Exclusion criteria: individual case studies, conference abstracts and opinion pieces. No date or language restrictions.

Search terms included: 'pulmonary rehabilitation' AND 'referral' OR 'uptake' applied to MEDLINE, EMBASE, CINAHL, PsychINFO, ASSIA, BNI, Web of Science and Cochrane Library from inception to June 2016 supplemented by review of reference lists and citation search. Titles, abstracts and full papers were reviewed independently, quality appraised (using Cochrane Collaboration's tool for RCTs and ROBINS-I, AMSTAR) and entered into summary tables. The protocol was registered (PROSPERO) and reported according to PRISMA guidelines.

**Results** We screened 3217 references, from which 7 papers including 6345 patients and 22 clinicians met inclusion criteria. Most studies (n = 5) were UK based.

Designs, interventions and scope of studies were diverse with interventions often part of multifaceted evidence based management of COPD. Examples included computer based prompts at practice nurse review, patient information, financial incentives. Most studies (n = 5) reported improvements in referral or uptake of PR (range 0% – 25% increase), however most had methodological limitations with risk of bias. Due to heterogeneity, studies were not considered combinable and meta-analysis was inappropriate.

**Conclusions** There is limited evidence for the efficacy of interventions to increase referral and uptake of PR. Existing studies are diverse and further testing using robust methods in various populations and settings is required to optimise access to PR.

## P213 POSITIVE DRIVERS AND POTENTIAL BARRIERS TO IMPLEMENTATION OF HOSPITAL AT HOME SELECTED BY LOW RISK DECAF SCORE

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**Background** Despite endorsement in guidelines, many hospitals do not offer hospital at home (HAH) for COPD exacerbation (AECOPD), partly reflecting the previous lack of a robust prognostic score to guide selection. The DECAF score addresses this concern, and should be routinely scored on admission.[1] In a RCT we have shown that HAH selected by DECAF score 0–1 is safe and effective. Up to 50% of admitted patients are suitable. Our population included patients with higher medical dependency than earlier trials and HAH was supported by 24/7 specialist on-call. In an embedded qualitative study, we identified positive drivers for, and potential barriers to, use of HAH to inform service implementation.

**Methods** Patients, carers, clinicians and managers were purposely selected to ensure diversity. Semi-structured interviews were conducted and Thematic-Construct Analysis employed.[2]

**Results** 44 patients (HAH/inpatient care/declined randomisation), 15 carers, 14 consultants, 11 specialist nurses and 4 managers were interviewed. *'Positive drivers'* were divided into two sub-constructs: *'Feeling more at ease and comfortable in own home environment';* and *'Feeling safe, reassured and appreciated through continuity of hospital care'*. Positive influences on independence, perceived rate of recovery, sleep quality, mood and contact with friends and family were noted. At 14 days post-presentation, 90% of patients stated they would prefer HAH over inpatient care for subsequent exacerbations of similar severity. Counter-intuitively, carers reported greater convenience rather than increased burden.

*'Potential Barriers'* were grouped into two sub-constructs: *'Personal preferences';* and *'Resistance to change'*. Some patients highlighted fear of being alone at night and dislike of strangers visiting their home; nurses cited higher workload and greater responsibility (with experience, viewed positively); whilst operational concerns included keeping medical records in a patient's home and inability to capture activity within current payment systems.

**Conclusions** HAH selected by DECAF allows the inclusion of more patients than existing models, and is preferred to inpatient care by most patients and their families. During the trial few barriers to implementation were identified, and were effectively overcome. Hospitals planning to implement HAH selected by DECAF should pre-emptively address these issues.

### REFERENCES

1 National COPD Audit Report, 2015.
2 Dismore. *J Health psychol,* 2016.

## P214 THE PREVALENCE OF RESPIRATORY SYMPTOMS AND LUNG DISEASE IN A SOUTH LONDON "LUNG HEALTH IN ADDICTIONS" SERVICE

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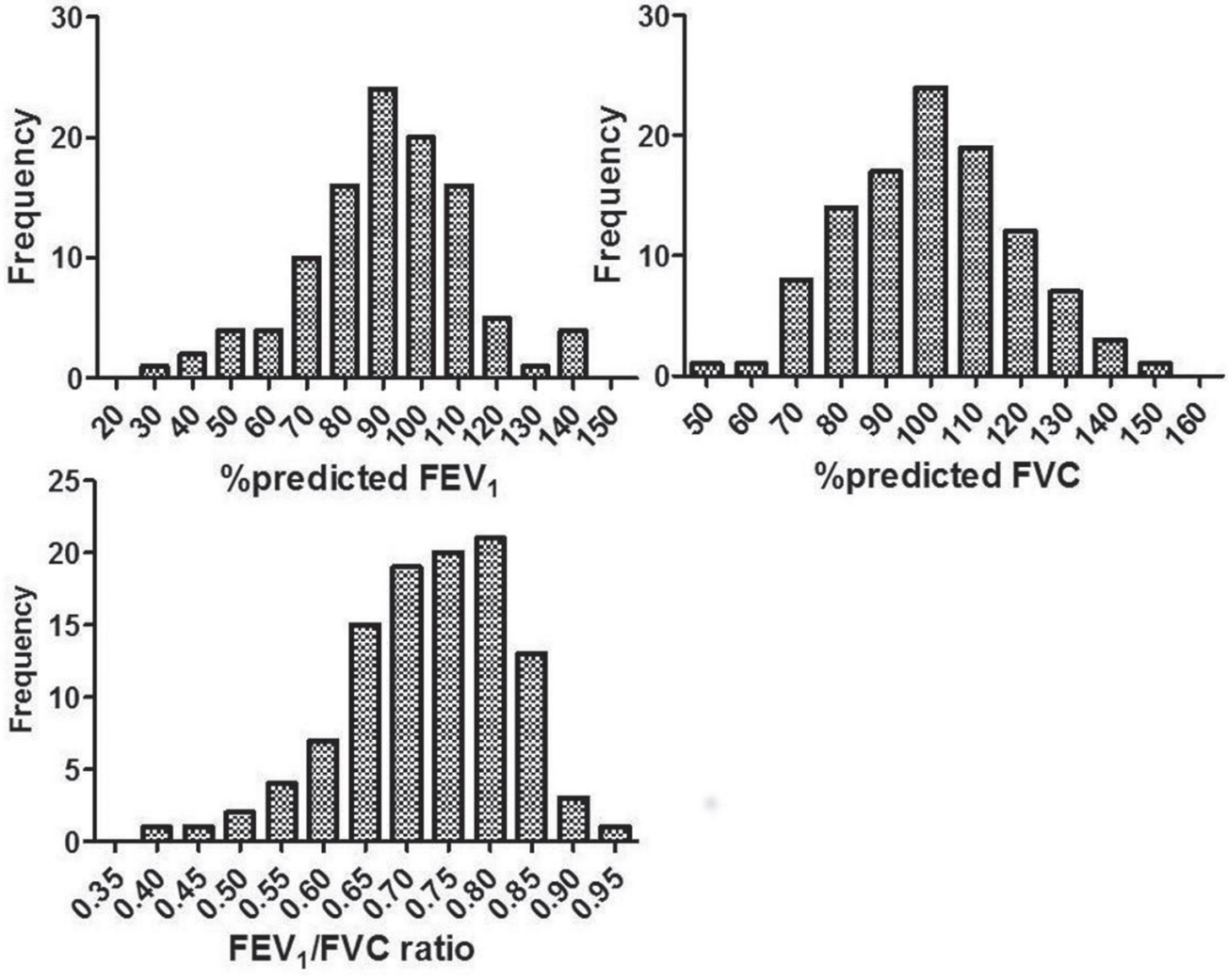
**Introduction and objectives** Patients undergoing treatment for heroin addiction die on average 15 years earlier than the general population (Smyth *et al.*, 2006). Opioid-related deaths in England and Wales have increased by two-thirds since 2012 (Office for National Statistics 2015). Although smoking-related respiratory disease contributes to the excess mortality in drug and alcohol addiction, screening for lung disease is not routinely offered in community drug and alcohol treatment services (CDATs). We have established a "Lung Health Clinic" in our local CDAT (Brixton, Lambeth, SE London). Through this clinic we aimed to document the respiratory symptom burden, and COPD prevalence, in addicts accessing our local CDAT.

**Methods** Assessments: handheld spirometry ($FEV_1$, FVC, $FEV_1$/FVC ratio) and pulse oximetry ($SpO_2$%). We recorded breathlessness (mMRC Dyspnoea Scale), chronic cough and cigarette smoking status.

**Results** 112 patients (88 male, mean(SD) age 46 (9) years) attended Jan–Dec 2015. Current/previous addictions included: smoked heroin 66.3%, intravenous heroin 32.5%, crack cocaine 68.2%, cannabis 60.0%. 81.3% were current cigarette smokers. Only 41% had accessed smoking cessation services despite these being offered in-house.

61.5% reported chronic cough. 20% reported significant breathlessness (mMRC Dyspnoea $\geq$ 2). 5% had a pre-existing COPD diagnosis, whereas spirometry [Figure 1] and clinical history were consistent with COPD in 36.4%. $SpO_2 \leq 95\%$ in 12.8%.

**Conclusions** There is a significant unmet burden of undiagnosed chronic lung disease, and respiratory symptoms, in our local




**Abstract P214 Figure 1** Frequency distribution of %predicted $FEV_1$/FVC ration in clients attending the Lung Health Clinic

CDAT, and a need to improve uptake of smoking cessation services. An economic model of expected gain in life expectancy and Quality Adjusted Life Expectancy (QALYs) from quitting is in development.

## P215 THE INCREMENTAL DISEASE BURDEN ASSOCIATED WITH THE PERSISTENCE OF MORNING, DAYTIME AND NIGHT-TIME SYMPTOMS IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENTS

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**Introduction** The current Global Initiative for Chronic Obstructive Lung Disease Strategy makes limited references to the variability of chronic obstructive pulmonary disease (COPD) symptoms according to the time of day patients experience symptoms, on awakening/morning, in the daytime and at night-time; therefore it's unclear whether specific treatment approaches are needed.

**Aims** To establish the association between time of day of symptoms and the burden experienced by patients; as measured by validated patient-reported outcomes (PROs), healthcare resource utilisation (HRU) and physician-perceived impact of COPD on patients' lives.

**Methods** Data were taken from four waves (2012–2016) of the Respiratory Disease Specific Programme (DSP); cross-sectional surveys of COPD patients in France, Germany, Italy, Spain, and the UK. Patients were defined as suffering from symptoms on awakening/morning (M), in the daytime (D), at night-time (N) or combinations of these according to physician-reported time of day of symptoms within the last 4 weeks. Kruskal-Wallis tests assessed statistical significance of outcomes across patient groups. Outcomes included HRU in the last 12 months, EQ-5D-3L with visual analogue scale, Jenkins Sleep Evaluation Questionnaire, COPD Assessment Test, activity impairment (measured by the work productivity and activity impairment questionnaire), and physician-reported impact COPD has on the patient's sleep.

**Results** In total, 8185 patients receiving treatment were analysed; 25% suffered no symptoms, 16% D only, 17% M/D only, 6% D/N only, 4% M, N or M/N only and 32% M/D/N. Across the four DSP waves, patients suffering any M, D or N symptoms ranged from 46%–64%, 67%–77% and 38%–47%, respectively. All outcomes differed significantly across patient groups (Table 1). In general, M/D/N patients utilised the most healthcare resources, suffered more exacerbations requiring emergency room visits or