

Use ISBAR Communication Tool to Reduce the Rate of Unplanned Endotracheal Extubation in the Neonatal Intensive Care Unit



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Background

- Unplanned endotracheal extubation is an important medical accident. Unexpected endotracheal extubation, not only cause respiratory tract injury and secondary pneumonia, but also severe respiratory failure, hypoxemia, cardiac arrest and other complications, which result in prolonged ICU and hospital stay.
- Patients with unintended endotracheal extubation also have a higher mortality rate if re-intubation is required.
- According to the previous literature, the common causes of unplanned endotracheal extubation include lack of proper restraint, changes in the patient's state of consciousness, inadequate use of sedatives, inadequate nursing manpower, delayed endotracheal extubation and cuff rupture of endotracheal tube.
- How to reduce the occurrence of unplanned endotracheal extubation is an important issue for patient safety.

Purpose

- Patients with unplanned endotracheal extubation have a higher mortality rate if re-intubation is required. We expect unplanned extubation is reduced to 0% after implementation of quality improvement in our neonatal intensive care unit.

Methods

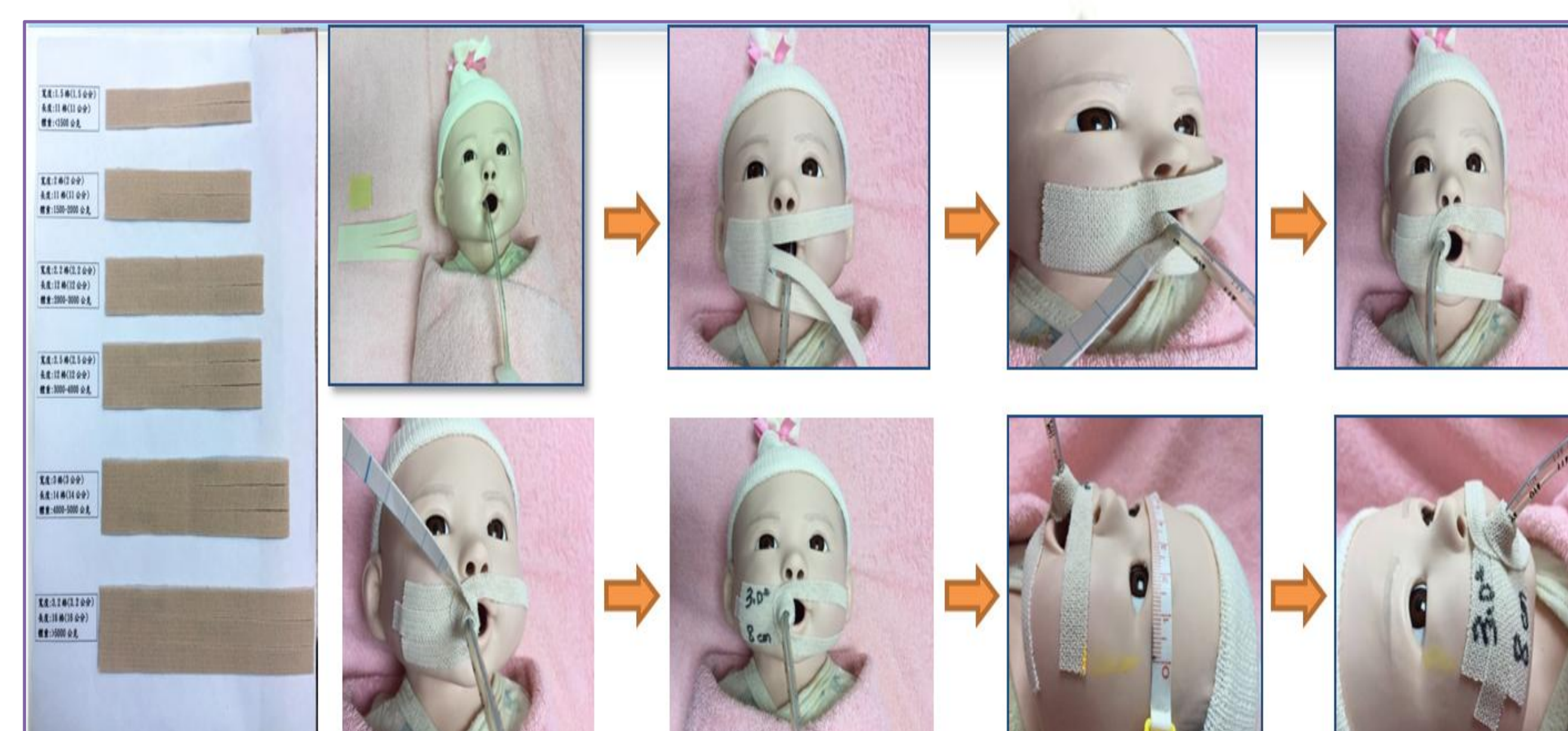
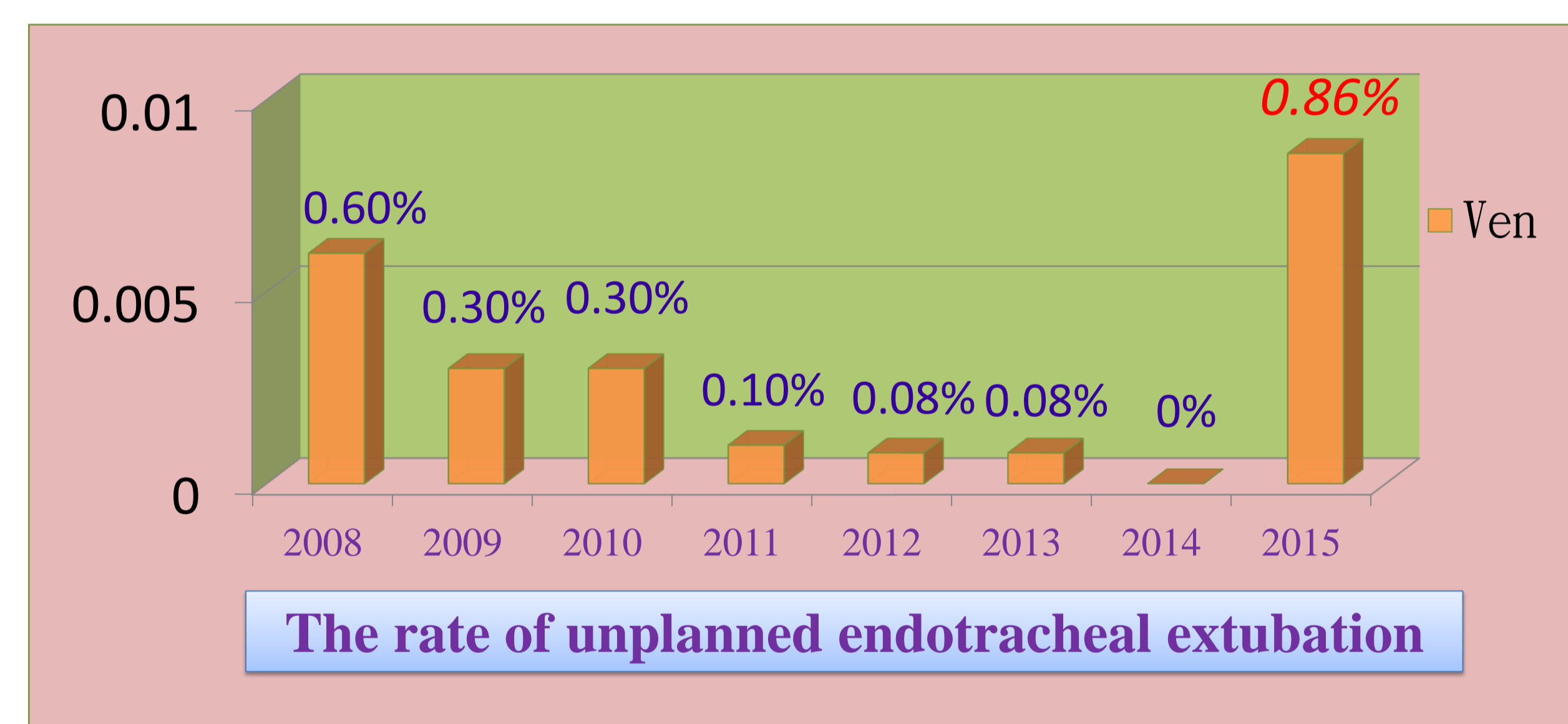
- Implementation of quality improvement included
 1. Reform the fixation method of endotracheal tube. with different length. We set up a table by weight to decide the number and length of phalanges, and take a video to demonstrate how to fix endotracheal tube by different phalanges of elastic adhesive tape.
 2. We revise “endotracheal tube care guide book”, and also formulate “security of endotracheal tube assessment form“, to promote the nursing staff to confirm the depth of the endotracheal tube and to perform auscultation of breath sounds.
 - 3 Promote the nursing staffs to use “N-PASS: Neonatal Pain, Agitation and Sedation Scale“ to evaluate pain, restlessness For intubated babies. If N-PASS is ≥ 3 points, the physician is called to deal with this condition. We also use ISBAR tool at hand- of communication every shift.
 4. Set up neonatal positioning guide and also encourage the use of pacifiers to achieve greater comfort of each intubated infant.
 5. Consider early extubation according to VAP Buddle daily as sessment.
 6. Arrange education and training of patients' safety.

Results

- There is improvement of the care of endotracheal tube after implementation of quality improvement.
- However, we found out that evaluation of N-PASS was difficult to be applied because attending physicians is worried that sedation analgesics easily lead to neonatal respiratory depression, which may result in delayed extubation .
- They recommended to use “containment” and oral sugar to pain relief. if fail, we will further consider use of sedatives.
- After implementation of quality improvent, we still did not reach the target value of 0%. we did not have an endotracheal extubation program guideline. Therefore, this will be the future direction of improvement.

Conclusion

- The project will continue to work to reduce unplanned endotracheal extubation , which aims to maintain patient safety , and improve quality of care, enhancing the communication and collaboration between healthcare teams.



Reform the fixation method of endotracheal tube