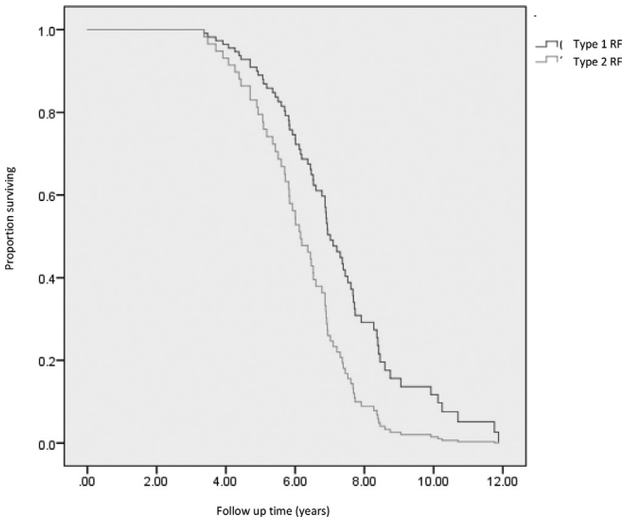

Abstract P149 Figure 1

reviewed for lung function, blood gases in the stable state, episodes of AHRF and mortality up to the end of March 2014. Cross-sectional analyses seeking associations of hypercapnia and T2RF were carried out, together with comparisons of FEV1 decline, AHRF and mortality between those with and without T2RF.

Results Mean follow up duration was 6.7 years. 164 patients died and 90 had one or more episodes of AHRF; AHRF was more common in T2RF ($p = 0.046$). Cox regression analysis, adjusting for age, demonstrated that death was more likely in those with T2RF compared to T1RF (Figure 1; $p = 0.018$). A rise in CO_2 after administration of oxygen during the test of LTOT eligibility showed a similar association, but it was less strong ($p = 0.041$). Lung function was strongly associated with T2RF and subsequent use of NIV for AHRF; 53% of those with FEV1 <30% predicted eventually required it. This increased to 81% if FEV1 was less than 20% predicted. After adjusting for baseline FEV1 in the regression model, FEV1 decline did not differ between T2RF and T1RF.

Conclusions LTOT patients with T2RF are at higher risk of AHRF and death, thus should be followed up more closely and more effort made to record advance wishes regarding NIV, if appropriate.

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P150 HOSPITAL RE-ADMISSIONS WITH EXACERBATION OF OBSTRUCTIVE PULMONARY DISEASE IN ILLICIT DRUG SMOKERS

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Introduction Patients with obstructive pulmonary disease (asthma or chronic obstructive pulmonary disease – COPD) who smoke illicit drugs are at an increased risk of hospital admissions. We compared hospital re-admission rates due to exacerbations of obstructive pulmonary disease amongst current/ex-illicit drug smokers versus current/ex-tobacco smokers.

Hypothesis

'Are those who smoke illicit drugs admitted to hospital with a clinical diagnosis of exacerbation of COPD more likely to be re-admitted with a further exacerbation than current/ex-tobacco smokers?'

Methods Re-admission was defined as any admission, after the first, with an exacerbation of obstructive pulmonary disease during the study period. All admissions with a presumptive diagnosis of 'exacerbation of COPD' between January 2009 and September 2011 were reviewed. This was performed retrospectively using our COPD admission database.

Results There were 950 sequential hospital admissions in 709 patients over a 33 month period. We found 250 ex-tobacco smokers, 370 current tobacco smokers and 89 current or ex-illicit drug smokers. Re-admission rates with exacerbation of obstructive pulmonary disease were higher in illicit drug smokers compared to current/ex-tobacco smokers (1.00 v. 0.22/0.26, $p < 0.001$). Illicit drug smokers were younger (50 v. 72.9/69.9 [mean 71.2] years, $p < 0.001$) and had shorter length of hospital stay (7.44 v. 9.28/10.69 [mean 9.87] days, $p = 0.038$). Illicit drug smokers with $FEV_1 < 1$ litre (L) had higher readmissions (2.56) than ex/current tobacco smokers (0.6) with $FEV_1 < 1L$ ($p < 0.001$) [Table 1]. Illicit drug smokers with $FEV_1 > 1L$ did not show this trend ($p = 0.236$). Tobacco pack years were higher in tobacco smokers (40.22) compared to illicit drug smokers (22.47), p.

Admissions requiring non-invasive ventilation (NIV) for type 2 respiratory failure were more common in illicit drug smokers (8.4 v. 3%, $p < 0.002$).

Conclusion We have shown that readmission rates in illicit drug smokers are higher than in tobacco smokers. These patients tend to be younger, have a male predominance, have shorter length of hospital stay and are more likely to require NIV; readmissions were more predominant in illicit drug smokers with an $FEV_1$1.

Abstract P150 Table 1 Re-admission rates in illicit drug and combined (ex/current) tobacco smokers assessed by FEV_1

	Illicit drug smokers (n = 35)			Tobacco smokers (n = 216)				
Spirometry	No.	Readmissions	Mean	No	Readmissions	Mean	χ^2	p value
$FEV_1 < 1$ L	16	41	2.56	105	63	0.6	19.66	0.0001
$FEV_1 > 1$ L	19	19	0.894	111	60	0.504	1.399	0.236

P151 CAN THE DECAF SCORE BE USED TO GUIDE PROGNOSIS AFTER AN ACUTE ADMISSION FOR COPD EXACERBATION?

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Introduction Each year chronic obstructive pulmonary disease (COPD) causes approximately 23,000 deaths in England. Patients are admitted daily with exacerbation of COPD which can often be life-threatening. Steer *et al* have shown the use of DECAF score to predict inpatient mortality in COPD exacerbation. The DECAF score stratifies patients into low, intermediate and high risk dependant on their admission score.

Abstract P151 Table 1 The use of DECAF score to risk stratify patients admitted with COPD exacerbation

Patient Risk	Total No of patients n (%)	No of inpatient deaths n (%)	Required NIV n (%)	Re-admitted within 3 months n (%)
Low Risk	99 (62.3%)	4 (4.0%)	9 (9.1%)	41 (43.1%)
Inter-mediate Risk	35 (22.0%)	1 (2.6%)	5 (14.2%)	12 (35.3%)
High Risk	25 (15.7%)	10 (40%)	4 (16%)	7 (46.7%)

Aim The aim of our study was to further evaluate the accuracy of DECAF score as a prognostic tool for patients admitted with exacerbation of COPD.

Method A retrospective review of notes of patients admitted with COPD exacerbations between December 2012 and January 2013 was undertaken. The data collected was used to determine the DECAF score which was compared to inpatient mortality, 30 days post-discharge mortality, usage of NIV and readmission within 3 months.

Results 159 patient notes were reviewed. 62.3% were classified as low risk according to DECAF score, with a 4.0% inpatient mortality. 22% were intermediate risk with 2.6% inpatient deaths. 15.7% of the patients were high risk, out of which 40% died as an inpatient. In addition, high DECAF score showed increased risk of 30 days post discharge mortality with 33.3% deaths in high risk patients (Table 1). The DECAF score did not predict the use of NIV. There was however a trend towards increasing use of NIV with higher DECAF score. 90 day readmission data showed similar patterns between risk groups based on DECAF score.

Conclusion Our study showed that high DECAF score is a strong predictor of inpatient and 30 day mortality in patients admitted with COPD exacerbation. A high DECAF score did not predict the need for NIV and it did not appear useful in predicting readmission over a 3 months period. The use of DECAF score in clinical settings would help guide physicians to risk stratify patients, to plan management and to determine whether patients are cared for in high dependency unit, respiratory or a general ward. It may be useful in guiding levels of support for patients by community teams on discharge to prevent adverse events.

P152 THE RELATIONSHIP BETWEEN EDUCATIONAL QUALIFICATIONS, ACCESS TO INFORMATION TECHNOLOGIES AND CLINICAL OUTCOMES IN PATIENTS WITH ACUTE EXACERBATION OF COPD (AECOPD)

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Introduction and objectives Although socioeconomic factors are known to influence clinical outcome in COPD patients, few studies have addressed the impact of educational attainment. This is particularly relevant in light of the fact that telehealth, using often complex technologies, are increasingly used in the management of chronic diseases. We therefore aimed to ascertain the proportion of patients hospitalised with AECOPD who have formal educational qualifications and access to information technologies.

Method Clinical and physiological data were prospectively gathered from consecutive patients admitted to a metropolitan teaching hospital with AECOPD between April and December 2013. Patient data were analysed according to the possession of educational qualifications, and access to a personal computer and the internet.

Results 100 patients were admitted with AECOPD (40% female, age 70.5 ± 9.3 years). 51% of patients lived alone, 38% were current smokers with a FEV1 0.70 ± 0.39 L at admission, and 13% were receiving long term oxygen therapy. Median symptomatic days prior to admission was 4.0 (IQR 1 to 14), with an annual admission frequency of 2.0 (IQR 1 to 6). 14% of patients had access to both a computer and the internet. Patients with no access to these technologies were older (71.2 ± 9.2 vs. 64.8 ± 7.7 years, $p < 0.02$). Patients with no educational qualifications had a lower %predicted FEV1 (31.2 ± 23.6 vs. 38.7 ± 20.9, $p < 0.05$), and were less likely to have access to information technologies (7% vs. 93%, $p < 0.05$). They were more likely to be readmitted within 28 days (11% vs 3%, p=ns), but presented with a lower symptom burden on admission as measured by the numerical rating scale (3.6/10 vs. 5.0/10, p=ns).

Conclusion These data suggest there may be difficulties in implementing the use of telehealth within this metropolitan COPD population. Only 14% had access to a computer and the internet. Patients with no educational qualifications had worse spirometry at admission, but surprisingly a lower symptom burden. This may be due to the fact that those with educational

Abstract P152 Table 1

	Educational qualifications N= 17 Mean (SD) or%	No qualifications N=83 Mean (SD) or%	Computer/Internet N=14	No Computer/Internet N=86
Female	4%	36%	6%	34%
Age (years)	69.4 (8.3)	70.6 (9.4)	64.8 (7.7)	71.3 (9.2)
FEV_1%predicted	38.7 (20.9)	31.2 (23.6)	23.6 (16.2)	34.9 (24.2)
Current smokers	9%	29%	3%	35%
Mean number of symptomatic days prior to admission	5.0 (6.5)	5.11 (4.7)	4.1 (2.1)	5.2 (5.2)
Admission frequency (/12 months)	3.4 (2.3)	2.5 (1.2)	2.2 (1.2)	2.7 (1.5)
28 day readmission	3%	11%	0	14%
Numerical Rating Scale (/10)	5.0 (2.0)	3.6 (2.1)	3.8 (1.9)	3.8 (2.1)
COPD Assessment Test (/40)	24 (10.8)	21.8 (10.8)	21 (10.2)	22.2 (11.09)
Length of hospital stay (days)	4.1 (2.9)	6.0 (6.2)	5.0 (7.1)	5.7 (5.6)