

BRFSS Brief

Number 1105

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 2009

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 leading cause of death in the United States and New York State and a cause of significant disability, including paralysis, speech difficulties, and emotional problems.¹ In the United States, approximately 137,000 people die from stroke annually.² In 2008, nearly 6,000 New Yorkers died from stroke.³

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.⁴ To ensure stroke victims receive timely care and reduce death and disability due to stroke, it is important to educate the public to recognize the signs and symptoms of stroke and to respond 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 with special expertise in caring for stroke patients.⁵

Although public awareness of the signs and symptoms of stroke increased since 2001, less than half of New York State adults in 2009 recognized five common symptoms of stroke correctly and identified calling 9-1-1 as the first action to take in response to stroke.

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.

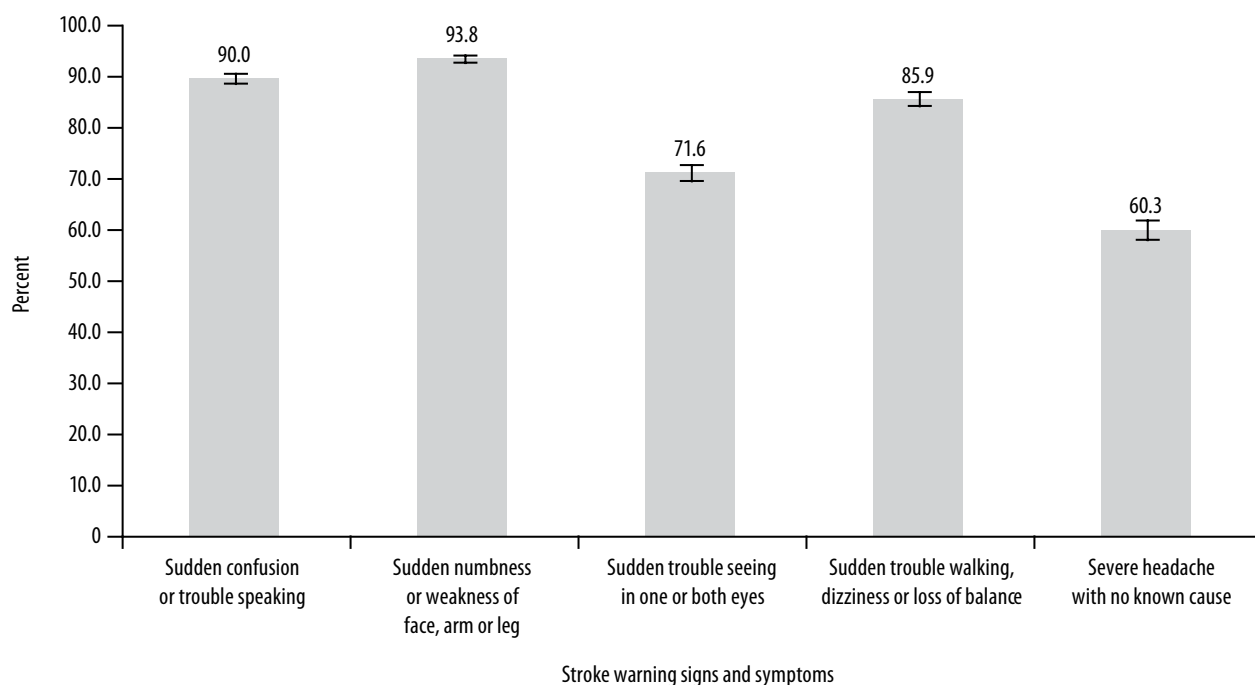
Respondents were also asked the following question to measure the public's awareness to call 9-1-1 when they thought someone was having a heart attack or stroke:

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

Response choices:

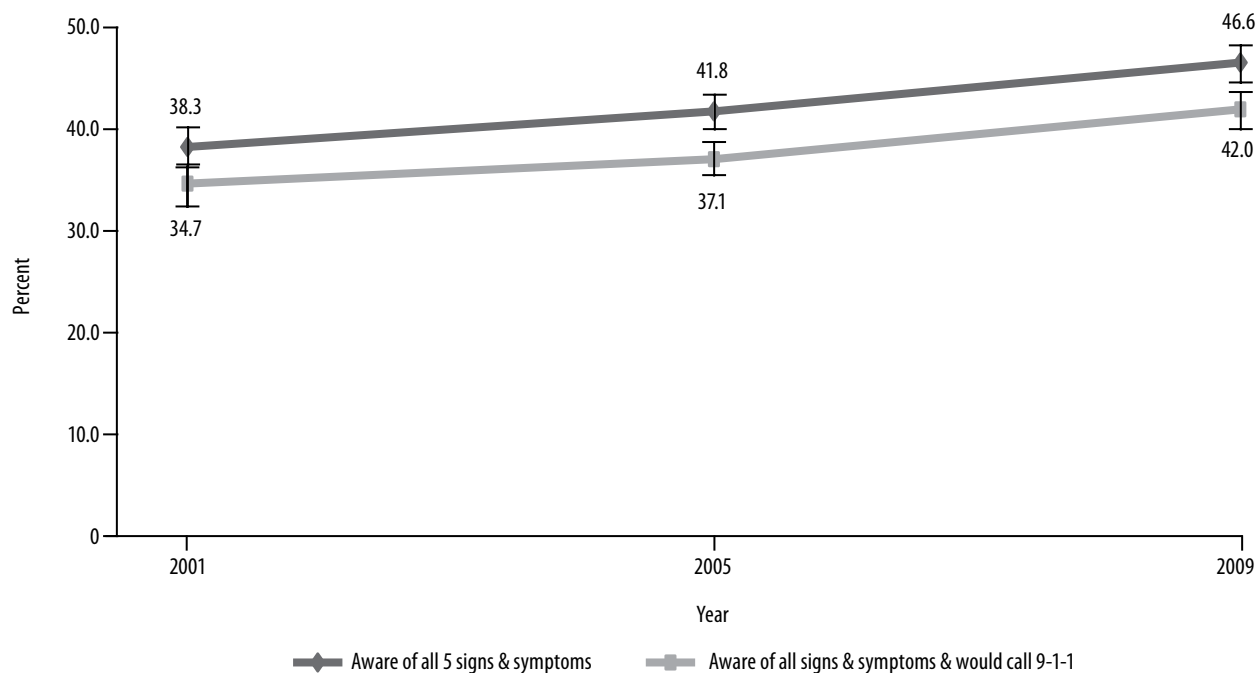
1. take them to the hospital
2. tell them to call their doctor
3. call 9-1-1
4. call their spouse or a family member
5. do something else

Percentage of adults aged 18 and older aware of certain stroke signs and symptoms: 2009 New York State BRFSS



Note: Error bars represent 95% confidence intervals.

Trends in recognition of stroke symptoms among adults: New York State BRFSS



Note: Error bars represent 95% confidence intervals.

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, 2009 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=3,491]	46.6	44.4-48.8	89.3	87.7-90.7	42.0	39.8-44.2
Sex						
Male	45.6	42.1-49.2	86.4	83.6-88.7	39.4	36.0-42.9
Female	47.5	44.8-50.3	91.9	90.1-93.5	44.3	41.5-47.0
Age						
18-24	41.2*	30.6-52.7	87.1	75.7-93.6	34.2*	24.5-45.4
25-34	38.1	31.9-44.7	91.0	85.1-94.7	35.3	29.4-41.7
35-44	48.2	43.2-53.4	89.9	86.0-92.8	43.8	38.7-48.9
45-54	53.8	49.3-58.2	91.0	88.0-93.3	49.1	44.6-53.6
55-64	52.2	47.9-56.5	88.7	85.7-91.2	46.9	42.6-51.3
65+	41.4	38.0-44.9	86.6	84.0-88.8	36.6	33.3-40.0
Race						
White	50.6	48.1-53.1	90.0	88.3-91.5	45.9	43.5-48.4
Black	44.3	36.2-52.6	88.3	80.6-93.2	40.9	33.1-49.3
Hispanic	30.9	24.0-38.7	88.3	81.7-92.8	26.2	19.9-33.5
Other	27.4*	18.7-38.1	86.0	74.8-92.7	23.2*	15.8-32.8
Income						
<\$15,000	33.7	26.0-42.4	90.8	84.8-94.6	30.4	22.9-39.1
\$15,000-\$24,999	38.1	32.4-44.1	91.2	87.7-93.8	35.1	29.5-41.2
\$25,000-\$34,999	37.4	30.8-44.5	84.2	76.2-89.8	34.0	27.7-41.0
\$35,000-\$49,999	43.7	37.8-49.6	90.2	86.4-93.1	40.3	34.6-46.2
\$50,000-\$74,999	50.5	44.4-56.6	88.6	83.0-92.5	45.4	39.4-51.5
\$75,000 and greater	56.1	52.1-60.0	89.7	86.6-92.2	49.5	45.5-53.5
Missing	40.2	34.3-46.3	89.0	85.1-92.0	37.2	31.4-43.4
Education						
Less than high school (HS)	23.1	16.5-31.2	87.5	79.4-92.7	21.7*	15.3-30.0
High school or GED	37.0	32.8-41.3	89.9	86.9-92.2	33.3	29.3-37.6
Some college	52.5	47.9-57.0	88.4	84.9-91.2	46.9	42.4-51.5
College graduate	53.2	49.8-56.5	90.0	87.4-92.1	48.0	44.6-51.4
Region						
NYS excluding NYC	49.3	46.8-51.9	89.6	87.8-91.1	44.0	41.5-46.5
New York City	39.3	35.1-43.7	88.7	85.1-91.5	36.5	32.4-40.8
Diagnosed with High Blood Pressure						
Yes	48.0	44.2-51.7	88.2	85.4-90.6	42.5	38.8-46.2
No	46.2	43.4-48.9	89.7	87.7-91.4	41.8	39.2-44.5

§ 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.

* Estimates based on fewer than 50 observations.

References

1. Centers for Disease Control and Prevention: Stroke Signs and Symptoms. http://www.cdc.gov/stroke/signs_symptoms.htm
2. Heron MP, Hoyert DL, Murphy SL, Xu JQ, Kochanek KD, Tejada-Vera B. Deaths: Final data for 2006, *National Vital Statistics Reports* 2009;57(14):1–15
3. New York State Department of Health Vital Statistics, 2008; table 31a.
4. 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.
5. New York State Department of Health Designated Stroke Centers <http://www.health.ny.gov/nysdoh/ems/stroke/stroke.htm>

Program Contributions

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