When the pressure is too much: The implementation of a NIV proforma is a breath of fresh air.

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1. Project Aims

Non Invasive Ventilation (NIV) is used acutely to provide ventilatory support to patients presenting with hypercapnic respiratory failure. Despite British Thoracic Society (BTS) guidelines on how to implement and deliver NIV, a recent National Confidential Enquiry into Patient Outcome and Death (NCEPOD) review found the care of patients requiring NIV remains poor nationally. They concluded that in 73% of patients there was room for clinical and/or organisational improvement.

We looked to evaluate current clinical practice at Basingstoke Hospital against standards suggested by the NCEPOD review to identify areas for improvement.

2. Methods

We reviewed our NIV provision at an organisational level; where NIV occurred, ratio of nurses to patients on NIV and monitoring whilst on NIV.

We also collected data for individual patients admitted between January – March 2017 retrospectively using case notes and electronic records. 42 sets of notes were requested for patients coded as receiving NIV during their admission.

We received notes for 33 admissions. This included 34 episodes, as some patients received NIV more than once during an admission. 23 patients received NIV in the form of BiPAP; 11 received CPAP and these patients were excluded from our results. Patients who received NIV on ITU were also excluded.

3. Key Findings

- Age range 43 – 95 years with an average age 74
- 52% (12/23) had a diagnosis of COPD
- 52% patients (12/23) had no escalation plan before starting NIV
- Only 52% of patients had a repeat ABG within 1-2 hours of starting NIV
- No maximum ratio of patients on NIV : nurses
- No clinical lead for NIV
- Junior doctors and nurses felt unsupported using NIV, with appropriate training not being adequately given

4. Proforma

Quotes from Junior Doctors following use of NIV Proforma:

‘Provides a lot of clarity and I feel a lot more confident treating patient on NIV’
‘Really easy to use. A great trouble shooting guide’
‘Makes a massive difference to patient safety – mistakes far less likely to be made’
‘Ensures standardised care’

5. What Was The Impact of the Audit?

Patients: Standardised and appropriate care in accordance to national guidelines
Nurses: Additional training in both group and in one to one scenarios
Doctors: Guidance regarding when to repeat ABG’s; how to adjust NIV settings; when to escalate
Prompts regarding escalation decision early on in treatment

6. Points for reflection:
Changing a service requires multi-disciplinary team input on many levels, including senior non-clinicians

7. Timeline of actions following initial audit:

**Post Initial Audit**
- Results presented at Respiratory meeting, Grand Round and junior doctor teaching
- A NIV Proforma developed
- A new NIV logo so patients could be appropriately tagged on our electronic tracking system
- One-to-one and group sessions to train respiratory nurses
- The establishment of a clinical NIV lead
- Reviewing NIV nurse : patient ratio

**NIV Proforma Implemented On The Respiratory Ward**
- Trialled over a 4 week period
- Re-audit results showed poor compliance of proforma (~50%)
- Of those who used NIV proforma, 100% had escalation plans documented
- All had ABG’s at more appropriate intervals
- Ongoing training for doctors and nurses

**NIV Proforma Implemented Across The Hospital**
- Implementation agreed by ED & AAU teams
- Teaching sessions to medical teams on why and how to use the proforma
- emailed information sent to doctors and nursing colleagues, and proformas delivered to appropriate departments
- Tagging of patients on electronic system commenced
- Re-audit to be completed and then NIV proforma to be initiated trust wide

Main issue identified was patients were often started on NIV in AAR and ED. The proforma works well when started at the time of NIV initiation. Doctors & Nursing colleagues found completing it retrospectively was not useful.