

National Heart Failure Audit

Second report for the audit period between
July 2007 and March 2008

Prepared in partnership with:

The British Society for Heart Failure



HQIP

Healthcare Quality
Improvement Partnership



National Heart Failure Audit

Second report for the audit period ending March 2008

This second report for the National Heart Failure Audit presents key findings and recommendations from the audit which was launched in July 2007. The data included in this report was submitted between July 2007 and March 2008. Aimed at healthcare professionals, managers and clinical governance leads, the report describes progress to date, results of a qualitative review of the first six months of the audit, and how the audit has been modified to support local implementation.

The report also describes how participation will help providers and commissioners measure standards of care against evidence-based best practice and national standards, identify gaps in care and improve services.

Electronic copies of this report can be found at: www.ic.nhs.uk/heartdisease

www.ic.nhs.uk/our-services/improving-patient-care/national-clinical-auditsupport-programme-ncasp/audit-reports/

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Acknowledgements

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We would like to acknowledge the important contribution made by all NHS Trusts and the individual clinicians, nurses and audit teams who are participating in the audit.

Foreword



Reliable information has always been key to understanding and improving services. Since publication of the National Service Framework for Coronary Heart Disease we have seen outstanding improvements in cardiac care.

One of the reasons we have been able to do this is that we had sound data to show us where we were and to track progress. Heart failure services have been slower to improve; and one of the factors holding it back has been the lack of good data. 71 per cent of Trusts are now participating as against 33 per cent at this stage last year. But the database still carries information for a mere 6 per cent of heart failure patients, so we need both to encourage the remaining Trusts to participate and to enthuse everyone to enter their full set of records.

Because these are not data for data's sake. The NHS Next Stage Review makes it clear that the spotlight is now on the quality of services. The Review highlights services for long-term conditions, and heart failure is one of the most significant of these. This means that commissioners will be even more intent on the range and quality of the information available to them, to decide what services to commission from which provide.

As NHS Choices expands, patients will be looking for information on quality and outcomes to decide where they wish to be treated. For reasons of self-interest alone, it will be to Trusts' advantage to invest in providing it; and I am certain that staff caring for heart failure patients will be as anxious as any other to provide the best quality service possible. Data will show them where they are doing so, and where they need to learn from others and make improvements.

I look forward to seeing this audit grow and flourish and help the NHS to improve the quality and effectiveness of its care for this growing group of patients.

A handwritten signature in black ink that reads "Roger Boyle". The signature is written in a cursive, flowing style.

Professor Roger Boyle

National Director for Heart Disease and Stroke

1 Executive Summary

The National Service Framework (NSF) for Coronary Heart Disease (CHD) sets national standards of care relating to CHD, including providing better care for people with heart failure. The National Institute for Clinical Excellence (NICE) has issued guidelines on the management of heart failure in primary and secondary care. Both play an important role in improving health standards and ensuring high quality care is available and accessible to all who need it.

1.1 Heart failure

Heart failure is a clinical syndrome characterised by symptoms such as breathlessness and fatigue, and signs of fluid retention such as swollen ankles. It is caused when the heart is unable to pump enough blood fast enough to meet the needs of the body. It develops over time as the pumping action of the heart grows weaker. Most cases are due to coronary heart disease and damage following a heart attack. A third of cases are caused by high blood pressure, which causes the heart's muscular wall to thicken, making it less flexible and unable to pump blood properly.

Heart failure affects at least one in 100 people in the UK, increasing steeply with age to about 7 per cent in men and women over 75-84 years. The number of patients with heart failure is set to rise in the next twenty years. This is due to the combined effects of improved survival after a heart attack and an ageing population.

Survival rates are worse than for breast and prostate cancer, with annual mortality ranging from 10 per cent to 50 per cent depending on severity, and a high risk of sudden death. Patients with heart failure experience a poor quality of life, with over a third experiencing severe and prolonged depressive illness.

Heart failure is one of the largest sources of emergency hospital admissions, readmission rates and occupied bed days, equating to almost 5 per cent of all emergency medical admissions. There is good evidence that appropriate diagnosis, treatment and ongoing support can improve quality of life, help reduce morbidity and mortality and reduce hospital admission. Evidence suggests that progress in meeting the NSF standards and implementing evidence based clinical guidance has, until recently, been slow. Whilst substantial progress has been made over the last

two years, there is variation across the country and between different groups of patients in relation to the confirmation of diagnosis, access to evidence based treatment and heart failure specialist staff.

1.2 The National Heart Failure Audit

National clinical audits play a key role in supporting improvement by monitoring implementation of national evidence based guidance and measuring progress towards meeting national standards.

The National Heart Failure Audit is run jointly by The NHS Information Centre for health and social care (The NHS IC) and the British Society for Heart Failure, and is funded by the Healthcare Quality Improvement Partnership (HQIP). The audit focuses on the care and treatment of all patients admitted to hospital with heart failure. The main purposes of the audit are to measure the process of care and clinical outcomes, enabling comparisons between hospitals and bring about improvement where necessary. The national audit consists of 34 core data items that reflect national guidance on the care and treatment of patients with heart failure. The heart failure database provides users with immediate feedback on data quality. Participating in the audit has many benefits and can:

- help care providers to measure their standards of care against best practice and national standards, identify gaps in their care provision and improve their services.
- improve the quality of life of patients with chronic heart failure
- support the local healthcare system's ability to meet its Public Service Agreement target for long term conditions by avoiding unnecessary hospital admission and reduce length of stay
- support Primary Care Trusts by providing information to support effective commissioning
- support specialist recertification
- act as a resource for healthcare professionals in both primary and secondary care to assess whether NHS Trusts are meeting the standards set by the NSF for CHD, NICE and the Healthcare Commission.

This report summarises key findings from the first eight months of the national roll out of the audit between July 2007 and March 2008.

1.3 Summary of key findings and main recommendations

As of March 2008, 105 out of 147 (71 per cent) Trusts had registered with the audit although only 37 (25 per cent) were submitting data. Hospitals submitted clinical data on 6,299 patients. Nationally this represents approximately 6 per cent of patients discharged from hospital with a diagnosis of heart failure. A list of participating and non-participating hospitals is provided in the Appendix 2.

Early findings indicate variation in access to some of the key clinical treatments for heart failure. Patients who receive the majority of their care on general medical wards are less likely to be prescribed ACE inhibitors and Beta blockers. Patients admitted to cardiology are more likely to be prescribed aldosterone receptor antagonists.

To ensure audit data is representative of care in all organisations, it is essential that the quality of care for all patients admitted to hospital is recorded. The number of cases submitted by each site varies considerably.

The results of a qualitative review of the first six months of the audit identified a number of factors that impact on data completeness. These include scope of the audit and local resources, competing local priorities and the complexity of the care pathway.

In response, the scope of the audit has been reduced and will focus on cases of heart failure coded in the first diagnostic position. This gives priority to the cases more likely to have been discharged with a primary diagnosis of heart failure. This reduces the target group from 392,874 cases to 107,242 which equates to a reduction of 72 per cent. Other mechanisms to improve data completeness include the use of the information from the heart disease audits to demonstrate financial savings, support effective commissioning and the move towards world class commissioning, and to assess performance by the Healthcare Commission.

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- demonstrate financial savings
- support effective commissioning and the move towards world class commissioning
- assess performance by the Healthcare Commission.

2 Introduction to the National Heart Failure Audit

2.1 Background to heart failure

Heart failure is a complex syndrome that can result from any structural or functional cardiac disorder that impairs the ability of the heart to function as a pump to support physiological circulation. The syndrome of heart failure is characterised by symptoms such as breathlessness and fatigue, and signs such as fluid retention.

Heart failure occurs in around 1 per cent of the adult population rising to 7 per cent in those aged over 75 years and 15 per cent for those aged 85 and over (1). Most cases of heart failure are due to coronary heart disease (approximately 70 per cent) and about a third result from hypertensive heart disease. Although there has been an overall decline in mortality from coronary heart disease, the number of patients with heart failure is increasing(2). This is due to an ageing population combined with improved survival rates after a heart attack but with patients left with residual left ventricular dysfunction.

In 2001, over 11,000 deaths due to heart failure were officially recorded in the UK. However, the number of deaths directly attributed to heart failure is likely to be an underestimate of the actual number of deaths it causes. Guidance given on death certificates, that heart failure is not a cause but a mode of death, discourages doctors from recording heart failure as the underlying cause of death. This means that other causes of death, such as coronary heart disease, are more commonly given as the cause of death.

2.2 Patient outcomes

Heart failure has a significant impact on patient outcomes. Survival rates are worse than for breast and prostate cancer, with annual mortality ranging from 10 per cent to 50 per cent depending on severity, and a high risk of sudden death. Newly diagnosed patients have a 40 per cent risk of dying within a year of diagnosis (3). Patients with heart failure experience a poor quality of life, with over a third experiencing severe and prolonged depressive illness.

2.3 Impact on services

Providing services to patients with heart failure costs the NHS an estimated £625 million per year. Heart failure places a significant demand on hospital facilities and resources through hospital emergency

admissions and readmissions. It accounts for 5 per cent of medical admissions, while the readmission rate for heart failure has been estimated to be as high as 50 per cent over 3 months (4).

2.4 The evidence base

There is good evidence that appropriate diagnosis, treatment and ongoing support can improve quality of life and help reduce morbidity and mortality(5).

The National Service Framework (NSF) for Coronary Heart Disease(CHD)(6) emphasises the need to develop a systematic approach to the diagnosis, investigation, treatment and ongoing support of people with heart failure throughout the NHS. Evidence-based clinical guidelines(7) published by the National Institute for Health and Clinical Excellence (NICE) aim to assist health professionals in clinical decision making.

2.5 Variation in practice

In a national review of CHD services, the Healthcare Commission found that despite significant progress in implementing the NSF, progress in meeting the heart failure standards had been slow (2004)(8). This was in stark contrast to the progress made in the treatment of heart attacks and reduced waits for revascularisation. In response, the Healthcare Commission undertook a service review of heart failure services to assess the performance of local services against the NSF standards and NICE recommendations. The results, published in July 2007(9), indicate that whilst substantial progress had been made in the intervening two years there was still variation across the country in relation to the confirmation of diagnosis, access to evidence based treatment and heart failure specialist staff. This in turn appears to have an impact on patient outcomes. Data pooled for the years 2002-2003 and 2004-2005 demonstrated wide variation in the level of observed re-admission and mortality across PCTS in England when compared with expected levels.

Further work undertaken by the Healthcare Commission(10) focused on inpatient admission routes and used patients with heart failure to examine access to diagnostics and key treatment. The results indicated that many patients admitted to acute hospitals in England, Wales and Northern Ireland are not managed fully in accordance with international evidence-based guidelines. Only a

minority of patients with heart failure are seen, or followed up, by a specialist service. Whilst most trusts (86.5 per cent) have a lead consultant for the care of patients with heart failure, only 22.3 per cent of patients admitted to hospital with heart failure were referred to the lead clinician or a cardiologist.

Access to specialist heart failure teams was also shown to be extremely variable with averages for trusts varying from 0 per cent to 74 per cent. There were also differences in access to evidence-based clinical treatment between different groups of patients. Women appeared to be less well managed against recommended guidelines and are less likely to be prescribed anti-failure medication, except diuretics, on discharge. The Healthcare Commission recommends that significant and sustained effort is required to address gender inequalities in the provision of heart failure care. The National Heart Failure Audit has been designed to measure equity of access between different patient groups.

2.6 The role of clinical audit in improving care and reducing variation

Clinical audit plays a key role in determining whether standards of care are being met and identifying variation in practice. Audit findings can be used in various ways by a wide range of stakeholders to bring about improvements in patient care and patient outcomes (Table 1). It is crucial that high quality data is collected to demonstrate that patients receive evidence based care and that service improvement is undertaken where necessary. Prior to the launch of the audit in July 2007, there was no national audit relating to the care of heart failure. At a local level, fewer than 20 per cent of organisations were able to meet the CHD NSF criteria for auditing the delivery of heart failure services in 2006. This is despite an NSF milestone of 2002 (hospitals). This makes it difficult to compare practice with clinical standards and so make a case for service improvement.

Table 1: Various ways stakeholders can use audit findings to drive improvement

| | |
|---|--|
| Improving standards of care | <p>Access to national comparative data allows clinicians, healthcare professionals and cardiac networks to examine key aspects of the quality of care and impact on patient outcomes and quality of life, and implement change accordingly.</p> <p>NHS commissioners will know the quality of acute services so they can purchase more care from units providing evidence based care and with reduced waiting times and readmissions and with the best outcomes for patients. NICE has published guidance on commissioning an effective heart failure service</p> <p>Audit results are a resource for healthcare professionals in both primary and secondary care to assess whether their hospitals are meeting the standards set by the Department of Health and assessed by the Healthcare Commission.</p> |
| Supporting patient choice | <p>NHS commissioners will know the quality of acute services so they can purchase more care from units providing evidence based care and with better patient outcomes such as reduced waiting times and readmission rates. NICE has published guidance on commissioning an effective heart failure service (11).</p> |
| Supporting effective commissioning | <p>Information can be used to highlight inequities both within an organisation and between different localities. For example, audit findings can highlight postcode lottery in commissioning policy between PCTs.</p> <p>Stakeholders, including NHS commissioners, can match activity rates to the needs of local population to support commissioning decisions.</p> |
| Specialist recertification | <p>Robust clinical audit is anticipated to become an important component of recertification for most specialities</p> |

2.7 The aims of the audit

The National Heart Failure Audit aims to provide national comparative data to help clinicians and managers improve the quality and outcomes of their services. Findings can be used to assess achievement against NSF targets and NICE guidelines for heart failure on an ongoing basis. Information can also be used to inform patients about the quality of local care and to support patient choice.

The Heart Failure Audit: secondary care

The provision of comprehensive and high quality services for patients with heart failure is complex. A multidisciplinary approach is advocated often involving healthcare professionals from both primary and secondary care as well as involving social care services. It requires good coordination at all stages of the patient pathway. Such complexity poses a number of challenges and an audit that encompasses all organisations would be extremely large and potentially unwieldy, and would be difficult to evaluate. This being the case, The NHS IC and the BSH have chosen to focus initially on auditing inpatient care within secondary care.

The Heart Failure Audit: key objectives

The first objective of the audit is to identify the percentage of inpatients with a diagnosis of heart failure who have quality of care recorded. The original scope of the audit aimed to capture data on all patients identified as having heart failure in hospital discharge codes using the following ICD-10 codes in any diagnostic position:

- I50.0 Congestive heart failure
- I50.1 Left ventricular failure
- I50.9 Heart failure, unspecified
- I11.0 Hypertensive heart disease with (congestive) heart failure
- I42.0 Dilated cardiomyopathy
- I25.5 Ischaemic cardiomyopathy
- I42.9 Cardiomyopathy, unspecified.

A second objective is to describe current clinical practices in heart failure diagnosis, care and treatment, and to explain variation in practice using data on patient characteristics and healthcare provider identity. A third objective is to describe the following patient outcomes: length of stay, in-hospital mortality and late mortality (up to one year post discharge).

An algorithm summarising the core data items mapped to the key NICE heart failure recommendations can be found in Appendix 1.

Hospitals that consistently achieve above average results will be identified, allowing other centres to adopt their successful methods in order to improve the quality of care and survival rates for patients with heart failure across the United Kingdom.

The Heart Failure Audit: Primary Care

The need to extend the scope to primary settings has also been highlighted by the Healthcare Commission (2007). The aim is to extend the audit into primary care following successful implementation of the audit in secondary care. In the meantime, The NHS Information Centre will work with organisations with a cardiac remit to identify ways in which heart failure audit findings can be used alongside other data sources to provide a picture of the quality of care across the both primary and secondary care. These include the Cardiac Outcomes Database (Table 2) and the GP Extraction System (GPES) (Table 3).

Table 2: Linking heart failure data across primary and secondary care

Cardiac Outcomes Database

The Central Cardiac Audit Database (CCAD) contains separate audit records from all of the national heart disease audits. These are separate audits covering the following different specialities:

- Heart attacks (MINAP)
- Adult Cardiac Surgery
- Congenital Heart Disease
- Cardiac Rhythm management (CRM)
- Adult Intervention
- Cardiac rehabilitation
- Arrhythmia
- Heart failure
- Sudden Arrhythmic Death Syndrome (SADS)
- Pulmonary hypertension

From a patient perspective, each event forms part of their serial record of care and is part of the patient pathway. A patient will view all events (e.g. heart attack, intervention, surgery, access to rehabilitation and development of heart failure) as significant factors adversely affecting their quality of life. Whatever the initial event, patients will see completely "event free" survival as the gold standard of optimal care.

Over time, information about the same patient will appear numerous times across each of the audits. Linking the data provides important clinical information about what is happening to patients across the pathway and the potential impact on their outcome. For example, by linking the data we can identify the number of heart attack patients who go on to develop heart failure. This has the potential to give important information about prevalence rates, put process in place to ensure all heart attack patients are monitored and treated to delay progression of disease so increasing life expectancy and reducing mortality rates. This would also reduce emergency admission and readmission rates.

The Cardiac Outcomes Database can also link secondary care heart failure audit data with data from other sources such as the General Practice Research Database (Figure 1) which holds records on 800 practices. This will provide invaluable information about the interface between primary and secondary care, misdiagnosis and prescribing rates, each of which have been highlighted as potential factors leading to emergency readmission, life expectancy and quality of life of patients with heart failure.

Figure 1 The Central Cardiac Audit Databases and linkage with internal and external national databases.

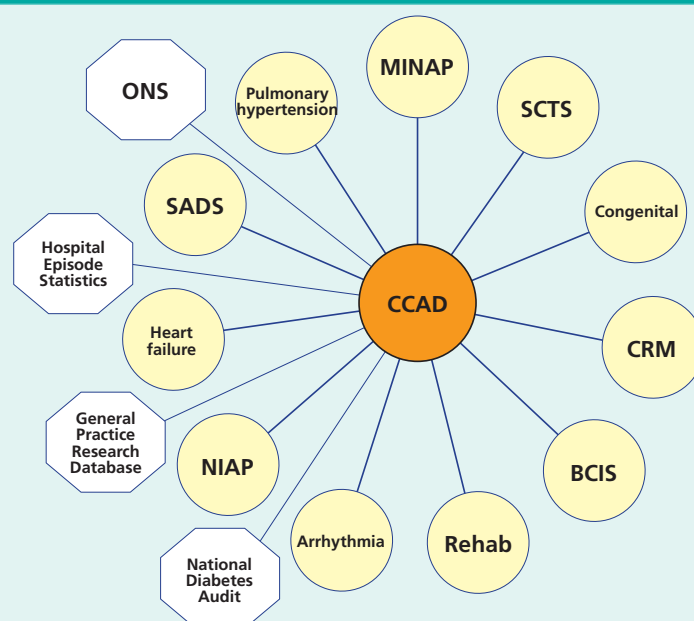


Table 3: The General Practice Extraction System

The General Practice Extraction System

The NHS Information Centre and NHS Connecting for Health are consulting with stakeholders for a new data extraction system. The General Practice Extraction Service (GPES) will be a centrally-managed primary care data extraction and analysis tool which will obtain information from all NHS GP practices in England.

In phase one, GPES will be used by the NHS Information Centre to provide census extracts for the Department of Health and for arms length bodies such as the Health Protection Agency (e.g. for purposes of disease surveillance, commissioning support, clinical audit).

In phase two, GPES may be made available to NHS bodies, including strategic health authorities, primary care trusts and practice-based commissioning groups, so they can obtain local data extracts to address specific local issues.

Data could be linked with secondary care data collected via the National Heart Failure Audit to provide information about the primary and secondary care pathway.

2.8 Organisation of the Audit

The National Heart Failure Audit is project managed by The NHS Information Centre for health and social care with specialist clinical knowledge provided by the British Society for Heart Failure. The audit was initially commissioned by the Healthcare Commission for two years (2006-2008) and has since been renewed for a further two years until March 2010. Commissioning arrangements transferred to the Healthcare Quality Improvement Partnership (HQIP) in April 2008.

2.9 The British Society for Heart Failure

The British Society for Heart Failure (BSH) is a national organisation of health care professionals dedicated to improving heart failure outcomes in the UK. It is a charitable organisation and functions as an affiliated group of the British Cardiovascular Society. As part of the BSH strategy to improve patient care in heart failure, several of its board members have worked with The NHS IC to design a national audit dataset for heart failure. The BSH project steering group have collaborated with The NHS IC during the development and design of the heart failure dataset and database and the pilot phase of the audit providing clinical input and direction.

2.10 The NHS Information Centre

The NHS Information Centre for health and social care (The NHS IC) exists to collect, analyse and

distribute facts and figures for health and social care communities in England. The National Clinical Audit Support Programme (NCASP) within The NHS IC runs a programme of national audits in a number of disease areas including cancer, heart disease, diabetes and renal services. The audits aim to improve the treatment of patients and improve patient care and outcomes. Each audit offers reliable information to help health professionals continually measure and improve care by comparing practice to specific standards and national trends. The heart disease audits look at specific conditions and also aim to link audits together to follow a patient's treatment and outcomes throughout their lifetime. Further information about the clinical audits, including audit reports, can be accessed via The NHS IC website: www.ic.nhs.uk/our-services/improving-patient-care/national-clinical-audit-support-programme-ncasp/heart-disease

2.11 Audit and the Healthcare Commission

The National Heart Failure Audit is commissioned by the Healthcare Quality Improvement Partnership (HQIP) since 1 April 2008. Previous to this the audit was commissioned by the Healthcare Commission. The Healthcare Commission is responsible for carrying out independent, authoritative and patient-centred assessments of the performance of each local NHS organisation. The Healthcare Commission will continue to recognise that participation in clinical audit is an indication of good clinical governance and

increasingly the findings will be used in the Annual Health Check.

Participation in national clinical audit is also a requirement in the Wales Assembly Government's healthcare policy document, Designed for Life⁽ⁱ⁾.

2.12 Heart Failure Application

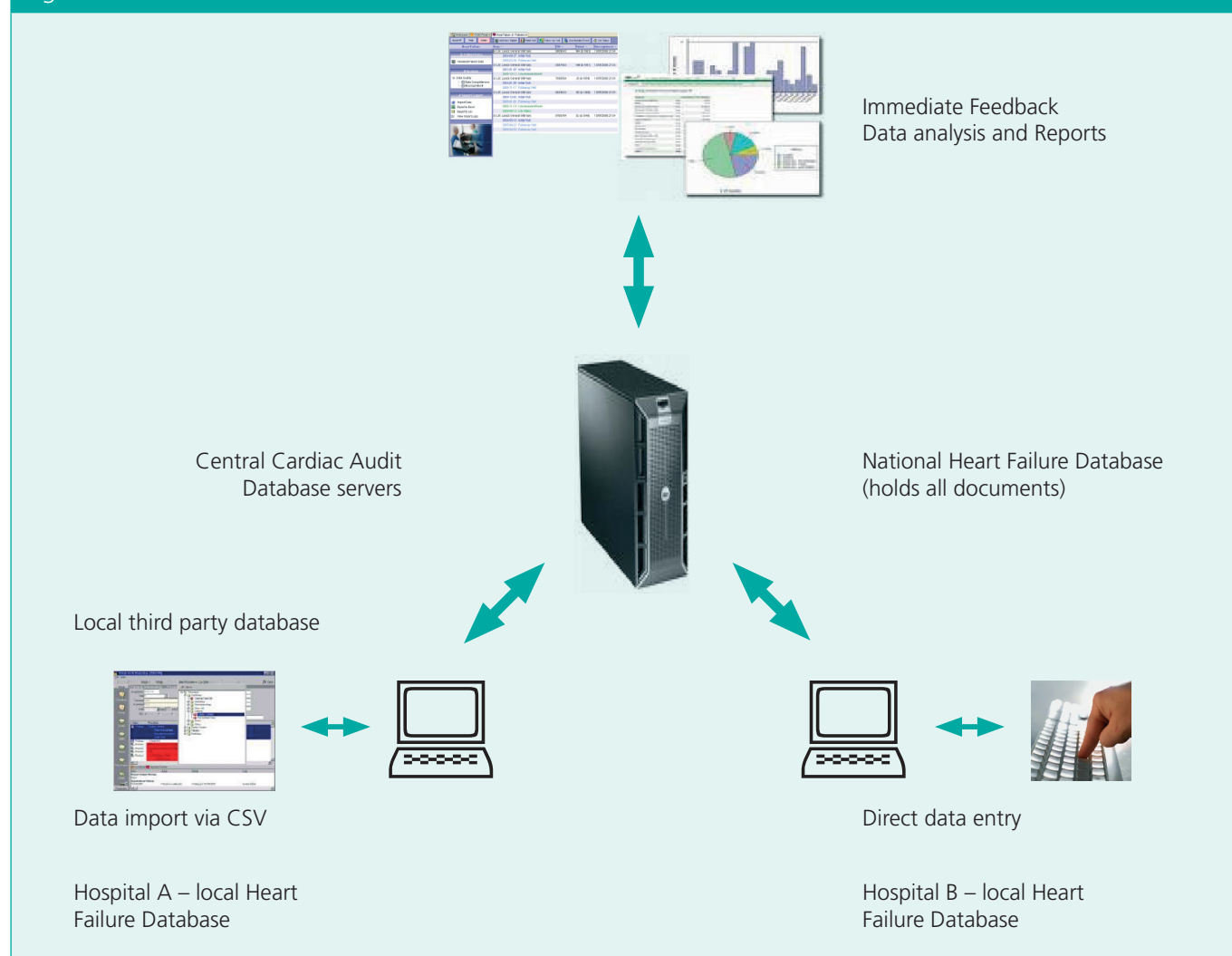
The National Heart Failure Audit application uses IBM Lotus Notes® and IBM Lotus Domino® as constituents for its software infrastructure. IBM Lotus Notes® and IBM Lotus Domino® are industry leading, client-server, collaborative document-management products

incorporating robust security features, and have been widely adopted for use in the commercial sector.

Use of the heart failure application requires connection to NHSnet or the internet. It is installed by an auto install CD with minimal local IT system changes required.

IBM Lotus Notes® allows documents to be defined for data entry and display and treats collections of documents as 'databases'. Each document can be populated with all the design elements familiar with web users.

Figure 2: National Heart Failure Database Infrastructure overview



(i) Designed for life: creating world class health and social care for Wales in the 21st Century. <http://www.wales.nhs.uk/documents/Designed-for-life-e.pdf>

Each hospital accesses the heart failure database via the Central Cardiac Audit Database (CCAD) portal and has the ability to create a local encrypted replica of the database so that response times are not subjected to local network performances (Figure 2).

Replication is automatically scheduled, every time you open or close the database.

Opening a database allows users to see all the documents to which they have authorised access, and in turn allows the creation of new documents, either by directly inputting the data or by importing data from third party systems, or by editing existing information. Once data has been entered into the hospital local heart failure database that database is then synchronised with the central heart failure database so that data can be analysed to provide immediate feedback.

2.13 Heart Failure application security and patient confidentiality

Security mechanisms are designed to ensure only authorised users access information on the Heart Failure application database. Users only see records submitted by their own organisation (unless permission is given for them to view other organisations' data from other trusts and cardiac networks), and published information contains only comparative analysis figures. Several levels of security are built into the system:

- ID security: the Heart Failure application is accessed through use of an IBM Lotus Notes® ID, and that ID can be set to expire or have its access terminated, thus preventing unauthorised users from accessing the system. A complex password is required to access the IBM Lotus Notes® ID (and thus, the CCAD application itself) and that password can be set to expire after a given period forcing the user to change it regularly
- Server security: the central (server-based) Heart Failure application database replica is also protected by server security so that no unauthorised persons can obtain access to it or replicate data to it

- Application security: access to the IBM Lotus Notes® database is controlled by a database Access Control List (ACL). This ensures both non-repudiation, (a user cannot deny that they have accessed data), and that users and organisations only have access to their own records. Users may be given 'read only' or editing rights. Users can delete records if they have the correct permissions and if there are no child documents relating to that record.

The application is also encrypted so that if any unauthorised person were to somehow obtain the hard drive upon which the Heart Failure application exists, they would also need an authorised ID file (and knowledge of its password) to access it.

All system database accesses are recorded in a system log file that can be audited in the event of suspected security threats or data misuse.

2.14 Patient confidentiality

Audit data is subject to strict rules of confidentiality. The National Clinical Audit Support Programme (NCASP) works with the Healthcare Quality Improvement Partnership (HQIP) and the Patient Information Advisory Group (PIAG) to ensure that support is provided under Section 251 of the NHS Act 2006 for the collection and use of patient identifiable data. All current NCASP audits have PIAG support. Hospitals send the data to the National Heart Failure Audit application via a secure connection to the NHS secure network, (NHSnet) and internet (access via an ISP is through Port: 1352 on the Internet. This is not Port: 80 (WWW access) which has known security flaws), where it is securely stored on a highly encrypted national computer database. Once captured, the data is only accessible to people who store and analyse the data. Patients can choose to opt-out of the audit, such that their details will not be stored or used for any purpose by the audit.

3 Findings

3.1 Participation

The first objective of the audit is to identify the percentage of inpatients with a diagnosis of heart failure who have quality of care recorded. This requires participation of all hospitals and submission of all cases of heart failure that meet the audit criteria.

As of March 2008, 105 out of 147 (71 per cent) Trusts had registered with the audit. A list of registered and non-registered Trusts and hospitals is provided in Appendix 2.

There is variation in the number of cases submitted by each Trust per month with only 37 (25 per cent) submitting more than 10 records per month on a regular basis.

Hospitals submitted data on 7,390 patients and of these 6,299 records included clinical information about the first admission⁽ⁱⁱ⁾. There were 1,715 readmission records for 763 patients. The number of readmissions records per person ranges from 1 to 12 records per patient.

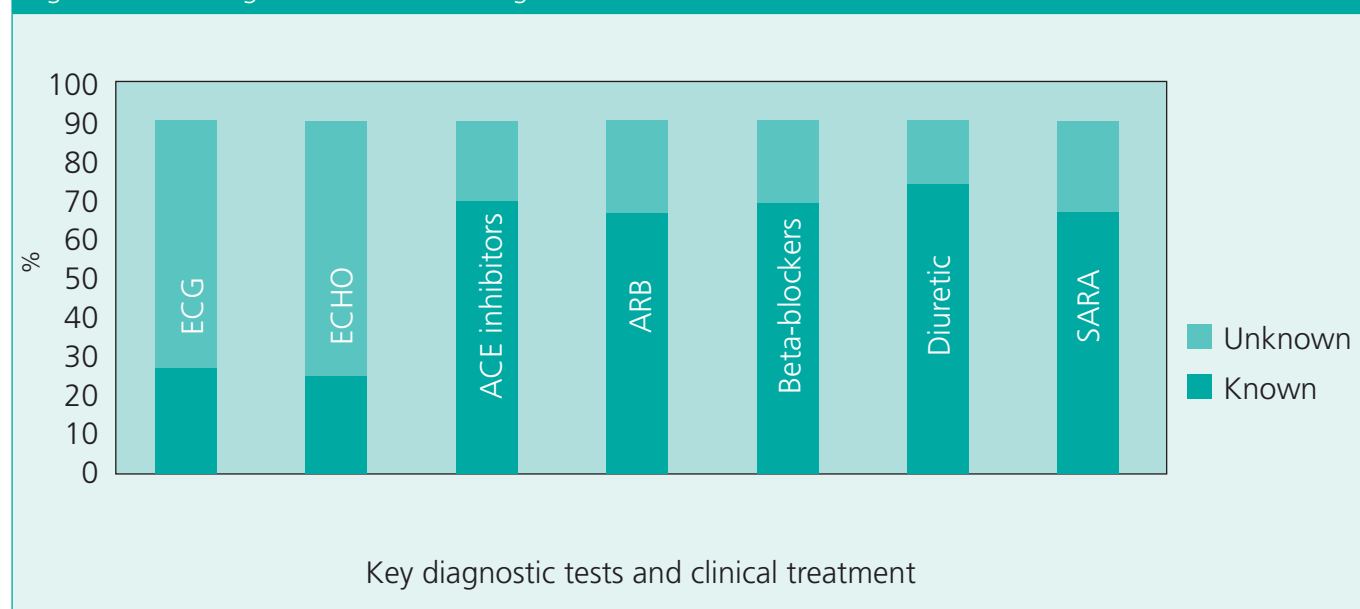
Nationally, the number of cases submitted to the audit represents approximately 6 per cent of patients discharged from hospital with a diagnosis of heart failure⁽ⁱⁱⁱ⁾.

Data completeness

All of the 34 core data items are mandatory. There is an 'unknown' option within each core data item. This allows the user to save the record even if a specific piece of information is missing from the patient record.

Figure 3 shows the percentage of cases where information about the diagnostic or clinical treatment was recorded as 'unknown'. The percentage of 'unknown' responses was high for ECG and Echo tests but lower for key clinical treatments.

Figure 3 Percentage of cases where diagnostic and clinical information is recorded as 'unknown'



(ii) First admission refers to the first admission inputted into the national audit and not the actual first inpatient episode of care for the patient.

(iii) Based on HES discharge data 2006-2007 as coded in Section 2.7

3.2 Patient demographics: age and gender

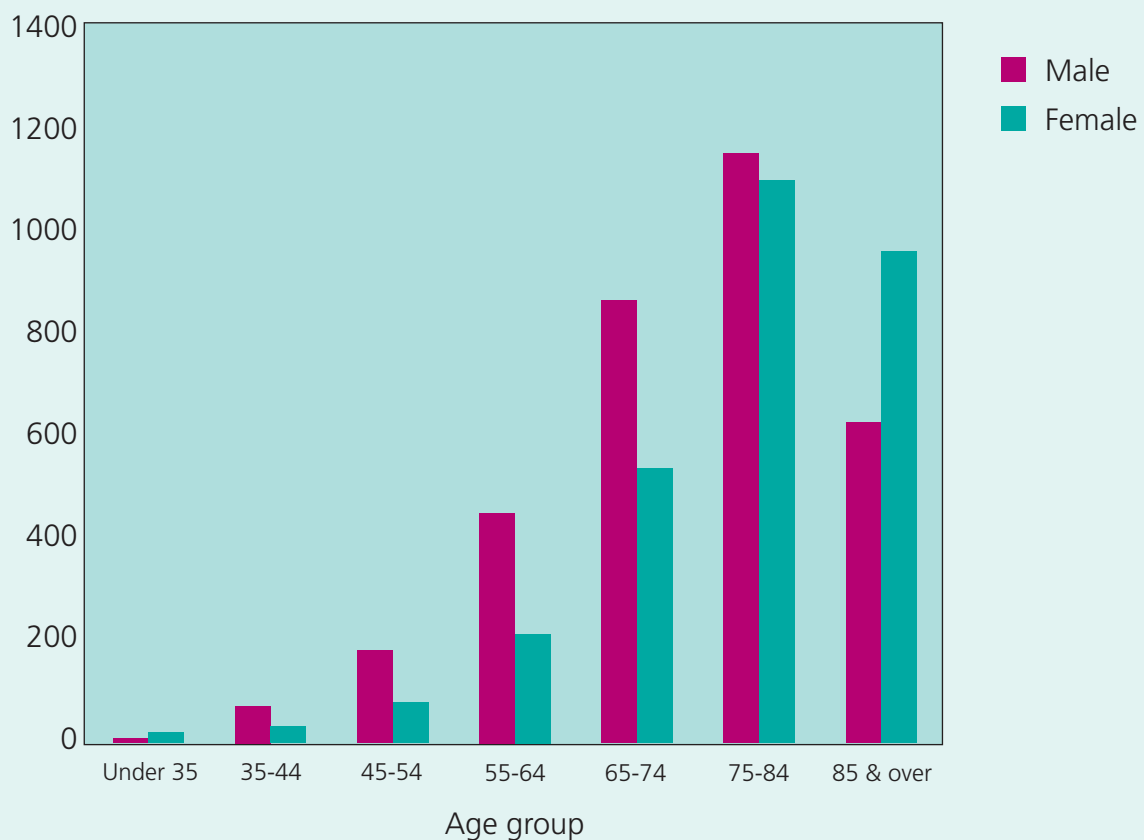
The incidence of heart failure is gradually increasing partly due to the ageing population. Prevalence of heart failure increases sharply with advancing age and there are differences in onset between men and women. Up to 74 years, more men than women have heart failure. This reverses at ages above 75, when slightly more females have heart failure than males.

This pattern is reflected in these early findings which show slightly more cases of men (n= 3357; 53 per cent) than women (2939; 47 per cent). The mean age was 75.5 years although there are differences between men and women with women being older (78 years) than men (73.4 years) (Figure 4 and Figure 5).

Figure 4: Age and gender distribution of cases submitted to the National Heart Failure Audit

| | All ages | Under 35 | 35-44 | 45-54 | 55-64 | 65-74 | 75-84 | 85 & over |
|-------|----------|----------|-------|-------|-------|-------|-------|-----------|
| Men | 3357 | 15 | 79 | 184 | 452 | 858 | 1143 | 626 |
| Women | 2939 | 26 | 37 | 83 | 213 | 535 | 1092 | 953 |
| Total | 6299 | 41 | 116 | 268 | 665 | 1395 | 2235 | 1579 |

Figure 5: Age and gender distribution of cases submitted to the National Heart Failure Audit



3.3 Diagnosis and management of patients with heart failure

Measures of the quality of care received by patients are required to drive and monitor improvement. Access to key investigations, treatments and interventions, length of hospital stay and mortality are all indicators of the quality of heart failure services.

Diagnosis: access to key investigations

The NSF and NICE guidelines emphasise the importance of having a confirmed diagnosis of heart failure because many of the symptoms are similar to those of other conditions such as asthma. If heart failure is suspected, a number of tests (such as electrocardiogram, chest x-ray and various blood tests) are recommended. If heart failure is not ruled out, echocardiography is recommended to confirm and identify the cause.

Electrocardiogram (ECG) was recorded in 34.5 per cent of cases (n=2173). Echocardiography results were recorded in 32 per cent (n=2014) of cases, of which 60.5 per cent were reported as having moderate or severe LV Systolic Dysfunction (for example, a LVEF <40 per cent).

Care and treatment: access to drug therapies

People with heart failure due to left ventricular systolic dysfunction need to receive optimal doses of certain drugs to improve symptoms, enhance life expectancy and help reduce hospital admission. Key drugs include ACE inhibitors, Beta-blockers, Angiotensin II receptor antagonists (ARB), loop diuretics and selective aldosterone receptor antagonists (SARA). Prescribing these drugs in the right doses is a key element of the NSF and NICE guidelines. Figure 5 summaries prescribing rates for each of the therapies. The following results are for drugs on discharge.

- **Angiotensin converting enzyme (ACE) inhibitors**
Most people with heart failure are prescribed an ACE inhibitor. ACE inhibitors have a protective effect on the heart and when added to diuretics, improve symptoms, exercise tolerance, and survival and reduce hospital admission rates in chronic heart failure.

Information about prescribing of ACE inhibitors was recorded in 79.5 per cent of cases (n=5008). Of these, nearly half of patients (46.1 per cent) were prescribed ACE inhibitors. Prescribing rates on readmission were similar with 43.7 per cent of patients prescribed ACE inhibitors.

- **Beta-adrenoreceptor blocking drugs**

Beta-adrenoreceptor blocking drugs (beta-blockers) work on the heart and blood vessels to reduce blood pressure and the amount of work the heart does. A beta-blocker is usually prescribed in addition to an ACE inhibitor.

Information about prescribing of beta-blockers was recorded in 78.8 per cent of case (n=4965). Of these, over a third of patients (36.4 per cent) were prescribed beta-blockers. Prescribing rates on readmission were slightly higher with 43.7 per cent of patients prescribed beta-blockers.

- **Angiotensin II receptor antagonists (ARB)**

Angiotensin-II receptor antagonists work in a similar way to ACE inhibitors and are used instead of an ACE inhibitor if a patient has problems or side-effects with taking an ACE inhibitor (such as a persistent cough).

Information about prescribing of ARB was recorded in 76.6 per cent of cases (n=4824). Of these, only 9.2 per cent were prescribed ARB. Prescribing rates on readmission were similar with 10.5 per cent of patients prescribed beta-blocker following readmission.

- **Loop Diuretic**

A diuretic is commonly needed to ease fluid retention. Diuretics are taken in addition to an ACE inhibitor and beta-blocker.

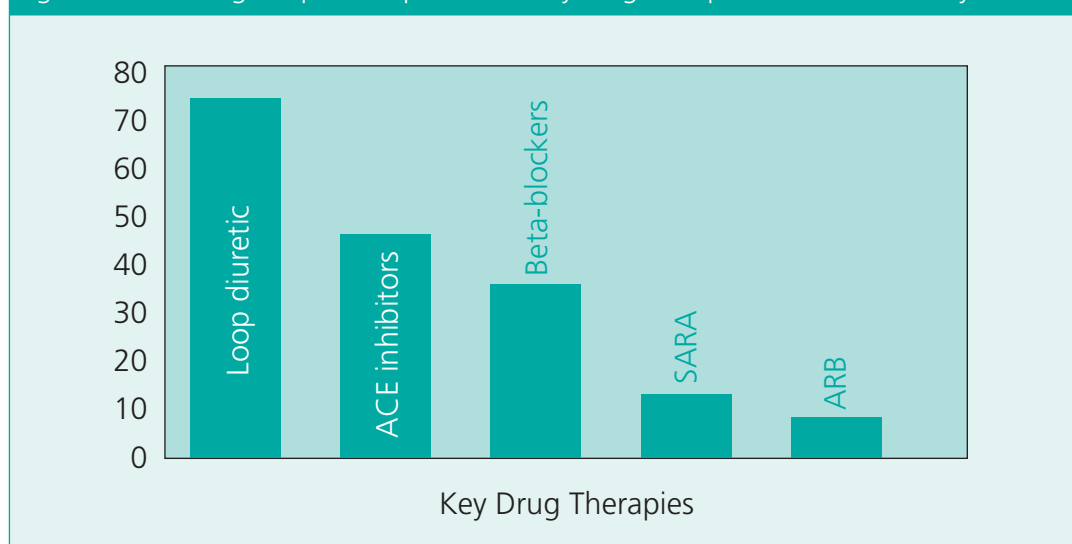
Information about prescribing of loop diuretics was recorded in 83.9 per cent of case (n=5287). Of these, nearly three quarters of patients (73.8 per cent) were prescribed loop diuretics, increasing to 87.2 per cent on readmission.

- **Aldosterone receptor antagonists (SARA)**

The aldosterone antagonist spironolactone has been shown to reduce mortality in patients with severe heart failure.

Information about the prescribing of aldosterone receptor antagonists was recorded in 76.8 per cent of cases (n=4837). Of these cases, only 13.1 per cent were prescribed a SARA, increasing to 22 per cent of patients on readmission. Figure 6 shows prescription of key drug therapies recommended by NICE.

Figure 6: Percentage of patients prescribed key drug therapies recommended by NICE



3.4 Variation in access

Work undertaken by the Healthcare Commission highlighted that many patients admitted to acute hospitals are not managed fully in accordance with evidence-based guidelines. Factors such as access to specialist wards and services and sex of the patient may impact on access to key treatments.

Information on the ward where the patient received the majority of their care was available in 2,103 cases (33.4 per cent of the total cases submitted to the audit).

The majority of patients (61 per cent) were treated in general medicine with just under a third treated on a cardiology ward (31 per cent) and 7.9 per cent treated on other wards.

Figure 7: The ward where heart failure patients receive the majority of care by age group

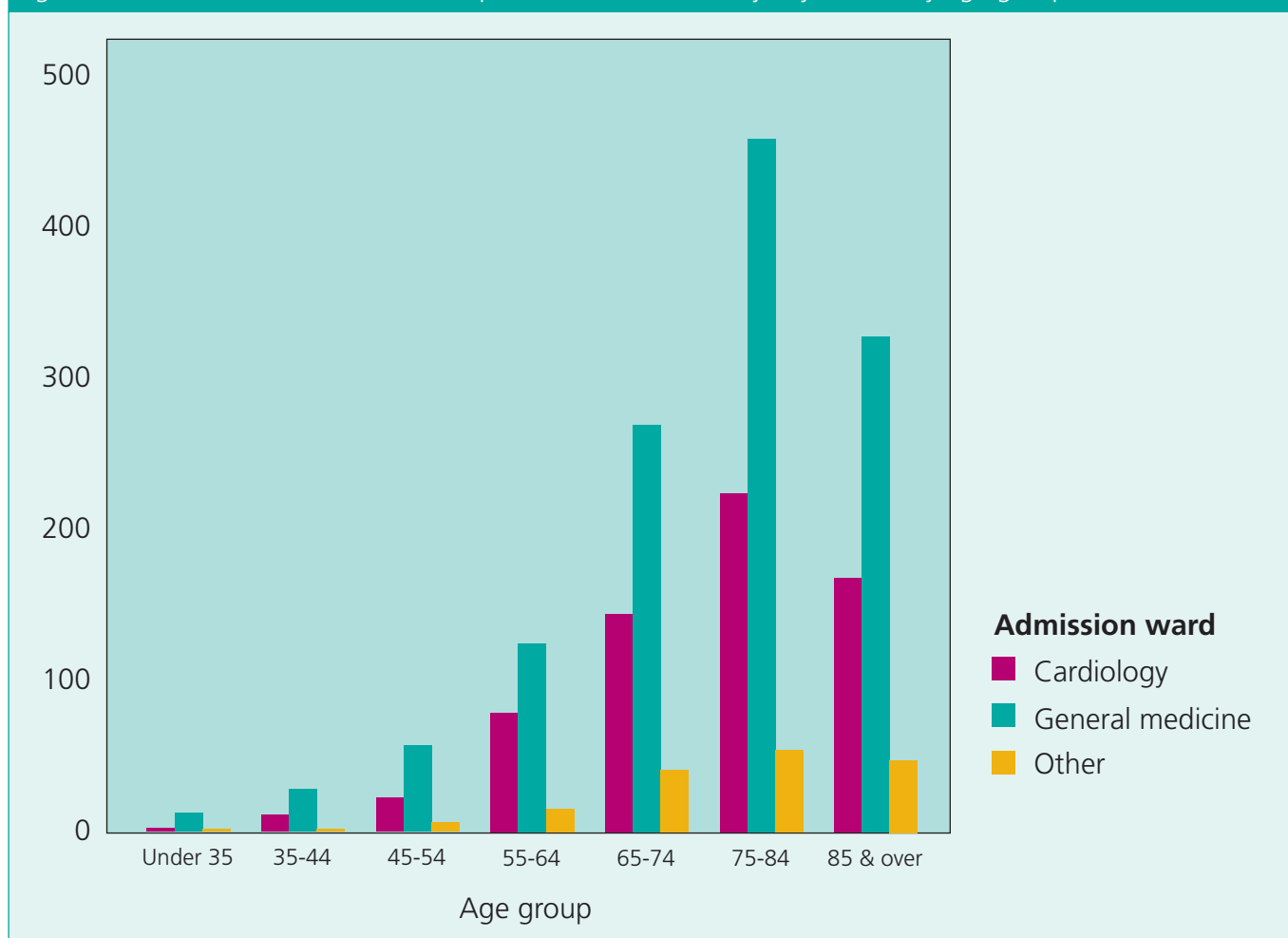


Figure 7 shows admission wards across the different age groups'.

Figure 8 Percentage of in patients with heart failure prescribed key drug therapies within different wards.

| Percentage of patients prescribed: | | | | | |
|------------------------------------|----------------|----------------|---------------|-----------------|-----------------|
| Type of ward | ACE prescribed | ARB prescribed | BB prescribed | Loop prescribed | SARA prescribed |
| Cardiology | 60.5 | 17.4 | 61.6 | 94.9 | 34.6 |
| General Medical | 46.2 | 12.9 | 27.5 | 95.4 | 17.5 |
| Other | 62.2 | 17.6 | 44.7 | 97.9 | 25.2 |

Figure 8 shows the percentage of patients with heart failure who were cared for within each type of ward and prescribed the key drug therapies. Whilst loop diuretics were universally prescribed on each type of ward, patients admitted to cardiology are more

likely to be prescribed SARA. Patients who received the majority of their care on general medical wards were less likely to be prescribed ACE inhibitors and beta-blockers.

There appears to be little difference between the prescribing rates for men and women or between different age groups (Figures 9 and 10).

Figure 9 Variation in access to key treatments by age and sex

| Percentage of patients prescribed: | | | | | |
|------------------------------------|----------------|----------------|---------------|-----------------|-----------------|
| Sex | ACE prescribed | ARB prescribed | BB prescribed | Loop prescribed | SARA prescribed |
| Male | 45.5 | 11.2 | 36.3 | 87.3 | 16.2 |
| Female | 46.8 | 12.9 | 36.5 | 88.6 | 18.1 |

Figure 10 The proportion of patients prescribed key treatments within each age group

| Percentage of male and female patients prescribed: | | | | | |
|--|----------------|----------------|---------------|-----------------|-----------------|
| Age Group | ACE prescribed | ARB prescribed | BB prescribed | Loop prescribed | SARA prescribed |
| Under 35 | 43.3 | 19.2 | 31.3 | 87.9 | 17.2 |
| 35-44 | 47.4 | 11.0 | 40.2 | 88.9 | 16.7 |
| 45-54 | 46.0 | 11.3 | 35.1 | 89.0 | 18.7 |
| 55-64 | 47.0 | 11.0 | 38.2 | 87.5 | 16.1 |
| 65-74 | 45.9 | 11.7 | 40.1 | 88.2 | 14.3 |
| 75-84 | 46.3 | 11.1 | 35.1 | 87.3 | 17.6 |
| 85 and over | 45.5 | 14.0 | 34.4 | 88.4 | 18.7 |
| Total percentage | 46 | 12.0 | 36.4 | 87.9 | 17.0 |

Patients not prescribed any of the key drug therapies

Whilst the majority of patients received at least one of the key drug therapies, 4 per cent of patients (n=215) did not receive any of the five key therapies. The majority of these patients were aged between 75 and 84 years old and treated within general medicine.

3.5 Implementation issues

Good progress has been made in relation to registration. The next phase of the audit will focus on improving data completeness by recruiting all Trusts and increasing the number of records submitted by each Trust. A qualitative review of the first six months of the audit highlighted a number of factors likely to impact on data completeness. These are summarised below and will inform our approach to the next phase of the audit.

- **Scope of the audit**

To ensure the audit captures the quality of care for all patients with heart failure and not just those accessing specialist services, the audit aimed to collect data on all patients with heart failure using the ICD-10 codes in any diagnostic position (see section 2.7).

On average it takes 15 minutes for users to input data for each patient. Whilst this is a relatively quick process, the entire process becomes burdensome with high volume conditions such as heart failure. Users felt that the current scope of the audit was unmanageable without additional local audit support for data entry. This is supported by analysis of Hospital Episode Statistics (HES) discharge data for 2006-2007. HES is the national statistical data warehouse for England of the care provided by NHS hospitals. HES data contains information

about diagnosis and within the audit is used to establish case ascertainment.

Figure 11 shows the average expected resource requirements at a Trust level. The original audit would have required an average of 47 hours per month. An optimum balance needs to be made between collecting data that effectively measures the quality of care balanced with minimising the burden on healthcare resources. Refining the

scope to all patients with heart failure discharge code in the primary position prioritises the more resource intensive cases. This significantly reduces the target group from 384, 543 to 105,000 cases which equates to a reduction of 72 per cent of cases. This reduces the resource requirements to an average of 13 hours a month.

Figure 11 A breakdown of the average (mean) number of heart failure cases per Trust and expected time required for direct data input each month.

| | England total cases on HES discharge data for 2006-07 | Cases in England (mean) | Cases per Trust per month* | Time per month in minutes* | Time per month in hours* |
|------------------|--|-------------------------|----------------------------|----------------------------|--------------------------|
| Any position | All codes | 384543 | 2275 | 189.6 | 47 hours |
| Primary position | All codes | 105000 | 648 | 54.0 | 13 hours |
| | I110: hypertensive heart disease with (congestive) heart failure | 686 | 16 | 1.3 | <1 hour |
| | I255 Ischemic cardiomyopathy | 500 | 15 | 1.2 | <1 hour |
| | I420 Dilated cardiomyopathy | 4358 | 31 | 2.6 | <1 hour |
| | I429 Cardiomyopathy | 653 | 11 | 0.9 | <1 hour |
| | I500 Congestive heart failure | 59043 | 376 | 31.3 | 8 hours |
| | I501 Left ventricular failure | 30996 | 198 | 16.5 | 4 hours |
| | I509 Heart failure unspecified | 8130 | 53 | 4.4 | 1 hour |

• Coding

Discharge codes can be used to identify records for data input and to measure the proportion of cases submitted to the audit.

When reviewing patient notes, users have found that some patients have been incorrectly coded as having heart failure, or that the admission was unrelated to heart failure. Reducing the scope of the audit to discharge codes in a primary position would reduce the scale of the task and filter the majority of inappropriate cases (for example, patients with heart failure admitted with a broken leg). However, the issue of accuracy will remain without implementing local

changes that improve the accuracy of diagnosis and coding.

• Supporting local implementation

Feedback from users highlighted the importance of organisational support in improving data completeness:

- The majority of local audit leads do not have additional administrative support to collection and data input. Whilst clinical audit is an essential component of high quality health care, heart failure is a high volume condition (see above) and inputting data for all cases would have

a significant impact on clinical time without additional administrative support.

- The responsibility for auditing the care of heart failure patients falls within the remit of different healthcare professionals. To illustrate, The Healthcare Commission survey of heart failure patients found that most patients (74 per cent) were admitted under the care of the on-call medical team, with only 13 per cent coming under the direct care of a cardiologist or the lead heart failure clinician, and 9 per cent of patients admitted directly to the elderly care physicians. Access to specialist heart failure teams was also shown to be extremely variable with averages for trusts varying from 0 per cent to 74 per cent.

The National Heart Failure Audit focuses on the quality of care of all patients with heart failure not just those admitted to specific wards. It therefore requires an integrated and coordinated approach to ensure that the quality of care of all patients with heart failure is captured. In practice, responsibility for collecting national clinical audit tends to be placed with an individual such as heart failure specialist nurses or clinical audit staff. Without additional resources and organisational support, it is difficult for individuals to audit the quality of care that spans various directorates and goes beyond their remit.

- Heart failure is one of a number of national heart disease audits. Within a context of competing priorities, hospitals are reported to prioritise audits linked to incentives such as performance indicators.
- Implementing and extending the audit across all pathways may be challenging without advice and support on how to approach implementation. Whilst technical support and guidance was provided, the following resources would further support implementation and improve the data collection process:
 - access to more detailed user information including working examples of the audit process
 - access to training either through workshops or through existing regional meetings such as cardiac network meetings
 - rapid access to a helpdesk for clinical and audit advice.

- **The heart failure audit tool**

Heart failure is a high volume condition and it is crucial to keep the core data set to a minimum to reduce the impact of data collection on local resources. The dataset was designed giving priority to key requirements of the National Standards Framework (NSF) and audit criteria provided by NICE. The dataset included a small core dataset of 26 fields that records the key investigations and interventions. This data is used for the national audit. Users found the database user friendly once they have entered a couple of records. Users felt that the existing mandatory fields captured the key NSF and NICE audit requirements but suggested the following changes:

- additional options within the ECG and Echo options. The current options focus on results and do not capture information about access to tests.
- to capture information across the episode of care including onward referral
- drug treatments and the need for an additional option to reflect reasons for non-prescribing such as contraindications.

In addition to the core items, users requested a database that was clinically functional and had the flexibility to collect more information as required to meet local needs. The final database consists of 231 items (26 core and 205 optional items) although hospitals are only required to submit the 26 core data items. Users welcomed the dual functionality but highlighted the importance of making the core requirements more prominent as potential users may misperceive the level of data collection required. This in turn may impact on recruitment and data completeness. In response, the database and accompanying user information has been amended to highlight the minimum requirements.

The National Heart Failure Audit aims to produce national comparative data that can be used to assess service quality, variations in care and impact on patient outcomes. Early findings have provided important information about the audit and its role as an effective and efficient mechanism for collecting national data. Findings have also highlighted some of the challenges that need to be addressed to support local data collection.

4 Discussion

Clinical findings

Early findings relating to demographics and variation in access to specialist wards and clinical treatments reflect findings described in existing research and the work undertaken by the Healthcare Commission. This demonstrates that the National Heart Failure Audit is an effective mechanism for collecting national data. As data completeness improves it will be possible to make meaningful comparisons in the quality of care provided by different hospitals and accessed by different groups of patients. Information can be used by a wide range of stakeholders to inform service improvement, performance monitoring and commissioning.

The proportion of data reported as unknown data was greater within the diagnostic tests than in clinical treatments. Feedback from users indicates this is more likely to be a reflection of local recording practices rather than poor access to key diagnostic tests. For example, some hospitals do not include information about ECG and ECHO results in case notes, only that the patients received the test. The dataset has been revised to allow users to record access to tests where results are not available. Likewise, there may be valid reasons why a patient is not prescribed a key drug therapy, such as contraindication. The revised version of the dataset will provide more response options to provide a more accurate assessment of quality and access issues.

The heart failure database provides users with immediate feedback on data quality. Data completeness is expected to improve as case ascertainment increases and users are able to compare local performance with the national average and the national target.

Improving participation and data completeness

As of March 2008, 71 per cent of NHS trusts had registered with the audit. This is good progress and local champions have played an important role in recruitment. National incentives have also played a role. To illustrate, the Healthcare Commission used evidence of registration as part of the cross-referencing component of the Annual Health Check for 2007-2008. In the lead up to the March 2008 deadline, participation doubled from 35 per cent to 71 per cent between January and March. In relation to data completeness, there is scope for improvement as less than 37 Trusts are submitting more than 10 records. The total number of submitted cases represents only 6 per cent of patients discharged from hospital with heart failure.

The more the data is used by the people who have influence and need to use it, the better the chances of improving the data. Audit findings can be used by a wide range of stakeholders. Feedback from users highlighted a number of local challenges to improving data completeness. The next phase of the audit will look at ways of addressing these challenges via the following mechanisms:

- Reducing the scope of the audit:** Locally, additional administrative support for data entry is rare. An optimum balance needs to be made between collecting data that effectively measures the quality of care whilst minimising the burden on clinical time. In response, the scope of the audit has been refined giving priority to the more resource intensive cases. From April 2008, the audit will focus on cases of heart failure coded in the primary discharge position only. This reduces the target group from 392,874 cases to 107,242, which equates to a reduction of 72 per cent of cases. This reduces the anticipated impact on resources from an average of 47 to 13 hours per month. However, resource implications vary across the country depending on local prevalence. In some areas participation in the National Heart Failure Audit is still likely to require over 40 hours a month.

- Performance Indicators:** The Healthcare Commission report 'Pushing the Boundaries' encourages participation in the national audit and predicts that indicators from the audit may be used to provide additional assurance that the standards are being met. Heart disease audits are increasingly being used to assess performance. For the 2008-2009 assessment year, the Healthcare Commission will be assessing trust participation in the following audits: adult cardiac surgery audit, cardiac rhythm management audit and congenital heart disease audit. Future assessment years may see trusts being assessed against the completeness of their data within these audits. There will also be scope for other new or existing heart disease audits to be included within future assessments. The Healthcare Commission have consulted with the British Society for Heart Failure and indicators will be informed by data collected via the national audit.
- Commissioning:** The audit can also play an important role in the commissioning process and securing funding for services. The Healthcare Commission identified considerable variation in the prevalence of heart failure and that patients are not receiving optimal levels of care. The Commissioning Framework for Health and well being⁽¹³⁾ emphasises the move towards commissioning for quality and outcomes rather than volume. Participation in the National Heart Failure Audit will provide demonstrable evidence that local hospitals meet the NICE quality requirements and that care and treatment has a positive impact on patient outcomes. In some clinical areas, participation in national audit is already a key condition within the specialist commissioning arrangements.
- Accuracy of Coding:** The issue of accuracy makes it difficult to establish an accurate figure of the number of patients discharged with a diagnosis of heart failure. This makes case ascertainment difficult.

Given the significant impact on patient outcomes, NHS resources and scope for improvement, the inclusion of heart failure is likely. This would have a positive impact on data completeness.

- Financial Incentives:** Advancing Quality is an innovative programme designed to improve hospital care. The programme is being piloted in seven hospitals and the one ambulance service in the North West and will be rolled out across the region in 2009. The programme financially rewards hospitals for providing quality care to their patients. The programme, which will involve collecting and analysing data to measure quality standards, is designed to reward hospitals for providing quality care to their patients. The aim is to prove that by improving quality it is possible to improve results and save money. Re-admission rates will reduce, and complications in procedures and the time patients spend in hospital will be reduced. Hospital costs will reduce significantly and hospitals can reinvest their savings in improving facilities and care. The programme has generated a lot of interest from health services across the country so there is a good chance that the programme will be implemented on other areas. Further information can be accessed via the following link: www.advancingqualitynw.nhs.uk.

Much can be learned from the early experience of the Myocardial Infarction Audit. Coding was an initially an issue and there was often a difference between HES and hospital data about the number of patients treated for AMI. Case ascertainment was used as a performance indicator so there was an incentive to improve accuracy. In response, hospitals introduced the 'blue stamp' system whereby notes would be stamped with a unique marker to confirm that diagnosis was based on gold standard diagnostic tests.

Applying the same approach to heart failure would provide stakeholders with more accurate data. This in turn can be used to inform a wide range of activities including service development, demand management and commissioning. This will also support the future introduction of heart failure related performance indicators, as discharge data will be used as a denominator to calculate data completeness.

As part of the reporting process, users will receive feedback on case ascertainment. The NHS IC will use HES primary discharge data to monitor the proportion of missing cases. The proportion of missing cases in the primary diagnostic position will be used to monitor data completeness for the audit.

The proportion of missing cases in any diagnostic position will also be monitored. Findings will be used to monitor the proportion of cases submitted to the audit and to evaluate the scope of the audit on an ongoing basis.

- **National resources:** To support local users, The Information Centre has updated the user guidance and set up a dedicated heart failure helpdesk to address non-technical issues. Queries can be sent to the following email address: h-f@ic.nhs.uk. The NHS Information Centre is also in the process of working with partner organisations to identify ways to support local implementation of the National Heart Failure Audit.

5 Recommendations

Since the launch of the National Heart Failure Audit, a significant proportion of NHS Trusts have registered with the audit. There is still more to be done and attention needs to focus on recruiting the remaining NHS trusts and ensuring Trusts submit all relevant cases on a regular basis. Developing policies and tools to support implementation is also essential. The role of the NHS Information Centre is to be the recognised source of comparative data to support improvement in health and social care. Organisations such as Cardiac Networks, The Heart Improvement Programme and The Healthcare Commission also have a remit to support and promote improvement in the quality of heart failure services.

The NHS Information Centre has identified a number of key areas for attention. These are for:

- all secondary care service providers should contribute to the National Heart Failure Audit to evaluate whether all patients with a primary diagnosis of heart failure have access to recommended medication in line with the NICE guidelines.
- commissioners to use evidence of participation in the National Heart Failure Audit within the effective commissioning process and to ensure that all patients with a confirmed diagnosis of heart failure have access to evidence based treatment as recommended by NICE.
- The Healthcare Commission to include heart failure related performance indicators within the Annual Health Check.
- The NHS Information Centre will redefine the scope of the audit to minimise the impact of the audit on local resources.
- The NHS Information Centre to work with partner organisations including the Heart Improvement Programme and Cardiac Networks, to identify ways of supporting local implementation of the National Heart Failure Audit.
- The NHS Information Centre, in discussion with partner organisations including the Heart Improvement Programme and Cardiac Networks, to identify ways of using audit findings to support the local improvements of heart failure services.

6 Conclusion

Quality information is at the heart of improving services. This is particularly relevant for the improvement of heart failure services. Whilst significant progress has been made in recent years, the lack of national data makes it difficult to assess the quality of services across the country.

The National Heart Failure Audit is a continuous audit. With improved participation and data completeness, it has the potential to provide stakeholders with national comparative data. This information can be used to drive improvement and reduce variation in access to quality care and treatment.

Findings can be used by hospitals to assess whether they meet the requirements of the CHD NSF and NICE guidelines and safely compare themselves nationally against other units. Information from the audit can also be used to inform patient choice, performance monitoring and effective commissioning.

All stakeholders, including the public have a right to expect open reporting. More important though is the expectation that audit will make a difference. All stakeholders have a responsibility to ensure findings are used to drive improvement and make a positive difference to the experience of patients living with heart failure.

7 References

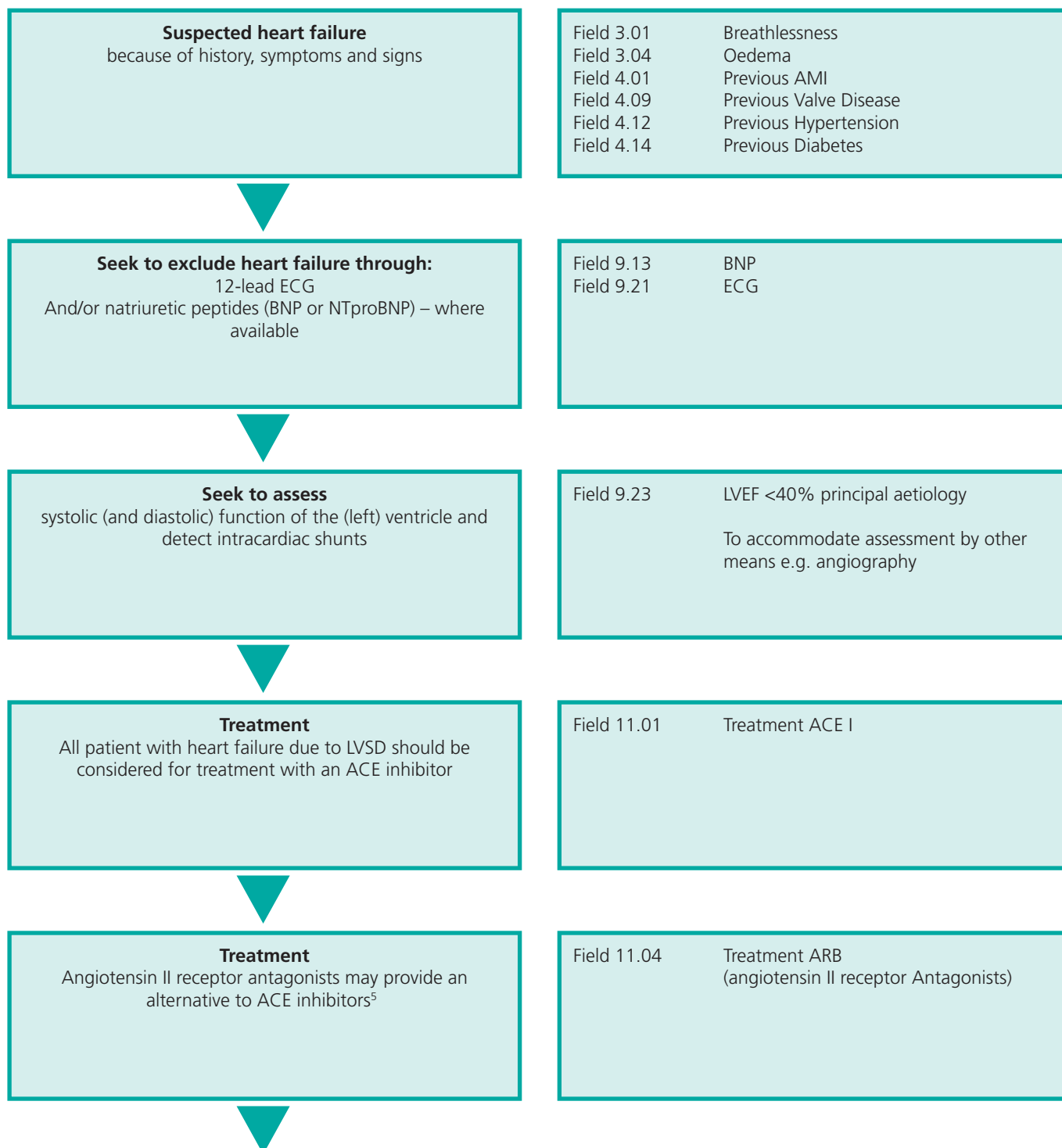
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8 Appendices

Appendix 1

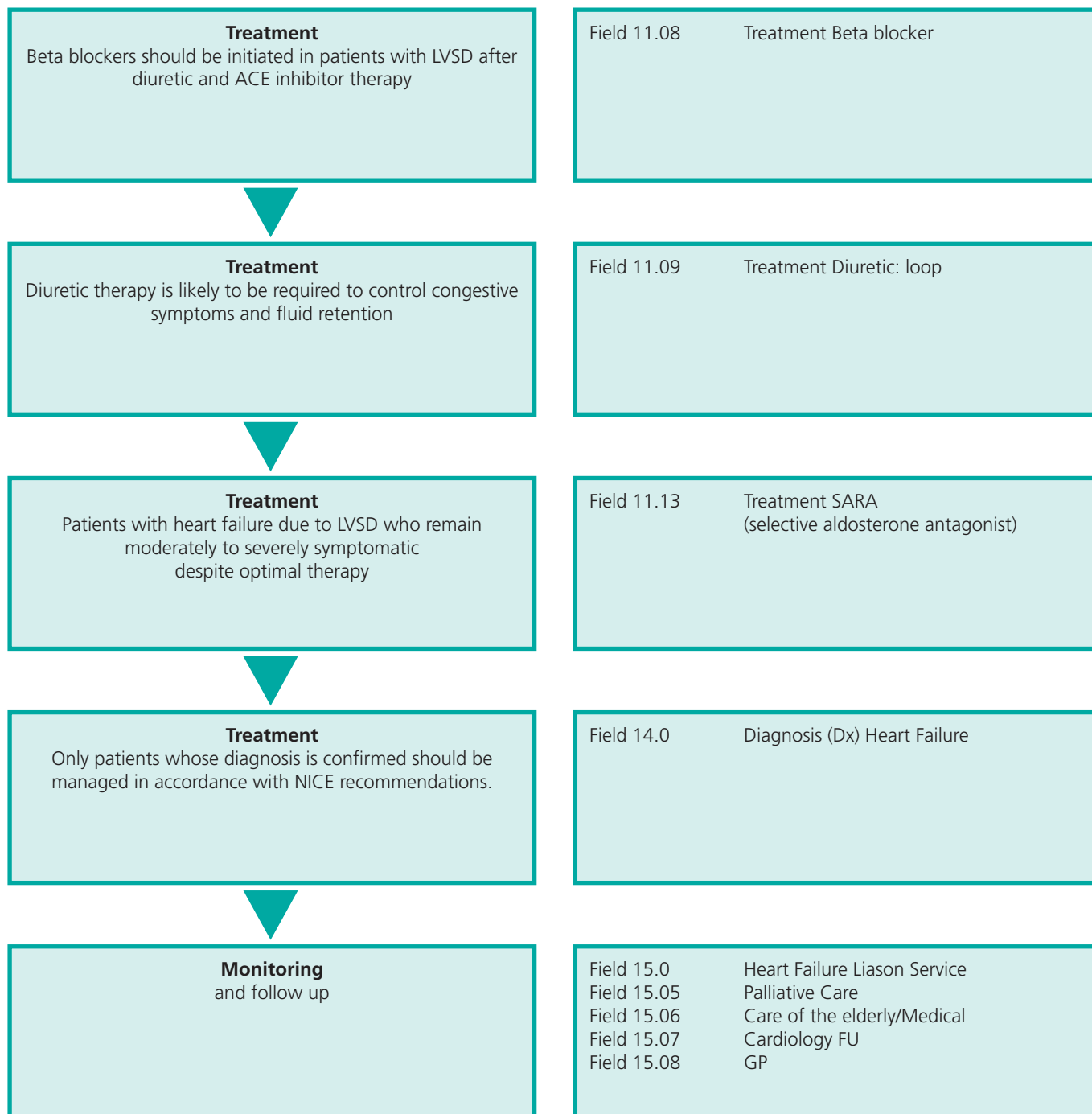
Algorithm summarising clinical core data items mapped to the key NICE⁴ heart failure recommendations. A copy of the dataset is available via The Information Centre website (www.ic.nhs.uk/heartdiseaseaudits).

1) Measuring the quality of care: Diagnosis, treatment and follow up

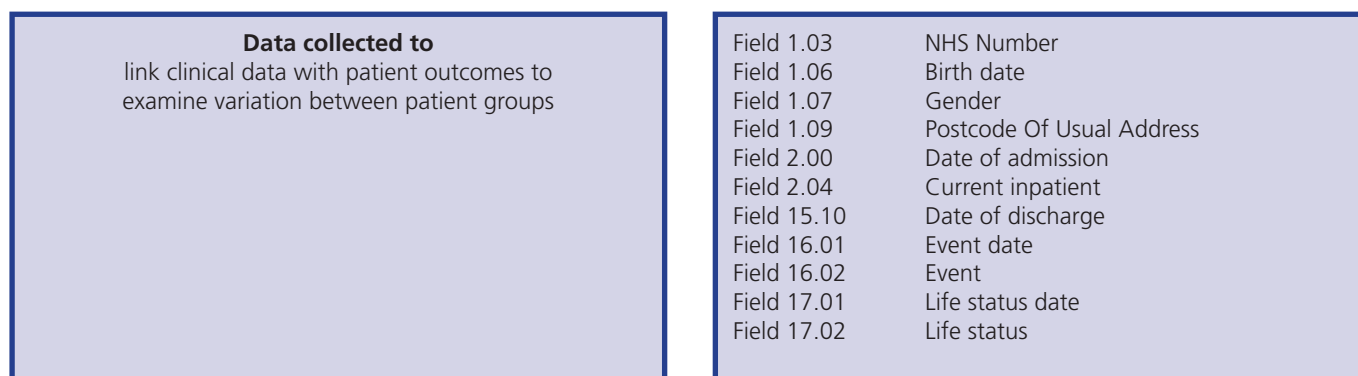


4 Page 5 <http://www.nice.org.uk/nicemedia/pdf/CG5NICEguideline.pdf>

5 Angiotensin II receptor antagonists have been licensed since publication of the Chronic Heart failure guidelines (2003).



2) Measuring patient outcomes and examining variation



Appendix 2

Participating and non participating NHS Trusts and hospitals as of May 2008.

Key

| | |
|--|---|
| | Participating hospitals submitting more than 10 records and on a regular basis |
| | Participating hospitals registered but submitting less than 10 records since registration |
| | Hospitals not registered with the National Heart Failure Audit |

| NHS Trust | Hospital | Registered | Submitting records |
|--|--------------------------------------|------------|--------------------|
| BEDFORD HOSPITAL NHS TRUST HOSPITAL | Bedford Hospital | ✓ | Yes |
| GWENT HEALTHCARE NHS TRUST | NENevill Hall Hospital | ✓ | Yes |
| HILLINGDON HOSPITAL NHS TRUST | Hillingdon Hospital | ✓ | Yes |
| WEST MIDDLESEX UNIVERSITY HOSPITAL NHS TRUST | West Middlesex University Hospital | ✓ | Yes |
| PETERBOROUGH AND STAMFORD HOSPITALS NHS FOUNDATION TRUST | Peterborough District Hospital | ✓ | Yes |
| NORTH WEST LONDON HOSPITALS NHS TRUST | Northwick Park Hospital | ✓ | Yes |
| ST HELENS AND KNOWSLEY HOSPITALS NHS TRUST | Whiston Hospital | ✓ | Yes |
| SOUTH TEES HOSPITALS NHS TRUST | James Cook University Hospital | ✓ | Yes |
| SOUTH WARWICKSHIRE GENERAL HOSPITALS NHS TRUST | Warwick Hospital | ✓ | Yes |
| EAST SUSSEX HOSPITALS NHS TRUST | Eastbourne District General Hospital | ✓ | Yes |
| GUERNSEY HEALTH AND SOCIAL SERVICES DEPARTMENT | Princess Elizabeth Hospital | ✓ | Yes |
| NORTH GLAMORGAN NHS TRUST | Prince Charles Hospital | ✓ | Yes |
| SALFORD ROYAL HOSPITALS NHS TRUST | Hope Hospital | ✓ | Yes |
| OXFORD RADCLIFFE HOSPITALS NHS TRUST | John Radcliffe Hospital | ✓ | Yes |
| WORTHING AND SOUTHLANDS HOSPITALS NHS TRUST | Worthing Hospital | ✓ | Yes |
| WORCESTERSHIRE ACUTE HOSPITALS NHS TRUST | Worcester Royal Hospital | ✓ | Yes |
| CALDERDALE AND HUDDERSFIELD NHS TRUST | Calderdale Royal Hospital | ✓ | Yes |
| GLOUCESTERSHIRE HOSPITALS NHS FOUNDATION TRUST | Cheltenham General Hospital | ✓ | Yes |
| NORTH TEES AND HARTLEPOOL NHS TRUST | University Hospital of Hartlepool | ✓ | Yes |
| PORTSMOUTH HOSPITALS NHS TRUST | Queen Alexandra Hospital | ✓ | Yes |
| SHERWOOD FOREST HOSPITALS NHS TRUST | Newark Hospital | ✓ | Yes |
| NORTH TEES AND HARTLEPOOL NHS TRUST | University Hospital of North Tees | ✓ | Yes |
| GLOUCESTERSHIRE HOSPITALS NHS FOUNDATION TRUST | Gloucestershire Royal Hospital | ✓ | Yes |
| UNIVERSITY HOSPITALS COVENTRY AND WARWICKSHIRE NHS TRUST | Hospital of St Cross | ✓ | Yes |
| HEART OF ENGLAND NHS FOUNDATION TRUST | Solihul General Hospital | ✓ | Yes |

| NHS Trust | Hospital | Registered | Submitting records |
|--|--|------------|--------------------|
| MILTON KEYNES GENERAL HOSPITAL NHS TRUST | Milton Keynes General Hospital | ✓ | Yes |
| AINTREE HOSPITALS NHS TRUST | University Hospital Aintree | ✓ | Yes |
| LUTON AND DUNSTABLE HOSPITAL NHS TRUST | Luton & Dunstable Hospital | ✓ | Yes |
| HEART OF ENGLAND NHS FOUNDATION TRUST | Birmingham Heartlands Hospital | ✓ | Yes |
| SALISBURY FOUNDATION NHS TRUST | Salisbury District Hospital | ✓ | Yes |
| HARROGATE AND DISTRICT NHS FOUNDATION TRUST | Harrogate District Hospital | ✓ | Yes |
| ROYAL WEST SUSSEX NHS TRUST | St Richard's Hospital | ✓ | Yes |
| UNIVERSITY HOSPITALS COVENTRY AND WARWICKSHIRE NHS TRUST | Walsgrave Hospital | ✓ | Yes |
| SOUTH DEVON HEALTH CARE NHS TRUST | Torbay Hospital | ✓ | Yes |
| CALDERDALE AND HUDDERSFIELD NHS TRUST | Northampton General Hospital | ✓ | Yes |
| ROYAL BROMPTON AND HAREFIELD NHS TRUST | Royal Brompton Hospital | ✓ | Yes |
| SHERWOOD FOREST HOSPITALS NHS TRUST | King's Mill Hospital | ✓ | Yes |
| ROYAL UNITED HOSPITAL BATH NHS TRUST | Royal United Hospital Bath | ✓ | Yes |
| NORTHERN LINCOLNSHIRE AND GOOLE HOSPITALS NHS TRUST | Scunthorpe General Hospital | ✓ | Yes |
| WALSALL HOSPITALS NHS TRUST | Manor Hospital | ✓ | Yes |
| BRIGHTON AND SUSSEX UNIVERSITY HOSPITALS NHS TRUST | Princess Royal Hospital (Haywards Heath) | ✓ | Yes |
| SOUTH TYNESIDE NHS FOUNDATION TRUST | South Tyneside District Hospital | ✓ | Yes |
| SWINDON AND MARLBOROUGH NHS TRUST | The Great Western Hospital | ✓ | Yes |
| Hull and East Yorkshire Hospitals NHS Trust | Castle Hill | ✓ | Yes |
| HULL AND EAST YORKSHIRE HOSPITALS NHS TRUST | Hull Royal Infirmary | ✓ | Yes |
| BRADFORD TEACHING HOSPITALS NHS FOUNDATION TRUST | Bradford Royal Infirmary | ✓ | Yes |
| CEREDIGION & MID WALES NHS TRUST | Bronglais General Hospital | ✓ | Yes |
| EAST SUSSEX HOSPITALS NHS TRUST | Conquest Hospital | ✓ | Yes |
| NORTH CUMBRIA ACUTE HOSPITALS NHS TRUST | West Cumberland Hospital | ✓ | Yes |
| SOUTHAMPTON UNIVERSITY HOSPITALS NHS TRUST | Southampton General Hospital | ✓ | Yes |
| CITY HOSPITALS SUNDERLAND NHS FOUNDATION TRUST | Sunderland Royal Hospital | ✓ | Yes |
| ESSEX RIVERS HEALTHCARE NHS TRUST | Colchester General Hospital | ✓ | Yes |
| ROYAL SURREY COUNTY HOSPITAL NHS TRUST | Royal Surrey County Hospital | ✓ | Yes |
| UNIVERSITY HOSPITAL OF NORTH STAFFORDSHIRE NHS TRUST | University Hospital of North Staffordshire | ✓ | Yes |
| NEWHAM UNIVERSITY HOSPITAL NHS TRUST | Newham General Hospital | ✓ | Yes |
| NORTH CHESHIRE HOSPITALS NHS TRUST | Warrington District General Hospital | ✓ | Yes |

| NHS Trust | Hospital | Registered | Submitting records |
|---|--|------------|--------------------|
| NORTHUMBERLAND, TYNE AND WEAR NHS TRUST | Wansbeck General Hospital | ✓ | Yes |
| BUCKINGHAMSHIRE HOSPITALS NHS TRUST | Wycombe General Hospital | ✓ | Yes |
| UNIVERSITY HOSPITAL BIRMINGHAM FOUNDATION NHS TRUST | University Hospital Queen's Medical Centre | ✓ | Yes |
| HINCHINGBROOKE HEALTH CARE NHS TRUST | Hinchingbrooke Hospital | ✓ | Yes |
| GUY'S & ST THOMAS' NHS FOUNDATION TRUST | St Thomas Hospital | ✓ | Yes |
| THE MID CHESHIRE HOSPITALS NHS TRUST | Leighton Hospital | ✓ | Yes |
| UNIVERSITY COLLEGE LONDON HOSPITALS NHS FOUNDATION TRUST | University College Hospital | ✓ | Yes |
| Barts and the London NHS Trust | Barts and the London Chest | ✓ | No |
| BASILDON AND THURROCK UNIVERSITY HOSPITALS NHS FOUNDATION TRUST | Basildon Hospital | ✓ | No |
| BRIGHTON AND SUSSEX UNIVERSITY HOSPITALS NHS TRUST | Royal Sussex County Hospital | ✓ | No |
| CALDERDALE AND HUDDERSFIELD NHS TRUST | Huddersfield Royal Infirmary | ✓ | No |
| CARDIFF AND VALE NHS TRUST | University Hospital of Wales | ✓ | No |
| CONWY AND DENBIGHSHIRE NHS TRUST | Glan Clwyd DGH Trust | ✓ | No |
| COUNTESS OF CHESTER HOSPITAL NHS FOUNDATION TRUST | Royal Liverpool University Hospital | ✓ | No |
| EALING HOSPITAL NHS TRUST | Ealing Hospital | ✓ | No |
| EPSOM AND ST HELIER UNIVERSITY HOSPITALS NHS TRUST | Epsom General Hospital | ✓ | No |
| EPSOM AND ST HELIER UNIVERSITY HOSPITALS NHS TRUST | St Helier Hospital | ✓ | No |
| FRIMLEY PARK HOSPITAL NHS FOUNDATION TRUST | Frimley Park Hospital | ✓ | No |
| HEART OF ENGLAND NHS FOUNDATION TRUST | Selly Oak Hospital | ✓ | No |
| HEREFORD HOSPITALS NHS TRUST | County Hospital Hereford | ✓ | No |
| IPSWICH HOSPITAL NHS TRUST | The Ipswich Hospital | ✓ | No |
| ISLE OF MAN HEALTH SERVICES | Noble's Hospital | ✓ | No |
| LEEDS TEACHING HOSPITALS NHS TRUST | Leeds General Infirmary | ✓ | No |
| MAIDSTONE AND TUNBRIDGE WELLS NHS TRUST | Kent and Sussex Hospital | ✓ | No |
| MID YORKSHIRE HOSPITALS NHS TRUST | Pontefract General Infirmary | ✓ | No |
| NORTH HAMPSHIRE HOSPITALS NHS TRUST | North Hampshire Hospital | ✓ | No |
| NORTH WEST LONDON HOSPITALS NHS TRUST | Central Middlesex Hospital | ✓ | No |
| NORTHERN DEVON HEALTHCARE NHS TRUST | North Devon District Hospital | ✓ | No |
| NORTHUMBERLAND, TYNE AND WEAR NHS TRUST | Hexham General Hospital | ✓ | No |
| NORTHUMBRIA HEALTH CARE NHS TRUST | North Tyneside General Hospital | ✓ | No |
| QUEEN ELIZABETH HOSPITAL NHS TRUST | Queen Elizabeth Hospital (Woolwich) | ✓ | No |
| ROYAL BERKSHIRE AND BATTLE HOSPITALS NHS TRUST | Royal Berkshire Hospital | ✓ | No |
| ROYAL BOURNEMOUTH AND CHRISTCHURCH HOSPITALS NHS FOUNDATION TRUST | Royal Bournemouth General Hospital | ✓ | No |
| ROYAL BROMPTON AND HAREFIELD NHS TRUST | Harefield Hospital | ✓ | No |
| ROYAL CORNWALL HOSPITALS NHS TRUST | Royal Cornwall Hospital | ✓ | No |
| ROYAL DEVON AND EXETER NHS FOUNDATION TRUST | Royal Devon & Exeter Hospital | ✓ | No |

| NHS Trust | Hospital | Registered | Submitting records |
|--|--|------------|--------------------|
| ROYAL FREE HAMPSTEAD NHS TRUST | Royal Free Hospital | ✓ | No |
| SANDWELL AND WEST BIRMINGHAM HOSPITALS NHS TRUST | City Hospital | ✓ | No |
| SANDWELL AND WEST BIRMINGHAM HOSPITALS NHS TRUST | Sandwell District Hospital | ✓ | No |
| SCARBOROUGH AND NORTH EAST YORKSHIRE HEALTH CARE NHS TRUST | Bridlington and District Hospital | ✓ | No |
| SCARBOROUGH AND NORTH EAST YORKSHIRE HEALTH CARE NHS TRUST | Scarborough General Hospital | ✓ | No |
| SHEFFIELD TEACHING HOSPITALS NHS FOUNDATION TRUST | Northern General Hospital | ✓ | No |
| SHEFFIELD TEACHING HOSPITALS NHS FOUNDATION TRUST | Royal Hallamshire Hospital | ✓ | No |
| SOUTH MANCHESTER UNIVERSITY HOSPITALS NHS TRUST | Wythenshaw Hospital | ✓ | No |
| SOUTHEND HOSPITAL NHS TRUST | Southend Hospital | ✓ | No |
| SURREY AND SUSSEX HEALTHCARE NHS TRUST | East Surrey Hospital | ✓ | No |
| SWANSEA NHS TRUST | Morrison Hospital | ✓ | No |
| TAMESIDE AND GLOSSOP ACUTE SERVICES NHS TRUST | Tameside General Hospital | ✓ | No |
| THE QUEEN ELIZABETH HOSPITAL KING'S LYNN NHS TRUST | Queen Elizabeth Hospital (King's Lynn) | ✓ | No |
| THE WHITTINGTON HOSPITAL NHS TRUST | Whittington Hospital | ✓ | No |
| UNITED BRISTOL HEALTHCARE NHS TRUST | Bristol Royal Infirmary | ✓ | No |
| University Hospital Birmingham NHS Foundation Trust | Queen Elizabeth Hospital Birmingham | ✓ | No |
| WEST HERTFORDSHIRE HOSPITALS NHS TRUST | Hemel Hempstead General Hospital | ✓ | No |
| WHIPPS CROSS UNIVERSITY HOSPITAL NHS TRUST | Whipps Cross Hospital | ✓ | No |
| AIREDALE NHS TRUST | Airedale General Hospital | ✗ | No |
| ASHFORD AND ST PETER'S HOSPITALS NHS TRUST | St Peter's Hospital | ✗ | No |
| BARKING HAVERING AND REDBRIDGE HOSPITALS NHS TRUST | King George Hospital | ✗ | No |
| BARKING HAVERING AND REDBRIDGE HOSPITALS NHS TRUST | Oldchurch Hospital | ✗ | No |
| BARNET AND CHASE FARM HOSPITALS NHS TRUST | Barnet General Hospital | ✗ | No |
| BARNET AND CHASE FARM HOSPITALS NHS TRUST | Chase Farm Hospital | ✗ | No |
| BARNESLEY HOSPITAL NHS FOUNDATION TRUST | Barnesley District General Hospital | ✗ | No |
| BARTS AND THE LONDON NHS TRUST | Royal London Hospital | ✗ | No |
| BLACKPOOL, FYLDE AND WYRE HOSPITALS NHS TRUST | Victoria Hospital | ✗ | No |
| BOLTON HOSPITALS NHS TRUST | Royal Bolton Hospital | ✗ | No |
| BRO MORGANNWG NHS TRUST | Neath Port Talbot Hospital | ✗ | No |
| BRO MORGANNWG NHS TRUST | Princess of Wales Hospital | ✗ | No |
| BROMLEY HOSPITALS NHS TRUST | Princess Royal University Hospital Bromley | ✗ | No |
| BUCKINGHAMSHIRE HOSPITALS NHS TRUST | Stoke Mandeville Hospital | ✗ | No |

| NHS Trust | Hospital | Registered | Submitting records |
|---|---|------------|--------------------|
| BURTON HOSPITALS NHS TRUST | Queen's Hospital (Burton) | x | No |
| CAMBRIDGE UNIVERSITY HOSPITALS NHS FOUNDATION TRUST | Addenbrookes Hospital | x | No |
| CARDIFF AND VALE NHS TRUST | Llandough Hospital | x | No |
| CARDIOTHORACIC CENTRE - LIVERPOOL NHS TRUST | Cardiothoracic Centre Liverpool | x | No |
| CARMARTHENSHIRE NHS TRUST | Prince Philip Hospital | x | No |
| CARMARTHENSHIRE NHS TRUST | West Wales General | x | No |
| CENTRAL MANCHESTER AND MANCHESTER CHILDREN'S UNIVERSITY HOSPITALS NHS TRUST | Manchester Royal Infirmary | x | No |
| CHELSEA & WESTMINSTER HEALTHCARE NHS TRUST | Chelsea and Westminster Hospital | x | No |
| CHESTERFIELD ROYAL HOSPITAL NHS FOUNDATION TRUST | Chesterfield Royal Hospital | x | No |
| COUNTESS OF CHESTER HOSPITAL NHS FOUNDATION TRUST | Countess of Chester Hospital | x | No |
| COUNTY DURHAM AND DARLINGTON ACUTE HOSPITALS NHS TRUST | Bishop Auckland General Hospital | x | No |
| COUNTY DURHAM AND DARLINGTON ACUTE HOSPITALS NHS TRUST | Darlington Memorial Hospital* | x | No |
| COUNTY DURHAM AND DARLINGTON ACUTE HOSPITALS NHS TRUST | University Hospital of North Durham | x | No |
| DARTFORD AND GRAVESHAM NHS TRUST | Darent Valley Hospital | x | No |
| DERBY HOSPITALS NHS FOUNDATION TRUST | Derby Royal Infirmary | x | No |
| DONCASTER AND BASSETLAW HOSPITALS NHS FOUNDATION TRUST | Bassetlaw District General Hospital | x | No |
| DONCASTER AND BASSETLAW HOSPITALS NHS FOUNDATION TRUST | Doncaster Royal Infirmary | x | No |
| DONCASTER AND BASSETLAW HOSPITALS NHS FOUNDATION TRUST | Montagu Hospital | x | No |
| DUDLEY GROUP OF HOSPITALS NHS TRUST | Russell's Hall Hospital | x | No |
| EAST AND NORTH HERTFORDSHIRE NHS TRUST | Lister Hospital | x | No |
| EAST AND NORTH HERTFORDSHIRE NHS TRUST | Queen Elizabeth II Hospital | x | No |
| EAST CHESHIRE NHS TRUST | Macclesfield District General Hospital | x | No |
| EAST KENT HOSPITALS NHS TRUST | Kent and Canterbury Hospital | x | No |
| EAST KENT HOSPITALS NHS TRUST | Queen Elizabeth the Queen Mother Hospital | x | No |
| EAST KENT HOSPITALS NHS TRUST | William Harvey Hospital | x | No |
| EAST LANCASHIRE HOSPITALS NHS TRUST | Blackburn Royal Infirmary | x | No |
| EAST LANCASHIRE HOSPITALS NHS TRUST | Burnley General Hospital | x | No |
| EAST SOMERSET NHS TRUST | Yeovil District Hospital | x | No |
| GATESHEAD HEALTH NHS FOUNDATION TRUST | Queen Elizabeth Hospital (Gateshead) | x | No |
| GEORGE ELIOT HOSPITAL NHS TRUST | George Elliot Hospital | x | No |
| GOOD HOPE HOSPITAL NHS TRUST | Good Hope General Hospital | x | No |

| NHS Trust | Hospital | Registered | Submitting records |
|--|--|------------|--------------------|
| GWENT HEALTHCARE NHS TRUST | Royal Gwent Hospital | ✘ | No |
| HAMMERSMITH HOSPITALS NHS TRUST | Charing Cross Hospital | ✘ | No |
| HAMMERSMITH HOSPITALS NHS TRUST | Hammersmith Hospital | ✘ | No |
| HAMPSHIRE PCT | Lymington Hospital | ✘ | No |
| HEATHERWOOD AND WEXHAM PARK HOSPITALS NHS TRUST | Heatherwood Hospital | ✘ | No |
| HEATHERWOOD AND WEXHAM PARK HOSPITALS NHS TRUST | Wexham Park Hospital* | ✘ | No |
| HOMERTON UNIVERSITY HOSPITAL NHS FOUNDATION TRUST | Homerton Hospital | ✘ | No |
| ISLE OF WIGHT HEALTHCARE NHS TRUST | St Mary's Hospital Newport | ✘ | No |
| JAMES PAGET HEALTHCARE NHS TRUST | James Paget Hospital | ✘ | No |
| KETTERING GENERAL HOSPITAL NHS TRUST | Kettering General Hospital | ✘ | No |
| KING'S COLLEGE HOSPITAL NHS TRUST | Kings College Hospital | ✘ | No |
| KINGSTON HOSPITAL NHS TRUST | Kingston Hospital | ✘ | No |
| LANCASHIRE TEACHING HOSPITALS NHS FOUNDATION TRUST | Chorley & South Ribble District General Hospital | ✘ | No |
| LANCASHIRE TEACHING HOSPITALS NHS FOUNDATION TRUST | Royal Preston Hospital | ✘ | No |
| LEEDS TEACHING HOSPITALS NHS TRUST | St James University Hospital | ✘ | No |
| MAIDSTONE AND TUNBRIDGE WELLS NHS TRUST | Maidstone General Hospital | ✘ | No |
| MAYDAY HEALTHCARE NHS TRUST | Mayday University Hospital | ✘ | No |
| MEDWAY NHS TRUST | Medway Maritime Hospital | ✘ | No |
| MID ESSEX HOSPITAL SERVICES NHS TRUST | Broomfield Hospital | ✘ | No |
| MID STAFFORDSHIRE GENERAL HOSPITALS NHS TRUST | Staffordshire General Hospital | ✘ | No |
| MID YORKSHIRE HOSPITALS NHS TRUST | Dewsbury District Hospital | ✘ | No |
| MID YORKSHIRE HOSPITALS NHS TRUST | Pinderfields General Hospital | ✘ | No |
| NHS FORTH VALLEY | Stirling Royal Infirmary | ✘ | No |
| NORFOLK AND NORWICH UNIVERSITY HOSPITAL NHS TRUST | Norfolk and Norwich Hospital | ✘ | No |
| NORTH BRISTOL NHS TRUST | Southmead Hospital | ✘ | No |
| NORTH BRISTOL NHS TRUST | Frenchay Hospital | ✘ | No |
| NORTH BRISTOL NHS TRUST | Weston General Hospital | ✘ | No |
| NORTH CHESHIRE HOSPITALS NHS TRUST | Halton General Hospital | ✘ | No |
| NORTH CUMBRIA ACUTE HOSPITALS NHS TRUST | Cumberland Infirmary | ✘ | No |
| NORTH EAST WALES NHS TRUST | Maelor Hospital | ✘ | No |
| NORTH MIDDLESEX UNIVERSITY HOSPITAL NHS TRUST | North Middlesex Hospital | ✘ | No |
| NORTH WEST WALES NHS TRUST | Ysbyty Gwynedd | ✘ | No |

| NHS Trust | Hospital | Registered | Submitting records |
|---|---------------------------------------|------------|--------------------|
| NORTH WEST WALES NHS TRUST | Llandudno General Hospital | x | No |
| NORTHERN LINCOLNSHIRE AND GOOLE HOSPITALS NHS TRUST | Diana, Princess of Wales Hospital | x | No |
| NOTTINGHAM CITY HOSPITAL NHS TRUST | Nottingham City Hospital | x | No |
| OXFORD RADCLIFFE HOSPITALS NHS TRUST | Horton General Hospital | x | No |
| PEMBROKESHIRE AND DERWEN NHS TRUST | Withybush General Hospital | x | No |
| PENNINE ACUTE HOSPITALS NHS TRUST | Rochdale Infirmary | x | No |
| PENNINE ACUTE HOSPITALS NHS TRUST | Fairfield General Hospital | x | No |
| PENNINE ACUTE HOSPITALS NHS TRUST | North Manchester General Infirmary | x | No |
| PENNINE ACUTE HOSPITALS NHS TRUST | Royal Oldham Hospital | x | No |
| PLYMOUTH HOSPITALS NHS TRUST | Derriford Hospital | x | No |
| PONTYPRIDD & RHONDDA NHS TRUST | Royal Glamorgan | x | No |
| POOLE HOSPITAL NHS TRUST | Poole Hospital | x | No |
| QUEEN MARY'S HOSPITAL | Queen Mary Hospital | x | No |
| ROYAL CORNWALL HOSPITALS NHS TRUST | West Cornwall Hospital | x | No |
| SHREWSBURY AND TELFORD HOSPITALS NHS TRUST | Royal Shrewsbury Hospital | x | No |
| SHREWSBURY AND TELFORD HOSPITALS NHS TRUST | Princess Royal Hospital Telford | x | No |
| SOUTH TEES HOSPITALS NHS TRUST | Friarage Hospital | x | No |
| SOUTHPORT AND ORMSKIRK HOSPITAL NHS TRUST | Southport and Formby District General | x | No |
| ST GEORGE'S HEALTHCARE NHS TRUST | St George's Hospital | x | No |
| ST MARY'S NHS TRUST | St Mary's Hospital Paddington | x | No |
| STOCKPORT NHS FOUNDATION TRUST | Stepping Hill Hospital | x | No |
| SWANSEA NHS TRUST | Singleton Hospital | x | No |
| TAUNTON AND SOMERSET NHS TRUST | Taunton and Somerset Hospital | x | No |
| THE LEWISHAM HOSPITAL NHS TRUST | University Hospital Lewisham | x | No |
| THE NEWCASTLE UPON TYNE HOSPITALS NHS TRUST | Royal Victoria Infirmary | x | No |
| THE PRINCESS ALEXANDRA HOSPITAL NHS TRUST | Princess Alexandra Hospital | x | No |
| THE ROTHERHAM NHS FOUNDATION TRUST | Rotherham General Hospital | x | No |
| THE ROYAL WOLVERHAMPTON HOSPITALS NHS TRUST | New Cross Hospital | x | No |
| TRAFFORD HEALTHCARE NHS TRUST | Trafford General Hospital | x | No |
| UNITED LINCOLNSHIRE HOSPITALS NHS TRUST | Grantham & District General Hospital | x | No |
| UNITED LINCOLNSHIRE HOSPITALS NHS TRUST | Lincoln County Hospital | x | No |
| UNITED LINCOLNSHIRE HOSPITALS NHS TRUST | County Hospital Louth | x | No |

| NHS Trust | Hospital | Registered | Submitting records |
|---|---------------------------------|------------|--------------------|
| UNITED LINCOLNSHIRE HOSPITALS NHS TRUST | Pilgrim Hospital | ✘ | No |
| UNITED LINCOLNSHIRE HOSPITALS NHS TRUST | Skegness District Hospital | ✘ | No |
| UNIVERSITY HOSPITALS OF LEICESTER NHS TRUST | Glenfield Hospital | ✘ | No |
| UNIVERSITY HOSPITALS OF LEICESTER NHS TRUST | Leicester Royal Infirmary | ✘ | No |
| UNIVERSITY HOSPITALS OF MORECAMBE BAY NHS TRUST | Furness General Hospital | ✘ | No |
| UNIVERSITY HOSPITALS OF MORECAMBE BAY NHS TRUST | Royal Lancaster Infirmary | ✘ | No |
| UNIVERSITY HOSPITALS OF MORECAMBE BAY NHS TRUST | Westmoreland General Hospital | ✘ | No |
| WEST DORSET GENERAL HOSPITALS NHS TRUST | Dorset County Hospital | ✘ | No |
| WEST HERTFORDSHIRE HOSPITALS NHS TRUST | Watford General Hospital | ✘ | No |
| WEST SUFFOLK HOSPITALS NHS TRUST | West Suffolk Hospital | ✘ | No |
| WINCHESTER AND EASTLEIGH HEALTHCARE NHS TRUST | Royal Hampshire County Hospital | ✘ | No |
| WIRRAL HOSPITAL NHS TRUST | Arrowe Park Hospital | ✘ | No |
| WORCESTERSHIRE ACUTE HOSPITALS NHS TRUST | The Alexandra Hospital | ✘ | No |
| WRIGHTINGTON, WIGAN AND LEIGH NHS TRUST | Royal Albert Edward Infirmary | ✘ | No |
| YORK HOSPITALS NHS TRUST | York District Hospital | ✘ | No |

Notes

The NHS Information Centre for health and social care is working to make information more relevant and accessible to the public, regulators, health and social care professionals and policy makers, leading to improvements in knowledge and efficiency.

It is an NHS special health authority that collects, analyses and distributes data to reduce the burden on frontline staff, releasing more time for direct care.

Electronic copies of the National Heart Failure Audit report can be downloaded from the improving patient care section of our website.


Printed copies of this report can be ordered through our Contact Centre, quoting document reference 18090208.

Need to know more?

 **0845 300 6016**

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 **The NHS Information Centre for health and social care
1 Trevelyan Square
Boar Lane
Leeds
LS1 6AE**

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