Evaluating the effect of setting up a nurse-led heart failure service

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In the UK 880,000 people have definite or probable chronic heart failure with 63,000 new cases being identified each year (Department of Health, 2003). Heart failure and its management have become a national and governmental priority. A specialist nurse was recruited to establish and manage a nurse-led service for this client group. This article outlines the development of this service and evaluates its performance.

In the UK 880,000 people have definite or probable chronic heart failure, with 63,000 new cases being identified each year (Department of Health, 2003). Of these 40 per cent will die within one year, resulting in worse prognostic survival rates than breast and prostate cancer (West Midlands Director of Public Health and West Midlands Regional Cancer Registry, 1995).

With the publication of the National Service Framework for Coronary Heart Disease (DoH, 2000) and the National Institute for Clinical Excellence guidance (NICE, 2003) heart failure and its management have become a government priority. There is much evidence to support the role of specialist nurse intervention in the management of heart failure (Blue et al, 2001; Cline et al, 1999; Cline et al, 1998).

Background
Basildon and Thurrock University Hospitals NHS Foundation Trust serves a population of 458,000 and is supported by three primary care trusts. Patients with chronic heart failure were traditionally managed using a medical model of care. This meant either being managed by a consultant cardiologist at the hospital or by the patient’s GP. Given the severe medical understaffing this inevitably led to lengthy waits for drug therapies and reduced educational support for patients.

Consequently, many of these patients frequently presented to general practice, Accident and Emergency or medical assessment units for symptom relief. Approximately one million bed days (two per cent of the total) are taken up by patients with chronic heart failure. The admission period in care of older people can be in the range of 5–11 days (Rich et al, 1995).

The cardiology medical team decided to recruit a specialist nurse to establish and manage a nurse-led service for this client group. While there are many forms of heart failure as indeed there are several causes, this service addresses the needs of patients with heart failure caused by left ventricular systolic dysfunction (LVD), as diagnostically confirmed by an echocardiogram.

Setting up a service
The objectives of the service were to:

- Provide a holistic service to patients who have chronic heart failure;
- Provide an educational programme to patients, carers and health care professionals;
- Provide drug optimisation clinics;
- Provide maintenance follow-up clinics;
- Establish and strengthen palliative care links;
- Develop an integrated care pathway spanning primary and secondary care.

The heart failure service protocol was ratified by key stakeholders, and the pharmacist formulated the patient group direction (PGD) to include all the drugs necessary to optimise patients’ therapeutic management.

Polypharmacy is a critical factor in managing medicines effectively and has several implications for patient concordance and nursing practice. It is imperative that any nurse responsible for supplying and delivering medicines has both the theoretical and practical knowledge and skills to administer licensed drugs and be able to advise patients regarding any side-effects.

The documents needed to support the service have since gone through several evaluations and have been refined (Box 1).

Key challenge
Identifying appropriate accommodation proved to be the most difficult challenge. Due to the nature of clinical activity (the administration of drugs) the outpatients department is not the most appropriate clinical area and so clinical consultation rooms were allocated in the cardiology setting.
department. This also facilitated easy access to technical cardiology for the tests required, for example, electrocardiogram (ECG) and echocardiography. Administration of the service is handled by the medical secretary who books appointments, manages the diary, ensures access to medical records and is responsible for sending updated information to patients’ primary care physicians.

Patient referrals to the service are generated from GPs, the cardiology medical team and other clinical consultants, for example endocrinology, respiratory and medicine for older people. The nurse-led service in south-west Essex is unusual in that direct GP referrals can be made to the consultant nurse.

From the time of referral, patients are seen within 2–3 weeks and this enables four ‘new’ patients to be seen per week. There are 4–12 new referrals per month.

Patients are then reviewed in the clinic every 2–4 weeks depending on clinical need and the stage they have reached in the upward titration of their drugs. Six patients are reassessed at each clinical session and there is a clinic four days per week enabling a total of 24 patients to be reviewed each week. Patients requiring urgent attention regarding clinical deterioration and symptom control can be seen on the same day at the rapid access heart failure clinic if necessary.

The team comprises a consultant nurse and two specialist heart failure nurses, one based at the acute hospital and one in the community, promoting a seamless interface of care provision.

Clinical management plan
At initial consultation a full history including drug history – prescribed drugs, over-the-counter pills and herbal agents – is taken. This also includes a physical assessment (Box 2). Once all this information is collected the New York Heart Association classification (Box 3, p36) is established if not already known.

Evidence is available documenting the benefits of clinically proven drugs such as angiotensin-converting enzyme (ACE) inhibitors, beta blockers, and digoxin and spironolactone. However, these drugs are most effective when they are optimised to the target clinical dose for each patient and this is not always the case in practice. Many patients who are on suboptimal therapies therefore do not gain the full therapeutic effects and are more symptomatic as a result.

For patients presenting with a clinical overload of fluid, adjustment of diuretics is made upon clinical examination. In some refractory cases, additional therapies such as metolazone are given. This has proven to be wholly beneficial in improving worsening heart failure and ultimately reducing the need for hospitalisation.

Critical monitoring of specific parameters is standard. Serum electrolytes and biochemistry are measured at every therapy alteration, especially as the drugs used to treat heart failure carry the risk of renal dysfunction. When patients reach the clinical target doses for their heart failure medication they are reviewed for a period of up to six months until stable. This provides the

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**REFERENCES**


patients with reassurance on the management of their care and allows them an opportunity for adjustments to their therapies if required.

A community heart failure outreach clinic is available for those patients who have difficulty accessing the hospital or for those requiring standard upward titration of their medication.

Inevitably some patients will develop worsening heart failure and may require re-referral to our cardiology consultants or hospital admission. It is therefore an additional benefit that the specialist team has the power of deciding, managing or requesting direct patient admissions. This process facilitates fast-track admission to an appropriate unit.

**Education**

The educational component of this service is integral to empowered patient management. Elements include an explanation of diagnosis, home monitoring, pharmacokinetics and early symptom recognition.

Education is reinforced throughout the patient’s attendance at the service.

It is also imperative to act as an educational resource for other members of the health care teams as they will also have to care for patients with heart failure. The heart failure team uses a standardised educational programme to ensure a seamless consistent approach.

**Palliative care**

To strengthen the link between the heart failure service and palliative care services a member of the Macmillan team is on the steering group for implementing the integrated care pathway.

Additionally, the community heart failure specialist nurse is a regular attendee at the forums involving the palliative care service, district nursing service and the intermediate support teams. This has enabled access to palliation for patients with end-stage cardiac failure, which had historically been non-existent. In the NICE guidelines reference is made to these services being available to patients with non-malignant conditions such as heart failure (NICE, 2003).

**Supplementary support services**

Many patients who attend the service present with new onset medical problems – for example diabetes, iron deficiency anaemia, pernicious anaemia and thyroid dysfunction. These conditions may also require medicalisation and further investigation and the nurse-led service makes appropriate referrals and admissions, and facilitates therapeutic management.

**Results**

Evaluation is ongoing and readmission rates, medication rates, GP consultations, and morbidity and mortality data are being collated to provide quantitative data.

Patients’ drug therapies were audited before and after attending the nurse-led heart failure service. The results are shown in Fig 1 (p35). A total of 450 patients were seen/audited in a one-year period. Patients’ treatments were assessed according to classification of drug: ACE inhibitor, alpha-adrenoceptor blocker and beta blocker. Medication rates were higher after patients attended the nurse-led service. However, although many patients were identified as being on appropriate drug therapy, this was frequently found to be at suboptimal dosage.

Patient questionnaires provided qualitative data. Responses elicited from patients and carers gave an insight into whether the service is patient focused. Patients’ opinions include:

- ‘It’s reassuring to know you’ll see the same person at each visit’;
- ‘It’s frightening to hear you have a heart condition, but the nurses are very good at explaining things’;
- ‘I’ve altered my own water tablets when I needed to’;
- ‘I get an appointment every two weeks and know I can speak to someone before that if I need to’.

**Conclusion**

The nurse-led heart failure service at Basildon Hospital is now in its third year and continues to improve outcomes for patients. There are still some issues that need developing and the focus for this year is on establishing a cardiac rehabilitation programme for this client group.

Heart failure is a challenging terminal cardiac condition and many of these patients also have co-morbidities, which makes their management more difficult.

However, nurse-led initiatives can make dramatic improvements to patients’ lives as well as to families, health care resources and the NHS.

Heart failure trajectory is set to rise with the ageing population and increased survival rates from myocardial infarction through strategies such as thrombolysis and interventional surgery. It is thus essential that interventions known to improve patient outcomes, such as specialist nurse programmes, be implemented.

### REFERENCES


### BOX 3. THE NEW YORK HEART ASSOCIATION CLASSIFICATION

**Class I**

Patients with no limitation of activities – they suffer no symptoms from ordinary activities

**Class II**

Patients with slight, mild limitation of activity – they are comfortable at rest or with mild exertion

**Class III**

Patients with marked limitation of activity – they are comfortable only at rest

**Class IV**

Patients who should be at complete rest, confined to bed or chair – any physical activity brings on discomfort and symptoms occur at rest.