M22 DOES A NURSE-LED NON INVASIVE VENTILATION (NIV) SERVICE IMPROVE PATIENT OUTCOMES?H Mainman, S Chambers, HJ Curtis. *Queen Elizabeth Hospital, Gateshead, UK*

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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-pat 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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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

To date, 15 interviews have been completed at Croydon Healthcare services Trust, and the Dutch interviews are underway.

Results The interview transcripts were thematically analysed using mostly framework analysis. Analysis was conducted using NVIVO 10. The following themes emerged from the data. 1) Acceptance of vest 2) willingness to wear the vest during day-time 3) Discomfort with sensor size and shape prohibiting night wear 4) Demonstrated capability of donning the vest and handling of the sensors 5) Safety concerns emphasising importance of patient education before use 6) Gender related concerns regarding vest design.

Conclusion The vests were well received by patients however the above results illustrate the importance of involving the end users in the design and development of any smart intervention. These results will be used for the final design and development of the vest.

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M24

PREVALENCE OF ANXIETY AND PATIENT CHARACTERISTICS FROM A RANDOMISED CONTROLLED TRIAL (RCT) TO IDENTIFY IF COGNITIVE BEHAVIOURAL THERAPY (CBT) BY RESPIRATORY NURSES REDUCES ANXIETY IN COPD

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Introduction Anxiety and depression are common co-morbidities in COPD. Anxiety is associated with increased breathlessness, lower levels of self-efficacy, impaired health status, poorer treatment outcomes and reduced survival, increased risk of hospitalisation, longer in-patient stay, readmissions and unhealthy behaviours such as smoking and lack of exercise. The aim of this abstract is to present prevalence data, engagement and baseline patient characteristics from the largest RCT on CBT in COPD.

Study design A multicentre RCT with follow up at 3, 6 and 12 months (ISRCTN55206395). Outcome measures include mean HADS-A (anxiety) and HADS-D (depression) score,¹ EuroQol - 5D Questionnaire,² COPD Clinical Assessment Tool³ and admission prevention at three, six and 12 months post intervention.

Approach 1,518 patients were screened for symptoms of anxiety using the Hospital Anxiety and Depression Scale (HADS). Two thirds, 705 (59%) patients scored ≥ 8 for anxiety and were approached.

Intervention Up to 6 CBT sessions provided by one of four respiratory nurses were offered. Self-help leaflets on anxiety and depression were provided as standard care.

Usual care Self-help leaflets only.

Results 42% of eligible patients consented to take part. Groups were well matched at baseline (Table 1) with no correlation between FEV1 and anxiety. A median of 4 CBT sessions (range 2–6) was delivered. Retention was high: 85% at 3 months and 72% at 6 months.

Abstract M24 Table 1 Baseline characteristics

	CBT Group (n = 139)	Control Group (n = 140)	p-value	(95% CI)
	Mean (SD)	Mean (SD)		
Age	66	67	66.5	
Gender				
Male	61 (44)	67 (48)	128 (46)	
Female	78 (56)	73 (52)	151 (54)	
Severity of COPD				
Mild	16 (11)	13 (9)	29 (10)	
Moderate	44 (32)	47 (34)	91 (33)	
Severe	50 (36)	49 (35)	99 (35)	
Very Severe	29 (21)	31 (22)	60 (22)	
Educational Level				
No educational qualifications	100 (75)	103 (77)	203 (73)	
HADS-Anxiety Score	12.3 (3.19)	12.0 (2.94)	0.47	(-0.456–0.988)
HADS-Depression Score	9.4 (4.01)	9.0 (3.68)	0.34	(-0.470–1.347)
CAT (Health Status)	28.2 (6.45)	28.7 (5.99)	0.52	(-1.944–0.990)
EQ5D	0.41 (0.29)	0.41 (0.30)	0.95	(-0.07–0.07)
Married or Co-habiting	68 (49)	63p (45)	132 (47)	
Current smoker	39 (28)	40 (29)	79 (28)	
Mean pack years	46	49	47	
BMI	26	27	26.5	

Conclusion The prevalence of anxiety and depression is high in patients with COPD and screening is therefore recommended. Affected patients were willing to engage in CBT in this large study. Results from 3, 6 and 12 months data will be available in November 2015 and will be reported. Results will include the cost effectiveness of CBT in COPD delivered by respiratory nurses.

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Education and training: from simulation to social media

M25

OXYGEN: TOO MUCH OF A GOOD THING? CAN SIMULATION IMPROVE EDUCATION?

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A cohort of chronic obstructive pulmonary disease patients experience acute exacerbations (AECOPD) presenting with worsening sputum production, cough and breathlessness. The recommended treatment for AECOPD involves using a 28% Venturi mask to achieve an arterial oxygen saturation of 88–92%. These guidelines have been poorly adhered to with many health professionals still administering high flow oxygen. An AECOPD model, created on the human patient simulator, was administered with 28% or 100% oxygen. 28% oxygen relieved hypoxia