

**NQF ENDORSED VOLUNTARY CONSENSUS STANDARDS FOR HOSPITAL CARE**

**Measure Information Form  
Collected For: The Joint Commission Only  
CMS Informational Only**

**Measure Set:** Stroke (STK)

**Set Measure ID #:** STK-8

**Performance Measure Name:** Stroke Education

**Description:** Ischemic or hemorrhagic stroke patients or their caregivers who were given educational materials during the hospital stay addressing **all** of the following: activation of emergency medical system, need for follow-up after discharge, medications prescribed at discharge, risk factors for stroke, and warning signs and symptoms of stroke.

**Rationale:** There are many examples of how patient education programs for specific chronic conditions have increased healthful behaviors, improved health status, and/or decreased health care costs of their participants. Clinical practice guidelines include recommendations for patient and family education during hospitalization as well as information about resources for social support services. Some clinical trials have shown measurable benefits in patient and caregiver outcomes with the application of education and support strategies. The type of stroke experienced and the resulting outcomes will play a large role in determining not only the course of treatment but also what education will be required. Patient education should include information about the event (e.g., cause, treatment, and risk factors), the role of various medications or strategies, as well as desirable lifestyle modifications to reduce risk or improve outcomes. Family/caregivers will also need guidance in planning effective and realistic care strategies appropriate to the patient's prognosis and potential for rehabilitation.

**Type of Measure:** Process

**Improvement Noted As:** An increase in rate

**Numerator Statement:** Ischemic or hemorrhagic stroke patients with documentation that they or their caregivers were given educational material addressing **all** of the following:

1. Activation of emergency medical system
2. Follow-up after discharge
3. Medications prescribed at discharge
4. Risk factors for stroke
5. Warning signs and symptoms of stroke

**Included Populations:** Not applicable

**Excluded Populations:** None

**Data Elements:**

- *Education Addresses Activation of Emergency Medical System*
- *Education Addresses Follow-up After Discharge*
- *Education Addresses Medications Prescribed at Discharge*
- *Education Addresses Risk Factors for Stroke*
- *Education Addresses Warning Signs and Symptoms of Stroke*

**Denominator Statement:** Ischemic stroke or hemorrhagic stroke patients discharged home.

**Included Populations:**

- Discharges with an *ICD-9-CM Principal Diagnosis Code* for ischemic or hemorrhagic stroke as defined in Appendix A, Table 8.1 or Table 8.2.
- A discharge to home, home care or court/law enforcement

**Excluded Populations:**

- Patients less than 18 years of age
- Patients who have a Length of Stay greater than 120 days
- Patients with *Comfort Measures Only* documented
- Patients enrolled in clinical trials
- Patients admitted for *Elective Carotid Intervention*

**Data Elements:**

- *Admission Date*
- *Birthdate*
- *Clinical Trial*
- *Comfort Measures Only*
- *Discharge Date*
- *Discharge Disposition*
- *Elective Carotid Intervention*
- *ICD-9-CM Principal Diagnosis Code*

**Risk Adjustment:** No

**Data Collection Approach:** Retrospective data sources for required data elements include administrative data and medical records.

**Data Accuracy:** Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.

**Measure Analysis Suggestions:** None

**Sampling:** Yes, please refer to the measure set specific sampling requirements and for additional information see the Population and Sampling Specifications section.

**Data Reported As:** Aggregate rate generated from count data reported as a proportion

**Selected References:**

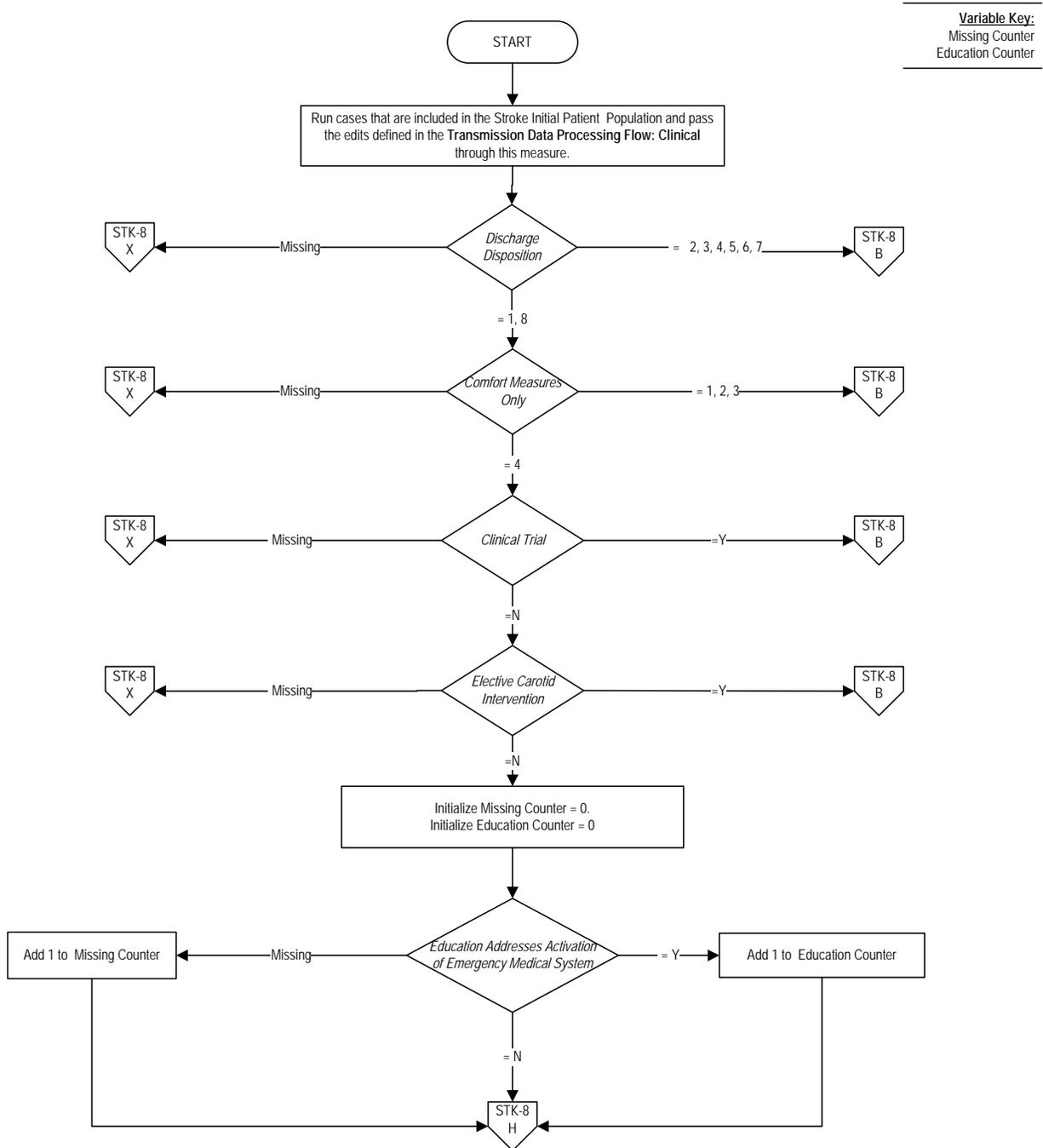
- Duncan et al, Stroke Rehabilitation Clinical Practice Guidelines *Stroke*. 2005;36:e100-e143.
- Evans RL, Matlock AL, Bishop DS, Stranahan S, Pederson C. Family intervention after stroke: Does counseling or education help?, *Stroke* 1988;19:1243-1249.
- Kaiser Permanente Clinical Practice Guidelines for Acute Stroke, Kaiser Permanente Medical Group, 1998.
- Lorig KR, Sobel DS, Stewart AL, et al. Evidence suggesting that a chronic disease self-management program can improve health status while reducing hospitalization: A randomized trial. *Medical Care* 1999;37:5-14.
- Post Stroke Rehabilitation, Clinical Practice Guideline No.16, Agency for Health Care Policy and Research (now known as Agency for Healthcare Research and Quality), 1995.

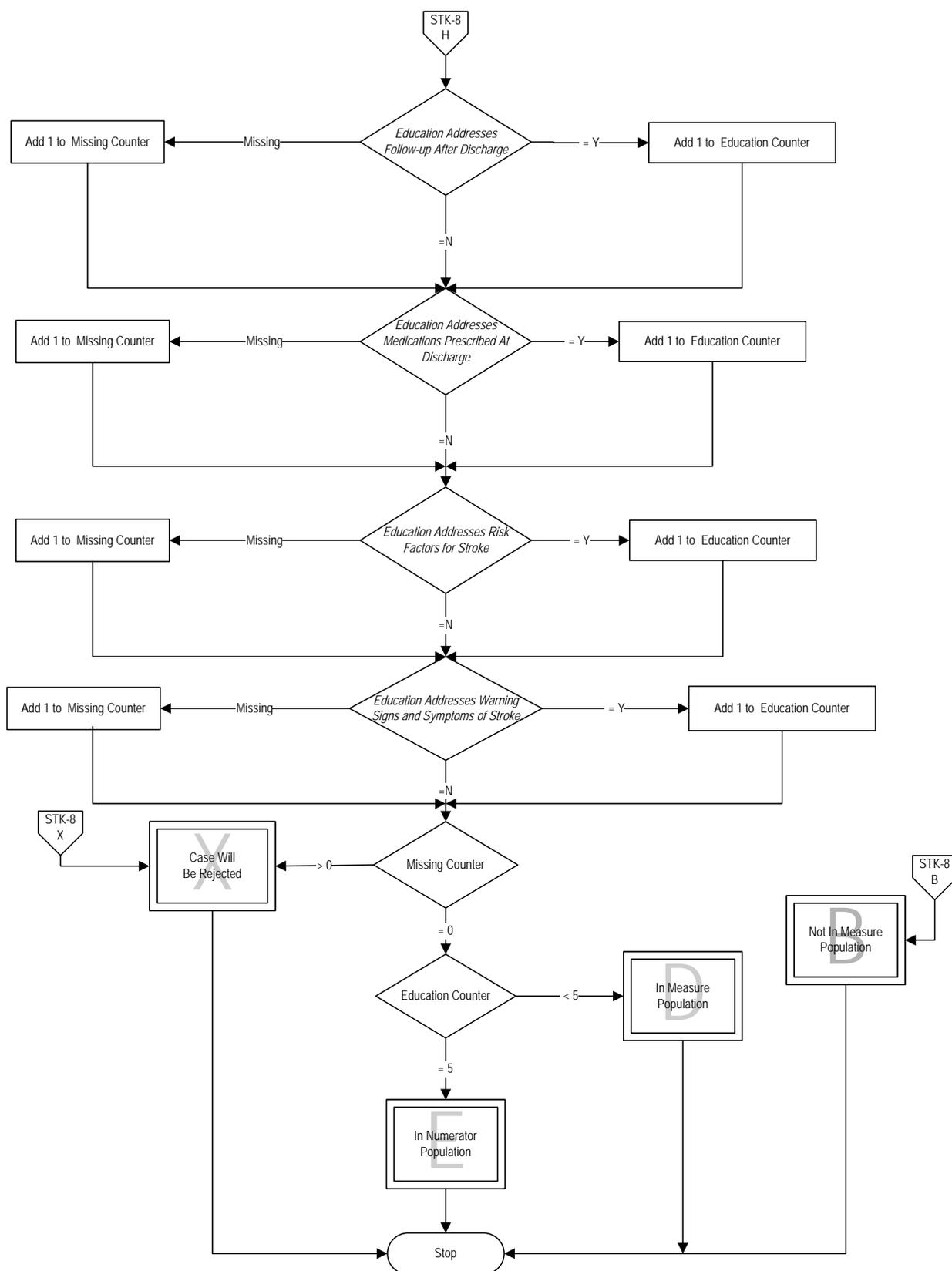
## STK - 8: Stroke Education

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1. Activation of emergency medical system
2. Follow-up after discharge
3. Medications prescribed at discharge
4. Risk factors for stroke
5. Warning signs and symptoms of stroke

**Denominator:** Ischemic stroke or hemorrhagic stroke patients discharged home.





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1. Activation of emergency medical system
2. Follow-up after discharge
3. Medications prescribed at discharge
4. Risk factors for stroke
5. Warning signs and symptoms of stroke

**Denominator:** Ischemic stroke or hemorrhagic stroke patients discharged home.

Variable Key: Missing Counter, Education Counter

1. Start processing. Run cases that are included in the Stroke (STK) Initial Patient Population and pass the edits defined in the Transmission Data Processing Flow: Clinical through this measure.
2. Check Discharge Disposition
  - a. If Discharge Disposition equals 2, 3, 4, 5, 6, 7 the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
  - b. If Discharge Disposition equals 1, 8 continue processing and proceed to Comfort Measures Only.
3. Check Comfort Measures Only
  - a. If Comfort Measures Only is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
  - b. If Comfort Measures Only equals 1, 2, or 3, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
  - c. If Comfort Measures Only equals 4, continue processing and proceed to Clinical Trial.
4. Check Clinical Trial
  - a. If Clinical Trial is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
  - b. If Clinical Trial equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
  - c. If Clinical Trial equals No, continue processing and proceed to Elective Carotid Intervention.

5. Check admitted for Elective Carotid Intervention
  - a. If Elective Carotid Intervention is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
  - b. If Elective Carotid Intervention equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
  - c. If Elective Carotid Intervention equals No, continue processing and initialize missing and education counters.
  
6. Initialize Missing Counter and Education Counter. Set both counters equal to zero. Continue processing and proceed to Education Addresses Activation of Emergency Medical System.
  
7. Check Education Addresses Activation of Emergency Medical System
  - a. If Education Addresses Activation of Emergency Medical System is missing, add one to the Missing Counter. Continue processing and proceed to Education Addresses Follow-up After Discharge.
  - b. If Education Addresses Activation of Emergency Medical System equals Yes, add one to the Education Counter. Continue processing and proceed to Education Addresses Follow-up After Discharge.
  - c. If Education Addresses Activation of Emergency Medical System equals No, continue processing and proceed to Education Addresses Follow-up After Discharge.
  
8. Check Education Addresses Follow-up After Discharge
  - a. If Education Addresses Follow-up After Discharge is missing, add one to the Missing Counter. Continue processing and proceed to Education Addresses Medications Prescribed At Discharge.
  - b. If Education Addresses Follow-up After Discharge equals Yes, add one to the Education Counter. Continue processing and proceed to Education Addresses Medications Prescribed At Discharge.
  - c. If Education Addresses Follow-up After Discharge equals No, continue processing and proceed to Education Addresses Medications Prescribed At Discharge.
  
9. Check Education Addresses Medications Prescribed At Discharge
  - a. If Education Addresses Medications Prescribed At Discharge is missing, add one to the Missing Counter. Continue processing and proceed to Education Addresses Risk Factors for Stroke.

- b. If Education Addresses Medications Prescribed At Discharge equals Yes, add one to the Education Counter. Continue processing and proceed to Education Addresses Risk Factors for Stroke.
  - c. If Education Addresses Medications Prescribed At Discharge equals No, continue processing and proceed to Education Addresses Risk Factors for Stroke.
- 10. Check Education Addresses Risk Factors for Stroke
  - a. If Education Addresses Risk Factors for Stroke is missing, add one to the Missing Counter. Continue processing and proceed to Education Addresses Warning Signs and Symptoms of Stroke.
  - b. If Education Addresses Risk Factors for Stroke equals Yes, add one to the Education Counter. Continue processing and proceed to Education Addresses Warning Signs and Symptoms of Stroke.
  - c. If Education Addresses Risk Factors for Stroke equals No, continue processing and proceed to Education Addresses Warning Signs and Symptoms of Stroke.
- 11. Check Education Addresses Warning Signs and Symptoms of Stroke
  - a. If Education Addresses Warning Signs and Symptoms of Stroke is missing, add one to the Missing Counter. Continue processing and proceed to the Missing Counter.
  - b. If Education Addresses Warning Signs and Symptoms of Stroke equals Yes, add one to the Education Counter. Continue processing and proceed to the Missing Counter.
  - c. If Education Addresses Warning Signs and Symptoms of Stroke equals No, continue processing and proceed to the Missing Counter.
- 12. Check Missing Counter
  - a. If the Missing Counter is greater than zero, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
  - b. If the Missing Counter equals zero, continue processing and proceed to Education Counter.
- 13. Check Education Counter
  - a. If the Education Counter is less than five, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing.
  - b. If the Education Counter equals five, the case will proceed to a Measure Category Assignment of E and will be in the Numerator Population. Stop processing.