Injury Report 2022

Wake County Health and Human Services
Public Health Report

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WAKE COUNTY NORTH CAROLINA Health & Human Services

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1.0 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.

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 (like drowning)[1]

This report analyzes the three leading causes of injury death in Wake County (motor vehicle traffic (MVT), falls, and poisonings). Similar to previous years, poisonings (unintentional) became the number one cause of injury death in 2021.

Figure 1

Source: Injury and Violence Prevention Branch, NC DHHS, 10/19/22

[1]Unintentional Injury, Maine Center for Disease Control and Prevention. Retrieved 10/19/22 from https://www.maine.gov/dhhs/mecdc//population-health/inj/unintentional.html

2.0 Leading Causes of Emergency Department (ED) Visits and Hospitalizations by Injury

Table 1 shows unintentional falls displaced unintentional motor vehicle traffic (MVT) injuries as the top cause of injury emergency department (ED) visits starting in 2019.

Table 1: Top Five Causes of ED Visits by Injury (All Ages), Wake County, 2017-2021*

Cause of Injury	2017			2018			2019			2020			2021		
	Cases	Rate	Rank	Cases	Rate	Rank	Cases	Rate	Rank	Cases	Rate	Rank	Cases	Rate	Rank
MVT - Unintentional	11,195	1,044.1	1	11,789	1,079.3	1	11,876	1,068.2	2	8,833	780.1	2	9,968	880.4	2
Fall - Unintentional	9,843	918.0	2	11,655	1,067.0	2	11,892	1,069.7	1	10,274	907.4	1	11,009	972.3	1
Natural/ Environmental-Unintentional◊	2,861	266.8	3	2,769	253.5	3	2,765	248.7	3	2,109	186.3	3	2,132	188.3	3
Unspecified Unintentional **	-	-	-	1,858	170.1	4	1,912	172.0	4	-	-	-	-	-	
Other Specified/ Unintentional❖	1,911	178.2	4	1,847	169.1	5	1,788	160.8	5	1,645	145.3	4	1,625	143.5	4
Poisoning - Unintentional	1,242	115.8	5	-	-	-	-	-	-	1,202	106.2	5	1,473	130.1	5

Note: Rates per 100,000 Wake County residents.
*2021 data are provisional; data as of 9/21/2022. Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/30/2022.
◊A "natural/environmental" injury is defined as an injury resulting from exposure to adverse natural and environmental conditions (such as severe heat, severe cold, lightning, sunstroke, large storms, and natural disasters) as well as lack of food or water. Source: Definitions for WISQARS Nonfatal - NCIPC (cdc.gov), retrieved 10/19/22.
** Intent established, but mechanism unclear or not documented.
❖An "other specified" injury is defined as an injury associated with any other specified cause that does not fit another category. Some examples include causes such as electric current, electrocution, explosive blast, fireworks, overexposure to radiation, welding flash burn, or animal scratch. Source: Definitions for WISQARS Nonfatal - NCIPC (cdc.gov), retrieved 10/19/22.

Table 2 shows that unintentional falls was the top cause of injury hospitalizations in Wake County from 2017 to 2021 by a substantial margin.

Table 2: Top Five Causes of Injury Hospitalizations by Injury (All Ages), Wake County, 2017-2021*

Cause of Injury	2017			2018			2019			2020			2021		
	Cases	Rate	Rank	Cases	Rate	Rank	Cases	Rate	Rank	Cases	Rate	Rank	Cases	Rate	Rank
Fall - Unintentional	1,837	171.3	1	1,886	172.7	1	2,150	193.4	1	1,945	171.8	1	2,040	180.2	1
MVT - Unintentional	439	40.9	2	478	43.8	2	559	50.3	2	492	43.5	2	526	46.5	2
Poisoning - Unintentional	270	25.2	3	296	27.1	3	322	29.0	3	303	26.8	3	339	29.9	3
Poisoning - Self-Inflicted	227	21.2	4	218	20.0	4	241	21.7	4	197	17.4	4	221	19.5	4
Fire/Burn - Unintentional	157	14.6	5	182	16.7	5	185	16.6	5	-	-	-	-	-	-
Unspecified - Unintentional	-	-	-	-	-	-	-	-	-	156	13.8	5	146	12.9	5

Note: Rates per 100,000 Wake County residents
2021 data are provisional; data as of 9/21/2022
Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/30/22

3.0 Leading Causes of Injury Deaths

As in previous years, the top three causes of injury death in Wake County have not changed. While unintentional falls represented the highest percentage of injury deaths in 2019, unintentional poisonings had the highest percentage in 2020 and 2021 (Figure 2).

Figure 3 shows the 2021 rankings for the top five causes of injury death in Wake County. While the rate of self-inflicted firearm deaths in Wake County slightly decreased in 2021, the other four top causes of injury deaths had slight increases in 2021.

Figure 2: Percentage of the Top Three Causes of Injury Death, Wake County, 2017-2021*

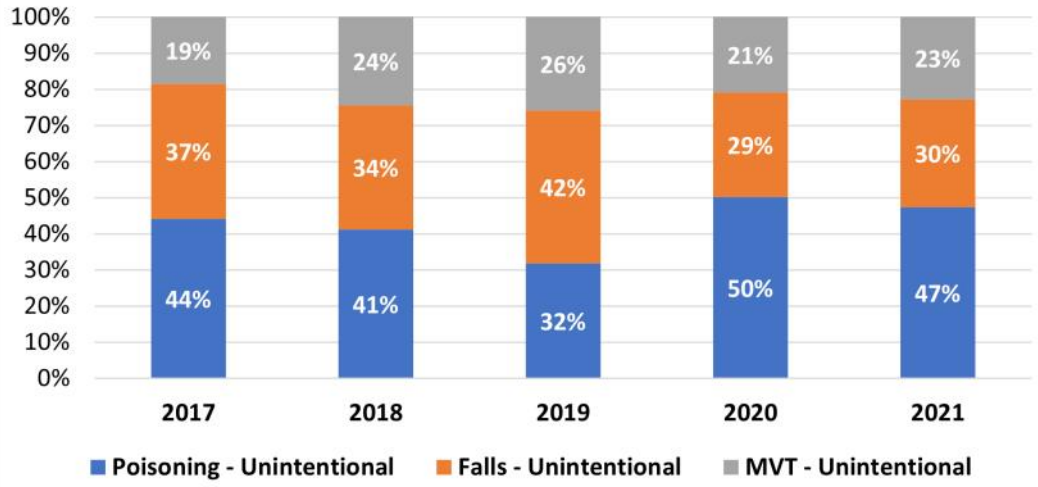
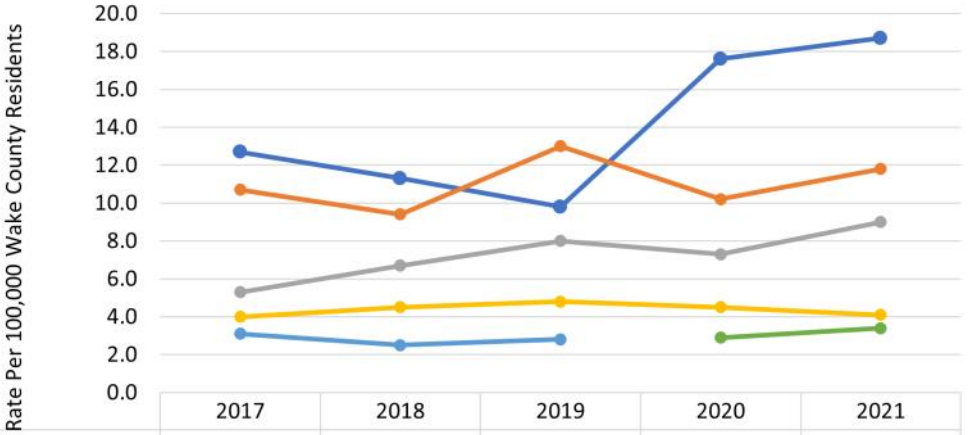


Figure 3: Death Rates, Top Five Causes of Injury Death, Wake County, 2017-2021**



	2017	2018	2019	2020	2021
Poisoning - Unintentional	12.7	11.3	9.8	17.6	18.7
Falls - Unintentional	10.7	9.4	13	10.2	11.8
MVT - Unintentional	5.3	6.7	8	7.3	9
Firearm - Self-Inflicted	4	4.5	4.8	4.5	4.1
Suffocation - Self-Inflicted	3.1	2.5	2.8		
Firearm - Assault				2.9	3.4

*Figure 2: 2021 data are provisional. Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/21/22.
**Figure 3: 2021 data are provisional. Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/21/22.

4.0 Fall Deaths

Table 3 shows there were 612 fall deaths in Wake County from 2017-2021. The 65+ age group led all age groups in the number of fall deaths, but their death rate remains stable in comparison to previous years. White non-Hispanics had the highest fall death rate among racial and ethnic groups, and females had a slightly higher rate of death from unintentional falls than males per 100,000.

Table 3: Unintentional Fall Deaths, Wake County, 2017-2021*

	Number	Percent	Rate per 100,000
Sex			
Female	331	54.1	11.6
Male	281	45.9	10.4
Race/Ethnicity			
White (NH**)	535	87.4	15.9
Black (NH)	42	6.9	3.7
American Indian (NH)	0	0.0	0.0
Asian (NH)	11	1.8	2.5
Hispanic	24	3.9	4.2
Other (NH)/Unknown	0	0.0	0.0
Age Group			
0-14	0	0.0	0.0
15-24	***	***	***
25-34	5	0.8	0.6
35-44	8	1.3	1.0
45-54	16	2.6	2.0
55-64	34	5.6	5.4
65+	546	89.2	82.3
Total	**612**	**100**	**11.0**

*2017-21 data are provisional.
**"NH" = non-Hispanic ethnicity
*** Number, percentage, and rate suppressed for counts between 1-4.
Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/21/22.

5.0 Poisoning Deaths

Table 4 shows that there were 779 unintentional poisoning deaths in Wake County from 2017-2021, a substantial increase (15.6%) from 2016-2020. Similar to previous years, males (74.8%), white non-Hispanics (69.5%), and people ages 25-54 (73.2%) had the highest percentages of unintentional poisoning deaths. Notably, the black non-Hispanic poisoning death rate increased by 37.4% from 2016-2020 to 2017-2021.

Table 4: Unintentional Poisoning Deaths, Wake County, 2017-2021*

	Number	Percent	Rate per 100,000
Sex			
Female	196	25.2	6.9
Male	583	74.8	21.6
Race/Ethnicity**			
White (NH)	541	69.5	16.1
Black (NH)	191	24.5	16.7
American Indian (NH)	***	***	***
Asian (NH)	7	0.9	1.6
Hispanic	34	4.4	5.9
Other (NH)/Unknown	5	0.6	-
Age Group			
0-14	***	***	***
15-24	94	12.1	12.9
25-34	257	33.0	31.3
35-44	184	23.6	22.3
45-54	129	16.6	16.4
55-64	90	11.6	14.2
65+	24	3.1	3.6
Total	**779**	**100**	**14.1**

*2017-2021 data are provisional. **"NH" means non-Hispanic ethnicity.
*** Number, percentage, and rate suppressed for counts between 1-4.
Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/21/22

6.0 Unintentional Overdose Deaths

Table 5 shows that the overall cocaine overdose death rate increased by 18.1% from 2016-2020 to 2017-2021. Black non-Hispanics continue to be disproportionately represented among cocaine deaths. During 2017-2021, black non-Hispanics died from cocaine overdoses at over double the rate of white non-Hispanics and more than five times the rate of Hispanics. Additionally, males died from cocaine overdoses at a dramatically higher rate than females.

Table 5: Cocaine Overdose Deaths, Wake County, 2017-2021*

	Number	Percent	Rate per 100,000
Sex			
Female	59	20.6	2.1
Male	228	79.4	8.5
Race/Ethnicity**			
White (NH)	153	53.3	4.5
Black (NH)	117	40.8	10.2
American Indian (NH)	0	0.0	0.0
Asian (NH)	***	***	***
Hispanic	11	3.8	1.9
Other (NH)/Unknown	***	***	***
Age Group			
0-14	0	0.0	0.0
15-24	22	7.7	3.0
25-34	95	33.1	11.6
35-44	68	23.7	8.2
45-54	55	19.2	7.0
55-64	41	14.3	6.5
65+	6	2.1	0.9
Total	**287**	**100**	**5.2**

The heroin overdose death rate decreased slightly by 7.4% from 2016-2020 to 2017-2021. Males died at a much higher rate than females and white non-Hispanics died at a higher rate than other racial/ethnic groups (Table 6).

Table 6: Heroin Overdose Deaths, Wake County, 2017-2021*

	Number	Percent	Rate per 100,000
Sex			
Female	38	20.3	1.3
Male	149	79.7	5.5
Race/Ethnicity**			
White (NH)	142	75.9	4.2
Black (NH)	32	17.1	2.8
American Indian (NH)	***	***	***
Asian (NH)	***	***	***
Hispanic	10	5.4	1.7
Other (NH)/Unknown	0	0.0	0.0
Age Group			
0-14	0	0.0	0.0
15-24	23	12.3	3.1
25-34	66	35.3	8.0
35-44	54	28.9	6.6
45-54	28	15.0	3.6
55-64	13	7.0	2.0
65+	***	***	***
Total	**187**	**100**	**3.4**

Table 5 and Table 6:
*2021 data are provisional.
**"NH" means non-Hispanic ethnicity.
*** Number, percentage, and rate suppressed for counts between 1-4.
Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/22/22.

Table 7 shows other synthetic narcotic (e.g. fentanyl) overdose deaths increased by 29.1% from 2016-2020 to 2017-2021. Subgroups that saw substantial increases in death rates were males, black non-Hispanics, and people ages 25-44.

Table 7: Other Synthetic Narcotic Overdose Deaths, Wake County, 2017-2021*

	Number	Percent	Rate per 100,000
Sex			
Female	130	24.0	4.6
Male	411	76.0	15.2
Race/Ethnicity**			
White (NH)	376	69.5	11.2
Black (NH)	134	24.8	11.7
American Indian (NH)	0	0.0	0.0
Asian (NH)	***	***	***
Hispanic	23	4.3	4.0
Other (NH)/ Unknown	***	***	***
Age Group			
0-14	0	0.0	0.0
15-24	80	14.8	11.0
25-34	199	36.8	24.3
35-44	133	24.6	16.1
45-54	79	14.6	10.1
55-64	41	7.6	6.5
65+	9	1.7	1.4
Total	**541**	**100**	**9.8**

*2021 data are provisional.
**"NH" means non-Hispanic ethnicity.
*** Number, percentage, and rate suppressed for counts between 1-4.
Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/22/22.

Table 8 shows that males and white non-Hispanics had a higher percentage of overdose deaths due to commonly prescribed opioids (oxycodone, hydrocodone, morphine, etc.) than their counterparts (females and other races/ethnicities) between 2017-2021.

Table 8: Commonly Prescribed Opioid Overdose Deaths, Wake County, 2017-2021*

	Number	Percent	Rate per 100,000
Sex			
Female	41	28.1	1.4
Male	105	71.9	3.9
Race/Ethnicity**			
White (NH)	115	78.8	3.4
Black (NH)	25	17.1	2.2
American Indian (NH)	0	0.0	0.0
Asian (NH)	***	***	***
Hispanic	***	***	***
Other (NH)/Unknown	***	***	***
Age Group			
0-14	***	***	***
15-24	12	8.2	1.6
25-34	44	30.1	5.4
35-44	36	24.7	4.4
45-54	28	19.2	3.6
55-64	22	15.1	3.5
65+	***	***	***
Total	**146**	**100**	**2.6**

*2021 data are provisional.
**"NH" means non-Hispanic ethnicity.
*** Number, percentage, and rate suppressed for counts between 1-4.
Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/22/22.

Table 9 shows the death rate for psychostimulant overdoses (including methamphetamine) increased 82.3% from 2016-2020 to 2017-2021. Males and white non-Hispanics represented most psychostimulant deaths.

Table 9: Psychostimulant Overdose Deaths, Wake County, 2017-2021*

	Number	Percent	Rate per 100,000
Sex			
Female	16	21.3	0.6
Male	59	78.7	2.2
Race/Ethnicity**			
White (NH)	60	80.0	1.8
Black (NH)	10	13.3	0.9
American Indian (NH)	0	0.0	0.0
Asian (NH)	***	***	***
Hispanic	***	***	***
Other (NH)/Unknown	0	0.0	0.0
Age Group			
0-14	0	0.0	0.0
15-24	7	9.3	1.0
25-34	25	33.3	3.0
35-44	26	34.7	3.2
45-54	11	14.7	1.4
55-64	5	6.7	0.8
65+	***	***	***
Total	**75**	**100**	**1.4**

Tables 9 and 10:
*2021 data are provisional.
**"NH" means non-Hispanic ethnicity.
*** Number, percentage, and rate suppressed for counts between 1-4.
Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/22/22.

Table 10 shows that, while males still represented the large majority, females had a relatively high percentage of benzodiazepine deaths between 2017-2021 when compared to other drug death categories. Benzodiazepines are a class of psychoactive drugs that depress brain activity and are used to treat conditions such as anxiety, insomnia, and seizures.

Table 10: Benzodiazepine Overdose Deaths, Wake County, 2017-2021*

	Number	Percent	Rate per 100,000
Sex			
Female	45	30.8	1.6
Male	101	69.2	3.7
Race/Ethnicity**			
White (NH)	123	84.3	3.7
Black (NH)	17	11.6	1.5
American Indian (NH)	0	0.0	0.0
Asian (NH)	***	***	***
Hispanic	5	3.4	0.9
Other (NH)/Unknown	0	0.0	0.0
Age Group			
0-14	0	0.0	0.0
15-24	20	13.7	2.7
25-34	54	37.0	6.6
35-40	30	20.6	3.6
45-54	24	16.4	3.1
55-64	15	10.3	2.4
65+	***	***	***
Total	**146**	**100**	**2.6**

6.1 The Wake County Drug Overdose Prevention Initiative

This section reflects the cumulative efforts of the Drug Overdose Prevention Initiative between January 1, 2018, and June 30, 2022.

Serving as a state leader, the hybrid Rapid Responder Post Overdose Response Team (PORT) facilitates recovery from substance use disorders and provides creative and effective risk reduction to our most vulnerable populations. The initiative has permanent funding for post overdose recovery and harm-reduction services.

2300 individuals have been served by this program between January 1, 2018 and June 30, 2022. The Rapid Responder staff employ an interdisciplinary approach to care planning. Each client is assessed for common risks associated with the use of street drugs, social barriers to health, readiness and willingness to work toward a substance free life and co-occurring physical and mental health problems.

The staff has referred 971 individuals to rehabilitation services as well as paraprofessional Mutual Aid programs. Transportation services are provided to those who have difficulty getting to their medication-assisted treatment (MAT) providers.

Individuals who are at high risk for recurrent overdoses are supplied with Narcan, Fentanyl Test Reagents and instructed in the use of both.

Over 35% of the engaged clients remain connected with their Peer Support Staff for over one year. The project staff plan to provide first aid and CPR training to the unsheltered community in 2023.

7.0 Motor Vehicle Traffic (MVT) Deaths

Table 11 shows that during 2017-2021, males, Black non-Hispanics, and the 65+ age group had the highest MVT death rates per 100,000.

Table 11: Motor Vehicle Traffic Deaths, Wake County, 2017-2021*

	Number	Percent	Rate per 100,000
Sex			
Female	116	28.7	4.1
Male	288	71.3	10.7
Race/Ethnicity**			
White (NH)	184	45.5	5.5
Black (NH)	152	37.6	13.3
American Indian (NH)	***	***	***
Asian (NH)	11	2.7	2.5
Hispanic	50	12.4	8.7
Other (NH)/ Unknown	6	1.5	-
Age Group			
0-14	17	4.2	1.6
15-24	68	16.8	9.3
25-34	70	17.3	8.5
35-44	61	15.1	7.4
45-54	54	13.4	6.9
55-64	53	13.1	8.3
65+	81	20.1	12.2
Total	**404**	**100**	**7.3**

*2021 data are provisional.
**"NH" means non-Hispanic ethnicity.
*** Number, percentage, and rate suppressed for counts between 1-4. Source: NC DHHS DPH, Injury and Violence Prevention Branch, 9/22/22.

8.0 Pedestrian/Automobile Crashes

Table 12 shows that crash deaths decreased in 2021; the only categories with slight increases in 2021 were "Possible Injury" and "Unknown Injury".

Table 12: Pedestrian* Crash Data by Crash Severity, Wake County, 2017-2021

	2017	2018	2019	2020	2021	Total
Killed	12	17	22	26	16	**93**
Suspected Serious Injury	42	32	54	45	33	**206**
Suspected Minor Injury	122	149	154	112	109	**646**
Possible Injury	110	129	142	88	90	**559**
No Injury	48	35	44	42	32	**201**
Unknown Injury	5	**	**	0	**	**8**
Grand Total	**339**	**363**	**417**	**313**	**281**	**1713**

*Data shows all pedestrian crashes (occurring both on a roadway and elsewhere).
**Number suppressed for counts between 1-4.
Source: Special report prepared by NC Department of Transportation (DOT) for Wake County, 10/11/22.

9.0 Bicycle/Automobile Crashes

Table 13 shows that overall bicycle crash injuries increased in 2021 and the number of deaths was similar to 2020 and 2017 (between 1-4).

Table 13: Bicycle* Crash Data by Crash Severity, Wake County, 2017-2021

	2017	2018	2019	2020	2021	Total
Killed	**	0	0	**	**	**6**
Suspected Serious Injury	6	11	7	7	9	**40**
Suspected Minor Injury	49	41	42	31	40	**203**
Possible Injury	31	32	31	21	32	**147**
No Injury	12	20	13	15	15	**75**
Unknown Injury	**	0	0	**	0	**
Grand Total	**101**	**104**	**93**	**78**	**97**	**473**

* Data shows all bicycle crashes (occurring both on a roadway and elsewhere).
** Number suppressed for counts between 1-4.
Source: Special report prepared by NC Department of Transportation (DOT) for Wake County, 10/11/22.

10.0 Acknowledgements

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