

BRFSS Brief

Number 1501

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, 2013

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 fourth and fifth leading cause of death in New York State (NYS) and the United States (US), respectively, and a cause of significant disability, including paralysis, speech difficulties, and emotional problems.¹⁻³ In the US, approximately 129,000 people died from stroke in 2012, and 6,000 of those people were New Yorkers.^{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 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 staff members who respond to 9-1-1 are trained to recognize stroke patients and transport them to one of over 100 state-designated stroke centers in NYS with special expertise in caring for stroke patients.⁶

Key Findings

In 2013, two out of five NYS adults (39.6%) recognized all five common signs and symptoms of stroke correctly, and only one-third (33.9%) recognized all five stroke signs and symptoms and identified calling 9-1-1 as the first action to take in response to stroke. NYS adults with household incomes less than \$50,000, adults with less than a college degree, adults who have not been diagnosed with high blood pressure, and adults who live in the New York City region were significantly less likely to be aware of all five stroke signs and symptoms. Males were significantly less likely to be aware of all five signs and symptoms and calling 9-1-1 as the first action to take responding to stroke symptoms. In addition, Hispanics and those with Medicaid or no insurance coverage were less likely than others to be aware of all five signs and symptoms and/or calling 9-1-1 as the first action to take responding to stroke signs and symptoms.

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.

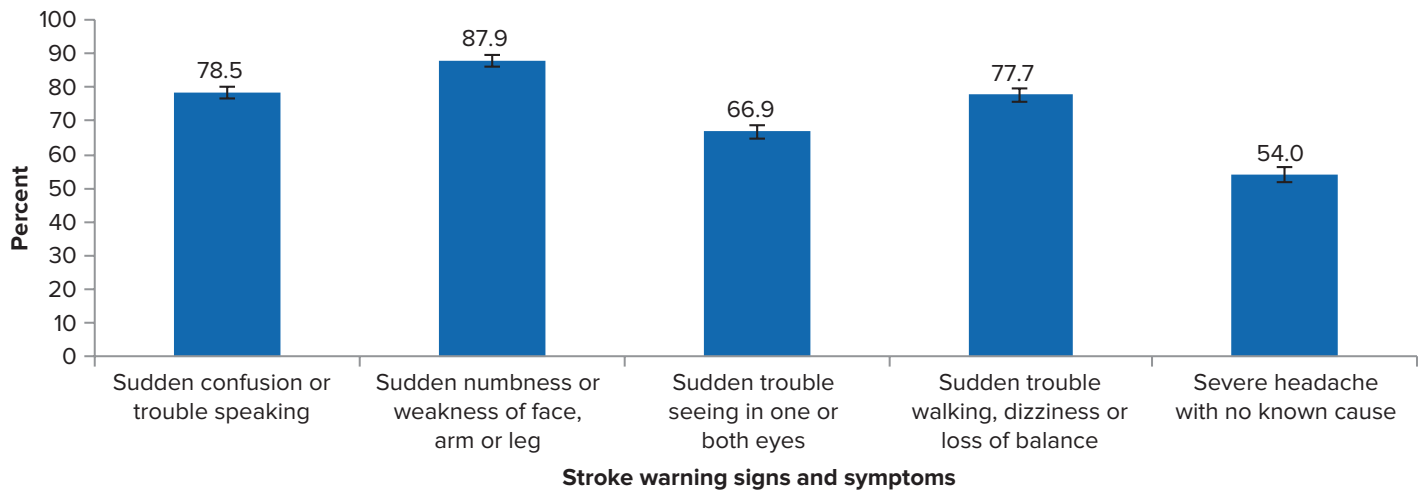
Respondents were also asked the following question to measure the public's awareness to call 9-1-1 when they thought someone was having a stroke:

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

Response choices:

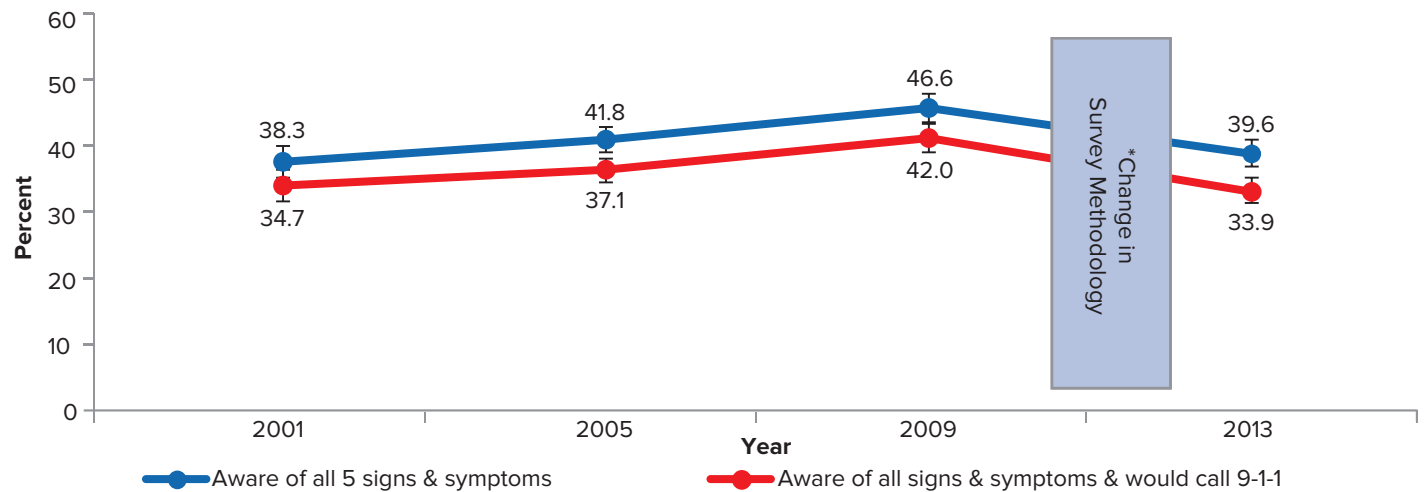
1. take them to the hospital
2. tell them to call their doctor
3. call 9-1-1
4. call their spouse or a family member
5. do something else

Figure 1. Percentage of adults aged 18 and older aware of certain stroke warning signs and symptoms, New York State BRFSS 2013



Note: Error bars represent 95% confidence intervals.

Figure 2. Trends in recognition of stroke symptoms among adults, New York State BRFSS



Note: Error bars represent 95% confidence intervals.

*Beginning in 2011, BRFSS data includes data from interviews completed by people with cell phones in addition to interviews completed by people with landlines. The data also reflect changes in how the Centers for Disease Control (CDC) weight the data. Weighting ensures that the data collected are as representative of New York's population as possible. The new method of weighting enables more demographic information about the respondents to be incorporated into the weighting. While these two changes improve the accuracy of the BRFSS, they may result in prevalence estimates that are significantly different from those previously calculated. **Because of the differences in data collection, it is not appropriate to compare 2013 data to prior years and the BRFSS 2013 prevalence data should be considered a baseline year for data analysis.**

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, 2013 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	
	%	95% CI†	%	95% CI	%	95% CI
New York State (NYS) [n=4,292]	39.6	37.6-41.7	85.6	84.0-87.1	33.9	32.0-35.9
Sex						
Male	35.6	32.6-38.7	83.7	81.2-85.9	28.9	26.1-31.8
Female	43.4	40.7-46.2	87.4	85.2-89.3	38.6	36.0-41.3
Age (years)						
18-24	33.0	25.7-41.2	80.5	72.6-86.6	27.8	21.0-35.8
25-34	31.8	27.1-36.9	87.7	83.7-90.8	27.9	23.4-32.8
35-44	35.5	30.7-40.6	86.4	81.9-89.8	30.4	25.9-35.3
45-54	43.8	39.2-48.5	89.4	86.3-91.8	39.3	34.9-44.0
55-64	47.7	43.1-52.2	87.1	83.9-89.7	41.8	37.3-46.4
65+	43.4	39.8-47.1	81.9	78.8-84.6	34.3	30.9-37.8
Race						
White non-Hispanic	44.1	41.6-46.7	85.5	83.5-87.4	37.6	35.1-40.1
Black non-Hispanic	36.8	31.3-42.8	87.8	83.5-91.1	31.7	26.4-37.5
Hispanic	28.5	23.7-33.8	82.2	77.2-86.2	24.4	19.8-29.5
Other non-Hispanic	36.7	29.0-45.2	87.6	81.3-92.0	32.0	24.5-40.5
Income						
<\$25,000	31.7	28.1-35.6	85.0	81.8-87.8	25.7	22.4-29.3
\$25,000-\$49,999	37.9	33.4-42.7	86.8	83.4-89.6	33.1	28.7-37.8
\$50,000 and greater	48.5	45.3-51.6	87.5	85.4-89.3	42.4	39.3-45.6
missing	31.8	26.5-37.6	79.7	73.2-85.1	26.3	21.4-31.8
Education						
Less than high school (HS)	26.0	20.1-32.9	80.0	72.7-85.7	21.8	16.3-28.5
High school or GED	35.2	31.3-39.3	86.5	83.6-89.0	30.3	26.5-34.3
Some college	40.9	37.1-44.9	86.0	83.1-88.5	34.6	30.9-38.5
College graduate	48.4	45.3-51.5	87.1	84.9-89.0	41.8	38.8-44.9
Region						
NYS excluding NYC	45.1	42.4-47.8	84.9	82.7-86.9	38.8	36.2-41.5
New York City	32.0	29.1-35.1	86.6	84.2-88.7	27.1	24.3-30.0
Diagnosed with High Blood Pressure						
Yes	44.5	41.1-48.0	84.3	81.7-86.5	37.8	34.5-41.2
No	37.5	35.0-40.0	86.3	84.2-88.1	32.2	29.9-34.7
Insurance Status						
Private	45.6	42.8-48.5	88.0	86.2-89.7	40.5	37.7-43.3
Medicare	40.1	36.0-44.4	81.5	77.8-84.7	31.1	27.3-35.1
Medicaid	29.2	22.9-36.5	87.9	82.2-92.0	23.4	17.8-30.2
Other government assistance plans	35.4	32.0-38.9	89.4	81.4-94.3	28.9	20.5-39.0
Other insurances	33.6	26.6-41.5	87.8	81.8-92.1	29.6	22.9-37.4
No coverage	27.0	21.0-34.0	77.9	70.9-83.5	22.4	16.7-29.2

§ 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.

† Confidence interval.

References

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3. New York State Department of Health Vital Statistics, 2012; table 31a. Available at http://www.health.ny.gov/statistics/vital_statistics/2012/table33a.htm Accessed on April 16, 2015.
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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 <http://www.health.ny.gov/nysdoh/ems/stroke/stroke.htm>.

Program Contributions

New York State Department of Health
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Bureau of Chronic Disease Control

Order Information

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