

# To improve door-to-needle time in patients with acute ischemic stroke by utility of interdisciplinary care models

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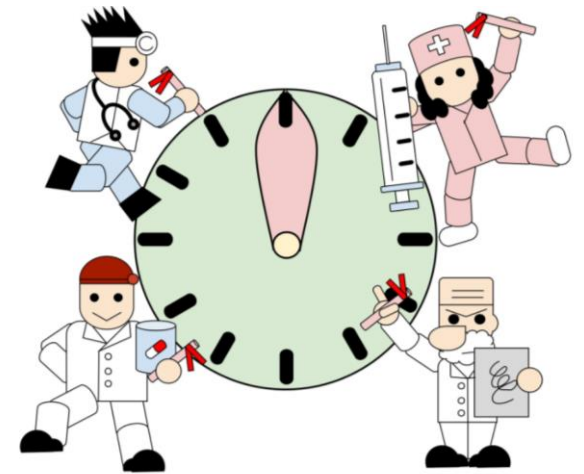
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## Background and objective

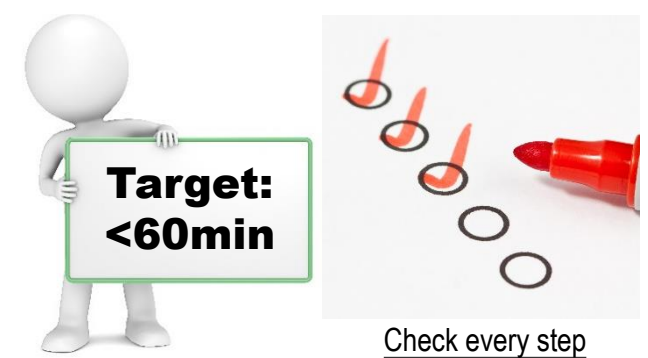
Stroke is responsible for disability in tens of thousands of adults in Taiwan every year. Approximately 80% of strokes are due to ischemic cerebral infarction, for which timely thrombolysis could have great benefits in prognosis. Efforts were made for application of interdisciplinary care models to improve door-to-needle time at Yunlin Christian Hospital, a district hospital in Yunlin County.

## Methods

Members of emergency physicians, nurse practitioners, clinical nurses, radiologists, medical laboratory scientists, and pharmacists were involved. Consensus conference was held for flowchart establishment and every requirement, with a monthly panel to discuss case by case. When code stroke protocol is initiated, establishment of parenteral route and obtaining of blood sample are warranted to be achieved within 10 minutes. Instant contact to radiologists for evaluation in the first place and to medical laboratory scientists for urgent dispatch should be conducted, and the response of evaluation and laboratory results should be obtained within 40 minutes. Neurologists are formally consulted, who are in charge of integrating information and explaining to the patients and his or her family. Once informed-consent is achieved, recombinant tissue plasminogen activator(rt-PA) will be administered under close monitoring, which should be initiated within 60 minutes. The nurse practitioner on duty is assigned to be the case manager and is responsible for process surveillance.



Time is brain : Interdisciplinary care models



Check every step



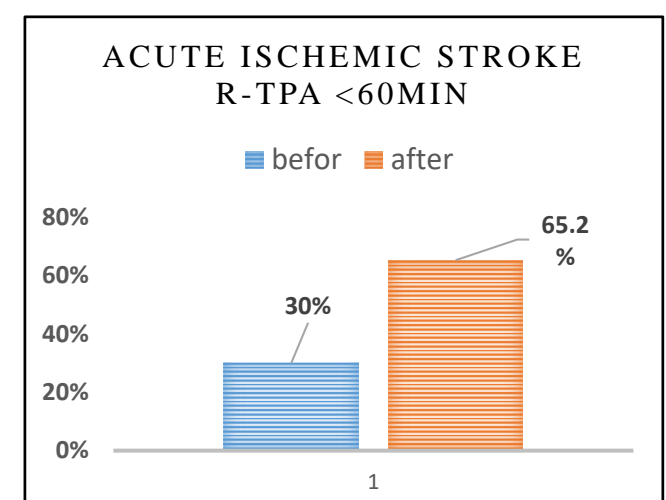
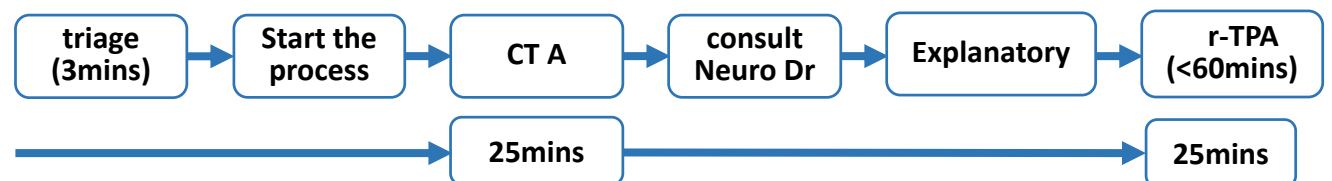
The team discussed and reached a consensus.

Image by 123RF

## Results

Throughout August, 2023 to February, 2024, stroke code was activated for 97 patients present to our emergency room. After exclusion of patients with final diagnosis other than acute ischemic stroke or with contraindications, totally 23 cases met the criteria for thrombolysis, all of whom received rt-PA administration after informed-consent was obtained. 15 patients, accounting for 65.2% of all cases, were achieved with door-to-rtPA time less than 60 minutes.

### Acute ischemic stroke process



## Conclusions

In our previous experience, only 30% of target patients received rt-PA administration with door-to-needle time less than 60 minutes. The application of interdisciplinary care models greatly improves door-to-needle time.

## Relevance to health promoting hospitals and health services

The improvement of door-to-needle time could be related with better outcomes in target patients.

**Keywords :** door-to-needle time, interdisciplinary care, acute ischemic stroke

