

Rapid E-mail Feedback After Thrombolysis at an Academic Center in New York City



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BACKGROUND

- ❖ Treatment of acute stroke is highly time sensitive
- ❖ Rapid performance feedback is one of the 11 Target: Stroke Best Practices
- ❖ Recent studies show novel feedback interventions can improve treatment timelines
- ❖ Email has not been assessed as a modality for providing rapid feedback to a multidisciplinary treatment team

HYPOTHESIS

- ❖ Rapid email feedback will improve DTN and component times
- ❖ Email feedback is an effective way to engage ED nursing in thrombolysis process improvements

METHODS

- ❖ Prospective study comparing median DTN and component times before and after the initiation of an email feedback intervention in April 2015
- ❖ Starting in April 2015, the timelines for all tPA treated cases in ED at Columbia University Medical Center were reviewed concurrently
- ❖ We designed a novel feedback form that summarizes the timeline and treatment team for each case. The form is emailed to the multidisciplinary care team within 48 hours. Institutional time goals are color-coded
- ❖ We also assessed the impact of the feedback process on ED nursing practice via a survey with 10 Likert-type questions

RESULTS

Table 1. Relevant Time Intervals Pre and Post Intervention

	Pre-intervention 1/13-2/15 (N=149)	Post-intervention 4/15-5/15 (N=33)	P-value
DTN, min*	50 [41-62]	58 [35-65]	0.79
Door-to-CT, min*	26 [15-31]	16 [12-21]	0.03
CT-to-tPA, min*	28 [19-39]	35 [20-47]	0.84
Door-to-stroke page, min*	2 [0-8]	9 [1-20]	<0.01
DMT ≤ 60 min (%)	111 (74.8)	23 (28.6)	0.66
Door-to-CT ≤ 25 min (%)	103 (69.1)	28 (84.8)	0.99

Table 2. Survey Results from 16 ED Nurses on their Experience

	Agree or strongly agree	Disagree or strongly disagree
I always read the feedback emails	87.5%	0%
The feedback emails have improved ED teamwork	44%	13%
My practice has changed due to the feedback emails	40%	20%
The feedback emails are supportive of my practice	75%	13%
My recognition of stroke is improved by the emails	53%	13%
The feedback emails have improved patient care	56%	0%

Figure 1. Example tPA Feedback Form

The form displays patient information and a timeline of events. A summary table at the bottom indicates: Door to Stroke Page (0:00:00), Door to CT (0:16:00), and Door to tPA (0:45:00). The Door to tPA time is highlighted in green, indicating it is within the 45-minute goal. A note states: 'No pre-notification case'. The form also includes checkboxes for 'Door to Stroke Page' and 'Door to CT'.

RESULTS

- ❖ 33 patients received tPA post-intervention compared with 149 in the pre-intervention period
- ❖ There were no significant differences in baseline characteristics in pre and post-intervention groups
- ❖ Door-to-stroke page and door-to-CT times were shorter post-intervention; CT-to-tPA time was longer
- ❖ There was no change in DTN time post-intervention
- ❖ ED nurses were satisfied with feedback emails

DISCUSSION

- ❖ This is the first study to look at email feedback and time to treatment in acute stroke
- ❖ tPA delivery process changes take time; it is likely we did not observe a difference in DTN with only 6 months of data
- ❖ Survey results suggest feedback emails are a useful tool to both foster collaboration with ED nursing and develop ED process changes

CONCLUSION

- ❖ Based on the nurses' responses, email may be an effective way to provide rapid feedback and case review
- ❖ More experience is needed to assess the impact of this feedback intervention
- ❖ Further study of the CT-to-tPA time interval is needed to determine factors that may prolong decision-making