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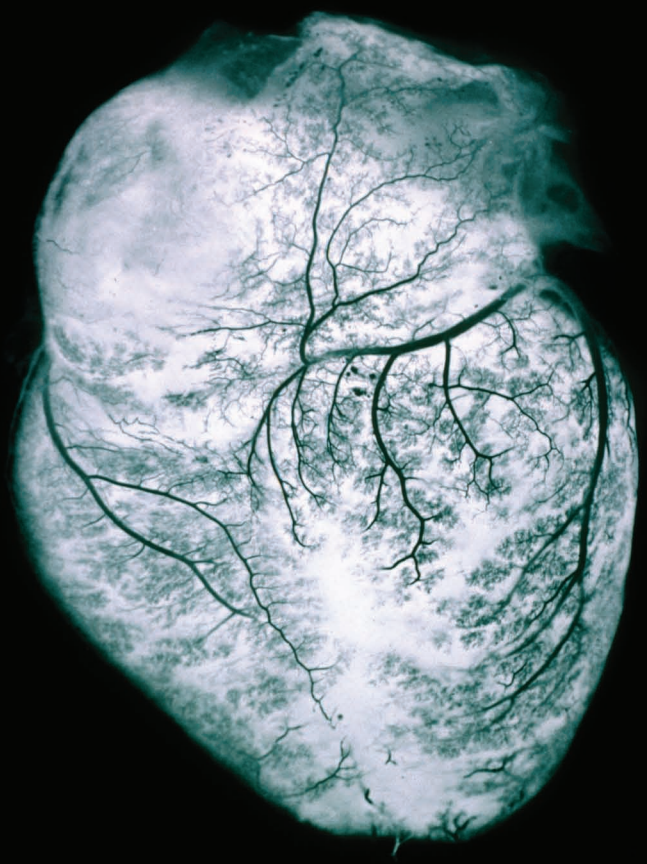
BRITISH SOCIETY FOR HEART FAILURE



NATIONAL HEART FAILURE AUDIT

PUBLIC & PATIENT REPORT

APRIL 2011 - MARCH 2012

This report was written by Polly Mitchell, the National Heart Failure Audit Project Manager, and Richard Mindham, the Patient Representative for the audit. Comments were provided by other heart failure patients who wish to remain anonymous.

It was completed with input from Professor Theresa McDonagh, a Consultant Cardiologist at King's College Hospital, who is clinical lead for the audit.

NICOR is a partnership of clinicians, IT experts, statisticians, academics and managers which manages six cardiovascular clinical audits and three clinical registries. NICOR analyses and distributes information about clinical practice in order to drive up the quality of care for patients.

The British Society for Heart Failure (BSH) is a national organisation of healthcare professionals which aims to improve care and outcomes for patients with heart failure by increasing knowledge and promoting research about its diagnosis, causes and management.

The Healthcare Quality Improvement Partnership (HQIP) is led by a consortium of the Academy of Medical Royal Colleges, the Royal College of Nursing and National Voices. Its aim is to promote quality improvement, and in particular to increase the impact of clinical audit in England and Wales. HQIP hosts the contract to manage and develop the National Clinical Audit and Patient Outcomes Programme (NCAPOP). The programme comprises 40 clinical audits that cover care provided to people with a wide range of medical, surgical and mental health conditions.

Founded in 1826, **UCL (University College London)** was the first English university established after Oxford and Cambridge, the first to admit students regardless of race, class, religion or gender, and the first to provide systematic teaching of law, architecture and medicine. It is among the world's top universities, as reflected by performance in a range of international rankings and tables. UCL currently has 24,000 students from almost 140 countries, and more than 9,500 employees. Its annual income is over £800 million.

This report and the 2011/12 Annual Report are available online at www.ucl.ac.uk/nicor/audits/heartfailure/additionalfiles

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National Heart Failure Audit **Public and Patient Report**

This is the first National Heart Failure Audit report produced specifically for heart failure patients and members of the public with an interest in heart failure. It is aimed at anyone who wants to know more about the treatment of heart failure in England and Wales. It is written for people with little or no previous knowledge of heart failure or clinical audit.

This report contains information about the audit and presents selected findings from the National Heart Failure Audit 2011/12 Annual Report, which covers the period between April 2011 and March 2012. The Annual Report, which was published on 27th November 2012, is aimed at clinicians and hospital managers, and contains more detailed findings from this period.

All words in **bold** are included in the glossary at the end of the report. Where you see  a description of the term is given.

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Summary of findings and recommendations

The National Heart Failure Audit 2011/12 Annual Report showed that when the treatment of heart failure follows recommended guidelines, outcomes for patients are much better. Patients are also more likely to receive this treatment if they are on a **cardiology ward**. Patients treated on a **cardiology ward** have lower mortality rates both in hospital and following discharge. These findings support findings from previous years, and reinforce the importance that **Trusts** follow the evidence-based guidelines for the treatment of heart failure.

Although heart failure patients tend to be elderly and ill, high quality treatment can lead to prolonged life, with fewer symptoms, after discharge from hospital. Heart failure patients treated on **cardiology wards** are less likely to die, both in hospital and within a year of discharge, than patients treated on general medical wards and other wards.

Heart failure patients who are prescribed recommended medicines and referred to specialist follow-up care also do better than patients not receiving these recommended treatments and services.

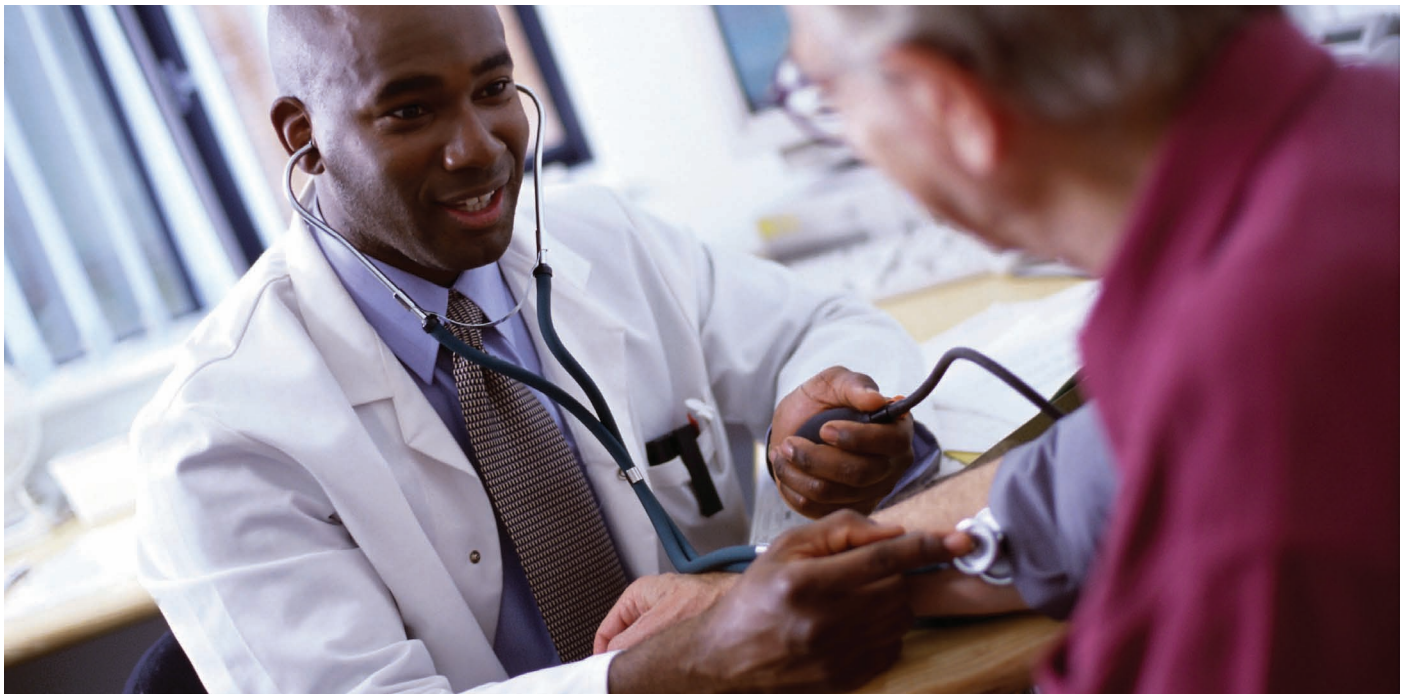
Based on the findings we recommend the following:

- All **Trusts** and **Local Health Boards** in England and Wales should ensure that heart failure patients have specialist input into their care wherever possible. If it is not possible to treat a heart failure patient in a **cardiology ward**, he or she may still be able to be seen by a **cardiologist** or **heart failure specialist nurse** whilst in hospital.
- **ACE inhibitors/ARBs**, **beta blockers** and **MRAs** should be prescribed to heart failure patients whilst in hospital wherever possible.
- Arrangements for follow-up with a **cardiologist** or **heart failure specialist nurse** should be firmly in place when a patient is discharged from hospital.

More information about these medicines can be found on p.5.

In order to ensure that analysis from the National Heart Failure Audit continues to be of a high quality, and representative of the care of heart failure patients in England and Wales:

- The National Heart Failure Audit aims to enrol 95% of all **Trusts** in England and **Local Health Boards** in Wales by 2012/13.
- The audit aims to capture information on 70% of all patients admitted to hospital with heart failure in England and Wales by the end of 2012/13.



About the National Heart Failure Audit

What is clinical audit?

Clinical audit is a quality improvement process for healthcare. It aims to enhance the care of patients by reviewing medical practice against explicit criteria and modifying it where necessary.

What is heart failure?

Heart failure is a very common condition where the heart is not able to pump blood around the body as well as it should. This is often because of a previous heart attack, but heart failure may also be caused by other conditions such as high blood pressure or **valve** disease.

Oedema is the medical term for swelling caused by fluid being retained in the body's tissues. Oedema commonly occurs in the feet and legs, and this is known as peripheral oedema.

An **electrocardiogram** or ECG is a test which measures the rhythm and electrical activity of your heart. An abnormal heartbeat can be an indication of heart failure.

An **echocardiogram** or echo is an ultrasound scan of the heart similar to that used in pregnancy. It creates a detailed picture of the heart which can be used to give accurate information about its structure and how well the **valves** are working.

Heart failure can leave you feeling very tired and short of breath, which makes everyday tasks such as walking up stairs or carrying shopping very difficult. It can also result in swollen feet and ankles, caused by **peripheral oedema**.

Heart failure can be diagnosed by blood tests, an **electrocardiogram** (**ECG**) and an **echocardiogram** (**echo**).

For most cases of heart failure there is no cure, but there are several medicines which can reduce or control your symptoms and improve the pumping action of your heart.

Medicines used in the treatment of heart failure

Beta blockers: Beta blockers are medicines which slow your heart rate. This reduces the amount of work the heart has to do and increases the amount of blood that is pumped with each heartbeat.

ACE inhibitors: ACE inhibitors reduce the activity of an **enzyme** called angiotensin-converting enzyme (ACE). ACE narrows the blood vessels, which leads to an increase in blood pressure. ACE inhibitors help to widen your blood vessels, which improves blood flow.

ARBs: Angiotensin receptor blockers, or ARBs, are used in patients who cannot tolerate ACE inhibitors due to side effects or pre-existing conditions. They act in a similar way to ACE inhibitors by relaxing blood vessels.

Diuretics (water tablets): Diuretics are used to remove excess water from the body and reduce the work the heart has to do. Excess water retention can be a result of heart failure, and can increase the workload of the heart. There are two main types of diuretic, loop diuretics and thiazide diuretics.

MRAs: Mineralocorticoid receptor antagonists, also known as MRAs, work in a similar way to diuretics, and can also help heal scarring of the heart tissue.

Lifestyle changes such as stopping smoking and cutting down on salt and alcohol can also help you to be more active and live a normal life.

An **enzyme** is a naturally occurring substance which speeds up chemical reactions in the body.

What is the National Heart Failure Audit?

Acute patients are patients admitted to hospital for urgent treatment. A lot of heart failure care and treatment occurs in the community, but sometimes heart failure patients are admitted to hospital if their symptoms worsen suddenly. Some people are not diagnosed with heart failure until they are admitted to hospital with symptoms. The National Heart Failure Audit does not cover community heart failure care.

In a clinical context, an **outcome** is a change in a person's health that can be attributed to an action taken by a doctor or healthcare professional. Clinical outcomes can be positive or negative, and include events such as death, readmission to hospital and disease-free survival.

The National Heart Failure Audit collects data on the care of **acute heart failure patients** in England and Wales. It reports on how patients are treated and the **outcomes** of their treatment. The audit aims to show whether hospitals are treating patients in accordance with recommended guidelines, and to show the **outcomes** associated with the treatment and management of heart failure. By publishing the audit results we hope that all hospitals will strive to further improve their performance and success in treating heart failure patients.

The National Heart Failure Audit is supported by the **British Society of Heart Failure** (**BSH**). The **BSH** is a professional society that aims to increase knowledge about heart failure and encourage research amongst clinicians and healthcare professionals. The **BSH** provides the clinical basis for the audit. It decides what information is collected by the audit, and determines the analysis that is performed on the data.

The audit is managed by the **National Institute for Cardiovascular Outcomes Research** (**NICOR**), which manages six national clinical audits, all concerned with heart disease. The audits are funded and commissioned by the **Healthcare Quality Improvement Partnership** (**HQIP**), which was established by the Department of Health to promote quality in healthcare. **HQIP** funds 40 National Clinical Audits.

Which Trusts are included in the audit?

All acute **Trusts** in England and **Local Health Boards** in Wales which discharge patients with a primary (main) diagnosis of heart failure are required to participate in the audit. There are 149 **Trusts** in England and six **Local Health Boards** in Wales which admit patients with heart failure.

137 NHS **Trusts** and five **Local Health Boards** submitted data to the National Heart Failure Audit. This is 92% of all eligible institutions. 12 NHS **Trusts** and one **Local Health Board** did not submit any data to the audit. These **Trusts** have been named in the Annual Report, and letters have been sent to their Chief Executives to explain that participation is not only mandatory, but vital for the improvement of heart failure care.

Which patients are included in the audit?

The National Heart Failure Audit collects information on **acute** patients who are admitted to hospital in England and Wales and are given a primary diagnosis of heart failure on discharge. This means that heart failure was the main reason for their admission to hospital.

In total 41,635 records of patients admitted to hospital with heart failure were recorded in the National Heart Failure Audit in 2011/12. However the total number of records included in analysis was 37,076. This is because around 4,000 records were for admissions where the patient only stayed for one day, or did not even stay the night in hospital. The clinical lead for the audit looked at these data and decided that a lot of these admissions were not appropriate for the audit, because they were elective admissions. This means that they were scheduled appointments, rather than emergency admissions, so the patients were not **acute** patients.

After the data were cleaned to remove all invalid records, 59% of all acute patients admitted to hospitals with heart failure in England and Wales

were included in the audit. This was 62% of patients in England and 12% in Wales. Next year we hope to capture 70% of all acute heart failure patients in England and Wales.

What data do the audit collect?

The National Heart Failure Audit collects information on the treatment and care of heart failure patients during their hospital admission. This includes where in hospital they were treated, the tests they were given, the medicines they were prescribed and the services they were referred to on discharge. We try to build up a picture of patients' care, in order to understand what kind of treatment is associated with better and worse **outcomes**.

The audit collects personal information, such as name, postcode, date of birth and NHS number. This information is used to link information from the heart failure audit with data from other audits and sources of information, which enables us to develop a more complete picture of your care. Personal information is only accessed on a need-to-know basis within **NICOR**, by a limited number of individuals. Data that could identify a patient is not shared with external research groups.

What benchmark does the audit use?

The audit measures the treatment of heart failure patients against guidelines from the National Institute for Health and Clinical Excellence (**NICE**).

NICE is an NHS organisation which produces recommendations about the most effective care and treatment for many diseases and medical conditions. All of **NICE**'s guidelines are based on scientific evidence and developed by independent committees. **NICE has produced a guideline** directly relating to the treatment and care of heart failure patients, and the National Heart Failure Audit uses this as a benchmark to measure the treatment of heart failure in England and Wales.

The guideline, published in 2010, is called CG108 Chronic heart failure and can be found on the NICE website: http://www.nice.org.uk/CG108.

A concise version of the guidance is also available on the NICE website: http://guidance.nice.org.uk/QS9

How are audit findings used?

Audit findings are fed back to **Trusts** so they can monitor their outcomes and progress locally, and improve practice where necessary. The National Heart Failure Audit Annual Report and this Public and Patient Report are publically available on the **NICOR** website. National Heart Failure Audit data are also given to NHS Choices and data.gov.uk, both of which aim to increase patient choice by making information about hospital practice more widely available.

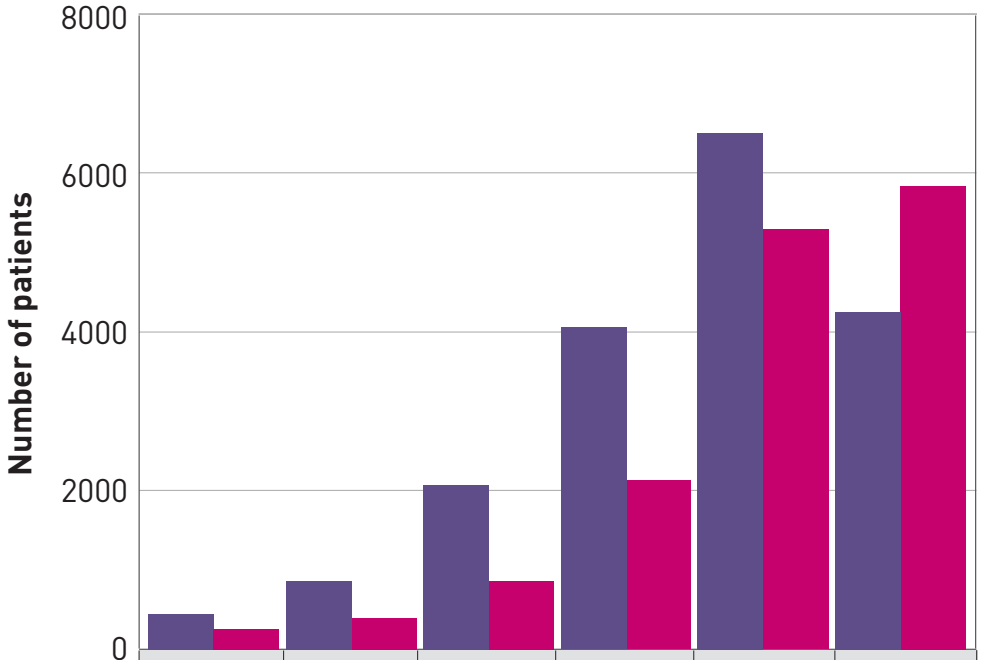
Findings

Patient characteristics

Age: The average age of patients at their first admission in 2011/12 was 78 years.

Men tended to be admitted a few years earlier than women: the average age of men was 76 years, and the average age of women was 80 years.

This graph shows that there were more men than women in the audit up to the age of 84 years. In the group of patients who were over 85 years old, the majority were women.



	18-44	45-54	55-64	65-74	75-84	85+
Men	433	862	2072	4051	6505	4243
Women	219	371	862	2127	5304	5836

Symptoms and medical history

Patients admitted to hospital with heart failure tend to have pronounced symptoms and heart failure that has progressed to an advanced stage. They also tend to have other conditions which cause and complicate their heart failure.

One way of describing the severity of heart failure is the New York Heart Association (NYHA) Classification, which divides patients up into four groups, depending on how bad their symptoms are. The four classifications are:

NYHA I: Heart disease, but no symptoms and no limitation in ordinary physical activity.

NYHA II (mild heart failure): Mild shortness of breath and/or chest pain, and slight limitation during ordinary activity.

NYHA III (moderate heart failure): Marked limitation in activity due to symptoms, even during less-than-ordinary activity, e.g. walking short distances (20–100m), and comfortable only at rest.

NYHA IV (severe heart failure): Severe limitations. Patients experience symptoms even while at rest and are mostly bed bound.

40% of patients in the audit were admitted with moderate heart failure (NYHA III) and 32% with severe heart failure (NYHA IV).

Another main sign of heart failure is **peripheral oedema**, which results in swollen feet and ankles. 29% of patients were admitted with moderate **oedema**, and 16% with severe **oedema**.

Ischaemic heart disease, or IHD, occurs when there is a reduced supply of blood to the heart. This is often caused by a build-up of fatty deposits in the walls of blood vessels, making them narrower.

The most common causes of heart failure for patients in the audit were **hypertension** (high blood pressure) and **ischaemic heart disease**, or **IHD**. 54% of patients had a medical history of hypertension, 46% had a history of **IHD**, and 26% of patients had both. 31% of patients had previously suffered a **heart attack**, and 36% had a history of arrhythmia (irregular or abnormal heartbeat).

Ward of treatment

A **cardiology ward** is a specialist ward where patients with problems with their heart or circulation are treated.

48% of patients were treated in **cardiology wards**, with 41% treated on general medical wards and 11% on other wards (for example, care of the elderly wards).

Men were more likely to be treated on **cardiology wards** than women, as were younger patients.

Diagnosis

The guideline issued by **NICE** recommends that all patients with suspected heart failure are given an **echo**. If you have this test, your doctor will be better able to diagnose your condition and to treat it quickly and effectively.

The number of patients receiving an **echo** is high - 86% of patients had an **echo** during the admission.

Patients were more likely to have an **echo** if they were men, under 75 and treated on **cardiology wards**. Men and younger patients were more likely to be treated on **cardiology wards**, so this seems to indicate that specialist doctors and nurses working on **cardiology wards** are more likely to give patients an **echo**.

Of those patients who had an echo, 65% were diagnosed with **left ventricular systolic dysfunction** (**LVSD**).

Left ventricular systolic dysfunction, known as LVSD, is the most common and easily recognised type of heart failure. It occurs when the left ventricle, the main pumping chamber of the heart, does not pump with sufficient force, and does not empty fully.

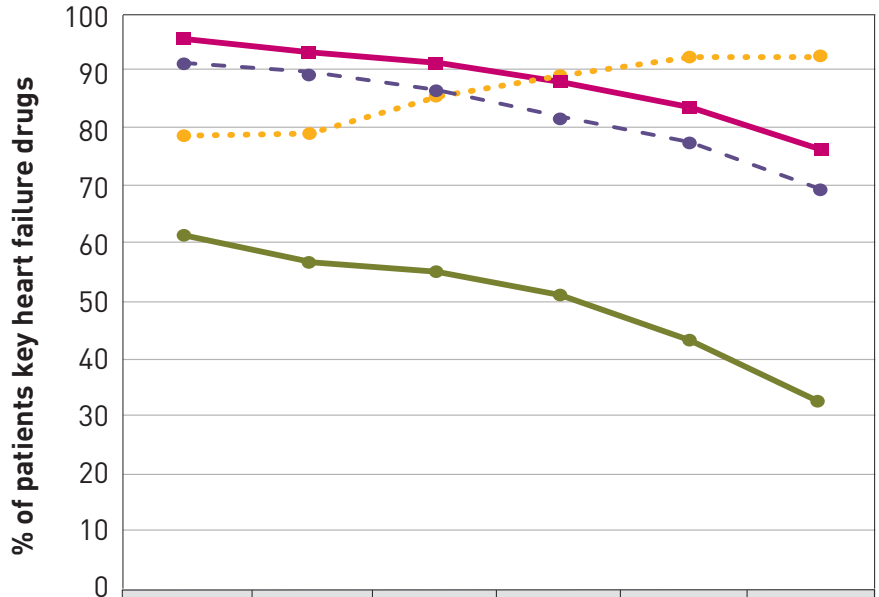
Treatment

The number of patients who are prescribed (given) medication that improved their heart failure symptoms is measured for all patients with **LVSD**. This is because the **NICE** guideline explicitly recommends these treatments for patients with **LVSD**.

- Prescription of **ACE inhibitors** or **ARBs** is high, with 84% of patients discharged on either of the therapies. This is similar to the 81% recorded in 2010/11.
- 78% of patients were prescribed **beta blockers** when discharged from hospital.
- 45% of patients were discharged on an **MRA**. This is an increase from 36% in 2010/11.
- 89% of patients were discharged on loop **diuretics**, and 4% were discharged on thiazide **diuretics**.

As observed in previous years, prescription rates for **ACE inhibitors/ARBs**, **beta blockers** and **MRAs** are all higher for patients who were admitted to **cardiology wards**, as opposed to general medical or other wards. This indicates that **cardiologists** and specialist staff are more likely to prescribe recommended treatments to heart failure patients.

*This graph shows the decrease in prescription of **ACE inhibitors/ARBs**, **beta blockers** and **MRAs** for older patients. **Loop diuretics** were the only treatments for which prescription rates increased with age.*



	18-44	45-54	55-64	65-74	75-84	85+
ACEI/ARB	95	93	91	87	83	76
Beta blocker	91	89	86	81	77	69
Loop diuretic	78	79	86	89	92	92
MRA	60	56	55	51	43	33

Follow-up services

NICE recommends that after discharge heart failure patients are referred to follow-up services led by **heart failure specialist nurses** or **cardiologists**. This is to ensure that patients are taking as much recommended treatment as they can tolerate, and that they make the lifestyle changes necessary to improve their symptoms.

54% of patients were referred to a heart failure nurse led follow-up service on discharge.

52% were referred to follow-up with a **cardiologist**.

Referral rates were higher for patients who were younger, male and treated on a **cardiology ward**.

Mortality

Mortality, or death, both in hospital and within a year of discharge, is one of the key **outcomes** recorded by the audit.

Many acute heart failure patients die in hospital and in the year following their admission to hospital for heart failure.

We find out whether the patients in our audit died following discharge by getting information on their life status from the Office of National Statistics. The NHS Information Centre provides us with this information at the end of the audit year. In 2011/12 the **median time from discharge to follow-up** was 231 days for patients who survived and 39 days for patients who died.

The time to follow up is the number of days from the date of discharge from hospital until the date of census or, if a patient died, the number of days following discharge to their date of death.

Of all patients admitted in 2011/12, 11.1% died in hospital; this is very similar to the 11.6% recorded in 2010/11. Of those patients who survived to discharge, 26% died within the follow-up period of approximately 231 days.

Although a large number of patients die following their admission, many of these deaths may be preventable. Heart failure patients are, on the whole, elderly, so it may not be surprising that the mortality rate is so high. However, even when age is taken into account, patients who receive specialist care are less likely to die, both when they are in hospital and within a year of discharge. Patients who receive treatment that is in line with recommended guidance from **NICE** also have better **outcomes**.

Outcomes and ward of treatment

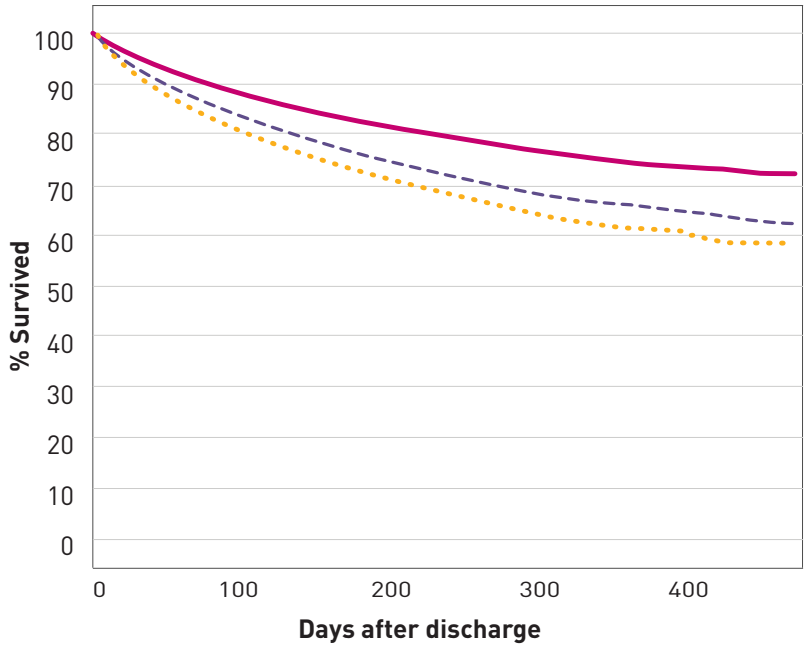
Patients treated on **cardiology wards** had much better **outcomes** than patients treated on general medical and other wards.

Only 8% of patients treated on a **cardiology ward** died in hospital, compared with 13% of patients treated on general medical wards, and 17% of patients treated on other wards.

*Out of those patients who were discharged from hospital alive, those who were treated on a **cardiology ward** were less likely to die within the follow-up period than patients treated on a **general medical ward** and those treated on **other wards**.*

*This graph illustrates the better chance of survival for patients treated on a **cardiology ward**, compared to those treated on other wards.*

*Only 22% of patients treated on **cardiology wards** died within the follow-up period, compared with 30% of patients treated on **general medical wards** and 33% of patients on **other wards**. This means that for every 100 patients discharged, 12 more will be alive one year later if managed by a cardiology team.*



Place of care	Total number of patients	Total number deceased	Percentage deceased	Median follow-up period (days)
Cardiology	13463	2944	22%	242
General Medicine	11100	3308	30%	225
Other	2734	914	33%	215

Older patients are less likely to be admitted to a **cardiology ward**, which may partly explain the lower rates of death on **cardiology wards**, compared to other wards. However, even when age, severity of symptoms and medical history were taken into account, patients treated on **cardiology wards** were less likely to die in hospital than patients treated on non-specialist wards. Furthermore, patients treated on **cardiology wards** were still less likely to die during the follow-up period, even when these factors were taken into consideration.

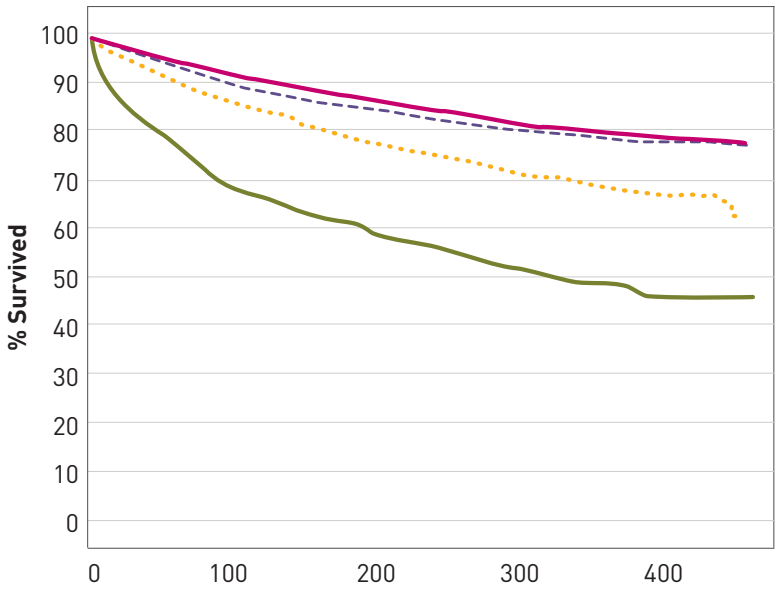
Outcomes and treatment on discharge

Patients who received **beta blockers** and **ACE inhibitors/ARBs** when they were discharged were less likely to die during the follow-up period.

When age, severity of heart failure and medical history were taken into account, patients discharged with a prescription of **ACE inhibitors/ARBs** or **beta blockers** were still less likely to die within the follow-up period.

This graph shows that the benefits of being prescribed recommended drugs were additive for patients with LVSD. This means that the greater number of recommended drugs a patient was prescribed, the better his or her chances of survival.

*Of those patients prescribed **no ACE inhibitor/ARB, beta blocker or MRA** on discharge 46% died during the follow-up period. Patients prescribed an **ACE inhibitor/ARB** on discharge were less likely to die during the follow-up period (27% died), and patients prescribed a **beta blocker and ACE inhibitor/ARB** were even less likely to die (18% died). The patients with the best survival outcomes during the follow-up period were those discharged on an **ACE inhibitor/ARB, a beta blocker and an MRA** – only 17% of these patients died.*



Treatment(s) on discharge	Total number of patients	Total number deceased	Percentage deceased	Median follow-up period (days)
ACEI/ARB, beta blocker & MRA	734	4367	17%	257
ACEI/ARB & beta blocker	809	4408	18%	251
ACEI/ARB	357	1316	27%	242
No ACEI/ARB, beta blocker or MRA	299	653	46%	183

However, patients discharged on loop **diuretics** were more likely to die during the follow-up period. This remained true when age, symptoms and medical history were taken into account.

Although loop diuretics are effective at reducing **peripheral oedema**, they can speed up the progression of heart failure. Patients should therefore be prescribed the lowest amount of loop **diuretic** that controls their **oedema** effectively.

There might be good reason why a patient is not prescribed the treatments that are recommended for heart failure patients. For example, if a patient has asthma, he or she may not be prescribed a beta blocker.

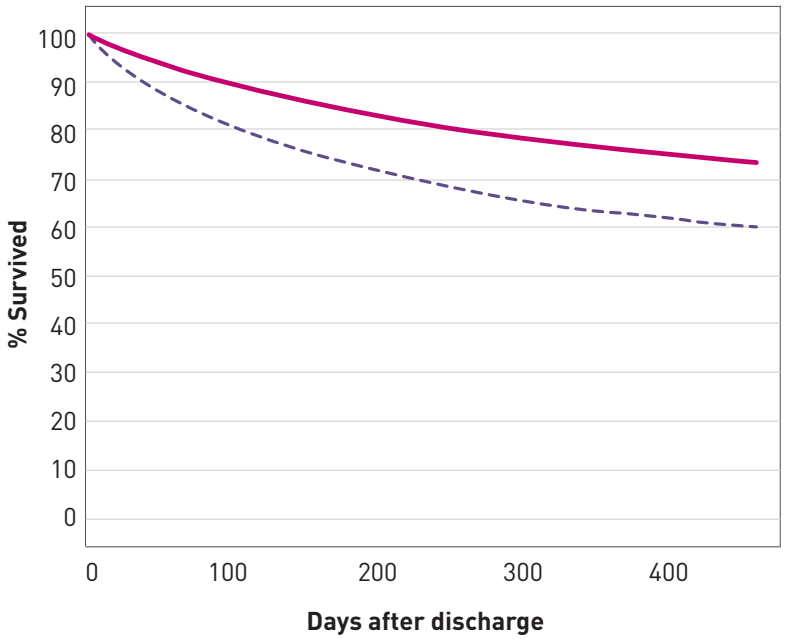
Outcomes and follow-up services

Patients referred to heart failure nurse and cardiology follow-up services also had better **outcomes**:

25% of patients referred to follow-up services led by **heart failure specialist nurses** died within the follow-up period , compared with 28% of those not referred to nurse led follow-up.

This graph shows the extent of the benefit of being referred to cardiology follow-up services on discharge.

*Only 20% of patients **referred to cardiology follow-up** services on discharge died, compared with 32% of patients **not referred to follow-up** with a cardiologist. This means that for every 100 patients discharged, 12 more will be alive one year later if managed by a cardiology team.*



Cardiology follow-up	Total number of patients	Total number deceased	Percentage deceased	Median follow-up period (days)
Yes	13615	2745	20%	249
No	12724	4082	32%	216

Glossary

ACE inhibitor (Angiotensin-converting enzyme inhibitor)
ACE inhibitors are a type of medicine that is recommended for treating heart failure.

They work by reducing the activity of an enzyme called angiotensin-converting enzyme (ACE). ACE narrows the blood vessels, which leads to an increase in blood pressure. ACE inhibitors help to widen your blood vessels, which improves blood flow.

Acute
Acute patients are patients admitted to hospital for urgent treatment. The management of patients requiring urgent or emergency care is known as acute medicine.

ARB (Angiotensin receptor blocker)
ARBs are a recommended treatment for heart failure for patients who cannot tolerate ACE inhibitors. They act in a similar way to ACE inhibitors by widening blood vessels.

Beta blocker
Beta blockers are a type of medicine that is recommended for treating heart failure. They act by slowing your heart rate. This reduces the amount of work the heart has to do and increases the amount of blood that is pumped with each heartbeat.

BSH (British Society of Heart Failure)
The BSH is an organisation of healthcare professionals, which aims to improve the standard of care of heart failure by encouraging research and increasing knowledge about the condition.

Cardiologist
A doctor who has specialised in diagnosing and treating heart diseases and conditions which involve the heart.

Cardiology ward
A cardiology ward is a specialist ward where patients with problems with their heart or circulation are treated.

Diuretic
Diuretics are a type of medicine that are used to reduce the symptoms of heart failure. Diuretics are used to remove excess water from the body and thus reduce the work the heart has to do. Excess water retention can be a result of heart failure, and can increase the workload of the heart. There are various types of diuretic, including loop diuretics, thiazide diuretics. Diuretics are also known as Water Tablets.

ECG (Electrocardiogram)
A test which measures the rhythm and electrical activity of your heart. An abnormal heartbeat can be an indication of heart failure.

Echo (Echocardiogram)
An ultrasound scan of the heart similar to that used in pregnancy. It creates a detailed picture of the heart which can be used to give accurate information about its structure and how well the valves are working.

Heart attack
Also known as an acute myocardial infarction, a heart attack occurs when one of the blood vessels leading to the heart becomes blocked. This means that blood cannot reach the heart, and the heart muscle begins to die. People who have suffered a heart attack often go on to have heart failure as a result of damaged heart tissue.

Heart Failure Specialist Nurse
A nurse who is specially trained to care for and treat heart failure patients. Their work covers clinical aspects of care, but will also include educating and supporting patients and their families.

High blood pressure or Hypertension
Hypertension is the medical term for high blood pressure. Blood pressure is measured to see how strongly blood presses against the walls of blood vessels as it is pumped around your body. High blood pressure causes the heart to work harder when pumping blood around the body.

HQIP (Healthcare Quality Improvement Partnership)
HQIP is the organisation which commissions and funds NICOR. HQIP commissions 40 national clinical audits and is funded by the Department of Health.

IHD (Ischaemic Heart Disease)
IHD is a disease resulting in a reduced supply of blood to the heart. This is often caused by fatty deposits building up in the walls of blood vessels, making them narrower.

Local Health Board
A Local Health Board is an NHS administrative unit in Wales, responsible for delivering all NHS healthcare services within a given geographical area. They are equivalent to English NHS Trusts. There are seven Local Health Boards in Wales, six of which are eligible to participate in the National Heart Failure Audit.

LVSD (Left Ventricular Systolic Dysfunction)
LVSD is the most common and easily recognised type of heart failure. It occurs when the left ventricle, the main pumping chamber of the heart, does not pump with sufficient force, and does not empty fully.

Median
Calculating the median is a different way of measuring the average length of stay. It is worked out by arranging the lengths of stay for all admissions from the lowest value to the highest value, and picking the middle one. Averages can be skewed by a small number of unusually small or large values, so median can offer a more realistic impression of the average.

MRA (Mineralocorticoid receptor antagonist)
MRA work in a similar way to diuretics, getting rid of excess fluid, and can also help heal scarring of the heart tissue. MRAs also maintain levels of potassium in the blood.

NICE (National Institute for Health and Clinical Excellence)
NICE is an NHS organisation which produces evidence-based recommendations about the most effective care and treatment for many diseases and medical conditions. NICE has produced a guideline directly relating to the treatment and care of heart failure patients. The National Heart Failure Audit uses this as a benchmark to measure good practice.

NICOR (National Institute for Cardiovascular Outcomes Research)
NICOR is a part of University College London. It is responsible for managing nine cardiovascular audits and registries.

Outcome
In a clinical context, an outcome is a change in a person's health that can be attributed to an action taken by a doctor or healthcare professional. Clinical outcomes can be positive or negative, and include events such as death, readmission to hospital and disease-free survival.

Peripheral oedema or oedema
Oedema is the medical term for swelling caused by fluid being retained in the body's tissues. Excess fluid is stored in the spaces between tissues under the skin. Oedema commonly occurs in the feet and legs, and this is known as peripheral oedema.

Trust
In this report a Trust refers to an Acute Trust. An Acute Trust is an NHS administrative unit in England, which is responsible for between one and four hospitals. It makes sure that hospitals provide high-quality healthcare and that they spend their money efficiently.

Valve
A valve is a device which regulates the flow of liquid. There are valves in your heart and blood vessels which make sure that blood only flows one way through the heart. Valve disease is a common cause of heart failure. When a valve does not open properly the flow of blood is obstructed. When a valve does not close properly it can allow blood to flow backwards. Both of these put strain on your heart.

Further information

National Heart Failure Audit

- National Heart Failure Audit: www.ucl.ac.uk/nicor/audits/heartfailure/
- 2011/12 Annual Report: www.ucl.ac.uk/nicor/audits/heartfailure/additionalfiles/

About heart failure

The following websites contain more information about heart failure and its treatment:

- NHS choices: www.nhs.uk/conditions/Heart-failure/
- Heart failure matters: www.heartfailurematters.org/
- British Heart Foundation: www.bhf.org.uk/heartfailure/
- Patient.co.uk: www.patient.co.uk/health/Heart-Failure.htm

The British Heart Foundation has a series of publications related to heart failure which are designed for patients. You can find these on their website, or you can order hard copies by calling the BHF Orderline on 0870 600 6566 or emailing orderline@bhf.org.uk

NICE guidance

The NICE guideline and quality standard referred to in this report can be found on the NICE website:

- Chronic heart failure clinical guideline (CG108): www.nice.org.uk/CG108/
- Chronic heart failure quality standard (QS9): www.nice.org.uk/QS9/

Related organisations

More information about the healthcare organisations mentioned in this report can be found by accessing their websites:

- **NICOR** (National Institute for Cardiovascular Outcomes Research): www.ucl.ac.uk/nicor/
- **BSH** (British Society of Heart Failure): www.bsh.org.uk/
- **NICE** (National Institute for Health and Clinical Excellence): www.nice.org.uk/
- **HQIP** (Healthcare Quality Improvement Partnership): www.hqip.org.uk/
- The Department of Health: www.dh.gov.uk/
- The NHS Information Centre for Health and Social Care: http://www.ic.nhs.uk/