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Title: Does adding telemonitoring to optimised management of chronic obstructive pulmonary disease (COPD) reduce hospital admissions? Randomised controlled trial

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Body: Introduction Previous trials of telemonitoring in COPD have been confounded by additional supportive clinical care in the intervention group. It is unclear if telemonitoring alone will improve clinical outcomes Aim To determine if telemetrically supported self-monitoring of COPD prevents hospital admissions when both groups receive optimised care. Trial design Researcher-blind RCT. Setting UK primary care. Methods Patients with a COPD admission in the previous year were centrally randomised to telemetric or normal monitoring. The primary outcome, assessed at 1 year, was time to first hospital admission with a COPD exacerbation. Other outcomes included number of days in hospital, deaths and health-related quality of life (St George's Respiratory Questionnaire (SGRQ)) Results We randomised 256 patients (128 telemonitoring): baseline characteristics were similar. Using an intention-to-treat analysis, there was no difference in time to admission between the groups (adjusted hazard ratio for admission (reference=tele-group) 1.04 (95%CI 0.73 to 1.50). 61 patients in each group had an admission. There was no significant difference in the mean number of of admissions/person (tele-group: 1.2 (SD1.9), control: 1.1 (SD1.6)); bed days (tele-group: 9.4 (SD 19.1) vs usual 8.8 (SD 15.9)); deaths (tele-group: 16, control 21. p=0.38) or SGRQ at 1 year (mean difference: 1.5 (-1.4 to 4.5)) Conclusion When both groups received optimised care, telemonitoring did not reduce the time to a hospital admission or increase quality of life. ISRCTN number: 96634935 Funding: Chief Scientist's Office of Scottish Government.