

BRFSS Brief

Number 1905

The Behavioral Risk Factor Surveillance System (BRFSS) is an annual statewide telephone survey of adults developed by the Centers for Disease Control and Prevention and administered by the New York State Department of Health. The BRFSS is designed to provide information on behaviors, risk factors, and utilization of preventive services related to the leading causes of chronic and infectious diseases, disability, injury, and death among the noninstitutionalized, civilian population aged 18 years and older.

Awareness of Stroke Signs and Symptoms

New York State Adults, 2017

Introduction and Key Findings

Stroke occurs when blood flow to the brain is restricted because a blood vessel is blocked by a clot or a blood vessel bursts (aneurysm). Stroke is the fifth leading cause of death in the United States (US) and the fourth leading cause of death in New York State (NYS). In the US, approximately 142,000 people died of stroke in 2016, including 6,000 New Yorkers.¹⁻³ Stroke is also a significant cause of disability including paralysis, speech difficulties and emotional disturbances.^{3,4}

The onset of a stroke is often accompanied by numbness or weakness of the face, arm or leg on one side of the body; confusion and trouble speaking or understanding; trouble walking, dizziness or loss of balance or coordination; trouble seeing in one or both eyes; or severe headache without a known cause. Individuals who arrive at a hospital within three hours of the first stroke symptom onset can receive treatments that return blood flow to areas impacted by a clot. These stroke patients are more likely to be healthier three months after a stroke than those patients whose care is delayed.⁵ To ensure stroke victims receive timely care and reduce death and disability due to stroke, it is important to educate the public to be familiar with the symptoms of stroke, recognize signs of stroke in others and respond to signs and symptoms by calling 9-1-1 immediately. Emergency medical services personnel who respond to 9-1-1 are trained to recognize stroke and transport patients with suspected stroke to one of the more than 120 NYS designated stroke centers with expertise in caring for stroke patients.⁶

Key Findings

In 2017, 35.7% of NYS adults were able to recognize all five common signs and symptoms of stroke correctly and 30.9% were able to recognize all five symptoms and identify calling 9-1-1 as the first action to take in response to stroke. Awareness of all five stroke warning signs and symptoms was significantly lower among males, Hispanics, adults with household incomes less than \$50,000, adults with a disability, adults with no health care coverage, and adults who live in New York City. Eighty-five percent of adults correctly identified calling 9-1-1 as the first action to take when responding to stroke symptoms. The percentage of adults identifying 9-1-1 correctly did not vary across demographic groups within the population.

BRFSS questions

Stroke awareness questions:

Which of the following do you think is a symptom of stroke? For each, tell me "Yes", "No", or you're "Not sure".

1. Do you think sudden confusion or trouble speaking are symptoms of a stroke?
2. Do you think sudden numbness or weakness of face, arm, or leg, especially on one side, are symptoms of a stroke?
3. Do you think sudden trouble seeing in one or both eyes is a symptom of a stroke?
4. Do you think sudden trouble walking, dizziness, or loss of balance are symptoms of a stroke?
5. Do you think severe headache with no known cause is a symptom of a stroke?

Respondents were identified as "aware" of each of the five valid stroke awareness questions if they answered "yes" to the question about that symptom.

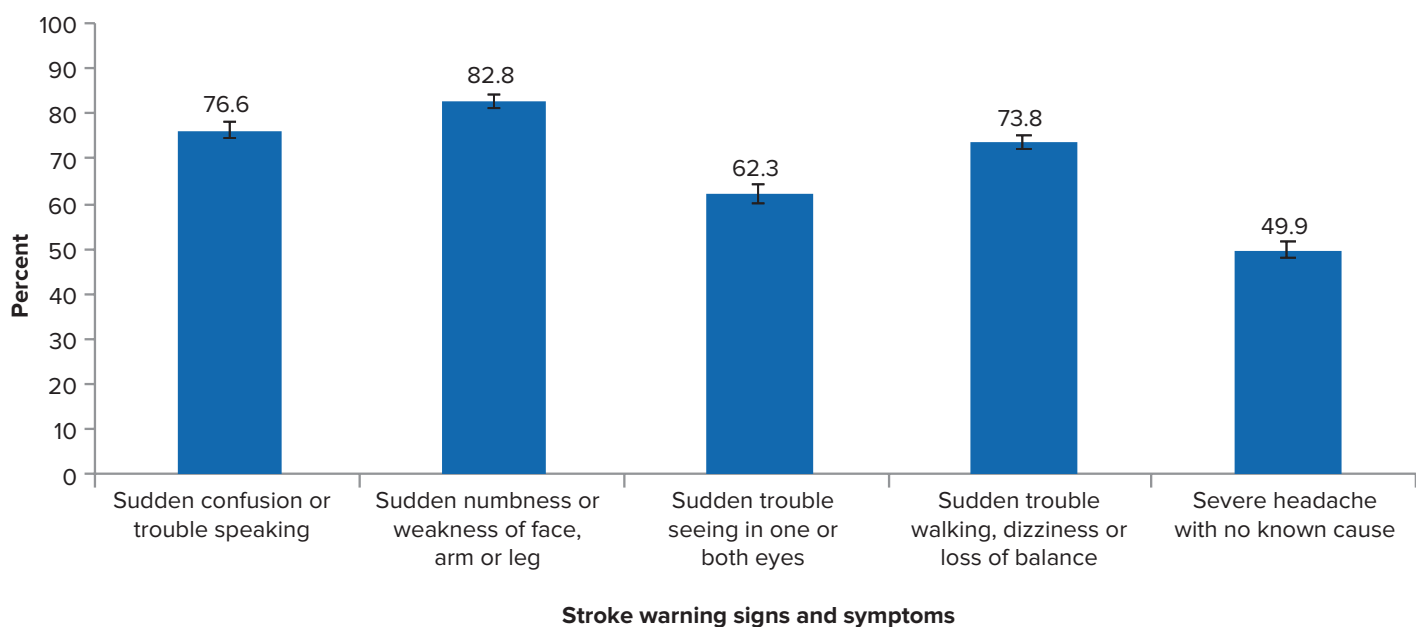
Respondents were also asked the following question to measure the public's awareness to call 9-1-1 when they thought someone was having a stroke:

If you thought someone was having a stroke, what is the first thing you would do?

Response choices:

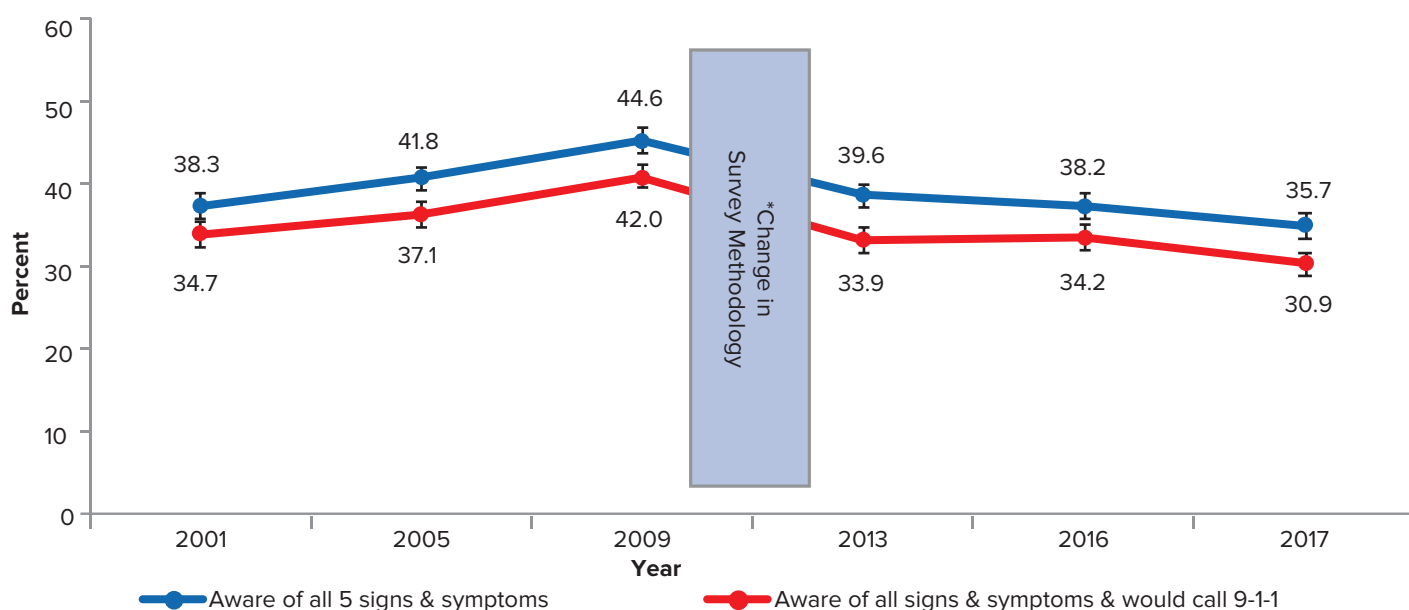
1. take them to the hospital
2. tell them to call their doctor
3. call 9-1-1
4. call their spouse or a family member
5. do something else

Figure 1. Percentage of New York State adults aged 18 and older aware of certain warning signs and symptoms, BRFSS 2017



Note: Error bars represent 95% confidence intervals.

Figure 2. Percentage of New York State adults with recognition of stroke symptoms, by BRFSS survey year from 2001 to 2017



Note: Error bars represent 95% confidence intervals.

*Data from 2013 and 2016 are not comparable to prior years because of changes to the BRFSS methods in 2011. See the following link for more information on these changes: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6122a3.htm?s_cid=mm6122a3_w

Awareness of certain stroke warning signs and symptoms and of calling "9-1-1" as the first action to take, among New York State adults^a, 2017 BRFSS

	Aware of all five signs and symptoms [§]		Calling 9-1-1 identified as first action		Aware of all five signs and symptoms and indicated calling 9-1-1 as first action	
	% ^b	95% CI ^b	%	95% CI	%	95% CI
New York State (NYS) [n=5,811]	35.7	33.9-37.5	85.2	83.8-86.6	30.9	29.2-32.7
Sex						
Male	30.3	27.9-32.9	83.6	81.4-85.5	25.7	23.4-28.2
Female	40.7	38.1-43.2	86.8	84.8-88.5	35.8	33.3-38.3
Age (years)						
18-24	31.7	25.5-38.7	79.7	73.3-84.9	26.9	21.0-33.7
25-34	29.8	25.3-34.6	86.3	82.2-89.6	25.6	21.4-30.2
35-44	37.0	32.2-42.1	88.3	84.8-91.1	32.6	28.0-37.6
45-54	36.2	32.2-40.5	87.3	84.0-90.0	32.4	28.5-36.5
55-64	41.6	37.7-45.7	87.7	84.8-90.1	36.7	32.9-40.7
65+	36.9	33.8-40.1	81.3	78.4-83.9	30.8	27.9-33.8
Race, Ethnicity						
White	42.1	39.8-44.5	85.9	84.2-87.5	36.5	34.2-38.8
Black	34.9	29.7-40.6	85.7	80.8-89.6	31.8	26.7-37.4
Hispanic	21.9	18.2-26.1	82.2	78.2-85.6	19.0	15.5-23.1
Other	23.1	17.9-29.3	86.2	81.0-90.1	19.9	15.0-25.9
Annual Household Income						
<\$25,000	23.6	20.6-26.9	84.1	81.1-86.7	19.3	16.5-22.4
\$25,000-\$49,999	34.8	31.0-38.8	83.5	79.7-86.7	30.0	26.4-33.8
\$50,000 and greater	45.5	42.7-48.4	87.6	85.7-89.2	40.3	37.6-43.2
missing ^c	25.3	20.6-30.7	81.8	76.3-86.2	21.5	17.3-26.5
Educational Attainment						
Less than high school (HS)	—	—	—	—	—	—
High school or GED	31.1	27.6-34.8	86.9	84.1-89.4	26.6	23.3-30.3
Some college	37.6	33.9-41.4	85.2	82.1-87.9	33.5	30.0-37.2
College graduate	45.9	43.2-48.7	86.2	84.2-87.9	39.8	37.1-42.6
Health Care Coverage						
Private	41.6	38.9-44.2	87.1	85.2-88.8	36.7	34.1-39.3
Medicare	35.0	31.4-38.7	83.9	80.6-86.6	30.1	26.8-33.6
Medicaid	31.4	26.6-36.7	85.2	80.6-88.8	25.6	21.2-30.7
Other insurance ^d	34.4	26.7-43.0	84.6	77.6-89.7	29.0	21.9-37.5
No coverage	16.1	12.4-20.7	78.9	73.0-83.9	13.7	10.3-18.1
Disability Status^e						
Yes	30.5	27.1-34.1	85.1	82.1-87.7	26.4	23.2-29.9
No	37.2	35.2-39.4	85.3	83.6-86.8	32.3	30.3-34.4
Region						
NYS excluding NYC	40.8	38.5-43.2	85.1	83.3-86.8	35.0	32.8-37.3
New York City	27.0	24.3-29.9	85.4	83.0-87.5	24.1	21.5-26.9

§ Five signs and symptoms: 1) sudden confusion or trouble speaking; 2) sudden numbness or weakness of face, arm, leg, esp. on one side; 3) sudden trouble seeing in one or both eyes; 4) sudden trouble walking, dizziness, or loss of balance; and 5) severe headache with no known cause.

a Rows with less than 50 observations and rows that contain a confidence interval with a half-width or greater than 10 have been suppressed.

b % = weighted percentage; CI = confidence interval

c "Missing" category included because more than 10% of the sample did not report income.

d Includes TRICARE, VA/Military, and Indian Health Services.

e Respondents who reported at least one type of disability (cognitive, self-care, independent living, vision, mobility, or hearing).

References

1. National Center for Health Statistics. Health, United States, 2017: With special feature on mortality. Hyattsville, Maryland. 2018.
2. Mozzafarian D, Benjamin EJ, Go AS, et al. Heart disease and stroke statistics—2016 update: a report from the American Heart Association. *Circulation*. 2016;133:e38-360.
3. New York State Department of Health Vital Statistics, 2016; table 33a. Available at https://www.health.ny.gov/statistics/vital_statistics/2016/table33a.htm Accessed on November 5, 2018.
4. Heron M. Deaths: Leading causes for 2016. National Vital Statistics Reports; vol 67 no 6. Hyattsville, MD: National Center for Health Statistics. 2018.
5. Lloyd-Jones D, Adams R, Carnethon M, et al. Heart Disease and Stroke Statistics—2009 Update. A Report From the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. *Circulation*. 2009;119:e21–e181.
6. New York State Department of Health Designated Stroke Centers https://profiles.health.ny.gov/hospital/designated_center/Stroke+Center

Program Contributions

New York State Department of Health
Bureau of Chronic Disease Evaluation and Research
Bureau of Chronic Disease Control

Order Information

Copies may be obtained by contacting:

BRFSS Coordinator
New York State Department of Health
Bureau of Chronic Disease Evaluation and Research
Empire State Plaza
Corning Tower, Rm. 1070
Albany, NY 12237-0679

Or by phone or electronic mail:

(518) 473-0673
or
BRFSS@health.ny.gov
or
www.health.ny.gov



Department
of Health