A YEAR OF CARING

Benchmarking 2020 Performance in HFAP-certified Stroke Centers

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In 2020, HFAP became a brand of Accreditation Commission for Health Care, Inc.

ACHC’s mission is to deliver the best possible accreditation experience.

HFAP’s mission is to be the valued partner for healthcare organizations committed to improving their quality of care through accreditation standards and continuing education, with a focus on advancing the health and welfare of their communities.

Thanks to Carol Roesch, MBA, RN, FACHE, for her contributions to this report.
All HFAP-certified stroke centers are required to submit quarterly data on performance measures aligned with the American Stroke Association's Get With The Guidelines™ metrics. In 2018, we began sharing the aggregate data as an annual review to:

- Support improvement in individual HFAP stroke centers by providing a resource that allows them to compare their performance to that of their peers.
- Enhance the culture of community and learning established by HFAP's quarterly practice-sharing teleconferences for stroke programs.
- Evaluate the effectiveness of HFAP certification as a driver of quality improvement for the care of stroke patients.

This year, in addition to the measures applicable to all stroke programs, we are also including those specifically focused on Thrombectomy and Comprehensive Stroke Centers (see pages 18–22). Please note, inclusion in this report is limited to stroke centers that were certified prior to January 2020 and therefore submitted a full year of data.

In past years, we grouped stroke programs into cohorts based on patient volume. This was based on an expectation that smaller programs would be less successful in meeting the benchmarks for some measures. Our intention was to put each organization's performance in a meaningful context.

What we have discovered over four years of analyzing these data is that HFAP-certified stroke programs aim to maximize their potential for excellence based on the services they provide, regardless of program size. With that in mind, this year's report groups data based on the certification program as follows:

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As always, the HFAP team is here to support your program. Now that we have joined the ACHC family, HFAP customers can look forward to additional opportunities: for education, for connection, for resources.

We welcome your feedback and hope that you find this report useful.
Below each graph is a description of what is being measured along with comments that describe best practice and summarize the overall analysis.

The results demonstrate that HFAP-certified stroke centers continue to meet or exceed the benchmarks established as national goals. Use this data to benchmark and communicate your own center’s performance.

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**Analyze**

1. Identify your organization. Or find the group that represents the certification option appropriate to your program.

2. Compare your performance to that of your peer organizations and the overall group.

3. Compare your results with your community needs assessment. Does your stroke program meet the goals set in that report?

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**Communicate**

- Share this report (and your analysis) with your stroke staff to show how their patient care is reflected in the data.

- Share this report with your Board, medical staff, leadership team, and hospital staff as evidence of the quality care you provide.

- Share this report with your marketing department to encourage active support of your program.

- Share relevant results at your community education events.
SM-1: Venous Thromboembolism (VTE) Prophylaxis

Description of the measure

This measure is focused on patients with a diagnosis of acute ischemic stroke who are assessed to be at risk for VTE and for whom prophylaxis (including anticoagulant medications, sequential compression stockings, and early mobilization) is indicated.

See HFAP Standard 02.02.03.

Best practice

Complete a VTE risk assessment at admission. The application of sequential compression devices is the accepted intervention for VTE risk.

Comment

In 2020, 94% of organizations met or exceeded the benchmark for prophylaxis for ischemic stroke patients at risk for VTE. The average performance indicated delivery of VTE prophylaxis for 96% of the relevant patient population.

Three Primary Stroke Centers missed the benchmark. Each had fewer than 60 stroke patients in calendar year 2020. At lower patient volume, any individual failure to meet the measure will be prominent in the data.
SM-2: Discharged on Antithrombotic Therapy

Description of the measure
This measure addresses ischemic stroke patients prescribed antithrombotic therapy (anti-platelet and anticoagulants) at hospital discharge.

See HFAP Standard 02.02.03.

Best practice
All ischemic stroke patients should receive a prescription for antithrombotic therapy at the time of discharge. If antithrombotic therapy is not prescribed at discharge, there must be a documented reason in the patient’s medical record.

Comment
The aggregate average achievement in 2020 indicates that 98% of ischemic stroke patients were discharged from these programs with a prescription for antithrombotic therapy. The benchmark of 85% was met or exceeded by 96% of certified stroke centers. Two individual programs did not meet the threshold, discharging 80% and 83% of patients respectively on antithrombotic therapy. Each of these organizations saw fewer than 40 stroke patients in 2020. At lower patient volume, an individual failure to meet the measure will be prominent in the data.
**SM-3: Anticoagulation Therapy for AF/Flutter**

**Description of the measure**

This measure addresses ischemic stroke patients with a clinical diagnosis of atrial fibrillation/flutter who are prescribed anticoagulation therapy at hospital discharge.

See HFAP Standard 02.02.03.

**Best practice**

Cardiac monitoring for 24 hours after admission may be helpful in diagnosing AF/Flutter. There must be documentation of a reason for not prescribing anticoagulation in AF/Flutter patients if it is not prescribed.

**Comment**

The benchmark was achieved by 98% of stroke centers, with a single organization that did not prescribe anticoagulation therapy to any patients and failed to document the reason why. Nonetheless, the aggregated average achievement was 97%.
SM-4: Thrombolytic Therapy within 4.5 hours

Description of the measure
This measure addresses acute ischemic stroke patients who arrive at this hospital within 2 hours (120 minutes) of time last known well and for whom IV tPA was initiated at this hospital within 4.5 hours of time last known well.

See HFAP Standard 02.00.06.

Best practice
When the 4.5-hour benchmark is missed, an explanation, e.g., blood pressure or airway management, will help distinguish patient-specific severity of illness issues that must be immediately addressed from process issues that can be addressed with corrective actions. For example, multiple critical patients would not be an acceptable reason for late administration of tPA.

Comment
Although most HFAP-certified stroke centers delivered thrombolytic therapy for all patients within 4.5 hours of time last known well, four programs fell below the benchmark, resulting in an aggregate 96% achievement rate across participating stroke centers.

The four centers that missed the benchmark included two programs with a small patient population and two that treated more than 175 stroke patients in 2020.
Description of the measure
This measure addresses ischemic stroke patients administered antithrombotic therapy by the end of hospital day 2. Antithrombotic therapy is defined as medications which include anti-platelets and anticoagulants used in the treatment of ischemic stroke.

See HFAP Standard 02.02.03.

Best practice
Having the stroke coordinator or a stroke champion review patient medical records in real time can help catch medications that would be expected but have not been ordered.

Comment
In 2020, 94% of centers achieved the benchmark. Three organizations missed it; one Stroke Ready and two Primary Stroke. Overall, 97% of patients across all of these organizations received antithrombotic therapy by the end of hospital day 2.
**SM-6: Discharged on Statin Medication**

**Description of the measure**

The measure looks at ischemic stroke patients with LDL greater than or equal to 100 mg/dL or LDL not measured or those who were on a lipid-lowering medication prior to hospital arrival for statin medication prescribed at hospital discharge.

See HFAP Standard 02.02.03.

**Best practice**

If a patient is not prescribed a statin, meeting the goal of this metric would require documentation demonstrating why, e.g., allergy or intolerance by patient.

Most centers find it helpful to have real time review of medical records to catch medications that have not been ordered.

**Comment**

For this measure, 94% of stroke programs surpassed the benchmark with an average score of 96%.
**SM-8: Stroke Education**

**Description of the measure**

This measure addresses ischemic or hemorrhagic stroke patients or their caregivers who were provided with educational materials during the hospital stay that included: risk factors for stroke, warning signs and symptoms of stroke, when and how to activate the emergency medical system, medications prescribed at discharge, and the need for follow-up after discharge.

See HFAP Standard 02.02.06.

**Best practice**

In keeping with our intent to be a resource partner to the organizations we serve, HFAP stresses the value of an educational approach to health care. Our expectation is that stroke centers take a similar approach and are prepared with materials for patients and their caregivers to help them understand and effectively advocate for their care.

**Comment**

In 2020, 96% of HFAP certified programs met the benchmark for this measure. This is an improvement from 2019 when 91% of hospitals provided effective stroke education.

The aggregated average score for 2020 was 97%.
**SM-10: Assessed for Rehabilitation**

**Description of the measure**

This measure addresses ischemic or hemorrhagic stroke patients who were assessed for rehabilitation services. Initial physical rehabilitation must be conducted by a physical therapist and, as per clinical needs assessment, may include occupational therapy or speech and language therapy.

See HFAP Standard 02.02.04.

**Best practice**

Have the speech language therapist evaluate the patient while in the emergency department when appropriate to support achievement of this measure.

**Comment**

All centers surpassed this benchmark threshold by significant margins. The aggregate average for 2020 was 99%.
Description of the measure
This measure addresses the number of eligible patients who were screened for dysphagia prior to receiving anything by mouth. (The dysphagia screen may be performed by an RN.)
See HFAP Standard 02.02.02.

Best practice
By broadening the scope of patients who receive dysphagia screening to include all elderly patients and all those with even vague symptoms of stroke, this standard can more easily be met as well as picking up patients who may be silent aspirators that do not have stroke.

Note: If a patient is kept NPO in the ED and subsequently transferred from the ED to a hospital with a higher level of care, this patient may be counted in the numerator when scoring the measure.

Comment
In 2020, 83% of HFAP-certified stroke centers met or exceeded the benchmark with an average aggregate score indicating that 89% of patients are screened for dysphagia prior to be given anything by mouth. There were two significant outliers, one with about 200 stroke patients in 2020 and the other with a very small patient population but both within the Primary Stroke Certification program.
SM-12A: Door-to-Needle Time — 60 Minutes

Description of the measure
This measure addresses acute ischemic stroke patients age 18 years and older who receive intravenous tissue plasminogen activator (tPA) therapy during the hospital stay with a time from hospital arrival to initiation of thrombolytic therapy administration (door-to-needle) of 60 minutes or less.

See HFAP Standard 02.00.06.

Best practice
The American Stroke Association has raised the bar for performance expectations on this measure as well as for stroke measures 12B and 12C (to be introduced for HFAP certification in 2021). Stroke programs should examine their processes to meet these higher performance expectations.

Meeting patients at the door, performing a quick assessment, and taking the patient directly to CT has helped many hospitals reduce the time from door-to-needle but the results for this measure (and the next) are not where we would like them to be.

Comment
While 80% of these stroke centers achieved the HFAP benchmark, only 35% of hospitals met the ASA’s higher expectation. The average score across all organizations is 68%. These measures (12A, 12B) for rapid initiation of tPA have been consistently challenging for many stroke centers.

In last year’s benchmarking report, we announced that the American Stroke Association had raised this benchmark threshold from 50% to 85% and that HFAP stroke certification standards would reflect this change in 2021. In March 2021, HFAP issued an addendum to the stroke certification manuals providing the updated threshold for this measure, which became effective April 1.
**SM-12B: Door-to-Needle Time — 45 Minutes**

**Description of the measure**
This measure addresses acute ischemic stroke patients age 18 years and older who receive intravenous tissue plasminogen activator (tPA) therapy during the hospital stay with a time from hospital arrival to initiation of thrombolytic therapy administration (door-to-needle) of 45 minutes or less.

See HFAP Standard 02.00.06.

**Best practice**
The American Stroke Association raised this benchmark threshold from 50% to 75% and HFAP stroke certification standards reflect that change as a performance expectation beginning in 2021.

**Comment**
In support of the maxim “time is brain,” this measure is designed to push achievement beyond SM-12A by accelerating time to tPA. In 2021, a further level of achievement will be added with to measure tPA administration within 30 minutes.

Performance on this measure saw improvement from the prior year with 53% of stroke programs meeting the 45-minute threshold in 2020 compared with 36% in 2019. The aggregate average score was 49%, below HFAP’s 2020 benchmark of 50% and significantly below the ASA benchmark of 75%.
**SM-13: Stroke Team Arrival**

**Description of the measure**

This measure addresses the time between presentation of a patient in the ED with stroke symptoms and the arrival of the stroke team to the bedside or the time between inpatient onset of symptoms and the arrival of the stroke team to the bedside.

See HFAP Standard 02.03.03.

**Best practice**

Establish a protocol for close communication with EMS regarding actual arrival time to assist in meeting this measure.

**Comment**

This measure saw excellent results in 2020 with 93% of hospitals exceeding the benchmark and an aggregate average score of 92%.

One organization did not report results for this measure.
Description of the measure
This measure looks at patients with blood drawn for laboratory testing and results delivered within 45 minutes of arrival in the ED and inpatients with lab testing resulted within 45 minutes of onset of symptoms. Laboratory testing included in this turnaround time measure includes: point-of-care glucose testing; INR and PT and PTT (if indicated); and other as per stroke protocol/physician order.

See HFAP Standard 02.00.05.

Best practice
A glucose reading is the only lab required unless the patient has a blood clotting disorder. This can be by finger stick at the bedside. If allowed by policy, the hospital may accept the EMS glucose reading as well.

Comment
In 2019, 88% of stroke programs achieved the goal for this measure; in 2020, it was 86% with an average reported score of 89%.

One organization did not report its results.
**SM-15: Neuroimaging Studies**

**Description of the measure**

This measure addresses the number of patients with neuroimaging (CT scan or MRI) turnaround time (TAT) within 45 minutes of hospital arrival or inpatient presentation of acute stroke symptoms (as defined by hospital protocols).

See HFAP Standard 02.00.04.

**Best practice**

Every minute counts. The neuroimaging time is measured from patient arrival until the ED provider has received results of the scan. Break down your process steps to determine where minutes are being used that may delay TAT.

**Comment**

This measure showed year-over-year improvement with 82% of stroke programs achieving the benchmark compared to 79% in 2019. The average score was 88%.
SM-16: Neurosurgical Services

Description of the measure
This measure calculates the number of patients diagnosed with hemorrhagic stroke (as defined by hospital protocols) who received neurosurgical services (or were transferred for neurosurgical service) within two hours of need.

See HFAP Standard 02.00.07.

Best practice
For hospitals that do not perform neurosurgery or neuro-interventions, the two-hour window is from the time the decision is made that the patient may need surgery/intervention until the patient is transferred out the door. Alerting EMS early about potential transfer, having standardized transfer protocols, and early notification to the receiving hospital of potential transfer may assist with reducing times.

Comment
In 2020, 74% of participating programs met the benchmark for this measure with an aggregate average score of 83%.
SMA-1 NIHSS Performed for Ischemic Stroke Patients

Addresses ischemic stroke patients for whom a National Institutes of Health Stroke Scale (NIHSS) examination is performed and documented in the medical record prior to any acute recanalization therapy (i.e., IV or IA thrombolytic therapy or mechanical endovascular reperfusion therapy) or those for whom an NIHSS assessment is documented within 12 hours of ED arrival who do not undergo recanalization therapy.

Best practice

The NIHSS, originally designed as a research tool for clinical trials, has been shown to be an effective predictor of short- and long-term outcomes of stroke patients. The scale is a 15-item examination that evaluates the effect of acute cerebral infarction on the levels of consciousness, language, neglect, visual-field loss, extraocular movement, motor strength, ataxia, dysarthria, and sensory loss. A single patient assessment requires less than 10 minutes to complete.

Used as a data collection tool for planning patient care, it provides a common language for information exchange among providers.

Comment

All stroke programs met the threshold for this measure with an overall average score of 95%.

SMA-3 Severity Measure Performed for SAH & ICH

Addresses subarachnoid hemorrhage (SAH) and intracerebral hemorrhage (ICH) stroke patients for whom a severity measurement (e.g., Hunt and Hess Scale for SAH patients or ICH Score for ICH patients) is performed prior to clipping, coiling, or any surgical intervention in patients undergoing surgical intervention and documented in the medical record; or documented within six hours of arrival at the hospital emergency department for patients who do not undergo surgical intervention.

Best practice

Multiple scales exist for assessing the clinical condition of patients following SAH or ICH. The goal of this measure is to improve communication among clinicians by providing a consistent and common, shared grading scale.

Comment

Just over half (57%) of the stroke centers to which this measure applies achieved the benchmark threshold in 2020. The average performance was 74%.
**SMA-4 Procoagulant Reversal Agent Initiated for ICH**

Addresses intracerebral hemorrhage (ICH) stroke patients with an INR value > 1.4 at hospital arrival who are treated with a procoagulant reversal agent (i.e., fresh frozen plasma, recombinant factor VIIa, prothrombin complex concentrates).

**Comment**

All stroke programs exceeded the threshold for this measure with each achieving a score of 100% for ICH stroke patients treated in 2020.

**SMA-5 Hemorrhagic Transformation (Overall Rate)**

Addresses ischemic stroke patients who develop a symptomatic intracranial hemorrhage (i.e., clinical deterioration ≥ 4 point increase on NIHSS and brain image finding of parenchymal hematoma, or subarachnoid hemorrhage, or intraventricular hemorrhage) within the 36 hours after the onset of treatment with IV or IA tPA therapy, or mechanical endovascular reperfusion procedure (i.e., mechanical endovascular thrombectomy with a clot retrieval device).

**Comment**

This measure has no associated benchmark; it is used for tracking and trending. The goal is that this complication would be rarely seen.

All but one stroke program kept hemorrhagic transformation below 15% and the average was 9%.
SMA-6 Nimodipine Treatment Administered

Addresses subarachnoid hemorrhage (SAH) patients for whom nimodipine treatment was administered within 24 hours of arrival at this hospital.

Comment

All stroke programs exceeded the threshold for this measure with an average of 96% nimodipine administration for SAH patients with 24 hours of arrival.

SMA-8 Thrombolysis in Cerebral Infarction

Addresses ischemic stroke patients with a post-treatment reperfusion grade of TICI 2B or higher in the vascular territory beyond the target arterial occlusion at the end of treatment with tPA therapy and/or mechanical endovascular reperfusion therapy.

Comment

The average for HFAP-accredited programs in 2020 was 87%.
SMA-9 Door-to-Skin Puncture Time
Addresses a goal of < 90 minutes from hospital arrival to the time of skin puncture to access the artery selected (e.g., brachial, carotid, femoral, radial) for endovascular treatment (EVT) (i.e., IA tPA infusion and/or mechanical embolectomy devices), of acute ischemic stroke.

Comment
The average achievement for this measure in 2020 was 62%.

SMA-10 Modified Rankin at Discharge or 90 Days
Addresses ischemic stroke patients treated with IV or IA tPA therapy or who undergo mechanical endovascular reperfusion therapy for whom a 90-day (≥75 days and ≤105 days) Modified Rankin Score (mRS) is obtained via telephone or in-person.

Comment
All stroke programs exceed the 85% threshold for this measure with an average score of 98%.
SMA-11 Timeliness of Reperfusion: Arrival to TICI 2B or Higher

Addresses ischemic stroke patients with large vessel occlusion in the internal carotid artery (ICA) or ICA terminus, middle cerebral artery (MCA) M1 or M2, or basilar artery, who receive mechanical endovascular reperfusion therapy within 120 minutes of hospital arrival and achieve TICI 2B or higher at the end of treatment.

Comment

In 2020, 72% of these program’s ischemic stroke patients meeting the criteria above achieved TICI 2b or higher at the end of treatment.

SMA-12 Timeliness of Reperfusion: Skin Puncture to TICI 2B or Higher

Addresses ischemic stroke patients with large vessel occlusion in the internal carotid artery (ICA) or ICA terminus, middle cerebral artery (MCA) M1 or M2, or basilar artery, who receive mechanical endovascular reperfusion therapy and achieve TICI 2B or higher in 60 minutes or less from time of skin puncture.

Comment

This metric was achieved for 70% of patients on average across HFAP-certified stroke centers.
The data reported throughout this publication was collected throughout 2020: as the COVID-19 pandemic was first identified in the U.S., as it accelerated and stressed healthcare providers and systems, and as frontline healthcare professionals struggled to provide effective care and essential comfort in the face of uncertainty and limited knowledge.

COVID-19 had an impact on stroke programs, too. In some hospitals, stroke coordinators were asked to return to bedside nursing to address staffing shortages. But strokes (like other disease and trauma) didn’t go away. In fact, regions with high prevalence of COVID-19 began reporting increased incidence of stroke and in younger patients. Now, both anecdotal and data-based evidence is being examined for a direct connection between COVID-19 and stroke. A recent study by the Emory Brain Health Center found that rates of unexplained acute ischemic stroke were higher among COVID-19 patients.

This is just a recent example of how our knowledge of stroke – its risk factors, triggers, variations, and treatments – continues to grow. We now understand that COVID-19 will be with us indefinitely and may inform our expectations regarding “typical” stroke patients in the future.

Quality care provided by certified stroke centers is vitally important. HFAP certification is just one indicator of your program’s commitment to continuous improvement. HFAP Surveyors are consistently impressed by the depth of knowledge and dedication of those involved in the programs they survey.

HFAP will continue to provide quarterly stroke teleconferences. Our practice-sharing sessions have been well-received by stroke coordinators and we look for suggestions to continue to support you. If you do not currently receive information to register for these programs and would like to, or have a topic you would like to present or propose for discussion, please let us know by emailing certadvisor@achc.org.

