

## Circumstances Preceding Suicide among the Middle-aged in New York City, 2015-2016

Between 2009 and 2016, the overall rate of death due to suicide in New York City (NYC), as well as nationally, was generally higher among middle-aged (45- to 64-years-old) people.<sup>1,2</sup> Compared with other age groups in 2016, the suicide rate in NYC was the highest among 45- to 64-year olds, and increased 19.5% when compared with the rate among this same age group in 2007.<sup>1</sup>

Information on the circumstances preceding death by suicide are seldom present in NYC public health surveillance reports. In this brief we use data from a unique public health surveillance system, the New York Violent Death Reporting System (NYVDRS), to describe characteristics and circumstances preceding death among NYC suicide decedents ages 45- to 64-years-old.

- In 2015-2016, a total of 1,087 suicides cases were included in NYVDRS. At least one circumstance preceding suicide was known for 883 (81%) of the total suicide cases. The analysis reported in this brief focuses on this group of 883 suicide cases.
- Circumstances experienced by suicide decedents include: a mental health problem (66%), an alcohol and/or substance use problem (23%), suicide intent and planning (39%) and life stressors (22%).
- Approximately two thirds of the 45- to 64-year-olds were male, just over one third were female; more than half (55%) were White, 21% were Latino/a, 13% were Black and 11% were of other racial groups.
- Suicide by hanging, strangulation or suffocation (42%) was the most common method of suicide among 45- to 64-year-olds; suicide by poisoning (22%) was the second most common and suicide by fall (e.g., jumping from a high place) was the third most common (17%).

### NVDRS Definitions:

**Suicide:** a death resulting from the intentional use of force against oneself.

**Circumstances preceding suicide:** more than one circumstance may be present in each case.

**Mental health problem:** includes disorders and syndromes listed in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) except alcohol and other substance dependence or misuse.

**Alcohol problem:** Decedent was perceived by self or others to have a problem with, or be addicted to, alcohol.

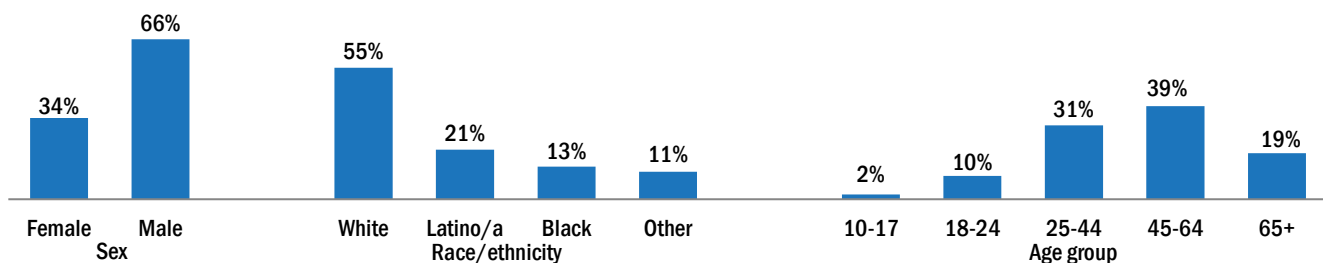
**Substance problem:** Decedent was perceived by self or others to have a problem with, or be addicted to, drugs other than alcohol.

### Other Definitions:

**Race/ethnicity:** For the purpose of this publication, Latino/a includes persons of Hispanic origin based on ancestry reported on the death certificate, regardless of reported race; Latino/a excludes reported ancestry from non-Spanish speaking Central/South American countries, and non-Spanish speaking Caribbean islands. Black, White, Asian, and Other race categories do not include people of Latino/a origin.

**Health system interaction:** Information collected on decedents' interaction with the health system includes: recent release from a health care or treatment facility; emergency room or hospital admission, after injury; health or mental health condition(s) and treatment.

Demographic characteristics of suicide decedents with known circumstances, New York City, 2015-2016



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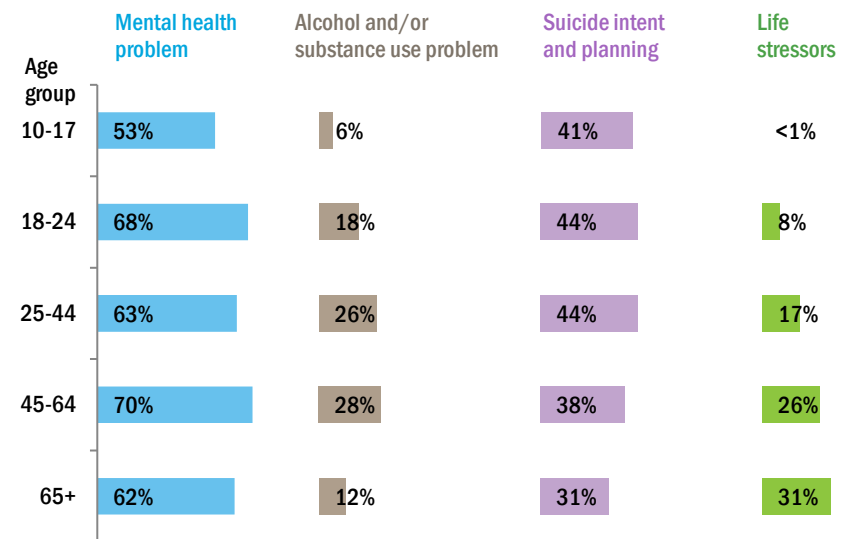
Source: New York Violent Death Reporting System, (NYVDRS), 2015-2016

**Data Source: National Violent Death Reporting System (NVDRS):** A CDC-funded, state-based surveillance system linking information from three sources: death certificates, medical examiner files, and law enforcement information. The NVDRS-assigned manner of death is consistent with manner of death reported in at least one of the three sources. NVDRS collects information when documented on decedents' interaction with the health or mental health system. The New York City Health Department worked with the New York State Department of Health to build and implement the New York contribution (NYVDRS) to this surveillance system in 2015.

## Circumstances preceding suicide among 45- to 64-year-old decedents differed compared with other age groups

- Among 45- to 64-year-olds, a mental health problem was experienced by 70% of suicide decedents in 2015-2016.
- Among 45- to 64-year-olds, an alcohol and/or substance use problem was experienced by 28% of suicide decedents.
- Thirty-eight percent of 45- to 64-year-olds who died by suicide had at least one circumstance of suicide intent or planning which includes: past history of suicide attempt (20%), past history of suicide thoughts or plans (20%) and recently disclosed suicide intentions (8%).

Circumstances preceding suicide, by age group, New York City, 2015-2016



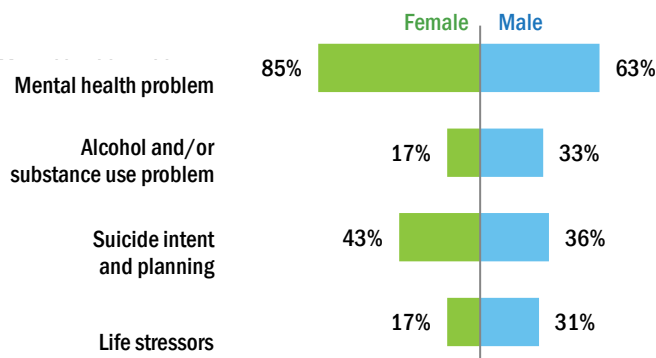
For this publication, life stressors include: physical health problem; job problem; financial problem; eviction or loss of home; death of family or friend; and legal problems. More than one circumstance may be present in each case.

Source: New York Violent Death Reporting System, (NYVDRS), 2015-2016

- Suicide intent or planning was more common among 45- to 64-year-olds compared with those 65 or older, but less common compared with those in younger age groups who died by suicide.
- Among 45- to 64-year-olds who died by suicide, 26% had a least one circumstance of life stressors.
- Life stressors were less commonly experienced by 45- to 64-year olds compared with those 65 or older who died by suicide.
- Life stressors among 45- to 64-year olds include: physical health problem (7%), job problem (9%), financial problem (7%), eviction or loss of home (2%), death of family or friend (5%) and legal problems (2%).

## Life stressors were more common among 45- to 64-year-old males than among females in the same age group

Circumstances preceding suicide, by sex, among 45-64 year old decedents, New York City, 2015-2016



For this publication, life stressors include: physical health problem; job problem; financial problem; eviction or loss of home; death of family or friend; and legal problems. More than one circumstance may be present in each case.

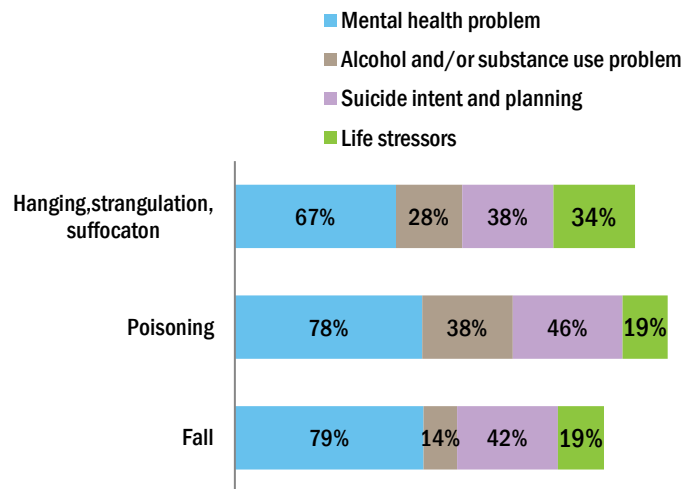
Source: New York Violent Death Reporting System, (NYVDRS), 2015-2016

- A mental health problem was more common among 45- to 64-year-old females, than among 45- to 64-year-old males (85% vs. 63%) who died by suicide in 2015-2016.
- An alcohol and/or substance use problem was more common among 45- to 64-year-old males compared with 45- to 64-year-old females (33% vs. 17%) who died by suicide.
- Among 45- to 64-year-olds, 43% of female decedents and 36% of male decedents had at least one circumstance of suicide intent or planning.
- Life stressors were more common among 45- to 64-year-old males than among 45- to 64-year-old females (31% vs. 17%) who died by suicide.

## Method of suicide differed by preceding circumstances among 45- to 64-year-olds

- From 2015-2016, among 45- to 64-year olds who died by hanging, strangulation or suffocation, 67% experienced a mental health problem. A similar proportion of 45- to 64-year old suicide-by-fall decedents (79%) and suicide-by-poisoning decedents (78%) experienced a mental health problem.
- Among 45- to 64-year-olds, an alcohol and/or substance use problem was more commonly experienced by suicide decedents who died by poisoning (38%) compared with decedents who died by falling (14%).
- Among 45- to 64-year-olds, 46% of suicide-by-poisoning decedents, 42% of suicide-by-fall decedents and 38% of decedents of hanging, strangulation or suffocation had at least one circumstance of suicide intent or planning.
- Among 45- to 64-year-olds, life stressors were more commonly experienced by decedents of suicide by hanging, strangulation or suffocation (34%), compared with decedents of suicide by fall (19%) or suicide by poisoning (19%).

Method of suicide by circumstance category, among 45-64 year old decedents, New York City, 2015-2016



For this publication, life stressors include: physical health problem; job problem; financial problem; eviction or loss of home; death of family or friend; and legal problems. More than one circumstance may be present in each case.

Source: New York Violent Death Reporting System, (NYVDRS), 2015-2016

### Confidential and free resources

For more information about treatment resources or to talk to someone directly if you or someone you know is experiencing a crisis, call 1-888 NYCWell (1-888-692-9355) or visit: [nycwell.cityofnewyork.us](http://nycwell.cityofnewyork.us)

**Authors:** Sheldon Radcliffe, Carla Clark, Catherine Stayton

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- Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. <https://www.cdc.gov/injury/wisqars/index.html>. Accessed March 27, 2019.

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New York City Department of Health and Mental Hygiene





# Epi Data Tables

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## Circumstances Preceding Suicide among the Middle-aged in New York City, 2015-2016

### Data Tables

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- Table 3.** Circumstances by age group, New York City, 2015-2016
- Table 4.** Circumstances by sex among 45-64 year old decedents, 2015-2016
- Table 5.** Circumstances by most common methods of suicide among 45-64 year old decedents, 2015-2016

### Data Source

**New York Violent Death Reporting System (NYVDRS), 2015-2016:** A CDC-funded state-based surveillance system linking information from three sources: death certificates, medical examiner files, and law enforcement information. The NVDRS-assigned manner of death is consistent with manner of death reported in at least one of the three sources. The New York City Health Department partnered with the New York State Department of Health to build and implement the New York contribution (NYVDRS) to this surveillance system in 2015.

**Table 1: Characteristics of suicide decedents with known circumstances by age group, New York City, 2015-2016**

Source: New York Violent Death Reporting System (NYVDRS), 2015-2016.

Demographics	All		10-17		18-24		25-44		45-64		65+	
	Count of suicides	Percent of Suicide	Count of suicides	Percent of Suicide	Count of suicides	Percent of Suicide	Count of suicides	Percent of Suicide	Count of suicides	Percent of Suicide	Count of suicides	Percent of Suicide
<b>Age group</b>												
10-17	17	2										
18-24	85	10										
25-44	271	31										
45-64	341	39										
65+	169	19										
<b>Sex/gender</b>												
Male	578	65	12	71	52	61	183	68	226	66	105	62
Female	302	34	5	29	31	36	87	32	115	34	64	38
Transgender	^	^	^	^	^	^	^	^	^	^	^	^
<b>Race/ethnicity*</b>												
Latino/a	197	22	8	47	29	34	63	23	70	21	27	16
White	447	51	^	^	^	^	122	45	186	55	114	67
Black	122	14	^	^	^	^	46	17	46	13	7	4
Other	117	13	^	^	^	^	40	15	39	11	21	12

For the purpose of this publication, Latino/a includes persons of Hispanic origin based on ancestry reported on the death certificate, regardless of reported race; Latino/a excludes reported ancestry from non-Spanish speaking Central/South American countries, and non-Spanish speaking Caribbean islands. Black, White, Asian, and Other race categories do not include persons of Latino/a origin.

Other race includes: Asian; Native Hawaiian or Pacific Islander; American Indian or Alaska Native and Unspecified Race.

^count less than five and have been suppressed.

**Table 2: Suicide method by age group among decedents with known circumstances, New York City, 2015-2016**

Source: New York Violent Death Reporting System (NYVDRS), 2015-2016

Demographics	All		10-17		18-24		25-44		45-64		65+	
	Count of suicides	Percent of Suicide	Count of suicides	Percent of Suicide	Count of suicides	Percent of Suicide	Count of suicides	Percent of Suicide	Count of suicides	Percent of Suicide	Count of suicides	Percent of Suicide
<b>Method</b>												
Hanging, strangulation, suffocation	368	42	9	53	41	48	112	41	144	42	62	37
Fall (jumping from a high place)	187	21	^	^	^	^	62	23	57	17	41	24
Poisoning	158	18	^	^	^	^	44	16	74	22	30	18
Firearm	82	9	^	^	^	^	25	9	27	8	24	14
Sharp instrument	37	4	^	^	^	^	13	5	18	5	6	4
Other transport vehicle	25	3	^	^	^	^	7	3	11	3	^	^
Drowning	18	2	^	^	^	^	^	^	8	2	^	^
Other method/unknown method	8	1	^	^	^	^	^	^	^	^	^	^

Other transport vehicle includes: trains, planes, boats.

Other method include: blunt instrument, fire or burns; motor vehicle including buses, motorcycles; or if a method type was classified as "Other" after it was determined that the method does not match any of the standard NVDRS categories (eg. taser, electrocution, nail gun).

^count less than five and have been suppressed.

**Table 3: Circumstances suicide by age group, New York City, 2015-2016**

Source: New York Violent Death Reporting System (NYVDRS), 2015-2016.

Demographics	All		10-17		18-24		25-44		45-64		65+	
	Percent	95% Confidence Interval	Percent	95% Confidence Interval	Percent	95% Confidence Interval	Percent	95% Confidence Interval	Percent	95% Confidence Interval	Percent	95% Confidence Interval
<b>Circumstances</b>												
Mental health problem	66	(62.79-69.15)	53	(27.81-77.02)	68	(57.24-77.92)	63	(57.05-68.86)	70	(65.23-75.18)	62	(54.36-69.47)
Alcohol and/or substance use problem	23	(20.04-25.67)	6	(0.15-28.69)	18	(10.23-27.43)	26	(20.72-31.47)	28	(23.16-32.94)	12	(7.38-17.68)
Suicide intent and planning <sup>‡</sup>	39	(35.95-42.49)	41	(18.44-67.08)	44	(32.80-54.72)	44	(37.55-49.67)	38	(33.23-43.81)	31	(24.45-38.93)
Life stressors <sup>‡</sup>	22	(19.50-25.09)	^	^	8	(3.38-16.23)	17	(13.03-22.39)	26	(21.79-31.41)	31	(23.91-38.32)

Circumstances are not mutually exclusive, within or between circumstance groups.

Mental health problem include those disorders and syndromes listed in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) exception of alcohol and other substance dependence or misuse.

Alcohol problem: decedent was perceived by self or others to have a problem with, or addicted to, alcohol.

Substance problem: decedent was perceived by self or others to have a problem with, or addicted to drugs other than alcohol.

For this publication, suicide intent and planning includes: suicide attempt; history of suicide thoughts, plans; and disclosed suicide intent

For this publication, life stressors include: physical health problem; job problem; financial problem; eviction or loss of home; death of family or friend; and legal problems.

<sup>^</sup>count less than five and have been suppressed.

**Table 4: Circumstances by sex among 45-64 year old decedents, 2015-2016**

Source: New York Violent Death Reporting System (NYVDRS), 2015-2016.

Demographics	All		Male		Female		p-value
	Percent Overall	95% Confidence Interval	Percent	95% Confidence Interval	Percent	95% Confidence Interval	
<b>Circumstances</b>							
Mental health problem	70	(65.23-75.23)	63	(56.17-69.15)	85	(77.39-91.35)	<b>&lt;0.0001</b>
Alcohol and/or substance use problem	28	(23.16-32.94)	33	(27.1-39.7)	17	(11.0-25.6)	<b>0.0021</b>
Suicide intent and planning <sup>2</sup>	38	(33.23-43.83)	36	(30.01-42.92)	43	(33.44-52.17)	0.2562
Life stressors <sup>2</sup>	26	(21.79-31.07)	31	(25.01-37.44)	17	(10.96-25.57)	<b>0.0071</b>

Circumstances are not mutually exclusive, within or between circumstance groups.

Mental health problem include those disorders and syndromes listed in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) exception of alcohol and other substance dependence or misuse.

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Substance problem: decedent was perceived by self or others to have a problem with, or addicted to drugs other than alcohol.

For this publication, suicide intent and planning includes: suicide attempt; history of suicide thoughts, plans; and disclosed suicide intent

For this publication, life stressors include: physical health problem; job problem; financial problem; eviction or loss of home; death of family or friend; and legal problems.

p-values below the significance level (0.05) appear in bold.



**Table 5: Circumstances by most common methods of suicide among 45-64 year old decedents, 2015-2016**

Source: New York Violent Death Reporting System (NYVDRS), 2015-2016.

Demographics	All Methods		Hanging, strangulation, suffocation		Poisoning		Fall		p-value
	Percent Overall	95% Confidence Interval	Percent	95% Confidence Interval	Percent	95% Confidence Interval	Percent	95% Confidence Interval	
<b>Circumstances</b>									
Mental health problem	70	(65.23-75.23)	67	(59.06-74.93)	78	(67.28-87.11)	79	(66.11-88.62)	0.1111
Alcohol and/or substance use problem	28	(23.16-32.94)	28	(20.64-35.85)	38	(26.81-49.87)	14	(6.26-25.79)	<b>0.0104</b>
Suicide intent and planning <sup>‡</sup>	38	(33.23-43.83)	38	(30.23-46.65)	46	(34.29-57.93)	42	(29.14-55.92)	0.5369
Life stressors <sup>‡</sup>	26	(21.79-31.07)	34	(26.35-42.38)	19	(10.75-29.70)	19	(10.05-31.91)	<b>0.0203</b>

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