

ONLINE DATA SUPPLEMENT

Title

COPD discharge bundle and pulmonary rehabilitation referral and uptake following hospitalisation for acute exacerbation of COPD

Authors

Ms Ruth E Barker ^{1,2,3}	r.barker2@rbht.nhs.uk (ORCID: 0000-0002-7022-01)
Dr Samantha S. C. Kon ^{1,3}	s.kon@rbht.nhs.uk / s.kon@nhs.net
Mr Stuart F Clarke ³	stuart.clarke4@nhs.net
Ms Jenni Wenneberg ³	jenni.wenneberg@nhs.net
Dr Claire M Nolan ¹	c.nolan@rnht.nhs.uk
Ms Suhani Patel ¹	s.patel1@rbht.nhs.uk
Ms Jessica A Walsh ¹	j.walsh@rbht.nhs.uk
Mr Oliver Polgar ¹	o.polgar@rbht.nhs.uk
Dr Matthew Maddocks ⁴	matthew.maddocks@kcl.ac.uk
Dr Morag Farquhar ⁵	m.farquhar@uea.ac.uk
Dr Nicholas S Hopkinson ²	n.hopkinson@ic.ac.uk
Prof Derek Bell ⁶	d.bell@imperial.ac.uk
Prof Jadwiga A Wedzicha ²	j.wedzicha@imperial.ac.uk
Dr William D-C Man ^{1,2}	w.man@rbht.nhs.uk

Corresponding Author

Ms Ruth E Barker, NIHR Clinical Doctoral Research Fellow

Address: Royal Brompton and Harefield NHS Foundation Trust, Harefield Respiratory
Research Group, Harefield Hospital, Middlesex, UB9 6JH, United Kingdom

Email: r.barker2@rbht.nhs.uk

COPD discharge bundle

The COPD discharge bundle is a structured list of evidence-based practices delivered prior to hospital discharge following admission for an acute exacerbation of chronic obstructive pulmonary disease to attempt to standardise post-discharge care in the UK. The bundle delivered in this cohort study incorporates all five items recommended by the British Thoracic Society COPD Discharge Bundle (<https://www.brit-thoracic.org.uk/quality-improvement/clinical-resources/copd-spirometry/>), namely: 1) Review of medication and providing inhaler technique education; 2) Provision of a self-management plan; 3) Assess and offer referral for smoking cessation; 4) Arrangement of post-hospitalisation follow-up; and 5) Assess suitability and refer for pulmonary rehabilitation. Figure E1 below provides an example of the standardised paperwork which requires completion when delivering the COPD discharge bundle.

British Thoracic Society **BTS Chronic Obstructive Pulmonary Disease (COPD) Discharge Care Bundle** **COPD D1** **Trust logo**

This care bundle describes 5 high impact actions to ensure the best clinical outcome for patients admitted with an acute exacerbation of COPD (AECOPD). The aim is to reduce the number of patients who are readmitted following discharge after an AECOPD and to ensure that all aspects of the patients COPD care is considered.

Patient sticker

1. REVIEW PATIENT'S MEDICATIONS & DEMONSTRATE USE OF INHALERS
Assess during medication rounds. Observe the patient using their inhalers and refer to _____ if technique is inadequate. Ensure medications have been optimised by respiratory specialist team.
Inhaler technique checked: Medications reviewed by respiratory team before discharge?

2. PROVIDE WRITTEN SELF MANAGEMENT PLAN & EMERGENCY DRUG PACK
Prescribe COPD emergency drug pack and provide to patient at discharge. Ensure patient has a completed self management plan describing how and when to use medications provided. Provide oxygen alert card if patient is at risk of CO2 retention (referral to a community team for drug pack and plan is acceptable)
Self management plan? Given ... Already has ... Not applicable ... Emergency drug pack provided? Yes ... No ... Not applicable ...
Oxygen alert card? Yes ... No ... Not applicable Referred to community team for pack or plan? Yes ... No ... Not applicable ...

3. ASSESS AND OFFER REFERRAL FOR SMOKING CESSATION
Ask every patient whether they are a current smoker and offer referral to smoking cessation service
Patient is a current smoker: Yes Ex-smoker Never smoked
(To be classed as an ex-smoker, patients must have abstained for 3 months)
Referral made: Yes No Declined N/A
Has smoking cessation been recorded as discussed? Yes No

4. ASSESS FOR SUITABILITY FOR PULMONARY REHABILITATION
All patients who report walking slower than others on the level or who need to stop due to dyspnea after a mile or after less than 15 minutes walking should be assessed for and offered pulmonary rehabilitation
Already completed pulmonary rehabilitation? Referral made?
Declined? Not applicable: Not Done:

5. ARRANGE FOLLOW UP CALL WITHIN 72 HOURS OF DISCHARGE
Follow up all patients at home within 72 hours in person or by phone. A call for the patient can be booked by calling _____ and faxing completed discharge bundle to: _____
Patient has agreed to be contacted: Patients phone number: _____
Date of call given to patient: _____

ENSURE ALL ELEMENTS OF COPD SAFE DISCHARGE CHECKLIST COMPLETED
Nurse checking completion of discharge checklist (initials): _____
Checklist completed:
Date of admission: _____
Date of discharge: _____

Instructions for use of bundle:

Data entry: <https://audits.brit-thoracic.org.uk/>
Enquiries: carebundles@brit-thoracic.org.uk

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Figure E1. Example of standardised paperwork which requires completion for the COPD discharge bundle.

Sample Size Calculation

The sample size calculation was based on previous observations that approximately 30% of those receiving a discharge bundle are referred for pulmonary rehabilitation.⁽¹⁾ To demonstrate an increase in referral rate to 60% in those who received a discharge bundle from a pulmonary rehabilitation practitioner, with 80% power at the 5% significance level and assuming an exposure ratio of 1:9 (i.e. 10% of discharges would receive a bundle from a pulmonary rehabilitation practitioner) would require a minimum of 220 patients (MedCalc Software, Ostend, Belgium).

For the overall population at hospital discharge, we estimated the proportion taking up pulmonary rehabilitation to be 20%.⁽¹⁾ To demonstrate an increase in the proportion of those at hospital discharge taking up pulmonary rehabilitation to 50%, with 80% power at the 5% significance level and assuming an exposure ratio of 1:9 (i.e. 10% of discharges would receive a bundle from a pulmonary rehabilitation practitioner), would require a minimum of 190 patients (MedCalc Software, Ostend, Belgium).

We planned to collect data for a minimum of one year to take into account seasonal variations, and continue to collect if the planned sample size had not been recruited within one year.

Diagram for study flow

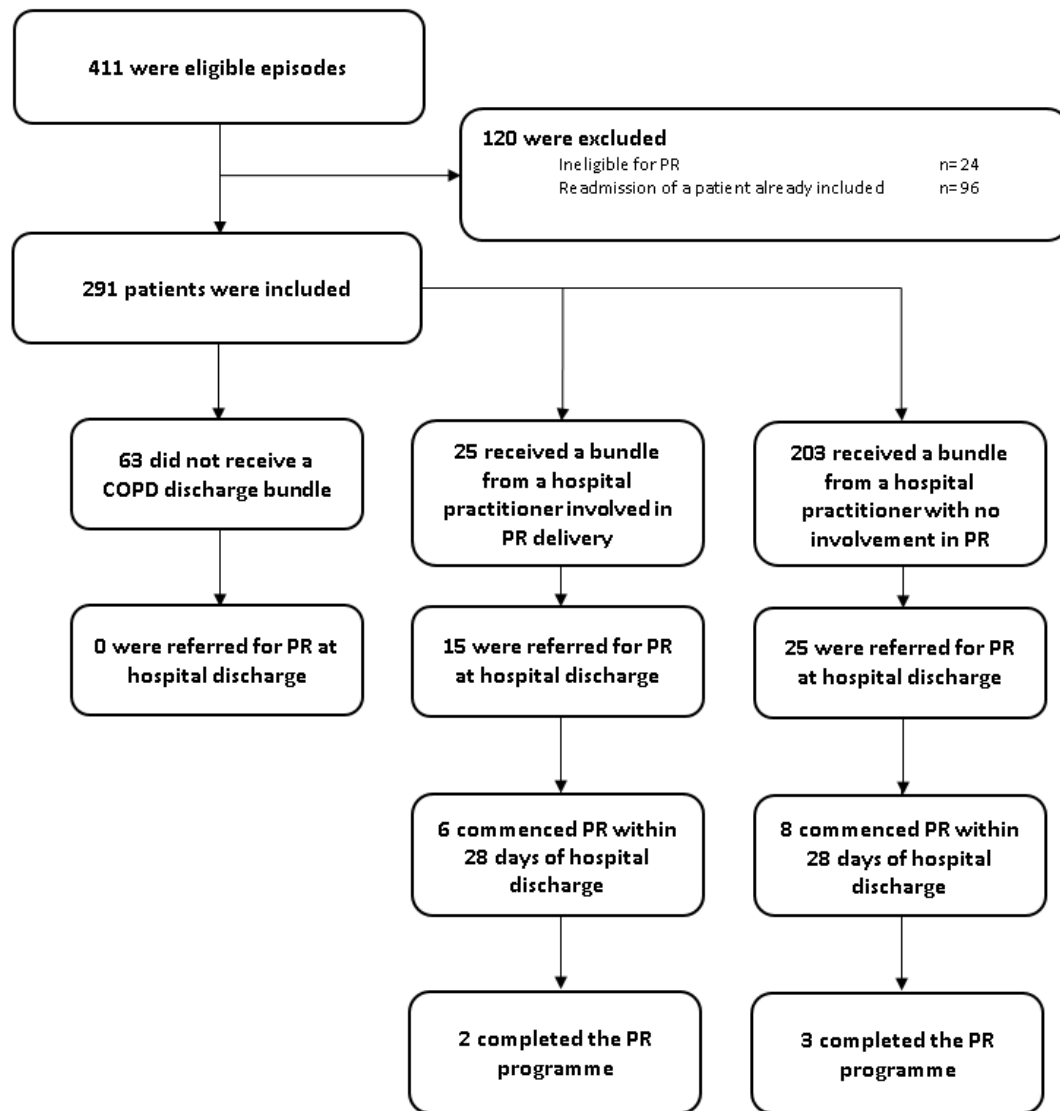


Figure E2. Diagram of study flow

References

1. Jones SE, Green SA, Clark AL, Dickson MJ, Nolan AM, Moloney C, et al. Pulmonary rehabilitation following hospitalisation for acute exacerbation of COPD: referrals, uptake and adherence. *Thorax*. 2014;69(2):181-2.