

# Supported early discharge had a readmission rate similar to that of conventional care in chronic obstructive pulmonary disease

Cotton MM, Bucknall CE, Dagg KD, et al. Early discharge for patients with exacerbations of chronic obstructive pulmonary disease: a randomised controlled trial. *Thorax*. 2000 Nov;55:902-6.

## QUESTION

How does early discharge with home respiratory nurse support compare with conventional hospital management for subsequent need for readmission in patients with acute exacerbations of chronic obstructive pulmonary disease (COPD)?

## DESIGN

Randomized (allocation concealed\*), unblinded,\* controlled trial with 60-day follow-up.

## SETTING

A large university hospital in Glasgow, Scotland, United Kingdom.

## PATIENTS

81 patients (mean age 67 y, 57% women) who were admitted on an emergency basis with an acute exacerbation of COPD. Exclusion criteria were other medical conditions or acidotic respiratory failure requiring inpatient care, residence outside Glasgow, homelessness, or lack of telephone access. 93% of patients received their allocated intervention, but all patients were included in the intention-to-treat analysis.

## INTERVENTION

41 patients were allocated to early discharge, of whom 36 were sent home the next working day after recruitment. These patients had home visits by specialist respiratory nurses on the first morning after discharge and thereafter at intervals determined by the nurse. Home treatment was based on the practice developed by the Acute Respiratory Assessment Service. The nurse assessed progress and could adjust treatment after discussion with medical staff. The nurse could not prescribe but could advise patients on the use of "as-required" medication. 40 patients were allocated to conventional hospital care. All patients were reviewed at the chest clinic 2 months after discharge.

## MAIN OUTCOME MEASURES

Readmission rate, additional days in the hospital on readmission, and 60-day mortality rate.

## MAIN RESULTS

The mean number of days in the hospital was 3.2 for the nurse-supported early discharge group and 6.1 for the conventional hospital-care group. Patients in the nurse-

supported early discharge group had a median nursing follow-up of 24 days and a median of 11 nurse home visits. The nurse-supported early discharge and conventional hospital-care groups did not differ for readmission rates (29% vs 30%), additional days in the hospital (7.83 d vs 8.75), or 60-day mortality rate (2.4% vs 5%).

## CONCLUSION

Early discharge with respiratory nurse home visits was associated with readmission rates and subsequent days in the hospital similar to those of conventional hospital care in patients with an acute exacerbation of chronic obstructive pulmonary disease.

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\*See Glossary.

## COMMENTARY

Hospital beds are often in short supply, especially during the winter when many exacerbations of COPD occur. Cotton and colleagues have previously shown in an uncontrolled trial that patients referred from general practitioners with exacerbations of COPD can possibly be managed at home by respiratory specialist nurses (1). These 2 studies examine patients presenting to emergency departments with exacerbations of COPD; they also address attempts to reduce the time spent in the hospital, either by discharge the same day from the medical assessment unit or the next working day from the ward. Both studies provided support at home by a respiratory specialist nurse the next day and approximately every other day as the nurse felt necessary. Nebulized bronchodilators and home oxygen were provided as needed.

The reassuring finding is that the readmission rate, a primary outcome measure in both studies, did not increase with home care. Perception of the service by patients and general practitioners is important to note, but it was addressed only in the study by Skwarska and colleagues.

Marked differences were seen between the studies by Cotton and colleagues and Skwarska and colleagues in the number of visits by nurses and the length of care at home. In the study by Skwarska and colleagues, the respiratory nurses made a mean of 3.8 home visits and had a median follow-up of 7 days. In contrast, in the study by Cotton and colleagues, respiratory nurses made a median of 11 home visits and had a median follow-up of 24 days. The readmission rates were not higher with home care, but both studies showed very high readmission rates (about 30% during the 9 to 11 wk of follow-up in both groups).

One striking finding was that only a small proportion of eligible patients could be allocated to enter the studies (20% of COPD patients in the study by Cotton and colleagues and 26% in the study by Skwarska and colleagues). 1 limitation was the availability of the nurse support during weekday daytime hours. The other and larger group of excluded patients had more severe exacerbations or other medical problems, particularly new radiographic changes.

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