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)

qualifications may have a greater awareness of the symptoms of an exacerbation, and therefore present to hospital at an earlier stage.

P153 STRATIFYING PNEUMONIC EPISODES AND ACUTE EXACERBATIONS IN COPD PATIENTS – A CONTINUUM OR DISCRETE PHENOMENA?

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Background Acute exacerbations of chronic obstructive pulmonary disease (AECOPD) are characterised by an acute worsening of symptoms beyond the normal day-to-day variability. Pneumonic episodes, confirmed by new chest X-ray (CXR) infiltrates, are common in patients with COPD but are difficult to distinguish in primary care from non-pneumonic exacerbations. It is uncertain whether AECOPD and pneumonic episodes in COPD patients are distinct clinical events in terms of aetiology and/or response to oral therapy. We performed a longitudinal study to characterise these events and to determine clinically meaningful differences associated with CXR changes in the outpatient setting.

Methods The Acute Exacerbation and Respiratory Infections in COPD (AERIS) study is a longitudinal epidemiological study to assess how changes in the COPD airway microbiome contribute to the incidence and severity of AECOPD. Patients with moderate to very severe COPD aged 40–85 years were followed monthly for 2 years, and reviewed within 72 h of onset of symptoms of AECOPD. We compared markers of systemic and airway inflammation between pneumonic AECOPD characterised by new CXR infiltrates, and non-pneumonic AECOPD, in a subcohort of 36 patients.

Results In the first year of study participation 122 exacerbations were recognised of which 120 had a CXR performed. Of these, 20 (16.7%, n = 12 patients) were identified as having new radiographic infiltrates. Statistically significant differences occurred in mean white blood cell count, blood neutrophil count, C-reactive protein, fibrinogen and sputum percentage neutrophil count between those AECOPD with new CXR infiltrates and those without (Table 1). Furthermore, there was a trend towards more severe symptom scores with pneumonic episodes using the EXACT-PRO score (p = 0.057).

Abstract P153 Table 1 Values reported as mean ± standard deviation. NS = no significance

	AECOPD with no CXR infiltrate	AECOPD with new CXR infiltrate	p-value
WBC count (blood) 10*9/L	9.1 (2.8)	11.2 (3.6)	< 0.01
Neutrophils 10*9/L	6.4 (2.5)	8.5 (3.6)	< 0.01
Lymphocytes 10*9/L	1.7 (0.8)	1.4 (0.6)	NS
Eosinophils 10*9/L	0.20 (0.16)	0.33 (0.28)	NS
CRP mg/L	20.6 (28.7)	66.8 (77.0)	< 0.05
Procalcitonin µg/L	0.091 (0.120)	0.093 (0.049)	NS
Fibrinogen g/L	5.3 (1.2)	6.4 (1.2)	< 0.01
Sputum (%):			
Neutrophils	57.5 (35.0)	77.6 (25.6)	< 0.05
Lymphocytes	0.8 (2.6)	0.2 (0.3)	NS
Eosinophils	2.5 (4.7)	2.0 (2.5)	NS
Macrophages	19.0 (16.3)	11.3 (11.5)	NS
EXACT PRO score	41.4 (8.5)	45.3 (7.0)	NS

Conclusion Pneumonic episodes are common in the context of clinical events presenting as outpatient AECOPD. The profile of airway and systemic inflammation is greater during these events than those without CXR changes. Understanding whether the biology and clinical course of these events is distinct from other exacerbations is key, particularly as patients are encouraged to self-manage based on symptom changes alone. Further study of the AERIS cohort will investigate links between aetiology, outcomes and prognostic markers at exacerbation including radiological and clinical indices.

P154 THE IMPACT OF A DISCHARGE CARE BUNDLE ON THE 30-DAY READMISSION RATE FOLLOWING HOSPITALISATION FOR ACUTE COPD EXACERBATION

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Introduction National audit reports high rates of early readmission following hospitalisation for chronic obstructive pulmonary disease (COPD) exacerbation. Discharge bundles aim to optimise care and reduce readmission. Frimley Park Hospital NHS Foundation Trust interacts with different community respiratory teams across three counties.

Aims We hypothesised that a novel COPD discharge bundle would reduce re-admission. We also wished to see if the bundle was effective across multiple community administrations, and in patients with a history of frequent exacerbation.

Methods Admissions with a primary COPD diagnostic code and cases referred to the COPD nurse were collated during Q4 2013/14. Patients were classified according to whether they were assessed by the COPD nurse using the discharge bundle. Readmissions within 30-days and 3-months were identified using a hospital clinical database. Readmissions with COPD exacerbation (infective or non-infective) were included, as well as COPD associated lower respiratory tract infection or pneumonia. The database identified frequent severe exacerbators (patients with >1 admission in the previous year), and recorded age and length of stay as surrogates of disease complexity.

Results 24 patients were excluded (18 had other diagnoses, 4 died, and 2 lived out of area). Table 1 shows the characteristics of the remaining 156 patients according to whether they completed the bundle. There was no overrepresentation of short (zero or one day) length of stay patients in the group not completing the bundle. 17.5% of patients completing the bundle were re-admitted within 30-days, compared to 34% who did not (p = 0.027). A similar trend was seen at 3-months. No difference was observed in the timing or duration of readmissions. Logistic regression using covariates of age, length of stay, history of frequent severe exacerbation and discharge bundle use, suggested the latter two variables were both independent predictors of re-admission at 30-days: OR 5.70 (95% CI 2.46 to 13.2, p < 0.001) and OR 0.33 (95% CI 0.14 to 0.79, p = 0.012) respectively. Different community teams exerted no significant effect when added to the model.