

confidence intervals associated with this result mean that we may be missing a 20% effect, which could be explained by a pragmatic study design where sites were not naïve to the intervention as peers had previously been involved in screening sessions at many hostels.

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## Predicting and preventing re-admissions in COPD – what is the real cost?

### S81 GAIT SPEED IS A PREDICTOR OF MORTALITY FOLLOWING HOSPITALISATION FOR ACUTE EXACERBATIONS OF COPD

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**Background** Acute exacerbations of chronic obstructive pulmonary disease (AECOPD) are associated with significant morbidity, mortality, and high resource utilisation. More accurate prediction of prognosis following hospital discharge may help optimise clinical management and individualise post-discharge care. Physical performance is potentially amenable to treatment and may help stratify patients at risk of early mortality. In community-dwelling older adults, the 4-metre gait speed (4MGS) is a well-established physical performance measure and a consistent predictor of mortality. We hypothesised that 4MGS at discharge predicts 1 year mortality in patients hospitalised with AECOPD.

**Methods** 213 patients admitted to one hospital with a primary diagnosis of AECOPD were recruited prospectively. 4MGS was measured on the day of hospital discharge. Data on all-cause mortality at one year were obtained from the patient care summary record, hospital and GP records, and corroborated by patients and their families. Logistic regression models were used to assess the association between 4MGS and death.

**Results** Baseline characteristics: 111 males/102 females; mean (SD) age 72 (11) years, 4MGS 0.61 ms<sup>-1</sup> (0.26) and median (IQR) FEV<sub>1</sub>% predicted 35 (26, 49). 35 patients (16%) were not

alive at 1 year. 4MGS at hospital discharge was significantly lower in these patients compared to survivors (mean (SD) 0.47 (0.24) vs 0.63 (0.26) ms<sup>-1</sup>;  $p < 0.001$ ). All-cause mortality at 1 year increased with decreasing quartiles of 4MGS (Q4 4%; Q3 9%; Q2 21%; Q1 32%;  $p < 0.001$ ). Multivariate logistic regression demonstrated a significant trend in the age adjusted odds of death with decreasing quartiles of gait speed ( $p < 0.001$ ) (see Table 1). Increased odds of death at 1 year were seen with each 0.1 ms<sup>-1</sup> decline in gait speed (OR 1.26 (1.06 to 1.49),  $p = 0.008$ ).

**Conclusion** The 4MGS measured at discharge predicts 1 year mortality in patients hospitalised with acute exacerbation of COPD. Given the simplicity of the 4MGS, it is a potentially useful tool to risk stratify patients with COPD in the acute setting and tailor post discharge care.

### S82 AN ECONOMIC EVALUATION OF SELF-MANAGEMENT PROGRAMS DELIVERED AT DISCHARGE AFTER ACUTE EXACERBATION, IN COPD PATIENTS IN THE UK

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**Background** Self-management interventions delivered to COPD patients at discharge following admission for exacerbation aim to enable patients to better manage and control their symptoms but it is not clear if they are beneficial. Our systematic review concluded that there was no evidence of a reduction in the risk of admissions or mortality but noted a dearth of good quality studies and a direction of effect for readmissions in favour of self-management.

**Methods** A hypothetical Markov model was built to estimate the cost-effectiveness of self-management interventions in COPD patients recently discharged from hospitals, compared to usual care. It estimated the effect in terms of Quality Adjusted Life Years (QALYs) in a cohort of UK COPD patients, applying a reduced risk of admissions obtained from the hazard ratio of 0.82 (0.50, 1.36) reported in a meta-analysis in a systematic review. Due to uncertainty around this effect, extensive sensitivity analysis was conducted to estimate the likelihood being cost-effective at alternative thresholds.

**Results** This model found that self-management delivered at discharge was more costly, but resulted in better outcomes, with a £683 cost difference and a gain of 0.0831 QALYs. To be cost-effective it would need to cost £2200 or less if the hazard ratio remained at 0.82. Sensitivity analysis found that self-management had a 68% probability of being cost-effective at a threshold of £20,000 per QALY, with most of this uncertainty being around the effect, duration of effect and cost.

**Conclusion** If self-management interventions are effective in reducing readmissions for up to two years, they are likely to be cost-effective. This speculative economic model describes the uncertainty around this conclusion.

**Abstract S81 Table 1** Multivariable logistic regression model predicting all cause mortality at 1 year by gait speed

	Death 1 year		
	Crude odds ratio (95% CI)	Adjusted odds ratio (95% CI)	P value
Gait speed (quartiles)			
1 (median 0.32)	11.49 (2.50–52.81)	8.67 (1.81–41.62)	
2 (median 0.50)	6.55 (1.37–31.21)	4.87 (0.97–24.34)	0.007
3 (median 0.69)	2.55 (0.47–13.78)	2.34 (0.43–12.72)	<0.001
4 (median 0.91)	1	1	trend)
Gait speed continuous			
per 0.1 m/s decline	1.32 (1.12–1.55)	1.26 (1.06–1.49)	0.008