

Optimising the rapid sequence induction checklist. A quality improvement project.

Dr Tom Baddeley, CT1 Anaesthetics trainee. Dr David Macnair, Consultant Anaesthetist.
Anaesthetic department, Dumfries and Galloway Royal Infirmary

Introduction

- Rapid Sequence Induction (RSI) is an intubation technique used to minimise the time between loss of airway reflexes and endotracheal tube placement, in those at risk of aspiration of gastric contents.
- The National Audit Project 4 (2011)¹ encouraged use of a checklist for all intubations of critically unwell patients to minimise errors from inadequate preparation of equipment and prepare the team for potential difficulty.

Methods

- Informal feedback was that the original RSI checklist was unpopular because it was clunky and caused anxiety among patients.
- A questionnaire was sent via Microsoft Forms to the anaesthetic department to evaluate this. 6 anaesthetic nurses and 13 doctors completed the survey.


Results

- Main findings:
 - 74% respondents did not use a checklist for every RSI.
 - 47% respondents modify checklist to clinical situation.
 - 84% respondents agree that checklist is important for patient safety.
 - Checklist was preferentially used when outside of theatre environment.
- Comments:
 - Checklist can be improved by: "simplicity", "condensing it", "standardisation", "splitting checklist into stages that can be completed at different stages of patient journey...checklist performed in front of an anxious patient is not appropriate".
 - Barriers to using checklist: "staff disengagement", "time consuming", "complacency".

Conclusion

- Multiple improvements needed to encourage use of checklist by stakeholders, condense and improve flow, avoid repetition, promote standardisation across all hospital departments.

RAPID SEQUENCE INDUCTION CHECKLIST

TEAM	<input type="checkbox"/> ALLOCATE ROLES <input type="checkbox"/> Airway 1 and 2 <input type="checkbox"/> Assistant 1 (equipment +/- cricoid) <input type="checkbox"/> Assistant 2 (runner, call for help, MILS) <input type="checkbox"/> Drugs <input type="checkbox"/> VERBALISE AIRWAY PLAN <input type="checkbox"/> A: Intubation <input type="checkbox"/> B: LMA insertion	<input type="checkbox"/> C: Facemask ventilation <input type="checkbox"/> D: Location of airway rescue trolley <input type="checkbox"/> VERBALISE LOCATION OF HELP <input type="checkbox"/> CAN WE WAKE PATIENT? <input type="checkbox"/> Yes <input type="checkbox"/> No
EQUIPMENT	<input type="checkbox"/> EQUIPMENT <input type="checkbox"/> Monitoring: (EtCO ₂ , SpO ₂ , ECG, BP) <input type="checkbox"/> Ambu bag + PEEP valve, facemask <input type="checkbox"/> 2x laryngoscope <input type="checkbox"/> 2x ETT (+ smaller size) cut, lubricate, tie, syringe <input type="checkbox"/> Videolaryngoscope <input type="checkbox"/> Bougie, stylet	<input type="checkbox"/> Adjuncts, stethoscope <input type="checkbox"/> Suction on <input type="checkbox"/> Trolley tip check <input type="checkbox"/> Ventilator ready <input type="checkbox"/> DRUGS <input type="checkbox"/> Induction <input type="checkbox"/> Paralysis <input type="checkbox"/> Maintenance <input type="checkbox"/> Emergency
PATIENT	<input type="checkbox"/> Patient sign in <input type="checkbox"/> WHO checklist <input type="checkbox"/> Check monitoring commenced <input type="checkbox"/> Airway assessment <input type="checkbox"/> Preoxygenation	<input type="checkbox"/> Optimise haemodynamics <input type="checkbox"/> Optimise position <input type="checkbox"/> Reliable IV access <input type="checkbox"/> TEAM READY?
INDUCTION + INTUBATION	<input type="checkbox"/> POST INTUBATION CARE <input type="checkbox"/> Cuff up and secure <input type="checkbox"/> Confirm ETT location <input type="checkbox"/> Cricoid off, anaesthetic on	

Modifications

- Logical and natural flow within each section.
- Use of colour and arrows as a visual cue.
- Addition of DAS guideline as aide-mémoire.
- Amalgamate the parts of the current theatre, ED, RCOA and CCU checklists to facilitate its standardisation across hospital.
- Check boxes as cognitive cue.
- Incorporate allergies and other patient details together as these will be included in the WHO checklist which is completed for every theatre patient.
- 'Team Ready' timeout just prior to intubation for concerns to be raised.
- 'Team', 'equipment' and 'airway plan' can be discussed prior to patient arrival so they do not overhear potentially anxiety causing details.
- Allows flexibility for the airway team leader to decide on specifics of position, drug doses, equipment, preoxygenation methods.

1. Cook TM, Woodall N; Fourth National Audit Project. Major complications of airway management in the UK: results of the Fourth National Audit Project of the Royal College of Anaesthetists and the Difficult Airway Society. Part 2: intensive care and emergency departments. Br J Anaesth. 2011 May;106(5):632-42. doi: 10.1093/bja/aer059. Epub 2011 Mar 29. PMID: 21447489.