Acute Non Invasive Ventilation
National Confidential Enquiry into Patient Outcome and Death (NCEPOD)

ORGANISATIONAL QUESTIONNAIRE

CONFIDENTIAL

Name of Trust/Health Board: __________________________________________

Name of Hospital: _________________________________________________

Who completed this questionnaire?

Name(s): __________________________________________________________

Position(s): ______________________________________________________

What is this study about?

To identify and explore avoidable and remediable factors in the process of care for patients aged 16 years or older receiving acute non invasive ventilation.

Inclusions

All hospitals from England, Scotland, Wales, Northern Ireland, Jersey, Guernsey and the Isle of Man that treat adult patients acutely with non invasive ventilation, are included in the study.

Who should complete this form?

This questionnaire should be completed by the Medical Director of the Trust/Health Board or person(s) nominated by them who would have the knowledge to complete it accurately or be able to seek help to complete it accurately. Input from the relevant clinical leads is strongly recommended.

To ensure confidentiality of the data, please return the completed questionnaire directly to NCEPOD in the SAE provided.

How to complete the form:

Information will be collected using two methods; box cross and free text.

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.

Does this hospital have a guideline /protocol for acute NIV?

☒  Yes  ☐  No

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

☐  Yes  ☒  No

Please only mark one box per question, unless indicated

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.
PLEASE CHECK THE DEFINITIONS BELOW AS THERE HAS BEEN SOME CONFUSION BETWEEN THE TERMS NIV AND CPAP IN CASES SUBMITTED FOR PEER REVIEW

<table>
<thead>
<tr>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPAP</strong></td>
</tr>
<tr>
<td><strong>BIPAP</strong></td>
</tr>
<tr>
<td><strong>NIV</strong></td>
</tr>
<tr>
<td><strong>EPAP</strong></td>
</tr>
<tr>
<td><strong>IPAP</strong></td>
</tr>
<tr>
<td><strong>COPD</strong></td>
</tr>
<tr>
<td><strong>AHRF</strong></td>
</tr>
</tbody>
</table>

Critical care includes Level 2 and 3 patients:

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).
A THE HOSPITAL

1a. Type of facility (please select one option that fits best).
   - District general hospital: ≤500 beds
   - District general hospital: >500 beds
   - University teaching hospital
   - Independent hospital
   - Other (please specify)

2a. How many in-patient beds are there in your hospital?

2b. Does this hospital have an emergency department?
   - Yes
   - No

2c. If Yes what was the average emergency department attendance per day in 2015 (1st January - 31st December)?

2d. What was the average daily number of acute medical admissions in 2015 (1st January - 31st December)?

3a. How many patients were managed with acute NIV in 2015 (1st January - 31st December)?
   - 1-50
   - 51-100
   - 101-150
   - 151-200
   - 201-250
   - 251-300
   - 301-350
   - > 350

3b. Is this number?:
   - Number of cases coded
   - Routinely collected data within the department
   - An approximation
   - Other (please specify)

4a. Does this hospital initiate home CPAP or NIV treatment (as opposed to referring to another centre for initiation)?
   - Yes
   - No

4b. Total number of patients on home CPAP?
   - Number started on CPAP in the last 12 months?
   - No CPAP service

4c. Total number of patients on home NIV?
   - Number started on NIV in the last 12 months?
   - No NIV service

B POLICIES, PROTOCOLS, GUIDELINES AND DOCUMENTATION

5a. Does this hospital have a guideline/protocol for acute NIV?
   - Yes
   - No

5b. If Yes please indicate what is included
   i) Indications for NIV
      - All acute hypercapnic respiratory failure (AHRF) (due to any cause)
      - AHRF due to COPD exacerbation
      - AHRF due to pneumonia
      - AHRF due to neuromuscular disease
      - AHRF due to acute presentation of chest wall deformity
      - Other (please specify)

   - Indications not included
      - AHRF in obesity/obstructive sleep apnoea
      - AHRF due to pulmonary oedema

ii. Location(s) where NIV treatment can be provided

iv. Recommendation to make escalation plan

Weaning guidance/protocol

Contraindications to NIV

Does your hospital use a NIV prescription form? Yes No

Does your hospital use a specific NIV observation chart? Yes No

If Yes, does the observation chart require recording of:

Ventilation mode

IPAP setting

EPAP setting

Conscious level

Other (please specify)

Does this hospital have an identified medical lead clinician for the NIV service? Yes No

If Yes, how much time is allocated in the job plan for the lead role (please put 0 if none)? __ hours/week

If Yes to 8a what specialty is the lead clinician?

Respiratory medicine

Emergency medicine

Acute medicine

Critical care medicine

Other (please specify)

How many consultants in respiratory medicine are employed in your hospital?

Number of consultants: __

WTE consultants: __

Do you have an identified non-medical lead for the NIV service? Yes nursing Yes physio No

How is medical supervision of NIV provided out of hours (tick all that apply)?

Respiratory consultant on call rota

General medical consultant on call rota

Other (please specify)

How many consultants participate in the general medical on call rota? __

How many respiratory consultants participate in the general medical on call rota? __

For what percentage of the total out of hours period (nights, weekends, bank holidays) is the NIV service covered by a respiratory consultant (please approximate to nearest 10%)? __%
In which of the following areas is NIV mainly provided (i.e. not just initiated before transfer for ongoing treatment to the “Designated NIV unit”):

<table>
<thead>
<tr>
<th>Clinical areas</th>
<th>Number of beds</th>
<th>Approximate percentage of acute NIV episodes provided in this area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensive care unit (level 3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High dependency unit (level 2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory high care within respiratory ward (level 1)</td>
<td>Number of high care beds:</td>
<td></td>
</tr>
<tr>
<td>Respiratory ward, not including high care beds (level 0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please give details below)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other (please provide details)

How many trained nurses and healthcare assistants staff the "designated NIV" unit during the early, late and night shifts?

<table>
<thead>
<tr>
<th></th>
<th>Early (10am)</th>
<th>Late (6pm)</th>
<th>Night (midnight)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trained nurses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthcare assistants</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15a. Does your hospital have a defined staffing ratio for patients receiving NIV? [ ] Yes  [ ] No

15a. If Yes, NIV patients/nurse? [ ]

16a. How is physiotherapy provided for acute NIV patients?

[ ] Dedicated NIV physiotherapist  [ ] General physiotherapy service
[ ] Respiratory physiotherapy service  [ ] Physiotherapy not provided

16b. Number of hours/day physiotherapy cover provided to designated "NIV unit":

<table>
<thead>
<tr>
<th></th>
<th>Monday-Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>(hours per day)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## C TRAINING

17a. Does your hospital run a training programme for delivery of NIV?  
- Yes  
- No

17b. If Yes, what is the frequency of training?

<table>
<thead>
<tr>
<th>Monthly</th>
<th>Quarterly</th>
<th>Six monthly</th>
<th>Annually</th>
<th>Other (please specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physiotherapists</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

18a. Do you have a staff competency assessment for delivery of NIV?  
- Yes  
- No

18b. Number of staff with competency (please tick unknown if you do not keep a record of competency?)

<table>
<thead>
<tr>
<th>Number</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurses</td>
<td></td>
</tr>
<tr>
<td>Doctors</td>
<td></td>
</tr>
<tr>
<td>Physiotherapists</td>
<td></td>
</tr>
</tbody>
</table>

18c. Do staff without competency directly supervise patients receiving NIV?  
- Yes  
- No

## D ORGANISATION/DELIVERY OF NON-INVASIVE VENTILATION SERVICE

19. Location of NIV provision and monitoring used in routine clinical practice (please mark any that apply):

<table>
<thead>
<tr>
<th></th>
<th>NIV initiated</th>
<th>NIV continued</th>
<th>Continuous Oximetry</th>
<th>Continuous ECG</th>
<th>Invasive BP (arterial line)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Department</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute Medical Unit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Medical Wards</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgical Wards</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory Ward</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory High Care Area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICU (level 3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HDU (level 2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
20a. Number of acute NIV machines (excluding ITU ventilators)?

20b. Number of ITU ventilators?

21a. In the last 12 months has your hospital ever had more patients requiring NIV than NIV machines available?

21b. If Yes, please explain how this was resolved:

22. How is oxygen delivered during NIV? (please state the number of NIV machines in use in each category – 0 if not available)

- Pre-mixed through NIV machine
- Entrained through tubing
- Entrained through mask

<table>
<thead>
<tr>
<th></th>
<th>Makes changes to ventilator settings</th>
<th>Takes arterial blood gas samples</th>
<th>Takes capillary blood gas samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory specialist nurse</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Physiotherapist</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Critical care outreach nurse</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Ward nurse</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Healthcare assistant</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Consultant (respiratory)</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Consultant (emergency medicine)</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Consultant (acute medicine)</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Consultant (general medicine)</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Respiratory trainee (ST3 and above)</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Medical trainee (ST3 and above)</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Medical trainee (below ST3)</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Other</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

23a. Do you offer a choice of mask Type for provision of acute NIV?

23b. If Yes, number of different Types of mask offered?

24. How many different mask Sizes does your unit offer for acute NIV?

25. Who in your service does the following? (please mark all that apply)
26a. Does your 'designated NIV unit' have a dedicated blood gas machine located within the ward? □ Yes □ No

26b. Which of the following gas sampling are used to assess the response to ventilation (please mark all that apply)? □ Arterial □ Capillary □ Venous

27a. Does your hospital have a critical care outreach service? □ Yes □ No

27b. If Yes, number of hours/day covered?
   Monday - Friday [ ]
   Saturday [ ]
   Sunday [ ]

27c. Does this service cover the whole hospital? □ Yes □ No

**E GOVERNANCE, AUDIT AND DATA COLLECTION**

28. Did your hospital contribute cases to the British Thoracic Society NIV audit in 2013? □ Yes □ No

29. Does your hospital undertake an annual audit of the NIV service? □ Yes □ No

30a. Did your organisation investigate any serious incidents related to NIV provision in 2015? □ Yes □ No

30b. If yes, please describe below the incident and actions taken following investigation:

   [Blank space for description]
If required please use this page to expand on any answers given throughout the questionnaire. Please include the question number.

<table>
<thead>
<tr>
<th>Question number</th>
</tr>
</thead>
</table>

Thank you for taking the time to complete this questionnaire.
Funding for this study was provided by The Healthcare Quality Improvement Partnership (HQIP) as part of The Clinical Outcome Review Programme into medical and surgical care.

NCEPOD
Ground Floor, Abbey House
74-76 St John Street
London
EC1M 4DZ