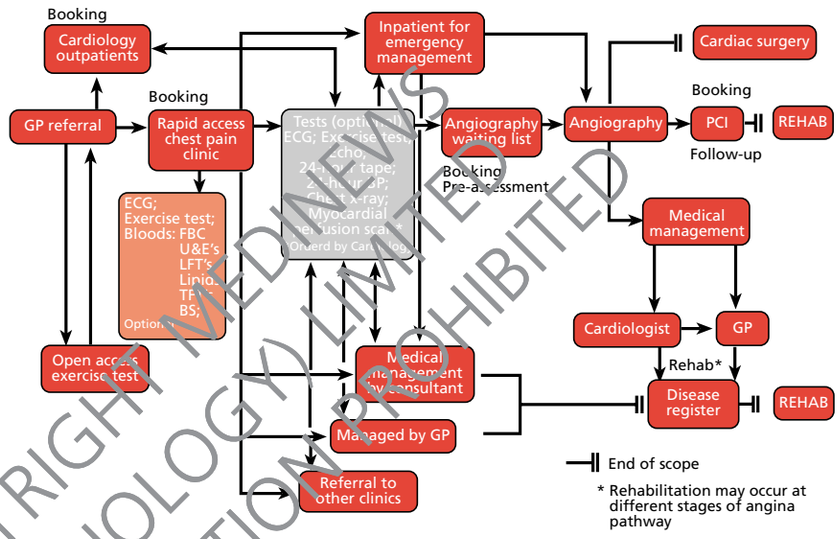
The angina journey: a major challenge in cardiology

We continue our series on the work of the Coronary Heart Disease Collaborative (CHDC), a national programme, which is part of the Modernisation Agency. In this issue we focus on CHDC teams improving services for patients presenting with angina pectoris.

Angina pathway

Patients with suspected angina pectoris pose a major challenge to all levels of cardiology services. Their pathway through their NHS care can involve many stages over many years – figure 1 shows this hypothetical journey. As the diagram shows, it begins when a patient's symptoms are assessed in primary care and they are given a working diagnosis of angina and referred for further investigation. At the other end of the pathway, they can progress to intervention and revascularisation, advances which have radically altered our approach to patient care. The CHDC is committed to improving the experience for patients with suspected angina throughout this journey, from its original presentation to definitive treatment. This article will illustrate – using specific hospitals as examples – those changes that have been led by the CHDC to improve this journey.

Figure 1. A hypothetical pathway through the NHS undertaken by patients with angina pectoris



Key: GP = general practitioner; ECG = electrocardiogram; FBC = full blood count; U&E's = urea and electrolytes; LFT's = liver function tests; TFT's = thyroid function tests; BS = blood sugars

Step 1

The rapid access chest pain clinic

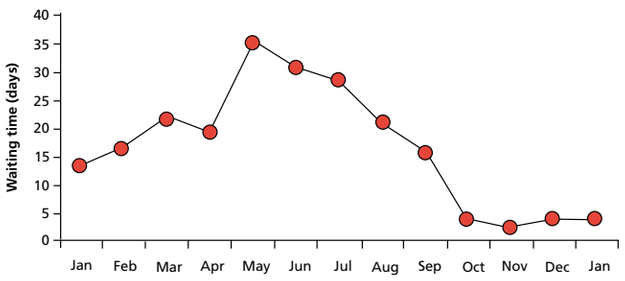
The rapid access chest pain clinic (RACPC) has been a highly successful innovation across the country following publication of the National Service Framework (NSF) for Coronary Heart Disease (CHD). It guarantees that patients with new onset angina will be seen within two weeks of referral. These one-stop clinics can offer a wide variety of investigations and treatment options.

Clarification of RACPC pathway reduces waiting times

The pathway through the RACPC at Homerton University Hospital, London, was unclear to both patients and general practitioners (GPs). The waiting time also exceeded the NSF target, peaking at 34 days by May 2002. On reviewing procedures it was discovered that the RACPC was not operating as a one-step clinic. After attending the RACPC, patients then needed to see a consultant at an out-patient's clinic to be either discharged or referred for an angiogram/further tests. This meant that patients with negative exercise tolerance tests had to make unnecessary return trips to hospital just to be discharged. Furthermore, patients were attending this out-patient appointment months after their clinical appointment when they perceived they had already been given a 'medical opinion'. This process had an impact on the out-patient waiting time, it confused patients and, as a result, increased the out-patient 'do not attend' rate.

After discussions with other CHD Collaborative programmes, the process at Homerton was redesigned so that a dedicated bleep system for the RACPC was introduced in the cardiology department. This allowed immediate referral from primary care practices to the RACPC enabling patients to access the service within 48 hours. The team developed clear referral criteria and a referral form. A patient infor-

Figure 2. Graph showing the reduced waiting time for the rapid access chest pain clinic at Homerton Hospital after clearer referral criteria had been implemented



mation sheet was also developed. Now patients are accessing the RACPC in a median time of three days and the process has been made clear to GPs and patients (see figure 2).

Information for RACPC patients

A process mapping workshop at the John Radcliffe Hospital, Oxford, revealed that patients attending the RACPC did not receive any information prior to attending the clinic. This led to some patients attending the clinic in unsuitable clothing for the treadmill exercise and not bringing a list of their medication. The nurse consultant devised a leaflet describing the RACPC and the experience patients could expect both at the clinic and after the test. It also detailed what patients needed to bring to the clinic. By improving communication, the hospital has found the whole process runs more smoothly with better patient and staff satisfaction.

The exercise tolerance test

Central to the assessment of angina is an exercise tolerance test, which provides objective evidence of the presence or absence of underlying myocardial ischaemia. Direct referral for electrocardiogram (ECG)/exercise tolerance test (ETT) can also help the GP reach a decision about the next step in the angina pathway. It is important, however, that the ETT is interpreted by a cardiologist and there is dialogue between the specialist and the GP to structure the patients' care/subsequent investigation and referral.

A further role for cardiac technicians

At St George's Hospital London, GP-requested ECG reports were taking three weeks to be received back at practices. The requests were collected once-weekly by the cardiology specialist registrar, who reported on them 'when they had time'. Other ways of operating this service were examined and tested, and it was agreed that two cardiac technicians would report on all the ECGs on a daily basis. They would be supervised, countersigned and added to by the 'on-call' specialist registrar as required. Interpretative ECG machines were also purchased, so the technicians could use the software reports, making additions where necessary. This new system for ECG reporting has been running successfully for over six months now, with reports being received by GPs within five working days of request, benefiting over 3,000 patients per year, without any cost implications.

Cardiology out-patients clinic

Referral to routine cardiology out-patients is also an option for GPs but this may mean patients undergoing a wait, which is likely to be a minimum of three months. Only low-risk patients who fail the criteria for the RACPC should follow this route. At the out-patient clinic, the patient will have access to a variety of tests and a full range of non-invasive investigations, which can help to establish the diagnosis.

At the John Radcliffe Hospital, Oxford, the appointment of a waiting list co-ordinator to centrally manage the waiting list and the introduction of pooled new patient referrals has reduced median waiting times from 46 to 36 days. To clarify the referral pathway, criteria for generic referrals to the cardiology out-patient clinic have also been agreed between primary and secondary care, where previously no protocol existed.

Previously, the waiting time to see individual consultants ranged between six and 16 weeks, with between 10 and 70 patients on each cardiologist's waiting list. Now, up to 60% of cardiology out-patient referrals are centrally pooled, with new patient referrals shared amongst consultants, equalising the different waiting times. As a result, more than 300 new patients have benefited from shorter waits since January 2003.

Step 2

Referral back to primary or secondary care

Patients without evidence of CHD can be referred back to the care of the GP. On the other hand, should CHD be confirmed, risk stratification is crucial to determine the next step. Patients at highest risk, and those with threatened or overt acute coronary syndromes (ACS) merit immediate admission. Those with a high-risk, positive ETT should also be considered for immediate/urgent admission for coronary angiography with a view to revascularisation.

The majority of patients will have a less aggressive presentation and most, with confirmation of CHD, can initially be managed medically with immediate recommendation of treatment. More stable patients with confirmed evidence of CHD can be referred for routine coronary angiography to determine the extent and severity of CHD, facilitating future planning. Such patients should be followed up by the cardiology team and, where appropriate, be referred to other speciality clinics, such as those for hypertension or hyperlipidaemia.

Rehabilitation for angina patients

The Angina Plan developed by Gill Furze at the University of York uses the principles of cognitive behavioural therapy to address misconceptions

Figure 3. Graph showing the reduction in coronary artery bypass procedures (CABG) as the number of percutaneous coronary interventions (PCI) has increased

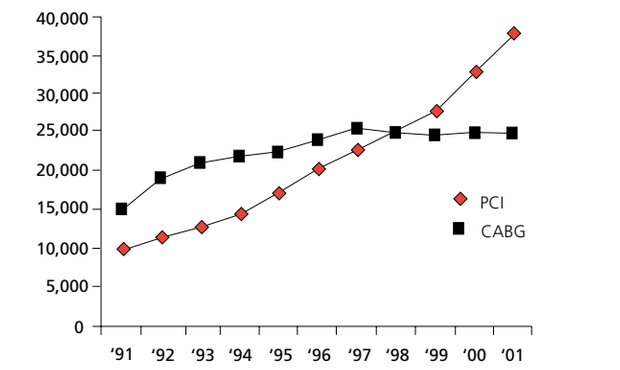


Figure 4. The final check before the procedure: pre-planned, patient-oriented and problems solved

about angina, through a formal rehabilitation programme. Lack of capacity in rehabilitation services can limit the delivery of such information and advice to angina patients.

Sunderland Teaching Primary Care Trust (part of the Northern Network of Cardiac Care Collaborative Programme) is piloting an innovative approach to this problem. In Sunderland, education and advice for angina patients was done on an ad-hoc basis, due to limited capacity of local rehabilitation services. The CHD occupational therapist, therefore, trained as a facilitator with the support of the cardiologist, who is the clinical lead for rehabilitation, and the rehabilitation nurses. Now, patients diagnosed with stable angina are referred direct from the RACPC to the occupational therapist, using a proforma. This pilot will potentially benefit over 1,000 patients a year, with plans to train facilitators in primary care to capture existing patients from secondary prevention clinics.

Step 3

Admission to hospital

The benefits of revascularisation make it logical to consider all patients with confirmed CHD for coronary angiography. It is the only way to determine the distribution of disease and allow appraisal of treatment modalities. It is now common practice that all high-risk, unstable patients and all stable patients with persistent symptoms despite medical therapy go forward for coronary angiography. The detailed anatomical information obtained from coronary angiography determines whether the patient is suitable for angioplasty, bypass surgery or medical therapy. There is a continued exponential rise in angioplasty for patients with CHD whilst the demand for bypass surgery has plateaued (see figure 3). This evolution in the treatment of patients with CHD will shape the future configuration of cardiology services.

Integrated care pathway for day case patients

An integrated care pathway (ICP) for day case percutaneous coronary interventions (PCIs) has been developed at St George's Hospital, London, which involves the patient and their carer attending a pre-assessment clinic managed by the day case nurse practitioner, before the admission. The ICP is a protocol to help all members of the multi-disciplinary team manage the whole patient journey, regardless of where care is given. It commences at the clinic, giving the patient the chance to discuss in more detail both their condition and the forthcoming procedure (see figure 4).

Day case patients are always the first on the intervention list and completing the ICP prior to admission means the administration aspects of a patient stay can be carried out without the usual rush. All relevant information is safely recorded the day before the procedure and using the ICP also allows possible problems (such as renal impairment and anaemia) to be identified earlier and corrected prior to intervention. Leaving this to the day of admission means the procedure would need to be cancelled.

At St George's Hospital, the ICP has been successfully used on all patients having a day case PCI. It has now been added to the approved ICP list at hospital. Patients are also benefiting from a reduced wait for admission as they can be seen on the hospital's day case unit.

Summary

The patient journey in CHD highlights the need for integration of primary, secondary and tertiary care. At each stage in the pathway, the CHDC philosophy of change can have a positive impact upon patient care. This has been illustrated in the examples given above describing improvements made in various hospitals. The CHDC has been set up to be a central plank in the future of cardiology, which should be embedded in the Local Implementation Teams and form a central part of the CHD Network. As patterns of care are developed and redesigned, the CHDC is able

to improve the experience and outcomes for patients with suspected CHD. The management of angina pectoris will remain a challenge for the foreseeable future.

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Editors' note
This is the fifth article in the series on the work of the CHDC. Previous articles have covered an overview (*Br J Cardiol* 2003; **10**: 91-2); acute myocardial infarction (*Br J Cardiol* 2003; **10**: 101-04); heart failure (*Br J Cardiol* 2003; **10**: 189-92); and rehabilitation (*Br J Cardiol* 2003; **10**: 269-71).

Further details at www.modern.nhs.uk/CHD