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Home based therapy combined with self management plans reduces re-admission rates for COPD

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The UK NHS recommends that hospitals take responsibility for patients readmitted within 30 days of discharge. We explored the impact on readmission rates of our "acute COPD early response service" (ACERS), comprising specialist nurses and physiotherapists with medical input from a respiratory physician.

The ACERS provided daily hospital-at-home therapy. Domiciliary case-management including self-management plans and rescue packs were provided after the acute therapy period. We measured 30-day and 90-day readmission rates following an admission for exacerbation of COPD over two years starting November 2009, just after the team commenced work, to estimate the impact on readmission rates. The rates between the two years were compared using Fisher's exact test.

In the first year, 330 patients were discharged following an exacerbation of COPD. Of these, 58 (17.6%) were readmitted within 30 days and 82 (24.8%) within 90 days. In the second year, there were 271 discharges. The 30 day readmission rate was significantly lower than in the first year at 26 (9.6%) ($p=0.006$) and the 90 day readmission rate was 45 (16.6%) which was also significantly lower ($p=0.016$). The month-by-month 30-day readmission rates were generally lower during the second year.

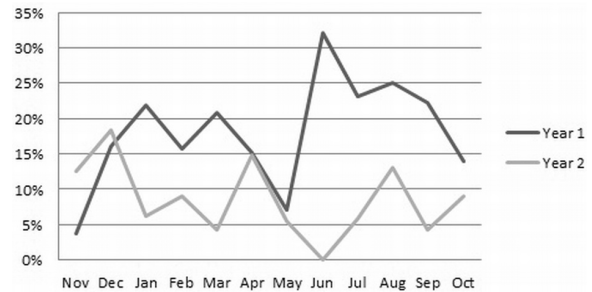


Figure 1. 30 Day readmission rate.

Conclusion: A dedicated specialist hospital-at-home team for COPD may reduce 30-day and 90-day readmission rates following a hospital admission for COPD exacerbation.

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End of life fears in COPD: The influence of biomedical variables, mental health status and disease specific anxieties

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Introduction: More than half of the COPD-patients report end of life fears. The available research, however, has not yet identified the influence of unspecific and disease specific symptoms on these fears in COPD.

Aims: This study aims at investigating the influence of biomedical variables, mental health status and disease specific anxieties (i.e. dyspnea related fear) on end of life fears (fear of dying, fear of death).

Methods: 132 rehabilitation patients with COPD (GOLD-II n=30, GOLD-III n=18, GOLD-IV n=84) completed questionnaires assessing mental health status (Hospital Anxiety and Depression Scale, HADS), disease specific anxieties (COPD anxiety questionnaire, CAF) and end of life fears (Multidimensional Orientation toward Dying and Death Inventory, MODDI-F). Pulmonary function (FEV1 38.83±15.53% pred.), blood-gas analysis and 6-minute walk test (6MWT; 287.39±119.22m) served as biomedical variables.

Results: Hierarchical regression analyses revealed that biomedical variables were not predictive of "fear of dying" ($p=0.48$) and "fear of death" ($p=0.44$). However, mental health status explained incremental variance ("fear of dying": $\beta=0.39$; $p<0.001$; "fear of death": $\beta=0.35$; $p<0.001$). When disease specific anxieties (i.e. dyspnea related fear) were included as an additional predictor ("fear of dying": $\beta=0.28$; $p<0.05$; "fear of death": $\beta=0.41$; $p<0.001$), mental health status was no longer significant. Disease specific anxieties completely mediated the contingency between mental health status and end of life fears ($p<0.05$).

Conclusions: Psychotherapeutic interventions for COPD patients might not only consider mental health status, but also disease specific anxieties and end of life fears.

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Dynamic preferences for site of death among patients with advanced chronic organ failure

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Background: Being able to die at the preferred site is seen as a key principle of a good death. Aims of this study were to assess 1-year stability and determinants of preferences for site of death among patients with advanced COPD, Chronic Heart Failure (CHF), or Chronic Renal Failure (CRF) and to assess agreement between the actual site of death and the site patients indicated in advance as their preferred site.

Methods: 265 outpatients (105 COPD; 80 CHF; 80 CRF) were recruited. 206 patients (77.7%; 67.2 (13.1) years; 64.1% male) completed 1-year follow-up. Patients were visited at baseline, 4, 8, and 12 months to assess the preferred site of death. Patient characteristics were recorded. A bereavement interview was done with the closest relative of patients who died within 2 years after baseline (n=66, 24.9%) to assess actual site of death.

Results: At baseline, 106 patients (51.5%) preferred to die at home, 61 (29.6%) at the hospital, 21 (10.2%) at a care home or hospice and 18 (8.7%) did not know. Patients living with a partner were more likely to prefer to die at home (OR 3.21 (1.73-5.92)). During 1 year, 61.2% of the patients changed their preference for site of death. During the interview before their death, 34 patients (51.5%) preferred to die at home; 22 (33.3%) at the hospital; 8 (12.2%) at a care home or hospice and 2 (3.0%) did not know. 57.6% died at the hospital, 27.3% at home and 39.4% died at the preferred site (Kappa 0.07, p=0.42).

Conclusions: Although most patients preferred to die at home, the majority died in the hospital. Only 39% of the patients died in the preferred site. However, 61% of the patients changed their preference for site of death at least once during 1 year.

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Decrease of physical activity in patients with COPD in the course of the disease

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Background: COPD is a progressive lung disease that affects physical activity of patients. Little is known about the changes of physical activity in the course of the disease.

Methods: We measured total daily energy expenditure, the physical activity level (total daily energy expenditure divided by resting metabolic rate), and steps per day by a multisensory armband over a period of 5 to 6 consecutive days in 26 patients with chronic bronchitis and 137 COPD patients (GOLD stage I - IV) at baseline and at follow-up.

Results: During a median follow-up of 2.8 years (range, 1.8 - 3.5) total daily energy expenditure decreased from 2708 kcal (SD 590) to 2518 kcal (SD 536) resulting in an annual rate of decline of 68 kcal (P <0.001). Physical activity level decreased from 1.57 (SD 0.28) to 1.48 (SD 0.25) resulting in an annual rate of decline of 0.03 (P <0.001). Steps per day decreased from 6822 (SD 3786) to 5685 (SD 3546) resulting in an annual rate of decline of 418 steps (P <0.001). The absolute decline of total daily energy expenditure, physical activity level, and steps per day was independent of baseline disease severity. The relative changes of all physical activity parameters were higher in patients with severe and very severe COPD.

Conclusion: Physical activity decreases across all severity stages of COPD in the course of the disease with relative changes being most prominent in severe stages.

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A self-management programme of activity coping and education (SPACE) for COPD: 6 week results from a randomised controlled trial

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Introduction: SPACE for COPD is a self-management programme which individuals follow independently with telephone support.

Objective: To test the effectiveness of SPACE on health related quality of life (HRQoL) and exercise capacity compared with usual GP care at 6 weeks.

Methods: 184 patients with COPD [101male; mean (SD) age 69(9.19) yrs; FEV₁ 1.45(0.56) l; BMI 27.56(5.2)] were recruited from primary care and randomised to SPACE or usual care. Blinded measurements were taken at baseline and 6 weeks and included Chronic Respiratory Questionnaire-SR [CRQ-dyspnoea (primary outcome)], Incremental Shuttle Walk Test (ISWT), Endurance Shuttle Walk Test (ESWT), and the Hospital Anxiety Depression Scale (HADS).

Results: See Table 1.

Conclusion: SPACE is effective in improving HRQoL and exercise capacity, when compared with usual care. SPACE could be used to facilitate self-management of patients with COPD in primary care.

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Living with COPD: Psychological distress among family carers

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The impacts of Chronic Obstructive Pulmonary Disease (COPD) in terms of patients' psychological distress have been well reported. However, COPD also poses several challenges to family carers, as they represent a primary source of support to patients. Yet, the burden of COPD in terms of family carers' psychological distress remains relatively unexplored. This study aimed to assess the presence of anxiety and depression symptoms among family carers.

A cross-sectional study was conducted with 110 family carers of patients with COPD, in the central region of Portugal. A structured questionnaire based on ICF-checklist was used to collect socio-demographic and subjective health status data; Depression and anxiety were measured with the Hospital Anxiety and Depression Scale (HADS). Descriptive statistics and χ^2 tests were applied using PASW Statistics 18.0. Participants' mean age was 59.99±12.33 years old and were mainly female (n=87;79.1%). The majority were spouses (n=75;68.2%) and caring for more than 4 years (n=66;60%). 67.3% of participants presented anxiety symptoms, 37.3% depression symptoms and 28.2% presented both. Subjective mental health was significantly associated with anxiety (p=0.001) and depression (p=0.001). Subjective physical health was significantly related with depression (p=0.001). No other statistically significant associations were found.

Caring for a patient with COPD can impact negatively on the psychological health of family carers. Similar results have been shown in the context of other chronic conditions, such as cancer, dementia or stroke. The results highlight the need of supportive interventions tailored to the particularities of DPOC caregiving in order to prevent burden among family carers.

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Reduced exertional dyspnea with supplemental oxygen in patients with COPD – Characteristics of responders and non-responders

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Introduction: Ambulatory oxygen is recommended for COPD patients who desaturate during activity, and who experience subjective effect of oxygen supplement. COPD patients with no former oxygen treatment admitted for rehabilitation were referred to extended testing if oxygen saturation measured by pulse oximetry (SpO₂) during 6-minute walk test (6MWT) fell below 88%.

Aim: Our study aimed at identifying characteristics that differed between patients who experienced subjective effect of oxygen during constant load treadmill test and those who did not.

Abstract 3092 – Table 1

	SPACE (n=71)		Usual Care (n=85)		Between Group Difference
	Baseline	Change (95%CI)	Baseline	Change (95%CI)	
CRQ-dyspnoea	3.31	0.71*** (0.46–0.96)	2.90	0.49*** (0.25–0.72)	0.33* (-0.001–0.665)
CRQ-fatigue	3.96	0.37** (0.17–0.59)	3.81	0.01 (-0.19–0.21)	0.37* (0.08–0.66)
CRQ-emotion	4.87	0.31** (0.10–0.53)	4.85	-0.04 (-0.21–0.13)	0.35* (0.08–0.62)
CRQ-mastery	5.27	0.14 (0.07–0.35)	5.20	-0.10 (-0.31–0.11)	0.25 (-0.05–0.54)
ISWT (m)	333.54	12.77 (-0.90–26.44)	340.96	-7.71 (-18.08–2.66)	20.48* (3.78–37.18)
ESWT (s)	258.63	219.60*** (140.86–298.33)	272.83	85.60** (32.39–138.82)	133.99 (39.66–228.32)**
HADS-A	5.90	-0.61* (-1.15 to -0.09)	6.79	0.12 (-0.37–0.61)	-0.74* (-1.45–0.02)
HADS-D	5.29	-0.50 (-1.04–0.04)	5.14	0.12 (-0.39–0.63)	-0.62 (-1.36–0.12)

*p<0.05, **p<0.01, ***p<0.001.

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Methods: Lung function was measured and expressed in % of reference values. Two 5 min constant load treadmill tests were performed at a speed just below 6MWT to mimic walking speed in daily activity. Arterial bloodgas samples were drawn before stop. Dyspnea was measured on Borg CR10 scale. Blinded and in random order, patients received oxygen supplement 6 L/min or placebo air administered continuously through nasal catheter.

Results: 27 of 39 patients rated their dyspnoea at least 1 Borg unit lower with oxygen than without. There were no differences in age (64 (8); 65 (6) p=0,56), FEV1 (37 (15); 32 (16) p=0,33), RV (193 (74), 171 (88) p=0,46), TLC (115 (40), 107 (49) p=0,66), DLCOVA (38 (15); 37 (23) p=0,94), resting pO₂ (kPa) (8,9 (0,6); 8,8 (0,9) p=0,92), nadir pO₂ with placebo (6,8 (0,4); 6,5 (0,8) p=0,19), nadir SpO₂ during 6MWT (81(3); 78(5) p=0,10) or pO₂ with oxygen (kPa) (10,4 (1,3); 10,9 (1,8), p=0,19) between patients with subjective effect and those without.

Conclusion: None of the registered variables were helpful in predicting subjective effect of ambulatory oxygen.

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A ten-year survey of long term oxygen treatment (LTOT) in severe COPD: Comparing the survival during telemetric home monitoring vs standard care
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Subjects' survival, is a crucial outcome during long-term oxygen treatment (LTOT).

Methods: The survival of a cohort of 886 patients suffering from very severe chronic obstructive respiratory disease (COPD) and admitted to long-term oxygen treatment (LTOT) at home was investigated over the last ten years. Subjects were divided in two groups well matched for age, sex, lung function and daily oxygen use: group A, patients managed according to an usual protocol for home assistance, and group B, patients admitted to a telemetric daily monitoring. *Statistics:* Wilcoxon's test was used in order to compare the survival and acute episodes of relapse, and p<0.05 was accepted.

Results: Mean survival had a significantly longer duration (2.5 fold) in subjects telemetrically controlled at home (1239.6 days ± 382.1 vs sd 482.6 days ± 273.9 sd, p<0.01). Moreover, episodes of heart failure and of lower airway infections had a lower incidence in these subjects (17.3 vs 33.0%, and 11.3 vs 21.1% respectively, both p<0.01). When standardization for age, lung function, smoking habit, and comorbidities, females still showed a significantly longer survival when managed according to the telemetric protocol of home LTOT (1166.4 days ± 556 sd vs 1433.7 days ± 656.3 sd, p<0.01).

Conclusions: The telemetric management of home LTOT proves more effective than standard care in terms of patients' overall survival. Even if further studies are needed, a different females' psychological approach to this particular model of management and their better acceptance of procedures might presumably contribute to explain the difference observed in the main outcome.