

## **1. Introduction and who the guideline applies to**

This document sets out guidelines for emergency airway management of adults and children in non-theatre areas. It is based on the 4th National Audit Project (NAP4), the joint position statement from the Royal College of Emergency Medicine and the Royal College of Anaesthetists as well as the Association of Anaesthetists standards of monitoring during Anaesthesia.

### **Background:**

Rapid Sequence Induction (RSI) in non-theatre areas presents a unique set of problems. The patients, indications for intubation and degree of urgency are very different to those encountered by anaesthetists in the operating department.

Several studies of airway management outside the operative theatre have identified higher rates of complications including failed intubation, oesophageal intubation, hypoxia and emergency cricothyroidotomy. These include studies in Intensive Care and Emergency Departments. Differences in factors such as case mix, availability of skilled and trained staff, levels of assistance and working environment all likely contribute.

In non-theatre settings it must be accepted that patients requiring emergency airway management are intrinsically high-risk. Critical illness, injury and oxygen dependency or threatened airway are all such examples.

The incidence of failed intubation in the ED and ICU is much higher than in the theatre environment. For example, the incidence of failed intubation among anaesthetists in the controlled environment of the theatre suite is 0.05%–0.35%. In contrast in the emergency setting the incidence has been reported to be 1%–2%, with repeated attempts at laryngoscopy being required in 5%–20% of cases. In NAP4, failed intubation was the second most common airway complication in ICU patients. RSI non-theatre areas is a high-risk procedure.

Mort's study of more than 10,000 emergency intubations outside the operating theatre found multiple attempts at intubation to be associated with dramatic increases and high rates of hypoxaemia, regurgitation of gastric contents, aspiration, bradycardia and cardiac arrest. For these reasons, the staffing and equipment in both settings must be such that airway management can be timely, skilled and where necessary utilise highly advanced techniques

The Fourth National Audit Project of the Royal College of Anaesthetists and the Difficult Airway Society (NAP4): Major complications of airway management in the UK highlighted several concerns.

The main findings and recommendations from NAP4 that are applicable to non-theatre areas are:

- Most adverse airway events in the Emergency Department were complications of rapid sequence induction. The most common cause appeared to be poor judgement. Poor planning, inadequate provision of skilled staff and equipment, delayed recognition of events and lack (or misinterpretation) of capnography were all considered to be important.

- Failed intubation and displaced endotracheal tubes in the ICU and ED contributed to morbidity and mortality.
  - Management of the obstructed airway requires particular skills and a multi-disciplinary approach.
  - Airway management in the Intensive Care Units, Emergency Department and remote hospital areas should be based on the concept of Right person, Right place, Right equipment, Right preparation.
- **SCOPE**
  - These guidelines apply to all patients who have been deemed to require emergency airway management
  - For the purpose of this guideline, children are patients aged 0-16.
  - These guidelines are to be used by all healthcare professionals whose work brings them into contact with patients who require emergency airway management in non-theatre areas.
  - Non-theatre areas include the Intensive Care Units (ICUs), the Emergency Department (ED) as well as all other wards and clinical areas.
- **ROLES AND RESPONSIBILITY**
  - Medical Director and Chief Nurse are responsible for:
    - a) Ensuring that appropriate mechanisms are in place to make sure that emergency airway management guidelines are followed.
    - b) Ensuring the policy and guideline development is based on national guidance, approved by the ITAPS Quality and Safety Group and disseminated across the Trust via CMG management teams.
  - CMG Teams are responsible for:
    - a) Ensuring all staff within their CMG follow the guidance.
    - b) Ensuring dissemination of and compliance with this policy.
    - c) Ensuring regular audit of compliance with this policy is carried out with timely feedback to staff.
    - d) Ensuring that any remedial action resulting from compliance audit is acted upon.
  - All Anaesthetists, Intensive Care Medicine (ICM) doctors, Operating Department Practitioners (ODPs), Anaesthetic trained nurses, ICU Doctors, ICU nurses, ED Doctors and ED nurses should be familiar with this guidance.

## **2. Guideline Standards and Procedures**

### **Right person:**

For initial management:

- ITAPS provides skilled intubators in the form of a 24/7 on-call of senior Anaesthetists /Intensive Care Medicine trainees and Consultants to make decisions about and manage intubations required in the Emergency Department, Intensive Care Units and other non-

theatre areas. A senior Anaesthetic trainee is the 2<sup>nd</sup> on-call (ST5+) Anaesthetist. A senior ICM trainee is on the ITU Registrar on-call.

- Emergency intubations should be managed by (or under supervision of) a senior Anaesthetist or senior Intensive Care Medicine Doctor
- Cross specialty supervision should ideally be undertaken at Consultant level and is solely at the discretion of the Anaesthetist
- The Anaesthetist's assistant should be a trained anaesthetic ODP (Operating Department Practitioner) or Anaesthetic trained nurse.

## **Adults:**

- Primary pathology: Airway compromise

If the patient is in imminent danger, call 2222 and fast bleep the 2<sup>nd</sup>-on call Anaesthetist bleep (6104) ODP (4220) and ENT on-call by stating:

**“Airway emergency, Anaesthetist required”**

- Critically unwell patient with no imminent airway compromise: Refer directly to ICU

## **Children:**

- If the patient is in imminent danger, call 2222 and fast bleep the Paediatric Anaesthetist on 6573 (held by the 2<sup>nd</sup> on-call Anaesthetist) and ODP (4220) by stating:

**“Paediatric airway emergency, Anaesthetist required”**

- Critically unwell patient with no imminent airway compromise: Refer directly to PICU

For paediatrics, further assistance should be sought from:

1. Paediatric Intensive Care Consultant
2. Paediatric Consultant anaesthetist on-call

**For all patients, further assistance may be sought from the 1<sup>st</sup> on-call Anaesthetic Registrar (bleep 4058) or Anaesthetic phone on shortcode #6873**

For the management of all anaesthetised patients, the guidance of the Association of Anaesthetists should be followed. This states that the continuous presence of an appropriately trained and suitably experienced anaesthetist is the cornerstone of patient safety during anaesthesia. The anaesthetist should be with the patient at all times, right up until care has been handed over to an appropriately trained member of staff.

## **Right Place:**

In the ED patients with airway emergencies should be initially managed in the resuscitation room.

- Staff who are required to manage airway emergencies in the Emergency Department should be familiar with the environment and the available equipment.
- In cases of airway compromise, it may be preferable to secure the airway before moving the patient out of the emergency department. However, the anaesthetist may make the decision to move a patient with a threatened airway to the main operating theatres to secure the airway.

In the ICUs:

- For many patients the safest place for emergency airway management will be on the ICU.
- If a hazardous airway predicted and the patient is deemed stable enough, it may be appropriate to transfer to theatre for airway management.

## Right equipment:

Waveform capnography is always used during intubation, in patients who remain intubated and during transfer of intubated patients.

Rescue airway devices are immediately available. The UHL standardised difficult airway trolley is available in the resuscitation room and intensive care units.

All equipment used for emergency airway management should be properly maintained and serviced regularly where applicable. Responsibility for this lies with the department in which the equipment is located.

## Right preparation:

The decision to intubate must be led by the Anaesthetics and Critical Care team. This is to ensure that adequate resources are made available to receive the patient, and that the patient's ability to survive a critical illness has been explored.

During and after emergency airway management, standards of anaesthetic care and safety must be the same as those provided in theatre suites.

A checklist is used before intubation. This should identify appropriate preparation of the patient, the correct range of equipment and drugs, suitable team members for each role and plans for management of failure and complications. This checklist can be found printed on the emergency anaesthetic record or LOCSSIP.

The Emergency Anaesthetic Chart is in Appendix 1

The Intubation LOCSSIP is in Appendix 2

## **3. Education and Training**

- All new and returning Anaesthetic/ICM trainees are offered a tour of the ED and ICU's and inspection of the facilities as part of their formal induction.
- For Anaesthetic and ICM Doctors, there are no specific education and training requirements for the implementation of this guideline. Staff who identify a training need must discuss this with their line manager.

## **4. Monitoring Compliance**

What will be measured to monitor compliance	How will compliance be monitored	Monitoring Lead	Frequency	Reporting arrangements
Intubation checklist	Datix incidents	ITAPS Q&S Lead	Every incident	ITAPS Audit meeting
Audit of intubations done in non theatre settings	P&G compliance	Airway lead	Annually	QI meetings

## 5. Supporting References

- Major complications of airway management in the UK. The 4<sup>th</sup> National Audit Project (NAP4). Report and findings. Royal College of Anaesthetists, 2011

<https://www.nationalauditprojects.org.uk/downloads/NAP4%20Full%20Report.pdf>

- Emergency Airway Management: A joint position statement from the Royal College of Emergency Medicine and the Royal College of Anaesthetists

[https://res.cloudinary.com/studio-republic/images/v1648113373/Emergency\\_Airway\\_Management\\_Joint\\_Statement\\_December\\_15/Emergency\\_Airway\\_Management\\_Joint\\_Statement\\_December\\_15.pdf?i=AA](https://res.cloudinary.com/studio-republic/images/v1648113373/Emergency_Airway_Management_Joint_Statement_December_15/Emergency_Airway_Management_Joint_Statement_December_15.pdf?i=AA)

- Recommendations for standards of monitoring during anaesthesia and recovery 2021. Association of Anaesthetists

<https://anaesthetists.org/Home/Resources-publications/Guidelines/Recommendations-for-standards-of-monitoring-during-anaesthesia-and-recovery-2021>

## 6. Key Words

List of words, phrases that may be used by staff searching for the Guidelines on PAGL. If none – state none.

ICU, ED, RSI, Airway, Intubation

CONTACT AND REVIEW DETAILS	
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<b>Details of Changes made during review:</b> New guideline	

## 7. Appendices:

### Appendix 1 Emergency anaesthetic chart



Emergency anaesthetic chartv2.

### Appendix 2 LocSSIP ITU Intubation



Intubation  
LOCSSIP.pdf