

# Lean process methods expedite care in ischemic stroke

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Image courtesy of Blausen Medical

Use of lean process improvement methodology can reduce the time to stroke care without compromising patient safety, according to a study published online Nov. 8 in *Stroke*.

(HealthDay)—Use of lean process improvement methodology can reduce the time to stroke care without compromising patient safety, according to a study published online Nov. 8 in *Stroke*.

Andria L. Ford, M.D., from the Washington University School of Medicine in St. Louis, and colleagues used lean process improvement methodology to develop a streamlined intravenous [tissue plasminogen activator](#) (tPA) protocol. Value stream analysis (VSA) was used to analyze the steps required to treat patients with tPA for [acute ischemic stroke](#). Characteristics, protocol metrics, and [clinical outcomes](#) before and after VSA were compared.

The researchers identified several tPA protocol inefficiencies with VSA, including routing of patients to room, computed tomography (CT), and back to room; serial processing of workflow; and delays in waiting for test results. A new protocol designed to minimize delays was implemented on March 1, 2011, and included direct routing to head CT before going to the [patient room](#); parallel process workflow; and point-of-care laboratories. In the periods before and after VSA, 132 and 87 patients, respectively, were treated with tPA. In the

post-VSA period, compared with the pre-VSA period, door-to-needle times were significantly reduced (39 versus 60 minutes) and the percentage of patients treated within 60 minutes from hospital arrival increased significantly (78 versus 52 percent), with no alteration in the rate of symptomatic hemorrhage.

"Lean manufacturing principles were applied to expedite intravenous tPA delivery with dramatic reduction in door-to-needle times and without compromising patient safety," the authors write. "Future studies may determine if this intervention is sustainable across various hospital settings."

**More information:** [Abstract](#)

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