Care bundles reduce readmissions for COPD

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Abstract

In 2011, the respiratory nursing team at the James Paget University Hospital Foundation Trust were considering introducing a discharge care bundle for patients admitted with an acute exacerbation of chronic obstructive pulmonary disease.

At the same time, the trust was asking for applications for Commissioning for Quality and Innovation schemes (CQUINs). These are locally agreed packages of quality improvement goals and indicators, which, if achieved in total, enable the provider to earn its full CQUIN payment. A CQUIN scheme should address the three domains of quality, safety and effectiveness, patient experience and also show innovation.

This article discusses how the care bundle was introduced and how, over a 12-month period, it showed tangible results in improving the care pathway and reducing readmissions and saving a significant amount of money.

Chronic obstructive pulmonary disease (COPD) is the fifth leading cause of death in the UK (National Institute for Clinical Excellence, 2010). It is a common condition, with acute exacerbations (AECOPD) causing 12% of acute admissions for COPD and being responsible for more than a million occupied bed days a year in the UK; about a third of patients are readmitted within 90 days of discharge (Hopkinson et al, 2012). An admission to hospital is a major setback for patients as there is approximately a 10% chance of dying in hospital from a hypercapnic exacerbation with acidosis (Global Initiative for Chronic Obstructive Lung Disease, 2011).

With these figures in mind, it is crucial that we work effectively to reduce admissions and readmissions with AECOPD.

A survey by the British Lung Foundation and the British Thoracic Society (2010) showed that:

» Many patients are not seen by a specialist before discharge;
» Many patients are not given appropriate post-discharge advice or have follow-up arranged;
» Only a third of hospitals use a formal discharge checklist.

This survey helped the team look objectively at how we could improve the care and experience of people admitted with an AECOPD.

Since December 2010, hospitals have been responsible for patients for 30 days after discharge. If a patient is readmitted within this time, the hospital will not receive any payment for the additional care (Department of Health, 2010b). This means that anything to help reduce readmissions benefits not only the patient but also the trust.

The COPD care bundle
Care bundles have been advocated by a number of researchers. Winn et al (2011) found that using a COPD care bundle helped reduce readmissions with AECOPD...

We were aiming to collect the core data as outlined by Hopkinson et al (2012) but designed our own bundles as we also wanted to collect other data that might prove interesting to the team. We were concerned by the apparent lack of knowledge demonstrated in Ready for Home? (BLF and BTS, 2010), which stated only 46% of patients admitted with AECOPD were aware they had been admitted for treatment of a flare-up. It was felt that, unless the patients’ knowledge of their underlying lung condition was improved, they may be unlikely to engage in managing their situation.

Designing the care bundle
Our target group was patients admitted with an uncomplicated AECOPD. We designed and piloted the care bundle, the final version of which is outlined in Box 1.

The data collected
We collected the data generated by the care bundle over a 12-month period. Of the 469 patients referred with AECOPD, 298 were suitable for the COPD care bundle. The results are discussed below.

The respiratory nurse specialist team saw 82% of patients within two working days of admission. The reasons patients were not seen in this time frame were either due to a bank holiday or because the they had attended at the weekend and were discharged before we could see them.

Confirmed or presumed COPD
To ensure we had the correct diagnosis, we searched the hospital notes for evidence of spirometry. If none existed, we asked the GP surgery to fax in their results. The majority were confirmed. The national COPD audit showed that 90% of people hospitalised with COPD were known to have been given the diagnosis before admission and to experience exacerbations frequently (Calderon-Larranaga et al, 2011). Our data (Fig 1) indicates a lower number of patients having a diagnosis before admission, which may signify a lower pick-up of COPD in the community.

Smoking cessation
As a team, we had presumed that most patients admitted would still be smokers.

As can be seen from Fig 2, we have 32.1% current smokers. Our smoking cessation adviser sees patients in hospital and advises them on treatment and follow-up. Of the 38 patients referred, 39% had quit at four weeks.

Pulmonary rehabilitation
We have an active rehabilitation service and we used the admission as a route to encourage patients to enrol on the programme (Fig 3). The aim is to enrol as soon as possible after an exacerbation; the evidence supports early referral onto pulmonary rehabilitation programmes to help prevent readmission with COPD.

Some patients admitted to hospital with an AECOPD have not been diagnosed or have not been fully assessed during their stay. For this group of patients, we defer programme enrolment until their follow up. This is to ensure that their diagnosis is correct and that they are on the appropriate medications.

Measuring the change in breathlessness
We used the Medical Research Council’s dyspnoea scale to measure patients’ current and usual levels of breathlessness. This was to measure their own perception of their breathlessness. Not surprisingly, scores increased during exacerbations (Figs 4 and 5).

COPD assessment test (CAT) score
The COPD assessment test (CAT) is a validated, short, simple questionnaire for patients to complete (Glaxo Smith Kline, 2009), used in routine clinical practice to measure the health status of patients with COPD. Although it consists of a small number of items, it covers a broad range of effects of COPD on health. Studies have shown that it is responsive to changes in the disease and to treatment such as rehabilitation (Jones et al, 2012).
Innovation

The CAT provides a framework for discussion that the patient and nurse can use to gain a common understanding and grading of the disease (Fig 6).

The higher the CAT score, the greater the disease’s impact on the patient’s health status. During an exacerbation it has been suggested that a patient’s score may increase by five points; this may take many weeks to return – if indeed it does return – to its pre-exacerbation status. CAT scores can therefore be used to assess whether patients recover from an exacerbation (Jones et al, 2009).

Inhaler technique

The respiratory nurse specialist assessed patients’ inhaler technique as a routine part of our care bundle.

Where patients had an unsatisfactory inhaler technique, either the technique was modified or they were started on an alternative device. Fig 7 shows how many patients had their technique corrected or had to use a different device. All patients had satisfactory inhaler technique before discharge.

Where patients were unable to use an inhaler due to comorbidities such as dementia, the respiratory nurse specialist ensured that a carer was able to administer it.

Management plan and SOS pack

The outcomes strategy for COPD and asthma suggests that people who have had an exacerbation of COPD should be provided with individualised written advice on early recognition of future exacerbations, management strategies (including appropriate provision of antibiotics and corticosteroids for self-treatment at home) and a named contact (DH, 2012).

Our aim was to provide self-management plans to all patients. We also had SOS packs made up by the pharmacy, which contained one week’s supply of oral steroids and antibiotics. Self-management plans are discussed with patients and contain clear instructions about using their SOS pack. All patients (if they agree) are referred on discharge to community matrons or community COPD nurses for ongoing support at home.

Readmissions

Before we starting the respiratory nursing care bundle our 30-day readmission rate for AECOPD was 23.21%. Twelve months it was introduced, 30-day readmissions fell to 17.78%, reflecting a 23.4% in real reduction terms. We have also found a decrease in readmissions on a month-on-month basis since the care pathway was introduced. With 13 fewer readmissions in eight months £30,277 was saved, which is equivalent to £45,415 a year.

Summary

We have not examined how each component could affect readmission, just accepted that the whole care bundle seems to work; we are now developing updates to the care pathway.

In addition to changing our practice, we brought a substantial income to the trust as we could prove that our CQUIN scheme had been effective. Nurses have learnt that, using a care bundle, we have been able to measure what we are doing with patients admitted to hospital and reduce readmission rates substantially.

The trust has been accepted as one of 20 UK sites to take part in the British Thoracic Society Care Bundle project. This looks at outcomes in patients who have a care bundle in place for admission for COPD, discharge with COPD and admission with community-acquired pneumonia.

References