

**Methods** We analysed data from 384 patients in the London COPD cohort collected between 1995 and 2012. Patients completed diary cards recording respiratory symptoms. Exacerbation onset was defined as the first of two days of 2 major symptoms (increased breathlessness, sputum volume or purulence) or 1 major and 1 minor symptom (cold, increased cough, increased wheeze, sore throat). Recovery was defined as the first of two symptom free days and exacerbation duration was defined as the period between onset and recovery.

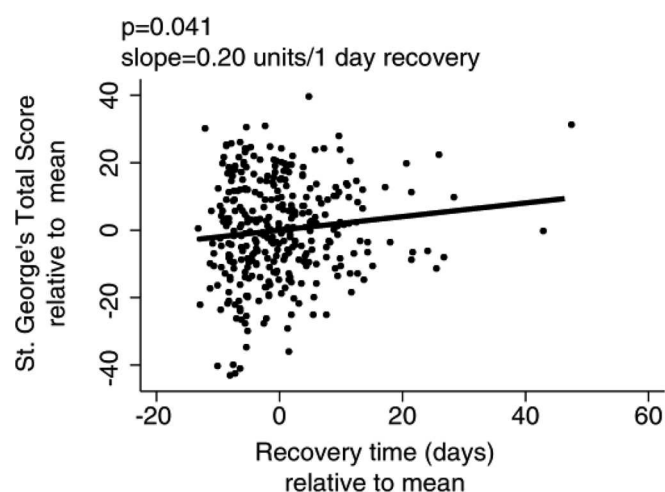
Patients completed the St. George's Respiratory Questionnaire (SGRQ) annually when clinically stable. To avoid bias with repeated measures, exacerbation recovery and SGRQ total scores were averaged. FEV<sub>1</sub>% predicted was measured at recruitment.

**Results** The 384 COPD patients (246 male); mean age 68.6 years (SD8.4), FEV<sub>1</sub> % predicted 45.8% (16.6) and FEV<sub>1</sub>/FVC 45.8% (12.2) with 122 patients (32.1%) still smoking at recruitment. There were 3498 exacerbations (median annual rate = 2.13 (IQR 1.0–3.2)).

The median exacerbation duration was 10 days (IQR 6–18). Exacerbation duration was not available for 350 (10.0%) exacerbations as no symptoms were recorded and for a further 109 (3.1%) where the patient continued to recorded symptoms post-exacerbation for 100 days or more.

In a multiple linear regression model, total SGRQ score increased by 0.20 units/1 day increase in exacerbation duration (95% CI 0.008–0.39;  $p = 0.041$ ) after allowance for FEV<sub>1</sub>% predicted and exacerbation frequency. The results suggest that halving the duration of 4 exacerbation events from 10 to 5 days will produce a 4 unit change in the total SGRQ score.

**Conclusion** Shorter exacerbations are associated with improved quality of life. More research is needed on acute interventions designed to ameliorate exacerbations.



**Abstract M23** Figure 1 shows the partial residual plot for SGRQ score against exacerbation duration, with allowance of lung function and exacerbation frequency.

**M24 MORTALITY PREDICTION BY CURB65 IN PNEUMONIA WITH AND WITHOUT COMPLICATING COPD**

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**Introduction** The CURB65 score was developed to predict mortality in community acquired pneumonia (CAP) but is often used in pneumonia complicating acute exacerbations of COPD (pAECOPD). We have previously shown that CURB65 underestimates in-hospital mortality in pAECOPD, particularly in low risk patients (observed mortality 11.2%, CURB65-predicted 1.5%). [1] Of importance, CURB65 was derived in a population with significant exclusions, notably admission from nursing home, and few patients with dementia were included, whereas in our DECAF AECOPD cohort [1] such patients were included. The higher than predicted mortality in pAECOPD may reflect additional risk conferred by co-existent COPD, a less selected population and/or clinical outcomes in participating hospitals. We have therefore investigated whether the mortality of an equivalent population with CAP, but without COPD, is similar to that found previously in pAECOPD.

**Methods** Patients admitted with a primary diagnosis of CAP were identified from coding records. Patients with confirmed or suspected COPD were excluded; selection criteria and time frame otherwise matched the DECAF cohort. Demographic, clinical and mortality data were gathered from clinical notes. Categorical variables were compared using Fisher's exact test.

**Results** 115 patients with CAP were included: mean (SD) age 72.1 (16.4) years, 29.6% were admitted from institutional care and 21.7% had dementia. Median (IQR) CURB65 score was 2 (1–3) and in-hospital mortality 16.5%. Compared to the earlier cohort with pAECOPD, mortality in patients with low or intermediate risk CURB65 scores was lower.

**Abstract M24 Table 1.**

Curb65 risk score	DECAF pAECOPD			CAP without COPD			P
	N	died	%	n	died	%	
Low	89	10	11.2	30	0	0	.06
Intermediate	98	16	16.3	29	0	0	.02
High	112	34	30.4	56	19	34	.73
Total	299	60	20.1	115	19	16.5	.49

In the present study, 74% of deaths occurred in patients admitted from institutional care (mortality 35%, non-institutional care 9%  $p = 0.002$ ) and/or those with dementia (mortality 36%, without dementia 11%  $p = 0.006$ ).

**Conclusions** Compared to the BTS national audit, the proportion of patients with severe pneumonia is higher (49% v 30%) and mortality lower (16.5% v 21.2%). Both dementia and admission from institutional care were associated with high mortality rates. Among patients with low or intermediate risk CURB65 scores the mortality of those with CAP without COPD was lower than we previously found in pAECOPD, confirming that the underestimation of mortality risk by CURB65 in pAECOPD was not attributable to less effective clinical care.

**REFERENCES**

1. Steer. The DECAF score. *Thorax*, 2012;67:970–6.

**M25 HAS THE NEW CONTRACT DELIVERED BETTER AMBULATORY OXYGEN DEVICES FOR PATIENTS? A LONDON PERSPECTIVE**

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**Background** In 2012 changes in the home oxygen service (HOS) contract offered patients the potential to benefit from new technology designed to assist ambulatory oxygen (AO) use, such as liquid oxygen (LOX) and refillable cylinders (Homefill). Prior to the change in contract only three services were thought to be commissioned in London (serving approximately 10,000 HOS users, costing £10.5m), with many areas attempting to meet increasing demand with no increase in resources.

**Aim**

- To determine the service provision, commissioning arrangement and assessment protocols for AO across London
- Establish an AO network across London

**Methods** A telephone audit was carried out in January-March 2013 with all known oxygen assessment centres in London. Two clinicians used an agreed proforma, with email follow-up. The interview included questions regarding; commissioning/funding; location; access to service, referrals and pathway; assessment protocol; disciplines/grades; and integration with respiratory services.

**Results** 34 interviews were performed across the 32 London boroughs. Key findings are:

Access: Two boroughs had no service, some had multiple.

Who: In 20 teams nursing staff assessed; 15 teams, physiotherapists; and 7 teams, respiratory physiologists.

Where: 16 assessed in the hospital, 9 in the community and 7 in both.

How: The majority (94%) performed the 6MWT, however teams that assessed in the home did not use validated reproducible exercise tests.

Equipment for assessment: The majority had standard cylinders (88%); 53% had lightweight and conservers; and other devices were rarely (3–13%) available.

Size: 16 services (47%) carried out less than 5 assessments per month.

Funding: 47% have some arrangements in place, 29% had no funding or no service provided and 24% unclear.

Integration: 67% were part of an integrated service, 18% stand alone, 12% unclear and 6% had no service.

**Conclusions** Service provision for AO across London is varied, with no standardised referral pathway, assessment protocol and often limited range of equipment available for assessment. This raises concerns over access to services, clinical assessment skills/competencies and unsuitable prescriptions. Approximately half of the services have no or unclear funding arrangements and although the majority of services (67%) are integrated within a wider COPD/IRS there was no established network and many clinicians felt isolated.

**M26 TEACHING STUDENTS TO PRESCRIBE OXYGEN SAFELY: THE IMPACT OF AN E-LEARNING MODULE AND BTS OXYGEN PRESCRIPTION SECTION ON OXYGEN PRESCRIBING BY MEDICAL STUDENTS TAKING FINAL MBBS EXAMINATIONS**

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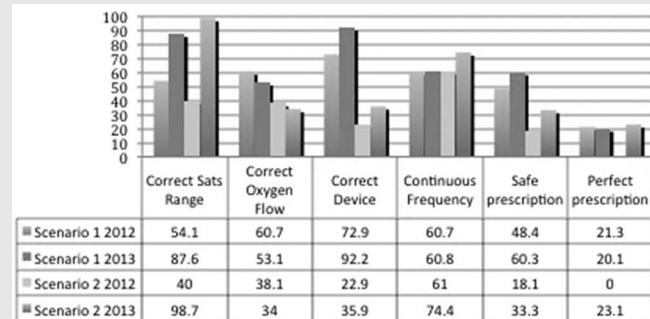
**Introduction and Objectives** National audits show oxygen prescribing is not consistently safe, despite BTS Emergency Oxygen

Guidelines. We previously identified that medical students were unable to safely prescribe oxygen at final MBBS examinations.<sup>1</sup> A compulsory e-Learning module was introduced to address this unmet educational need. We assessed the impact of this intervention in 2013.

**Methods** An Oxygen Prescribing Final MBBS OSCE station was used in 2012 and 2013. In 2013 candidates (350) completed a new compulsory oxygen e-Learning module. Candidates in 2012 (227) had not. In 2013 the exam prescription chart also included an oxygen prescription section. Each year, candidates were presented with one of two clinical scenarios. Scenario 1: 72-year-old patient with COPD, and Scenario 2: 72-year-old hypoxic patient without respiratory disease. Oxygen prescriptions were assessed against BTS standards across a number of domains. They were classified as 'safe/unsafe' and 'perfect/imperfect' by a respiratory nurse specialist.

**Results** Some improvements were seen in both scenarios (See Table 1), particularly prescription of the correct target saturation range. In 2012 40% (42/105) prescribed correct range for the non-COPD scenario; in 2013 this was 98% (154/156).

**Abstract M26 Table 1.**



**Conclusions** Introducing an oxygen e-Learning module and BTS-recommended oxygen prescription section resulted in improved competence and safety of oxygen prescribing with significant improvement in correct target saturation ranges. However, students still have gaps in equipment knowledge and a high proportion did not prescribe oxygen safely for a patient without respiratory disease. The e-Learning module was undertaken by students at a point close to examinations; moving this earlier in the year may lead to better engagement and improve the understanding of oxygen prescribing in non-COPD patients, emphasised in the module. Safer prescribing is enabled by oxygen prescription sections with target range saturation choices but equipment education is also needed. Adverse consequences of incorrect oxygen use continue to cause patients harm. Ensuring undergraduates have the practical knowledge and skills to prescribe oxygen safely is essential.

**REFERENCE**

1. D Hammersley, A Connor, C Ward, *et al.* Competence in, and safety of, oxygen prescribing by medical students taking Final MBBS as assessed by Objective Structured Clinical Examination. *Thorax* 2012; 67(Suppl 2):A168

**M27 SHOULD THERE BE A RESPIRATORY-SPECIFIC MODIFIED EARLY WARNING SCORE?**

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