

Reducing Total Fasting Time in Neurosurgical Patients Undergoing Tracheostomy Tube Change

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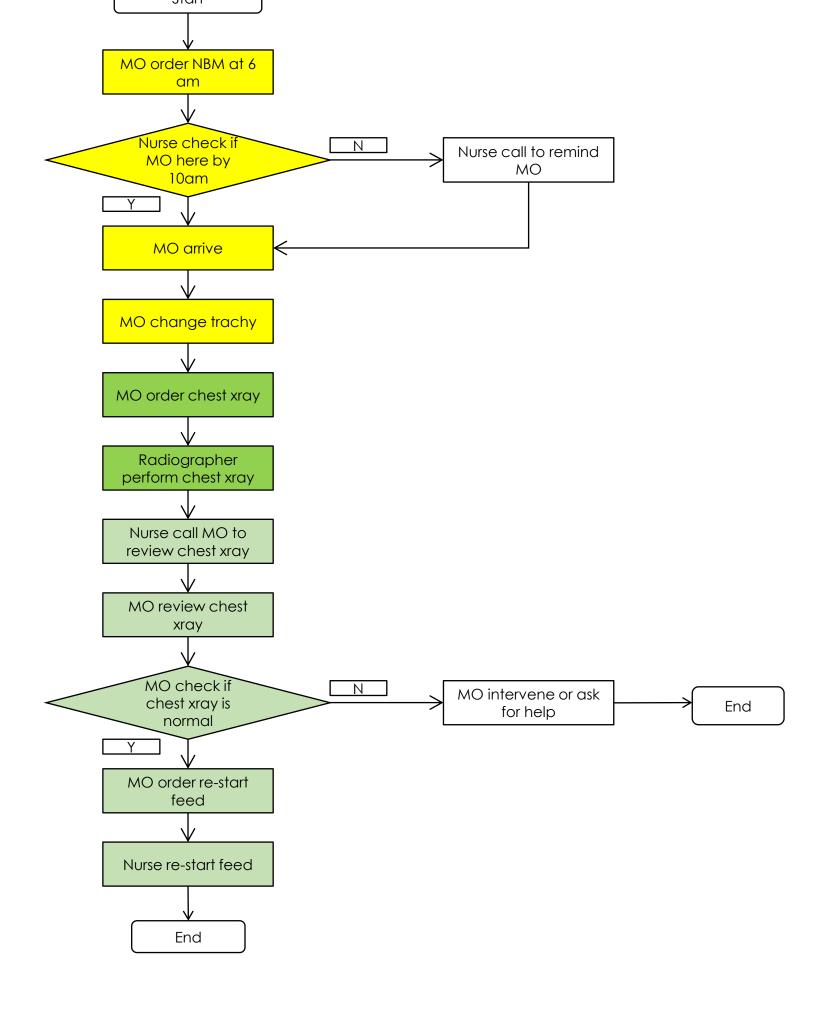


Introduction:

Intubated Neurosurgical patients commonly require a tracheostomy when they failed extubation in ICU. Tracheostomy tube change (TTC) is performed in the day by Medical Officer in charge according to the TTC workflow to ensure patient safety. (Figure 1)

Figure 1.

Existing work flow for TTC



Problem:

Long duration of fasting invariably increases the risk of possible complications like aspiration of gastric contents, dehydration and malnutrition. We aim to reduce the total fasting time in neurosurgical patients undergoing TTC by 20% within a year.

Methodology:

We retrospectively analysed 23 data points from Neurosurgical patients who underwent TTC according to existing protocol from: Jan – Mar 2013 and a more recent cohort Jan – Jul 2014. The time taken from fasting onset to TTC (375mins) accounts for 62.3% of total fasting time (602mins). (Figure 2)

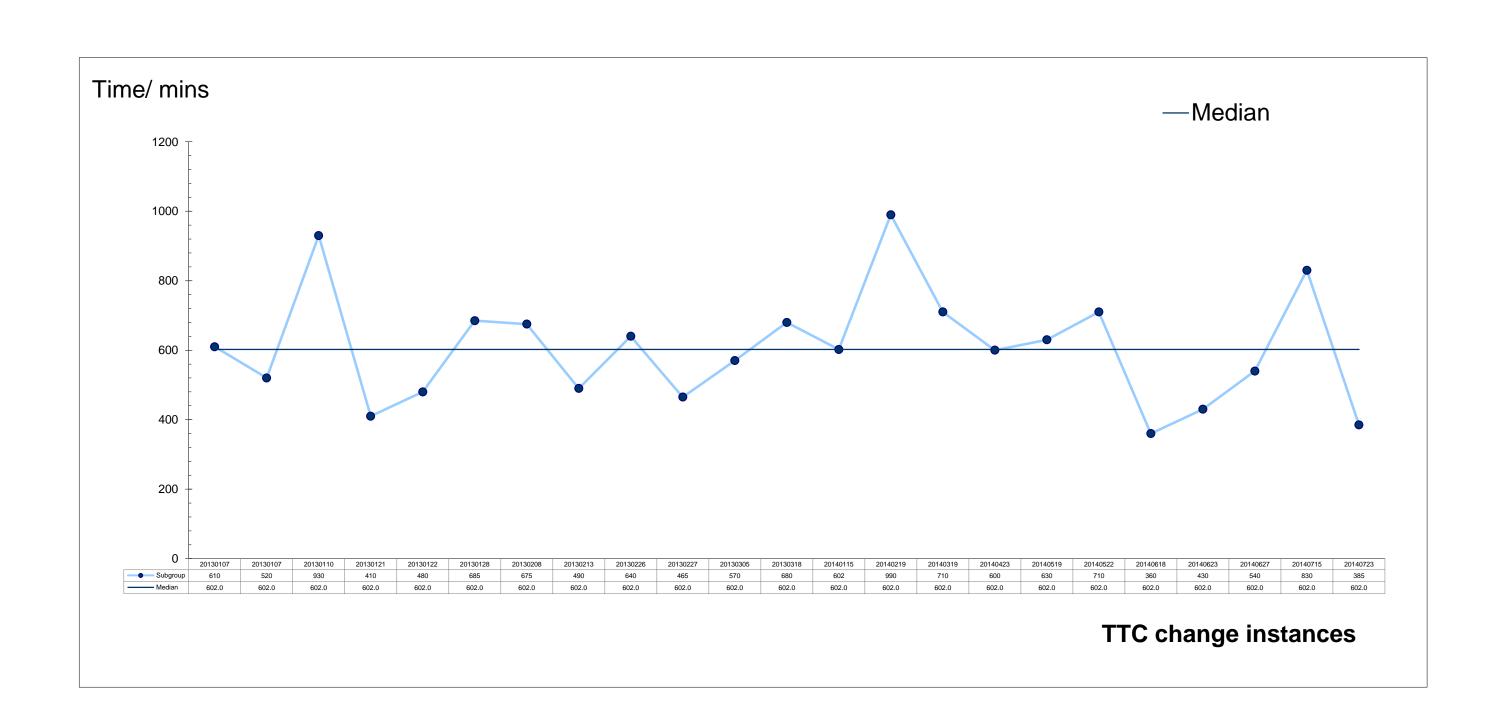


Figure 2. Run Chart for Total Fasting Time - baseline

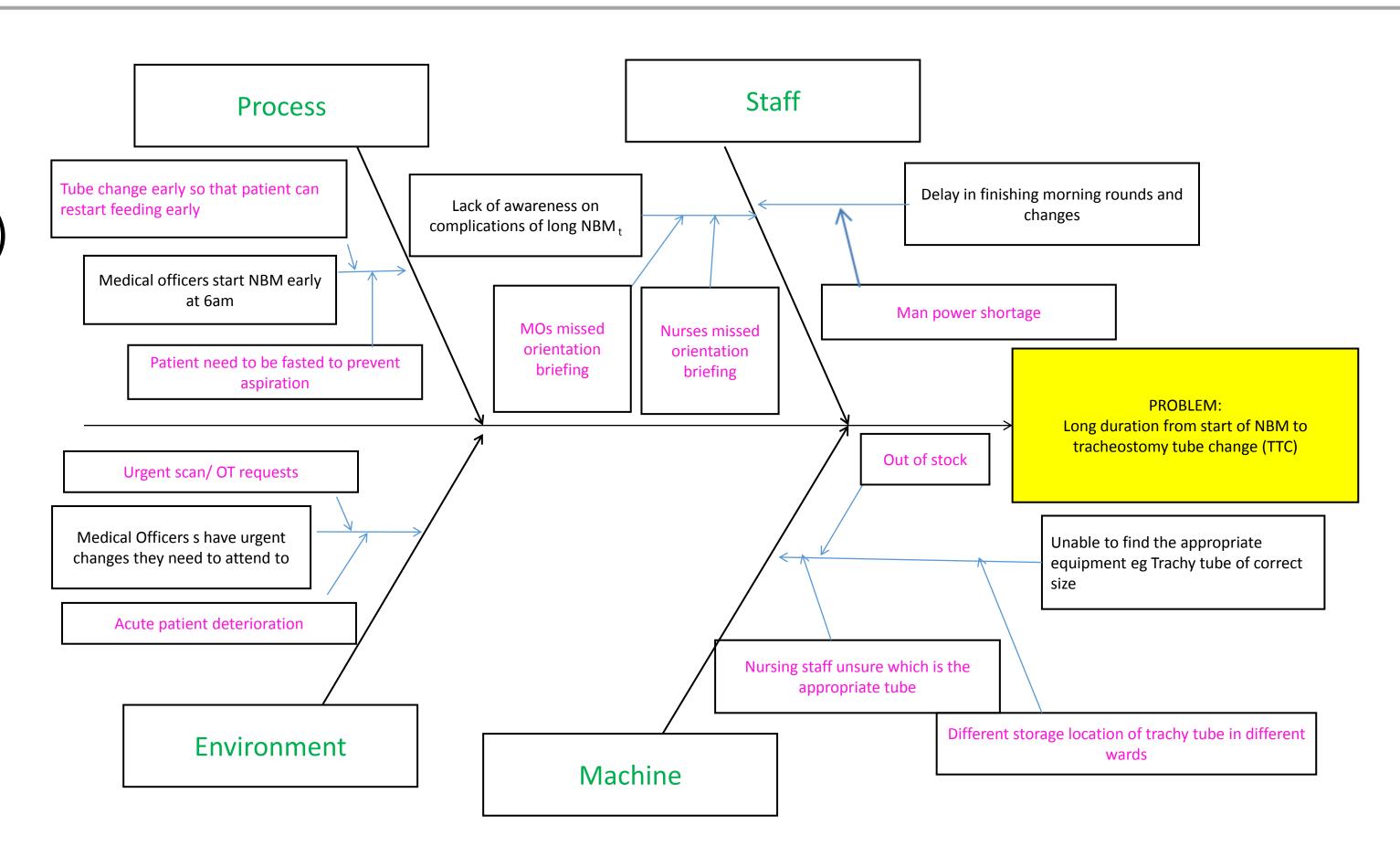


Figure 3. Fish Bone Root Cause Analysis

Intervention:

After root cause analysis using Fish bone diagram and Pareto chart analysis, we identified one of the root cause being medical officers were unable to perform TTC procedure before noon due to urgent duties. The intervention decided was to Delay Time of Fasting Onset from 0600h to 1000h.

Rosults:

Post intervention we analyzed a further 8 TTC instances from 23rd Sept - 11th Dec 2014. **A 19.1% reduction in median total fasting** duration was observed from 602mins to 487mins.

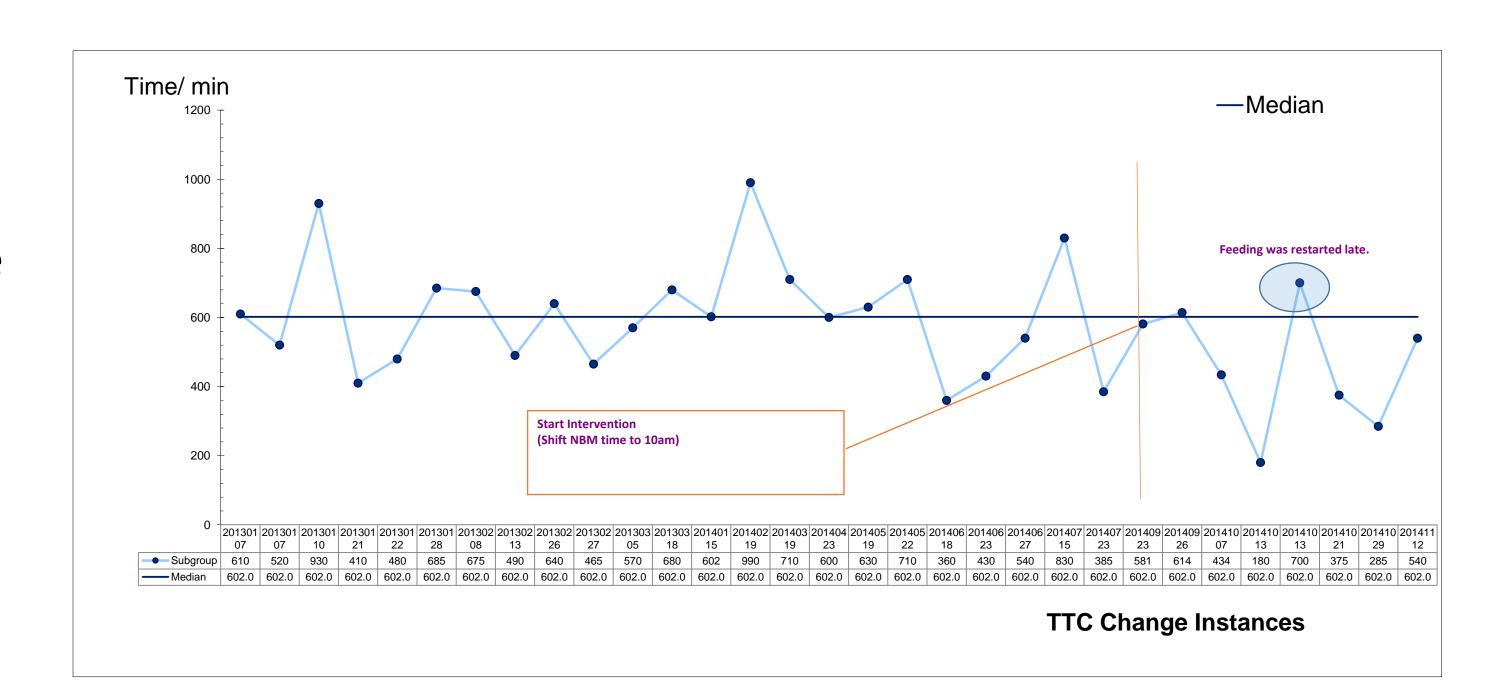


Figure 4. Run Chart for Total Fasting Time – post intervention

Conclusion and future work:

Delaying the onset of fasting from 0600h to 1000h has reduced the total fasting duration in patients. This simple intervention, with appropriate implementation, has improved the quality of patient care. Amendments were hence made in the existing TTC protocol.

The next phase will be a review on the necessity of performing Chest X-ray post tracheostomy tube change.