**Conclusion** Patients with advanced COPD and co-morbid anxiety were more likely to have had contact with their GP. Those with co-morbid depression were more likely to have had an in-patient admission. Variables associated with these relationships may include health related quality of life, co-morbidities and exacerbations managed at home. On-going work will validate these conclusions by analysing data collected over an 18 month period. Supportive interventions targeting patients with comorbid anxiety and depression may ameliorate the effects of psychological morbidity and reduce admissions.

## P50 PREDICTING READMISSION FOLLOWING EXACERBATION OF COPD USING A NON-CONTACT SENSOR – A PROOF OF CONCEPT STUDY

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**Introduction and objectives** Chronic Obstructive Pulmonary Disease (COPD) is the second most common cause of emergency admission to hospital in the UK. Following an exacerbation there is a high risk of recurrence. Early identification and prompt treatment of exacerbations have been shown to reduce risk of hospital admission.[1] Respiratory rate changes during an episode of exacerbation and may serve as the warning signal of developing exacerbation. We aimed to determine whether a non-contact bedside sensor (SleepMinder TM) recording Nocturnal Respiratory Rate (NRR) could detect exacerbations in patients with COPD following hospital discharge.

**Methods** Patients were enrolled following a hospital admission for an exacerbation of there underlying COPD. They were followed prospectively for 12 weeks and monitored by SleepMinder TM (Resmed) technology recording NRR. Demographics and clinical details were extracted from medical records. A research nurse contacted each participant weekly and recorded CAT scores and any healthcare contacts.

**Results** 15 patients completed the study period and recorded >75% of study data. Of these 8 patients had further exacerbations. Median time post discharge for an exacerbation was 56.5 days (IQR 41–67). There were no differences in baseline demographics between those who had an exacerbation and those that did not however there was a trend towards increased BMI, baseline CAT score and length of stay. Of the 8 patients who had an exacerbation a clear signal in NRR could be identified, by visual inspection, in 5 (62.5%) around the time of recorded health care contact. The average time from a signal to health care contact was 6.6 days indicating a window of opportunity for intervention. The was no significant trend between change of CAT score and change of NRR indicating patients may be unaware of impending exacerbation (p value 0.243).

**Conclusions** SleepMinder TM technology assessing nocturnal respiratory rate may have use in a real time clinician led connected health setting to trigger early intervention and prevent readmission following discharge.

### REFERENCE

1 Wilkinson TM, Donaldson GC, Hurst JR, *et al*. Early therapy improves outcomes of exacerbations of chronic obstructive pulmonary disease. *Am J Respir Crit Care Med*. 2004;**169**:1298–303

## P51 ADVANCING QUALITY (AQ) REDUCING VARIATION AND IMPROVING QUALITY AND OUTCOMES FOR PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) IN THE NORTH WEST OF ENGLAND

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**Introduction and objectives** COPD patients in the North West of England die 15 years earlier than expected.

Advancing Quality is a programme of work where a common approach supports quality improvement that focuses on clinical pathways.

**Methods** A regional clinical expert group agreed the AQ COPD evidence based measures (clinical interventions) in February 2013.

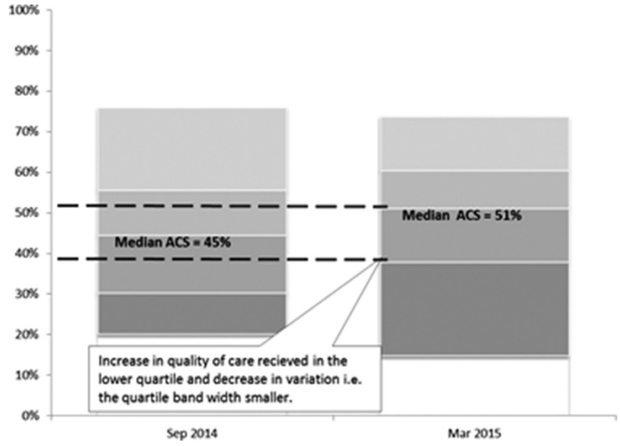
**The AQ COPD clinical interventions are:**

**Within 4 Hours Hospital Arrival:** Oxygen - Bronchodilator - Corticosteroid - Antibiotic Therapy.

**During Hospital Admission:** Smoking Cessation - Pulmonary Rehab - Inhaler Technique - Written Self-Management Plan - Spirometry – Home Oxygen - Appropriate End of Life Care – follow up.

Following an initial pilot, AQ COPD went live in September 2014. AQ is a proven approach to improve quality, providing standardisation and transparency for providers and commissioners.

**Results** Trusts aim to deliver all the interventions that the patient is eligible for, this is known as the Appropriate Care score (ACS). More patients are receiving "perfect care" with AQ, (see Figure 1).




**Abstract P51 Figure 1** Advancing Quality (AQ) reducing variation and improving quality and outcomes for patients with Chronic Obstructive Pulmonary Disease (COPD) in the North West of England

Trusts participating in AQ had a mean LOS of 4.7 days compared to 5.7 days for non-participating trusts and average bed days for patients re-admitted in participating trust was 5.5 days compared to 11.8 days in non- participating trusts. Trusts participating saw their readmission rate fall to 20.1% over the period (a reduction of 9%).

**Conclusion** A regional standardised approach, focused on a small but significant set of clinical interventions, can have a significant impact on improving patient care and outcomes.