# Door-to-needle time

The benefits of intravenous tissue plasminogen activator (tPA) in patients with acute ischemic stroke (AIS) are time-dependent and guidelines recommend a door-to-needle (DTN) time of 60 minutes or less.

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The neurosurgeon group showed similar door-to-needle time and clinical outcomes to the neurologist group in patients with AIS in the ER. This study suggests that neurosurgeons have comparable abilities to care for patients with AIS in the ER [1)]

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Intravenous thrombolysis (IVT) plays a prominent role in acute ischemic stroke treatment (AIS). The sooner IVT is administered, the higher the odds of a good outcome. Therefore, registering the in-hospital time to treatment with IVT, i.e. the door-to-needle time (DNT), is a powerful way to measure quality improvement [2)].

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Ren et al. demonstrated national marked and sustainable improvement in adherence to door-to-needle time, door-to-puncture time, and successful reperfusion therapy from 2013 to 2017 in Japan in acute ischemic stroke thrombolysis. Adhering to the key Quality Indicators substantially affected in-hospital outcomes, underlining the importance of monitoring the quality of care using evidence-based Quality Indicators and the nationwide Close The Gap-Stroke program [3)].

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Even though DNT in the Netherlands is short compared to other countries, lowering the DNT may be achievable by focusing on specific subgroups [4)].

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One major contributing factor is the time for a doctor to come and assess and administer the thrombolytic agent to the patient. The change was implemented by ensuring that the core medical trainee on call is allocated to respond as a priority to all possible thrombolysis calls. This has resulted in a reduction of mean DTN time, from 74 minutes in November to 43 minutes in January. As well as improving patient outcomes, it is proposed that the implementation of change has benefitted the training experience and development of key skills of the core medical trainees [5)].

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Implementation of a national quality improvement initiative was associated with improved timeliness of tPA administration following AIS on a national scale, and this improvement was associated with lower in-hospital mortality and intracranial hemorrhage, along with an increase in the percentage of patients discharged home [6)]

1)

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[2] [4]

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[3]

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[6]

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