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Marian Day describes a service development that avoids hospital admission and assists early discharge for people with chronic obstructive pulmonary disease

KEY WORDS

COPD
Rapid access
Home care

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A rapid access and early discharge service for people with COPD

The British Thoracic Society (1997) defines chronic obstructive pulmonary disease (COPD) as a chronic, slowly progressive disorder that causes significant mortality and morbidity. In most cases it is caused by smoking tobacco.

There are increasing numbers of home care services for patients with COPD. These services provide high quality care while avoiding the complications of admitting a patient to hospital. In Peterborough we have developed a service that provides:

- Rapid access to treatment at home (which helps to avoid hospital admission);
- Early supported discharge.

Background to the service The development of the Acute Respiratory Assessment Service (ARAS) at Peterborough Hospitals NHS Trust followed the results of an audit of the care received by patients with COPD. The results highlighted a number of issues that we felt could be addressed by the provision of this type of service.

Constraints of the hospital service The audit identified that many patients with COPD were admitted to hospital with an exacerbation of their disease and remained as inpatients for an average of 10 days. This exposed them to a number of complications associated with being in hospital, including infection.

During this time they were often cared for on non-respiratory medical wards where the expertise in the management of respiratory disease was not readily available. This had an impact on patient education and it was difficult to provide therapy that was tailored to meet each patient's individual needs.

Diagnostic tests such as spirometry, blood gas sampling and sputum microscopy were often omitted. The treatments patients received often reflected what they had access to at home, such as steroids, antibiotics, nebuliser therapy and oxygen.

The audit also revealed that once patients had been admitted to hospital for treatment of their COPD, they were much more likely to be hospitalised in the future (Davies et al, 2000).

Constraints in GP practices The British Thoracic Society's COPD guidelines (1997) suggest that spirometry testing should be repeated when the patient is reviewed in a stable state after an acute exacerbation of his or her disease. However, as not all GP surgeries have access to spirometers, diagnosis was often based on the patient's history. In addition, not all patients attended follow-up appointments.

Unfortunately, a lack of ongoing assessment and follow-up does not allow for appropriate tailoring of drug therapy, or assessment for alternative treatments such as lung volume reduction surgery or pulmonary rehabilitation programmes.

Service provision After discussions with the local primary care trusts (PCTs), we reviewed the literature on home care services for patients with COPD.

Established home care services, such as the service in Glasgow (Gravil et al, 1998), were compared with our local situation. Most of the literature we reviewed tended to approach the problem from one of two directions. Either the service was available for early supported discharge of patients from hospital or it provided direct routes for referral of patients at home by their GP.

However, we held a strong belief that the best way forward was to accept patients from both referral routes. Therefore, a proposal was made for an outpatient service that aimed to avoid admission to hospital and encourage rapid discharge for patients with COPD.

The Acute Respiratory Assessment Service

Since the Acute Respiratory Assessment Service began in April 2001, more than 1,000 patients have been seen. The ARAS is currently available Monday to Friday from 8.30am–4.30pm. Outside these hours, patients must contact their GP who can refer them to the medical admissions unit.

The care is provided by a respiratory nurse specialist and two junior nurses with respiratory experience. The hospital-based respiratory nurse specialist also manages and supports the service. Medical responsibility is shared by two respiratory consultants.

Once the patient has been accepted, he or she is given a leaflet containing our service philosophy and contact details. The patients are then visited or contacted at home. The amount of input required is negotiated with the patient and his or her carers, based on individual needs and response to treatment. Some patients require daily visits initially, while others can be adequately supported with two or three home visits and by contact over the telephone.

Referral pathways Patients are accepted onto the service through a number of different referral routes.

GP referrals A GP may refer directly to the service if a patient who is currently experiencing an exacerbation of COPD has not responded to initial treatment. The patient will then be asked to attend the ARAS unit for a detailed assessment by the respiratory nurses. This involves:

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- Blood tests, such as capillary blood gas sampling;
- Chest X-ray;
- Spirometry;
- A sputum specimen for microscopy, culture and sensitivity;
- Electrocardiography (ECG);
- Baseline observations of pulse, blood pressure, temperature and respiratory rate;
- Social assessment.

When the assessment is complete and the results of the tests have been reviewed, the respiratory nurse decides if the patient can be supported at home. The criteria for receiving the service include:

- Patient agrees to be managed in the service;
- Patient has adequate social support;
- Patient has a partial pressure of oxygen (PO₂) above 8 kilopascals. If the PO₂ is less than 8kPa (normal value is 12–14kPa) but the patient has in the past remained clinically stable with a low PO₂, then he or she can be considered for the service. Patients receiving long-term oxygen therapy may have a PO₂ below 8kPa but can also be considered;
- Patient's partial pressure of carbon dioxide (PCO₂) is within normal range (4.5–6.0kPa). If the PCO₂ is outside the normal range, the patient can be included if there is recorded evidence that this has happened before and the patient at that time remained clinically stable.

Once the decision has been made that the patient can be supported at home, the patient is reviewed by a member of the respiratory medical team and prescriptions for any new medicines are issued. We have found that existing medicine regimes often need only minor changes, such as a change of antibiotic, an increase in the dose of steroids, or the temporary provision of oxygen therapy or nebuliser therapy.

Referrals for hospitalised patients Where patients have already been admitted to hospital, the ARAS nurses assess them in the hospital ward. Again if the nurse decides that a patient fulfils the criteria for early discharge, arrangements are made for the patient to go home with ongoing support from the team.

Self-referral Once patients are included in the service, they can refer themselves or their carers can refer them. This is the most effective means of managing their care, as patients tend to contact the service when they begin to experience problems with their COPD. This means that we can quickly carry out tests such as sputum microscopy before patients start any antibiotic therapy. This allows them to begin the appropriate drug therapy at the earliest opportunity (Hosker et al, 1994).

Assessment during home visits During the visits, the nurses monitor the patients by means of spirometry, pulse oximetry, blood pressure, pulse, temperature, respiratory rate and sputum assessment.

Reviews of drug therapy are also undertaken during visits, ensuring that patients stop or reduce treatments such as nebuliser or oxygen therapy in accordance with their prescription. The opportunity can also be taken to assess inhaler techniques and give advice regarding smoking cessation or dietary intake as appropriate.

Communication with GPs Details of each patient's management are faxed to the appropriate GP so that the GP is kept informed about the patient's progress.

Benefits to the patient Cross-infection with bacteria such as methicillin-resistant *Staphylococcus aureus* (MRSA) is widely associated with hospital admission and misuse of antibiotic therapy (Manthous and Amoateng-Adjepong, 2000). Supporting the prescription of antibiotics with laboratory screening can help to eradicate inappropriate antibiotic use. In addition rapid treatment with appropriate therapy also means that patients make a faster recovery from exacerbations of their disease and this improves their quality of life.

It is suggested that admission of patients to hospital disempowers them (Hermiz et al, 2002). Home-based care allows patients to manage their own therapy at times that are convenient to them.

Nursing staff can provide educational support in the home to the patient and his or her carers. Nurses are also able to assess the patient's home environment and identify problems that may not be envisaged while the patient is in a hospital bed. Sometimes, small changes, such as fitting an additional stair rail, can make the patient's home environment more manageable.

Referral to other services such as occupational therapy, physiotherapy, dietetic services and social services also enables patients to function independently at home rather than being admitted to hospitals or care homes. But perhaps the greatest benefit is that patients know that they can contact the ARAS team for advice. The patients can continue with the management of their COPD at home, whereas previously they would have rung for the doctor or ambulance service, often resulting in admission to hospital (Angus, 2001).

Conclusion A full audit of the service and the quality of the care provided is under way. However, an initial review of our acceptance rates to the service show that by using the service 50 per cent of COPD patients are avoiding admission to hospital. ■