

vious need for 2 month post discharge visit for assessment and education reduced significantly, with associated dramatic reduction in phone-calls from patients with queries.

**Conclusion** This study, though limited to single centre, shows significant cost and potential safety benefits. Introducing greater rigour to the in-hospital assessment process was thought to account for the overall fall in oxygen prescription, particularly high-cost urgent orders. With reduction in need for post-discharge intervention also reducing the burden in the community and suggesting greater patient understanding.

## REFERENCES

- 1 Directorate, N.M., COPD Commissioning toolkit. 2012.
- 2 Hardinge M, *et al.* Guideline update: The British Thoracic Society Guidelines on home oxygen use in adults. *Thorax* 2015;**70**(6):589–91.

### P206 ACHIEVING RESPONSIBLE OXYGEN PRESCRIBING TO IMPROVE VALUE: LONDON CARE HOMES

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10.1136/thoraxjnl-2016-209333.349

**Background** Around 85,000 patients are currently prescribed home oxygen (HO) in England, costing the NHS > £100 million/yr. There are about 11000 HO users in London costing £12 million/yr. Department of Health data suggest 24%–43% of oxygen prescribed is not used/used inappropriately. The aim of this study was to better understand HO prescriptions/use in London nursing/care homes.

**Methods** Air Liquide (AL), the London oxygen provider, reviewed their database to identify nursing/residential/care home and hospice residents with an active HO Order Form (HOOF) as of January 2016. Staff education and support was undertaken by the AL respiratory nurse advisor (ALRNA) from Jan–June 2016. Results were reviewed with the London Clinical Oxygen Network.

**Results** 245 adult patients with a HO prescription were identified across 155 nursing/residential/care homes and hospices in London (mean age 77, range 22–102 years). Table 1 shows the Clinical codes on the HOOFs. The indication for oxygen was unknown in 52 (21%). HO prescription ranged from 0.5–15

LPM; equipment ranged from oxygen concentrators, ambulatory cylinders (89), static cylinders (22), portable oxygen concentrators (5) and liquid oxygen (2). 168 (68%) patients were underusing oxygen while 38 (15%) were overusing. 36 (14%) patients were not using their oxygen at all. Only 90 (36%) patients had a HOOF dating from 2016; 157 (64%) had a HOOF more than a year old. Issues noted included lack of information as to indication for HO and who to contact for guidance, absence of clinical directives from prescribers resulting in 'PRN' oxygen use and training needs around storage/use of oxygen equipment.

**Conclusion** A sizable number of nursing/residential/care home and hospice residents in London are currently prescribed oxygen which is being over/under or inappropriately used without ongoing specialist support/review. For 1 in 5 patients the clinical indication is unknown. New oxygen prescriptions for 'nursing home' patients should include guidance on use, staff training and ongoing support. These data exemplify broader issues relating to a lack of commissioned HO pathways and the need for commissioned Home Oxygen Review (HOS-R) services across all CCGs to keep patients safe, maximise patient benefit and reduce waste.

### P207 SELF-FILL OXYGEN SYSTEMS – BENEFITS FOR PATIENTS, HEALTHCARE PROVIDERS AND THE ENVIRONMENT

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10.1136/thoraxjnl-2016-209333.350

**Introduction** 'Non-delivery' Home oxygen concentrator systems that allow self-filling of ambulatory oxygen (AO) cylinders are emerging. They offer a relatively unlimited supply of AO in suitably assessed people who require Long term oxygen therapy (LTOT) with the proviso that they can use these systems safely and effectively, thus allowing users of LTOT to be self-sufficient and facilitating longer periods of time away from their home.

**Methods** A national review of the home oxygen service in Scotland was undertaken resulting in consolidation of all home oxygen delivery systems under a single contractor with the transition to this new service delivered over 2013. A health economics analysis was conducted following the transition to compare the differences between the previous conventional AO cylinder home delivery service and the HomeFill (HF) system.

**Results** Conservative calculations indicate a cost for 3 AO cylinders of about £84 per week, or £4247 per year, compared with a cost for HF of £920 per annum, giving a benefit of around £3344 for each patient. The costs savings related to reduced travel and delivery in 1213 HF users compared to the AO cylinder delivery model is 1.25 million Km's and the estimated carbon emission (CO<sub>2</sub>e) reduction for the HF system is 261.29 tonnes of CO<sub>2</sub>e.

**Conclusion** Evidence is emerging that 'Self-fill'/'non-delivery' oxygen systems can meet the AO needs of many patients using LTOT and can have a positive impact on quality of life; increased time spent away from place of residence and can offer significant financial savings to health care providers. Even with conservative estimates in the health economics analysis, the provision of the HF system to around 1000 patients saves about £1.67 million per year in Scotland. Self-fill oxygen delivery systems have been available in the UK for >5 years and whilst one could argue for a larger randomised controlled trial, the authors would propose

**Abstract P206 Table 1** Clinical codes for home oxygen provision for patients in London care homes

Clinical code on HOOF	Number of patients
COPD	71
Palliative	55
Unknown	52
Paediatric/Neonatal	19
Neuromuscular disease	11
Cluster Headache	10
Primary Pulmonary Hypertension	8
Other Respiratory	4
Cystic Fibrosis	4
Obstructive Sleep Apnoea	2
Bronchiectasis	2
Heart Failure	1

that with the available evidence, particularly the financial impact, it should be more widely utilised.

## P208 BEHAVIOURAL FEED-BACK EDUCATION INTERVENTION TO ENHANCE ADHERENCE IN PATIENTS WITH SEVERE UNCONTROLLED ASTHMA, A RANDOMISED CLINICAL TRIAL

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10.1136/thoraxjnl-2016-209333.351

**Background** Severe asthma can be due difficult to treat asthma due to poor adherence or due to refractory asthma. Identifying poor adherence can be challenging since the methods of adherence have limitations. We developed a method of assessing adherence using Inhaler compliance assessment (INCA) device, which incorporates both identifying technique errors and time of use of the inhaler. We hypothesised that that feedback on time of use and technique of use to patients, improves adherence, compared to standard education without visual feedback.

**Methods** This was a 3-month prospective multicentre randomised controlled study, in which patients with severe uncontrolled asthma recruited from specialist asthma clinics were randomised to get feedback on and education using the adherence information downloaded from the INCA device or education alone.

**Results** At the end of the study period, the mean rate of adherence for month three in the active group (n = 111) was 73% versus 63% in the control group (n = 107), p ≤ 0.01 (95% CI: difference 2.8, 17.6). Only the active group demonstrated significant reductions in the rate of technique errors missed doses, excess-doses with improvement in the habit of use. The mean AQLQ and ACT improved significantly in both groups. At the end of the study, 64 (32%) patients remained poorly controlled with persistent airflow obstruction. Of these, 39 had adherence rates <80%, (mean 52%), while 25 had adherence >80%, indicating refractory asthma.

**Conclusion** Without changing patients' therapy, most of the patients' asthma control improved. Two thirds of those who remained uncontrolled required further adherence counselling. 11% of the total cohort remained unstable despite adequate adherence and hence will require step up therapy. Our study shows that adherence assessment and education using INCA feedback should be considered prior to referring patients for additional therapy.

## P209 SPECIALIST RESPIRATORY PHARMACIST CASE MANAGEMENT COPD MEDICINES OPTIMISATION CLINICS: IMPLEMENTATION AND OUTCOMES

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10.1136/thoraxjnl-2016-209333.352

**Introduction and objectives** In line with 'Transforming Your Care' (restructuring of healthcare provision in Northern Ireland) and the Global Initiative for Chronic Obstructive Lung Disease (GOLD) strategy, this project brought specialist trust pharmacist-

led medicines optimisation case management clinics to COPD patients in primary care. The aim of the project was to achieve sustained medicines optimisation with associated improved patient outcomes.

**Method** An initial process mapping event resulted in establishing the existing COPD patient pathway between primary and secondary care. This informed the decision to base clinics in GP surgeries where the pharmacist: determined disease stage (GOLD classification); assessed medication adherence; established COPD medication appropriateness; prescribed COPD medications and smoking cessation; determined whether antibiotic prescribing was guideline-informed; and made appropriate referrals to primary and secondary care healthcare professionals. A 30-day telephone follow-up by the pharmacist involved reassessment of adherence, symptom scores and medication appropriateness. COPD exacerbations, antibiotic prescribing and unplanned hospital admissions were further recorded over 12 months. All data were analysed using SPSS Version 22.

**Results** Results for a patient cohort seen over four months (n = 360) demonstrated: statistically significant improvements in COPD medication appropriateness and adherence (Wilcoxon Signed Rank Test, p < 0.001, n = 360); improvement in COPD symptoms (MRC Breathlessness and CAT score); and reduced guideline-informed antibiotic prescribing (12 months post baseline review). Projected annual drug cost savings were £235k. Sixty-eight percent of patients had experienced one or more COPD exacerbations over the year prior to clinic attendance reducing to 50% during the 12 months post-intervention. Non-elective COPD-related hospital admissions also decreased (9.2% versus 5.3% over 12 months).

**Conclusion** Providing specialist hospital pharmacist COPD clinics in primary care resulted in safe and cost-effective medication use with improved patient outcomes 12 months post review.

## P210 IMPLEMENTATION OF ELECTRONIC COPD DISCHARGE CARE BUNDLES: A QUALITY IMPROVEMENT PROJECT

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10.1136/thoraxjnl-2016-209333.353

**Background and aims** Acute exacerbations of chronic obstructive pulmonary disease (AECOPD) are responsible for 115,000 emergency admissions to hospital *p.a.*; one-third of patients are re-admitted within 90 days. COPD discharge care bundles reduce re-admission rate.<sup>1</sup>

Paper-based COPD discharge bundles were implemented in our trust (a large tertiary centre in the West Midlands) in 2013, with disappointing completion rates. In order to improve compliance, an electronic bundle (e-bundle) was introduced. This uses a novel system (Figure 1) that electronically alerts our multidisciplinary respiratory support team to potential AECOPD patients when medications for AECOPD are electronically prescribed (e-prescribed). The aim of this audit was to see whether completion of COPD discharge bundles in this trust has improved since the e-prescribing alert system and e-bundle implementation in 2015.

**Methods** Admissions coded as AECOPD were retrospectively identified using ICD-10 codes for a three-month continuous period in 2015. Discharge summaries and e-bundles for each patient were accessed via online records, and in patients who were bundle-appropriate, data were collected on the presence or