M22 DOES A NURSE-LED NON INVASIVE VENTILATION (NIV) SERVICE IMPROVE PATIENT OUTCOMES?

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10.1136/thoraxjnl-2015-207770.449

Introduction and objectives Non-invasive ventilation (NIV) has been shown to reduce in-patient mortality in AECOPD from 20 to 10%. In 2011 national data revealed that there were multifactorial failures in effective NIV service provision, with a 26% in-patient mortality rate.

Local audit data in 2012 showed our in-patient mortality was 40% for all patients treated with NIV compared to a national rate of 30%. There was evidence of missed patients and delays to treatments. Could a nurse-led NIV service improve upon this?

Methods We set up a dedicated 24/7 nurse-led service with portable NIV machines and allocated respiratory ward beds in December 2013. The nurse would aim to be involved in all AECOPD admissions from the outset, with support from acute medical team. All aspects of clinical care were prospectively collected including nursing workload.

Results More patients received NIV with an improved success rate and reduced in-patient mortality rate. Mortality fell to 12% by summer 2014, and was 0% in patients with pH 7.25–7.35. Quality indicators also improved e.g. failure planning, in-put from respiratory team and consultants (See Table 1).

Abstract M22 Table 1

Measure	Feb/March 2012 Pre-change	Feb/March 2014	Aug/ Sept 2014	Nov 2014/Jan 2015
Patients/month	7–8	15	13	18
NIV Success	66%	76%	72%	66%
Mortality – all patients	40%	33%	11%	20%
Mortality pH 7.25–7.35	No data	13%	0%	15.5%
Speed of access to NIV	300 mins mean time to NIV from decision	100% within 1hr of decision for NIV	64% within 1hr	62% within 1hr
Oxygen Toxicity	26%	3%	16%	21%
Failure plans in place	93%	100%	80%	83%
Consultant-led decisions	53%	51%	30%	32%
Respiratory team involvement (in addition to acute medicine)	45%	59%	43%	44%
LOS (Mean) days	12	11	6.5	8.8
Oxygen alert	No data	70%	95%	93%

Although survival rates were maintained over winter 2014/15, quality indicators slipped, due to nursing pressures across our trust, which compromised the service. During this period the NIV-nurse had extra or alternative duties on 28% of the shifts. As a consequence 6 patients were treated on Intensive care and 3 operations were cancelled.

Conclusions The nurse-led service has dramatically improved survival outcomes and the quality of our NIV service.

We believe this to be due to a dedicated nurse-led model as opposed to a traditional physiotherapy service. But this model may be leaving our service open to the external pressures in nursing numbers across our trust.

Via our robust data collection and rolling analysis, we have been able to influence decision makers into not "pulling" the NIV nurse to alternative duties and compromising our successful service.

M23 THE USE OF WEARABLES FOR COPD PATIENTS: A QUALITATIVE STUDY

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10.1136/thoraxjnl-2015-207770.450

There have been significant advances in Technology enabled care (TEC) including wearable technology. However, to our knowledge, there is a paucity of literature related to patient perceptions of smart wearable sensors.

The WELCOME platform (FP-7 funded project) is an innovative integrated system using wearable sensors and smart computing for COPD patients with co-morbidities.[1] The aim of this platform is the early diagnosis of exacerbations and disease deterioration allowing for early intervention.

The wearable sensors in this project have been integrated into a vest (Figure 1) and several prototypes with mock sensors were developed. A structured interview was designed to explore COPD patient perceptions pertaining to vest comfort, ease of wear and handling, willingness to use and concerns. Interviews were designed to take place at the clinic (England and Netherlands) where patients are provided with a suitably sized vest to try on followed by the structured interviews.

Abstract M23 Figure 1