(5.3% & 6.2%), the COPD cohorts admission NEWS was double that of the AMU patients (median 4 vs 2). This difference persisted throughout admission to discharge.

Admission NEWS showed a step-wise increase in mortality amongst the AMU patients. In contrast, the COPD cohort with NEWS of 5 or 6 had *lower* in-patient mortality compared to COPD patients scoring 2–4. NEWS of ≥7 is used to trigger urgent medical attention and 20% of patients with COPD fulfilled this criteria (compared to 6.6% of non-COPD patients). When NEWS score was ≥10, mortality in both groups was high (31.6% in COPD patients, 40% in AMU patients)(graph 1).

In conclusion, we have shown that acute COPD patients have similar mortality to other emergency medical admissions yet persistently higher NEWS. This requires addressing possibly by adjusting the NEWS to take into account lower oxygen saturation targets in selected COPD patients (median 93% compared to 96% in AMU patients) and thus reduce over-alerting of those not necessarily at high risk of death.

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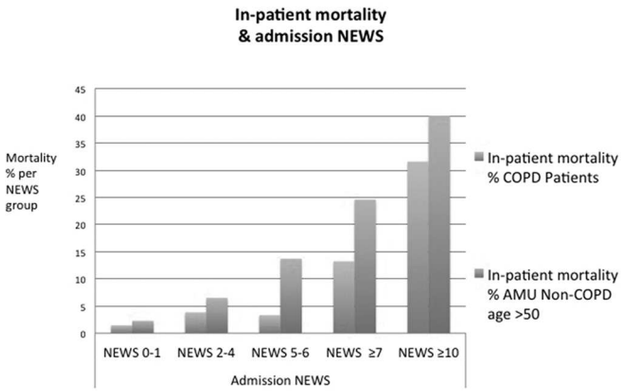

Abstract S67 Figure 1.

S68 THE NATIONAL EARLY WARNING SCORE (NEWS) & IATROGENIC HARM - COULD THE NEWS FOR COPD PATIENTS BE IMPROVED?

L Hodgson, S Bax, M Montefort, J Zahra, R Venn, H Ranu, J Congleton; *Western Sussex Hospitals, Worthing and Chichester, England*

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The National Early Warning Score (NEWS) system is in use throughout NHS Acute Trusts. It reliably picks up the small proportion of patients at high risk of death during their admission. However, during Acute Exacerbation of Chronic Obstructive Pulmonary Disease (AECOPD), where target saturations are 88–92% in selected patients, a high proportion of patients have NEWS 'alerts' when their oxygen levels are within the target range set by their clinician. This results in referral for urgent review by medical staff and/or an inappropriate increase of inspired oxygen which could exacerbate hypercapnic respiratory failure.

We therefore propose a simple modification to the NEWS system in patients at risk of hypercapnic respiratory failure. Three points are added for target saturations of 85% or less and two points are added for target saturations of 86–87%. For target saturations of 88–92%, no additional points will be added. This modification would be at the senior clinicians' discretion.

We reviewed the observations of 1119 patients admitted with a primary diagnosis of AECOPD and compared them to 15,953 patients aged over 50 admitted to one of two acute medical units. Admission saturations were reviewed and compared with in-patient mortality.

Use of the current NEWS system resulted in 40% of patients with AECOPD scoring 2–3 points on their saturation alone despite most being in the saturation range recommended by the BTS[1]. In addition, their risk of mortality was significantly lower than patients without COPD in the same saturation range (See table 1). Our proposed modified NEWS system results in an improved ability to identify the patients at higher risk of mortality, thereby resulting in more efficient utilisation of medical resources and the reduction of inappropriate use of oxygen and risk of hypercapnic respiratory failure.

We have shown that the current NEWS system leads to a significant number of patients with AECOPD alerting when they have nationally recommended target oxygen saturations. A simple adjustment of the alerting threshold in this cohort could improve the system. This could also be applicable to other respiratory patients with or at risk of hypercapnic respiratory failure.

1. BTS guideline for emergency oxygen use.

Current NEWS	NEWS 3 (≤91%)	NEWS 2 (92-93%)	NEWS 1 (94-95%)	NEWS 0 (≥96%)
AMU aged ≥50 % (n=)	6.8 (900)	6.6 (879)	16.1 (2133)	70.5 (9347)
AMU ≥50 Mortality %	17%	9.3%	6.2%	4.9%
COPD Patients % (n=)	23.6 (264)	17.1 (191)	21.7 (243)	37.6 (421)
COPD Mortality % (n=)	9.9%	5.2%	3.3%	3.6%

New Adjusted NEWS	≤85% = 3 pts	86-87% = 2 pts	88-92%	93-100%
COPD % (n=)	7.6 (85)	2.8 (31)	20.7 (232)	68.9 (771)
COPD Mortality	15.3% (n=13)	9.7% (n=3)	5.6% (n=13)	3.9% (n=30)

Abstract S68 Figure 1.

S69 IMPLEMENTATION OF A COPD DISCHARGE CARE BUNDLE AND HOSPITAL READMISSIONS IN LONDON

[1]AA Laverty, [2]S Elkin, [1]H Watt, [3]S Williams, [3]L Restrick, [4]D Bell, [1]NS Hopkinson; *[1]Department of Primary Care and Public Health, Imperial College London, London, England; [2]Imperial College London NHS Trust, London, England; [3]London Respiratory Team NHS London (up to June 2013), London, England; [4]NIHR CLAHRC for Northwest London, London, England*

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Background Acute exacerbations of COPD (AECOPD) are a major cause of morbidity, mortality and hospital admissions. Audit data shows significant variation in delivery of evidence-based interventions and readmission rates suggesting that optimising the care process may be beneficial. One approach is the "care bundle" where a series of evidence-based interventions

which should be delivered for all patients is mandated, irrespective of ward, or specialty, delivering care. A COPD discharge care bundle was developed by the NIHR CLAHRC for North-west London [Hopkinson *et al* 2012] and has been adopted by a number of acute hospitals in London, incentivised in some by commissioners using the Commissioning for Quality and Innovation (CQUIN) payment framework.

Methods To provide initial information on use of the bundle and readmissions we performed a Negative Binomial regression interrupted time series analysis comparing 7, 28 and 90 day readmission rates in hospitals before and after bundle adoption. The bundle was implemented at various time points between 2009 and 2011 in 9 Trusts in London, comprising 15 hospitals. Data from April 2002 to March 2012 were obtained from Hospital Episode Statistics using COPD exacerbation codes - J440 & J441 in the first position. Results were controlled for seasonality using month of admission and were also controlled for age and sex of patients at Trust level.

Results Following implementation of the COPD discharge bundle there was a significant change in the trend for the 28-day readmission rates for patients discharged after AECOPD. Falls were also indicated for 7- and 90-day readmissions, although these were not statistically significant at $p < 0.05$.

Conclusion These data suggest that the care bundle approach may be one systematic way to improve outcomes in patients admitted with an AECOPD. More work is needed, however, to separate any effects of the care bundle from other initiatives, e.g. Local Enhanced Services, that support delivery of evidence-based care in COPD i.e. quit-smoking interventions and pulmonary rehabilitation.

Hospital readmissions among hospital Trusts using the care bundle, before and after implementation

	7 day readmissions	28 day readmissions	90 day readmissions
Mean annual number (2002 – 2012)	209	563	1015
Annual trend pre bundle (%) *	+0.3% (0.005)	+0.3% (<0.001)	+0.3% (0.003)
Annual trend post bundle (%) **	-0.5% (0.099)	-0.8% (0.003)	-0.5% (0.099)

* pvalue for overall trend

** p value for difference between trend pre bundle implementation and post implementation

Abstract S69 Figure 1.

S70 IMPLEMENTING A COPD DISCHARGE BUNDLE ON A LARGE SCALE

[1]L Sewell, [2]M Cheung , [3]C Mitchell-Issitt, [3]K Barley, [3]C Chebbout, [3]S Msimanga, [4]S Boyce, [4]MC Steiner, [1]SJ Singh; *[1]Pulmonary Rehabilitation Department, Glenfield Hospital, University Hospitals of Leicester NHS Trust, Leicester, UK; [2]Acute Division, University Hospitals of Leicester NHS Trust, Leicester, UK; [3]Respiratory Discharge Service, Glenfield Hospital, University of Leicester NHS Trust, Leicester, UK; [4]LNR CLAHRC Rehabilitation Theme, University Hospitals of Leicester NHS Trust, Leicester, UK*

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Introduction There is emerging interest in the delivery of discharge care bundles to manage patients admitted with an an exacerbation of a chronic disease. This approach has been tested on a limited number of patients and the importance of care bundles has been acknowledged by the BTS. However, it is unclear how COPD discharge bundles could be implemented on a larger number of patients without additonal resources.

Objective We wanted to audit the effect of implementing a COPD discharge bundle to all patients discharged with a primary diagnosis of COPD upon smoking cessation and pulmonary rehabilitation (PR) referral rates and to establish the effect upon length of stay (LoS).

Methods We redeployeda Respiratory Early Discharge Service (REDS) in order to deliver the University Hospitals of Leicester COPD discharge bundle. This is comprised of evidence-based interventions including:referral to smoking cessation and PR services, implementation of a self management plan, assessment of inhaler technique, follow up phone calls at 2 working days and 15 days post discharge. The discharge bundle was delivered by the REDS team from April 2012 to March 2013. The total number of patients discharged with a primary diagnosis of COPD (diagnosis code J41–44) from Glenfield Hospital was collected along with referral rates to smoking cessation and PR services. Mean LoS for those patients receiving the care bundle was also recorded.

Results From April 2012 to March 2013 a total of 1742 patients were discharged with a primary diagnosis of COPD. 1160 of these patients received the COPD discharge bundle. Smoking cessation referrals rose from 23.7% in quarter 1 to 48.3% in quarter 4. Pulmonary rehabilitation referals rose from 39.7% in quarter 1 to 55.9% in quarter 4. Mean LoS for patients who received the discharge care bundle was 6.17 days compared to 7.22 days for 2011–2012. The mean LoS for patients who did not receive the care bundle was 7.08 days.

Conclusions A COPD discharge care bundle can be implemented on a large scale with increased referral rates to smoking cessation and PR services. No increase in LoS was noted dispite redeploying an early discharge service.

S71 COMPUTER-GUIDED CONSULTATION IN COPD PRACTICE

[1]E B Thompson, [1]M G Pearson, [2]L Davies, [3]E McKnight, [3]A Trusdale, [3]K Sargeant, [2]R M Angus; *[1]University of Liverpool, Liverpool, UK; [2]Aintree University Hospitals NHS Trust, Liverpool, UK; [3]NSHI Ltd, Dartford, UK*

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RATIONALE We previously showed a comprehensive computer guided-consultation (containing prompts developed from NICE guidelines) in COPD primary care was feasible without specialist training, while preserving the autonomy of clinical decision making. The pilot study based on COPD primary care register, 88% had a proposed management change and 29% of patients had a diagnostic revision. We have re-examined the impact in real life to determine if this is repeated.

Methods We report on review of 2000 patients drawn from COPD registers across 78 practices. 459 (23%) did not have COPD based on spirometry. 1541 with COPD, had a mean (SD) age of 69.4 (9.8) yrs, 903 (58.6%)male, 1407 (91.6%) had been smokers and 597 (38.4%) were current smokers. The mean (SD) FEV1 was 1.48 (0.56) with a mean FEV1 percent predicted of 61.4 and a mean FEV1/FVC ratio of 52.4. The mean (SD) MRC score was 2.58 (0.9) and BMI was 27.0 (5.9).

Results Treatment modifications were implemented across various interventions. Pharmacological recommendations included the addition of: Short-acting bronchodilator in 75/1541 (4.9%), and a long-acting bronchodilator (LAMA) in 78/1541 (5.1%). Long-acting beta agonist/inhaled corticosteroid combination (LABA/ICS) was added in 75 patients including 37 with only moderate disease. In 32 (1.8%) patients the recommendation was to discontinue various inhaled medication and in 28 (1.6%) patients these were LABA/ICS combinations. In addition, 28.8% of patients currently smoking, accepted referral for smoking cessation support. 38 patients had hypoxia, 10 already on oxygen,