

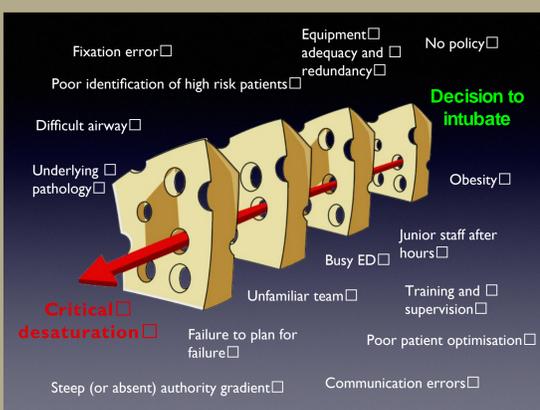
The Royal North Shore Hospital Emergency Department Airway Registry: Closing The Audit Loop

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Background

Timely, safe endotracheal intubation is a fundamental aspect of the ED resuscitation of critically ill or injured patients. Many studies have shown this to carry greater risks than intubation in the Operating Theatre. The reasons for this are multifactorial:



Project Aim

Having published the data from RNSH ED (Fogg *et al* 2012) a bundle of changes were developed and implemented to improve safety. This subsequent study was designed to assess their efficacy, particularly key metrics such as first pass success and complication rates.

Methods

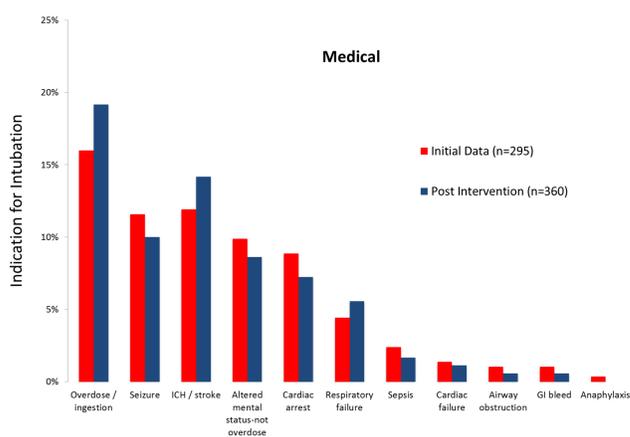
Between October 2012 and March 2014, RNSH Data was extracted from the Australian and New Zealand ED Airway Registry (ANZEDAR). This was compared to the data in the original RNSH study.

The RSI Bundle

- Credentialing system, requiring 3 months anaesthetics experience before attempting any RSI in ED.
- Mandatory use of a bougie or stylet to aid intubation along with C-Mac video laryngoscopy for all attempts.
- Nasal prong apnoeic diffusion oxygenation for all patients to prolong time to desaturation.
- A pre intubation checklist must be completed before RSI starts.
- Standardised failed airway algorithm to improve teamwork.
- Simulation – in situ and sim-centre based crisis resource management (CRM) training.
- Procedural training – cadaveric laboratory and simulation lab.

Results 1

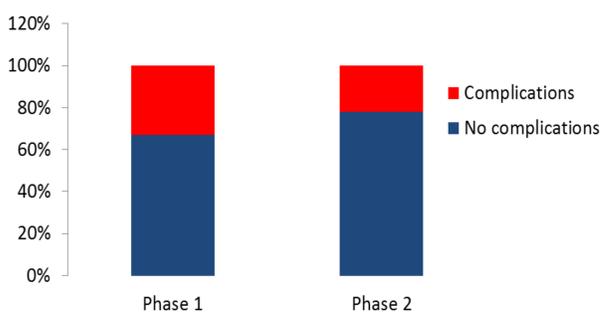
Indications for intubation, patient demographics and degree of physiological derangement were similar in both groups



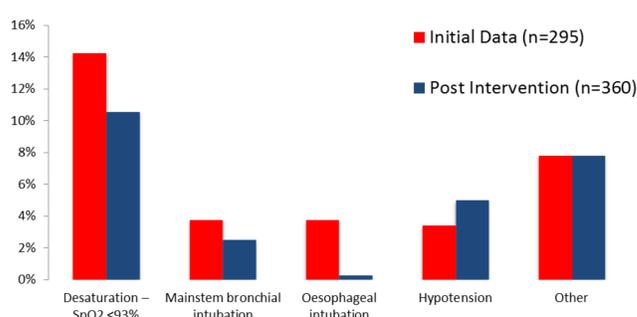
Results 2

- First pass success improved from 83.4% to 93.9% (P<0.001)
- The incidence of at least one complication declined from 28.3% to 20.1% (P=0.017)

Overall Complication Rate



% Complications



Conclusion

- The bundle of changes introduced made significant improvements in both first pass success rate and the occurrence of complications.
- Many components of the bundle focus on the non technical aspects of intubation and as such, these lessons in CRM can be easily translated to other aspects of Critical Care.

Recommendation

All EDs are encouraged to consider joining the Australian and New Zealand ED Airway Registry in order to review their own performance of intubation and institute changes as highlighted by their own data.

This project received the 2014 NSW Health Award in the category "Translational Research"



L-R: Hatem Alkhouri, Tim Jewell, John Vassiliadis, Toby Fogg, Martin Ward, The Hon. Jillian Skinner
Photo taken by Don Fuchs.

