

# Reduction in Nighttime Door to Groin Puncture Time After Implementation of Mechanical Thrombectomy Quality Improvement Protocol

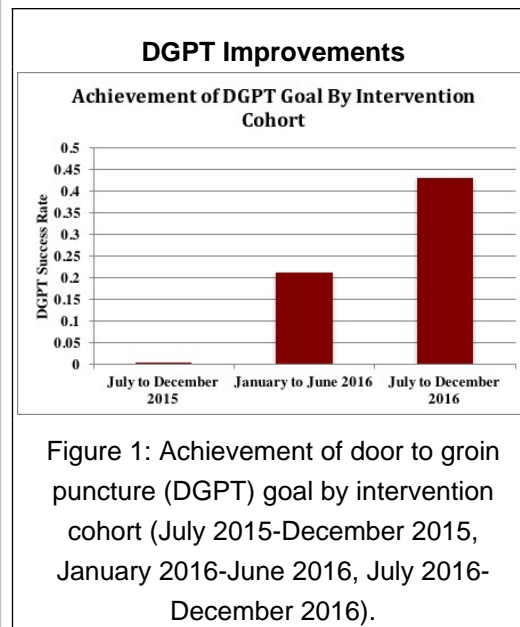
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## Introduction

Reduced time between symptom onset and endovascular intervention for large vessel ischemic stroke has been correlated with better neurologic outcomes. Prior studies have demonstrated that nighttime stroke admissions are associated with increased door-to-groin puncture time (DGPT) compared to daytime admissions. From 2015-2016, our institution implemented a quality improvement (QI) protocol to reduce DGPT. Here we present the results of our effort, with a focus on nighttime interventions.

## Methods

A retrospective analysis was performed to identify the effects of QI protocol implementation on nighttime DGPT. Measures included: creation of a formal stroke intervention team activation system, establishment of structured monthly QI meetings, and uniform utilization of a dedicated anesthesia team for stroke interventions. Patients were subdivided into three cohorts depending on the date that they were treated (July 2015-December 2015, January 2016-June 2016, July 2016-December 2016). These groups represented initial, partial, and full implementation of the QI protocol respectively. For the purposes of measuring workflow improvements, our QI team established a benchmark DGPT of 90 minutes.



## Results

We identified a subset of 30 patients who were treated at night. Among these patients, mean DGPT was 243 minutes in the first cohort, 134 minutes in the second cohort, and 94 minutes in the third cohort. The proportion of interventions achieving a benchmark DGPT < 90 minutes was 0% in the first cohort, 21% in the second cohort, and 43% in the third cohort (Figure 1).

## Conclusions

Though nighttime stroke interventions may exhibit increased DGPT due to reduced availability of on-site staff and ancillary resources compared to daytime, implementation of a formal QI protocol can mitigate many of these barriers.

Prompt intervention is crucial to the optimal management of patients with acute ischemic stroke. Workflow improvements directly lead to maximal preservation of viable brain, resulting in improved neurologic outcomes after stroke.

## Learning Objectives

By the conclusion of this session, participants should be able to:

1. Describe the importance of quality improvement in mechanical thrombectomy workflow
2. Discuss, in small groups, optimal use of institution specific resources to achieve reduced DGPT
3. Identify sub-populations of patients who are at higher risk for prolonged DGPT.

## References

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