About this Release

Cardiac rehabilitation is a service which supports patients with heart disease, in partnership with a multidisciplinary team of health professionals. Through this, patients are encouraged and supported to achieve and maintain optimal health and well-being.

The Scottish Government’s “Our Better Heart Disease and Stroke Care Action Plan” (June 2009) emphasised the importance of ensuring that people who were living with heart disease and could benefit from cardiac rehabilitation, could access services.

Cardiac rehabilitation is offered to patients who suffer from heart disease. For this publication, the number of people who are eligible for cardiac rehabilitation is an estimate and is based on the number of people who have been admitted to hospital following a heart attack, coronary artery bypass graft (CABG), angioplasty, valve surgery, heart failure or unstable angina. These are referred to as “initiating cardiac events” in this report.

This publication includes information by Health Board and type of initiating event for the year ending 31st March 2012 on the following areas:

- demographics of people referred for cardiac rehabilitation;
- referral rates for cardiac rehabilitation;
- assessment for cardiac rehabilitation following referral;
- the interventions used as part of cardiac rehabilitation;
- completion rates for cardiac rehabilitation.
Data Quality

Cardiac rehabilitation referral rates have been estimated by using anonymised aggregated data from two separate sources. The estimate of the number of eligible cases is obtained from hospital discharge data from the Scottish Morbidity Records (SMR01) database, while the number of people receiving cardiac rehabilitation is obtained from paper audit forms. The two data sources are not directly comparable as they may relate to different individuals and slightly different time periods. Because of this, referral rates could potentially exceed 100%. In addition, there are concerns about the completeness of the audit data. The number of audit forms received declined in 2011/12 compared with the previous year and completeness of reporting varies by NHS Board. For some NHS Board areas, there were disparities between the figures collected in the audit and local reporting systems, with the audit perceived as under reporting activity. For all these reasons, these figures should be treated with caution.

Data for NHS Fife are not included within this report as these are undergoing quality assurance checks and will be published at a later date.

Key Points

- Across Scotland, an estimated 59.5% of patients who had a heart attack, coronary artery bypass graft (CABG) or angioplasty were referred for cardiac rehabilitation (figure 1). This represents 67.4% of heart attack patients, 53.0% of patients undergoing CABG and 29.1% of patients undergoing angioplasty procedures. (Table 3)

Figure 1: Estimated percentage referred for cardiac rehabilitation having had a spell of care in hospital involving a heart attack, CABG or angioplasty by NHS Board

April 2011 - March 2012

Note: Referral rates have been calculated from separate sources of numerator and denominator data and may exceed 100% due to differences in data completeness, data quality and classification of patients by type of initiating event.
Patients have been allocated to a single initiating event within a hierarchical order: heart attack, CABG, angioplasty, valve surgery, heart failure, unstable angina then other events. This may contribute to the apparent low percentage of patients undergoing angioplasty reported to have been referred for cardiac rehabilitation. Audit data shows that 39.6% of patients with a type of heart attack known as a non-ST elevation myocardial infarction (NSTEMI) also had a linked angioplasty intervention. (Table 4)

In NHS Boards, the percentage of patients referred to cardiac rehabilitation after any heart attack, CABG or angioplasty ranged from 35.6% in NHS Grampian to 97.6% in NHS Dumfries & Galloway. (Table 3)

In comparison to the Cardiac Rehabilitation publication for April 2010 – March 2011, the percentage referred for rehabilitation in Scotland has fallen (for heart attack, CABG and angioplasty combined) from 65.2% in 2010/11 to 59.5% in 2011/12. The 2010/11 uptake figures were 74.8% for heart attack, 68.5% for CABG and 21.6% for angioplasty. The lower percentages for heart attack and CABG are partly accounted for by the smaller number of audit forms submitted for 2011/12 (8,762) compared to 2010/11 (10,398).

Of those referred for cardiac rehabilitation in Scotland, 91.4% underwent assessment, an increase of 4.6% from the previous year. Across NHS Boards, the percentage assessed ranged from 81.0% in NHS Highland to 96.8% in NHS Tayside. (Table 7)

For Scotland as a whole, 81.8% of all patients assessed for cardiac rehabilitation received heart disease education. (Table 9)

Of those referred and assessed for cardiac rehabilitation after a heart attack or revascularisation (CABG or angioplasty), 63.3% completed the programme of rehabilitation. This ranged from 32.4% in NHS Borders to 79.5% in NHS Lothian. The corresponding figure for Scotland in 2010/11 was 66.8%. (Table 10.1)

**Data Collection**

The source data for this publication are from a routine audit of cardiac rehabilitation referrals captured on a continual basis by NHS Healthcare Improvement Scotland and then ISD since April 2010. Eligible numbers for cardiac rehabilitation have been estimated from routine national hospital episode records (SMR01).

**Definitions**

Different terms can be used when talking about heart disease conditions and operations and sometimes these are interchangeable. For consistency the following terms were used in this report.

<table>
<thead>
<tr>
<th>Term used in report</th>
<th>Also known as</th>
<th>Description</th>
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<tbody>
<tr>
<td>Angioplasty</td>
<td>Percutaneous coronary intervention (PCI)</td>
<td>A procedure performed to treat coronary heart disease that involves passing a thin, hollow tube into the coronary arteries under X-ray guidance, from an artery in the groin or arm (under local anaesthetic). A device on the tube is then used to unblock the artery, and stretch the</td>
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<tr>
<td>CABG</td>
<td>Coronary artery bypass graft</td>
<td>An operation in which a blood vessel from another part of the body is grafted to the coronary artery or arteries, to bypass narrowed sections and restore blood flow to the heart muscle.</td>
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<tr>
<td>Heart attack</td>
<td>Acute myocardial infarction</td>
<td>The result of sudden complete blockage of the blood supply to part of the heart.</td>
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<tr>
<td>Initiating event</td>
<td></td>
<td>A spell in hospital due to a heart attack, CABG, angioplasty, valve surgery, heart failure and unstable angina.</td>
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<tr>
<td>Intervention</td>
<td></td>
<td>The method used to provide cardiac rehabilitation. There are many possible options, including heart disease education, dietary advice and exercise (see table 9).</td>
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<tr>
<td>Revascularisation</td>
<td>CABG or Angioplasty</td>
<td>A collective term that includes CABG and angioplasty procedures.</td>
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**Further Information**

Further information can be found on the [ISD website](http://www.isdscotland.org/).

**About ISD**

Scotland has some of the best health service data in the world combining high quality, consistency, national coverage and the ability to link data to allow patient based analysis and follow up. Information Services Division (ISD) is a business operating unit of NHS National Services Scotland - and has been in existence for over 40 years. We are an essential support service to NHSScotland and the Scottish Government Health Department and others, responsive to the needs of NHSScotland as the delivery of health and social care evolves. [www.isdscotland.org/](http://www.isdscotland.org/).