



Heart Disease Improvement Programme

National Overview – Take Heart

September 2011

Healthcare Improvement Scotland is committed to equality. We have assessed the performance assessment function for likely impact on equality protected characteristics as defined by age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, and sexual orientation (Equality Act 2010). You can request a copy of the equality impact assessment report from the Healthcare Improvement Scotland Equality and Diversity Officer on 0141 225 6999 or email contactpublicinvolvement.his@nhs.net

On 1 April 2011, Healthcare Improvement Scotland took over the responsibilities of NHS Quality Improvement Scotland.

Image credits:

Science Photo Library pages 16,17,19, 23

NHSScotland Photo Library pages 20, 24

Copyright © 2011 **Healthcare Improvement Scotland**

ISBN 1-84404-601-X

First published September 2011

The contents of this document may be copied or reproduced for use within NHSScotland, or for educational, personal or non-commercial research purposes only. Commercial organisations must obtain written permission from Healthcare Improvement Scotland prior to copying or reproducing any part of this document.

Information contained in this report has been supplied by NHS boards/NHS organisations, or taken from current NHS board/NHS organisation sources, unless otherwise stated, and is believed to be reliable on publication.

www.healthcareimprovementscotland.org

Acknowledgements

Many people across Scotland contributed to the Healthcare Improvement Scotland heart disease improvement programme. Our shared aim was to make sure people with heart disease in Scotland have person-centred, safe and effective care. We warmly acknowledge the time and effort that has been invested as well as the professional and personal commitment to this work. In particular, we acknowledge the Scottish Intercollegiate Guidelines Network (SIGN) guideline groups; the standard setting groups, including those who chaired the groups and project group leads; the British Heart Foundation; and Chest Heart & Stroke Scotland. We wish to record our gratitude to the clinicians who led the various national audits.

We also want to thank the key individuals who have led on this work throughout the last 4 years, in particular, Martin Denvir (Clinical Lead for Programme), and Iain Findlay. We would like to thank Kevin Jennings, Frank Dunn and Nick Boon for chairing the evaluation panels. We also acknowledge the support, advice and professional input by the Scottish Government Health Directorates National Advisory Committee, particularly from Will Scott, Tom Pilcher and Barry Vallance. Finally, this programme would not have been possible without the expertise, advice and development work provided by the Information Services Division (ISD) of NHS National Services Scotland. Thanks are due in particular to Sue Payne and Adam Redpath.

The NHS board managed clinical networks have taken the lead locally in completing the self-evaluation tool and supporting the measurement work. They will now take the lead on advising on local improvement plans using the information and intelligence gathered by this programme of work. We acknowledge the support provided by the managed clinical network managers and lead clinicians in all the NHS boards, as well as the support provided by the local clinical governance teams.

A **glossary of terms** can be found on the British Heart Foundation's website using the following link: www.bhf.org.uk/heart-health/glossary.aspx

It can also be found on the Healthcare Improvement Scotland website (www.healthcareimprovementscotland.org) where you will also find a report containing the summary findings for each NHS board.

Contents

Acknowledgements	3
Foreword	6
Executive summary	7
About the Heart Disease Improvement Programme	10
NHS board performance against the heart disease standards	12
Our findings and recommendations from the evaluation panels and national measurement exercise	14
Appendix 1 - Heart disease indicators	26
Appendix 2 - Heart failure care bundle: acute care	29

Foreword

Cardiovascular disease is the leading cause of death in the UK. The largest contribution to these deaths is due to coronary heart disease which results in nearly 10,000 deaths every year in Scotland. Although death rates from coronary heart disease have been falling since the late 1970s, the rate in the UK is still among the highest in Western Europe and higher still in Scotland compared to other parts of the UK. Mortality varies across Scotland with the highest rates found in the West of Scotland. Over the last 10 years, much has been done to tackle the problem at every level. The Scottish Government set a strong strategic direction when it first published a *National Strategy for Coronary Heart Disease and Stroke* in 2002. This was updated in 2004 and in 2009, and a National Advisory Committee was set up to oversee progress against the required actions. The ban in Scotland on smoking in enclosed public spaces in 2006 was also a landmark strategic initiative.

At local level, NHS boards were supported in setting up managed clinical networks which have developed ambitious programmes of work aimed at making sure every patient gets the right care, every time. This work has been informed and guided by an important set of evidence-based SIGN guidelines published by Healthcare Improvement Scotland (then NHS Quality Improvement Scotland) in 2007.

To support translating the evidence into practice, Healthcare Improvement Scotland set up a comprehensive heart disease improvement programme which included:

- the development and publication of standards
- assessment of each NHS board against the standards
- a national programme of heart disease audit aimed at specifying a small number of key indicators, and
- the development and implementation of a care bundle for heart failure to mark the start of a sustainable process of improvement. This is closely linked to the Scottish Patient Safety Programme in acute care and to the work on patient safety in primary care.



I was appointed as clinical lead for this programme in 2008 and I have been privileged to work with many collaborators, organisational and individual. The commitment to this programme of work and to ongoing improvement of heart disease services in Scotland has been considerable and in just 3 years we are now publishing a groundbreaking report which sets out in detail just what has been achieved in Scotland – and what is still to be done. The journey is not over but we know what we need to do and we can now measure our improvement and progress towards this. It has been a privilege and a pleasure to provide professional and clinical leadership for this work and I look forward to the next stage.

Acknowledgements have been made to the many people who have been involved in this work. I would like to add my thanks to the team at Healthcare Improvement Scotland including Wendy Forbes, Lesley Holdsworth, Mel Miller, Elaine Racionzer, Fiona Russell, Jan Warner and Anna Wimberley.

Martin Denvir
Programme Clinical Lead
September 2011

Executive summary

Introduction

There were 19,641 cases of heart disease in Scotland in 2009–2010 and around 11,500 people had a heart attack in Scotland in 2010¹. Diagnosis is often sudden: chest pain, an emergency call, an ambulance journey to hospital and a diagnosis of heart attack. Many healthcare professionals are involved in this pathway of care and, once diagnosed with a heart attack, there follows a life-long journey filled with many challenges of tests, medication, treatment, rehabilitation and personal adjustment to this life-changing event.

Scotland has world-class cardiology services. We have good evidence of best care and steadily improving outcomes. We also have a high degree of expertise; technology; and effective networks to provide this. Over the last 3 years, we have been measuring our performance against a comprehensive set of clinical standards in order to allow us to take stock of where we are now and where we should focus our efforts towards further improvement.

This report is the first of its kind: it is the first time we have had such a comprehensive picture of cardiology services. We have been able to achieve this because our effective networks have made it possible to link together primary and acute care. These networks include GPs, the ambulance service, nurses, cardiologists, allied health professionals including physiotherapists, cardiac physiologists and radiographers. They also include organisations like the British Heart Foundation and Chest Heart & Stroke Scotland which are integral to care and recovery and provide information and support to thousands of people every year.

Headline findings

Effective heart disease care begins with prevention and is dependent on assessing those at risk. Once diagnosed, effective treatment and multiprofessional co-operation are essential. While not every NHS board throughout Scotland can provide very specialised services, much has been done to develop expert centres that are available to all.

We found the following.

- All NHS boards have cardiovascular risk assessment programmes in place to identify people at high risk of heart disease and stroke. However, these programmes are not provided comprehensively for all high risk groups in the general population.
- For people with atrial fibrillation, a common heart rhythm disorder, we identified concerns about the prescribing of blood-thinning drugs, such as warfarin. While nearly 80% of people with this diagnosis receive some form of blood-thinning drug, less than half (47%) of higher risk patients are receiving warfarin. Conversely, a third (31%) of low risk patients, who should be treated with aspirin alone, are receiving warfarin which exposes them, unnecessarily, to a higher risk of bleeding complications.
- The Scottish Ambulance Service provides a well-trained and rapid response to emergency calls. It reaches 71% of patients with suspected heart disease within 8 minutes with highly equipped ambulances carrying a full range of equipment and drugs to treat a heart attack. The data collected by the Scottish Ambulance Service, at this point in time, cannot be readily used to provide information about the speed of diagnosis during this first part of the patient pathway.
- From the limited data provided by NHS boards, we found that on average 32% of patients who call for help due to chest pain have an electrocardiogram (ECG) diagnostic test within 30 minutes.

¹ ISD Scotland, NHS National Services Scotland. Heart Disease Statistics Update, Year Ending 31 March 2010. 2011 [cited 2011 Aug 31]; Available from: www.isdscotland.org/Health-Topics/Heart-Disease/Publications/2011-02-22/2011-02-22-heart-disease-report.pdf

- 90% of patients have troponin testing within 12 hours of symptoms.
- Few NHS boards meet the reperfusion treatment (angioplasty or thrombolysis) target for patients with heart attacks. While patients are referred to specialist intervention centres, tracking the quality of care patients receive across different centres proved challenging.
- Once diagnosed with coronary heart disease, the use of drugs to prevent a second heart attack is very high: 96% of patients are prescribed long-term aspirin; 93% clopidogrel; 90% beta blockers; 95% statins; and 87% angiotensin converting enzyme inhibitor or angiotensin receptor blockers.
- Over 90% of patients discharged from hospital cardiology wards were given advice on symptoms, diets, drugs and exercise. Following a heart attack, on average 80% were referred to cardiac rehabilitation services where they receive a thorough assessment and are offered a menu of options, including exercise classes and psychological support, to help them recover from their heart attack.
- The overall use of implantable devices to treat life-threatening heart rhythm disorders (implantable cardioverter defibrillators) is relatively high and in line with England. The implantation level of specialised pacemaker devices for people with heart failure (cardiac resynchronisation therapy) in Scotland is significantly lower than in England.
- There is increasing recognition that people with heart disease need additional supportive care as they reach the end of life which includes palliative care where appropriate. Regular needs assessment is important but a relatively low number of patients (2%) with heart failure were registered on their GP palliative care register. There was no way of confirming whether this was an appropriate level or not.
- Systematic review of prescribing of anticoagulants for all patients with atrial fibrillation in primary care, beginning with a documented stroke risk assessment. Patients at low risk of stroke should not routinely be prescribed warfarin.
- NHS boards are responsible for the care of their own patients and need to collect and use information about every stage of the patient pathway, including where care is provided by other NHS organisations. To provide the best possible care, NHS boards need to use data collected by a range of organisations, including the Scottish Ambulance Service. NHS boards should seek to review these data regularly and provide feedback to all stakeholders on the quality of patient care, particularly when they are referred to specialist (tertiary) centres outwith their local NHS board. The accountability for these processes should be with the NHS board of residence of the patient. Managed clinical networks are particularly well placed to facilitate a co-ordinated approach to this.
- NHS boards should implement the Scottish Patient Safety Programme heart failure care bundle which will improve a range of aspects of care including the use of cardiac resynchronisation therapy devices. NHS boards should seek to use the improvement methodologies encapsulated in the care bundle approach to improve other aspects of patient care.
- NHS boards need to develop, review, and record patients' support needs regularly so that they can respond to these as they change over time. In particular, NHS boards should develop systems to screen patients with heart disease for end of life needs using recognised tools. This can be facilitated through GP palliative and support care registers and anticipatory care plans.
- In future, NHS boards should routinely collect data to measure their performance using the heart disease clinical indicators developed as a result of the Healthcare Improvement Scotland Heart Disease Improvement Programme. Review of these data will support continual improvement and provide a regular, national picture of cardiac services in Scotland.

Recommendations

These headline findings provide evidence of very good care in many cases. They also shine a light on areas we can improve and we recommend the following.

Next steps

As a result of this work, we have now developed a number of tools for NHS boards that will support continued improvement. In particular:

Heart disease indicators

A suite of indicators has been developed by Healthcare Improvement Scotland working in collaboration with ISD and the National Advisory Committee for Heart Disease. These indicators include a series of high level indicators from ISD and a small number of key clinical indicators to be collected by heart disease managed clinical networks throughout Scotland. They are at the stage of being tested and will be refined over time and in light of experience. The indicators have been published at the same time as this report (see Appendix 1). They are aligned to the heart disease standards and to the Scottish Government Action Plan for Heart Disease. They will be reported on and reviewed regularly by an expert review panel.

Medical profiles

A subset of the heart disease clinical indicators will be included in the national programme of medical profiles. These medical profile indicators are currently being piloted and will not require any additional data collection by managed clinical networks and will be reported regularly to chief executive officers. NHS boards that are underperforming compared with national levels of performance will be expected to respond with comments and should have an improvement plan in place to address any deficiencies in service delivery.

Care bundles

The Scottish Patient Safety Programme heart failure care bundle is currently being implemented in acute care by all managed clinical networks in Scotland. Each NHS board is at a different stage of implementation. This work is aligned with the development and implementation of a primary care heart failure bundle which is currently being piloted in five NHS boards.

Work is also under way on a combined audit/bundle approach to the management of patients with acute coronary syndrome.

Follow-up

Healthcare Improvement Scotland will review performance against the standards using the data collected from the care bundles, the clinical indicators and the medical profiles.

This report provides the information we need to make heart disease services in Scotland even better. The tools and support now in place demonstrate our commitment to make this happen.

About the Heart Disease Improvement Programme

The Heart Disease Improvement Programme was set up in 2007. It aims to drive and support continuous improvements in care for people in Scotland with heart disease. The programme supports implementation of evidence and measurement of the effectiveness of this. The core elements include:

- the five SIGN heart disease guidelines published in February 2007, in addition to the existing guideline on cardiac rehabilitation
- the *Clinical Standards for Heart Disease*, published in April 2010, together with a self-evaluation tool and a report containing the summary findings for each NHS board, and
- a measurement exercise aimed at identifying key improvement indicators that can be routinely measured and used for driving improvement.

This programme is ambitious, challenging and ground-breaking.

- **Ambitious** because it set out to provide the first ever Scotland-wide picture of heart disease services.
- **Challenging** because it required streamlining data collection and analysis to make future assessment at local and national level straightforward and improvement focused.
- **Ground-breaking** because we are moving away from measuring everyone against everything, and targeting resources locally and nationally to achieve the best possible experiences and outcomes.

The data, intelligence and knowledge produced and developed as a result of this work are valuable resources, locally and nationally. We have used this to develop a national heart failure care bundle in acute care (see Appendix 2) as part of the Scottish Patient Safety Programme. The data also need to be used further to support local and national improvement.

NHS boards have been supported to put in place managed clinical networks to plan and support improvement in heart disease services. We worked collaboratively with the managed clinical networks to develop our Heart Disease Improvement Programme.

This is a new approach for us which we will evaluate and build on our experience going forward.

Making sure the programme was feasible and effective

We piloted the standards in two NHS boards (NHS Ayrshire & Arran and NHS Western Isles). Following this, all NHS boards had two rounds of measurement (audit). The first round was a pilot to support NHS boards to test local systems and give us feedback on how best to measure performance against the standards. Data collected and analysed from the second round were used for submission as part of the formal performance assessment exercise.

Evidence from NHS boards

NHS boards were asked to provide evidence that they were currently meeting the standards or were developing systems of improvement that would lead to the standards being met within a locally defined timescale. All NHS boards provided a completed self-evaluation and supporting evidence by November 2010. Healthcare Improvement Scotland provided guidance to NHS boards on what type of evidence was required. This included:

- narrative/description of current local services and any improvement plans
- local documentation such as protocols, pathways, care plans and patient information documents
- data from national (Healthcare Improvement Scotland led) audit and data from local audit
- data from ISD
- data from the Quality and Outcomes Framework (QOF), and
- data provided by the Scottish Ambulance Service.

Evaluation panels

Evaluation panels included public partners, medical and nursing staff, managers, and representatives from voluntary sector organisations. All panel members had training in the review process and scoring methodologies before panel meetings. Panels met over a 2-day period in January 2011. We used a four-point assessment scale:

Level 1: The NHS board is **developing** its policies, strategies, systems and processes to deliver heart disease services in line with national evidence, standards and guidance.

Level 2: The NHS board is **implementing** its policies, strategies, systems and processes to deliver care in line with national evidence, standards and guidance.

Level 3: The NHS board is **monitoring** the effectiveness of its policies, strategies, systems and processes to deliver care in line with national evidence, standards and guidance.

Level 4: The NHS board is **reviewing** and continuously improving its policies, strategies, systems and processes to deliver care in line with national evidence, standards and guidance.

The panel assessed each criterion and the scores were aggregated to give the NHS board's overall performance for each standard.

This scale reflects the infrastructure in place to provide person-centred, safe and effective care for people with heart disease.

NHS board performance against the heart disease standards

Heart disease standards		Scotland	AA	BO	DG	FI	FV	GR	GGC	HI
1	Provision of information to patients	I	M	I	M	I	I	I	M	I
2	Communication and multidisciplinary management of patients with heart disease	I	M	D	I	I	M	I	I	I
3	Education and training for staff	I	D	D	I	I	D	D	D	I
4	Primary prevention of cardiovascular disease	I	I	I	I	I	D	NE	D	I
5	Assessment of chest pain in the non-emergency care setting	I	I	D	I	I	I	D	I	D
6	Assessment and management of confirmed coronary heart disease in the non-emergency care setting	I	I	I	I	I	I	D	M	I
7	Assessment and diagnosis of suspected acute coronary syndrome	I	I	I	I	I	I	I	I	I
8	Initial management and treatment of suspected or confirmed acute coronary syndrome	I	I	I	I	I	D	D	I	D
9	Ongoing management and treatment of acute coronary syndrome	I	M	I	M	R	M	I	M	I
10	Cardiac rehabilitation	I	M	M	M	M	M	D	R	D
11	Assessment, diagnosis and treatment of arrhythmias	D	D	D	D	D	D	D	I	D
12	Management of atrial fibrillation	D	I	D	D	I	I	D	I	D
13	Management of ventricular arrhythmias	D	I	D	D	D	D	I	D	D
14	Diagnosis of heart failure	D	D	D	I	I	D	D	D	D
15	Medication for heart failure	I	I	I	I	M	I	D	I	I
16	Multidisciplinary service delivery for heart failure	I	I	I	I	I	I	NE	I	I
17	Implantable devices for heart failure	D	D	D	D	I	I	NE	D	D
18	Supportive and palliative care for patients with heart disease	D	M	D	I	D	I	NE	M	D

Key:

Assessments:		NHS boards:		
D	Developing	AA – Ayrshire & Arran	GGC – Greater Glasgow and Clyde	SH – Shetland
I	Implementing	BO – Borders	HI – Highland	TA – Tayside
M	Monitoring	DG – Dumfries & Galloway	LA – Lanarkshire	TSH – The State Hospital
R	Reviewing	FI – Fife	LO – Lothian	WI – Western Isles
NE	No evidence	FV – Forth Valley	NWTC – National Waiting Times Centre	
NA	Not applicable	GR – Grampian	OR – Orkney	

Heart disease standards		LA	LO	NWTC	OR	SH	TA	TSH	WI
1	Provision of information to patients	M	I	I	D	I	I	I	M
2	Communication and multidisciplinary management of patients with heart disease	M	I	I	D	I	I	M	D
3	Education and training for staff	M	M	D	NE	M	I	D	D
4	Primary prevention of cardiovascular disease	I	I	NA	D	I	I	M	I
5	Assessment of chest pain in the non-emergency care setting	M	I	NA	D	I	I	I	I
6	Assessment and management of confirmed coronary heart disease in the non-emergency care setting	M	D	NA	D	I	I	NA	I
7	Assessment and diagnosis of suspected acute coronary syndrome	I	M	NE	D	I	I	NA	I
8	Initial management and treatment of suspected or confirmed acute coronary syndrome	I	I	D	D	I	I	NA	I
9	Ongoing management and treatment of acute coronary syndrome	I	I	I	D	M	I	NA	I
10	Cardiac rehabilitation	I	M	NE	I	I	I	NA	I
11	Assessment, diagnosis and treatment of arrhythmias	M	D	D	D	D	D	NA	I
12	Management of atrial fibrillation	I	D	I	NE	D	D	NA	I
13	Management of ventricular arrhythmias	I	D	D	NE	D	D	NA	D
14	Diagnosis of heart failure	D	D	I	D	I	I	NA	D
15	Medication for heart failure	I	M	D	D	I	I	NA	M
16	Multidisciplinary service delivery for heart failure	I	I	D	D	I	I	NA	I
17	Implantable devices for heart failure	I	D	I	D	D	I	NA	D
18	Supportive and palliative care for patients with heart disease	D	I	NE	D	I	D	NA	I

Our findings and recommendations from the evaluation panels and national measurement exercise

Our findings are presented in five sections that cover all 18 standards. Where applicable, we have also included data from the measurement exercise.

General (Standards 1–3)

These standards cover:

- provision of information to patients
- communication and multidisciplinary management of patients with heart disease, and
- education and training for staff.

Provision of information to patients

Panel assessment

All NHS boards provided evidence that they had a wide range of patient information in a variety of formats available to patients and their families. Most of this information was sourced from charitable organisations, such as the British Heart Foundation and Chest Heart & Stroke Scotland. Few NHS boards had any system that ensured that this information was widely available in all clinical settings. At the time of our review, few NHS boards provided evidence of monitoring the uptake and use of this information, including patient feedback on its usefulness.

NHS boards with good practice: NHS Dumfries & Galloway, NHS Greater Glasgow and Clyde, NHS Highland, NHS Lanarkshire, NHS Shetland, NHS Western Isles

Communication and multidisciplinary management of patients with heart disease

Panel assessment

Most NHS boards had clear communication protocols in place associated with effective communication systems between primary and secondary care. Many NHS boards are increasing the use of electronic formats of communication. Some NHS boards provided examples of care pathways, discharge letters and outpatient clinic letters. Few NHS boards had a specific care plan for heart disease patients which was shared with the patient. Most NHS boards had discharge protocols in place. While there was variation in practice, most NHS boards gave appropriate advice to patients and provided them with a copy of a discharge document. However, in the majority of cases, this document was designed for use by healthcare professionals, rather than patients.

NHS boards with good practice: NHS Forth Valley, NHS Lothian



Education and training for staff

Panel assessment

There was a wide variation in the performance of NHS boards against this standard. Many NHS boards provided evidence based around the training provided as part of the NHS Knowledge and Skills Framework, which is a generic training and professional development scheme for non-medical staff. However, the evaluation panels considered this to be too generic and not directly related to heart disease. Most NHS boards could provide evidence of some forms of specific heart disease education. Few had a programme of education and training which was well structured with clear strategic aims. Most NHS boards had recently identified a lead person for taking forward an educational programme for heart disease.

NHS boards with good practice: NHS Lanarkshire, NHS Shetland

Panel recommendations

NHS boards should:

- assess patients' views on the information provided to make sure it is person centred and takes account of diversity of needs (Standard 1).
 - provide patients and their families with a care plan in all clinical settings. This does not have to be complex and should provide information about current treatment, key contacts and medication (Standard 2).
 - have a structured educational programme for staff who care for people with heart disease aimed at the needs of staff and the service as a whole (Standard 3).
-

The individual at risk of developing cardiovascular disease (Standard 4)

This standard covers the primary prevention of cardiovascular disease.

Panel assessment

All NHS boards had schemes in place to target priority groups for primary prevention of cardiovascular disease. These included Well North and Keep Well. These schemes provided data on the number and type of people being targeted. There was good documentation on blood pressure and smoking status, although not all NHS boards recorded the full range of risk factors referred to in the standard. Assessment for risk generally was variable.

Panel recommendation

NHS boards should:

- use a recognised risk assessment tool to support targeted cardiovascular risk assessment of high priority groups. The standard recommends the use of ASSIGN, a cardiovascular risk score which includes a measure of social deprivation.

NHS boards with good practice: NHS Borders, NHS Lanarkshire, NHS Tayside, The State Hospitals Board for Scotland, NHS Western Isles

The patient with chest pain (Standards 5–10)

These standards cover:

- assessment of chest pain in the non-emergency care setting
- assessment and management of confirmed coronary heart disease in the non-emergency care setting
- assessment and diagnosis of suspected acute coronary syndrome
- initial management and treatment of suspected or confirmed acute coronary syndrome
- ongoing management and treatment of acute coronary syndrome, and
- cardiac rehabilitation.

Assessment of chest pain in the non-emergency care setting

National measurement exercise

To assess care provided for people with coronary heart disease presenting and being managed in the community, data were extracted from 248 GP practices across 12 of the 14 NHS boards. The data recorded 59,707 people with a diagnosis of coronary heart disease, representing 4.4% of the population. There was generally a high use of secondary prevention drugs, although the use of angiotensin converting enzyme (ACE) inhibitors (58%) and beta blockers (58%) could be improved. Blood pressure was well controlled in the majority of patients (87%). There was scope for improvement in the number of patients with a documented cholesterol of 5mmol/l or less (67%).



Panel assessment

The majority of NHS boards had a clear and concise protocol or pathway for referral and management of patients presenting with chest pain in primary care. Most NHS boards are now using the Scottish Care Information Gateway IT system for referral of patients to secondary care services with chest pain. While this system prompts the user to perform certain blood tests, none of the NHS boards were able to provide data to measure how commonly this was undertaken. Many NHS boards carry out ECGs for patients with chest pain but none could provide data indicating the timely use of this test. Most NHS boards could provide secondary care review of a patient with concerning symptoms of chest pain within 5 working days.

NHS boards with good practice: NHS Fife, NHS Lanarkshire, NHS Lothian

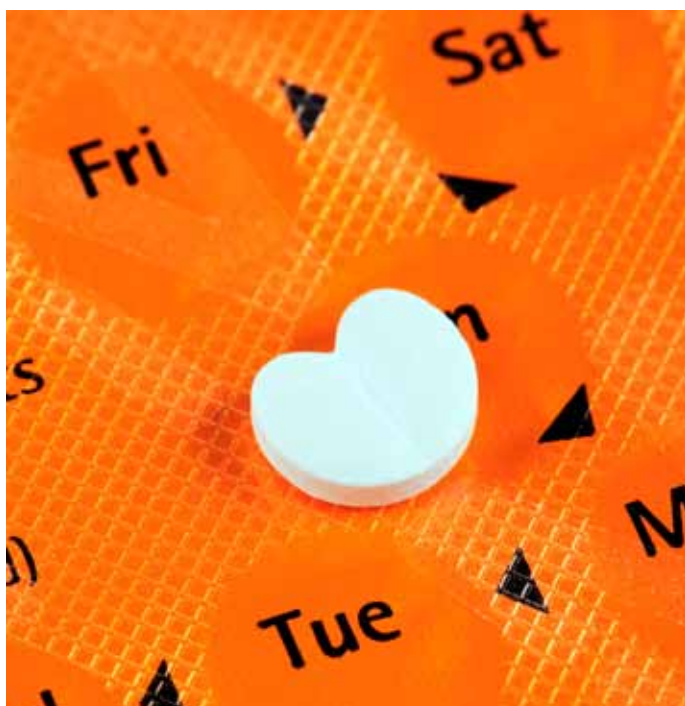
Assessment and management of confirmed coronary heart disease in the non-emergency care setting

Panel assessment

Despite good data on the use of secondary prevention medications, none of the NHS boards could provide evidence on whether patients had been optimally treated and titrated to evidence-based doses of these drugs. Few NHS boards could provide evidence of advice and information offered to patients in the primary care setting. Most NHS boards had clear pathways for referral to secondary care if symptoms worsen in patients with known coronary heart disease. Few NHS boards could provide evidence that patients with coronary heart disease are reviewed within 3 months of their initial diagnosis. Quality and Outcomes Framework data indicated that most patients with known coronary heart disease are reviewed annually for influenza vaccination. However, there was limited information on the nature or content of this annual review.

NHS boards with good practice: NHS Borders, NHS Forth Valley, NHS Grampian, NHS Greater Glasgow and Clyde, NHS Tayside

Acute coronary syndrome is the term used to describe a range of problems that can be caused by a sudden reduction in blood flow to the heart muscle caused by a narrowing or blockage of the blood vessels. This group of problems ranges from a threatened heart attack (unstable angina) to an actual heart attack (myocardial infarction). When a heart attack occurs, blockage of the blood flow to the heart causes damage to the heart muscle and leaves a scar. Early diagnosis and treatment improve the outlook for people with acute coronary syndrome.



Assessment and diagnosis of suspected acute coronary syndrome

National measurement exercise

Nearly 2,000 audited episodes of care were submitted from 14 NHS boards. The data indicated that initial assessment of acute coronary syndrome needs to be improved. Patients with suspected acute coronary syndrome need an ECG within 30 minutes of presentation; at present less than 50% of patients receive this. Initial drug treatment is good. Patients require immediate treatment with aspirin and a troponin blood test: 85% received immediate aspirin and 90% had troponin testing. Patients also need early percutaneous coronary intervention (known as primary angioplasty) or thrombolysis. The reported data indicated delays in providing this.

Most acute coronary syndrome patients are treated by specialist teams and receive the right care. However, early risk assessment is important in determining treatment. At present only 11% of patients have had their risk of further angina or heart attack assessed within 24 hours.

Over 90% of patients were given advice on symptoms, diet, drugs and exercise when discharged and nearly 80% were referred to cardiac rehabilitation. However, only 60% were provided with a copy of their discharge letter.

Use of secondary prevention medication is high and we found that, at discharge, 96% of patients were prescribed long-term aspirin; 93% clopidogrel; 90% beta blockers; 95% statins and 87% ACE inhibitors or angiotensin receptor blockers.

Panel assessment

In an emergency setting, the Scottish Ambulance Service provides rapid response for patients with suspected heart attack within 8 minutes in the majority of cases. There are more delays for people living in rural areas. Most patients with cardiac type chest pain are attended by a well-trained paramedic ambulance crew carrying a full range of appropriate equipment and drugs, including oral aspirin which is administered to all such patients. There were little or no data available to the panels to allow them to judge whether the diagnostic ECG was being performed in a timely way by ambulance crews, within 30 minutes of call for help. This problem arises because the crews do not routinely record this in the ambulance service database, although the time is documented on the ECG print-out. Discussions are currently under way with the Scottish Ambulance Service to address this issue.

Good communication with regular review of data and outcomes between hospitals and local ambulance services is crucial to ensuring improvements to practice. Data that were available from hospitals regarding the timely use of the ECG, within 10 minutes of presentation to the emergency department, indicated a poor performance by many NHS boards. On average, the proportion of patients achieving this time across Scotland as a whole was only just over 30% in the national audit. Nearly all patients with suspected acute coronary syndrome receive troponin testing, although there was variation between NHS boards as to how many tests were done. All performed at least one troponin test at 12 hours after the estimated time of onset of symptoms.

Initial management and treatment of suspected or confirmed acute coronary syndrome

Panel assessment

NHS boards appeared to perform poorly against the standard for initial management and treatment of confirmed acute coronary syndrome for two reasons. Firstly, the acute coronary syndrome measurement exercise was not well completed by NHS boards and there were many missing data fields. Secondly, the complex movement of patients between hospitals and between NHS board areas makes this a difficult data item to track accurately. However, Healthcare Improvement Scotland did ask each specialist centre in Scotland to submit their data by NHS board, although a number of NHS boards did not respond in a timely way. One key issue that became clear, however, was that all specialist centres were focusing only on the part of the patient journey from 'diagnostic ECG to treatment' and were missing data on the portion of the journey from 'call for help to diagnostic ECG'. These centres did not appear to consider it to be their responsibility to monitor the performance for this. However, few NHS boards were achieving timely reperfusion treatment for the majority of their patients, regardless of what type of reperfusion therapy was used: primary angioplasty or thrombolysis.

Few NHS boards were using the Global Registry of Acute Coronary Events risk score to assess the need for ongoing interventional management in patients presenting with non ST-segment elevation acute coronary syndrome. Many stated that they were planning to address this imminently. Most NHS boards in Scotland provide a specialist multidisciplinary cardiac care team to manage the majority of acute coronary syndrome patients with a few exceptions in more rural areas where there is no specialist consultant cardiologist.

Ongoing management and treatment of acute coronary syndrome

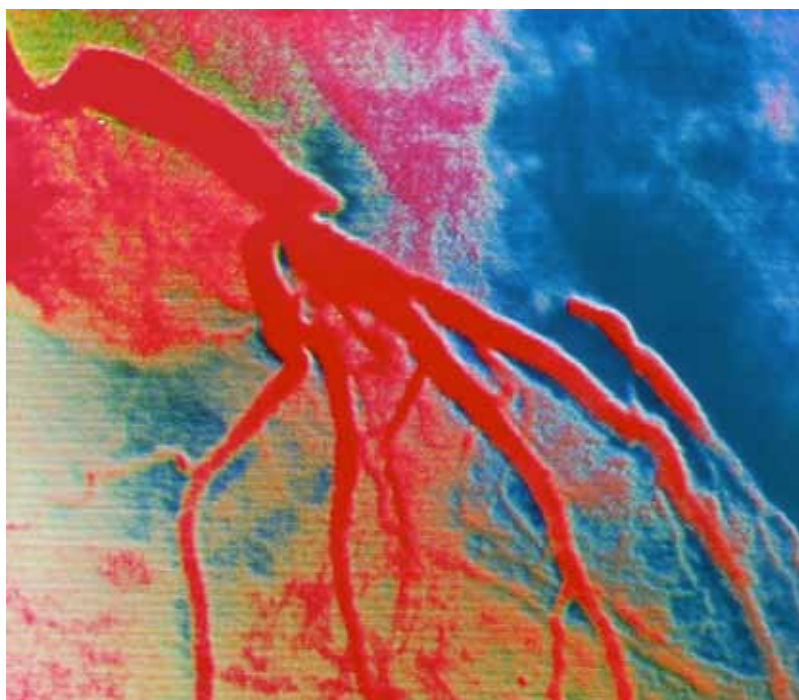
Panel assessment

Most NHS boards appear to be performing assessment of left ventricular function in the majority of patients who present with acute coronary syndrome as required in Standard 9. The majority of patients are treated with heparin according to guidelines and the use of secondary prevention medications at discharge was very high for all NHS boards. Many had systems in place for monitoring this and were using data for feedback and review. This approach was best developed in NHS Fife where a routine frequent system of review and feedback had been running for a number of years. Detailed and comprehensive data were presented to the panel on how this was being used for feedback and review for all acute staff and more widely within the NHS board organisation. The panel was impressed by this.

The use of aldosterone antagonists for patients with impaired heart function following a heart attack was more difficult to assess, mainly because the data provided were not sufficiently selective to assess whether this drug was being used appropriately. This was due to a problem in the way the data were collected on the audit forms. A high proportion of patients with confirmed acute coronary syndrome were referred to cardiac rehabilitation, amounting to 79% for Scotland as a whole.

NHS boards with good practice:

NHS Dumfries & Galloway, NHS Fife, NHS Forth Valley, NHS Grampian, NHS Greater Glasgow and Clyde, NHS Shetland



Cardiac rehabilitation

Cardiac rehabilitation is a programme of exercise and information sessions that helps patients get back to everyday life as soon as possible after a heart attack or heart surgery. It aims to help people understand their condition; recover from surgery or a heart attack; make lifestyle changes to help improve heart health; and reduce the risk of further heart attack.

National measurement exercise

This measurement exercise ran from 1 April–30 June 2010. It covered all patients in all locations offering cardiac rehabilitation programmes. In total, 2,020 patient records were processed to provide a snapshot of cardiac rehabilitation activity. Sixty-four per cent were male and 72% were aged 60+. Collection of cardiac rehabilitation is an ongoing audit and contributes to the British Heart Foundation UK audit. Further analysis will be carried out as more data become available.

We found over 79% of patients were referred to cardiac rehabilitation. Assessment was well recorded and universally good (over 90%) for educational needs, social needs, exercise and risk factors. More work is needed on making sure patients receive psychological and functional capacity assessment. Sixty per cent of patients completed their programme.

Panel assessment

The majority of NHS boards are delivering a menu-based programme of cardiac rehabilitation across a range of cardiac conditions aligned with those specified in the standards. All NHS boards participated actively in the national measurement exercise and provided excellent qualitative data on the content and use of different elements of their cardiac rehabilitation services. Despite this, there remains some uncertainty about the proportions of patients who receive cardiac rehabilitation following discharge from hospital with conditions such as heart failure, cardiac surgery and elective coronary angioplasty. Many NHS boards were clearly developing strategies to cope with the increasing demand for cardiac rehabilitation services. Particularly in response to the increased diagnosis of myocardial infarction following the new national definition and the prospect of providing cardiac rehabilitation to people with known coronary heart disease who have a step change in their condition. Ongoing measurement associated with a national programme of audit will address this and other issues over the course of the next 12 months.



Panel recommendations

NHS boards should:

- have a clear pathway of care for patients who present with chest pain in primary care which includes rapid access to specialist services when symptoms dictate early referral and review (Standard 5).
- make sure coronary heart disease patients are reviewed within 3 months of diagnosis to permit optimisation of all aspects of care including secondary prevention medications (Standard 6).
- develop robust systems of review and feedback of performance through data provided by their local ambulance service for people who present to emergency services with cardiac chest pain (Standard 7).
- continuously monitor the effectiveness of reperfusion therapies across the whole patient journey and link more closely with the Scottish Ambulance Service (Standard 8).
- continuously monitor the use of secondary prevention medication and referral to cardiac rehabilitation and use data for feedback and learning to improve services. The panels also felt that NHS boards should build on their generally good performance in this standard by focusing on optimisation of doses of these drugs after discharge (Standard 9).
- extend menu-based cardiac rehabilitation services across a broad range of patient groups focusing on those that have not previously received cardiac rehabilitation services, such as people undergoing elective percutaneous coronary intervention (Standard 10).

NHS boards with good practice: NHS Dumfries & Galloway, NHS Fife, NHS Forth Valley, NHS Greater Glasgow and Clyde

The patient with heart rhythm problems (Standards 11–13)

These standards cover:

- assessment, diagnosis, and treatment of arrhythmias
- management of atrial fibrillation, and
- management of ventricular arrhythmias.

Atrial fibrillation is the most common type of arrhythmia, affecting up to 500,000 people in the UK. An arrhythmia is a problem with the rate of rhythm of the heartbeat. Atrial fibrillation occurs when rapid, disorganised electrical signals override the heart's natural pacemaker and cause the upper chambers of the heart (the atria) to fibrillate or contract very fast and irregularly. In atrial fibrillation, blood pools in the atria and is not pumped fully into the lower two chambers of the heart (the ventricles). As a result, the four chambers do not work together as well as they should to pump blood around the body. Atrial fibrillation can raise the risk of stroke and needs to be treated.

National measurement exercise

Data were extracted from 248 GP practices across 12 of the 14 NHS boards. Data were collected on all patients with a diagnosis of atrial fibrillation (excluding those with atrial fibrillation due to valvular disease) and 19,470 patients were identified. Over 55% of these were aged over 75 and 56% were categorised as at high risk of stroke. The most common risk factor identified was hypertension.

Referral rates to specialist care are low (16%) and stroke risk assessment using a tool, such as CHADS₂, is not documented in primary care data systems. However, the data are commonly available to do this. Also of concern is prescribing of appropriate blood-thinning drugs based on risk assessment. A high number of patients with atrial fibrillation were prescribed some form of blood-thinning drug (79%). However, a relatively small number of high risk patients are receiving warfarin (47%) and an inappropriately high number of low risk patients are also receiving warfarin (31%). This suggests scope for improvement in risk assessment and prescribing processes in primary care for people with atrial fibrillation.

Assessment, diagnosis and treatment of arrhythmias

Panel assessment

Few NHS boards had well-developed protocols and pathways for the management and referral of patients with heart rhythm disorders. Most services were configured around consultant cardiologists without distinct pathways or protocols. While most NHS boards described local systems that provide access to ECG as a diagnostic tool, few if any could report performance data on whether patients received this test. Many NHS boards provided some evidence on training of staff on performing and interpreting ECGs. Few NHS boards had well-developed systems to monitor patients for serious side effects of the drug amiodarone, except NHS Western Isles, NHS Lanarkshire and NHS Shetland. Few NHS boards had systems developed that ensured referral of patients to the Familial Arrhythmia Network for Scotland. It was, however, noted that the network is currently at a developmental stage.

NHS boards with good practice: NHS Lanarkshire, NHS Lothian

Management of atrial fibrillation

Panel assessment

The evaluation panels were unable to use the data provided to assess whether stroke risk assessment was being performed and it was generally assumed that this was not the case. Retrospective analysis of the data indicated a high overall use of anti-thrombotic drug therapies, including aspirin and warfarin. However, less than half of patients who were at medium or high risk of stroke, who should have been receiving warfarin, were not prescribed this treatment. Furthermore, nearly one third of low risk patients who should have been treated with aspirin alone were receiving warfarin, exposing them, therefore, to a higher risk of bleeding complications. Relatively few patients with atrial fibrillation had undergone echocardiography to examine for structural heart disease as a cause of their atrial fibrillation. In addition, few patients were referred for specialist assessment and few NHS boards could provide evidence of whether patients with atrial fibrillation were being considered for ablation therapy.

Management of ventricular arrhythmias

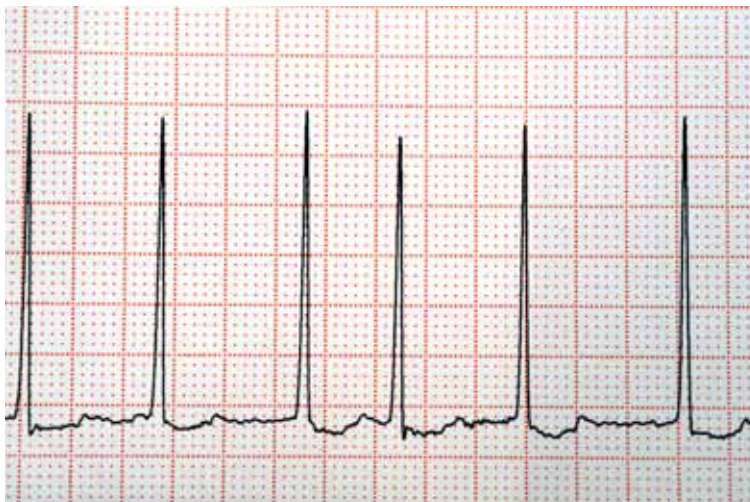
Panel assessment

Few NHS boards had well-developed protocols and pathways for referral and management of patients with life-threatening heart rhythm disorders. However, most services were based on direct referral to a consultant cardiologist for ongoing management. The national rate of use of implantable cardioverter defibrillators in 2009–2010 was 101.3 per million population which compares well with other countries in the UK. Little or no data were available to assess the delays to implant cardiac devices within 10 days of referral. All NHS boards provided systems to ensure that patients with implantable cardioverter defibrillators were reviewed on a regular basis, usually every 6 months. Most NHS boards used cardiac rehabilitation services to screen patients for memory and anxiety problems following cardiac arrest. However, few had well-developed protocols and pathways for doing this systematically and documenting this in the patient's case record.

Panel recommendations

NHS boards should:

- have clear pathways and protocols for the management and appropriate onward referral of patients with arrhythmias and those at risk of arrhythmia (Standard 11).
- have systems to ensure that all patients with atrial fibrillation have a formal stroke risk assessment performed and documented in the case record and make sure those at high risk are receiving anti-thrombotic medication (Standard 12).
- implement protocols for the management of life-threatening arrhythmias which include the assessment of anxiety and memory problems in survivors (Standard 13).



NHS boards with good practice: NHS Ayrshire & Arran, NHS Dumfries & Galloway, NHS Orkney

The breathless patient (Standards 14–18)

These standards cover:

- diagnosis of heart failure
- medication for heart failure
- multidisciplinary service delivery for heart failure
- implantable devices for heart failure, and
- supportive and palliative care for patients with heart disease.

Heart failure results from a weak or stiff heart muscle and causes reduced blood flow around the body. It affects about 900,000 people in the UK and can be caused by a number of conditions, such as high blood pressure or heart attack.

National measurement exercise

We extracted information on 11,466 patients diagnosed with heart failure from primary care datasets. Analysis included assessment of diagnosis, prescribing, uptake of vaccinations and inclusion on the palliative care register. These data indicated a low number of patients receiving appropriate baseline investigations, including ECGs (21%) and echocardiography (58%); and a high level use of evidence-based drug therapies, including ACE inhibitors or angiotensin receptor blocker (78%) and beta blockers (66%). There was a high level of vaccination against influenza (79%) and pneumonia (79%) for patients with heart failure in primary care.



Diagnosis of heart failure

Panel assessment

Most NHS boards had well-developed pathways and protocols for referral and management of people with breathlessness and suspected heart failure presenting in the primary care setting. Few NHS boards could provide data or numeric measurement of how commonly this was done or how timely diagnostic tests were performed. The standard recommends 3 days for ECG or blood testing for brain natriuretic peptide hormone. Similarly, few NHS boards had data indicating how rapidly patients received echocardiography if the ECG or brain natriuretic peptide test was abnormal. A number of NHS boards indicated that there was a high demand for echocardiography services and were not able to achieve the target timescale set by the standard of 10 working days for outpatients and 2 working days for inpatients. All NHS boards were developing systems to improve the quality of care for patients admitted to hospital with heart failure using a nationally agreed clinical care bundle developed in conjunction with the Scottish Patient Safety Programme. A key aspect of this care bundle is that all patients with a confirmed diagnosis of coronary heart failure are reviewed prior to discharge by a doctor with expertise in heart failure. All NHS boards were implementing this aspect of the care bundle using a variety of approaches which varied depending on the level of expertise available locally.

NHS board with good practice: NHS Lothian

Medication for heart failure

Panel assessment

Most NHS boards had well-developed protocols and pathways to ensure that patients with a confirmed diagnosis of heart failure receive evidence-based drug therapies. Most NHS boards could provide measurement data on the proportions of patients receiving medications in both primary and secondary care settings. These data indicated a good level of use of these drugs, although there was scope for improvement in both settings. Some NHS boards had developed systems for regular data feedback used for learning and improvement. Data became available after the panels met regarding referral to the advanced heart failure services and this will be used to assess ongoing improvements in the use of this service.

NHS boards with good practice: NHS Western Isles

Multidisciplinary service delivery for heart failure

Panel assessment

The majority of NHS boards had well-developed multidisciplinary services incorporating specialist heart failure nurses for patients admitted to hospital with heart failure. Some NHS boards had extended this approach into primary care. These services used standard pathways and protocols including a strong emphasis on patient education and self-management.

NHS boards with good practice: NHS Greater Glasgow and Clyde, NHS Highland, NHS Lothian, NHS National Waiting Times Centre, NHS Western Isles

Implantable devices for heart failure

Panel assessment

The level of implantation of cardioverter defibrillators was similar across all NHS boards in Scotland, with an average rate of implantation of 100 per million population, which is similar to England and Wales. An issue identified during the panel review process was that many NHS boards had agreed funding for inserting implantable cardioverter defibrillators in patients who already had evidence of serious heart rhythm disorders (secondary prevention) but some NHS boards did not have agreed funding for implanting cardioverter defibrillators in patients who were at high risk of sudden arrhythmic death (primary prevention implantable cardioverter defibrillator). ISD codes could not be used to discriminate between the two indications. The level of implantation of cardiac resynchronisation therapy devices was relatively low at around 7 per million and ranks lower in European terms and is significantly lower than in England. The reasons for this are not clear. However, the Scottish Patient Safety Programme heart failure care bundle is designed to encourage NHS boards to address this issue by documenting and reviewing cardiac resynchronisation therapy criteria in all heart failure patients admitted to hospital.

Supportive and palliative care for patients with heart disease

Panel assessment

Many NHS boards had progressed developments in this area extremely well over the last few years. Notably, NHS boards had frequently focused on heart failure patients initially and some had been developing systems to spread this to other heart disease conditions. Many NHS boards were developing anticipatory care pathways and protocols to manage medications, hospital admissions and cardiac devices in heart disease patients. However, data extracted from primary care indicated that a relatively low number of patients (2%) with heart failure were on palliative care registers. There was no way of confirming whether this was an appropriate level or not.

Panel recommendations

NHS boards should:

- provide responsive services for people who present with breathlessness in primary care and who are at risk of heart failure. All NHS boards should have a designated clinical expert in heart failure (Standard 14).
- monitor the use of evidence-based drug therapies and use the data for feedback, learning and improvement. NHS boards should seek to increase the referral of patients to the Scottish Advanced Heart Failure Service at the Golden Jubilee National Hospital, Clydebank (Standard 15).
- have multidisciplinary services that include a heart failure nurse. The extent of delivery of this service to all patients with heart failure should be measured and the data used for learning and improvement (Standard 16).
- develop processes to ensure systematic screening of patients who may benefit from device therapy (Standard 17).
- develop systems to screen patients with heart disease for end of life needs using recognised tools (Standard 18).

NHS boards with good practice: NHS Ayrshire & Arran, NHS Dumfries & Galloway, NHS Greater Glasgow and Clyde

Appendix 1

Heart disease indicators

Building on the work reported here, a sustainable system of measurement and performance assessment for heart disease services in Scotland will be developed using a suite of heart disease indicators. The overall aims are to provide meaningful and focused measurements that have the potential to inform improvements in the quality of care and patient experience. In addition, there is a need to reassure the public of an ongoing process of quality assurance.

This approach will be achievable within current levels of resource and will support service providers to gather and report evidence of the quality of local heart disease services. This in turn will inform their own improvement activities. The response of NHS boards to these indicators will be monitored and reviewed by a national group with representation from patients, voluntary organisations and NHS organisations. Development and implementation of improvement plans linked to the indicators will remain a local issue for each NHS board. The proposed suite of indicators align clinically with the heart disease standards and strategically with the Scottish Government Action Plan for Heart Disease.

A suite of 20 indicators has been developed which includes a series of high level indicators from ISD and a number of key clinical indicators linked to nationally agreed quality improvement aims arising from the Heart Disease Improvement Programme. Data relating to the quality improvement indicators (4.1-4.6) will be collected by heart disease managed clinical networks and submitted to ISD for collation on a quarterly basis. These are now ready to be tested and their focus and content may change with time.

Heart disease indicators

Indicator 1 – Mortality (in-hospital and within 30 days of discharge) for myocardial infarction and congestive cardiac failure		Data source
1.1	Percentage mortality in-hospital following admission with myocardial infarction (all MI codes), by NHS board of residence	SMR01/NRS
1.2	Percentage mortality in-hospital following urgent/emergency admission with congestive heart failure (I50.0), by NHS board of residence	SMR01/NRS
1.3	Percentage mortality within 30 days of discharge following myocardial infarction (all MI codes), by NHS board of residence	SMR01/NRS
1.4	Percentage mortality within 30 days of discharge following urgent/emergency admission with congestive heart failure (I50.0), by NHS board of residence	SMR01/NRS

Indicator 2 - Length of stay		Data source
2.1	Median length of stay for STEMI and NSTEMI (MI), by NHS board of residence	SMR01
2.2	Median length of stay for patients discharged with a diagnosis of congestive cardiac failure (CCF, ICD10 I50.0), by NHS board of residence	SMR01
2.3	Median length of stay following emergency/urgent and elective percutaneous coronary intervention (PCI), by NHS board of residence	SMR01
2.4	Median length of stay for elective and urgent/emergency coronary artery bypass graft, by NHS board of residence	SMR01

Indicator 3 – Readmission to hospital		Data source
3.1	Percentage readmission within 30 days following myocardial infarction, by NHS board of residence	SMR01/NRS
3.2	Percentage readmission within 30 days of discharge with congestive cardiac failure, by NHS board of residence	SMR01/NRS
3.3	Percentage readmission within 30 days of elective percutaneous coronary intervention, by NHS board of residence	SMR01/NRS
3.4	Percentage readmission within 30 days of urgent/emergency percutaneous coronary intervention, by NHS board of residence	SMR01/NRS
3.5	Percentage readmission within 30 days of elective coronary artery bypass graft, by NHS board of residence	SMR01/NRS
3.6	Percentage readmission within 30 days of urgent/emergency coronary artery bypass graft, by NHS board of residence	SMR01/NRS

Indicator 4 - Indicators for quality improvement		Data source
4.1	Percentage of patients discharged from hospital with a diagnosis of congestive cardiac failure due to left ventricular systolic dysfunction with all three Scottish Patient Safety Programme care bundle elements achieved ("perfect care")	SPSP extranet
	Percentage of ST-elevation myocardial infarction (STEMI) patients receiving optimal reperfusion therapy (all data, by NHS board of residence)	SCI-ACS
	Percentage of STEMI patients who received thrombolytic treatment within 60 minutes of call for help	
	Percentage of STEMI patients who received primary angioplasty within 120 minutes of call for help	
4.2	Percentage of STEMI patients who received thrombolytic treatment within 60 minutes of call plus percentage of STEMI patients who received primary angioplasty within 120 minutes of call for help	
	Percentage of STEMI patients receiving primary percutaneous coronary intervention with a "diagnostic ECG to balloon" time of 90 minutes or less	
	Percentage of STEMI patients receiving thrombolysis with a "diagnostic ECG to needle" time of 30 minutes or less	
4.3	Percentage of patients with acute coronary syndrome assessed and referred for cardiac rehabilitation, by NHS board of residence	SMR01/CR audit
4.4	Percentage of patients with persistent or permanent atrial fibrillation with a documented stroke risk score, by NHS board of residence	QOF/GPASS extraction
4.5	Percentage of patients with atrial fibrillation and a moderate or high stroke risk score prescribed anticoagulants (denominator to exclude those with a documented contraindication to anticoagulation)	GPASS extraction
4.6	Patient Reported Outcome Measure (EQ5D)	Locally generated

Key	
CR audit	Cardiac rehabilitation audit
GPASS	General Practice Administration System for Scotland
ICD-10	International Classification of Diseases
NRS	National Records for Scotland (formerly known as General Register Office for Scotland)
SCI-ACS	Scottish Care Information – Acute Coronary Syndrome
SMR	Scottish Morbidity Record
SPSP	Scottish Patient Safety Programme

Appendix 2

Heart failure care bundle: acute care

What is a care bundle?

A bundle is a structured way of improving the processes of care and patient outcomes: a small, straightforward set of evidence-based practices – generally three to five – that, when performed collectively and reliably, have been proven to improve patient outcomes².

The Scottish Patient Safety Programme, co-ordinated by Healthcare Improvement Scotland, is working with NHS boards to improve the safety and reliability of hospital care across Scotland. Within the Scottish Patient Safety Programme, frontline staff are applying evidence-based interventions to every patient, every time. By introducing reliable evidence-based changes to practice, it aims to reduce adverse events by 30% and mortality by 15%.

Heart failure care bundle – aims, outcomes and key elements

Implementation of the heart failure care bundle will ensure that all patients consistently receive care guided by up-to-date evidence. The aim, outcomes and key elements of the heart failure care bundle are as follows.

Aim

By 2012, to reduce length of stay in hospital and readmission rate of patients admitted to hospital with a primary diagnosis of heart failure, secondary to left ventricular systolic dysfunction confirmed by echocardiogram.

Outcomes

- 30% decrease in the median length of stay in hospital
- 15% reduction in readmission rate (%) to hospital within 30 days
- 30% increase in the median time to readmission, and
- 15% decrease in the mortality rate (%) at 1 month, 6 months, and 1 year.

Key elements

To deliver reliable, evidence-based care for patients with heart failure secondary to left ventricular systolic dysfunction by:

- expert review of patients during admission
- prescription of evidence-based drugs during inpatient stays, and
- referral of patients to a specialist heart failure nurse service before or at the time of discharge.

The heart failure care bundle is currently being implemented in cardiology units in all NHS boards in Scotland. Some NHS boards are also testing it in other hospital settings.

2 Haraden C. What is a bundle? [online]. 2006 [cited 2011 Apr 5]; Available from: www.ihl.org/IHI/Topics/CriticalCare/IntensiveCare/ImprovementStories/WhatIsaBundle



www.healthcareimprovementscotland.org

Edinburgh Office: Elliott House | 8-10 Hillside Crescent | Edinburgh | EH7 5EA
Telephone 0131 623 4300 **Fax** 0131 623 4299

Glasgow Office: Delta House | 50 West Nile Street | Glasgow | G1 2NP
Telephone 0141 225 6999 **Fax** 0141 248 3778

The Healthcare Environment Inspectorate, the Scottish Health Council, the Scottish Health Technologies Group, the Scottish Intercollegiate Guidelines Network (SIGN) and the Scottish Medicines Consortium are key components of our organisation.



You can read and download this document from our website. We are happy to consider requests for other languages or formats. Please contact our Equality and Diversity Officer on 0141 225 6999 or email contactpublicinvolvement.his@nhs.net