

Benchmarking

Benchmarking is the practice of comparing one's processes and performance metrics to best practices. The basic principle of benchmarking is that a point for comparison is identified, a benchmark, against which all can compare. (1) "In practical terms, benchmarking is used frequently to operationalize the transition from measurement of performance to performance improvement (Tomas 1993), and many quality improvement projects now present providers with benchmarks and averages to aid in this transition (Epstein 1995)." "Benchmarking, a management approach for implementing best practices at best cost, is a recent concept in the healthcare system" and "its integration within a comprehensive and participatory policy of continuous quality improvement (CQI)." (2)

"The basic principle of benchmarking consists of identifying a point of comparison, called the benchmark, against which everything else can be compared." (2) Frequently, a "target" or "goal" is determined by a panel of experts and set as a "benchmark" as a objective to strive for. This would apply in the realm of stroke processes as shown below.

Major benchmarks for acute stroke treatment are listed below. Some were chosen by a panel of experts at the National Institute of Health (NIH) and then adopted by the American Stroke Association, others by unanimous consent of a consortium of medical societies. **All are tracked by INSTOR.**

- 1) Door to MD = 10 minutes *
- 2) Door to Neuro expertise = 15 minutes *
- 3) Door to imaging = 25 minutes *, **
- 4) Door to image read = 45 minutes *, **
- 5) Door to IV tPA = 60 minutes *
- 6) Door to puncture for IA stroke = 120 minutes **
- 7) Puncture to start of revascularization = 45 minutes **
- 8) Clinical outcomes for IA (endovascular therapy) of at least 30% mRS 0-2 at 90 days **

***ASA Guidelines for Management of Acute Stroke; 2013.**

**** Multisociety Consensus Quality Improvement Guidelines for IA treatment of Stroke**

Joint Commission Stroke (STK) Core measures are:

- STK-1: Venous Thromboembolism (VTE) Prophylaxis
- STK-2: Discharged on Antithrombotic Therapy
- STK-3: Anticoagulation Therapy for Atrial Fibrillation
- STK-4: Thrombolytic Therapy

STK-5: Antithrombotic Therapy by end of day 2
STK-6: Discharged on Statin Medication
STK-8: Stroke Education
STK-10: Assessed for Rehabilitation

These ***Joint Commission Stroke Core measures*** are not truly emergency stroke treatment measures per se, but are rather measures of the overall care for stroke patients in general. Currently, there are no “benchmarks” for any of these Joint Commission Core Measures, nor are there failure levels. However, starting possibly in 2015, the Joint Commission is considering requiring all eligible acute stroke patients to be treated with IV tPA within 60 minutes of arrival (STK-4).

Performance measures for Primary and Comprehensive Stroke Centers elucidated by the Joint Commission but not defined as benchmarks nor with particular goals are listed below. Some of these, however, do have benchmarks as set by multiple medical societies (above). ***All of these are tracked by INSTOR:***

1. Percentage of patients with NIHSS score recorded on patient arrival
 - a. Actual minimum/median/maximum NIHSS for all acute ischemic stroke alerts
2. Percentage of eligible patients treated with IV tPA within 60 minutes of arrival
3. Percentage of patients who arrive by 2 hrs., are treated by 3 hrs.
4. Percentage of patients who arrive by 3.5 hrs., are treated by 4.5 hrs.
5. Percentage of patients with ANY modified Rankin Score (mRS) at 90 days
6. Percentage of patients with stroke severity measurement on patient arrival
 - i. NIHSS for acute ischemic stroke
 - ii. Hunt and Hess scale for SAH
 - iii. ICH score for ICH
7. Percentage of patients with ICH with treatment with a pro-coagulant reversal agent if needed
8. Median time to treatment with a pro-coagulant reversal agent
9. Median time to completion of INR reversal
10. Percentage of patients treated with IV tPA alone with symptomatic intra-cerebral hemorrhage within 36 hrs
11. Percentage of patients treated with both IV tPA and EVT with a symptomatic intra-cerebral hemorrhage within 36 hrs.
12. Percentage of patients treated with EVT alone with a symptomatic intra-cerebral hemorrhage within 36 hrs.
13. Percentage of patients with SAH that receive nimodipine within 24 hrs.
14. Median time to recanalization therapy for EVT patients
15. Percentage of patients treated with EVT with at least TIC1 2b recanalization

A literature review highlighted how benchmarking approaches have evolved in the healthcare sector. This evolution produced numerous definitions, whose common theme is continuous measurement of one's own performance and comparison with best-performers to learn about the latest work methods and practices in other organizations.” (2)

Benchmarking's key characteristic is that it is part of a comprehensive and participative policy of continuous quality improvement. Indeed, benchmarking is based on voluntary and active collaboration among several organizations to create a spirit of competition, to apply best practices, and to achieve the goal of reaching the defined benchmarks.

- 1) Codling S. Best Practice Benchmarking. A Management Guide. Gower, Cambridge, USA. 1992.
- 2) Ettorchi-Tardy A, Levif M, Michel P, et al. Benchmarking: A Method for Continuous Quality Improvement in Health. Healthcare Policy. 2012 May; 7(4): e101–e119.
- 3) Ellis J. All Inclusive Benchmarking. Journal of Nursing Management 2006:14, 377-383.