How to Guide

1000 Lives / O Fywydau

Improving care, delivering quality

Improving Care for Chronic Heart Failure Patients

www.1000livesplus.wales.nhs.uk
Improving Care for Chronic Heart Failure Patients

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The purpose of this guide

This guide has been produced to enable healthcare organisations and their teams to successfully implement a series of interventions to improve the safety and quality of care that their patients receive.

This guide must be read in conjunction with the following:

- Leading the Way to Safety and Quality Improvement
- How to Improve

Further guides are also available to support you in your improvement work:

- How to Use the Extranet
- A Guide to Measuring Mortality
- Improving Clinical Communication using SBAR
- Learning to use Patient Stories
- Using Trigger Tools
- Reducing Patient Identification Errors

These are available from the 1000 Lives Plus office, or online at www.1000livesplus.wales.nhs.uk

We are grateful to The Health Foundation for their support in the production of this guide.
Improving Care for Chronic Heart Failure Patients

Improving care, delivering quality

The 1000 Lives Campaign has shown what is possible when we are united in pursuit of a single aim: the avoidance of unnecessary harm for the patients we serve. The enthusiasm, energy and commitment of teams to improve patient safety by following a systematic, evidence-based approach has resulted in many examples of demonstrable safety improvement.

However, as we move forward with 1000 Lives Plus, we know that harm and error continue to be a fact of life and that this applies to health systems across the world. We know that much of this harm is avoidable and that we can make changes that reduce the risk of harm occurring. Safety problems can’t be solved by using the same kind of thinking that created them in the first place. To make the changes we need, we must build on our learning and make the following commitments:

■ Acknowledge the scope of the problem and make a clear commitment to change systems.
■ Recognise that most harm is caused by bad systems and not bad people.
■ Acknowledge that improving patient safety requires everyone on the care team to work in partnership with one another and with patients and families.

The national vision for NHS Wales is to create a world-class health service by 2015: one which minimises avoidable death, pain, delays, helplessness and waste. This guide will help you to take a systematic approach and implement practical interventions that can bring that about. The guide is grounded in practical experience and builds on learning from organisations across Wales during the 1000 Lives Campaign and also on the experience of other campaigns and improvement work supported by the Institute for Healthcare Improvement (IHI).
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>5</td>
</tr>
<tr>
<td>Driver Diagram</td>
<td>10</td>
</tr>
<tr>
<td>Getting Started</td>
<td>11</td>
</tr>
<tr>
<td>Drivers and Interventions</td>
<td>12</td>
</tr>
<tr>
<td>Helpful resources</td>
<td>25</td>
</tr>
<tr>
<td>Appendices</td>
<td></td>
</tr>
<tr>
<td>Measures and Definitions</td>
<td>27</td>
</tr>
<tr>
<td>Setting up your team</td>
<td>28</td>
</tr>
<tr>
<td>The Model for Improvement</td>
<td>30</td>
</tr>
</tbody>
</table>
This guide introduces the drivers and interventions which have been proposed to help reduce morbidity and mortality in patients with Chronic Heart Failure (CHF). It also addresses quality of care issues during the patient experience.

The Welsh Assembly Government (WAG) has developed a series of national improvement measures and targets, known as ‘Intelligent Targets’, which are more focused on improving the quality of care delivered and the outcomes for patients, and reflect the ambitions set out within the WAG policy documents, ‘Designed for Life’\(^1\) and ‘One Wales’.\(^2\)

Intelligent Targets are intended to deliver improvement through change in the delivery of health services in Wales. WAG has stated a commitment to ensure greater engagement of clinicians, other health professionals and patients in the delivery of Welsh healthcare services and Intelligent Targets.

The Intelligent Targets approach focuses on:

- The process of change.
- Utilisation of expert groups for subject knowledge.
- The Model For Improvement as standard.
- Employment of criteria developed by Greenhalgh et al (2004) for characteristics of effective change in a healthcare setting.

The targets that have been developed to optimise outcomes for patients aim to address the complete care pathway and recognise the varied and complementary roles that all sectors of healthcare and rehabilitation services play in delivering safe, effective and quality driven services.

This guide should be read in conjunction with other resources, particularly the Cardiac Disease National Service Framework\(^3\) (WAG 2009) and including those developed by the Cardiac Networks in Wales, and those published by national bodies such as NICE.

References

1. Welsh Assembly Government (2005) Designed for Life - A World Class Health Service for Wales Designed for Life. WAG.
Chronic Heart Failure

What Is Chronic Heart Failure (CHF)?

Heart failure is increasing in prevalence as a chronic condition and it presents significant challenges to individuals, their families and the healthcare system. Currently 900,000 people in the UK have heart failure. The incidence and prevalence of heart failure rises steeply with age, the average age of first diagnosis is 76 years. Heart failure has a poor prognosis, just under 40% of patients diagnosed die within a year - thereafter mortality is less than 10% annually. Survival rates are similar to those of colon cancer but worse than those of breast or prostate cancer.

Prevalent cases of heart failure on General Practitioner registers appear to have a significant mortality risk with a 5 year survival of 58% compared to 93% in the age and sex matched general population. A GP will look after, on average, 30 patients with heart failure and suspect a new diagnosis in 10 patients annually. It is anticipated that GPs who work in more deprived areas will have more cases. GP consultations cost an estimated £45 million per year with an additional £35 million for GP referrals to out patients. An estimate of £129 million per year has been given to community based drug therapy.

In regard to hospital based care, admissions due to heart failure are projected to increase by 50% over the next 25 years, largely due to the aging population. The total cost annually of heart failure to the NHS is 2% of the total NHS budget, 70% of this total is due to the cost of hospitalisation. Patient bed stay averages 11 days in Europe and readmissions are frequent; 1 in 4 patients are readmitted in 3 months.

Heart failure is the term used to describe a complex syndrome that occurs if the heart becomes less efficient at pumping blood around the body, either at rest or during activity. It is caused by structural or functional abnormalities of the heart. The damage is most commonly caused by ischaemic heart disease or by conditions that put extra workload on the heart. The heart may have coped with this extra workload for several years before heart failure occurs. These conditions include hypertension, diseased heart valves or arrythmias. Damage may also be caused by alcohol or drugs. Damage of unknown cause, such as dilated cardiomyopathy, account for just below 15% of cases under the age of 75 years.

The symptoms most commonly experienced are breathlessness (exertional dyspnoea, orthopnoea and paroxysmal nocturnal dyspnoea), fatigue and ankle swelling.

Signs in heart failure are many and may be due to: pulmonary and systemic congestion; structural cardiac abnormalities causing heart failure or resulting from heart failure and complications of both heart failure and its therapy.
Along with the financial cost to the health service there is an accrued burden on other support agencies and of course the patient and caregivers. Patients with heart failure commonly experience a slow clinical deterioration interspersed with periods of exacerbation and stabilisation negatively impacting on their quality of life. A diagnosis of heart failure inevitably requires them to make significant lifestyle changes and to actively participate in the disease management process.

The Goals of the 1000 Lives Plus Chronic Heart Failure Work-stream have been:
- To reduce readmissions from patients with established CHF.
- To reduce mortality rates through provision of evidence based care.
- To evaluate patient satisfaction with services delivered.

**Why delivering reliable, evidence-based CHF care is important: the evidence base for the treatment of CHF.**

Research carried out by the Healthcare Commission found that progress in implementing evidence-based clinical guidance had, until recently, been slow. Whilst substantial progress has been made over the last few years, there is considerable national variation:
- Variation between different groups of patients.
- Variation in the confirmation of a diagnosis.
- Variation in access to evidence-based treatment and heart failure specialist staff.

The growing priority given to improving heart failure prevention and care is reflected in the ‘Cardiac Disease National Service Framework for Wales’ and its accompanying Quality Requirements. Standard 4 of the NSF is focused on the management of care of patients with chronic heart failure and uses the NICE guidelines for Chronic Heart Failure as its evidence base. The NICE guidelines have been partially updated. Additionally the ongoing National Heart Failure Audit (co-ordinated by the Central Cardiac Audit Database, CCAD) is currently focusing on CHF services delivered in secondary care, with a view to rolling out the audit to primary care in the future.

The NSF and associated guidelines, underpinned by audit and evaluation, emphasise the need for improved access to diagnostic services (including echocardiography and B-type natriuretic peptide (BNP) testing), and robust clinical management involving non-pharmacological and pharmacological treatment, including resynchronisation device therapy, assist devices and transplantation. Once the diagnosis of CHF is confirmed, patients can be started (often sequentially) on appropriate medication and a care pathway with the aim of relieving symptoms, improving health-related quality of life, and reducing morbidity and mortality.
To enhance the care afforded to patients with heart failure in Wales, the Cardiac Networks have developed CHF pathways and guidance, including use of BNP in diagnosis, and symptom control guidelines for patients with end-stage heart failure and criteria for referral to specialist palliative care.

The National Leadership and Innovation Agency for Healthcare (NLIAH) has supported the service in respect of service improvement techniques.

**The impact of delivering evidence-based care**

One of the main objectives of managing patients with CHF is to introduce appropriate drug therapy, including ACE inhibitors and beta-blockers, ideally titrating doses up to the optimal target doses used in the large randomised controlled trials. There is good evidence that this goal can be achieved in the majority of patients if a determined and concerted effort is made in hospital, at outpatient clinics and in the community.

Over 50 clinical trials have shown that, in patients with reduced left ventricular systolic function, ACE inhibitors, angiotensin receptor blockers (ARBs), and beta-blockers reduce symptoms, readmission rates, and mortality. Studies report that the use of ACE inhibitors or ARBs at optimal doses reduces the risk of mortality by 15-25% and anticoagulation for people with heart failure who have atrial fibrillation reduces risk of stroke by 60-70%. When a variety of different pharmacological options are available, positive benefits are achievable if the drugs are provided appropriately and patients are supported to be concordant with their treatment.

The role for a hospital-based service is to implement reliably the in-hospital interventions described in this ‘How to guide’ and then to focus intensively on the transition of patients out of hospital into the community.

Hospitals that go beyond a basic discharge plan and focus intensively on improving the transition of patients from hospital to ambulatory care will have a much greater impact on reducing readmissions. Numerous studies have demonstrated the benefit of prompt post-discharge support and follow-up, and hospitals can play a pivotal role in initiating a strong ambulatory care plan.

A multi-disciplinary approach is essential, with access not only to specialist medical and nursing staff but also to cardiac rehabilitation and palliative care. Heart Failure Specialist Nurses can play a pivotal role in support and continuity of care at discharge, forming a link between primary and secondary care services. Much of the benefit cited in clinical trials (i.e. reduced readmissions and mortality) is due to rigorous follow-up.

The General Medical Services Quality and Outcomes Framework (QOF) for GPs was introduced in 2004. This incentivised aspects of managing chronic diseases in primary care and incorporated three measures on the diagnosis and management of heart failure. However, there is still wide variation in the number of patients on GP disease registers with suspected heart failure. Local prevalence of recorded heart failure mostly falls short of predicted levels1, which could indicate that there is a largely unseen demand for investigations, clinical assessment and care.
Primary Care can also make a significant impact on care improvements by promoting an evidence-based bundle of care within the General Practice setting, utilising The National Public Health Service ‘Primary Care Quality Improvement Toolkit for Chronic Heart failure.

(available at: www.wales.nhs.uk/sites3/page.cfm?ordid=719&pid=33292)

References


3 Cardiac Networks Co-ordinating Group (2009) Quality Requirements: Cardiac Disease National Service Framework for Wales. WAG.


6 CHRONIC HEART FAILURE: THE MANAGEMENT OF ADULTS WITH CHRONIC HEART FAILURE IN PRIMARY AND SECONDARY CARE (PARTIAL UPDATE) Draft for Consultation (Jan 2010) Royal College of Physicians

Improving Care for Chronic Heart Failure Patients

These interventions may be grouped together to form a primary and secondary care bundle. A care bundle is a grouping of best practice with respect to a disease process that individually improve care, but when applied together may result in a substantially greater improvement.
Improving Care for Chronic Heart Failure Patients

Getting Started

Have you set up your team?
You need to consider three different dimensions:

- Organisational level leadership
- Clinical or technical expertise
- Frontline leadership and team membership

See the ‘Leading the Way to Safety and Quality Improvement’ How to Guide; and Appendix D for further information.

Do you know how you will measure outcomes?
For this content area, you should use the following outcome measures:

- Percentage admission rates for Chronic Heart Failure patients
- Percentage readmission rates for Chronic Heart Failure patients

See Appendix C for further information.

Do you and your team understand how to apply the Model for Improvement?
The Model for Improvement is a fundamental building block for change and you need to understand how to use it to test, implement and spread the interventions in this guide.

See the ‘How to Improve’ Tools for Improvement guide and Appendix E for further information.

How are you going to measure process reliability?
In order to improve outcomes for your patients you need to demonstrate you are using these interventions reliably. This means that all the elements of the interventions are performed correctly on 95% or more of the occasions when they are appropriate. You need to do this by using the process measures in this guide.

See the ‘How to Improve’ guide and Appendix C for a summary of all process measures.

How will you share your learning?
Contact 1000 Lives Plus for details of mini-collaboratives and other ways to share your learning and to learn about the progress of other teams.
Drivers and Interventions

This section details the interventions highlighted in the driver diagram which evidence has shown to be effective in treating Chronic Heart Failure. You should use the Model for Improvement to test, implement and spread each intervention, using the listed process to monitor progress.

Please note that tools suggested for use will, where possible, be linked directly from this document using hyperlinks. They will also be available, in addition to tools developed locally by frontline teams, on the WHAIP website www.wales.nhs.uk/WHAIP

Numerous studies have established a firm evidence base indicating that specific components of CHF care reduce morbidity and mortality. To reproduce the benefits and safety of treatments provided by this research, clinical practice also requires a high degree of organisation. Of course, care must be tailored to the patient’s clinical condition and co-morbidities, and there is acknowledgement of the specialist treatment options for patients who remain symptomatic. These may include adding in an aldosterone antagonist (i.e. spironolactone) and instigating invasive therapies such as Cardiac Resynchronization Therapy and/or an Implantable Cardiac Defibrillator. Implantation of ventricular assist devices and cardiac transplantation remain other options for management of very advanced heart failure.

In the absence of contraindications or intolerance, the following key interventions should be provided to all established CHF patients:

**Driver: Accurate diagnosis and Assessment**

Echocardiography at diagnosis.

**Driver: Effective Drug Therapy**

ACE-inhibitor or angiotensin receptor blockers (ARB) at discharge for CHF patients with left ventricular systolic dysfunction (Left Ventricular Ejection Fraction (LVEF) <40%).

Anticoagulant at discharge for CHF patients with persistent/ permanent atrial fibrillation (AF).

Beta-blocker therapy at discharge for stabilised patients with left ventricular systolic dysfunction, without contraindications.
Driver: Effective Communication

Discharge planning to take account of the following: patient and carer wishes and the level of care and support that can be provided in the community - this information must be accessible to the primary care team; specific behavioural/lifestyle issues that can affect the risk of development and progression of CHF; information of who to contact for advice and support immediately following discharge and patient information leaflets or booklets.

Driver: Reduce risk of infections that contribute to CHF

Influenza immunisation* (seasonal) and Pneumococcal immunisation (in Primary Care).

Driver: Service assessment/evaluation

All secondary care services that deliver care to those with CHF should take part in the National Heart Failure Audit co-ordinated by CCAD.

Echocardiography

All patients with acute or chronic heart failure require confirmation of the underlying structural or functional abnormality. Echocardiography allows assessment of systolic and diastolic ventricular function and left ventricular ejection fraction (LVEF), which can distinguish people with impaired or preserved systolic function. It also assesses chamber size, wall thickness, regional wall motion abnormalities and valvular function.

As part of the referral process for the Specialist Heart Failure Nursing Service an echocardiogram needs to have been undertaken.

An example of good practice

Challenges for General Practice have been access to echocardiography services, the integrity of the Practice Register in terms of a heart failure diagnosis confirmed by an echocardiogram and supporting documentation. Various practices achieved improvement through the audit and review of patients attributed a Heart Failure diagnosis READ code on the Practice IT system. On review, patients coded with Acute Heart Failure or Right Sided Heart Failure were excluded from the register, Scrutiny of historical documentation from secondary care was required to validate the appearance of some patients on the register, and patients who had been diagnosed with heart failure but without a confirmatory echocardiogram were referred for investigation.
Improving Care for Chronic Heart Failure Patients

As one can see from the run chart displayed, concordance with this evidence based measure improved echocardiogram documentation from 72% to 100%.

**XC03 % CHF patients with documented Echo**

Percent of CHF patients with documentation in the medical record that left ventricular systolic (LVS) function has been evaluated by echocardiogram or equivalent imaging to confirm diagnosis.
ACE-inhibitor or angiotensin receptor blockers (ARB) at discharge.

All patients with heart failure due to left ventricular systolic dysfunction should be considered for ACE-inhibitor treatment (before beta-blocker therapy is initiated - depending on clinical judgement). Systematic reviews of randomised control trials have established that ACE inhibitors improve symptoms, reduce the risk of hospitalisation for heart failure and increase life expectancy, compared with placebo. The beneficial effect is more evident in those patients with severe symptoms. In patients intolerant of ACE-inhibitors, ARBs can be used as an alternative.

Forty nine practices throughout Wales participated in Local Enhanced Services for Heart Failure by auditing their registers and optimising this therapy.

An example of good practice by a GP Practice:

An audit of the Practice register was undertaken and those patients who had not been prescribed an ACE inhibitor or ARB were called in for review, unless there was a file note stating there was a contraindication to therapy. As one can see from the run chart displayed, concordance with this process measure improved from 78% to 97% of patients receiving therapy (100% is often unachievable due to patient choice in pursuing pharmacological management options).

\[\text{XCO4 \% CHF patients with ACEI or ARB}\]

Percent CHF patients with left ventricular systolic dysfunction (LVSD), i.e. LVEF <40%, without contraindications for ACE-inhibitors or ARB contraindications prescribed an ACE-inhibitor or ARB currently in primary care.
Beta-blocker therapy

Beta-blockers are the most under-prescribed of all treatments recommended in CHF. There is now reliable evidence that some beta-blockers significantly improve mortality and reduce hospitalisation in patients with all grades of heart failure. Beta-blocker therapy is recommended in all patients with CHF in addition to standard therapies of ACE inhibitors and diuretics, regardless of whether symptoms persist or not. Several systematic reviews provide consistent evidence of the benefits of beta-blockers compared with placebo, but whether a class effect exists for beta-blockers in heart failure is uncertain.

NICE⁶ and SIGN⁸ guidelines therefore recommend that licensed beta-blockers should be used when initiating therapy in heart failure. Only Bisoprolol, Carvedilol and Nebivolol (in patients aged over 70 years) currently have heart failure as a licensed indication in the UK. Current NICE guidance⁶ states that patients who are already taking beta-blocker therapy (e.g. atenolol) when they develop heart failure can either continue with their current beta-blocker or change to a licensed alternative. Switching to a licensed beta-blocker may be an improved option, as evidence suggests the benefits of beta-blockers may not be a class effect.

Very often it is the dose of beta-blocker that is not tolerated rather than the drug per se. It is better to give a low dose of beta-blocker than none at all, while individualisation of dosage is critical to allow all eligible patients, including older people, to benefit from the treatment.

It is important to start at a low dose, up-titrate the beta-blocker dose gradually to the target or highest tolerated dose and defer therapy in patients who are not stabilised and/or have more than minimal evidence of fluid overload or volume depletion. Therapy should be provided to all eligible patients, provided that the patient is stable, does not meet exclusion criteria and will receive follow-up.

The CIBIS III results should help to eliminate most of the doubts regarding efficacy and tolerability of beta-blockade, even in older people.⁹

An example of good practice by a GP Practice

Audit and patient review was carried out as for ACE inhibitors. There have been concerns in primary care about prescribing beta-blockade for heart failure when earlier teaching stated that it was contraindicated. Patients with CHF also often have multiple co-morbidities, which may impact upon pharmacological management decisions, for example the presence of asthma, COPD or vascular disease. In this particular area communications between hospital based and community based heart failure services are well-developed so that GPs have adequate support in decision-making and monitoring beta-blocker therapy.
**XC05 % CHF patients with documented beta-blocker therapy for stabilised patients**

Percent of stabilised patients with LVSD and without contraindications prescribed beta-blocker therapy currently in primary care.

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**Wrexham LHB XC05 % CHF patients with documented beta-blocker therapy for stabilised patients - GP Prac 3**

![Graph showing % CHF patients over months]

- **X-axis**: Month
- **Y-axis**: % CHF patients

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Discharge planning

This should take account of patient and carer(s) wishes and the level of care and support that can be provided in the community. Discharge planning information must be accessible to the Primary Care team as specific behavioural/lifestyle issues can affect the risk of development and progression of CHF.

A contact name and telephone number for advice and support immediately following discharge should be supplied to the patient and carer(s). A patient information booklet or leaflet should also be given.

A multi-disciplinary approach to management involving GPs, heart failure nurses, pharmacists and specialist teams from tertiary, palliative and rehabilitative care is recommended. This approach, which is supported by the Cardiac Disease NSF and the associated Quality Requirements, ensures patients and their carers receive appropriate advice and support throughout the duration of their treatment. It also ensures a seamless transition across care boundaries. For example, a lack of clear information in relation to commencement/termination of medication for CHF in hospital is often cited as a problem by GPs.

Examples of Good Practice

In response to discharge issues, the Heart Failure Specialist Nurse Team based at Nevill Hall Hospital (Aneurin Bevan HB) evaluated the quality and timeliness of their discharge documentation for heart failure patients discharged from cardiology to primary care physicians (under the care of Specialist Heart failure Nurses) and noted the need to improve the service. They utilised the Central Cardiac Audit Database (CCAD) to populate a template, which would serve as a transfer of care document, including self-management advice and an action plan, and this reduced the time to generate and post the discharge document from 21 to seven days.

Betsi Cadwaladr UHB utilised a different template system, via their electronic point of care document, to provide General Practitioners with improved and enhanced data quality and fields.

It has always been a priority to provide patients/carers with concise information and access to advice in the early days following discharge: the challenge is to help them to recognise any deterioration of their symptoms and condition.

The Traffic Light Self Management Tool, developed by Wrexham Locality (from a heart failure management tool posted on the Institute of Healthcare Improvement website) has proved to be a highly effective, well-received and evaluated resource for patients, and has been utilised throughout Wales by specialist CHF nurses. See Helpful Resources.
Anticoagulant at discharge for CHF patients with persistent/ permanent Atrial Fibrillation (AF)
In patients with CHF who have AF, anti-coagulation is firmly recommended.

Intervention 6: Influenza immunisation (seasonal) and Pneumococcal immunisation
Influenza and pneumococcal immunisation are included as components of the care bundle based on recommendations from the Advisory Committee on Immunisation Practices (ACIP). ACIP recommends special priority for immunisation of individuals with pulmonary or cardiac disease and influenza immunisation reduces the risk of hospitalisation for patients with heart failure.

Pneumococcal vaccine is especially recommended for persons with heart failure (MMWR April 4, 1997). It is most effective in preventing invasive disease, for which heart failure patients are at higher risk.

Vaccination is a primary care intervention, as responsibility for providing immunisation falls under the General Medical Services Contract. Practitioners from any care environment should inform and encourage CHF patients to ensure they receive this protection.

Organisations should aspire to provide patients with all six of the above key care components, or documentation of a contraindication if it exists. This patient-centred philosophy is at the heart of the Intelligent Target.

Taking part in the National Heart Failure Audit: (Secondary Care Measure only at present)

The National Heart Failure Audit is run jointly by The Information Centre (IC) for health and social care and the British Society for Heart Failure and is part of the national CCAD. The audit focuses on the care and treatment of patients admitted to hospital with heart failure.

The main purpose of the audit is to measure the process of care and clinical outcomes, enabling comparisons between hospitals in order to help bring about improvement where necessary. (For organisations to be part of the audit they must register and enter at least 20 cases per month).

The benefits include:

- Assisting care providers to measure their standards of care against best practice and national standards, identify gaps in their care provision and improve their services.
- Improving the quality of life of patients with CHF and the support for their carers.
- Acting as a resource for healthcare professionals in both primary and secondary care to assess whether NHS organisations are meeting the set standards of care.
The core mandatory dataset reflects key investigations and interventions highlighted in the NSF and NICE guidelines. Completing the dataset would enable the organisation to measure against the above six key interventions in the care bundle.

Details of how to participate are available at:
www.ic.nhs.uk/services/national-clinical-audit-support-programme-ncasp/heart-disease/heart-failure/frequently-asked-questions-faqs

Measures:
To assess the application of the interventions, use the following process measures:

- Percentage CHF patients with documentation in the hospital record that left ventricular systolic (LVS) function has been evaluated: either prior to admission; during hospitalisation; or planned after discharge.
- A further measure in the primary care environment could be: the percentage of CHF patients with confirmed LVSD by echocardiography recorded in their medical record.
- Percentage CHF patients with left ventricular systolic dysfunction (LVSD) (LVEF <40%) without contraindications for ACE-inhibitors or ARB contraindications prescribed an ACE-inhibitor or ARB (at discharge from secondary care).
- Percentage stabilised patients with LVSD and without contraindications prescribed beta-blocker therapy (at discharge for patient in secondary care).
- Percentage CHF patients with documentation in the hospital record of having received a discharge plan including on-ward referral, self-management advice and written instructions/educational material given to patient and/or carer with a contact name and telephone number.
- Percentage CHF patients with persistent/ permanent AF (without contraindication to anticoagulation) prescribed warfarin at discharge.
- Percentage CHF patients with influenza immunisation documented (seasonal measure).
- Percentage CHF patients with documented immunisation for pneumococcal pneumonia.
- Number of Secondary Care Services that deliver care to those with Heart Failure taking part in National Heart Failure Audit.
Use of B-type Natriuretic Peptide (BNP)

The CHF Intelligent Target specifically measures outcomes in patients with established CHF where the definitive diagnosis of CHF has been made. It is recognised that the partially updated clinical guidelines for heart failure, due for publication by NICE in summer 2010, will extend the indications for BNP both for the diagnosis and monitoring of heart failure and that this may require a subsequent update of the Intelligent Target measures for future years.

Outcome Measures for CHF

Organisations should track important outcome measures - such as admission and readmission rates for CHF patients.

The ultimate goal of the Intelligent Target is to improve quality of life and reduce morbidity for patients with CHF. This can, in part, be reflected in the number of non-scheduled readmissions for heart failure de-compensation, or a reduction in total numbers of patients admitted to receive care within a hospital environment.

The two outcome measures for Chronic Heart Failure are:

- Percentage of Chronic Heart Failure Readmissions
- Emergency admissions to hospital

Data for these measures will be supplied by Health Solutions Wales via 1000 Lives Plus.

Readmission data
(example below shows National data from HSW)

Mortality Data

Mortality data for heart failure is available on the Health Maps Wales web site www.infostats.wales.nhs.uk/IADataserver/MapSelect.asp#
Critical Success factors and Top Tips for Secondary and Primary Care

Improving the care of those with Chronic Heart Failure is a challenge and if your team tries to do everything all at once, it may well prove overwhelming. Those who applied the following principles have already achieved success in other quality improvement work and in delivering reliable, evidence-based care for patients with CHF.

Five Top Tips for Secondary Care

1. **Segment the population**
   Rather than trying to improve every aspect of care for every CHF patient who comes to your hospital, start with a smaller group, such as only those patients being discharged from the cardiology wards (including CCU). Once your team has implemented improvements within this group, spread the improvements to other groups.

2. **Start by designing for a homogeneous population and control as many variables as possible to test the design**
   There will always be exceptions that your team feels they cannot control, such as the patient transferred from another facility where it is unknown if the left ventricular ejection fraction (LVEF) has been assessed prior to admission. Don’t start with the exceptions; start with those for which you can control most of the factors, and bring in the rest later.

3. **Remember that many CHF components (such as medication prescription) need to happen at discharge, in contrast to those that can be provided at any time (such as patient education)**

4. **Use small tests of change to test the design** (See the Model for Improvement.)

5. **Measure the process.**
   If the science is right, the outcomes will follow.
**Five Top Tips for Primary Care**

1. **Use standard approaches to quality improvement.**
   For example use the Primary Care Quality Improvement toolkit developed by Public Health Wales (2008) to accomplish the goal. This constitutes an evidence-based bundle of care.

2. **Designate a named Nurse who is responsible for CHF patients within your Chronic Condition Management Clinics.**

3. **Revalidate your CHF Patient Register**
   This may be done by making IT system searches for drugs most often prescribed for CHF such as beta blockers, or spironolactone.

4. **Institute and optimize Ace inhibitor/ARB/beta blocker therapy to maximum tolerated levels to improve patient outcomes.**
   This will also satisfy responsibilities under the QOF system for CHF indicators.

5. **Evaluate your progress by interrogation of the Practice IT system.**
   Consistent use of READ codes will be important. It is hoped that an Audit + module will be developed to facilitate consistent retrieval for improvement purposes.
How to engage patients and their carers in Chronic Heart Failure care

Patient-centred care is a goal of the NHS in Wales. Supporting people to engage confidently and effectively with a range of health professionals, government officials, charitable organisations, other service users and carers is a high priority for the Welsh Assembly Government and their partners. Guidance on Involving NHS Service Users and Carers will shortly be published by WAG, and will focus particularly on those with vascular conditions including heart disease.

Techniques for engagement include:

- Discovery Interviews/Patient Story Collecting
- Focus Groups
- Opinion Surveys
- Forums
- Health Panels
- Citizens’ Juries
- Large Scale Events

The Cardiac Networks in Wales and 1000 Lives Plus have utilised very successfully feedback from patient stories. The South East Wales Cardiac Network pioneered the use of Discovery Interviews in Wales and has produced a “How To” kit for undertaking discovery interviews/patient story collecting projects.

In Mid-Wales a three counties group led by Carmarthenshire locality used focus groups to evaluate patient experience of heart failure service provision.

In North Wales, patient representatives attend Board meetings and support the change agenda and have opened educational events with powerful and emotive stories of their experience of living with heart failure.

Resources are available from the 1000 Lives Plus website to assist you in developing this element of care evaluation by placing the patient central to care improvement: www.1000livesplus.wales.nhs.uk.

Evaluating the Patient Experience

This has been a powerful and valuable tool to drive improvements and should be central to the qualitative evaluation of service delivery. Online resources are available at: www.1000livesplus.wales.nhs.uk
1. An example of a PDSA utilised by Betsi Cadwaladr University Health Board.

Using a sticker to drive care improvement:

**Plan**
Optimise Management and Care of CHF Patients by Improving adherence with an evidence based bundle of care, by utilisation of a sticker in notes.

**Do**
Use a sticker in Medical Notes which will serve as an aide memoire and care driver. (See below) Utilise in 10 sets of notes.

**Study**
Test effectiveness of intervention and evaluate: It was noted that when the page of the notes on which the sticker was placed was turned the effect was lost.

**Act**
Adopt/adapt/abandon - Adapt- Utilise Sticker on Drugs Sheet.

Repeat PDSA

**Plan**
Optimise Management and Care of CHF Patients by Improving adherence with an evidence based bundle of care, by utilisation of a sticker on Medicines Kardex/Sheet

**Do**
Use a sticker which will serve as an aide memoire and care driver. Utilise on 10 drugs charts.

**Study**
Test effectiveness of intervention and evaluate.

**Act**
Adopt/adapt/abandon.

2. Mortality Data

Mortality data for heart failure is available on the Health Maps Wales web site www.infostats.wales.nhs.uk/IADataserver/MapSelect.asp#

In the ‘select theme’ box, select ‘Cardiovascular Disease’, and then click ‘Filter’. The top analysis should be ‘Cardiovascular Disease Mortality’, select the map icon next to ‘Unitary Authority’ - a blank map should load up. Then in the sub theme box select ‘heart failure’, then select an indicator and a date and select ‘show data’, and a report should be presented on heart failure mortality.

Well evaluated by patients and carers, as a tool for recognising deterioration of their symptom control, and giving them confidence in obtaining advice and assistance from Specialist CHF Nurses.
### Appendix A - Measures and Definitions

#### Chronic Heart Failure

<table>
<thead>
<tr>
<th>Measure</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Echocardiography</strong></td>
<td>Percent of CHF patients with documentation in the hospital record that left ventricular systolic (LVS) function has been evaluated: either prior to admission; during hospitalization; or is planned after discharge. In the Primary care environment, the percentage of CHF patients with confirmed LVSD by echocardiography recorded in their medical record.</td>
</tr>
<tr>
<td><strong>ACE-inhibitor or angiotensin receptor blockers (ARB) at discharge for CHF patients with LVS dysfunction</strong></td>
<td>Percent CHF patients with left ventricular systolic dysfunction (LVSD) (LVEF &lt;40%) without contraindications for ACE-inhibitors or ARB contraindications prescribed an ACE-inhibitor or ARB (at discharge for secondary care).</td>
</tr>
<tr>
<td><strong>Beta-blocker therapy for stabilised patients with left ventricular systolic dysfunction, without contraindications</strong></td>
<td>Percent of stabilised patients with LVSD and without contraindications prescribed beta-blocker therapy (at discharge for patient in secondary care).</td>
</tr>
<tr>
<td><strong>Discharge planning</strong></td>
<td>Percent of CHF patients with documentation in the hospital record of having received a discharge plan including on-ward referral, self-management advice and written instructions/educational material given to patient and/or caregiver and the relevant contact numbers.</td>
</tr>
<tr>
<td><strong>Anticoagulant at discharge for CHF patients with persistent/permanent Atrial Fibrillation</strong></td>
<td>Percentage of CHF patients with persistent/ permanent AF and without warfarin contraindications prescribed warfarin at discharge.</td>
</tr>
<tr>
<td><strong>Influenza immunisation, Pneumococcal immunisation (Primary care Measure)</strong></td>
<td>Percent of CHF patients with influenza immunisation documented (seasonal measure). Percent of CHF patients with documented immunisation for pneumococcal pneumonia.</td>
</tr>
<tr>
<td><strong>Percent of chronic heart failure patients receiving perfect care (all of the above)</strong></td>
<td>Percentage of CHF patients who have received each element of the evidence-based bundle of care, which constitutes ‘perfect care’.</td>
</tr>
<tr>
<td><strong>Number of Secondary Care Services that deliver care to those with Heart Failure taking part in National Heart Failure Audit.</strong></td>
<td>Heart Failure Audit.</td>
</tr>
</tbody>
</table>
Appendix B - Setting up your team

Achieving improvements that reduce harm, waste and variation at a whole-organisation level needs a team approach: one person working alone, or groups of individuals working in an unco-ordinated way will not achieve it and this applies equally at all organisational levels.

Whether your improvement priorities relate to 1000 Lives Plus content areas, national intelligent targets or other local priorities, you need to consider three different dimensions in putting your team together:

- Organisation level leadership.
- Clinical or technical expertise.
- Frontline leadership.

There may be one or more individuals on the team working in each dimension, and one individual may fill more than one role, but each component should be represented in order to achieve sustainable improvement.

**Organisation level leadership**

An Executive, or equivalent level Director, should always be given delegated accountability from the Chief Executive for a specific content area; and all staff working on the changes should know who this is. This individual needs sufficient influence and authority to allocate the time and resources necessary for the work to be undertaken.

It is likely that accountability will be further delegated to Divisions, Clinical Programme Groups or Directorates and this can help to build ownership and engagement at a more local level. However, it is essential that the leader has full authority over the areas involved in achieving the improvement aim. As changes spread more widely, crossing organisational boundaries, appropriate levels of delegation will need to be reviewed.

When working with frontline teams, it is essential for organisational level leaders to have an understanding of the improvement methodology and to base conversations around the interpretation of improvement data. Reporting of progress to higher organisational levels should also use a consistent data format so that the Executive level leader can report to the Board on progress.

**Clinical/Technical Expertise**

A clinical or technical expert is someone who has a full professional understanding of the processes in the content area. It is critical to have at least one such champion on the team who is intimately familiar with the roles, functions, and operations of the content area.

This person should have a good working relationship with colleagues and with the frontline leaders, and be interested in driving change in the system. It is important to look for clinicians or technical professionals who are opinion leaders.
in the organisation (individuals sought out for advice who are not afraid to try changes).

Patients can provide expert advice to the improvement team, based on their experience of the system and the needs and wishes of patients. A patient with an interest in the improvement of the system can be a useful member of the team.

Additional technical expertise may be provided by an expert on improvement methodology, who can help the team to determine what to measure, assist in the design of simple, effective measurement tools, and provide guidance on the design of tests.

**Frontline leadership**

Frontline leaders will be the critical driving component of the team, assuring that changes are tested and overseeing data collection. It is important that this person understands not only the details of the system, but also the various effects of making changes in the system. They should have skills in improvement methods. This individual must also work effectively with the technical experts and system leader. They will be seen as a bridge between the organisation leadership and the day-to-day work.

Frontline leaders are likely to devote a significant amount of their time to the improvement work, ensuring accurate and timely data collection for process and outcome measures related to the frontline team.

**Characteristics of a good team member**

In selecting team members, you should always consider those who want to work on the project rather than trying to convince those that do not. Some useful questions to consider are the following:

- Is the person respected for their judgment by a range of staff?
- Do they enjoy a reputation as a team player?
- What is the person’s area of skill or technical proficiency?
- Are they an excellent listener?
- Is this person a good verbal communicator in, and in front of, groups?
- Is this person a problem-solver?
- Is this person disappointed with the current system and processes and do they passionately want to improve things?
- Is this person creative, innovative, and enthusiastic?
- Are they excited about change and new technology?
Appendix C - The Model for Improvement

Successful improvement initiatives don’t just happen - they need careful planning and execution. There are many things to consider and techniques to employ, which are captured in the driver diagram on page 31. The rest of this section explains the primary drivers and where to get more help in using them.

In any improvement initiative you need to succeed in three areas. You need to generate the Will to pursue the changes, despite difficulties and competing demands on time and resources. You need the good Ideas that will transform your service. Finally you need to Execute those ideas effectively to get the change required.

**Will**

The interventions you need to build Will are explained in the ‘Leading the Way to Safety and Quality improvement’ and ‘How to Improve’ guides. They concentrate on raising the commitment levels for change and then providing the project structure to underpin improvement approaches. Spreading changes to achieve transformative change across the whole health system requires strong leadership. We need to create an environment where there is an unstoppable will for improvement and a commitment to challenge and support teams to remove any obstacles to progress.

**Ideas**

The interventions in this guide describe ideas which evidence shows to be effective for achieving changes that result in improvements. It gives examples from organisations that have achieved them and also advice based on their experience. Methods and techniques for generating new ideas or innovative ways to implement the evidence can be found in the ‘How to Improve’ guide and other improvement literature.

**Execution**

However, to bring these ideas into routine practice in your organisation, it is essential that you test the interventions and ensure that you have achieved a reliable change in your processes before attempting to spread the change more widely.

1000 Lives Plus uses the Model for Improvement (MFI) which is a proven methodology as the basis for all its improvement programmes. It requires you to address three key questions and then use Plan-Do-Study-Act (PDSA) cycles to test a change idea. By doing repeated small-scale tests, you will be able to adapt change ideas until they result in the reliable process improvement you require. Only then are you ready to implement and spread the change more widely.
Improving Care for Chronic Heart Failure Patients

Model for Improvement

**Driver Diagram**

1. **Aim**
   - To deliver patient safety and quality initiatives for Health Boards and Trusts

2. **Primary drivers**
   - Will
   - To create an organisational culture and environment for improvement

3. **Secondary drivers**
   - Ideas
     - Evidence Base (The what to)
     - Use the relevant content area ‘How to Guide’ to assess the latest evidence of best practice

4. **Interventions**
   - Engagement
     - Engage senior Leadership
     - Make links to organisation goals
     - Form teams
     - Build skills
     - Raise awareness
     - Appoint clinical champions
   - Consult Faculty members to agree standards to be achieved
   - Use critical sub sets of key content areas to improve the outcome

5. **Execution**
   - Improvement Methodology (The how to)
     - The Model for Improvement
       - What are you trying to accomplish?
       - How will you know that a change is an improvement?
       - What change can you make that will result in improvement?
     - Establish reliable process
     - Use reliability model

   - PDSA cycles:
     - Test - implement - spread - sustain
     - Set SMART aims
     - Communicate aims
     - Use project charter to provide structure
     - Understand what to measure
     - Use 7 step measurement process
     - Map the process
     - Use creative thinking
Improving Care for Chronic Heart Failure Patients

Model for Improvement—PDSA Cycle

What are we trying to accomplish?
How will we know that a change is an improvement?
What change can we make that will result in improvement?

For more guidance on using the Model for Improvement, see the ‘How to Improve’ guide.

Seven Steps to Measurement

1 Decide aim
2 Choose measures
3 Define measures
4 Collect data
5 Analyse & present
6 Review measures
7 Repeat steps 4-6
One area that bears extra attention is measurement because we have found that this is often the Achilles heel of improvement projects. When measuring your progress, follow the Seven Steps to measurement shown on page 32 and covered in more detail in the ‘How to Improve’ Guide.

The key is to go round the Collect-Analyse-Review cycle frequently:

- **Collect** your data
- **Analyse** - turn it into something useful like a run chart
- **Review** - meet to decide what your data is telling you and then take action

Successful improvement projects all have clear aims, robust measurement and well tested ideas. Use the ‘How to Improve’ guide to ensure your projects have all three.

**What are we trying to accomplish?**

You will need to set an aim that is Specific, Measurable, Achievable, Realistic and Time-bound (SMART). Everyone involved in the change needs to understand what this is and able to communicate it to others.

**How will we know that change is an improvement?**

It is essential to identify what data you need to answer this question and how to interpret what the data is telling you. The improvement methodology ‘How to Guide’ provides detailed information on the tools, tips and information you need to achieve this, and includes the following advice:

<table>
<thead>
<tr>
<th><strong>Plot data over time</strong></th>
<th>Tracking a few key measures over time is the single most powerful tool a team can use.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Seek usefulness, not perfection.</strong></td>
<td>Remember, measurement is not the goal; improvement is the goal. In order to move forward to the next step, a team needs just enough data to know whether changes are leading to improvement.</td>
</tr>
<tr>
<td><strong>Use sampling.</strong></td>
<td>Sampling is a simple, efficient way to help a team understand how a system is performing.</td>
</tr>
<tr>
<td><strong>Integrate measurement into the daily routine.</strong></td>
<td>Useful data are often easy to obtain without relying on information systems.</td>
</tr>
<tr>
<td><strong>Use qualitative and quantitative data.</strong></td>
<td>In addition to collecting quantitative data, be sure to collect qualitative data, which often are easier to access and highly informative.</td>
</tr>
<tr>
<td><strong>Understand the variation that lives within your data.</strong></td>
<td>Don’t overreact to a special cause and don’t think that random movement of your data up and down is a signal of improvement.</td>
</tr>
</tbody>
</table>
What change can we make that will result in improvement?

The interventions in this guide describe a range of change ideas that are known to be effective. However, you need to think about your current local systems and processes and use the guide as a starting point to think creatively about ideas to test. The improvement methodology guide gives more advice to support you in generating ideas.

Spreading changes to achieve transformative change across the whole health system requires strong leadership. We need to create an environment where there is an unstoppable will for improvement and a commitment to challenge and support teams to remove any obstacles to progress. The guide on ‘Leading the Way to Safety and Quality Improvement’ gives detailed information on interventions that will support this. However, the Model for Improvement, PDSA cycles and process measurement lie at the heart of the transformative change we seek.
Improving care, delivering quality

If we can improve care for one person, then we can do it for ten.

If we can do it for ten, then we can do it for a 100.

If we can do it for a 100, we can do it for a 1000.

And if we can do it for a 1000, we can do it for everyone in Wales.

www.1000livesplus.wales.nhs.uk