TRACHEOSTOMY CARE STUDY
National Confidential Enquiry into Patient Outcome and Death (NCEPOD)

INSERTION QUESTIONNAIRE

CONFIDENTIAL

Hospital number: __________________________ NHS number: __________________________

Who completed this questionnaire?
Name: __________________________ Position: __________________________
Hospital: __________________________ Trust: __________________________

To be completed on all patients who undergo the insertion of a tracheostomy tube, as soon as possible.

What is this study about?
NCEPOD is examining remediable factors in the process of care of ADULT patients (16 years or older) who undergo the insertion of a tracheostomy.

Data is being collected over a 4 month period from all sites where the insertion of a tracheostomy is undertaken across England, Wales, Northern Ireland, Jersey, Guernsey and the Isle of Man, from both the public and the independent sector (where applicable). Both surgical and percutaneous insertions undertaken on either an emergency or elective basis will be included in the data collection.

How to complete the form:
Information will be collected using two methods; box cross and free text, where your opinion will be requested.

This form will be electronically scanned. Please use a black or blue pen. Please complete all questions with either block capitals or a bold cross inside the boxes provided e.g.

Was this a standalone tracheostomy procedure?

☒ Yes ☐ No

If you make a mistake, please “black-out” the incorrect box and re-enter the correct information, e.g.

☒ Yes ☐ No

Unless indicated, please mark only one box per question.

CPD accreditation:
Consultants who complete NCEPOD questionnaires make a valuable contribution to the investigation of patient care. Completion of questionnaires also provides an opportunity for consultants to review their clinical management and undertake a period of personal reflection. These activities have a continuing medical and professional development value for individual consultants. Consequently, NCEPOD recommends that consultants who complete NCEPOD questionnaires keep a record of this activity which can be included as evidence of internal/self directed Continuous Professional Development in their appraisal portfolio.

If you (the clinician completing the questionnaire) would like email confirmation of the completion of this questionnaire for your records, please clearly supply your email address below.

Questions or help?
A list of definitions is provided on page 2 of the questionnaire.

If you have any queries about this study or this questionnaire, please contact tracheostomy@ncepod.org.uk
Or telephone: 020 7251 9060

Thank you for taking the time to complete this questionnaire. The findings of the study will be published in 2014.
### DEFINITIONS

**Elective procedure/ operation**
A procedure or operation that is planned or booked in advance of routine admission to hospital.

**Levels of ward care**
- **Level 0:** Patients whose needs can be met through normal ward care in an acute hospital.
- **Level 1:** Patients at risk of their condition deteriorating, or those recently relocated from higher levels of care whose needs can be met on an acute ward with additional advice and support from the critical care team.
- **Level 2:** (e.g. HDU) Patients requiring more detailed observation or intervention including support for a single failing organ system or post-operative care, and those stepping down from higher levels of care. (NB: When Basic Respiratory and Basic Cardiovascular support are provided at the same time during the same critical care spell and no other organ support is required, the care is considered to be Level 2 care).
- **Level 3:** (e.g. ICU) Patients requiring advanced respiratory support alone or basic respiratory support together with support of at least two organs. This level includes all complex patients requiring support for multi-organ failure. (NB: Basic Respiratory and Basic Cardiovascular do not count as 2 organs if they occur simultaneously (see above under Level 2 care), but will count as Level 3 if another organ is supported at the same time).

**Critical care**
Level 2 and 3 care

**Bed head signs**
A sign available at the patient’s bed space which allows the quick and easy communication of information. (National Tracheostomy Safety Project, 2012. Page 46)

### CODES FOR SPECIALTY

**SURGICAL SPECIALTIES**

<table>
<thead>
<tr>
<th>Code</th>
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<tr>
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<td>101</td>
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<td>120</td>
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<td>Accident &amp; Emergency</td>
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**MEDICAL SPECIALTIES**

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### CODES FOR GRADE

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<tr>
<td>03</td>
<td>Trainee with CCT</td>
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<tr>
<td>05</td>
<td>Junior specialist trainee (ST1&amp;ST2 or CT equivalent)</td>
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<td>07</td>
<td>Nursing</td>
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<td>09</td>
<td>Other</td>
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<td>02</td>
<td>Staff grade/Associate specialist</td>
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<td>04</td>
<td>Senior specialist trainee (ST3+ or equivalent)</td>
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<tr>
<td>06</td>
<td>Basic grade (HO/FY1 or SHO/FY2 or equivalent)</td>
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<tr>
<td>08</td>
<td>Physiotherapy</td>
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</table>
Please provide a brief summary of this case, adding any comments or information you feel relevant, (please write clearly for the benefit of the specialist advisory group who will be reviewing the questionnaires). You may also type on a separate sheet. You may like to fill in the summary once you have completed the rest of the questionnaire.

NCEPOD attaches great importance to this summary. Please give as much information as possible about the care of this patient.
A. PATIENT DETAILS

1. Age at the time of insertion: _____________

2. Sex:
   □ Male  □ Female

3. Height _____________ cm
   □ Estimated height   □ Actual height

4. Weight _____________ kg
   □ Estimated weight   □ Actual weight

5. BMI _____________
   □ Estimated   □ Actual

6a. What was the principal diagnosis leading to the admission of this patient? (Please specify)

   __________________________________________________________

6b. What was the principal diagnosis leading to the need for tracheostomy? (Please specify)

   __________________________________________________________

7. What was the patient's ASA Grade immediately prior to tracheostomy insertion?
   □ ASA 1: A normal healthy patient
   □ ASA 2: A patient with a mild systemic disease; no limitations
   □ ASA 3: A patient with a severe systemic disease; limitations
   □ ASA 4: A patient with a severe systemic disease that is a constant threat to life
   □ ASA 5: A moribund patient who is not expected to survive the operation
   □ Unknown

B. ADMISSION

8a. Date of hospital admission (to the ward):
    ❏    ❏    ❏    ❏    ❏    ❏    ❏    ❏    ❏    ❏    □ Unknown
d d m m y y y y

8b. Time of hospital admission (to the ward):
    ❏    ❏    (24 hour clock)    □ Unknown
h h m m

9. What was the urgency of the admission?
   □ Elective  □ Emergency

10. What was the primary specialty of the clinician the patient was admitted under? (Please use specialty codes on page 2)
    ❏    ❏    □ Unknown
11a. Please state the patient's location immediately following admission: (please see definitions on page 2)

- [ ] Level 0
- [ ] Level 1
- [ ] Level 2
- [ ] Level 3
- [ ] Unknown
- [ ] Other (Please specify)

11b. Please state the patient's location in hospital immediately prior to tracheostomy: (please see definitions on page 2)

- [ ] Level 0
- [ ] Level 1
- [ ] Level 2
- [ ] Level 3
- [ ] Emergency Department
- [ ] Unknown
- [ ] Other (Please specify)

### C. TRACHEOSTOMY INSERTION DETAILS

12a. Date of tracheostomy insertion:  

- [ ] dd
- [ ] mm
- [ ] yyyy
- [ ] Unknown

12b. Time of tracheostomy insertion:  

- [ ] hh
- [ ] mm
- [ ] (24 hour clock)
- [ ] Unknown

13. What was the urgency of the procedure?

- [ ] Immediate  Immediate life, limb or organ-saving intervention; resuscitation simultaneous with intervention. Normally within minutes of decision to operate.
- [ ] Urgent  Acute onset or deterioration of potentially life threatening conditions; for those conditions that may threaten the survival of limb or organ; for fixation of many fractures; and for relief of pain or other distressing symptoms. Normally within hours of decision to operate.
- [ ] Expedited  Patient requiring early treatment where the condition is not an immediate threat to life, limb or organ survival. Normally within days of decision to operate.
- [ ] Elective  Intervention planned or booked in advance of routine admission to hospital. Timing to suit patient, hospital and staff.

14. Date of last tracheal intubation prior to tracheostomy insertion (if it does not coincide with insertion)  

- [ ] dd
- [ ] mm
- [ ] yyyy
- [ ] Unknown

- [ ] Not applicable

15a. Did the patient have a trial of extubation prior to tracheostomy?  

- [ ] Yes
- [ ] No
- [ ] Unknown
- [ ] Not applicable

15b. If YES, how many trials of extubation?  

- [ ] 1
- [ ] 2
- [ ] 3
- [ ] 4
- [ ] 5
- [ ] Unknown
16. What was the indication for tracheostomy? (Please tick all that apply)

- [] To facilitate the removal of pulmonary secretions
- [] To protect the airway as the patient was at high risk of aspiration
- [] Laryngectomy
- [] To enable long-term mechanical ventilation
- [] To facilitate weaning from mechanical ventilation
- [] Upper airway obstruction
- [] Other (Please specify) ________________
- [] Unknown

17. Was the neck considered potentially difficult for tracheostomy before starting, e.g. big veins, short neck, bleeding tendency, deep stoma? (Please give any additional comment on page 3)

   - [] Yes
   - [] No
   - [] Unknown

18a. Did the patient have a bleeding disorder?

   - [] Yes
   - [] No
   - [] Unknown

18b. If YES, please give details

   __________________________________________________________________________

18c. If YES, had this been fully corrected/controlled prior to tracheostomy insertion?

   - [] Yes
   - [] No
   - [] Unknown

19. How was the tracheostomy performed?

   - [] Percutanously (Please complete SECTION 2, Page 7)
   - [] Surgically (Please complete SECTION 3, Page 11)
### SECTION 2: PERCUTANEOUS TRACHEOSTOMY INSERTION

1a. Date of critical care admission (episode during which the tracheostomy was performed):

   - [ ] d
   - [ ] m
   - [ ] y
   - [ ] y

   - [ ] Unknown

   - [ ] Not applicable (please go to question 2)

1b. Time of critical care admission:

   - [ ] h
   - [ ] m

   - (24 hour clock)

   - [ ] Unknown

### A. OPERATION DETAILS

#### STAFFING

2. What was the grade of practitioner who managed the upper airway and/or anaesthetic during the tracheostomy insertion? (Please use grade codes on page 2)

   - [ ]

   - [ ] Unknown

3. What was the grade of doctor who performed the tracheostomy? (Please use grade codes on page 2)

   - [ ]

   - [ ] Unknown

4. What was the specialty of doctor who performed the tracheostomy? (Please use specialty codes on page 2)

   - [ ]

   - [ ] Unknown

5. Was this a different doctor/practitioner to the one who managed the airway?

   - [ ] Yes
   - [ ] No
   - [ ] Unknown

6a. Were there any deficiencies in staffing that hindered the procedure?

   - [ ] Yes
   - [ ] No
   - [ ] Unknown

   If YES, please give details

6b. If YES, please give details

#### CONSENT

7. Was a consent form completed?

   - [ ] Yes
   - [ ] No
   - [ ] Unknown

8a. If YES, what was the grade of clinician taking consent? (Please use grade codes on page 2)

   - [ ]

   - [ ] Unknown

8b. If YES, were the benefits and risks of the tracheostomy procedure stated on the consent form?

   - [ ] Yes
   - [ ] No
   - [ ] Unknown

#### EQUIPMENT AND MONITORING

9a. Was a Surgical Safety Checklist used during this procedure?

   - [ ] Yes
   - [ ] No
   - [ ] Unknown

9b. If YES, was this:

   - [ ] Original WHO checklist
   - [ ] Modified WHO checklist
   - [ ] Other

10a. Were there any deficiencies in equipment that hindered the procedure?

   - [ ] Yes
   - [ ] No
   - [ ] Unknown

10b. If YES, please give details

   - [ ]

   - [ ]

   - [ ]
11. How was the patient monitored during the tracheostomy insertion? (please tick all that apply)
   - [ ] ECG
   - [ ] SpO₂
   - [ ] Level 2 (HDU)
   - [ ] Level 3 (ICU)
   - [ ] Unknown
   - [ ] Other (Please specify)

12a. What were the results of the last blood gas taken prior to tracheostomy insertion?
   - FIO₂
   - PaO₂ KPa OR mmHg
   - PEEP cmH₂O
   - PaCO₂ KPa OR mmHg

13. Was ultrasound used to assess the neck prior to percutaneous tracheostomy? [ ] Yes [ ] No [ ] Unknown
14. Were there any predicted difficulties associated with the procedure? [ ] Yes [ ] No [ ] Unknown
15. Was the upper airway considered difficult to reinsert? [ ] Yes [ ] No [ ] Unknown
16. How was the patient's airway managed during tracheostomy insertion?
   - [ ] Endotracheal tube
   - [ ] Supraglottic airway device
   - [ ] Unknown
17a. Was an upper airway endoscopy undertaken during tracheostomy insertion? [ ] Yes [ ] No [ ] Unknown
17b. If YES to 17a, was the endoscope controlled/ performed by the practitioner managing the airway? [ ] Yes [ ] No [ ] Unknown
17c. If YES to 17a, was the endoscopy performed to:
   - [ ] Confirm tracheal puncture?
   - [ ] Monitor tracheal dilation?
   - [ ] Monitor tracheostomy tube insertion from above?
   - [ ] Confirm tracheostomy tube placement (visualisation of trachea through tracheostomy tube)
18. Was ventilation confirmed by capnography? [ ] Yes [ ] No [ ] Unknown
19a. What type of tracheostomy tube was used? (Please answer all)
   i) [ ] Cuffed
   - [ ] Uncuffed
   ii) [ ] Non-fenestrated
   - [ ] Fenestrated
   iii) [ ] Inner tube
   - [ ] No inner tube
   iv) [ ] Sub glottic aspiration port
   - [ ] No sub glottic aspiration port
   v) [ ] Standard length
   - [ ] Adjustable flange tube
19b. What size tracheostomy was used?  
- 6  
- 7  
- 8  
- 9  
- Unknown  
- Other

20. How was the tracheostomy tube secured? (answers may be multiple)  
- Sutures  
- Neck tapes  
- Unknown  
- Other (Please specify)

21a. Was a chest x-ray performed after the insertion of the tracheostomy?  
- Yes  
- No  
- Unknown

21b. If YES, what was the date of the first chest x-ray post procedure?  
- dd  
- mm  
- yyyy

21c. If YES, what was the time of the first chest x-ray post procedure?  
- hh  
- mm  
- (24 hour clock)

22a. Did the patient experience any immediate complications? (within 4 hours of tracheostomy insertion)  
- Yes  
- No  
- Unknown

22b. If YES, did these include: (please tick all that apply)  
- Haemorrhage (severe - requiring surgical operative intervention)  
- Malplacement of tube - within tissues around trachea or to main bronchus  
- Haemorrhage (minor - managed conservatively in critical care)  
- Pneumothorax  
- Surgical emphysema  
- Tube occlusion  
- Death  
- Loss of airway  
- Unknown  
- Other (Please specify)

23a. Was cuff pressure measured immediately after tracheostomy tube placement?  
- Yes  
- No  
- Unknown

23b. If YES to 23a, please state the measured pressure (cm H2O or other)  

23c. If NO to 23a, why not?  

24. What were the results of the first blood gas taken after tracheostomy?  
- FiO₂  
- PaO₂  
- PEEP  
- PaCO₂  
- KPa  
- mmHg  
- cmH₂O  
- Unknown

Thank you for taking the time to complete this questionnaire
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A. PRE-OPERATIVE CARE

1. Was this a standalone tracheostomy procedure?  
   - Yes  
   - No  
   - Unknown

2a. Was this part of a larger head & neck procedure?  
   - Yes  
   - No  
   - Unknown

2b. If YES, what was this procedure? (Please specify)  
   [Blank]

3. Was the tracheostomy considered to be palliative or part of a curative procedure?  
   - Curative  
   - Palliative  
   - Unknown

CAUTIONS AND CONTRAINDICATIONS

4a. Was a pre-operative assessment of the airway undertaken?  
   - Yes  
   - No  
   - Unknown

4b. If YES, was this undertaken by a:  
   - Surgeon  
   - Anaesthetist  
   - Surgeon & anaesthetist  
   - Unknown

4c. If YES to 4a, how was this undertaken?  
   - Clinical/External only  
   - CT  
   - MRI  
   - Nasoendoscopy  
   - Indirect laryngoscopy  
   - Unknown
   - Other (Please specify)  
   [Blank]

5. Was there evidence of stridor?  
   - Yes  
   - No  
   - Unknown

6a. Was a pre-operative Mallampati assessment or other assessment of intubation difficulty recorded in the case notes?  
   - Yes  
   - No  
   - Unknown

6b. If YES, what was the result?  
   - I  
   - II  
   - III  
   - IV  
   - Unknown
   - Other  
   [Blank]

7. Was the upper airway considered difficult to reintubate?  
   - Yes  
   - No  
   - Unknown

CONSENT

8. Was a consent form completed?  
   - Yes  
   - No  
   - Unknown

9a. If YES, what was the grade of clinician taking consent? (Please use grade codes on page 2)  
   - [Blank]  
   - Unknown

9b. If YES, were the benefits and risks of the tracheostomy procedure stated on the consent form?  
   - Yes  
   - No  
   - Unknown

10. What was the patient’s condition immediately prior to anaesthesia for the procedure?  
    - Awake  
    - Not awake  
    - Comatose  
    - Unknown
11. What type of anaesthetic was used?
   - [ ] General anaesthetic
   - [ ] Local anaesthetic
   - [ ] General and local anaesthetic
   - [ ] Unknown
   - [ ] Other (Please specify) ____________________________

12. How was the airway managed in theatre before the tracheostomy?
   - [ ] Face mask
   - [ ] Laryngeal mask airway
   - [ ] Endotracheal tube
   - [ ] Cricothyroid puncture
   - [ ] Unknown
   - [ ] Other (Please specify) ____________________________

13a. If intubated, did this require special equipment? e.g. tracheal tube guide, fibre-optic scope, video laryngeoscope.
   - [ ] Yes
   - [ ] No
   - [ ] Unknown
   - [ ] NA - patient not intubated
   - [ ] Please go to question 19

13b. If YES, please give details
   ____________________________

13c. Was the use of that scope planned?
   - [ ] Yes
   - [ ] No
   - [ ] Unknown

14. Were there significant concerns about oxygenation prior to intubation?
   - [ ] Yes
   - [ ] No
   - [ ] Unknown

15. Was there a failed intubation attempt?
   - [ ] Yes
   - [ ] No
   - [ ] Unknown

16. Was there any point when the anaesthetist was unable to intubate or ventilate?
   - [ ] Yes
   - [ ] No
   - [ ] Unknown

17. What was the lowest oxygen saturation recorded during the intubation phase?
   - [ ] Unknown
   - [ ] ______%

18a. Were there any unanticipated complications on induction?
   - [ ] Yes
   - [ ] No
   - [ ] Unknown

18b. If YES, please specify
   ____________________________

19. What was the lowest level of SpO2 recorded during the procedure?
   - [ ] Unknown
   - [ ] ______%

20a. Did the patient experience prolonged hypoxia? (e.g. SaO2 <90% for >5 minutes)
   - [ ] Yes
   - [ ] No
   - [ ] Unknown

20b. If YES, what length of time was this for?
   - [ ] ______ h
   - [ ] ______ m
   - [ ] (24 hour clock)
   - [ ] Unknown
C. INSERTION OF THE TRACHEOSTOMY/THE OPERATION

21. Where was the operation undertaken?

☐ Critical care ☐ Head & Neck specialist theatre
☐ Emergency ('CEPOD') theatre ☐ General theatre
☐ Other (Please specify) ____________________________________________

22. What incision was used to access the tracheal lumen?

☐ Vertical incision ☐ Björk flap
☐ Window ☐ Rescue/stay sutures
☐ Unknown ☐ Other (Please specify) ____________________________________________

23a. What type of tracheostomy tube was used? (Please answer all)

i) ☐ Cuffed ☐ Uncuffed ☐ Unknown
ii) ☐ Non-fenestrated ☐ Fenstrated ☐ Unknown
iii) ☐ Inner tube ☐ No inner tube ☐ Unknown
iv) ☐ Sub glottic aspiration port ☐ No sub glottic aspiration port ☐ Unknown
v) ☐ Standard length ☐ Adjustable flange tube ☐ Unknown

23b. What size tracheostomy was used?

☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ Unknown

☐ Other ____________________________________________

24. How was the tracheostomy tube secured? (answers may be multiple)

☐ Sutures ☐ Neck tapes
☐ Unknown ☐ Other (Please specify) ____________________________________________

25a. Were there any unanticipated intra-operative complications?

☐ Yes ☐ No ☐ Unknown

25b. If YES, please specify

____________________________________________________________________
____________________________________________________________________

DELAYS

26a. Were any clinically significant delays encountered between the decision to operate and the operation?

☐ Yes ☐ No ☐ Unknown

26b. If YES, how long was the delay?

☐ h ☐ m ☐ (24 hour clock) ☐ Unknown
If YES, what was the reason for the delay?

- [ ] Non availability of surgeon
- [ ] Non availability of anaesthetist
- [ ] Non availability of critical care/post operative bed
- [ ] Patient requiring additional treatment/resuscitation
- [ ] Non availability of theatre
- [ ] Unknown
- [ ] Other (Please specify) [ ]

EQUIPMENT AND MONITORING

Was a Surgical Safety Checklist used during this procedure?  [ ] Yes  [ ] No  [ ] Unknown

If YES, was this:

- [ ] Original WHO checklist
- [ ] Modified WHO checklist
- [ ] Other

Were there any deficiencies in equipment that hindered the procedure?  [ ] Yes  [ ] No  [ ] Unknown

If YES, please specify

How was the patient monitored during the tracheostomy insertion? (please tick all that apply)

- [ ] ECG
- [ ] Non invasive blood pressure monitoring
- [ ] SpO₂
- [ ] Invasive blood pressure monitoring
- [ ] Capnography
- [ ] Other (Please specify) [ ]

STAFFING

Were there any deficiencies in staffing that hindered the procedure?  [ ] Yes  [ ] No  [ ] Unknown

If YES, please specify

What was the specialty of the operating surgeon? (Please use grade codes on page 2)  [ ] [ ] [ ] Unknown

What was the seniority of the operating surgeon? (Please use grade codes on page 2)  [ ] [ ] [ ] Unknown

If the operating surgeon was a consultant, was a trainee present?  [ ] Yes  [ ] No  [ ] Unknown

If YES, what was their grade? (Please use grade codes on page 2)  [ ] [ ] [ ] Unknown
If a trainee was operating, what was the level of supervision?

- Supervised directly by the consultant present
- Unsupervised - consultant in hospital
- Unsupervised - consultant not in hospital
- Unknown
- Other (Please specify)

What was the grade of the most senior anaesthetist involved in the procedure? (Please use grade codes on page 2)

- Unknown

If the most senior anaesthetist was a consultant, was a trainee present?

- Yes
- No
- Unknown

If YES, what was their grade? (Please use grade codes on page 2)

- Unknown

If a trainee was operating, what was the level of supervision?

- Supervised directly by the consultant present
- Unsupervised - consultant in hospital
- Unsupervised - consultant not in hospital
- Unknown
- Other (Please specify)

Did the patient experience any immediate complications? (within 4 hours of tracheostomy insertion)

- Yes
- No
- Unknown

If YES, did these include: (please tick all that apply)

- Haemorrhage (severe - requiring surgical operative intervention)
- Haemorrhage (minor - managed conservatively in critical care)
- Surgical emphysema
- Death
- Malplacement of tube - within tissues around trachea or to main bronchus
- Pneumothorax
- Tube occlusion
- Loss of airway
- Unknown
- Other (Please specify)

Following the operation where was the patient discharged to?

- Critical care (Levels 2&3)
- Specialist Head & Neck ward (Please specify)
- General ward
- NA - tracheostomy inserted on critical care
- NA - Patient died during the procedure
- Other (Please specify)

Thank you for taking the time to complete this questionnaire
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