

RESEARCH LETTER

Pulmonary rehabilitation following hospitalisation for acute exacerbation of COPD: referrals, uptake and adherence

Abstract

Rationale Several randomised controlled trials support the provision of early pulmonary rehabilitation (PR) following hospitalisation for acute exacerbation of chronic obstructive pulmonary disease (AECOPD). However, there is little real-world data regarding uptake, adherence and completion rates.

Methods An audit was conducted to prospectively document referral, uptake, adherence and completion rates for early post-hospitalisation outpatient PR in Northwest London over a 12-month period.

Results Out of 448 hospital discharges for AECOPD, 90 referrals for post-hospitalisation PR were received. Only 43 patients received and completed PR (9.6% of all hospital discharges) despite a fully commissioned PR service.

Conclusions Despite the strong evidence base, there are poor referral and uptake rates for early outpatient PR following hospitalisation for AECOPD, with only a small proportion of the intended target population receiving this intervention.

INTRODUCTION

Outpatient pulmonary rehabilitation (PR) following hospitalisation for acute exacerbation of chronic obstructive pulmonary disease (AECOPD) improves exercise capacity, health status and reduces hospital readmissions.¹ However, there is little published data on process evaluation. The recent British Thoracic Society guidelines on PR recommend that 'clinical services should carefully record uptake, adherence and completion rates'.²

The aim of this audit was to record patient flow through a post-hospitalisation PR pathway, and document referral, uptake, adherence and completion rates for PR.

METHODS

Setting

The Hillingdon Hospital is the acute care provider in Hillingdon borough, northwest London. The Hillingdon respiratory outreach team routinely use a chronic obstructive pulmonary disease (COPD) discharge bundle³ and provide post discharge

telephone and home support for 14 days. PR is fully commissioned and is provided by Harefield Hospital on an outpatient basis through three sites across the borough. Transport is provided for assessments, but not classes.

Audit

Data was collected between November 2011 and October 2012. Patients were identified through the hospital COPD outreach team and corroborated by the coding department (using ICD-10 codes for primary diagnosis: J44—COPD with an acute lower respiratory tract infection, J44.1—COPD with an AECOPD, J44.9—COPD unspecified). All identified patients had their medical and nursing notes examined. Number of post-hospitalisation PR referrals to Harefield Hospital was recorded, as well as uptake, adherence and completion rates. PR completion was defined as attendance at 50% or more sessions.

RESULTS

Four hundred and forty eight patients were discharged from the Hillingdon Hospital following an AECOPD over the 12-month period; median (IQR) length of stay was 3 (1–5) days; 286 patients met referral criteria for post-hospitalisation PR; however only 90 referrals (32% of eligible) were received. Figure 1 is a Consolidated Standards Of Reporting Trials (CONSORT) diagram illustrating patient drop-out from hospital discharge to completion of post-hospitalisation PR. Reasons for drop-out are detailed in the online supplement. Sixty eight of the 90 referrals attended initial assessment, 60 started post-hospitalisation PR, with 43 patients completing (73% of starters; 9.6% of all hospital discharges for AECOPD). For completers, median (IQR) number of supervised sessions attended was 14 (10–16).

DISCUSSION

Despite the strong evidence base,^{1 4} we found that less than 10% of all hospital discharges for AECOPD complete early post-hospitalisation PR. The most notable discrepancy was that only 90 out of 286 eligible patients were referred (31%). A weakness of the audit was that we were not able to formally ascertain the reasons for non-referral despite careful scrutiny of notes. There were also drop-outs at uptake, adherence and completion stages, but these were in line with rates seen during PR of stable patients.⁵

Further studies are urgently required to investigate patient, staff and organisational

barriers to post-hospitalisation PR. Quality improvement solutions may improve acceptability to patients and stakeholders, but alternative approaches to delivering early post-hospitalisation outpatient PR may need to be considered, including starting PR earlier (eg, during inpatient admission or immediately after discharge in the home) as a bridge to outpatient PR, or at a later stage when the patient is more stable.

Sarah E Jones,^{1,2} Stuart A Green,³ Amy L Clark,⁴ Mandy J Dickson,² Ann-Marie Nolan,² Clare Moloney,² Samantha S C Kon,¹ Faisal Kamal,² Joy Godden,¹ Cathy Howe,³ Derek Bell,³ Sharon Fleming,¹ B Mimi Haselden,² William D-C Man^{1,4}

¹NIHR Respiratory Biomedical Research Unit, Royal Brompton & Harefield NHS Foundation Trust and Imperial College, Harefield, UK

²Respiratory Outreach Team and Department of Respiratory Medicine, The Hillingdon Hospital, London, UK

³NIHR CLAHRC for Northwest London, Imperial College, London, UK

⁴Harefield Pulmonary Rehabilitation Unit, Royal Brompton & Harefield NHS Foundation Trust, Harefield, UK

Correspondence to Sarah Jones, Department of Respiratory Medicine and Pulmonary Rehabilitation, Harefield Hospital, Hill End Road, Harefield UB9 6JH, UK; s.jones5@rbht.nhs.uk

Acknowledgements The authors would like to thank Kaye Joslin (Lead Community Matron for Hillingdon borough), Bevinder Dehele (Lead General Practitioner for COPD, Hillingdon CCG), Katrina Mindel (Commissioner for long-term health conditions, Hillingdon CCG) and Graham Hawkes from Hillingdon Local Involvement Network for their comments and assistance with the collection of data.

Contributors SEJ and SSCK collected the data. SEJ performed the analysis of data and preparation of the first draft of the manuscript. All authors contributed to the design of the study. WD-CM conceived the idea and is the guarantor of the paper, taking responsibility for the integrity of the work as a whole, from inception to published article.

Funding This project was supported by the National Institute for Health research (NIHR) Collaboration for Leadership in Applied Health Research and Care (CLAHRC) for Northwest London. SEJ and SAG were funded by the CLAHRC. SSCK is supported by the Medical Research Council (MRC). WD-CM is supported by a National Institute for Health Research Clinician Scientist Award (CS/7/007), a Medical Research Council (UK) New Investigator Research Grant (G1002113) and a National Institute for Health Research Clinical Trials Fellowship (NIHR-CTF-01-12-04). This project was undertaken at the NIHR Respiratory Biomedical Research Unit at the Royal Brompton and Harefield NHS Foundation Trust and Imperial College London. The views expressed in this publication are those of the authors and not necessarily those of the NHS, The National Institute for Health Research nor the Department of Health.

Competing interests None.

Provenance and peer review Not commissioned; internally peer reviewed.

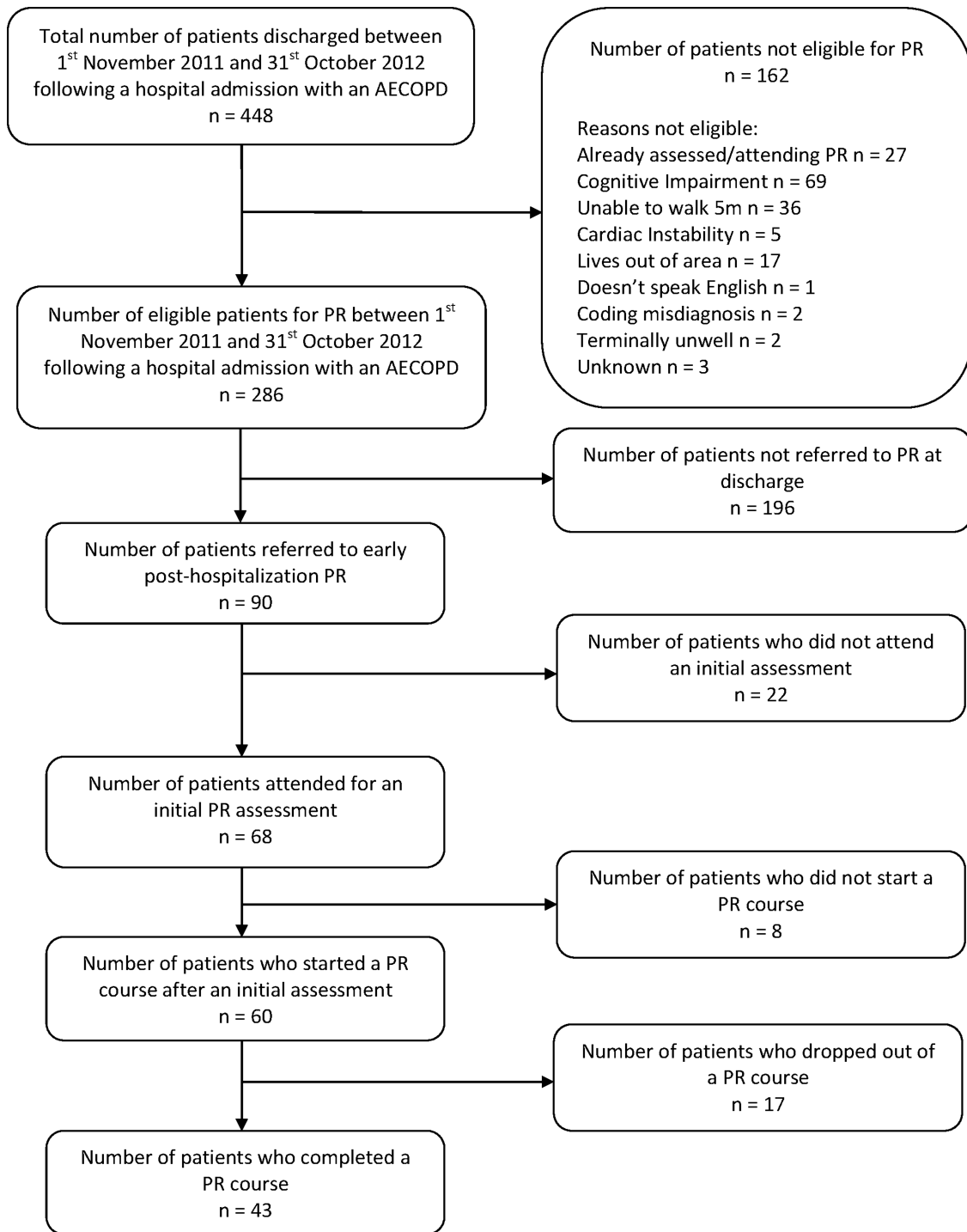


Figure 1 CONSORT diagram.

► Additional material is published online only. To view please visit the journal online (<http://dx.doi.org/10.1136/thoraxjnl-2013-204227>).

To cite Jones SE, Green SA, Clark AL, *et al.* *Thorax* 2014;**69**:181–182.

Received 19 July 2013
Accepted 23 July 2013
Published Online First 14 August 2013
Thorax 2014;**69**:181–182.
doi:10.1136/thoraxjnl-2013-204227

REFERENCES

- 1 Seymour JM, Moore L, Jolley CJ, *et al.* Outpatient pulmonary rehabilitation following acute exacerbations of COPD. *Thorax* 2010;**65**:423–8.
- 2 Bolton CE, Bevan-Smith EF, Blakey JD, *et al.* British thoracic society guideline on pulmonary rehabilitation in adults. *Thorax* 2013;**68**:ii1–ii30.
- 3 Hopkinson NS, Englebretsen C, Cooley N, *et al.* Designing and implementing a COPD discharge care bundle. *Thorax* 2012;**67**:90–2.
- 4 Man WD, Polkey MI, Donaldson N, *et al.* Community pulmonary rehabilitation after hospitalisation for acute exacerbations of chronic obstructive pulmonary disease: randomised controlled study. *BMJ* 2004;**329**:1209.
- 5 Hogg L, Garrod R, Thornton H, *et al.* Effectiveness, attendance, and completion of an integrated, system-wide pulmonary rehabilitation service for COPD: prospective observational study. *COPD* 2012;**9**:546–54.