

4th National Audit Project of the Royal College of Anaesthetists: Major Complications of Airway Management in the UK

Please select one form from the list below

- Airway management problem during anaesthesia
- Airway management problem in ICU / HDU
- Airway management problem occurring in the Emergency Department

Please note

Airway problems in the **Radiology Department** may occur in patients undergoing **anaesthesia** in that department or in patients transferred to the Radiology Department from **ICU** or the **Emergency Department** for investigation. For these patients and **for problems occurring in transit** complete the form relating to the site of initial airway management. For example if a patient develops airway obstruction in the CT scanner following intubation on the ICU the form NAP4ICU should be completed.

For problems occurring on **Labour Ward** please complete the form for airway management problem during anaesthesia

Enter

If you are not sure which form to select follow the links below for advice:-

RCoA Audit Pack to be found at :-

<http://www.rcoa.ac.uk/index.asp?PageID=1130>

RCoA Powerpoint Presentation to be found at :-

<http://www.rcoa.ac.uk/index.asp?PageID=1089>

FAQ's to be found at :-

<http://www.rcoa.ac.uk/index.asp?PageID=1147>

Airway Management Problem in ICU / HDU Patients

These pages are only for reports of cases where **an airway incident causing significant harm to a patient** occurred in the ICU/HDU or when a resident ICU/HDU patient was being cared for in an area outside the ICU/HDU (eg during a transfer or while in CT scan).

There are separate forms for reporting cases relating to airway incidents during anaesthesia or in the emergency department.

Inclusion Criteria

1. Please indicate the inclusion criteria by selecting one or more from the list below:

- Death**
- Brain damage**
- Emergency surgical airway or needle / cannula cricothyrotomy**
- Prolongation of ICU admission or treatment**

2. Please indicate the **primary airway problem**: - *radio buttons to select any one*

- Aspiration of gastro-oesophageal contents
- Failed mask ventilation
- LMA or supraglottic airway related problem
- Difficult or delayed intubation
- Failed intubation
- Tracheal tube misplacement
- Obstruction of tracheal tube or breathing circuit
- CICV - the can't intubate can't ventilate scenario
- Iatrogenic airway trauma
- Extubation related problems
- Tracheostomy related problems
- Other [please specify *free text limit to 50 letters*]

3. What was the root cause of the poor outcome?

- Hypoxaemia due to airway obstruction Yes No
 - Hypoxaemia due to tracheal tube misplacement or displacement Yes No
 - Hypoxaemia due to equipment failure Yes No
 - Aspiration of gastroesophageal contents Yes No
 - Cardiac or neurological complications caused by hypo/hypertension during airway management Yes No
 - Pharyngeal / oesophageal or other life-threatening soft-tissue trauma Yes No
 - Other Yes No
- Other [please specify *free text limit to 50 letters*]

4. About the person(s) completing this form:-

You are:-

- The clinician responsible for the patient's care (or one of team responsible for the patient's care): what is your job title? *Free text limit to 50 letters*
- The local reporter
- Both

Clinician Job Title:

Outcome Details

5. Please provide additional information on the inclusion criteria

checkboxes

- Death**
Please provide the cause of death. ... *free text limit to 50 letters*
- Brain damage**
Select the worst outcome observed
 - Delayed awakening
 - CVA
 - Seizures
 - Behavioural or cognitive impairment
 - Other [please specify *free text limit to 50 letters*]

Emergency surgical or needle/cannula airway

Prolongation of ICU stay as a result of a problem with airway management.

Reason for prolongation of ICU admission if appropriate

Aspiration of gastro-oesophageal contents

Myocardial infarction or cardiac problem

Airway trauma/oedema

Failure to awaken or elective ventilation to treat suspected brain injury

Other [please specify **free text limit to 50 letters**]

6. Outcome at time of form completion

Death

Partial recovery **specify** **free text limit to 50 letters**

Full recovery

7. Time to 'recorded outcome' from airway incident

Immediate

<24hrs

24hrs -1wk

1wk-1month

>1mth

8. Please provide a brief description of the event. Do not include any patient identifying details

..... **free text limit to 250 letters**

9. Which best describes the airway incident

Difficult or failed intubation

Accidental extubation

Problems at PDT (Percutaneous Dilatational Tracheostomy)

Other **free text limit to 50 letters**

Patient Characteristics at the time of the airway event

10. Gender Male Female

Age <1
 1- 4
 5 -10
 11- 20
 21- 40
 41- 60
 61 – 80
 > 81

ASA Grade I / II / III / IV / V [\(click one option\)](#)

Weight ___:___ kg Height ___:___mts BMI

Body habitus cachectic
 normal
 obese

11. Co-morbidities

- | | |
|---|--|
| <input checked="" type="checkbox"/> Hypertension or ischaemic heart disease | <input checked="" type="checkbox"/> Obstructive sleep apnoea |
| <input checked="" type="checkbox"/> Left ventricular failure | <input checked="" type="checkbox"/> Pregnancy |
| <input checked="" type="checkbox"/> Aortic stenosis | <input checked="" type="checkbox"/> Scleroderma |
| <input checked="" type="checkbox"/> Chronic obstructive pulmonary disease | <input checked="" type="checkbox"/> Rheumatoid arthritis |
| <input checked="" type="checkbox"/> Asthma | <input checked="" type="checkbox"/> Burns (acute or chronic) |
| <input checked="" type="checkbox"/> Renal failure | <input checked="" type="checkbox"/> Congenital deformity of head/neck |
| <input checked="" type="checkbox"/> Liver disease | <input checked="" type="checkbox"/> Previous radiotherapy to head/neck |
| <input checked="" type="checkbox"/> Diabetes mellitus | <input checked="" type="checkbox"/> Anticoagulated |
| <input checked="" type="checkbox"/> Obesity | |
| <input checked="" type="checkbox"/> Other free text limit to 50 letters | |

12. In trauma patients please list relevant major injuries
[free text limit to 50 letters](#)

13. Primary diagnosis
[free text limit to 50 letters](#)

Other relevant diagnoses
[free text limit to 50 letters](#)

14. Time of day hh:mm

15. Immediately prior to event

Type of respiratory support?

Facemask / Non Invasive Ventilation / Invasive Ventilation [\(click one option\)](#)

FiO₂ [free numerals with decimal point](#)

PaO₂ or SpO₂ [free numerals](#)

16. Organ failure

Vasoconstrictors

Inotropes

Renal replacement

CNS failure (estimated GCS <8)

Haematological failure

17. Direct consequences of airway incident

Hypoxia

CVS collapse

Cardiac arrest

For difficult intubation

Was difficulty with intubation or mask ventilation associated with the airway event

Yes

No (go to 35)

18. What was the indication for intubation?

[Free text limit to 30 letters](#)

19. Was intubation urgent?

Yes

No

20. Was an airway assessment performed?

Yes

No

21. Was difficulty anticipated?

Yes

No

If yes indicate with what aspects difficulty was anticipated

Face mask ventilation

Tracheal intubation

Direct tracheal access

Rescue techniques (eg LM insertion)

22. Was there a back-up plan? Yes No

If Yes go to

What was it? *Free text limit to 50 letters*

23. Was the equipment for this immediately available? Yes No

24. What form of anaesthesia was used?

None

Sedation

Simple IV induction

Rapid sequence induction

25. Drugs used

(click one option)

Induction STP / propofol / etomidate / ketamine/ midazolam / other *free text limit to 20 letters*

(click one option)

Opioid none / remifentanil / alfentanil / fentanyl / morphine / other *free text limit to 20 letters*

(click one option)

Relaxant none / suxamethonium / other *free text limit to 20 letters*

26. How many medical staff were involved in anaesthesia and airway management?

1 / 2 / 3 / 4 *(click one option)*

Grade of staff

1 *free text limit 20 letters* 2. *free text limit 20 letters* 3 *free text limit 20 letters* 4 *free text limit 20 letters*

Primary specialty of staff

Anaesthesia / Medicine / Surgical / Emerg. Med *(select one or more)*

27. When intubation was difficult 🚫 was mask ventilation

optimal / impaired / inadequate / impossible *(click one option)*

28. What problems arose?

How were they managed?

What complications arose?

free text limit to 500 letters

Techniques used

- A Used
- B Not used as not needed
- C Not used as no experience with it
- D Needed but not available
- E I do not know what this is

29. For intubation

- Macintosh A / B / C / D / E (click one option)
- McCoy A / B / C / D / E (click one option)
- Straight blade A / B / C / D / E (click one option)
- Reusable bougie A / B / C / D / E (click one option)
- Single use bougie A / B / C / D / E (click one option)
- Stylet A / B / C / D / E (click one option)
- OELM/BURP A / B / C / D / E (click one option)
- Other laryngoscope A / B / C / D / E (click one option)
- (state: free text limit 20 letters)
- ILMA A / B / C / D / E (click one option)

30. For airway rescue

- None A / B / C / D / E (click one option)
- Clma A / B / C / D / E (click one option)
- PLMA A / B / C / D / E (click one option)
- ILMA A / B / C / D / E (click one option)
- Combitube A / B / C / D / E (click one option)
- Other A / B / C / D / E (click one option)
- (state: free text limit 20 letters)

31. For direct tracheal access

- None A / B / C / D / E (click one option)
- Small bore cannula(<3mm) A / B / C / D / E (click one option)
- Large bore cannula(>2mm) A / B / C / D / E (click one option)
- Surgical airway A / B / C / D / E (click one option)
- Surgical tracheostomy A / B / C / D / E (click one option)
- Percutaneous tracheostomy A / B / C / D / E (click one option)

32. Duration of airway incident until airway secured or attempts abandoned? hh:mm

33. Estimated time this patient was hypoxic? hh:mm

34. Estimated time ventilation was not possible? hh:mm

For accidental extubation (including tracheostomy) leading to significant patient harm

Was accidental extubation associated with the airway event

Yes

No (go to 42)

35. How was the tracheal tube secured? *free text limit to 50 letters*

36. Why did it come out? *free text limit to 50 letters*

37. Was the patient attended? *free text limit to 50 letters*

38. Patient position? *free text limit to 50 letters*

39. How long until extubation was recognised? *hh:mm*

40. Did the event occur while the patient was off the ICU? Yes No

If yes

Please state where eg Radiology Department *free text limit to 50 letters*

Did being off site prevent optimal management? Yes No

Please state how did being off site prevented optimal management *free text limit to 50 letters*

41. What happened?

What problems arose?

How were they managed?

What were contributory factors?

What complications arose?

free text limit to 500 letters

Tracheostomy problems

Were problems at tracheostomy associated with the airway event

Yes No (go to 51)

42. Indication for tracheostomy *free text limit to 50 letters*

43. Technique used

- Surgical
- Ciaglia
- Blue / White / Green rhino
- Griggs
- PercuTwist
- Ripitrach
- Fantoni
- Other *free text limit to 30 letters*

44. Patient position *free text limit to 30 letters*

45. What form of anaesthesia was used?

- None
- Sedation
- IV anaesthesia
- Rapid sequence induction
- Inhalational anaesthesia

46. Drugs used

Induction *(click one option)*
STP / propofol / etomidate / ketamine/ midazolam / other *free text limit to 20 letters*
Opioid *(click one option)*
None / remifentanyl / alfentanil / fentanyl / morphine / other *free text limit to 20 letters*
Relaxant *(click one option)*
None / Suxamethonium / other (state). *free text limit to 20 letters*

47. How many medical staff were involved in anaesthesia and airway management?

1 / 2 / 3 / 4 / *click one option*

48. Grade of staff

1 dropdown list to select one of the entire list in No.12 2 dropdown list to select one of the entire list in No.12 3 dropdown list to select one of the entire list in No.12 4 dropdown list to select one of the entire list in No.12

Please indicate the primary specialty of staff : ANAES / MEDICAL / EMER. MED / INENSIVIST / SURG

1. 2. 3. 4.

49. How was the airway managed?

- Partial extubation
- Reintubation
- cLMA
- PLMA
- ILMA
- Other

50. Was a bronchoscope used?

- Intermittently
- Throughout technique

The nature of problems encountered

51. Specific complications

- Loss of airway
- Failed intubation
- Hypoxia
- Hypoventilation due to bronchoscope within airway
- Trauma to posterior trachea (+/- mediastinitis)
- Pneumothorax
- Pneumoperitoneum
- Airway bleeding

52. Free Text

What problems arose?

How were they managed?

What complications arose?

free text limit to 500 letters

53. Which of the following played an important role in the poor outcome?

- Defective knowledge
- Defective judgement
- Inadequate or malfunctioning equipment
- Defective training
- Team behaviour