



Singapore Healthcare
Management 2017

E-Airway Kit for Intra-hospital Transport of Critically ill Patients

Hiew Swee Sim, Josiah Quak, Lee Tian,
Wee Adelia, Hiew Swee Jin
Surgical Intensive Care Unit, Changi General Hospital

Background



Prior to the project initiation, one bulky Transport Kit containing emergency airway requisites was available in SICU for patient transportation. Multiple, simultaneous patient transportation for procedures necessitated the handpicking of individual emergency airway requisites from dispersed locations by nurses. Resultant risks include delays in patient transportation and inadvertent omission of crucial requisites.

Aim



To create an ergonomic **E-Airway Kit** which is easily handled during transport, easily stored and replaced after use.

Methodology

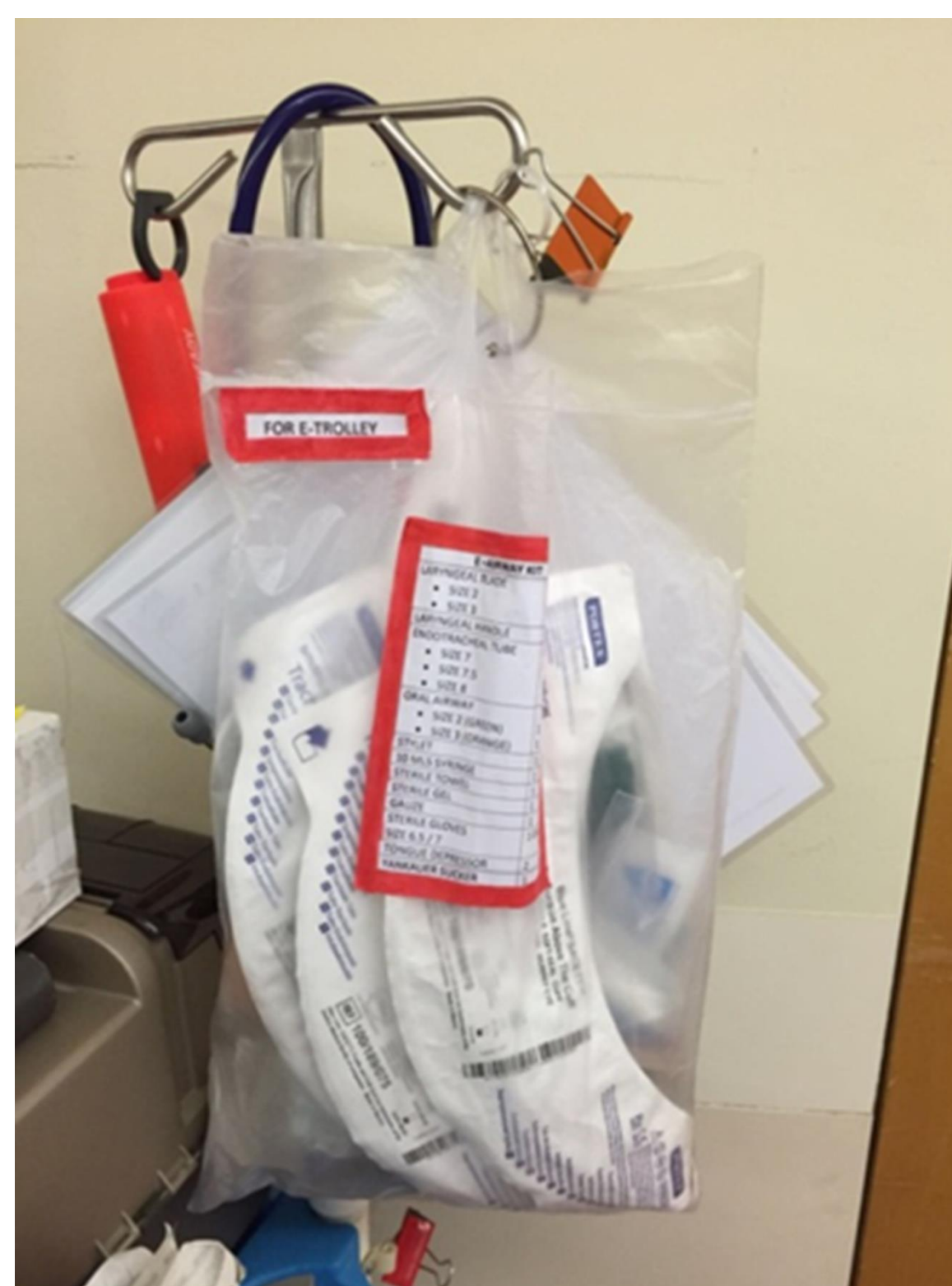


We tested on multiple ideas before reaching the final prototype. Previous ideas failed as the containers were too bulky, difficult to visualise items within, boxes tend to fall off and break, and container was difficult to disinfect after use. The final prototype stems from the idea of transparent zip-lock bag that keeps fruits clean, and is easy to replace.



Final Prototype

- ✓ Transparent
- ✓ Lightweight
- ✓ Hands-free
- ✓ Able to fit all 12 essential items
- ✓ Easy to clean
- ✓ Low cost
- ✓ Reduce cross contamination
- ✓ Sufficient for daily usage
- ✓ Improve efficiency



Results



- Staff have been briefed on workflows for usage, disinfection and replenishment to ensure kits are readily available.
- Airway requisite preparation times decreased by **79%**, from an average of 7.3 to 1.5 min.
- E-Airway Kit utilized **232** times for patient transportation over 3 months.
- E-Airway Kit also used in **7** cases of intubations in **SICU**.
- Total time saved was **1345.6mins** over 3 months.
- **100%** of staff interviewed (Including Respiratory Therapists) reflected positive feedback and high satisfaction levels.

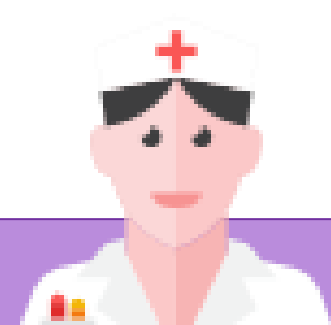
Staff feedback

"Easy to clean and replace kit contents."

"Checklist of items makes it easier to prepare new kits."

"Hands free and not bulky. Can hang on IV pole."

Conclusion



The **E-Airway Kits** have been adopted as standard practice in the SICU. Significant reductions in preparation timings have increased efficiency, streamlined work processes, and improved patient safety. It has also ensured that the ICU is intubation-ready at all times. Other intangible benefits reported include reduction in anxiety during patient transportation and emergency situations, and more time available for monitoring of patients' condition and other needs. Continued feedback ensures the continued relevance of the E-Airway Kits in the constantly evolving critical care setting.



Changi
General Hospital

