



Acute Non Invasive Ventilation

National Confidential Enquiry into Patient Outcome and Death (NCEPOD)

CLINICIAN QUESTIONNAIRE

CONFIDENTIAL

DETAILS OF THE CLINICIAN COMPLETING THIS QUESTIONNAIRE

Grade: _____

Specialty: _____

What is this study about?

The aim is to explore the overall management of acute non invasive ventilation provided to patients and to look for avoidable and remediable factors in the care of these patients.

Inclusions

Patients aged 16 years or older who were admitted as an emergency for any reason to hospital between 01/02/15 - 31/03/15 inclusive and received NIV acutely.

Eligible cases were identified from the hospital central record system (using the OPCS code for NIV - E85.2). 5 cases per hospital have been selected for review.

Exclusions

1) Patients who received continuous positive airway pressure (CPAP) or optiflow/high flow nasal oxygen rather than NIV (the same OPCS code is used for each of these)

2) Patients admitted to hospital who were already being treated with NIV at home

CPD accreditation:

Consultants who complete NCEPOD questionnaires make a valuable contribution to the investigation of patient care. It 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.

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 a treatment escalation decision made?

Yes No

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

Yes No

Questions or help?

If you have any queries about this study or this questionnaire, please contact:

niv@ncepod.org.uk or telephone: 020 7251 9060

further details available on our study web page: <http://www.ncepod.org.uk/niv.html>

Thank you for taking the time to complete this questionnaire. The findings of the study will be published in summer 2017.

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.

NCEPOD number:



CODES FOR SPECIALTY

SURGICAL SPECIALTIES

100 = General Surgery	110 = Trauma & Orthopaedics	161 = Burns Care
101 = Urology	120 = Ear, Nose & Throat (ENT)	170 = Cardiothoracic Surgery
103 = Breast Surgery	130 = Ophthalmology	172 = Cardiac Surgery
104 = Colorectal Surgery	140 = Oral Surgery	173 = Thoracic Surgery
105 = Hepatobiliary & Pancreatic Surgery	145 = Oral & Maxillo-Facial Surgery	180 = Accident & Emergency
106 = Upper GI Surgery	150 = Neurosurgery	190 = Anaesthetics
107 = Vascular Surgery	160 = Plastic Surgery	192 = Critical/Intensive Care medicine

MEDICAL SPECIALTIES

300 = General Medicine	326 = Acute internal medicine	410 = Rheumatology
301 = Gastroenterology	330 = Dermatology	430 = Geriatric Medicine
302 = Endocrinology	340 = Respiratory Medicine	500 = Obstetrics & Gynaecology
303 = Clinical Haematology	350 = Infectious Diseases	502 = Gynaecology
306 = Hepatology	360 = Genito-Urinary Medicine	800 = Clinical Oncology
307 = Diabetic Medicine	361 = Nephrology	810 = Radiology
314 = Rehabilitation	370 = Medical Oncology	820 = General Pathology
315 = Palliative Medicine	400 = Neurology	823 = Haematology
320 = Cardiology		

STAFF CODES

01 - Consultant (medical/surgical specialties)	02 - Staff grade/Associate specialist/Speciality Doctor	03 - Trainee with CCT
04 - Senior specialist trainee (ST3+ or equivalent)	05 - Junior specialist trainee (ST1 & ST2 or CT equivalent)	
06 - Basic grade (HO/FY1, SHO/FY2, or equivalent)	07 - Specialist Nurse (Nurse consultant, Nurse practitioner, Clinical nurse specialist)	
08 - Senior staff nurse, enrolled nurse (EN) etc	09 - 1st level nurse, staff nurse (RGN)	10 - Occupational therapist
11 - Physiotherapist	12 - Speech & language therapist	
13 - Non-registered staff (HCA, therapy assistant etc)		

DEFINITIONS

Levels of ward care	<p>LEVEL 0: Patients whose needs can be met through normal ward care in an acute hospital.</p> <p>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.</p> <p>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).</p> <p>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).</p>
Modified Medical Research Council (mMRC) Dyspnoea Scale	<p>0 - not troubled by breathlessness except on strenuous exercise</p> <p>1 - shortness of breath when hurrying on the level or walking up a slight hill</p> <p>2 - walks slower than people of the same age on the level because of breathlessness or has to stop for breath when walking at own pace on the level</p> <p>3 - stops for breath after walking about 100m or after a few minutes on the level</p> <p>4 - too breathless to leave the house or breathless when dressing or undressing</p>
Rockwood clinical frailty scale	<p>1 VERY FIT - people who are robust, active, energetic, and motivated. These people commonly exercise regularly. They are among the fittest for their age.</p> <p>2 WELL - people who have no active disease symptoms but are less than fit than category 1. Often, they exercise or are very active occasionally, e.g. seasonally.</p> <p>3 MANAGING WELL - people whose medical problems are well controlled, but are not regularly active beyond routine walking.</p> <p>4 VULNERABLE - while not dependent on others for daily help, often symptoms limit activities. A common complaint it being 'slowed up', and/or being tired during the day.</p> <p>5 MILDLY FRAIL - these people often have more evident slowing, and need help in high order IADLs (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.</p> <p>6 MODERATELY FRAIL - people need help with all outside activities and with keeping house. Inside, they often have problems with stairs and need help with bathing and might need minimal assistance (cuing, standby) with dressing.</p> <p>7 SEVERELY FRAILY - completely dependent for personal care from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within 6 months of life).</p> <p>8 VERY SEVERELY FRAILY - completely dependent, approaching the end of life. Typically they could not recover even from a minor illness.</p> <p>9 TERMINALLY ILL - approaching the end of life. This category applies to people with a life expectancy <6 months, who are not otherwise evidently frail.</p>





A. CASE SUMMARY

1. Please use the box below to provide a brief summary of this case, adding any additional comments or information you feel relevant. Please write clearly for the benefit of the case reviewers. You may also continue on the back page of this form.

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

B. PATIENT DETAILS

2. Age (on day 1 of hospital admission): years

3. Gender Male Female

4. Height cm **OR** feet inches Unknown

first documented weight during this admission

5. Weight kgs **OR** st lb Unknown

6. BMI Unknown

7a. What was the tobacco smoking history of this patient?

Ex smoker Never smoked Current smoker (around the time of admission) Unknown

7b. If the patient has smoked, what is their smoking history? pack years Unknown

8. What was the source of admission?:

Usual place of residence Other NHS hospital: General ward/Emergency department

Temporary place of residence Non NHS run hospital Hospice

Residential home Care home: NHS/independent Unknown

Other - please state:





9a. Date of most recent lung function test prior to admission (if not available, please use first test post discharge)

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
d	d	m	m	y	y	y	y

Date unknown

Not applicable - no lung function test available

9b. FEV1 value (in litres)

 .

Value unknown

% predicted

Value unknown

9c. FVC value (in litres)

 .

Value unknown

% predicted

Value unknown

10. Known comorbidities at time of admission:

Coronary artery disease

Congestive cardiac failure

Chronic liver disease

Dementia

Diabetes mellitus Type 1

Diabetes mellitus Type 2

Hypertension

Metastatic cancer

Moderate or severe chronic kidney disease

Other (Please state):

11. Rockwood clinical frailty scale score on admission (see definitions on page 2) - please estimate from your review of casenotes:

1 - very fit

2 - well

3 - managing well

4 - vulnerable

5 - mildly frail

6 - moderately frail

7 - severely frail

8 - very severely frail

9 - terminally ill

12. Normal level of mMRC breathlessness (i.e. prior to illness precipitating admission) - (see definitions on page 2)

unable to assess

13. Was the mMRC level:

13a. Documented in the notes?

Yes

No

13b. Estimated by you from other documentation?

Yes

No

C. ADMISSION

If admitted via the Emergency Department, this is the time/date they were formally admitted on to a ward

14. Time/date of first admission during study period:

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
h	h	m	m

24 hr clock

Time unknown

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
d	d	m	m

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2	0	1	5		
y	y	y	y		

15. What was the mode of admission?

Emergency department (self referral)

Emergency department (arrived by ambulance)

GP referral to assessment unit

From outpatient clinic

Other (please state):



EMERGENCY DEPARTMENT

Please omit this section if the patient did not attend the emergency department

16. Time/date of ambulance arrival or arrival in ED:

24 hr clock Time unknown Date unknown
h h m m d d m m y y y y

17a. Time/date of initial triage assessment:

24 hr clock Time unknown Date unknown
h h m m d d m m y y y y

17b. Initial triage observations:

Respiratory rate Not documented Heart rate Not documented
GCS Not documented SpO2 Not documented

18. Initial inspired oxygen concentration (%): or litres/minute: Not documented

19. Oxygen delivered by: Nasal cannulae Non re-breathe device Venturi
 Other (please state): Not documented

20. Initial NEWS score: or NEWS score not used

21. Time/date of first clinical assessment (in ED):

24 hr clock Time unknown Date unknown
h h m m d d m m y y y y

22. Healthcare professional who made initial assessment (please see page 2 for codes): Grade: Specialty:

D. CARE IMMEDIATELY FOLLOWING ADMISSION

23. Which ward was the patient admitted to?

Medical Assessment Unit General Medical Ward Specialist Respiratory Ward
 Designated NIV unit High Dependency Unit (Level 2) Intensive Care Unit (Level 3)
 Combined level 2/3 e.g. HDU/ITU Other (please state):

24. Admitting doctor (please see page 2 for codes): Grade: Specialty:

25. Time/date of first consultant review:

24 hr clock Time unknown Date unknown
h h m m d d m m y y y y

26. Specialty of first consultant review (please see page 2 for codes): Specialty:

27. Which of the following treatments were prescribed/administered following admission? (within the first 4 hours)

Antibiotics Nebulised bronchodilators Opiates Benzodiazepines
 Corticosteroids I.V. Aminophylline Diuretics Doxapram
 Oxygen Other sedatives (please state):





28a. Do you think oxygen toxicity contributed to hypercapnia? Yes No

28b. If YES, where was excess oxygen administered?

Before arrival in hospital Emergency department Hospital ward

29. To how many wards (excluding the emergency department) was the patient admitted before starting NIV? (0 if started in the ED)

30a. Did the patient require a ward transfer for treatment with NIV?

Yes - transferred before starting treatment Yes - treatment initiated then transferred No

30b. If YES, which ward were they transferred to?

Level 3 (e.g. ITU) Level 2 (e.g. HDU) Designated NIV unit (level 1)

Combined level 2/3 (e.g. HDU/ITU) Other (please state)

E. LOCATION IMMEDIATELY PRIOR TO STARTING NIV

31. Which location was the patient in immediately prior to starting NIV?

Medical Assessment Unit Emergency Department General Medical Ward

Surgical ward Specialist Respiratory Ward Designated NIV unit

Level 2 (e.g. HDU) Level 3 (e.g. ICU) Combined level 2/3 (e.g. HDU/ITU)

Other (please state):

F. NIV EPISODE

32. Time/date when NIV was started:

24 hr clock Time unknown Date unknown
 h h m m d d m m y y y y 2 0 1 5

33. Indication for NIV (this episode):

Cardiogenic pulmonary oedema Chest wall deformity COPD

Obesity/hypoventilation syndrome Neuromuscular disease Not documented

Other (please state):

34a. Had the patient been ventilated for the same indication previously? Yes No Unknown
 (If NO, please go to question 39 overleaf)

34b. If YES, was this a: Previous acute NIV Date unknown
 (if multiple previous episodes please give the date of the most recent previous episode) d d m m y y y y

Previous invasive ventilation Date unknown
 d d m m y y y y



35. How many acute NIV episodes were there in the 12 months prior to this admission? Unknown

36. What was the date of discharge following the last episode? Date unknown
d d m m y y y y

37. Was the patient under the care of the respiratory team during the last episode? Yes No Unknown

38a. Did respiratory outpatient follow up occur following the last episode? Yes No Not documented

38b. If YES, what was the time interval following discharge (days)? Not documented

38c. If NO, was this due to: Patient readmitted prior to follow up No follow up arranged Recurrent attender no follow up needed

Patient failed to keep appointment Other (please state):

39. Time/date of chest X-ray closest to the start of NIV (current admission)
 24 hr clock Time unknown Not done
h h m m d d m m y y y y

40. Did the chest X-ray show consolidation? Yes No Not documented

41. What were the results of other investigations prior to or immediately after starting NIV (this episode)?
 White blood cell count value Test not performed
 C-Reactive Protein value: Test not performed

42. Was the patient febrile (38C and above)? Yes No Unknown

43. Prior to initiation of NIV, was there a documented plan for action in the event of treatment failure? Yes No

44. Location of NIV delivery:

Area of practice:	Where was NIV started?	Where was NIV continued? (please tick all that apply)
Emergency department	<input type="checkbox"/>	<input type="checkbox"/>
Acute medical unit	<input type="checkbox"/>	<input type="checkbox"/>
General ward	<input type="checkbox"/>	<input type="checkbox"/>
Respiratory ward	<input type="checkbox"/>	<input type="checkbox"/>
Designated NIV unit	<input type="checkbox"/>	<input type="checkbox"/>
Higher dependency (level 2 or 3 e.g. HDU or ICU)	<input type="checkbox"/>	<input type="checkbox"/>
Other (please state)	<input type="text"/>	<input type="text"/>





- 45a.** Do you consider that non-ventilator management was appropriate prior to starting NIV? Yes No
- 45b.** If NO, do you think NIV could have been avoided? Yes No

45c. If NO to Q45a, please expand upon your answer:

46. Doctor who made decision to initiate NIV: Grade: Specialty: Not documented

47. Who set up the NIV machine (codes including nursing, physio, medical) - please see page 2 for codes): Grade: Specialty: Not documented

48. Who adjusted the mask and headgear? Grade: Specialty: Not documented

49a. Do you consider there was a delay in starting NIV? Yes No

49b. If YES, was this due to: Failure to recognise need for NIV Lack of equipment
 Patient required transfer to another clinical area Other (please state):

49c. If YES, please estimate the length of delay (in minutes): minutes

50. Dates/times that patient was first seen by respiratory staff:

Respiratory consultant Time not documented 2 0 1 5 Not seen
 24 hr clock h h m m d d m m y y y y

Respiratory ST3+ Time not documented 2 0 1 5 Not seen
 24 hr clock h h m m d d m m y y y y

Respiratory specialist nurse Time not documented 2 0 1 5 Not seen
 24 hr clock h h m m d d m m y y y y

Respiratory physiotherapist Time not documented 2 0 1 5 Not seen
 24 hr clock h h m m d d m m y y y y

Other (please state): Time not documented 2 0 1 5 Not seen
 24 hr clock h h m m d d m m y y y y

51. Did a respiratory consultant review result in:

51a. Change in ventilator settings: Yes No Not seen by respiratory consultant Not documented

51b. If YES, please explain:

51c. Change in non-ventilator treatments/management: Yes No Not seen by respiratory consultant Not documented

51d. If YES, please explain:





52. Blood gas analysis (please use temperature corrected values if available; if not arterial sample, please tick capillary box (column at end right))

	Date		Time 24 hr clock				Inspired oxygen (flow rate or %)	blood pH (or H ⁺)	pCO ₂ (kPa)	pO ₂ (kPa)	HCO ₃ (mEq/L)	Tick if capillary sample:
First sample taken during this admission	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	L/min <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
	d	m	2	0	1	5						
Immediately prior to initiation of NIV episode (if different from first sample)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	L/min <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
	<input type="text"/>	<input type="text"/>	2	0	1	5						
At or closest to 1 hour	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	L/min <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
	<input type="text"/>	<input type="text"/>	2	0	1	5						
At or closest to 4 hours	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	L/min <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
	<input type="text"/>	<input type="text"/>	2	0	1	5						
When pH first normalised	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	L/min <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
	<input type="text"/>	<input type="text"/>	2	0	1	5						
At decision to stop NIV episode	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	L/min <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> N/A <input type="checkbox"/>
	<input type="text"/>	<input type="text"/>	2	0	1	5						
Last result prior to discharge	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	L/min <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
	<input type="text"/>	<input type="text"/>	2	0	1	5						

53. Ventilator prescription/settings (pressures in cmH₂O)

	Date		Time 24 hr clock		Inspiratory pressure (IPAP) (cmH ₂ O)	Expiratory pressure (EPAP) (cmH ₂ O)	Backup rate (zero if none set)	O ₂ L/min or %
Initial settings	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/> L/min <input type="text"/>
	<input type="text"/>	<input type="text"/>	2	0	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
At 1 hour	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/> L/min <input type="text"/>
	<input type="text"/>	<input type="text"/>	2	0	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
At 4 hours	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/> L/min <input type="text"/>
	<input type="text"/>	<input type="text"/>	2	0	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Maximum inspiratory pressure delivered	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/> L/min <input type="text"/>
	<input type="text"/>	<input type="text"/>	2	0	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>





53. What target saturation was prescribed on NIV? 88-92% 94-98% Other value Not prescribed

54a. Was the target saturation achieved? Yes No, too high No, too low Not applicable

54b. If NO, please expand upon your answer:

55. How was oxygen administered while on NIV?

Entrained through mask/tubing Pre-mixed through ventilator Oxygen not administered

56. Who was responsible for changing the ventilator settings (please tick all that apply)

- Ward nursing staff Physiotherapist team Junior medical staff
 Respiratory consultant Respiratory ST3+ Critical care outreach nurse
 Respiratory specialist nurse Other (please state):

57. How was the decision made to adjust the ventilator settings? Clinical assessment According to standard protocol
 Blood gas analysis

58. Observations whilst on NIV:

	Initial settings	At 1 hour	At 4 hours	At decision to stop NIV episode
SpO2 %	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
Respiratory rate	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>
Heart rate	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
Systolic BP	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
GCS	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>
AVPU (Please indicate A, V, P or U)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

59. Please provide an estimate of how much NIV was used in the first 24 hours? hours Not documented

60. Were any of the following documented? (please tick all that apply)

- Mask leak Poor synchronisation with ventilation Patient discomfort/NIV poorly tolerated





61a. In your opinion, was NIV discontinued at the appropriate time? Yes No N/A

62b. If NO, please expand upon your answer:

63a. In your opinion, were there any aspects of NIV treatment that could have been improved?

Yes No Unable to tell

63b. If YES, please expand upon your answer:

64. What was the outcome of NIV (please only tick one box)

- Success - clinical improvement with normalisation of pH to >7.35
- Success - clinical improvement and cessation of NIV: no blood gas confirmation
- Failure - remained acidotic pH <7.35 AND hypercapnic CO2 >6kPa
- Failure - proceeded to intubation
- Failure - treatment withdrawn

65. If NIV failed, what was the primary reason for this (please only tick one box)

- Severe disease, difficult to ventilate: failed despite optimal ventilation
- General intolerance including agitation
- Specific mask intolerance e.g. pain, claustrophobia
- Patient deterioration e.g. conscious level or pCO2
- Excessive secretions
- Unable to stop excessive leaks
- Other (please state):
- No data/not recorded

66a. Was sedation used to improve tolerance of NIV? Yes No Not recorded

66b. If YES, what was the route of administration? Intravenous Oral Subcutaneous

66c. If YES, please provide details of the sedation used:

67. How was the effect of sedation monitored? GCS AVPU Not applicable

Other (please state):





68a. Were there any complications of NIV? None Local pressure sores Pneumothorax

Other (please state):

68b. If local pressure sores occurred, please state grade of ulcer (1-4) Not documented

69. Were there any adverse events related to the NIV episode? No adverse events documented
 Accidental disconnection of ventilator Accidental disconnection of oxygen

Other (please state):

G. ESCALATION AND CRITICAL CARE

70. Did the patient have an advance directive in place Yes No Not documented

71a. Was a treatment escalation decision made? Yes No

71b. If YES, please state the time/date when the decision was made:

24 hr clock Time unknown Date unknown
 h h m m d d m m y y y y

71c. If YES, was this (please tick all that apply):

For CPR Not for CPR Other (please state):
 For invasive ventilation Not for invasive ventilation
 For critical care Not for critical care

71d. If YES to 71a above, in your opinion, was the decision on escalation appropriate? Yes No

71e. If NO to 71d, please expand upon your answer:

72a. Was escalation of treatment discussed with the patient? Yes No

72b. If not discussed, was the reason for this documented? Yes No

72c. If not discussed, was this due to the patient's medical condition? Yes No

72d. If YES, please expand upon your answer:

73. Was treatment escalation discussed with the patient's family (or other/next of kin?) Yes No

74. Doctor who made decision: (please see page 2 for codes): Grade: Specialty:

75. If decision made by non-consultant, was the decision confirmed by a consultant? Yes No





76a. Was the patient referred for Level 2/3 (e.g. HDU/ITU) admission? Yes No

76b. If NO, in your opinion, do you think the patient should have been referred? Yes No

76c. If YES to 76b, please expand upon your answer

IF THE PATIENT WAS NOT REFERRED FOR HDU/ITU ADMISSION, PLEASE GO TO Q92

76d. If YES to 76a, please state the time/date of the request:

24 hr clock Time unknown Date unknown
h h m m d d m m y y y y

77. Doctor requesting admission: (please see page 2 for codes): Grade: Specialty:

78. Grade of critical care doctor responding to admission request: Grade:
(please see page 2 for codes):

79. Blood gas at time of referral to critical care:

24 hr clock Time unknown Date unknown
h h m m d d m m y y y y

Inspired oxygen (flow rate or %)

L/min % Not documented pO2 (kPa) Not documented

blood pH (or H+) pCO2 (kPa) HCO3 (mEq/L)

Not documented Not documented Not documented

80a. Was the patient receiving NIV at the time of this blood gas? Yes No

80b. If YES: Inspired oxygen (flow rate or %) L/min % Not documented
 Inspiratory pressure %
 Expiratory pressure %

81. Conscious level at time of referral: GCS or AVPU A V P U
alert, voice, pain, unresponsive

82a. Was the patient admitted to: ITU HDU Mixed ITU/HDU Not admitted

82b. If YES, please provide the date and time of this admission:

24 hr clock Time unknown Date unknown
h h m m d d m m y y y y

82c. If NO, in your opinion, should the patient have been admitted? Yes No

82d. If YES to 82c above, please expand upon your answer:

83. Which interventions did the patient receive in the critical care unit? (please tick all that apply)

Invasive ventilation (intubation): Arterial line NIV

Date/time intubated:

24 hr clock Time unknown Date unknown
h h m m d d m m y y y y



Date/time extubated:

24 hr clock Time unknown Date unknown
 h h m m d d m m y y y y

Tracheostomy

Date/time inserted:

24 hr clock Time unknown Date unknown
 h h m m d d m m y y y y

Date/time removed:

24 hr clock Time unknown Date unknown
 h h m m d d m m y y y y

84. Critical care outcome: Discharged to ward Discharged home on NIV Died

85. For patients admitted to and discharged from HDU/ICU: time/date of discharge from HDU/ICU:

24 hr clock Time unknown Date unknown
 h h m m d d m m y y y y

86. Was the patient still receiving NIV on discharge from HDU/ICU? Yes No

87. Was the patient still receiving invasive ventilation on discharge from HDU/ICU (e.g. transferred to weaning centre)? Yes No

88. Was the patient discharged under the care of a respiratory specialist team? Yes No

89. Was the patient discharged to a respiratory specialist ward? Yes No

90. For patients not discharged to respiratory ward or under respiratory team, please describe arrangements for post HDU/ICU care:

91. Critical care blood gases:

91a. First blood gas on admission to critical care

Date	Time 24 hr clock	Inspired oxygen (flow rate or %)
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> % L/min <input type="text"/> <input type="text"/>
d d m m	h h m m	

blood pH (or H+)	pCO2 (kPa)	pO2 (kPa)	HCO3 (mEq/L)
<input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>

91b. Last blood gas prior to discharge from critical care

Date	Time 24 hr clock	Inspired oxygen (flow rate or %)
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> % L/min <input type="text"/> <input type="text"/>
d d m m	h h m m	

blood pH (or H+)	pCO2 (kPa)	pO2 (kPa)	HCO3 (mEq/L)
<input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>





H. DISCHARGE/DEATH

92. What was the discharge destination of the patient:

- Transferred to another hospital Still an inpatient at 30 days
 Discharged home Died
 Other (please state)

93. If discharged from hospital, what was the date of discharge?

				2	0		
d	d	m	m	y	y	y	y

94. If the patient died, what was the date of death?

				2	0		
d	d	m	m	y	y	y	y

95. Speciality of consultant responsible at time of discharge/death (please see page 2 for codes):

96a. Was the patient discharged on NIV? Yes No Not documented

96b. If YES, what arrangements were made for ongoing NIV support? (please only tick one answer):

- Discharged by home NIV service Inpatient transfer to NIV service
 Referred to home NIV service as outpatient on NIV Other (please state):

Referred to home NIV service awaiting NIV

96c. Was the patient discharged on home oxygen? Yes No Not documented

97. If the patient was referred to home NIV service awaiting NIV (in question 96b above), what was the waiting time (if known)? days Not documented

98a. Was there any delay in discharge? Yes No N/A - patient died

98b. If YES, was this due to: (please tick all that apply):

- Waiting for social care Waiting for transfer for home NIV

Other (please expand upon your answer)

99. Was there a documented decision about appropriateness of NIV on future admissions?

- No Yes Date of documented decision N/A - on NIV N/A - patient died

				2	0	1	5
d	d	m	m	y	y	y	y

100. Was an advance care plan/treatment escalation plan documented prior to discharge or on follow up?

- Yes No Date plan was documented

				2	0	1	5
d	d	m	m	y	y	y	y

101. Was the palliative care team involved in the patient's care during the admission? Yes No Not documented





Please answer the following questions if the patient DIED during this admission:

102. Was death anticipated? Yes No Not documented

103a. Was treatment withdrawn? Yes No Not documented

103b. If YES, was treatment withdrawal discussed with (please only tick one answer):

Patient Relatives Consultant physician

103c. If not discussed, please provide reasons:

104. Was CPR attempted? Yes No

105. What level ward was the patient on when they died?

Level 0 Level 1 Level 2 Level 3 Not documented

106. What was the cause of death recorded as?

1a)

1b)

1c)

2)

107. Was this case reported to the coroner/procurator fiscal? Yes No Unknown

108. Was a hospital or coronial/fiscal autopsy performed? Yes No Unknown

109a. Was the death discussed in an M & M meeting? Yes No Not documented

109b. If YES, were remediable factors in the care of this patient identified? Yes No

109c. If YES, what were the remediable factors and what action was taken?

110a. If the patient was not discussed at an M & M meeting, having now reviewed the case, in your opinion were there lessons to be learned? Yes No Not documented

110b. If YES, please describe these:





111. Please provide the status of the patient at 1 year post discharge:

Alive (please provide last date known to be alive) Date unknown
d d m m y y y y

Dead (please provide date of death if known) Date unknown
d d m m y y y y

I. READMISSION

112a. Was the patient readmitted to your hospital within 30 days of the discharge date of the admission above? Yes No

112b. If YES, how many times was the patient readmitted to your hospital during the 30 day period?

112c. If YES, what was the date of the first readmission?

24 hr clock Time unknown Date unknown
h h m m d d m m y y y y

J. FOLLOW UP

113. Was a follow up appointment arranged? Yes No

114. Specialty of follow up clinic (please see page 2 for codes):

115a. Did a follow up appointment take place? Yes No

115b. If YES, what was the date of the follow up appointment? Date unknown
d d m m y y y y

115c. If NO, was this due to: Readmission Did not attend Death Other

If there is anything relating to the case that you would like to add, specifically regarding the NIV aspects of care during this admission, and how it impacted upon the patient's overall healthcare, please do so here:

Many thanks for taking the time to complete this questionnaire



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