

Online Supplemental Materials

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Table 1. Chinese Stroke Center Alliance Data Elements

Category	Example Elements
Patient demographics	Age, gender, ethnic, insurance status, family income
Medical history	Hypertension, diabetes mellitus, atrial fibrillation, dyslipidemia, cervical arterial stenosis, peripheral arterial disease, prior stroke/TIA, smoking, drinking, others
Medication history	Antiplatelet, anticoagulant, antihypertension, hypoglycemic drug, statin, traditional Chinese medicine
Hospital presentation	Location of symptom onset, time of last seen well or symptom onset, transfer model, arrival date/time, admission date/time
Initial neurological status	NIHSS at arrival and admission
Medications and interventions	Intravenous thrombolysis, endovascular treatment, early antithrombotic, antithrombotic at discharge, anticoagulant for patients with atrial fibrillation, antihypertensive medications for patients with hypertension disease, hypoglycemic medications for patients with diabetes mellitus, statin therapy, deep vein thrombosis prophylaxis, dysphagia screening before any oral intake, smoking cessation, and stroke education
Intracerebral hemorrhage (ICH)	Digital subtraction angiography, surgical therapy

Subarachnoid hemorrhage (SAH)	Digital subtraction angiography, nimodipine description, surgical or interventional treatment, ventricular shunting therapy
Lab values	Lipid panel, fasting plasma glucose, glycated hemoglobin, blood urea nitrogen, creatinine, homocysteinemia, uric acid, international normalized ratio
Complications	Complications include deep vein thrombosis, pneumonia, pulmonary embolism, and so on.
Outcomes	Outcomes include in-hospital cardiovascular events (ischemic stroke, hemorrhagic stroke, TIA, myocardial infarction), new-diagnosed atrial fibrillation, all-cause death, destination after discharge, length of stay at hospital, total cost during hospitalization.

Table 2. Outcomes and complications

Outcome	Definition
All-cause death	In-hospital death due to any cause
Cardiovascular events	Any event including ischemic stroke, hemorrhagic stroke, transient ischemic attack (TIA), and myocardial infarction during hospitalization
Ischemic stroke	New onset of focal neurological deficit that cannot be attributed to the presenting lesion and is confirmed with radiographic (CT and/or MRI) evidence.
Hemorrhagic stroke	New onset of focal neurological deficit and radiographic (CT and/or MRI) findings showing hemorrhagic signs in ischemic stroke patients, haematoma expansion in patients with ICH or SAH.
Transient ischemic attack (TIA)	New onset of focal neurological deficit lasting less than 24 hours
Myocardial infarction	Electrocardiography (ECG) or laboratory evidence of acute myocardial infarction
Atrial fibrillation	Intermittent or new persistent atrial fibrillation/flutter on ECG or ECG monitoring not present on admission
Complication	
Deep vein thrombosis(DVT)	Clinical diagnosis of deep vein thrombosis and with radiographic evidence
Pneumonia	Respiratory crackles, new purulent sputum, or positive sputum culture, and supported by typical chest X-ray findings
Pulmonary embolism	Clinical diagnosis of pulmonary embolism and with radiographic evidence
Epileptic seizure	Clinical or electrophysiological evidence of focal or generalized seizure in previously non-epileptic patients
Hydrocephalus	Radiographic evidence of hydrocephalous

Urinary infection	Clinical symptoms of urinary tract infection combined with a positive urine examination or culture
Respiratory failure or cardiopulmonary arrest	the absence of spontaneous respiration or cardiac pulse and unresponsiveness
Bedsore/Decubitus ulcer	Any skin breaks or necrosis resulting from either pressure or trivial trauma
Depression	Post-stroke mood disorders as mood disorders due to stroke with depressive features, major depressive-like episode, or mixed-mood features according to diagnostic criteria for depression from 5th edition Diagnostic and Statistical Manual of Mental Disorders
Gastrointestinal bleeding	Clinical (any episode of fresh blood or coffee ground emesis, hematemesis, melena, or hematochezia), laboratory or radiographic evidence of gastrointestinal bleeding.

Table 3. Specifications of guideline-recommended performance measures

Performance measure of ischemic stroke care	Performance measure definition for eligible patients
Acute performance measures	
IV rt-PA < 4.5 Hours	Intravenous recombinant tissue plasminogen activator (IV rtPA) in patients who arrive within 3.5 hours after initial symptom onset and treated within 4.5 hours
Endovascular treatment < 6 hours	Endovascular treatment means mechanical endovascular reperfusion therapy for acute ischemic stroke caused by arterial occlusion of proximal anterior circulation within 6 hours after admission
Early antithrombotics	Antithrombotic therapy prescribed within 2 days of hospitalization, including antiplatelet or anticoagulant therapy
DVT prophylaxis	Patients at risk for deep vein thrombosis (DVT) (non-ambulatory) who received DVT prophylaxis by end of hospital day two, including pneumatic compression, warfarin sodium, heparin sodium, or new oral anticoagulants
Dysphagia screening	Dysphagia screening prior to any oral intake
Rehabilitation assessment	Assessed for stroke rehabilitation services
Performance measures at discharge	
Antithrombotic medication	Antithrombotic therapy prescribed at discharge
Anticoagulation for atrial fibrillation	Anticoagulation prescribed at discharge for patients with atrial fibrillation or atrial flutter documented during the hospitalization
Antihypertensive medicines for patients with hypertension	Antihypertension medication prescribed at discharge for patients with history of hypertension disease or hypertension disease documented during the hospitalization

Hypoglycemia medication for diabetes mellitus	Hypoglycemic medication prescribed at discharge for patients with history of diabetes mellitus or diabetes mellitus documented during the hospitalization
Statin for lowering low-density lipoprotein \geq 100 mg/dL	Statin prescribed at discharge if low-density lipoprotein (LDL) \geq 100 mg/dL, if patient treated with lipid lowering agent prior to admission, or LDL not documented Hypoglycemia medication for diabetes mellitus
Smoking cessation	Smoking cessation intervention (counseling or medication) prior to discharge for current or recent smokers
Stroke education	Stroke education provided to patient and/or caregiver, including all 5 components: modifiable risk factors, stroke warning sign and symptoms, how to activate Emergency Medical Services, need for follow-up, medications prescribed

* Eligible patients are those without any medical contraindications (e.g., treatment intolerance, excessive risk of adverse reaction, patient/family refusal, or terminal illness/comfort care only) documented as reasons for non-treatment for each of the applicable measures. Acute performance measures, except for rt-PA measure, exclude patients who died before the end of hospital day two. Performance measures at discharge exclude patients who died during hospitalization.