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The impact of primary care management and comorbidities of COPD on length of hospital stay

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Introduction

Health Resource Groups (HRGs) are bundles of care that absorb similar financial resources. Variations in hospital length of stay (LOS) of patients with the same admission diagnosis and assigned HRG may reflect differences in pre-admission primary care services received by patients.

with access to linked primary and secondary care data can unlock care insights, enabling live monitoring of the effectiveness of primary care interventions. This approach can be also used for other conditions.

Objectives and Approach

We investigated whether within HRGs, variations of LOS of chronic obstructive pulmonary disease (COPD) admissions were associated with differences in COPD management services received in primary care. Individual-level primary and secondary care data from the Secure Anonymised Information Linkage (SAIL) databank of Wales was used for admissions in 2015 with high-volume ($n > 30$) HRGs. Effects of selected COPD primary care quality surrogate measures and comorbidities on LOS were analysed using a linear regression model adjusted for a modified Charlson co-morbidity index. The effect of completed pulmonary rehabilitation (PR) was analysed in a separate dataset for the Cwm Taf Health Board.

Results

We included 77,791 COPD patients, with mean age of 73.4 [SD=11.0], and 51.6% of which were males. Patients who were referred for a PR course prior to admission stayed 0.58 less days (95% CI = [0.18, 0.98], $p < 0.01$), while those who completed a PR course stayed 0.76 less days ([0.25, 1.27], $p < 0.01$). Non-significant associations were found where female patients stayed 0.34 days longer than males ([-0.01, 0.68], $p = 0.05$), patients given flu vaccination stayed 0.39 less days ([-0.07, 0.86], $p = 0.10$), and patients with anxiety diagnosis stayed 0.43 more days ([-0.03, 0.88], $p = 0.06$).

Conclusion/Implications

LOS for COPD could potentially be reduced with further targeted services provided in primary care. Countries using HRGs

