

Source: NC DHHS DPH, Injury and Violence Prevention Branch, 8/20/19.

Crash Analysis

Table 5 shows the frequency of automobile crashes in Wake County by hour of day and day of week, from 2008-17 (the most recent data period available; hours/days of week with highest number of crashes highlighted in red):

- Friday has the highest number of overall crashes; Sunday has the lowest
- 5:00 PM has the highest number of overall crashes and 4:00 AM has the overall lowest number
- On every weekday, 5:00 PM has the highest number of crashes (evening rush hour); on Saturdays and Sundays, 1:00 PM has the highest number of crashes
- On every weekday, 4:00 AM has the lowest number of crashes; on Saturdays it is 5:00 AM and Sundays it is 6:00 AM
- The weekday/hour of day with the highest number of “morning rush hour” crashes is Tuesday, 8:00 AM
- On every day of the week, there are many more crashes in the afternoon (12:00 PM to 6:00 PM) than in the morning (6:00 AM to 12:00 PM)
- There are many more crashes on both Friday and Saturday between 9:00 PM and 12:00 AM, and Saturday and Sunday between 12:00 AM and 4:00 AM, than on other days of the week at those same times
- Of the 168 hours in a week, Friday at 5:00 PM has the highest total number of crashes, while Tuesday at 4:00 AM has the lowest

Table 5

AUTOMOBILE CRASHES BY HOUR AND DAY OF WEEK, WAKE COUNTY, 2008-17								
2008-17	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Grand total by hour
12:00 AM	1,101	504	465	503	524	582	1,170	4,849
1:00 AM	947	357	330	352	357	473	966	3,782
2:00 AM	1,137	353	280	367	341	487	1,004	3,969
3:00 AM	982	325	270	301	301	402	876	3,457
4:00 AM	573	267	219	228	243	290	599	2,419
5:00 AM	452	403	358	387	361	408	486	2,855
6:00 AM	449	1,110	1,171	1,079	1,088	1,020	576	6,493
7:00 AM	489	3,130	3,540	3,374	3,225	2,757	765	17,280
8:00 AM	648	3,799	4,283	4,018	3,862	3,355	1,155	21,120
9:00 AM	910	2,826	3,175	3,100	2,907	2,834	1,576	17,328
10:00 AM	1,338	2,430	2,542	2,431	2,316	2,575	2,130	15,762
11:00 AM	1,645	2,620	2,714	2,690	2,588	3,070	2,780	18,107
12:00 PM	2,160	3,413	3,474	3,571	3,435	3,997	3,200	23,250
1:00 PM	2,557	3,444	3,595	3,632	3,550	4,530	3,555	24,863
2:00 PM	2,512	3,635	3,704	3,651	3,608	4,564	3,524	25,198
3:00 PM	2,542	4,126	4,245	4,203	4,288	5,244	3,382	28,030
4:00 PM	2,457	4,510	4,791	4,604	4,747	5,770	3,362	30,241
5:00 PM	2,310	5,452	5,930	5,868	5,751	6,127	2,922	34,360
6:00 PM	2,129	4,346	4,838	4,729	4,586	4,787	2,895	28,310
7:00 PM	1,813	2,593	2,783	2,812	2,882	3,483	2,499	18,865
8:00 PM	1,456	1,725	1,852	1,795	1,902	2,325	1,824	12,879
9:00 PM	1,244	1,348	1,425	1,457	1,564	2,002	1,722	10,762
10:00 PM	942	993	1,060	1,094	1,310	1,736	1,569	8,704
11:00 PM	738	643	682	724	829	1,436	1,392	6,444
Grand Total	33,531	54,352	57,726	56,970	56,565	64,254	45,929	369,327

Days and times with highest number of crashes are highlighted in red.
 Source: <https://ncvisionzero.org/visualizations/crashquerytool/>, 8/2/19.

Table 6 shows crashes by month of year from 2008-17 in Wake County. More crashes occur in the fall than the other seasons. Hazards such as increased glare (the sun moving closer to the horizon), fallen leaves, an increased presence of deer, school children unaccustomed to looking for moving traffic, and inexperienced teen drivers heading to school are thought to be reasons for increased crashes during fall. (<https://www.aarp.org/auto/info-2016/fall-driving-safety-tips.html>, 9/13/19) October has the most crashes, followed by November and December. February and July have the fewest crashes.

Table 6

AUTOMOBILE CRASHES BY MONTH, 2008-17, WAKE COUNTY											
MONTH	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
January	2,452	2,726	2,658	2,470	2,633	3,064	2,954	3,120	3,204	3,570	28,851
February	2,558	2,225	2,348	2,457	2,740	2,571	2,594	3,324	3,391	3,135	27,343
March	2,800	2,679	2,649	2,800	2,991	2,872	3,380	3,019	3,617	3,788	30,595
April	2,751	2,571	2,616	2,684	2,637	2,984	2,903	3,324	3,677	3,630	29,777
May	2,750	2,649	2,623	2,794	3,020	3,070	3,151	3,403	3,663	3,911	31,034
June	2,420	2,486	2,628	2,665	2,725	3,038	2,888	3,234	3,548	3,716	29,348
July	2,473	2,340	2,601	2,569	2,631	2,584	2,840	3,102	3,426	3,300	27,866
August	2,581	2,657	2,900	2,707	2,885	2,760	3,081	3,433	3,766	3,753	30,523
September	2,530	2,683	2,961	2,853	3,002	2,910	3,167	3,667	3,631	3,669	31,073
October	3,035	3,045	3,116	3,241	3,364	3,308	3,671	3,945	4,284	4,233	35,242
November	2,983	3,065	3,098	3,009	3,218	3,494	3,431	3,907	4,029	4,002	34,236
December	2,910	2,870	3,123	3,109	2,855	3,280	3,510	3,769	4,135	3,878	33,439
Grand Total	32,243	31,996	33,321	33,358	34,701	35,935	37,570	41,247	44,371	44,585	369,327

Months with highest number of crashes for each year are highlighted in red.

Source: <https://ncvisionzero.org/visualizations/crashquerytool/>, 8/2/19.

Table 7 shows how Wake County is faring with various categories of vehicle crashes over the 10-year period from 2008-17.

- Crash rates due to alcohol involvement, bicycle involvement, motorcycle involvement, and speed decreased significantly
- Crash rates involving fatal injuries decreased significantly
- Crash rates due to no seat belts and teen involvement decreased slightly
- Crash rates due to commercial motor vehicle (CMV) involvement increased slightly
- Crash rates involving evident injuries increased slightly
- Crash rates due to older drivers increased significantly
- Crash rates involving serious injuries increased significantly

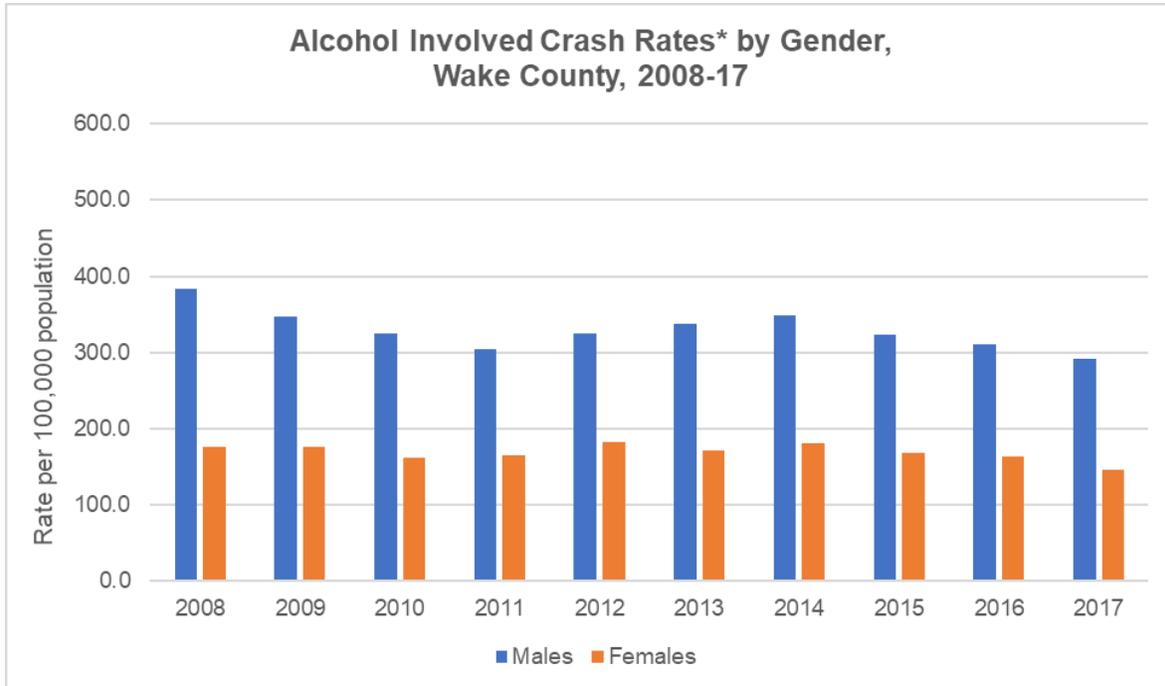
Table 7

RATES PER 100,000 POPULATION BY CRASH CATEGORY, WAKE COUNTY, 2008-17											
CRASH CATEGORY	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	% Increase/Decrease between Comparison Years (2008 and 2017)
Crash severity: fatal injury*	7.9	8.1	8.5	6.9	6.7	6.9	5.8	6.7	6.9	4.6	-42.4%
Bicycle involvement	15.5	13.7	15.3	15.8	14.6	13.8	16.2	11.4	11.6	10.0	-35.7%
Motorcycle involvement	40.5	36.2	32.5	37.9	38.7	34.8	37.7	31.6	33.1	29.7	-26.8%
Alcohol involvement	132.5	116.5	113.4	104.8	118.6	117.0	122.1	113.5	108.7	104.9	-20.9%
Speed involved crash	165.9	188.0	199.4	131.8	143.4	173.0	176.8	201.8	164.0	135.6	-18.2%
Unbelted involvement (no seat belt)	169.1	165.6	170.6	174.8	171.9	174.6	163.1	166.5	166.5	157.1	-7.1%
Teen involved crash	571.8	552.6	519.1	503.6	497.1	504.8	490.9	548.2	583.3	566.5	-0.9%
CMV (commercial motor vehicle) involvement	101.2	88.8	89.3	86.1	82.4	87.4	93.4	100.7	109.6	102.8	1.6%
Crash severity: evident injury*	185.1	166.8	162.2	159.0	163.3	152.8	149.5	155.8	172.1	202.2	9.2%
Older (above age 75) involved crash	108.1	119.2	120.0	122.7	124.6	126.4	133.1	135.7	160.5	154.7	43.1%
Older (between ages 65 and 75) involved crash	236.4	241.3	268.0	261.1	295.9	321.7	334.8	373.8	405.2	418.9	77.2%
Crash severity: serious injury*	13.0	8.7	10.8	9.7	10.7	10.8	10.0	12.9	18.6	30.0	131.8%

Source: <https://ncvisionzero.org/visualizations/crashquerytool/>, 8/2/19. * According to the NC Department of Transportation, “evident injury” is defined as “one or more people receive non-incapacitating injuries at the scene and will not prevent the individual from performing their normal activities for more than 24 hours”; “serious injury” is defined as “one or more people receive incapacitating injuries that prevent the individuals from performing their normal activities for more than 24 hours”; “fatal injury” is defined as “one or more people are killed at the scene or die within 30 days of the crash due to injuries received from the crash”. (https://connect.ncdot.gov/resources/safety/TEpp/TEPPL%20All%20Documents%20Library/N-13_d.pdf, 9/13/19)

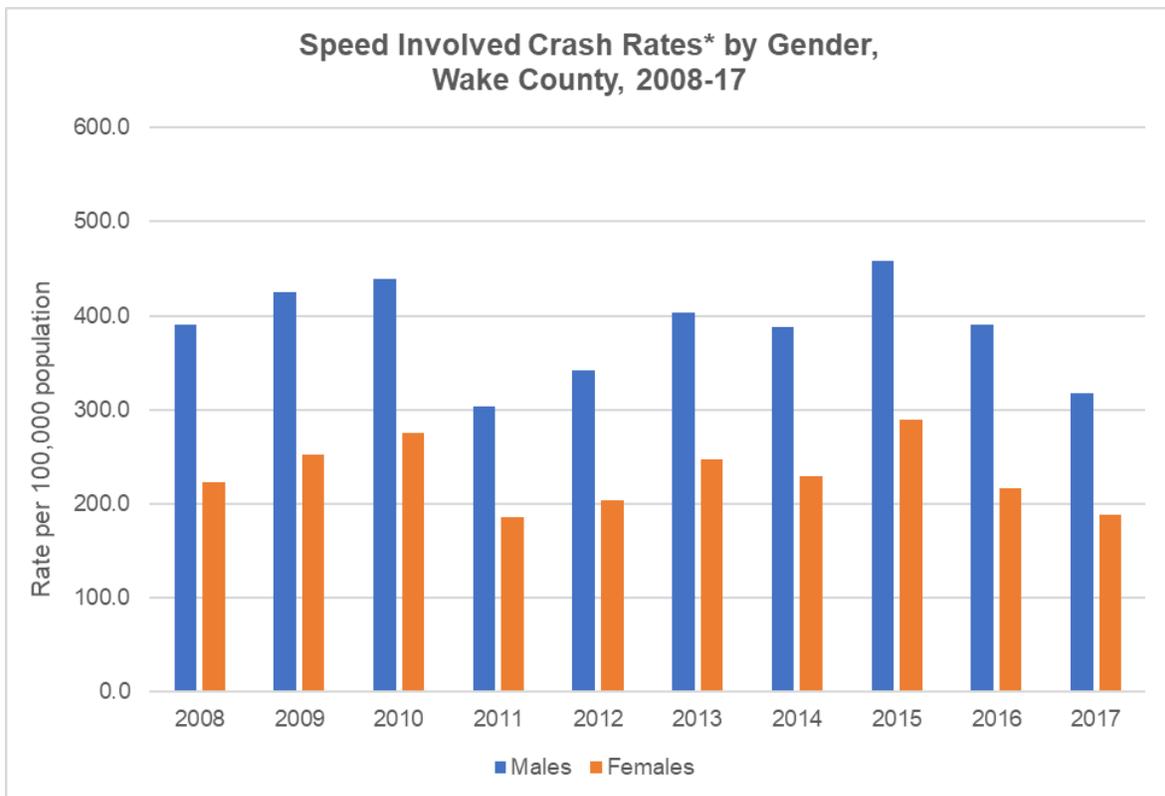
For some of the crash categories, there are pronounced gender disparities in crash rates. Alcohol involved, speed involved, commercial motor vehicle (CMV) involved and motorcycle involved crash rates have all decreased in both males and females from 2008 to 2017, but males have consistently higher rates than females in these categories (Figures 13-16).

Figure 13



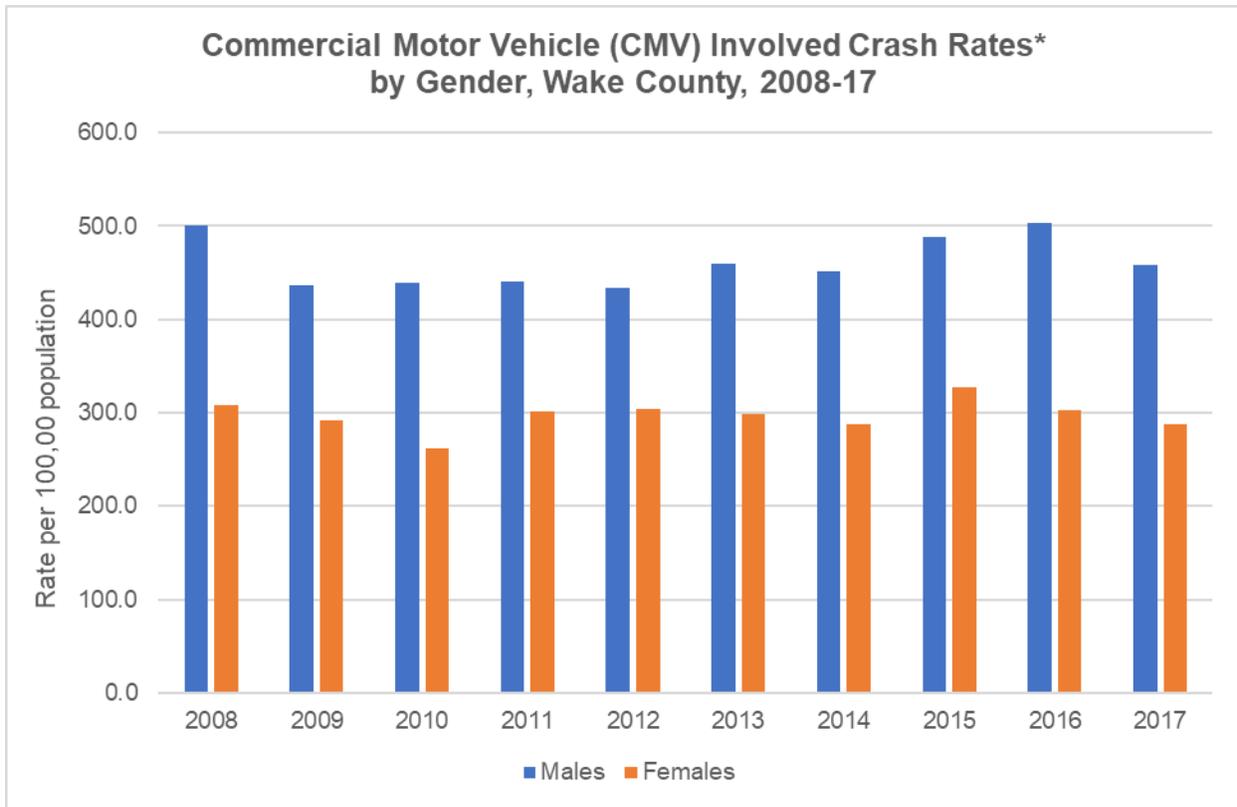
*Rate is per 100,000 population. Source: <https://ncvisionzero.org/visualizations/crashquerytool/>, 8/2/19.

Figure 14



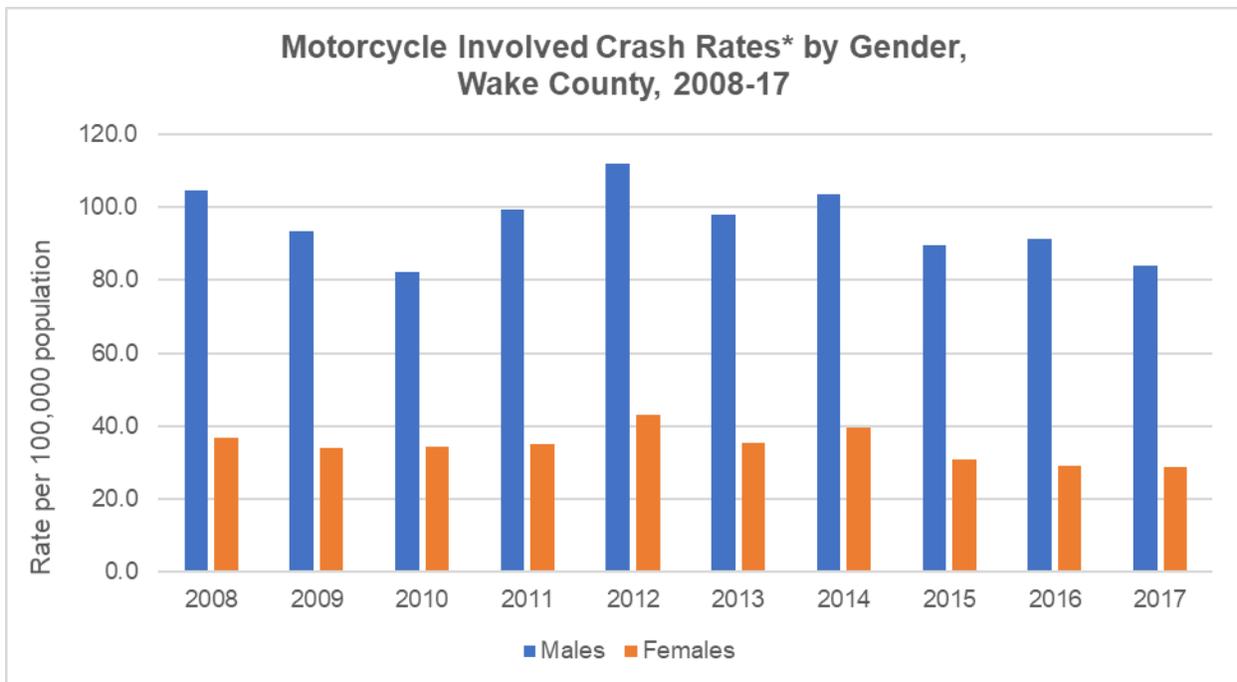
*Rate is per 100,000 population. Source: <https://ncvisionzero.org/visualizations/crashquerytool/>, 8/2/19.

Figure 15



*Rate is per 100,000 population. Source: <https://ncvisionzero.org/visualizations/crashquerytool/>, 8/2/19.

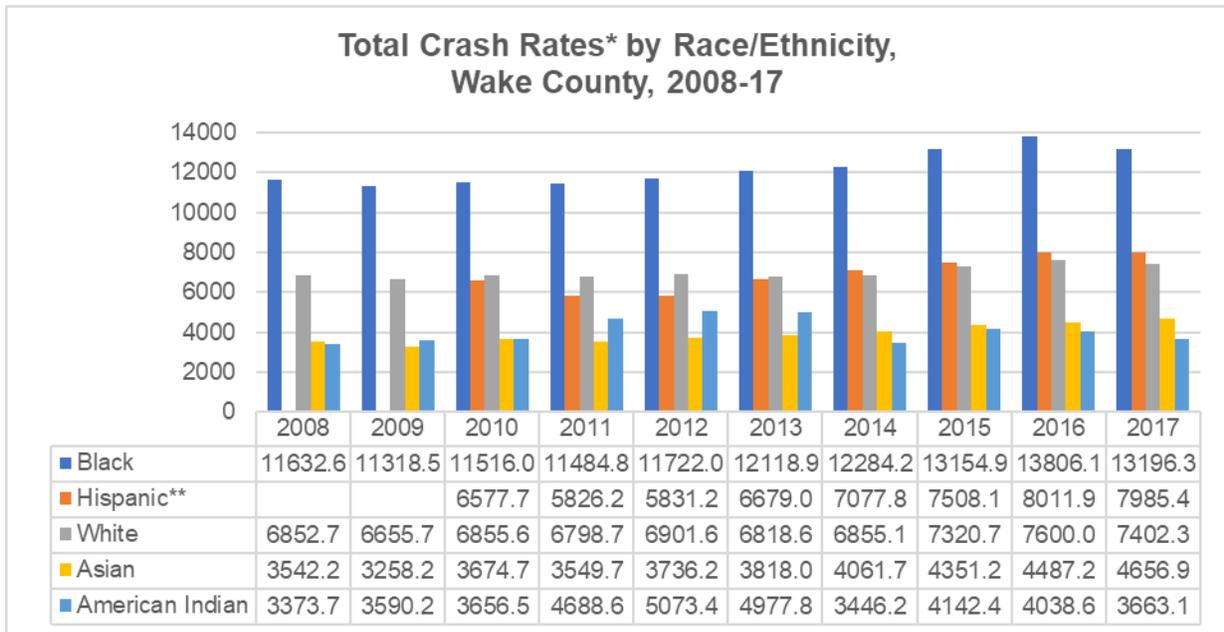
Figure 16



*Rate is per 100,000 population. Source: <https://ncvisionzero.org/visualizations/crashquerytool/>, 8/2/19.

There are also significant racial and ethnic disparities in crash rates in some categories. For all racial and ethnic groups, total crash rates increased from 2008-2017 (Figure 17). Blacks had the highest crash rates in all years, while Hispanics overtook whites beginning in 2014.

Figure 17



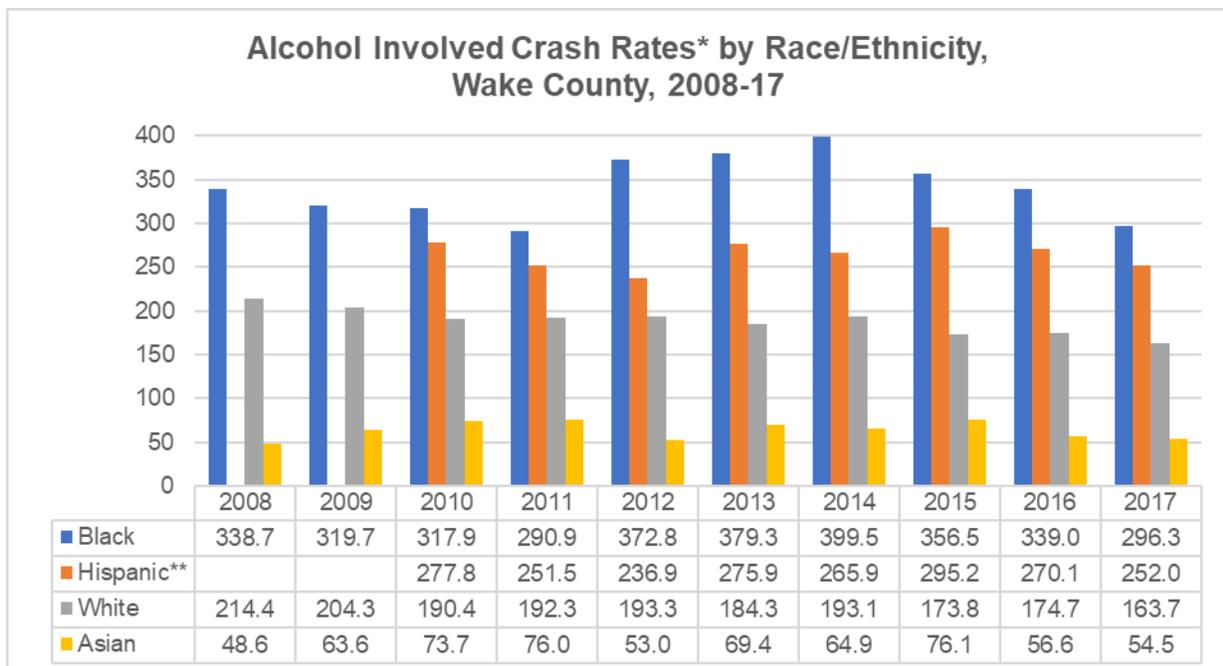
*Rate is per 100,000 population

**Rates for Hispanics not available for 2008 and 2009.

Source: <https://ncvisionzero.org/visualizations/crashquerytool/>, 8/2/19.

Figure 18 shows that blacks and Hispanics had higher rates of alcohol involved crashes than whites and Asians. Over the last three years, crash rates decreased for all races.

Figure 18



*Rate is per 100,000 population

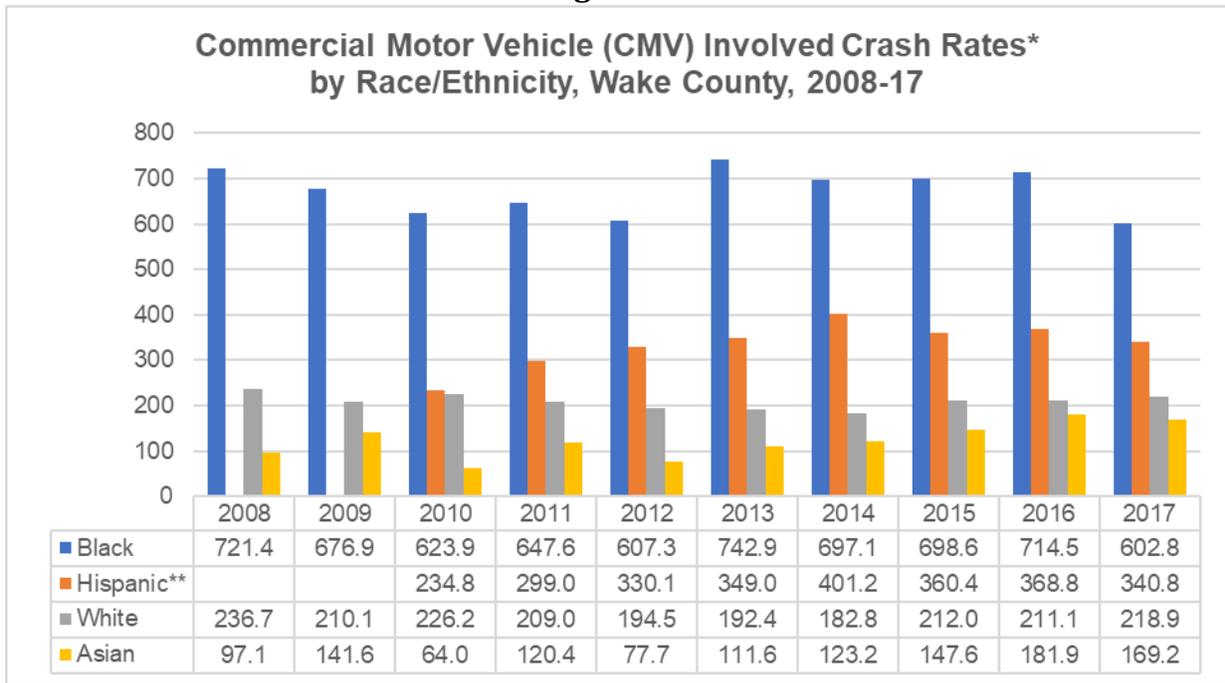
**Rates for Hispanics not available for 2008 and 2009.

Note: the number of American Indian crashes for all years was too small to calculate a rate.

Source: <https://ncvisionzero.org/visualizations/crashquerytool/>, 8/2/19.

The most significant racial/ethnic disparity in crash rates occurs for Commercial Motor Vehicle (CMV) involved crashes. Blacks are involved in these types of crashes at a significantly higher rate than whites, Hispanics or Asians. However crash rates decreased for blacks as well as whites over the 10-year period; rates increased for Hispanics and Asians (Figure 19).

Figure 19



*Rate is per 100,000 population

**Rates for Hispanics not available for 2008 and 2009.

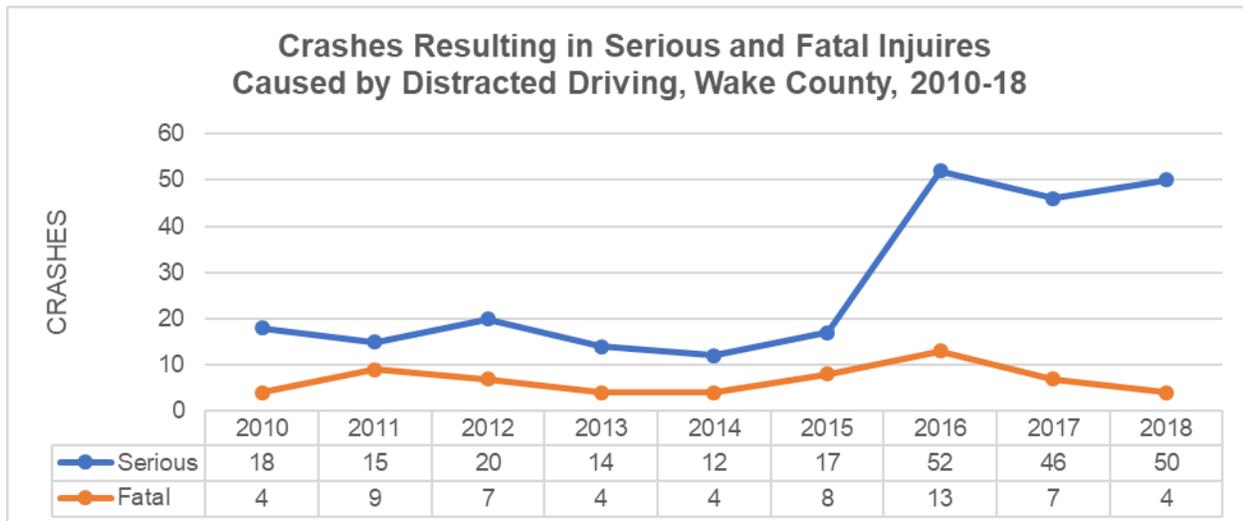
Note: the number of American Indian crashes for all years was too small to calculate a rate.

Source: <https://ncvisionzero.org/visualizations/crashquerytool/>, 8/2/19.

Distracted Driving

Distracted driving defined by CDC as “driving while doing another activity that takes attention away from driving—examples include sending a text message, talking on a cell phone, using a navigation system, or eating” played an increasing role in crashes with serious injuries (see definition in the footnote for Table 7) in Wake County from 2010-18 (Figure 20).

Figure 20



Source: <https://ncvisionzero.org/visualizations/crashquerytool/>, 8/2/19.

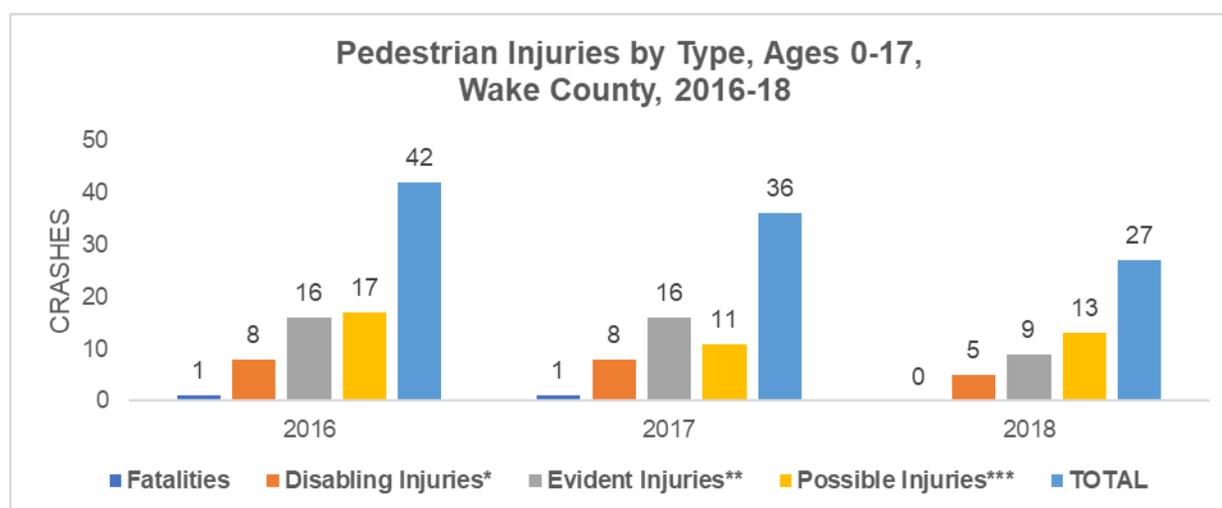
Child Passenger Safety Program

The mission of the Wake County Human Services Child Passenger Safety Program “Love Us and Buckle Us” is to help reduce and prevent the number of childhood injuries and deaths related to the improper use of child safety seats. This award-winning program established in 2017 consist of nationally certified child passenger safety technicians that provide “curb side” education to parents and caregivers on the proper use of child seats and the safe travel of all passengers. Since this program began in 2001, they have provided education and reduced cost seats to over 5000 Wake County Citizens. This program also holds an annual “Never Leave Your Child Alone” Press event where the team demonstrates the dangers of children being left in cars and the dangers of hyperthermia.

Pedestrian and Bicycle Injuries

The total number of crash fatalities and injuries for child pedestrians (ages 0-17) in Wake County has fallen between 2016 and 2018, as Figure 21 illustrates.

Figure 21

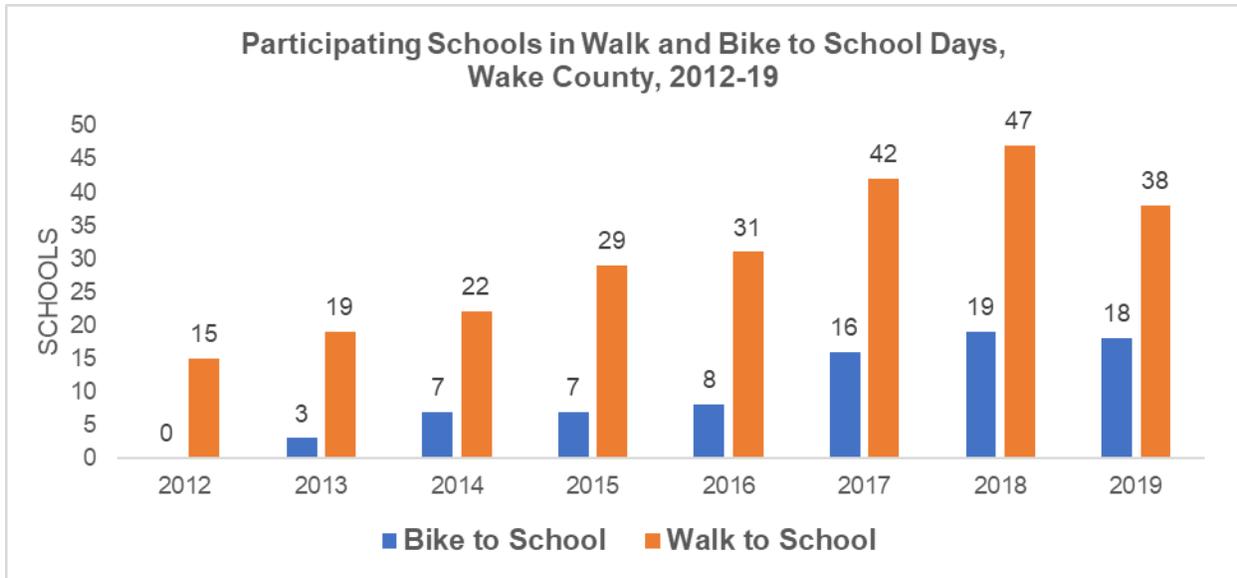


Disabling injuries are those serious enough to prevent normal activity for at least one day, such as massive loss of blood, broken bones, etc. ** Evident injuries are non-fatal or non-disabling injuries that are evident at the scene, such as bruises, swelling, limping, etc. *** Possible injuries are those for which there is no visible injury but there are complaints of pain or momentary unconsciousness. Injury definitions found at [https://connect.ncdot.gov/resources/safety/Documents/TEAAS/Chapter% 20Severity.pdf](https://connect.ncdot.gov/resources/safety/Documents/TEAAS/Chapter%20Severity.pdf). Source: NC Department of Transportation, Traffic Safety Unit, 8/30/18, 9/10/18, 3/25/19.

Safe Routes to School (SRTS) programs are evidence-based approaches to addressing traffic safety concerns and providing more opportunities for children to walk and bike to or at school. SRTS programs have also been shown to help students and school communities improve health, academic achievement, equity, and community engagement. From 2014 to 2019, the Wake County SRTS program has been supported by the statewide Active Routes to School (ARTS) Project and funded by the North Carolina Department of Transportation (NC DOT). WCHS served as the host agency for ARTS Region 5, which included nine counties.

The Wake County Safe Routes to School (SRTS) program seeks to increase the number of elementary and middle school students who safely walk and bike to school. *Walk and Bike to School Day* events often serve as a school’s first attempt to actively encourage walking and bicycling to school; children can be physically active at the start of their school day, and practice safe walking and biking skills. These events also build school community, help identify safety issues, and can lead to safety and policy improvements. Figure 22 shows the number of participating schools in Wake County has increased since 2012.

Figure 22



Source: Wake County SRTS Coordinator, 10/8/19.

SUCCESS STORY—LINCOLN HEIGHTS MAGNET ELEMENTARY SCHOOL, FUQUAY-VARINA

Lincoln Heights Elementary School in Fuquay-Varina has had a successful Safe Routes to School (SRTS) program since its inception in 2014. Largely due to the school's partnership with the Alice Aycock Poe Center for Health Education (Poe Center) as a "Be Well" School, as well as the commitment of the school's administration and staff. The Poe Center dedicated a liaison to the school who has been instrumental in making participation in bi-annual Walk and Bike to School Day events integral to the school's activities. For each event, the SRTS Coordinator provided signs, educational, and safety materials for students. On event days, school staff direct parents to drop off students at a nearby church parking lot, and school bus drivers are directed to drop students off at a designated off-site point to join the walk/bike route.

In 2018, the school achieved nearly 70% participation (500 students) in these events, and has spurred the following policy changes at the school:

- Use of the *Let's Go NC!* curriculum to teach walking and biking safety in Physical Education classes
- An *Action for Healthy Kids* grant (\$1,000) to fund a bicycle club
- \$1 million in pedestrian improvements from the town of Fuquay-Varina, including additional crosswalks, accessible curb ramps, and sidewalks near the school



Lincoln Heights Elementary School, Walk/Bike to School Day, October 2018

Nationwide Outbreak of Severe Pulmonary Disease Associated with Vaping

Vaping is defined as “the inhaling of a vapor created by an electronic cigarette (e-cigarette) or other vaping device”. (<https://kidshealth.org/en/teens/e-cigarettes.html>, 9/13/19) On August 30, 2019, CDC issued an official health advisory in response to 215 possible cases of pulmonary illness in 25 states related to e-cigarette use. (<https://www.tobaccopreventionandcontrol.ncdhhs.gov/ecigs/CDC-HAN-421-SeverePulmonaryDiseaseAssociatedwithUsingE-CigaretteProducts-08302019.pdf>, 9/13/19) NC DPH has begun investigating cases involving severe lung disease among people who reported recent vaping or dabbing (products include nicotine, marijuana oils, extracts, or concentrates. The NC DPH website listed the following information as of 9/26/2019:

- As of 10/17/2019, 54 cases have been reported in individuals in North Carolina ranging in age from 16 to 72 years.
- Patients experienced severe respiratory symptoms including cough and shortness of breath. Patients also reported experiencing fever, fatigue, chest pain, nausea, vomiting, and diarrhea.
- Most cases have been hospitalized and have required respiratory support. No deaths have been reported in North Carolina.
- To date there has not been one individual product identified in all cases, but all cases have reported e-cigarette product use or vaping.

Wake County provides residents access to the Quitline NC, which provides free cessation services to callers. Through this service, 11.6% of callers reported using E-Cigarettes or Vaping.

The nationwide outbreak of severe lung illness associated with e-cigarette/vaping use continues to be an ongoing investigation. Due to changing nature of the investigation and weekly updates of case counts by the CDC and the NC DPH, at the time of this publication some case counts may not reflect current reported measures.

Wake County Tobacco-Free Community Forum

Nearly 1 of every 5 high school students (20.8%) reported in 2018 that they used electronic cigarettes in the past 30 days. From 2011-2017, e-cigarette usage has increased by 894% among NC high school youth. To address this public health crisis, the Wake County Tobacco-Free Community Forum, hosted by the Alice E. Aycock Poe Center for Health Education, in partnership with Wake County Human Services took place on Friday, May 3rd at the WakeMed Andrews Center. Over 87 attendees, including elected officials, Wake County leadership, students, teachers and staff from Wake County Schools, parents and community members, learned about the changing landscape of tobacco prevention and control since the emergence of e-cigarettes.

With a new perspective and breadth of knowledge, the Forum ended with attendees receiving a charge from Commissioner Sig Hutchinson. Action items and next steps included the Triangle Apartment Association’s kick-off of their smoke-free housing certification, a Public Service Announcement contest for Wake County teens, a call to action for local high schools to convene a youth empowerment group, and other strategies to address tobacco-free policies.

Summary

This report analyzed motor vehicle traffic, falls and poisoning deaths in Wake County. It illuminated the continuing effects of the opioid epidemic in Wake County, as poisonings remained the top cause of injury death. The report also described the first 18 months of the Wake County Drug Overdose Prevention and Tobacco Use Initiative to address the opioid epidemic in Wake County. This report also highlighted some of the programs offered by Human Services and their outcomes on improving Public Health in Wake County.

References

1. Unintentional Injury (2013). Maine Center for Disease Control and Prevention. Retrieved 10/9/17 from <http://www.maine.gov/dhhs/mecdc//population-health/inj/unintentional.html>.

Acknowledgements

For contributions to this report:

Ramsay Hoke, Human Services Program Specialist

Carla Piedrahita, WCHS Division of Public Health

Mary Beth Cox, NC DHHS DPH, Injury and Violence Prevention Branch

Dana Dandeneau, NC DHHS DPH, Injury and Violence Prevention Branch

Scott Proescholdbell, NC DHHS DPH, Injury and Violence Prevention Branch

Christopher Oliver, NC DOT

Jennifer Delcourt, WCHS Health Promotion and Chronic Disease Prevention Program

Nicole Singletary, WCHS Division of Public Health

Michelle Mulvihill, WCHS Division of Public Health