



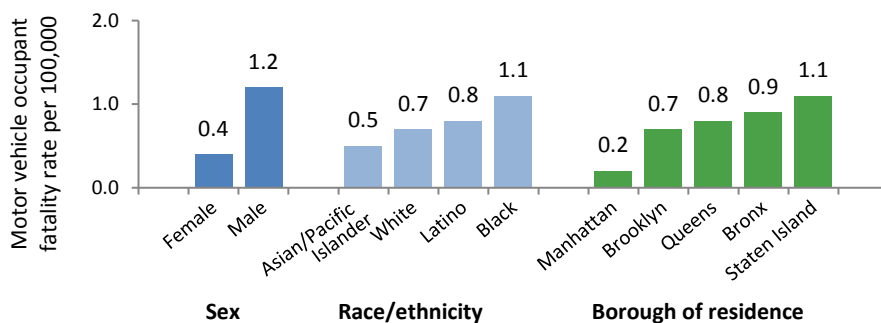
Motor Vehicle Occupant Fatalities in New York City

Preventing traffic-related deaths is the central goal of New York City's (NYC) Vision Zero initiative. Traffic-related deaths are a leading cause of injury death and remain a key public health concern in NYC. Vision Zero aims to keep people safe, no matter how they use the road – as pedestrians, bicyclists, motorcyclists, drivers, and passengers.

Between 2012 and 2014, there were 214 fatalities among motor vehicle occupants in NYC, accounting for 24% of the 889 total traffic-related deaths. These deaths occurred in 183 motor vehicle crashes and included 127 (59%) drivers and 87 (41%) passengers.

Motor vehicle occupant fatalities varied by sex, race/ethnicity, borough of residence and time of crash

New York City motor vehicle occupant fatalities by demographic characteristics, 2012–2014

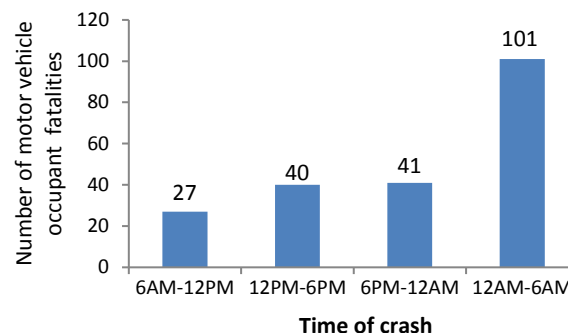


White, Black, and Asian/Pacific Islander races exclude Latino ethnicity. Latino includes Hispanic or Latino of any race.

Source: NYC DOHMH Bureau of Vital Statistics, 2012–2014

- The motor vehicle occupant fatality rate was three times higher among males than females (1.2 vs. 0.4 per 100,000 population).
- Among race/ethnicity groups, motor vehicle occupant fatality rates were highest among Black occupants and lowest among Asian/Pacific Islander occupants (1.1 vs. 0.5 per 100,000 population).
- Staten Island residents had the highest motor vehicle occupant fatality rate, at more than five times the rate for Manhattan residents (1.1 vs. 0.2 per 100,000 population).
- Crashes that occurred between midnight and 6 AM accounted for nearly half (48%) of all motor vehicle occupant fatalities.

New York City motor vehicle occupant fatalities by time of crash, 2012–2014



Source: NYC DOHMH Bureau of Vital Statistics, 2012–2014

Definitions:

Motor vehicle occupant fatalities are defined as any driver or passenger of a motor vehicle killed from injuries that occurred when their vehicle collided with another motor vehicle, rolled over, or crashed into a stationary object.

Types of roads are defined by NYC Department of City Planning.

Highways are considered roads with on-and-off ramps, higher speed limits and are limited to motor vehicle traffic. **Arterial roads** are typically wide streets with traffic signals that carry high volumes of traffic. **Local roads** are roads that typically have the lowest speeds.

Alcohol use described in this report represents alcohol use for the driver killed in the crash, based on review of medical examiner reports. Limited alcohol use information is known on surviving parties of a motor vehicle occupant crash.

Seat belt usage was identified from reviews of motor vehicle crash reports, police investigation reports, and medical examiner notes. Restraint use was not noted and/or unknown in 23% of driver fatalities and 29% of passenger fatalities.

Race/ethnicity: White, Black, and Asian/Pacific Islander race categories exclude Latino ethnicity. Latino includes Hispanic or Latino of any race.

Authors: Lawrence Fung, Sarah Conderino

Acknowledgements: Anna Caffarelli, Liang-yu Chen, Melanie Firestone, Seth Hostetter, Kristina Ipapo, Ritu Jain, Jennifer M. Norton

Suggested citation: Fung L, Conderino S. Motor Vehicle Occupant Fatalities in New York City. New York City Department of Health and Mental Hygiene: Epi Data Brief (85); March 2017.

Characteristics of motor vehicle driver fatalities in New York City

- Males represented 90% of all driver fatalities in NYC. According to the 2015 NYC Community Health Survey, males represented 60% of adult drivers.¹
- Male drivers aged 15 to 24 years had the highest fatality rate (1.5 per 100,000 population) compared with male drivers of other ages.
- Among driver fatalities, 33% occurred on arterial roads, 26% on highways, and 24% on local roads.
- Of the 124 crashes in which a driver was killed, 90% involved a single driver fatality where no other person died in the crash.
- Nearly half (49%) of all driver fatalities involved a collision with another vehicle. Forty-six percent of driver fatalities involved a collision with a stationary object.
- Seat belt usage was known in 77% of all driver fatalities. Of these, half (53%) of drivers were wearing a seat belt.

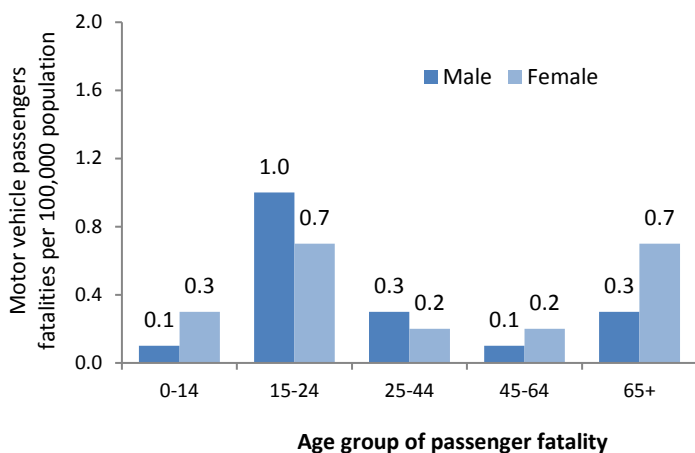
Driver fatalities by age group and sex, New York City, 2012–2014



Sources: NYC Office of Chief Medical Examiner 2012–2014 and NYC DOHMH Bureau of Vital Statistics, 2012–2014

Characteristics of motor vehicle passenger fatalities in New York City

Passenger fatalities by age group and sex, New York City, 2012–2014



Sources: NYC Office of Chief Medical Examiner 2012–2014 and NYC DOHMH Bureau of Vital Statistics, 2012–2014

- Females accounted for just over half of all passenger fatalities (54%).
- Males aged 15 to 24 years had the highest passenger fatality rate (1.0 per 100,000 population), followed by females aged 15 to 24 years and 65 years or older (both 0.7 per 100,000 population).
- Of the 70 crashes in which a passenger was killed, 74% involved a single passenger fatality where no other person died in the crash.
- New York State requires all motor vehicle occupants to be restrained in the front seat and occupants under 16 years of age to be restrained in the back seat as well. Seat belt usage was known for 62 (71%) passenger fatalities. Of these, 42% were wearing a seat belt. Seat belt usage was less common among rear seat passenger decedents than front seat passenger decedents (16% vs 78%).

- Among passenger fatalities, 31% occurred on an arterial road, 22% on a highway and 22% on a local road.
- The driver's age and sex were known in 70% of all crashes that involved a passenger fatality. The median age of the driver in crashes in which a passenger was killed was 32 years and 82% were male.

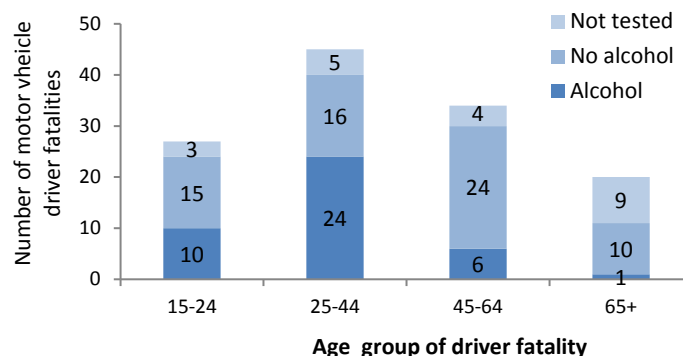
MORE New York City Health Data and Publications at nyc.gov/health/data

Visit EpiQuery – the Health Department's online, interactive health data system at nyc.gov/health/EpiQuery

Alcohol use among motor vehicle driver fatalities

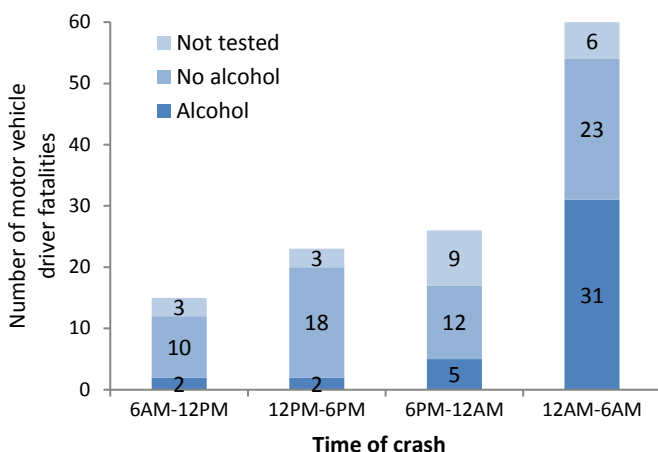
- One-hundred six (83%) of all motor vehicle driver fatalities were tested for alcohol. Of these, 41 (39%) had evidence of alcohol use. Among those who had evidence of alcohol use, 30 (73%) were above the legal limit for driving (0.08 g/dL).
- Drivers aged 25 to 44 years accounted for 59% of all driver fatalities who had evidence of alcohol use. Half (53%) of driver fatalities aged 25 to 44 had evidence of alcohol use.
- Male drivers under 45 years accounted for 53% of all driver fatalities, but they accounted for about 73% of all driver fatalities who had evidence of alcohol use.

Alcohol use among motor vehicle driver fatalities by age group, New York City, 2012–2014



Sources: NYC Office of Chief Medical Examiner 2012–2014 and NYC DOHMH Bureau of Vital Statistics, 2012–2014

Alcohol use among motor vehicle driver fatalities by time of crash, New York City, 2012–2014



Sources: NYC Office of Chief Medical Examiner 2012–2014 and NYC DOHMH Bureau of Vital Statistics, 2012–2014

- Seventy-eight percent of driver fatalities who had evidence of alcohol use were involved in crashes that occurred during the late night and early morning hours (12 AM to 6 AM). Among these late night and early morning fatalities, 61% occurred on a weekend.
- Forty-four percent of driver fatalities who had evidence of alcohol use were involved in a crash that occurred on a local road, 27% on an arterial road, and 20% on a highway.
- Speeding was noted as a contributing factor in 49% of driver fatalities who had evidence of alcohol use, compared with 45% of driver fatalities who did not.
- Drivers who had evidence of alcohol use were less likely to wear a seat belt than those who did not have evidence of alcohol use (38% vs. 62%).

References:

1. NYC Department of Health and Mental Hygiene. Community Health Survey 2015; unpublished data analyzed on June 1, 2016.

Data Sources:

Bureau of Vital Statistics (BVS), 2012–2014: The NYC Health Department's BVS maintains administrative data on all deaths in NYC and injury death information was obtained from death certificates. The following International Classification of Diseases (ICD)-10 codes were used to classify transportation deaths: V01-V99. [The National Center for Health Statistics Injury Matrices](#) was used to provide a framework to organize injury codes into meaningful groupings to facilitate national and international comparisons. The NYC Police Department (NYPD), the NYC Department of Transportation (DOT), and the NYC Health Department all monitor traffic-related fatalities. Each monitoring system is based on different definitions and counts presented in this report will differ from NYPD and DOT. For more information on how these counts differ, please refer to page 99 of the [Summary of Vital Statistics, Technical Notes](#).

NYC Office of Chief Medical Examiner (OCME) File Review, 2012–2014: Motor vehicle occupant fatalities were determined through manual review of medical examiner files. These fatality records were reviewed for additional crash circumstances and toxicology information on the victim.

NYC Department of Transportation (DOT) Fatality Database, 2012–2014: The NYC DOT Fatality Database compiles information on traffic-related fatalities from police reports (MV 104-AN) and additional DOT crash analysis.

Intercensal Estimates, 2000–2014: NYC Health Department population estimates, modified from US Census Bureau intercensal population estimates 2000–2014, updated October 2015. Rates are age-adjusted to the US 2000 standard population, except those for specific age groups.





Epi Data Tables

New York City Department of Health and Mental Hygiene

March 2017, No. 85

Motor Vehicle Occupant Fatalities in New York City

Data Tables

- Table 1.** Motor vehicle occupant fatalities by age, sex, race/ethnicity, borough of residence, neighborhood poverty of residence, and neighborhood poverty of crash, New York City, 2012-2014
- Table 2.** Alcohol status of motor vehicle driver fatalities by age, sex, race/ethnicity, borough of residence, neighborhood poverty of residence and road type, New York City, 2012-2014
- Table 3.** Motor vehicle occupant fatalities by crash type, New York City, 2012-2014
- Table 4.** Motor vehicle occupants fatalities by vehicle type and road type, New York City, 2012-2014
- Table 5.** Motor vehicle occupant fatalities by day of week and time of crash, New York City, 2012-2014
- Table 6.** Motor vehicle driver fatalities time of crash and day of week by alcohol status, New York City, 2012-2014
- Table 7.** Seat belt use and speeding by alcohol status among motor vehicle driver fatalities, New York City, 2012-2014
- Table 8.** Seat belt use by seating position among motor vehicle passenger fatalities, New York City, 2012-2014

Data Sources

Bureau of Vital Statistics (BVS), 2012-2014: The NYC Health Department's BVS maintains administrative data on all deaths in NYC and injury death information was obtained from death certificates. The following International Classification of Diseases (ICD)-10 codes were used to classify motor vehicle occupant deaths V30-V79 (.4-.9), V83-V86 (.0-.3), and V89.2 that occurred in NYC from 2012–2014. The National Center for Health Statistics Injury Matrices was used to provide a framework to organize injury codes into meaningful groupings to facilitate national and international comparisons. Refer to tables for International Classification of Diseases (ICD)-10 codes used. More information can be found at:

http://www.cdc.gov/nchs/injury/injury_matrices.htm

NYC Office of Chief Medical Examiner (OCME) file review, 2012-2014: Traffic fatality records were reviewed for additional crash circumstances and toxicology information on the victim for 2012-2014.

NYC Department of Transportation (DOT) Fatality Database, 2012-2014: The NYC DOT Fatality Database compiles information on traffic-related fatalities from police reports (MV 104-AN) and additional DOT crash analysis.

Intercensal Estimates, 2000-2014: NYC Health Department population estimates, modified from US Census Bureau intercensal population estimates 2000-2014, updated October 2015. Rates are age-adjusted to the US 2000 standard population, except those for specific age groups.

Table 1. Motor vehicle occupant fatalities by age, sex, race/ethnicity, borough of residence, neighborhood poverty of residence, and neighborhood poverty of crash, New York City, 2012-2014

Source: NYC DOHMH Bureau of Vital Statistics and NYC Office of Chief Medical Examiner

Demographic factor	Drivers			Passengers			Total ¹		
	N	%	Rate	N	%	Rate	N	%	Rate
Sex									
Male	114	90%	0.9	40	46%	0.3	154	72%	1.2
Female	13	10%	0.1	47	54%	0.4	60	28%	0.4
Age									
0-14	1*	1%	0.0	9*	10%	0.2	10*	5%	0.2
15-24	27	21%	0.8	29	33%	0.9	56	26%	1.7
25-44	45	35%	0.6	19	22%	0.2	64	30%	0.8
45-64	34	27%	0.5	12	14%	0.2	46	21%	0.7
65+	20	16%	0.6	18	21%	0.6	38	18%	1.2
Race/ethnicity²									
White	44	37%	0.5	24	28%	0.3	68	33%	0.7
Black	31	26%	0.5	31	36%	0.5	62	31%	1.1
Latino	32	27%	0.4	25	29%	0.3	57	28%	0.8
Asian	11*	9%	0.3	5*	6%	0.2	16	8%	0.5
Borough of residence³									
Bronx	18	16%	0.4	23	33%	0.5	41	22%	0.9
Brooklyn	35	31%	0.4	22	31%	0.3	57	31%	0.7
Manhattan	7*	6%	0.1	4*	6%	0.1	11*	6%	0.2
Queens	41	36%	0.6	18	26%	0.3	59	32%	0.8
Staten Island	13	11%	0.9	3*	4%	0.2	16	9%	1.1
Neighborhood poverty group⁴ (Residence)									
Low	23	20%	0.5	8*	12%	0.2	31	17%	0.8
Medium	33	29%	0.3	25	36%	0.3	58	32%	0.6
High	38	33%	0.6	21	30%	0.3	59	32%	0.9
Very High	20	18%	0.4	15	22%	0.3	35	19%	0.6
Neighborhood poverty group⁵ (Crash)									
Low	34	28%	1.5	13	15%	0.6	47	23%	2.1
Medium	46	38%	1.5	30	35%	1.0	76	37%	2.5
High	26	21%	1.6	26	31%	1.6	52	25%	3.2
Very high	15	12%	1.3	16	19%	1.4	31	15%	2.7
Total¹	127	100%	0.5	87	100%	0.3	214	100%	0.8

¹Figures represent three year (2012-2014) totals, percentages are column percentages, and rates are age-adjusted to the US standard population per 100,000.²Race/ethnicity was unknown or not noted for 11 decedents. White, Black, and Asian are self-reported race categories that exclude Latino ethnicity. Latino includes Hispanic or Latino of any race.³Only includes decedents who lived in New York City; 30 decedents lived outside of New York City or no resident ZIP code was noted.⁴Neighborhood poverty group (residence) is based on decedent's resident ZIP Code and is defined as proportion of residents in a ZIP Code with incomes below 100% of the Federal Poverty Level (FPL), per American Community Survey (2010-2014), in four categories: Low (<10% FPL), Medium (10% to <20% FPL), High (20% to <30% FPL), and Very High Poverty (≥30% FPL). Rates presented here are fatality rates per population; 30 decedents lived outside of New York City decedents or no resident ZIP code was noted and 1 decedent did not have a ZIP code noted to determine neighborhood poverty of residence.⁵Neighborhood poverty group (crash) is based on ZIP code of fatal crash and is defined as a proportion of residents in a crash ZIP Code with incomes below 100% of the Federal Poverty Level (FPL), per American Community Survey (2010-2014), in four categories: Low (<10% FPL), Medium (10% to <20% FPL), High (20% to <30% FPL), and Very High Poverty (≥30% FPL). Rates presented here are fatality rates per 100 miles of NYC street network; 8 crashes did not have a ZIP code noted to determine neighborhood poverty of the crash.

*Estimates should be interpreted with caution due to small cell size counts.

Table 2. Alcohol status¹ of motor vehicle driver fatalities by age, sex, race/ethnicity, borough of residence, neighborhood poverty of residence and road type, New York City, 2012-2014

Source: NYC DOHMH Bureau of Vital Statistics and NYC Office of Chief Medical Examiner

Demographic factor	Positive Alcohol		Negative Alcohol		Not Tested ¹		Total ²	
	N	%	N	%	N	%	N	%
Sex								
Male	37	90%	57	88%	20	95%	114	90%
Female	4	10%	8	12%	1	5%	13	10%
Age								
0-24	10	24%	15	23%	3	14%	28	22%
25-44	24	59%	16	25%	5	24%	45	35%
45-64	6	15%	24	37%	4	19%	34	27%
65+	1	2%	10	15%	9	43%	20	16%
Race/ethnicity³								
White	9	24%	25	40%	10	56%	44	37%
Black	14	38%	13	21%	4	22%	31	26%
Latino	12	32%	17	27%	3	17%	32	27%
Asian	2	5%	8	13%	1	6%	11	9%
Borough of Residence⁴								
Bronx	7	18%	9	16%	2	11%	18	16%
Brooklyn	8	21%	18	32%	9	47%	35	31%
Manhattan	4	11%	3	5%	0	0%	7	6%
Queens	14	37%	22	39%	5	26%	41	36%
Staten Island	5	13%	5	9%	3	16%	13	11%
Neighborhood Poverty⁵ (Residence)								
Low	6	16%	10	18%	7	37%	23	20%
Medium	13	34%	18	32%	2	11%	33	29%
High	13	34%	18	32%	7	37%	38	33%
Very High	6	16%	11	19%	3	16%	20	18%
Road type⁶								
Local	18	44%	11	17%	2	10%	31	24%
Arterial	11	27%	23	35%	8	38%	42	33%
Highway	8	20%	21	32%	4	19%	33	26%
Unknown	4	10%	10	15%	7	33%	21	17%
Total²	41	100%	65	100%	21	100%	127	100%

¹Alcohol status reflects the driver who was killed in the fatal crash. Alcohol status among drivers of another vehicle was not available as part of this data review. Decedents were not tested for alcohol because of family objection to autopsy.

²Figures represent three year (2012-2014) totals, percentages are column percentages, and rates are age-adjusted to the US standard population per 100,000.

³Race/ethnicity not noted for 9 decedents. White, Black, and Asian are self-reported race categories that exclude Latino ethnicity. Latino includes Hispanic or Latino of any race.

⁴Only includes decedents who lived in New York City; 13 decedents lived outside of New York City or did not have a zip code noted.

⁵Neighborhood poverty is based on resident ZIP Code and is defined as proportion of residents in a ZIP Code with incomes below 100% of the Federal Poverty Level (FPL), per American Community Survey (2010-2014), in four categories: Low (<10% FPL), Medium (10% to <20% FPL), High (20% to <30% FPL), and Very High Poverty (≥30% FPL); 13 decedents lived outside of New York City decedents or no resident zip code was noted.

⁶Road type was defined by the NYC Department of Transportation.

Table 3. Motor vehicle occupant fatalities by crash type, New York City, 2012-2014

Source: New York State Department of Motor Vehicles (MV-104) Police Report

Crash type	Number of Fatalities	Number of Crashes
Driver only	111	111
Driver and other driver	4	2
Driver and one passenger	16	8
Multiple driver and passenger	3	1
Driver and multiple passenger	11	2
Single passenger only	52	52
Multiple passengers	17	7
Total	214	183

Table 4. Motor vehicle occupants fatalities by vehicle type and road type, New York City, 2012-2014

Source: NYC Office of Chief Medical Examiner and NYC DOT Fatality Database

Vehicle type ¹	Driver		Passenger		Total	
	N	Percent	N	Percent	N	Percent
Car	75	59%	39	45%	114	53%
SUV/Jeep/Van	29	23%	22	25%	51	24%
Truck	3	2%	2	2%	5	2%
Other	4	3%	0	0%	4	2%
Unknown/unspecified/missing	18	14%	22	25%	40	19%
Road type²						
Local	31	24%	19	22%	50	23%
Arterial	42	33%	19	22%	61	29%
Highway	33	26%	27	31%	60	28%
Unknown	21	17%	22	25%	43	20%
Total	127	59%	87	41%	214	100%

¹Vehicle type described is of the decedent.

²Road type was defined by the NYC Department of Transportation.

Table 5. Motor vehicle occupant fatalities by day of week and time of crash, New York City, 2012-2014

Source: NYC DOHMH Bureau of Vital Statistics and NYC Office of Chief Medical Examiner

Day of week ¹	6am-6pm		6pm-6am		Total	
	N	Percent	N	Percent	N	Percent
Monday	4	6%	22	15%	27	13%
Tuesday	11	16%	13	9%	25	12%
Wednesday	11	16%	11	8%	22	10%
Thursday	7	10%	25	18%	33	15%
Friday	10	15%	9	6%	21	10%
Saturday	6	9%	31	22%	37	17%
Sunday	18	27%	31	22%	49	23%
Total	67	100%	142	100%	214	100%

¹Time of crash data are missing for five occupant deaths.

Table 6. Motor vehicle driver fatalities time of crash and day of week by alcohol status,¹ New York City, 2012-2014*Source: NYC Office of Chief Medical Examiner*

	Positive Alcohol		Negative Alcohol		Not tested for Alcohol		Total	
	N	Percent	N	Percent	N	Percent	N	Percent
Time of crash²								
Morning (6am-12pm)	2	5%	10	16%	3	14%	15	12%
Midday (12pm-6pm)	2	5%	18	29%	3	14%	23	19%
Afternoon/Evening (6pm-12am)	5	13%	12	19%	9	43%	26	21%
Night/Early Morning (12am-6am)	31	78%	23	37%	6	29%	60	48%
Day of week								
Monday	2	5%	9	14%	4	19%	15	12%
Tuesday	4	10%	10	15%	2	10%	16	13%
Wednesday	1	2%	9	14%	4	19%	14	11%
Thursday	8	20%	12	18%	4	19%	24	19%
Friday	5	12%	7	11%	1	5%	13	10%
Saturday	13	32%	6	9%	2	10%	21	17%
Sunday	8	20%	12	18%	4	19%	24	19%
Total	41	100%	65	100%	21	100%	127	100%

¹Alcohol status reflects the driver who was killed in the fatal crash. Alcohol status among drivers of another vehicle was not available as part of this data review.²Time of crash data are missing for three driver deaths.

Table 7. Seat belt use and speeding by alcohol status¹ among motor vehicle driver fatalities, New York City, 2012-2014*Source: NYC DOT Fatality Database, NYC Office of Chief Medical Examiner, New York State Department of Motor Vehicles (MV-104) Police Report*

	Positive Alcohol		Negative Alcohol		Not tested for Alcohol		Total	
	N	Percent	N	Percent	N	Percent	N	Percent
Seat belt status²								
Reported seat belt usage as no	20	63%	19	38%	7	44%	46	47%
Reported seat belt usage as yes	12	38%	31	62%	9	56%	52	53%
Total reported seat belt usage	32	100%	50	100%	16	100%	98	100%
Speeding as a crash contributing factor³	N	Percent	N	Percent	N	Percent	N	Percent
Speeding noted as a crash factor	20	49%	29	45%	6	29%	55	43%
Speeding not noted as a crash factor	21	51%	36	55%	15	71%	72	57%
Total	41	100%	65	100%	21	100%	127	100%

¹Alcohol status reflects the driver who was killed in the fatal crash. Alcohol status among drivers of another vehicle was not available as part of this data review.

²Seat belt use is missing for 23% (N=29) of all driver fatalities.

³Speeding refers to a crash contributing factor in which a driver was killed. This may refer to speeding on the part of the driver and/or another vehicle(s) involved in the fatal crash.

Table 8. Seat belt use by seating position among motor vehicle passenger fatalities, New York City, 2012-2014

Source: NYC DOT Fatality Database, NYC Office of Chief Medical Examiner, New York State Department of Motor Vehicles (MV-104) Police Report

	Rear seat passenger		Front seat passenger		Unknown seating position		Total passengers	
	N	Percent	N	Percent	N	Percent	N	Percent
Seat belt status¹								
Reported seat belt usage as no	27	84%	6	22%	3	100%	36	58%
Reported seat belt usage as yes	5	16%	21	78%	0	0%	26	42%
Total reported seat belt usage	32	100%	27	100%	3	100%	62	100%

¹Seat belt use is missing for 29% (N=25) of all passenger fatalities;
 7 passengers in the back seat had unknown seat belt usage
 11 passengers in the front seat had unknown seat belt usage
 7 passengers had both unknown seat belt and seating position