Delivering Quality and Value

Focus on: Heart Failure
Document Purpose: Best Practice Guidance

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Circulation List: PCT CEs, NHS Trust CEs, SHA CEs, Care Trust CEs, Foundation Trust CEs, Medical Directors, Directors of Nursing, PCT PEC Chairs, NHS Trust Board Chairs, GPs

Description: This document is one of a series of documents produced by the NHS Institute for Innovation and Improvement as part of our High Volume Care programme. Produced by the Delivering Quality and Value team, the aim of the Focus on series is to help local health communities and organisations improve the quality and value of the care they deliver.

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Acknowledgements
Foreword

By Professor Roger Boyle CBE, National Director for Heart Disease and Stroke, Department for Health

The National Service Framework for Coronary Heart Disease (2000) established clear standards for the management of patients with heart failure. Service models were suggested to reduce inequality and milestones were set to measure progress.

The Health Care Commission (2007) highlighted marked variability in the provision of care and this prompted the NHS Institute for Innovation and Improvement to identify the key characteristics that optimise quality and value for patients with heart failure. This project represents a timely and positive move.

This work relied on close co-operation of front line teams across England, collating ideas and cases to demonstrate good practice that could be adopted by the wider healthcare community. It is crucial that all patients receive the most efficient and effective care possible, and have positive experiences across the patient pathway. The cardiac networks are well placed to help their local health communities to make best use of these good practice examples to make this happen.

I commend this Focus on Heart Failure to all staff working across health and social care.
1. Introduction

The aim of this document is to highlight the ideal pathway and key characteristics that optimise quality and value for patients with heart failure.

The National Service Framework for Coronary Heart Disease (1) set milestones for diagnosis and treatment which has led to some improvements for patients with heart failure. Acute hospitals and primary care trusts (PCTs) have worked together through cardiac networks supported by the Heart Improvement Programme to achieve many of the improvements.

However there is still variation which needs to be reduced in order to further improve outcomes (2).

Variation in the diagnosis and treatment of heart failure for women and minority ethnic communities exists (1). It is known that the risk of developing coronary heart disease is higher among people from a south Asian descent and that they may have a worse prognosis following hospital admission for a heart attack than the white population (15). Clinicians, managers and commissioners should utilise this guidance to deliver a consistent and systematic approach to the investigation and treatment of heart failure across the NHS.

There are a number of factors causing inefficiency and variation in heart failure services. These include:

- a significant variability in adherence to clinical guidelines and also variation in the awareness and perception of heart failure between different medical groups (3)
- only a minority of patients are seen or followed up by a heart failure service and there is inequity in access to exercise and palliative care (4)
- poor adherence to medication is common in patients with heart failure (5)
- a very low uptake of cardiac rehabilitation for patients with heart failure (6)
- an increased risk of mortality in those patients with heart failure and diabetes (7)
- Variation that exists in the treatment for women patients (15) and ethnic minority communities (1).

During 2007/8, the NHS Institute for Innovation and Improvement has worked with NHS organisations to identify the key characteristics of high quality care for patients with heart failure. This document is based on this experience and a review of observed practice adopted by clinical teams throughout England. While this document is focused on the care of patients with heart failure, it can also be applied to other patients with long-term conditions. It is intended to help clinicians, managers and commissioners to improve their service and to reduce variation in practice.

About the Focus on series

This document is one of a series published by the NHS Institute for Innovation and Improvement as part of our High Volume Care programme. Produced by the Delivering Quality and Value Team, the aim of the Focus on series is to help local health communities and organisations improve the quality and value of the care they deliver.

The areas we are focusing on in the programme have been selected because: they are high volume (and therefore high consumers of NHS resources), they show variability in their use of resources and they represent a range of clinical areas.

To find out more about the programme and the Focus on series see the Delivering Quality and Value pages at: www.institute.nhs.uk
2. Heart failure

The prevalence of heart failure is increasing with the majority of cases due to coronary heart disease (CHD) and hypertensive heart disease (1), costing the NHS £625 million per year (8).

- heart failure affects one in 1,000 people each year - and is rising by 10% a year (1)
- figures suggest 0.5% of the population – (140,000) people - have undiagnosed heart failure (2)
- incidence of heart failure varies considerably between primary care trusts - from 0.9% to 5% (2)
- heart failure accounts for approximately 5% of medical admissions (2)
- around half of all patients admitted with heart failure are readmitted within three months (2)
- over the next 20 years prevalence is expected to increase by 20% (9) due to the rising proportion of older people and more people surviving heart attacks (2).

There has been a steady decline in the number of hospital admissions for heart failure. We believe this is due to the increasing number of patients being managed better in the community through a process of joint working between primary and secondary care.

**Figure 1: Hospital admissions for heart failure patients**

Improvements have also been made in the following areas:
- home telemonitoring for patients with heart failure (10)
- introduction of specialist nurse-led heart failure clinics to reduce readmission rates (11)
- development of effective multidisciplinary specialist services for people with chronic heart failure to improve life expectancy and quality of life (2) and help to reduce hospital stay by 30% - 50% (12).
3. The approach

The NHS Institute is committed to co-producing products with frontline NHS staff. We invite clinicians, managers, patients and carers from across the NHS to work with us as part of our project teams.

A literature review was undertaken of the recognised evidence in delivering optimised care for heart failure patients. The references section at the end of this document gives further detail of the documentary evidence.

The selection of organisations

During the course of this project we visited 10 organisations offering a range of systems of care for patients with heart failure. We analysed length-of-stay data correlated with readmission rates and used this as an indicator of performance.

The heart failure pathway spans self-care, primary care, intermediate care and acute care. However, there is limited data available outside of the acute hospital setting, for example the number of patients diagnosed with heart failure in the community or the number of patients receiving the correct medication consistent with National Institute for Clinical Excellence (NICE) guidelines. Therefore, data from the Healthcare Commission Service Review Pushing the Boundaries – Improving services for people with heart failure (2007) (2) was used to understand community-wide services for heart failure.

The framework of assessment comprised of the following four criteria:

1. Are patients with suspected heart failure being effectively diagnosed?
2. Are patients receiving evidence-based treatment consistent with NICE guidelines and are they being monitored effectively to ensure optimum treatment and quality of life?
3. Are there adequate and effective multidisciplinary services and care processes in place, which provide patients and carers with adequate education and support?
4. Are services having a positive impact on hospital admissions, mortality and patient experience?
The Variation

The review shows that substantial progress has been made in improving and developing services for heart failure patients but there is still wide variation in how this care is delivered across the country. The following graph figure 2 shows the variation of the then 303 health communities.

Figure 2: Variations in delivery of heart failure care *

* Based on organisations in existence as at 31 March 2006
This approach allowed us to identify organisations which were delivering care of varying levels of quality and efficiency. The communities spanned large university teaching hospitals and smaller district general hospitals, with a reasonable geographical spread and serving both rural and urban communities and local authorities. The acknowledgements section at the back of this document lists the organisations we visited. The information contained in this pathway is only possible because the health and social care communities allowed us to see their practice.

Visiting organisations

We undertook visits to observe the flow and process of care including clinical decision-making and considered the use of information to aid clinical and non-clinical decision making.

We carried out semi-structured interviews with a wide range of health and social care professionals. Our discussions involved a range of professionals including doctors eg, general practitioners (GPs) and cardiologists, specialist nurses and community matrons, social services, pharmacy staff, primary care staff, patient support groups, public health teams, allied health professionals, psychologists, information staff, executive teams, managers, improvement leaders and commissioners. In total we interviewed more than 130 staff and observed more than 100 staff in a variety of clinical settings.

The knowledge we gained from these visits and the validation process of the co-production event\(^1\) helped to develop the optimised pathway (figure 3 overleaf) for patients with heart failure laid out in this document. We also identified and validated through the co-production event the key characteristics of organisations that deliver high performance. In the course of this development work we consulted stakeholders, including professional bodies and patients and carers.

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\(^1\) Co-production with the NHS, involving all sites visited and national bodies and experts relevant to the pathway.
The Heart Failure pathway

The following diagram shows the pathway of care for patients with heart failure which highlights the complex flow and relationship between primary, intermediate and acute elements of care.

Figure 3
4. The characteristics of systems providing high quality care and value

The following characteristics have been found to be the key features for delivering quality and value for patients with heart failure. They are illustrated by case studies from the healthcare communities visited. Suggested measures for improvement are included later in the document. These offer clinicians, managers and commissioners a prompt to benchmark current practice against the characteristics described and further improve their services.

We recognise that there is already a great deal of excellent practice across the service and that not all of the characteristics will be applicable to all models of care or settings.

The characteristics are grouped in the following order:
- overarching characteristics
- self-care
- primary care
- acute care
- intermediate care.

Overarching characteristics

Key characteristic 1: executive teams across primary and secondary care are committed to developing heart failure services

- the PCT executive leadership has a clear philosophy and vision for continuous improvement of heart failure services
- the PCT recognises the importance of commissioning heart failure services from diagnosis to palliative care
- the PCT chief executive actively engaged, encouraging and supportive of the achievements of the heart failure team.

“The quality of the relationships between the managers and the clinicians is very important”

“Ideas come from frontline staff, it’s important to invest in their development”

“Long-term conditions should not be dependant on trailblazers - it is not a project”

Chief Executive, Islington PCT

“The most important principle is to ensure that you are providing excellent care based on best clinical practice and use this as the basis for influencing and informing the supporting financial and policy framework. It may take a while to catch up, but it generally gets there in the end.”

Chief Executive, the Whittington Hospital NHS Trust
Key characteristic 2: the use of information across a whole system facilitates high quality patient care

- public health delivers information on the incidence and the prevalence of heart failure which aids decision-making in the planning of services
- joint appointments spanning PCT and local authorities in each locality carry out joint health needs assessment.

Case study
Islington PCT

Islington PCT introduced incentives to reduce the number of people with undiagnosed heart failure.

The trust has consistently higher rates of mortality from cardiovascular disease (CVD) than comparable boroughs in England as a whole, with CVD being the highest cause of death in the borough.

The public health team conducted an audit of premature CVD deaths and found that nearly a third of patients who died prematurely of cardiovascular disease and who were registered with an Islington GP were not on any relevant Quality Outcomes Framework (QOF) disease register.

Detailed GP-specific data was disseminated widely through publications and presentations to a range of stakeholders, including local implementation teams for heart failure.

A series of recommendations have been adopted including

- an incentive scheme for primary care staff to identify undiagnosed patients, to improve the equity and completeness of QOF disease
- analytical support regarding coronary heart disease indicators and validation of data for heart failure nurses
- access to information staff who can provide the right data on clinical pathways in primary care.
A system wide group called the Heart Disease Management Group offered a range of support to GP practices to reduce the variation in care for patients with heart failure and vascular disease. They began collecting data in 2002 and provide GP practices with feedback on 20 indicators, highlighting successes and suggesting areas for improving the care.

Three practices identified as outliers in performance were visited by a pharmacist, a nurse and a GP to discuss their results and offered support in making improvements in heart failure care. Often this support was around organising structured care with effective call and recall systems, register validation and clinical support in setting up heart failure clinics. The information department provided support to improve the quality of the data recorded by practices.

The indicators include lifestyle factors such as alcohol intake and patient health through cholesterol levels and the percentage of patients taking beta-blockers.

Figures show the number of patients on the heart failure register who had received a diagnostic test had increased from 40% in 2002 to 60% by October 2006.

Case study
South of Tyne and Wear PCT - Gateshead
Key characteristic 3: the whole system of care is focused on service improvement

- an organisation-wide strategy is in place which focuses on service improvement and invests in improvement methodology and leadership capability
- lean approach to be rolled out across the organisation
- the PCT director of commissioning and reform is focused on pathway development in partnership with secondary care.

“NHS South of Tyne and Wear is committed to introducing a creative and innovative approach into the reform of patient pathways. The success of the strategy involves working with partners across the community to develop a shared vision for healthcare then applying a whole system approach to reform based on the key principle of determining the value of any process or pathway. It will distinguish the value added steps from the non-value added from the point of view of the patient, and then eliminating the waste using the ‘lean production system’ approach (adapted from Toyota into healthcare by Virginia Mason Medical Centre in Seattle). This is not a quick fix or an easy journey but involves a long-term commitment to a process of continual improvement which we believe will lead to better, faster and more affordable healthcare.”

PCT Director of Commissioning and Reform
The PCT and social services have a shared structure and have developed extensive partnership arrangements to ensure staff focus on the needs of their population.

The partnership arrangements support a focus on the needs of individuals and the local population, rather than the needs of health or social care.

The other significant advantage is that they can break down the barriers and remove the hurdles between health and social care. This facilitates an earlier needs assessment and timely intervention for heart failure patients.

**Key characteristic 4:** a fully integrated service delivers high quality and seamless care for patients with heart failure

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**Case study**

**Islington PCT**

<table>
<thead>
<tr>
<th>The PCT and social services have a shared structure and have developed extensive partnership arrangements to ensure staff focus on the needs of their population.</th>
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<tbody>
<tr>
<td>- strong multidisciplinary teams, all working to common goals for patients with heart failure across the health community. This ranges from palliative care nurses, specialist nurses, occupational therapists, physiotherapists, GPs, nurses and doctors in hospitals, social workers and psychologists.</td>
<td>- integrated health and social services within the PCT means there is a shared management structure, joint budgets and shared planning and decision-making to meet the needs of the local population.</td>
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<tr>
<td>- a system-wide advanced heart failure multidisciplinary group focused on delivering tailored and timely care wherever the patient with advanced heart failure may be in the pathway.</td>
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<td>- Gold Standards Framework (13) enables a local heart failure service to develop a system to improve and optimise the organisation and quality of care for patients and their carers in the last year of life.</td>
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<td>- joint visits between the heart failure nurse with respiratory nurse and palliative care nurse to co-manage the patients symptoms and coordinate care.</td>
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<td>- single assessment tool used by social services and community team allows for timely access and intervention.</td>
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<td>- electronic discharge document is sent to the GP when patient is discharged from hospital assessment unit and wards.</td>
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A specialist multidisciplinary team for patients with advanced heart failure provides improved end-of-life choices for patients.

The team incorporates end-of-life care specialists, secondary care clinicians and community staff, all led by a heart failure community matron.

GPs can refer to the team which is designed to bring a holistic approach to the management of each patient, deciding the best therapies and creating a single management plan for health and social care needs. This ultimately avoids unnecessary admissions.

Joint visits can be arranged between heart failure community matrons, respiratory nurses and palliative care nurses to co-manage the patient’s symptoms and coordinate care. The team helps fulfil patient wishes at end-of-life, such as preferred priorities of care, resuscitation and implantable cardiac defibrillator (ICD) de-activation.

Some patients use Telemedicine which monitors single channel ECG, weight and other parameters. This enables the multidisciplinary team to monitor patients closely and agree appropriate changes in treatment without the patient having to make frequent hospital or clinic visits.

Patients at this stage are often unable to attend outpatients or prefer not to as a result of the multidisciplinary review which has been agreed with the cardiologists. Joint visits can be arranged between heart failure community matrons, respiratory nurse and palliative care nurses to co-manage the patient’s symptoms and coordinate care.

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Case study
United Lincolnshire Hospitals NHS Trust and Lincolnshire PCT
Key characteristic 5: investment in leadership development

- all middle managers have a personal development plan which is periodically reviewed
- strong emphasis on medical leadership development
- protected time for all health professionals for shared learning and education.

Case study
North Tees and Hartlepool NHS Foundation Trust

A general manager of medicine heads up service improvements to heart failure care at North Tees and Hartlepool NHS Foundation Trust.

The general manager orchestrates service improvements following recommendations from national guidance such as National Service Frameworks, NICE, and Healthcare Commission reports.

The general manager understands the clinical processes of care. This translates into credibility with frontline staff enabling, implementing and sustaining improvements.

The role adds value to discussions with commissioners, because of the understanding of the risks associated with any considered developments, placing quality as the first criteria for assessment.
Pathway specific characteristics

Self care

Patients may seek advice from a range of sources such as NHS direct, pharmacy, the internet and support groups.

Key characteristic 6: patients and carers can support themselves and each other when they have good access to support groups and information

• patients and carers run support groups where experiences can be shared and self management is encouraged

Case study

HOPE – HEARTS OF POSITIVE ENERGY – a carer and patient led support group in Lincoln

| HOPE for heart failure is growing in Lincoln thanks to the success of a support group. | encouraging patients to live life as fully as possible. As well as providing emotional support for patients, carers and their families, the group offers weekly speakers on medical or educational topics and a social and hobbies element with a video, book club, a quarterly newsletter and a quiz. | they choose to still attend the meetings. |
| The carer and patient-led group began with just five members in June 2006 and has grown to become two groups and plans to expand with three more proposed groups. | As families cope with the loss of a loved one, the group offers support and company should they choose to still attend the meetings. | The group raises awareness of heart failure and is seeking funding to implement a chair-based exercise programme tailored to heart failure patient’s needs and abilities. Members work closely with the British Heart Foundation, heart failure community matrons and make presentations to health professionals at BHF study days. |
| HOPE focuses on living with heart failure and its associated long-term conditions, | | |
A support group run by patients for patients was set up in November 2007 and meets monthly, attracting around 25 patients each month. Patients were instrumental in setting up the group and plan the agenda for each meeting. Topics discussed include self-management strategies - such as fluid management - benefits advice and managing blood pressure. Patients decided to keep it specific to heart failure but with an option to extend it to other heart patients once established or if new recruits are needed.

Case study
Islington Patient Support Group

A patient-held record is improving care for patients with heart failure at GP surgeries across Islington. The record is given to patients through 37 GP practices. It includes a patient guide on heart failure, including sections on self-management (eg, fluid management) and the definition of heart failure. A clinical section allows health staff – from across the system – to review and insert clinical records. The aim of the record is to create a more seamless approach to heart failure care delivered by different health care providers. A formal review is planned in summer 2008. Plans are in place to secure funding for translating the patient-held record into other languages spoken locally.

Case study
Islington PCT
Primary care

The majority of patients with heart failure are managed in primary care with locally agreed pathways to access other services, such as hospitals or intermediate care.

Key characteristic 7: GPs are pivotal and valued as professionals for the ongoing management of patients with heart failure.

- GP regularly reviews the register to ensure there is accurate diagnosis and coding
- letters to GPs from hospitals state full list of medication with changes highlighted
- use of information by multidisciplinary groups in the community to reduce variation in care through a process of peer support
- audit of admissions and readmissions undertaken for all GPs in the patch to reduce variation
- a system for identifying the variation of heart failure services by individual GP practice shared across primary care
- GPs in practice share ideas and focus on secondary prevention and work to agreed goals
- GP runs a heart failure clinic with the practice nurse and other GPs visit and observe, resulting in low admissions for heart failure patients
- GP is PCT lead for CHD and is focused on improvement by ‘pushing the boundaries of where care can be delivered’ by setting up dedicated heart failure clinics in primary care. This ‘clinical champion’ may be a GP with a special interest in another setting. A GP offering enhanced services should have appropriate training in service development and needs assessment.

Case study
South of Tyne and Wear PCT - Gateshead

Heart failure patients in Gateshead are getting better access to diagnostic tests and treatment.

A multidisciplinary improvement group developed a local enhanced service asking practices to review patients in line with NICE guidance, use the local heart failure guidelines and validate their heart failure registers.

South of Tyne and Wear PCT - Gateshead funded two heart failure specialist nurses to work across primary and secondary care. The PCT also funded training courses for practice nurses and GPs.

The group helped develop an open access echo service. A practice piloted structured care with dedicated heart failure clinics with support from the heart failure nurses. GPs and nurses from other practices sat in on clinics to gain experience in reviewing heart failure patients.

Since the work was carried out, a range of improvements have been noted:

- The proportion of heart failure patients on beta-blockers increased by 12%; the proportion at target dose increased by 9%; 60% of patients are taking beta blockers
- 27 out of 33 GP practices signed up to Local Enhanced Service and 29 out of 33 had sent either GPs or nurses or both to the training courses
- waits for open access reduced to under two weeks
- the proportion of heart failure patients on Angiotensin converting enzyme inhibitor (ACEi) increased by 6.5% and the proportion at target dose increased by 7%; 80% of patients are taking ACEi / Angiotensin receptor blocker (ARB) medication.
Heart failure nurses from Islington PCT visit GP practices to review prevalence data, admission rates, referral patterns and frequency of secondary care referrals and follow-up.

Gathering intelligence through systems such as QMAS, Dr Foster and HES data, the nurses can target GP practices and develop improvement plans. Data from all of the 37 GPs in Islington is reviewed annually.

More patients have been diagnosed with heart failure, removed from registers if wrongly diagnosed. Patients with a diagnosis have been offered contact with a community heart failure nurse at home or at a GP practice.

Patients are referred to secondary care where necessary, using local guidelines. Where patients choose to be followed up in their GP surgery, patients are discharged with a management plan into the care of a GP and/or practice nurse.

The heart failure team are working directly with eight GP practices looking at improving prevalence rates and prescribing rates. The following graph (figure 4 overleaf) shows the volume of patients whose attendance and admission at hospital has been avoided from the eight GP practices.

Instead of visiting the hospital, patients are either seen at home or in heart failure clinics in their GP practices.

The avoided inappropriate attendance/admission to hospital resulted in a £250,000 saving to the PCT (figure 5 overleaf).
Figure 4: Avoidance of attendance and admission at Islington PCT

![Avoidance of attendance and admission at Islington PCT](image)

Figure 5: Savings associated with avoided admissions/attendances

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Total Number</th>
<th>Unit Costs</th>
<th>Total savings in £ *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiology - initial</td>
<td>31</td>
<td>155</td>
<td>4,805.00</td>
</tr>
<tr>
<td>Cardiology – follow up</td>
<td>361</td>
<td>81</td>
<td>29,241.00</td>
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<tr>
<td>Admission</td>
<td>68</td>
<td>3,351.47</td>
<td>227,899.96</td>
</tr>
<tr>
<td>A&amp;E attendance</td>
<td>21</td>
<td>72</td>
<td>1,512.00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>£263,457.00</strong></td>
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</tbody>
</table>
• heart failure nurses invite heart failure patients to clinics to up titrate medication
• heart failure nurses invite patients for screening for heart failure.

Case study
Islington PCT

Specialist nurses are working with GPs to improve diagnosis of heart failure.

Heart failure nurses worked with GP practices to identify patients whose symptoms, such as breathlessness, had not been recognised as those of heart failure.

The nurses spoke to clinicians to identify patients that might have heart failure from the list of patients that the heart failure team had identified.

The following criteria were used for searches:
• previous Myocardial Infarction and treatment with diuretics
• diagnosed Ischaemic Heart Disease (IHD) and diuretics and breathlessness
• hypertension, loop diuretics and breathlessness.

Based on the search results and discussion with clinicians a total of 22 patients attended a heart review - eight patients were sent for further testing (six patients for N terminal pro brain naturetic peptide (NT pro BNP) and two for ECHO) and of those, a total of six patients were later diagnosed with chronic heart failure.

A screening question (have you considered heart failure as diagnosis?) on the CHD template was rolled out in April 2008.
Key characteristic 9: access to timely echo services

• standardised open access echo request form and customised report for GPs with regular audit of quality of referral and report
• GP request for BNP form used within primary care with next-day results and open access echo or refer to open access heart failure nurse.
• GPs undergo accredited training in a cardiology department to help them understand the pathway

Case study
The Whittington Hospital NHS Trust

A 1994 audit into existing direct-access cardiac investigations looked at the selection of patients for the investigation and the quality of information provided on request forms by doctors.

The audit found that potentially dangerous practices were identified and corrected. A half-day accreditation programme was developed with an ’examination’ which meant that only accredited GPs would be allowed direct access.

The accreditation process in primary care resulted in comparable diagnostic detection as hospital consultants.
Waiting times for cardiology diagnostics have been cut from 20 weeks to less than three. The hospital trust introduced a new associate practitioner role in their cardiac physiology department to allow cardiac physiologists to undertake more complex diagnostics. Redesigning the workforce has provided the flexibility to achieve a reduction in waiting times for all diagnostics from 20 weeks to three weeks or less. Associate practitioners carry out some testing previously undertaken by registered practitioners. Their role includes recording and analysis of 24-hour ambulatory ECG and BP, spirometry, event recorders and assisting exercise tests. The education and training for this new role was developed with the support of the local SHA workforce directorate. This includes an access course for health care scientists with an added module which increase the Credit Accumulation and Transfer Scheme (CATS) points of the course and allows entry onto the BSc (Hons) Clinical Physiology course.
Echo service: advanced training programme specific to physiologists is competency-based and results in high retention levels.

Key characteristic 11: competent clinical leadership focused on quality providing senior level decision making from cardiology services in acute care offering expertise and advice to other professional groups.

- Cardiologist provides telephone advice for GPs and heart failure nurses.
- Cardiologist provides clinical supervision and senior input for heart failure nurses.
- Heart failure nurses can refer to cardiologist and admit direct to acute care beds.
- Heart failure nurses attend cardiology clinics.
- Heart failure nurses visit the medical admissions unit to identify heart failure patients.
- An alert system in the emergency department notifies heart failure nurses when a heart failure patient has been admitted.
- Heart failure nurses inform cardiologists when a heart failure patient is admitted.

Case study
Islington PCT and the Whittington Hospital NHS Trust

The community heart failure team can refer directly to the heart failure cardiologists. The team is also informed of any heart failure admissions so they can be involved in discharge planning.

The cardiologists offer a dedicated direct access telephone line twice a week to discuss any aspect of cardiovascular care including investigations, results, diagnoses and treatment.

The heart failure nurses also attend cardiology clinics so patients can be safely cared for at home, including more complex cases.

When patients are admitted to hospital with heart failure, the heart failure team ensure these patients are accurately identified, diagnosed and then offers support to the general physicians through a shared care strategy.

However, in principle all patients should benefit from cardiological input and optimisation of ACEI, diuretics and initiation of beta-blockers before leaving hospital, followed up with early cardiology outpatients.
Key characteristic 12: expertise provides audit support, advice and training to heart failure teams across the system

- a hospital-based clinical effectiveness team that can:
  - provide data support and patient information to clinical teams
  - measure the effectiveness of the heart failure nursing team
  - lead patient and public involvement in the heart failure service
  - deliver critical appraisal training to support evidenced based practice

Case study
North Tees and Hartlepool NHS Foundation Trust

A clinical effectiveness advisor works with the heart failure team to identify best available evidence. The advisor produces a monthly research email alert on coronary heart disease and provides critical appraisal training. This helps staff recognise areas of good practice.

The trust's clinical effectiveness unit supports this work by providing and appraising bibliographic database searches. The department also leads ‘Evidence in Practice’ workshops (www.evidencebasedpractice.org.uk) where heart failure has regularly been a theme.

The trust has a regular schedule of joint clinical audit between primary and secondary care utilising standards from the CHD National Service Framework and NICE guidance. Through regular audit and awareness of results improvements in practice (shown from an audit cohort of over 600 patients) demonstrate that 85% had received echocardiography and 96% had an ECG.

- a mobile workstation enables the patients medical records and results to be viewed on a ward round. All diagnoses can be coded and entered on a standard discharge proforma and emailed to primary care. Guidelines can also be easily accessed

- hospital-facilitated meetings to focus on the importance of accurate coding using expertise of a cardiologist-led clinical group.
Key characteristic 13: solutions are found to avoid inappropriate admissions and facilitate timely discharge

- the emergency department has dedicated therapists to facilitate timely discharge and local arrangements to minimise transport delays
- intermediate care teams and community teams are accessible to emergency departments to assess and organise appropriate care on discharge preventing inappropriate admission.

Case study
North Tees and Hartlepool NHS Foundation Trust

A new intermediate care service developed to meet Accident & Emergency targets is helping to keep heart failure patients out of hospital.

The aim of the service is to provide both a holistic and functional assessment so that patients can be discharged safely and quickly. A key group is those with heart failure.

Patients previously would have been admitted for a social admission or admitted pending organisation of community support or even discharged with a risk placing pressure on the family to meet care needs.

The team receives referrals for emergency patients within four hours and also facilitate discharge from the Emergency Assessment Unit within 72 hours.

The service can assess for rapid response and rehabilitation. Equipment and support services can be accessed and delivered the same day in most cases.

In the first three months, the service avoided 48 inpatient admissions.
A new transport service has reduced delays in discharge – and saved £30,000 since July 2007.

The trust had just two weeks to find a new supplier when their existing service gave notice.

The emergency services manager arranged a replacement service using a leased vehicle and existing transport staff who were re-employed by the trust. The service changed over without disruption.

Discharge transport is available seven days a week and the service provides transport for up to 18 patients a day. As well as making substantial savings, the new service is more flexible and the transport staff now work for the trust and are keen to ensure that the service is efficient and patient-focused.

The discharges are audited once a month to ensure they meet the criteria for hospital-provided discharge transport.

Case study
North Tees and Hartlepool NHS Foundation Trust

- delays to discharge and transfers reduced by novel use of own ambulance and own staff which operates from 11.30am – 7.30pm each day
Intermediate care

Intermediate care is the level of care between primary and secondary care. Patients may require this service at any point in their pathway to prevent unnecessary hospital admission and deliver care closer to home. All services need to be integrated and coordinated across the whole system, enabling them to be responsive and accessible.

Key characteristic 14: proactive management of heart failure patients by an intermediate care team

- intermediate care team referred to as the multi-link team (social services, occupational therapy and physiotherapists and other professionals) identify patients and proactively manage their care
- telecare leaflet for patients informing them about 24-hour care.

Case study

The Hartlepool Borough Council

A multi-link - a multidisciplinary intermediate care team - prevents unnecessary admissions to hospital, 24-hour care and support early and safe discharge from hospital. Alongside traditional therapies and interventions, it offers ‘telecare’ monitoring devices appropriate to each patient’s condition.

They regard themselves as ‘enablers to get patients home’

The team includes representation from the borough council, PCT and the Acute Trust. The team offers intermediate homecare, residential rehabilitation, mobile rehabilitation, rapid-response nursing, floating support or a short-stay transitional care placement.

Plans are underway to develop ‘Tele-health’ services which use assistive technology to monitor vital signs - pulse, breathing temperature, oxygen levels. Deviations would set off alerts to the central co-ordinating centre. It is anticipated that earlier but safe discharges will be available.
Key characteristic 15: dedicated rehabilitation for patients with heart failure results in improved patient outcome

- advanced exercise programme with British Society of Heart Failure run by a cardiac rehabilitation team
- training packages offered by a cardiac rehabilitation team for heart failure nurses supported by the British Heart Foundation
- heart failure rehabilitation delivered off site in the community
- rehabilitation questionnaire issued to all patients to capture patient experience.

Case study
The Hatter Cardiovascular Institute, University College Hospital NHS Trust

The Hatter Institute provides a specially designed exercise programme for patients with impaired ventricular function and symptoms.

The programme has helped patients increase the distance they can walk by an average of 32.5%.

Key features of the service include close liaison with cardiologists, heart failure specialist nurses and community heart failure teams to identify patients, agree referral and subsequent patient pathways and conduct exercise programmes in the local YMCA venue.

Patients with a variety of conditions and of all grades of severity and those with implanted devices (Implantable cardioverter-defibrillator (ICD), CRT pacemakers) are welcomed into the programme.

The service achieved the Queen’s Nursing Institute award (August 2007) to support the service for patients with ICD devices. It works with the Association of Chartered Physiotherapists in Cardiac Rehabilitation (CPICR) and British Association Cardiac Rehabilitation to develop training days.

Overleaf (figure 6) is a sample of 14 heart failure patients who completed the 12 week out patient heart failure exercise programme at the Hatter Institute. The figures represent metres walked during a six minute walk test. This was conducted to assess functional capacity at the patient’s ENTRY and then EXIT from the exercise-training programme.
Figure 6: Percentage improvement of patients six minute walking test

Percentage improvement of Patients taking part in 6 Minute Walking Test

<table>
<thead>
<tr>
<th>Patient</th>
<th>% Improvement from Entry to Exit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0%</td>
</tr>
<tr>
<td>2</td>
<td>50%</td>
</tr>
<tr>
<td>3</td>
<td>100%</td>
</tr>
<tr>
<td>4</td>
<td>150%</td>
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<td>5</td>
<td>200%</td>
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<td>6</td>
<td>250%</td>
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<td>7</td>
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<td>12</td>
<td>50%</td>
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<tr>
<td>13</td>
<td>0%</td>
</tr>
<tr>
<td>14</td>
<td>150%</td>
</tr>
</tbody>
</table>
Key characteristic 16: integrated palliative care services with effective communication systems in place ensuring easier access to hospices, day care and specialist expertise

- access to beds in a nursing home for vulnerable heart failure patients accessible by heart failure specialist nurses
- access to hospice and palliative care for heart failure patients.

Case study
Islington PCT

Two beds have been ring-fenced in a local nursing home that can be used for vulnerable heart failure patients. Specialist nurses and community matrons can access the beds directly when symptoms have exacerbated but do not require acute admission.

Patients receive 24-hour nursing with specialist input from community staff.

The criteria for admission has been developed between the PCT and the nursing home. Both teams are involved in the assessment process and see the patient on the day of transfer. The heart failure team works with the nursing home to develop care plans and maintain close contact with the patient and care home staff during their stay.
Specialist palliative care services have been designed specifically for people with heart failure. Patients with heart failure have access to day care or inpatient palliative care services in Gateshead.

Through the palliative care team, heart failure patients and their carers can access Marie Curie sitting services. Joint visits are arranged between the heart failure nurses and the palliative care team for patients with complex care needs.

An established heart failure palliative care forum includes a GP, heart failure nurses, community matron, cardiologist and palliative care consultants.

• clinical pharmacists in palliative care team optimise prescribing

• heart failure nurses are key members of the palliative care forum and manage patients with end stage heart failure symptoms

• heart failure nurses undertake joint home visits with palliative care nurses

• heart failure patients can access hospice day care with psychological support

• audit of referrals to palliative care demonstrates cardiology as the second highest referral. This demonstrates that patients with end stage heart failure need access to palliative care second only to those with cancer

• hospice at home service with timely access to resources eg, reclining chair available for patients homes.

Case study
South of Tyne and Wear PCT - Gateshead

- Specialist palliative care services have been designed specifically for people with heart failure.
- Patients with heart failure have access to day care or inpatient palliative care services in Gateshead.
- Through the palliative care team, heart failure patients and their carers can access Marie Curie sitting services. Joint visits are arranged between the heart failure nurses and the palliative care team for patients with complex care needs.
- An established heart failure palliative care forum includes a GP, heart failure nurses, community matron, cardiologist and palliative care consultants.
Key characteristic 17: heart failure nurses offering seamless care across the system for heart failure patients

- processes in place for direct referrals to and from heart failure nurses across primary and secondary care
- heart failure nurses deemed to have high impact by patients and carers. They do not know how they would have coped without them
- there is a system in place to identify and allocate patients to the appropriate level of specialist nurse according to their need
- heart failure nurses are highly trained with regard to symptom management and care of co-morbidities such as diabetes and COPD
- heart failure nurses visit patients in their own environment for the initial assessment
- out-of-hours services are notified by fax of heart failure patients at risk and the visiting GP has access to the patient-held record. If the patient is at very high risk of admission, the heart failure clinical notes are left at the patient’s home
- there is a common assessment framework used between professionals
- community matrons or the heart failure specialist nurse visit medical assessment units, emergency departments and wards to identify those at risk of readmissions and initiate appropriate discharge packages
- there is clarity about the responsibilities between heart failure specialist nurses and community matrons when managing patients with co-morbidities
- heart failure nurses run nurse-led heart failure clinics and play a key educational role within the multidisciplinary team
- heart failure nurses collect data to demonstrate the impact of the role on admission and readmission rates.

“Before we had the heart failure nurse if I became ill I would be waiting to get an appointment with the GP or phone an ambulance and end up in hospital sometimes for two weeks. Now with support of the nurses they check the bloods and change medication and I feel more confident. It's better for me and my wife because we don't have to keep going to the hospital”

Heart failure patient
The heart failure nursing service in Gateshead undertakes register validation and has set up heart failure clinics in GP practices. Currently the service has provided support for 12 of 33 practices in Gateshead. This rolling programme is being requested and valued in primary care with the advent of the Quality Outcomes Framework advocating 12 monthly reviews for all patients with stable left ventricular systolic function.

The heart failure nursing team has issued all practices with protocols for the management and assessment of patients with LVSD. The protocols are updated every two years.

The heart failure nurses operate an SOS service, which can be accessed by any patients currently under or previously known to the service.

The team offer telephone access to community matrons for advice or home-based reviews. A referral pathway between the teams enables joint home visits if required. The heart failure nurse can refer stable patients with other co-morbidities. Patients may be seen by the heart failure nurse as an inpatient and have a home visit following discharge. The patient can be streamlined into home-based follow-up and titration or into a secondary care nurse-led clinic. Figure 7 shows the impact of heart failure nurses on readmissions.

A heart failure module, which is accredited at Level 6, is delivered at Sunderland University with module sessions delivered by heart failure nurses. A rolling twice-yearly education programme is available for all primary and secondary care staff.

**Case study**

South of Tyne and Wear PCT - Gateshead

**Figure 7: Year-on-year reduction in heart failure readmissions as a result of the intervention of heart failure specialist nurses**
5. Measuring your performance

“Within organisations we know a defining characteristic of high performing teams is their willingness to measure their performance and use the information to make continuous improvement”

High quality care for all – NHS Next Stage Review Final Report, DH June 2008 p56

Measuring your performance is important as it provides valuable feedback on any changes made across the patient pathway. A useful toolkit to help you do this is the Annual healthcheck


It enables you to assess your current performance in comparison to all other organisations on a range of indicators across the patient pathway and your own local improvement initiatives.

A guide has been produced to assist users to install and use the toolkit. It also provides further information on the sources of data and rationale for each of the indicators.

Access the guide and toolkit via the link below.


As the result of NHS Next Stage Review, work is underway to develop quality metrics along the patient’s pathway.
6. Benefits

Delivering high quality care achieves a wide range of benefits. The figure below illustrates that by delivering quality and value for heart failure patients, a number of common benefits can be realised.

**Impact on patient care and service**
- Early comprehensive assessment and diagnosis
- Cared for by specialist staff
- Case management of co-morbidities
- Care closer to home
- Prevention of inappropriate admissions and readmissions
- Earlier safe discharge
- Involvement and support for patients and carers
- Improved quality of life
- Improved end of life care
- Easier access to equipment
- Equitable access to services

**Impact on staff and teamwork**
- Collaborative professional relationships managing patients co-morbidities
- Whole system delivering safe, high quality care
- Increased access to senior clinical advice and support
- Improved staff retention
- Improved job satisfaction
- Opportunities for developing advanced knowledge and skills
- Reputation of safety/quality of care

**Bottom line savings and opportunity costs**
- Reduced inappropriate secondary care attendances
- Reduction in outpatients appointments
- Reduced length-of-stay
- Decreased admission and readmission rate
- Efficient and appropriate use of specialist teams
- Management of co-morbidities
- Improved financial gain through accurate identification and coding
- Improved equity of access impacting on local public health
- Optimised prescribing
Optimal delivery of high quality care for patients with heart failure is an achievable goal. The opportunities for quality improvement in this area are immense and include:

- improved quality of life and experience for patients, supported by evidence-based delivery of services
- reduced inappropriate use of hospital beds and better management of patients closer to home.

Good quality care costs less than sub-optimal care - length-of-stay, admission rate and readmission rates are reduced.

The contents of this report are based on the Delivering Quality and Value Team's observations of the practices of NHS organisations that are judged to be delivering high quality care and value for money. While all of these observations have been tested thoroughly, it should be recognised that they may not be the only way of delivering high-quality care and value for money. For example, there may be different models for managing out of hours services effectively.

However, we believe that they will give valuable guidance and direction to clinicians, managers and commissioners seeking this goal.

To improve services, organisations should utilise this guidance and take the following steps:

1. Understand how your organisation performs when compared with the key measures and benchmarks by referring to the Healthcare Commission benchmarking toolkit (14)
2. A continuous programme for improvement coordinated by the cardiac networks
3. Integrate the local change management programme with the health community local delivery plans.

While this report offers suggestions to care providers and commissioners on how they might optimise their own provision of care for patients with heart failure and other patients with long-term conditions, all of the models of care illustrated in the case studies require a sustainable skills-based workforce. These models may vary from one setting to another.

7. Conclusion
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We wish to thank everyone who has contributed their time to enable us to carry out this work, and in particular the staff that took time out from their busy schedules to show us how they work and for all the information they shared. This includes the organisations we visited and their associated primary care trusts.

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Heart Improvement Programme and Cardiac Networks
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The Coronary Heart Disease National Service Framework: Building for the future - progress report for 2007
This document aims to help local health communities and organisations improve the quality and value of care.

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