

# ISQua 2019 Abstract Submission

*Topic: Patient Safety*

Identifier: ISQUA19-ABS-1788

## PROMOTION THE IMPLEMENTATION RATE OF "RTPA" IN ISCHEMIC STROKE PATIENTS WITH 60 MINUTES THROUGH "HFMEA" - A CASE STUDY OF A REGIONAL TEACHING HOSPITAL IN NORTHERN TAIWAN

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**Preferred presentation method:** Poster Display

**Are you a first time presenter at an ISQua Conference?:** Yes

**Objectives:** Ischemic stroke is the most common type of stroke in Taiwan, accounting for 70% of all strokes. According to the findings of the clinical trials of the National Institute of Neurological Disorders and Stroke (NINDS), treating the acute ischemic stroke patients with "rtPA" within three hours after the onset of the symptom could increase the chance of stroke rehabilitation or reduce the level of disability. The average time of acute ischemic stroke patients from symptom onset to hospital arrival is about 2 hours. Since hospital arrival time of the stroke patients is out of the control of the hospital, hospitals have set 'within a 60-minute door to needle time' of rtPA treatment as our target. Through the "HFMEA", this project aims to assess the potential risks posed by the rtPA treatment to the hospital emergency patients with ischemic stroke, and write a preventive and improvement proposal.

**Methods:** We set a northern regional teaching hospital as our research target and collected the information of the clinical-workflows of the ischemic stroke patients who was eligible for rtPA treatment in 2017. HFMEA was used to identify the failure mode and analyze the impact and risk during the workflow. According to the assessment form of the failure mode, the Risk Priority Number (RPN) of each failure mode was calculated. For those possible causes with RPN8 and a single item with a score of 4, decision tree analysis would be carried out to propose a respective improvement plan. All proposed improvement plans would be put into the trial run commencing from January 1, 2018 and finished the revision on February 28, 2018. The official improvement plan would be implemented on March 1, 2018, and gathering the effectiveness of the improvement would be stopped on November 30, 2018. All data in excel was documented and statistically analyzed in SPSS.

**Results:** From January 1 to December 31 of 2017, a total of 38 acute ischemic stroke in-patient treated with rtPA was admitted to the regional hospital. Via the analysis of the clinical workflow, 17 potential failure modes with 25 possible causes were identified. Refer RPN 8 and single item with a score of 4 to the failure mode assessment form, improvement should be carried out on these 17 possible causes. Before the improvement, 20 acute ischemic stroke patients were successfully treated with rtPA within 60 minutes starting from the emergency registration to the completion of emergency treatment. The success rate of rt-PA administration was 52.6%. After improvement, a total of 28 acute ischemic stroke patients admitted to the hospital and were eligible for rtPA, were successfully received the treatment. In which, 24 patients (85.7%) were administered rtPA within 1 hour. Comparison of the success rate between before and after the improvement, an increase in the successful rate and improvement rate were 33.1% and 62.9% after improvement. Failure reasons of 4 patients encompassed 'too late to inform the neurologist (N=2, 7.1%), miscommunication with the foreigner (N=1, 3.6%) and the personnel unfamiliar with the operation of the equipment (N= 1, 3.6%).

**Conclusion:** Via HFMEA, the implementation rate of rtPA in the acute ischemic stroke patients within 60 minutes was improved. In the future, a similar approach can be applied to other pivotal medical procedures promoting healthcare quality.

**Disclosure of Interest:** None Declared

**Keywords:** Healthcare Failure Mode and Effects Analysis (HFMEA), Ischemic stroke, Recombinant tissue plasminogen activator (rtPA)