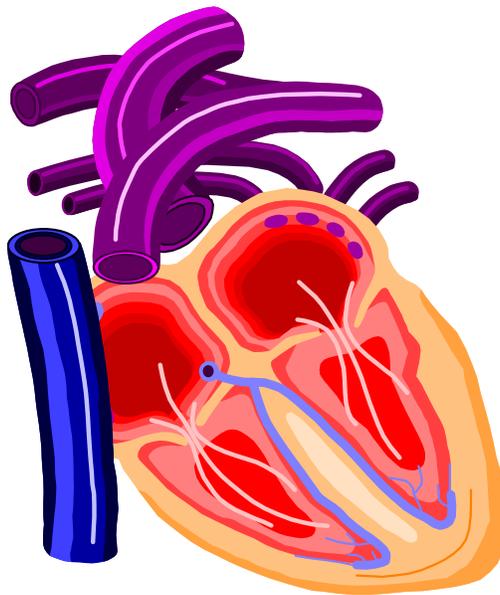


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Scoping the CHD Workforce

Birmingham and The Black Country Cardiac Networks



September 2004

CONTENTS

CONTENTS	0
EXECUTIVE SUMMARY	3
Findings.....	3
Recommendations.....	4
1. INTRODUCTION AND BACKGROUND	9
The Terms of Reference	9
The Approach Adopted	9
The NHS Plan Objectives	9
Heart Failure.....	10
Catheter Laboratories	11
2. INNOVATIONS IN MODELS OF CARE	12
Chronic Disease Management (CDM)	12
Modernisation projects in the Birmingham and the Black Country.....	12
The Expert Patient Programme.....	13
The CHD Workforce and the GMS Contract	14
Patient issues	15
Kaiser Permanente	18
EverCare	23
3. INNOVATIONS IN PROCEDURES AND ACUTE SERVICE DEVELOPMENTS	26
Primary Angioplasty	26
Biventricular Pacing	29
Service developments	29
New Computer Based Information	30
4. THE WORKFORCE	31
The CHD Workforce Coverage	31
Integrated Care Pathways	32
Cardiologists.....	33
Cardiothoracic Surgeons	35
Cardiac Anaesthetists.....	36
Cardiac Physiologists	36
Critical Care Nurses.....	39
Adult, Elderly and General Nurses.....	40
Prescribing Initiatives.....	41

Birmingham and The Black Country Cardiac Networks: Scoping the CHD Workforce

Cardiac Critical Care Nurses	41
GPs with a Special Interest.....	42
Physicians' Assistants	42
Practice Nurses	43
Heart Failure Nurses.....	43
District Nurses	44
Admin and clerical staff.....	44
Ambulance staff.....	45
Fitness trainers in gyms.....	45
Diagnostic radiographers and nuclear medicine technicians.....	45
5. Future CHD Workforce Planning Frameworks.....	46
Review of Existing CHD Workforce Information	46
The Local Delivery Plan	46
Proposed CHD Workforce Planning Framework	47
Appendix A	48
Those interviewed.....	48
Appendix B	49
The CHD Workforce and the GMS Contract Workshop.....	49
Appendix C	50
New GMS Contract.....	50
Appendix D	51
References	51

EXECUTIVE SUMMARY

Findings

1. Both Birmingham and The Black Country Cardiac Networks are seeking to improve services in the wider community and primary care to support the National Service Framework and GMS2.
2. The Black Country is undertaking a major service review, which will develop primary and community care and will have significant workforce implications. In addition, the new heart and lung centre will attract staff from neighbouring trusts, as well as further a field.
3. The design of integrated care pathways that follow the patient journey across all CHD related providers is well advanced in the Black Country. However, only organisation specific pathways exist in some Birmingham trusts.
4. Primary Angioplasty at Birmingham Heartlands and Solihull Hospital was introduced more than a year ago and 100 primary angioplasties have been completed, representing slightly fewer than two a week. However, only a third of which represents new work. The main impact of the new procedure is that it requires greater flexibility in staffing and working practices, as the additional patients per day, per laboratory who require this procedure is relatively small.
5. One option for primary angioplasty in London is for the service to be based at a central laboratory covering a population of 1.5 million. London Ambulance has stipulated that they want to have permanent centres, rather than each trust acting as a centre on a rotational basis. However, there are likely to be considerable regional variations, taking into account population centres, travelling times and the location of hospitals.
6. The national shortage of **cardiac physiologists** is likely to increase, as the number of catheter laboratories will increase by 90 with a joint investment of some £125 million pounds.
7. It is intended that **Cardiac physiologists** will be implanting pacemakers at the Hammersmith from January 2005.
8. Nurses undertake angiograms at the Hammersmith.
9. It is difficult to find applicants for **heart failure nursing** posts who have both acute and community experience. The majority are drawn from critical care posts that are difficult to fill.
10. **Administrative and clerical** (A&C) staff are in short supply and this can result in clinicians doing inappropriate tasks, such as typing long documents. The current poor rates of pay of A & C may be reduced further by the *Agenda for Change* job evaluation.
11. The use and integration of information management systems throughout the regions should be prioritised as at present there are too many incompatible systems in operation and full advantage is yet to be taken of the benefits of using IM&T, for example in organising and running clinics and appointments, maintaining CHD registers, having region-wide templates for audit procedures etc.

Recommendations

Policy issues

1. The development of new roles should be agreed across the Networks so that successful pilots can be rolled out across all Trusts.
2. The workforce priorities in the acute sector should be cardiologists; cardiac physiologists; staff in cardiac catheter laboratories and cardiac critical care nurses.
3. The primary and community priorities should be: supporting GMS2, particularly the training of practice and community nurses; developing expert patients; introducing health educators; developing rehabilitation in the community.
4. A high priority should be given to making the patient journey across the various sectors and between staff groups an easier and more logical process.

Integrated Care Pathways

5. Integrated Care Pathways across sectors following the patient journey should be designed and implemented in the Birmingham Network (this work is already progressing in The Black Country Network). However, it is essential that such work has the full support of lead clinicians, if it is to be effectively implemented. Heart failure may be a useful pathway to design in the first instance, as there is a large community element that would benefit from clarifying the tasks, roles and responsibilities of those undertaking them.
 - The advantages are: users experience greater continuity of care; it is easier to audit the quality of service; training needs can be more readily identified.
 - The resource requirements are releasing clinical staff at all levels from all the relevant organisations to plan the pathways and facilitators to coordinate workshops and to produce the pathways.
 - It is recommended that the Birmingham Network should discuss whether such support would be forthcoming.

Consultant Cardiologist

6. The number of **consultant cardiologists** needs to increase very substantially from the current staff-in-post of 36.8 WTE. The Department of Health Care Group Workforce Team Recommendations recommends an increase of 35 per cent (12.8 WTE), but this does not take children's services into account. This is based on 22 cardiologists per million. The British Cardiac Society's figures range from an extra 175 per cent (101.2 WTE) to an additional 341 per cent (125.5 WTE) compared with current levels. This is based on 44.9 and 72 cardiologists per million. However, is dependent on a large increase funding.

Cardiac physiologists

7. Consideration should be given to implementing:
 - fast track graduate programme for cardiac physiologists;
 - practice tutors for cardiac physiologists;
 - roll-out programme for assistant practitioners;
 - foundation degree in applied medical technology

Staff roles in Catheter Laboratories

8. The Networks should keep an eye on the development of the roles of nurses and Cardiac physiologists elsewhere in the country, in case they become relevant to local needs.
9. The networks should consider introducing generic staff in all of their catheter laboratories, so that a cost effective training programme can be established.

Improving the recruitment of cardiac nurses

10. A career structure should be developed that includes placements in both acute and community settings should be established, due to the need to have senior cardiac nurses with in both experience and the shortages of cardiac nurses generally. Promotion should depend on attaining competencies. This should attract newly qualified nurses into the speciality and offer them a career that will take them to G grade, with the necessary training and development mapped out for them.
 - This would require senior nurses at a PCT and acute trust to work together to develop a programme and for the Workforce Development Directorate to assess the impact on post registration education.

Compensating for the shortage of GPs

11. More use should be made of **physicians' assistants** and Sandwell should be asked to present on their experience of recruiting them from New York. In America, this role is also used in primary care.
 - The advantages are: compensating for the shortage of GPs and senior accident and emergency staff; reduced recruitment and locum costs.
 - The resource implications are in the cost of additional places on the two-year Birmingham University course and Department of Health funding is being sought.

Postgraduate training

12. Consideration should be given to supporting the development of a modular MSc course in **cardiac physiology**, catering for a range of professions.
 - The advantages are: improved staff retention; less money spent on agency costs and recruitment; extending the range of services that could be provided by non medical staff.
 - The resource implications are the cost of setting up the course and student fees.
13. Cardiac courses should be reviewed to extend multi-professional education and training and to remove profession specific requirements, unless there are exceptionally good reasons not to.

Acute Nurse training

14. All acute Trusts should train their **accident and emergency nurses** in extended role thrombolysis, which at present is only undertaken in a few Trusts.

Echocardiography training

15. A secure source of funding should be found for the two-day refresher course on reporting for **echocardiographers**. In addition, it is important to ensure that all staff who perform and or report echocardiograms are competent to do so in all settings.

Practice staff

16. The **practice nurse** CHD course developed by the Heart of Birmingham and the University of Central England should be reviewed with a view to using it across Birmingham.
17. There would be value in training **practice nurses** to be able to treat patients with a multiple conditions such as asthma, diabetes and CHD. This will reduce the number of appointments patients need to book.
18. The costs of any CPD for practice staff come from GPs' budgets: a central funding mechanism for such CPD would result in more staff being suitably qualified to support the CHD population.
19. **Practice and district nurses** should be trained to provide cardiac rehabilitation in primary and community care. However, this is likely to require skill mix changes and/or an increase in their numbers.
20. **Health educators** should be employed in primary care to run groups for CHD patients to help them manage their conditions more effectively.
21. The role of **Health Care Assistants** could be extended to include giving and supporting patients as they undertake changes in life style as well as taking biophysical measurements. In addition, they could provide administrative support in running annual clinics.
22. A protocol for **receptionists** should be used in all practices which would include instructing them to tell patients with chest pain to call an ambulance, rather than wait to see their GP.

Community care

23. The Evercare scheme of advanced district nurse and case management for elderly care, currently being implemented in Walsall and seven other Trusts in England, should be evaluated by the networks to see whether there are any specific lessons for CHD.
24. Community nurses should provide palliative care to terminal heart failure patients, however, their numbers would need to be increased and appropriate training given (for example the HeartSave Heart Failure Care course or similar).

More administrative support to clinical staff

25. Admin and Clerical Staff: Secretaries should be trained as PAs, with appropriate pay, career structure and training. This would enable them to release the time of clinical staff in all sectors of care

Wider community

26. Health fitness advisors should be trained in phase 4 rehabilitation.

27. Much wider preventative measures should be considered and funding made available for initiatives such as walking groups and 'green gyms' as well as more input to schools and pupils of all ages.

Patient related

28. Letters to patients: standard letters should be produced that can be understood by patients and clinicians that do not use terms covering the same condition interchangeably. These should be used throughout the Network.
29. Patient information: a directory of local services, approved leaflets, booklets, videos tapes, support groups and websites should be made readily available to staff who come into regular contact with CHD patients. Topics would include what to expect, lifestyle changes, medication and facilities for exercise.
30. Supporting anxious and lonely patients and carers: PALS should be used more widely for this group of patients. However, this should not be at the expense of developing patient to patient support, where this is an option.
31. Improved communication between practices and acute trusts: Groups of practices should have a CHD lead who would be the key link person with the acute trust. Their role would be to ease the patient journey between sectors. This could be a heart failure nurse or a GP with Special Interest. Another option would be for this to be a role for **Cardiologist** when new posts are created.
32. The **Expert Patient Programme** has the potential to improve the opportunities for CHD patients to self-manage their conditions more effectively and steps should be taken to implement its use more widely.
33. More needs to be done to promote Cardiac Patient Support Groups, as at present less than 1% of cardiac patients belong to them, but does not include other cardiac patients belonging to specific disease groups, according the British Heart Foundation.
34. All staff should receive training in giving patients opportunistic advice on healthy living including, for example, smoking cessation.

Workforce Planning Information

35. **Annual CHD Workforce Report to Network Boards:** The Workforce Planning section of the Strategic Health Authority should produce an annual review of staff-in-post trends, updating the information in this report. It should include commissioning information, where relevant, e.g. cardiac physiologists. The review should highlight priorities for action for the Networks and include Local Delivery Plan information.
36. **Local Delivery Plan level of detail:** The Strategic Health Authority should collect this information from trusts at the level of staff group and then aggregate the information up to a level required by the Department of Health.
37. **Cardiac Physiologist staff-in-post data:** The lead cardiac physiologist for Birmingham and the Black Country should collect this information on an annual basis, as it is likely to be much more accurate than payroll based information.
38. **Heart Failure Nurses:** Information on these nurses was obtained from the Networks who have their details, as they organise events for them. Like Cardiac

Physiologists, trust payroll based information is likely to be unreliable, due to errors in occupational codes.

39. **Critical Care Nurses:** The information is collected annually from trusts. However, most trusts do not supply this information. A recommendation that this should be addressed was made in chapter 4.

Information Technology

40. Further development and integration of information management systems in many areas of work should be implemented without delay.
41. More staff should have access to networked desk, lap or palm top technology in order to be able to incorporate evidence-based guidelines, research and clinical information systems into their work. Training should be available to support this as well as in preparation for the NHS-wide implementation of Electronic Health Records (EHRs) and Electronic Patient Records (EPRs).

Longer term developments

42. Consideration should be given to creating **consultant cardiac physiologist posts**, particularly if there could be agreement in extending their role further.
 - The advantages are: improved staff retention and recruitment; compensating for the shortage of medical staff; better quality services.
43. **Nurse consultants in cardiac care** with a remit to improve the interface of services in primary, community and secondary care should be appointed in each district.
 - The advantages are: improved staff retention and recruitment; compensating for the shortage of medical staff; better quality services.

1. INTRODUCTION AND BACKGROUND

The Terms of Reference

- 1.1 The Birmingham and Black Country Chronic Heart Disease Network commissioned Shared Solutions Consulting to conduct a scoping exercise to:
- Produce a profile of the CHD workforce highlighting hotspots and new roles
 - Conduct a training needs analysis of the workforce
 - Identify the competencies to support changes in work roles. However, it was decided not to duplicate the work of Skills for Health that published *Coronary Heart Disease: National Workforce Competence Framework Guide* after the terms of reference were first set
 - Design a framework to support the integration of workforce planning and delivery into the networks
- 1.2 In addition, three workshops were commissioned on topics that will have a significant impact on staff numbers, roles and ways of working. They were:
- The CHD workforce implications of GMS2
 - Heart Failure and the lessons from Kaiser Permanente
 - Primary Angioplasty

The Approach Adopted

- 1.3 This report sets the workforce (chapter 4) in context by reviewing key aspects of the NHS Plan (1.4 onwards) and then going on to assess the impact of innovations in models of care (chapter 2). This is followed by a review of innovations in procedures and acute service developments (chapter 3).
- 1.4 The scope of the CHD workforce would be even wider if prevention was considered more fully, as influencing factors known to contribute to the development of heart disease, such as poor diet, lack of exercise, especially in children, and smoking would include the involvement of many government and voluntary agencies. With increasing evidence (1) to suggest that many incidences of heart disease are preventable, in an ideal world the focus should be on maintaining and enhancing wellness rather than treating established illness. In this scenario the configuration of the workforce would move even more to primary and community care with a diminishing role for the front line staff in acute care.

The NHS Plan Objectives

- 1.5 In the White Paper *Saving Lives: Our Healthier Nation* (1999), (2) the Government set a target of reducing the death rate in people under 75 from coronary heart disease, stroke and related diseases by at least 40% by 2010.

- 1.5 The National Service Framework (NSF) for CHD, published in March 2000, (3) put forward the standards that will enable this target to be reached within the given timescale and with an emphasis on improving the health of the worst off in our population. Trusts have been set targets to:
- By 2005 increase the number of cardiologists by around a half compared with 1999/2000 and the number of cardio thoracic surgeons by around a quarter. (the 217 heart surgeons promised by the end of 2004 are already in post, increasing by 19% the number employed in 1999/2000)
 - Cut waiting times for CHD at all stages of the patient journey:
 - in an emergency; thrombolysis is given to heart attack patients within 60 minutes of calling for help ('call to needle')
 - maximum 2 week waits for rapid access chest pain clinics;
 - falling waits for diagnostic angiographies and for revascularisation.
 - General practitioners and primary care teams should develop registers of CHD patients through which they can review medication, offer advice on diet and lifestyle, and maintain the necessary contact with patients most at risk of suffering renewed heart problems.
 - Deliver systematic care across all areas of the CHD NSF, including rehabilitation and heart failure treatment, in line with NICE Clinical Guidelines published in July 2003 and with locally agreed protocols
 - Audit the delivery of effective interventions.
- 1.6 The NSF places great emphasis on developing primary care services for treating coronary heart disease. This should eventually result in fewer patients needing to be referred to secondary care but has major implications for staffing.
- 1.7 These documents and others including the NHS Modernisation Agency's CHD Collaborative Service Improvement Guides (2000 – 2003) provided the background for this project. In order to focus the work on the needs of Birmingham and the Black Country a number of visits to CHD centres in primary, secondary and tertiary care were made. Workshops involving key people were held and interviews (face-to-face, telephone and e-mail) were carried out, all with a range of people involved in CHD policies, service delivery, educators and patients. The contents of this report therefore reflect the situation in Birmingham and the Black Country as it is now and how it is developing. The recommendations arise directly from the findings emanating from this work.

Heart Failure

1.8 According to the British Heart Foundation:

- Around 880,000 people in the UK are affected each year
- It is the most common hospital admission for people aged 65 and over
- Prognosis is poor and about 40% of patients die within a year
- Heart failure costs the NHS £624 million a year

Catheter Laboratories

- 1.9 Over the next few years it is predicted that the number of catheter laboratories will increase by 90 with a joint investment between the DoH and New Opportunities Fund of some £125 million pounds. Many of these will be situated in DGHs. The growth in the number of catheter laboratories will lead to even greater shortages of senior technicians, so that new ways of working, including perhaps the use of generic catheter laboratory workers will need to be considered.
- 1.10 Many parts of Birmingham and the Black Country are classified as deprived and this is reflected in the burden of disease in general and CHD in particular. It also affects staff recruitment and retention.

2. INNOVATIONS IN MODELS OF CARE

Chronic Disease Management (CDM)

- 2.1 Chronic diseases, including CHD, are defined as those diseases that can only be controlled and not, at present, cured, present a huge challenge to the NHS. The World Health Organisation has identified that by 2020 chronic diseases will be the leading cause of disability and, if not successfully managed, will be the most expensive problem for all health care systems.
- 2.2 Models and techniques for the management of chronic disease currently being implemented and tested in the NHS include:
- The Expert Patients Programme (see section 2.8)
 - The National Primary Care Collaborative
 - The Healthy Communities Collaborative
 - New planning models and tools to predict demand and plan services
 - Learning from and working with successful organisations such as Kaiser Permanente (section 2.24) and
 - Evercare (discussed in section 2.45)
- 2.3 There is an NSF requirement to implement chronic disease management principles for heart failure. This has been shown to improve patient outcomes while reducing bed usage. Some Strategic Health Authorities have given CDM a high priority and Essex, for example, requires such a programme to be in place by October 2004. The key features outlined in their approach are:
- The promotion of self-care through care plans, telephone advice and education packages
 - Longitudinal case management – a case manager has responsibility for co-ordinating a patient's care across primary and secondary care
 - Hospital admissions are managed according to an evidence based protocol with on-going post-discharge management to prevent re-admission
 - The proactive management of high-risk caseloads and the use of systems tools and processes such as NSFs and care pathways
- 2.4 South Birmingham PCT has established two Chronic Disease Management facilitator posts (H grade nursing posts) to support GP practices in developing their CDM management systems and services, as part of GMS2.

Modernisation projects in the Birmingham and the Black Country

- 2.5 A disease management systems programme (heart failure) project was established in Walsall in July 2003. It consists of an electronic integrated care

pathway, including patient records, across all sectors of healthcare (1) and (2). The project is operating at a national and local level in Walsall and the next consideration is the potential implementation of the electronic service across the Black Country. The Walsall Hospital NHS Trust has already received a HIMP audit performance award that has enabled them to re-engineer heart failure and thrombolysis services.

- 2.6 Both Birmingham and The Black Country Networks are working towards improving health promotion and improving services in primary care, in line with the NSF and to implement the GMS2 contract in primary care, (see Appendix B).
- 2.7 The Black Country Network is planning with a model of care that focuses on providing as much care as is feasible in patients' homes. Services for which this is not feasible will be located in primary care, unless they can be only reasonably be provided in secondary care. Tertiary care will only provide services that cannot be provided in secondary care. The Birmingham Network is following a similar approach. It is important that new services are carefully designed from the point of view of efficiency and that staff productivity is taken into account.

The Expert Patient Programme

- 2.8 *"When acute disease was the primary cause of illness, patients were generally inexperienced and passive recipients of medical care. Now that chronic disease has become the principal medical problem the patient must become a co-partner in the process."*

Holman and Lorig, BMJ2000:320:526-7

- 2.9 The July 1999 White Paper *Saving Lives: Our Healthier Nation* and The NHS Plan of 2000 set out the Government's vision for a more patient-centred NHS and confirmed a commitment to help people living with long term conditions maintain their health and improve their quality of life through an Expert Patients Programme (EPP). The EPP is designed to provide lay-led self-management interventions to give people with long term conditions the confidence, knowledge and skills to manage their conditions better. A pilot phase finishes in 2004 and between 2004 and 2007 EPPs will be mainstreamed within all NHS areas. By then, all PCTs must have arrangements for user-led self-management programmes for key chronic conditions to be delivered or commissioned. CHD is defined as a chronic disease. Research already carried out in the USA and this country which shows the main benefits of self-management include;

- Reduced severity of symptoms
- Significant decrease in pain
- Improved life control and activity
- Improved resourcefulness and life satisfaction
- Decrease in the number of visits to GPs
- Reduced medication need

- 2.10 In this country Professor Julie Barlow of Coventry University is involved in ongoing research into EPPs. One of Professor Barlow's current projects, led by Dr. Andrew Turner of Coventry University, is a pilot study entitled "Establishing and Evaluating an Expert Patient Programme for CHD Patients" funded through the Staffordshire & Shropshire H.A. Patients who have had a MI and who have participated in a standard hospital rehabilitation course are followed through their participation in an Expert Patient course for CHD patients. The study is covering hospitals in Rugby, Worcester and Dudley and will extend to Solihull, Shrewsbury and North Staffordshire.
- 2.11 It is anticipated that data collection will be completed by the early autumn and the findings then written up for publication. This is still work in progress but the initial findings are that the patients involved gain benefits from both the MI rehabilitation course and the EP course. EPPs are designed not for specific conditions but should enable the Expert Patient to work across all chronic conditions in which similar problems (communication with health professionals, problem-solving, goal setting etc) are common to all. Many chronic disease patients have more than one condition and so a general course is likely to be more beneficial to them than one with a single disease focus. It is anticipated that one outcome from this pilot study is that mechanisms will be put in place to enable the EPPs to be run through the rehabilitation units, thus catering for patients with a wider range of conditions than just CHD.

The CHD Workforce and the GMS Contract

- 2.11 In order to fully explore the CHD workforce implications of the GMS contract, a workshop on the topic was held. The keynote speaker was Mary Fairfield, CHD/Diabetes Lead Sandwell PCT. The main points from the workshop follow.
- 2.12 The new contract will reward practices for a wide range of activities that are aimed to improve the quality of patient care, particularly for those with chronic diseases. A total of 1,050 points are available, each worth £75. They cover clinical services; practice organisation; the patient experience; additional services.
- 2.13 The maximum clinical points available under the quality framework is 121 for CHD and LVD, which is the highest for any condition. The next highest number of points available is 105, for hypertension a related condition. Practices are set thresholds for many targets, e.g. that between 25 and 90 per cent of patients with newly diagnosed angina (diagnosed after 01/04/03) who are referred for exercise testing and/or specialist assessment is worth seven points. Other CHD targets cover ongoing management, such as the percentage of patients with CHD whose blood pressure is 150/90 or less.

Performance management

- 2.14 The new contract will require a significant amount of performance management and the roles of LITs and networks need to be strengthened in order to assist in this task.

- 2.15 Given the large number targets to monitor, the large amount of data that will be collected could be used to support audit. It could be to produce an action plan for improvements and to identify training needs.

Patient issues

- 2.16 The Walsall CHD Collaborative pilot identified the need for greater patient and carer involvement. Consequently, a series of quarterly meetings were arranged for them to discuss their problems and to give an input to the service. The Black Country Collaborative rolled out the programme to Dudley and Wolverhampton and patients from these areas saw the value in developing their own Patient and Carer Partnerships. The very first meeting in Wolverhampton was very successful with all 70 invitees attending and more meetings have been requested. A joint Partnership meeting for the Black Country is being arranged. These meetings have enabled users and carers to identify gaps in services that have been subsequently filled. These Partnerships are affiliated to national bodies, such as BCPA, the British Cardiac Society and Heart Care Partnership UK.
- 2.17 Patients feel safe and supported in a cardiac care unit. However, they feel more vulnerable when transferred to a ward and more so when they are discharged. This suggests that they might benefit from more reassurance as the progress down the patient pathway. In addition, members of aftercare support groups can offer very valuable patient to patient support.

Recommendation: supporting *anxious and lonely patients*

PALS should be used more widely for this group of patients. However, this should not be at the expense of developing patient to patient support, where this is an option.

- 2.18 Community cardiac nurses visit patients in their home in order to support them and to explain some of the lifestyle choices they need to consider. This is increasingly important as the duration of hospital stays reduces and along with it the opportunity to influence patient behaviour. There would be value in a back up of system of making a telephone call if a visit is declined by a patient. Nurses can identify a wide range of issues that need to be addressed by seeing patients in their own homes that would be otherwise much less apparent. However, there are too few community cardiac nurses to visit all such patients shortly after they have been discharged.
- 2.19 Patients can become easily confused when they receive correspondence from the NHS uses terms interchangeably. In addition, they can receive conflicting information from different parts of the service.

Recommendation: letters to patients

Standard letters should be produced that can be understood by patients and clinicians that do not use terms covering the same condition interchangeably. These should be used throughout the Network.

Recommendation: patient information

A directory of local services, approved leaflets, booklets, videos tapes, support groups and websites should be made readily available to staff who come into regular contact with CHD patients. Topics would include what to expect, lifestyle changes, medication and facilities for exercise.

2.20 Patients with multiple conditions such as heart disease and diabetes can find themselves being invited to separate nurse led clinics on different days.

Recommendation: nurse led dual diagnosis community clinics

Nurses should lead dual diagnosis community clinics to address co-morbidity, supported by GP with Special Interest. This would involve training nurses in dual skills.

2.21 While this would increase the demand for training and the associated costs, however, the nurses would be more productive as they would save time by combining the two appointments.

2.22 Sometimes, blood tests are duplicated as the patient results are stored separately. The Aftercare Support Group in Wolverhampton has pressed for patient hand held records. This would provide more detailed information than is given in medicards that includes: patient name; hospital number; drugs injected and medication.

Recommendation: records

Patients should carry their own summary of notes that would include tests results so that duplicate test can be avoided.

2.23 Carers make a substantial and sometimes unrecognised contribution to patient care. However, more needs to be done initially to support the family to work through the impact of a heart attack on one of their members. Carers need to be linked to voluntary and community groups and other statutory groups to receive support. In addition, they need to be trained and regularly updated.

2.24 Patients also need to be supported to take responsibility for the condition, whenever possible.

2.25 There is a concern that the multi-ethnic population does not readily access the full range of services that are available. The Asian Link Nurse in Wolverhampton is a step in this direction.

Recommendation: schemes to target the multi-ethnic population

More resources should be use to contact the multi-ethnic population through linking with temples and other religious institutions.

Wider social issues

2.26 Given that a significant amount of heart disease is preventable, reducing the incidence of disease is the best way to improve the effectiveness of staff. However, many of the factors that influence the spread of heart disease are outside the control of the NHS. These factors include:

- Less income inequality
- The food industry and healthier fast food, with less salt and sugar
- Banning smoking in public places
- Healthier school dinners
- Educating children and adults
- Easier access to leisure facilities in deprived communities

Workforce issues

2.27 The new contract is likely to result in a growing number of nurse led clinics, which will increase the demand for Heartsave courses or their equivalents. The CHD clinics will also require closer working between practice nurses, GPs, pharmacists and pathology staff. Multi-disciplinary working will involve staff covering diet and smoking cessation, exercise schemes and secondary care teams.

2.28 There will need to be closer co-ordination between primary and secondary care. This would be facilitated once integrated care pathways are written and implemented across sectors. In addition, community cardiac nurses who are based in acute trusts could be assigned this role. Some already carry out this role, however, there would be value in formalising the arrangements.

Recommendation: improved communication between practices and acute trusts

Groups of practices should have a CHD lead who would be the key link person with the acute trust. Their role would be to ease the patient journey between sectors. This could be a heart failure nurse or a GP with Special Interest.

2.29 The new contract will require a large amount of data entry and administrative support in recording information from clinics. It would not be cost effective if well-trained nurses absorb this work, in addition to their clinical responsibilities.

Recommendation: freeing up nurses' time from administration

Administrative and clerical staff should be used more extensively to support the growing number community nurse-led clinics and to enter data on CHD registers.

Service improvements

2.30 Practices need support in implementing the many service improvements required in the new GMS contract. One approach has been to create an H grade post to act as a chronic disease management facilitator in South Birmingham.

2.31 While the Networks are already well established, many staff do not have time to attend. Networks could play an important role in sharing what has worked and what has not.

Kaiser Permanente

2.32 The Birmingham Network has developed an approach called, “Working Together for Health” that draws upon the Kaiser model of care. One of the reasons for the interest in Kaiser’s approach is the need to address the continuing increase in emergency admissions in the UK (Birmingham Heartlands University Hospital experienced an 8 per cent increase in 2003 alone). There are separate projects in Birmingham that have adapted the Kaiser approach to local circumstances, namely:

- Heart failure
- COPD
- Diabetes
- Orthopaedics

2.33 The following section is based on a presentation by Dr Philip Madvig¹ of Kaiser Permanente, given to the Birmingham Network, a workshop lead by Mike Bleby and a recent BMJ article by Chris Ham (6).

2.34 Kaiser has achieved better clinical outcomes for frequent patient conditions than most other American providers. For instance, there has been a 15% decline in mortality and 25% reduction in admissions for cardiac patients. Total hip replacements require 4 days hospital stay with Kaiser, compared with 12.6 days in the UK. Kaiser requires only a third of the bed days for many other conditions as well.

2.35 Chris Ham points out that bed day use in the NHS for the eleven leading causes for admission is three and a half times that of Kaiser’s standardised rate. This is because in the Kaiser model there are lower admission rates and patient stays are relatively shorter. Ham et al conclude that the NHS could learn from Kaiser’s integrated approach, the focus on effective chronic disease management, the emphasis on self-care, the role of intermediate care, and the leadership provided by doctors in developing and supporting this model of care. It is particularly important for clinicians to know that they are leading and sustaining change, rather than to feel that change is being imposed on them.

2.36 Kaiser’s reduced length of stay does not necessarily result in an overall reduction in costs as there is a much greater investment in primary care than is the case in the UK. The financial savings in acute settings are spent on higher drug bills in primary care where not only are more patients put on drug based programmes but also compliance is much greater. As patients live longer, they consume more healthcare resources over their lifetime.

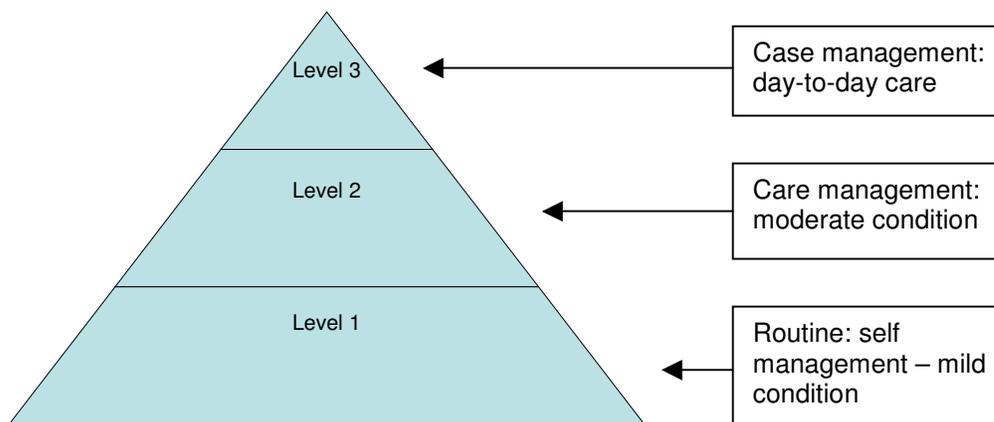
2.37 Disease prevention, self-care and disease management lie at the heart of Kaiser’s approach and emergency hospital admissions are treated as system failures. The approach is underpinned by integration of care across all sectors. Patients with specific conditions, such as diabetes, receive two to three one-to-one sessions with a clinical health educator. The patient then joins a group of similar patients,

¹ Presentation at Birmingham Heartlands University Hospital, 6th November 2003

facilitated by the clinical health educator. This leads to much better drug compliance and less usage of acute services. Communication with patients is extensive and includes a website with home pages for clinicians, where they can provide their own personal advice to patients.

2.38 Disease registers are of paramount importance, as they are used to proactively manage the care of patients, rather than only depending on patients to self-refer when they feel ill. Patients are educated about their conditions through tapes, CDs, books and web based information. The following diagram shows how Kaiser matches the clinical requirements of the patient cost effectively. Patients with mild conditions are taught to manage their own conditions. Those with a moderate condition are case managed. Finally, the most intensive resource users are case managed on a day-to-day basis.

Figure 1: Kaiser Pyramid of Care



2.39 All physicians see it as their responsibility to keep patients out of hospital, as far as is possible. They have an exclusive contract with Kaiser, meaning they cannot work for other organisations. There is a very close integration between primary and secondary care physicians. They work in teams and compete against each other in the quarterly performance tables. There is a strong focus on clinical leadership, in which physicians receive training. Staff also undertake communications skills training

2.40 A Kaiser physician has three hours in the morning and three hours in the afternoon patient contact time. Patients are given appointments of 15 minutes, which is significantly longer than is the case in the UK. Every Kaiser patient should receive equal care. Patients are more affluent than in the UK and less elderly, although, the average age is increasing.

2.41 There is a strong emphasis on adhering to evidence based guidance and monitoring outcomes. Physicians are actively involved in the production of guidance so they have a strong sense of ownership. These documents are updated in the light of clinical experience. Clinical champions are identified at the start of the exercise. Phone conferences are extensively used to conduct research

and improve clinical practice, in order to save time. Kaiser has ten years experience of evidence based medicine in the treatment of specific conditions. Its healthcare improvement process is as follows:

- Produce a register of patients with a specific condition
- Research treatment approaches and outcomes
- Recommend and implement best practice
- Monitor results

2.42 Kaiser's future research will focus on co-morbidity that is harder to treat. Indeed, the 5% of patients with multiple pathologies and/or mental health conditions absorb 53% of resources. 10 per cent of patients can account for 70 per cent of health care expenditure.

Implications for the UK

2.43 The Kaiser approach is quite different and clinicians will need to be engaged and receive incentives in order to change their practice. They may need reassurance that it is safe for patients to manage their own care. Also consideration needs to be given to who will be educating patients, as clinicians are very busy as it is. Kaiser uses behavioural educators based in primary care for much of this role.

2.44 The implementation of integrated care pathways that cover the whole patient journey across the various sectors is essential to support the evidenced Kaiser approach.

2.45 Professional development and training implications need to be addressed, including regularly updating. Skill mix changes and greater multi-disciplinary team-working will be required.

2.46 Tighter performance of clinicians would need to take a different form from the competitive league table approach that is popular in America. It would need to be non-threatening and team based so that no one individual is to "blame". This could be done by exception reporting by analysing the reasons for the best performance and the dissemination them more widely.

2.47 Earlier diagnosis and continuity of care will benefit patients. Care would be better targeted on those who need it most. However, clinicians at the workshop raised the following concerns regarding patients:

- Will they want much more responsibility for their own care, as this is a change in thinking?
- How will the patients acquire much more information, through help-lines and local support workers?
- How to address people who don't speak English or who have a chaotic lifestyle?
- Carers will require more support, as well as patients.

- Will the standardisation result in better care for patients?

Figure 2: Comparisons between Kaiser Permanente and the NHS

(Light, D. and Dixon, M. in the BMJ of 27.03.04) (7)

Factor	Kaiser Permanente	NHS
Governance	Doctors design and run services to determine how the budget is spent	Complex, contradictory mix of central directives, local executives and 'clinical governance'. Managerial hierarchies by sector
Financing	Population-based integrated budget. It's doctors' money Everyone on salary with small, team-based bonuses for meeting targets No building up private practice on KP base	Largely service-based segmented budgets, set primarily by central directives It's not anyone's money Mostly on salary with varying reward structures; general practitioners contract independently Consultant incentive to build private practice on NHS base
Organisation	Own facilities, hospitals Large outpatient centres with multi-speciality teams, laboratories and equipment Many specialists practise at centres or in the community	Own facilities, hospitals Small general practices with other facilities elsewhere or available by arrangement Most specialists practise at hospitals
Role of Specialists	Design interface with primary care, guidelines, protocols, patient pathways Delegate to nurse specialists Involved early and more often; more specialists Less use of hospitals Fewer admissions, rapid discharge	Largely run their speciality clinics as they see fit Some delegation to nurse specialists Referrals arranged at arms length weeks later; fewer specialists More use of hospitals More admissions, slower discharge

The patient pathway

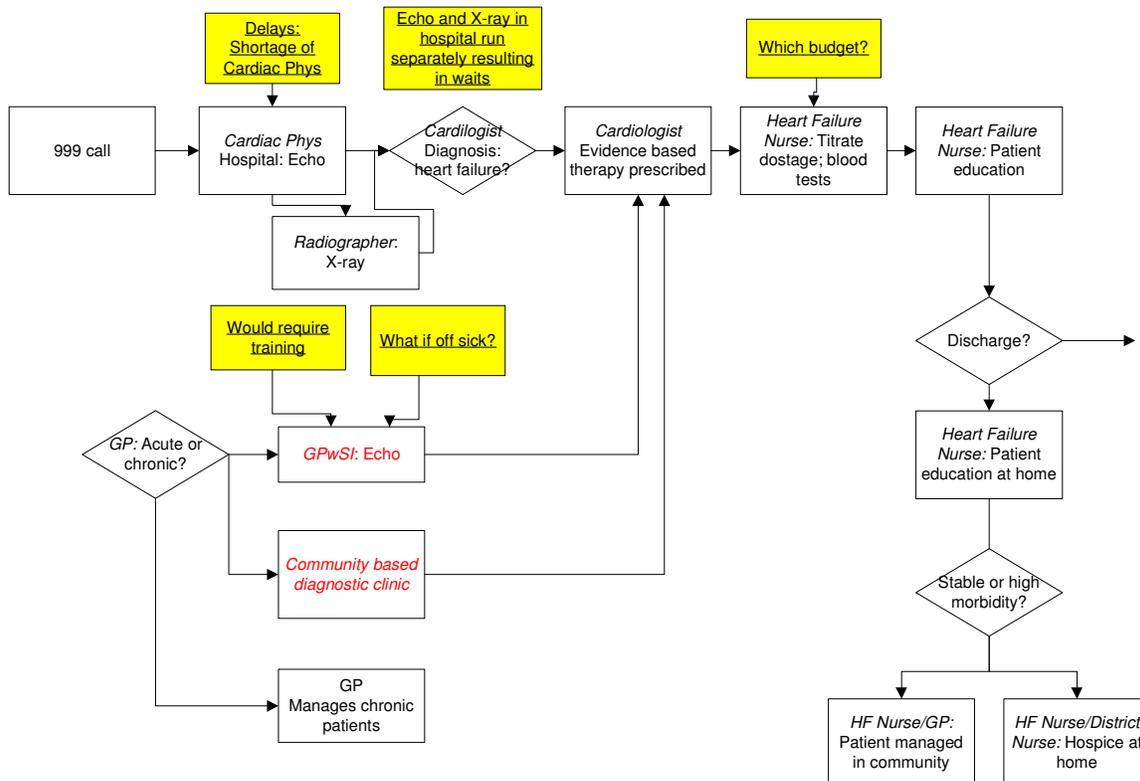
2.48 The issues that were identified regarding the existing pathway were that echo and x-ray tests in hospital can involve significant waits (see Figure 4). There is a shortage of cardiac physiologists to undertake echocardiogram and that as the tests under undertaken by separate departments, there can be a lack of coordination between them, delaying the completion of tests. This problem is not universal and can be overcome by demand and capacity work and recruiting into vacant posts.

2.49 Alternative pathways were designed, such as a GPwSI who would undertake echocardiograms. However, there was a concern about how robust such an approach would be in the case of sickness or annual leave. Echocardiographs

would still be undertaken quite extensively for in-patients, as many of them would by-pass primary care.

2.50 A further approach was a community based diagnostic clinic that would better integrate the various tests required. However, throughput would have to be sufficiently high in order to contain costs.

Figure 3 – High level integrated care pathway



Workforce

2.51 There is a strong primary care focus, with larger units of organisation than is the norm in the UK. A typical Kaiser centre has:

- 20,000 patients
- 6/8 physicians (1: 2,500 to 1: 3,333 – this compares with about 1: 1,800 in the UK)
- 2 nurses (1:10,000 patients)
- 1 counsellor (called behaviour health specialist)

2.52 A feature of Kaiser is that there are many more **health educators** and **discharge planners** than is the case in the UK. **Health educators** could be former medical clerks or come from a public health background. **Discharge planners** are usually former nurses. They are extensively used and have a key role in managing the

patient journey. They are trained to work with patients belonging to the same diagnostic group and have an average of 25 patients each. The range of patient conditions for which they are responsible is likely to be expanded.

EverCare

2.53 Evercare, an affiliate of United Health Care (USA), started as a small pilot programme in 1987 to provide proactive care for the vulnerable elderly and is now implemented nationally. Well-documented studies demonstrate that the Evercare approach can result in:

- Up to 50 percent reduction in the hospitalisation rates of its patients in care facilities whilst achieving the same mortality results in comparison to a control group. (8)
- A significant reduction in the number of prescription drugs used thus lowering unwanted side effects and saving costs.
- Very high satisfaction rating among families and health care workers.

2.54 The Department of Health contracted with Evercare in November 2002 to implement the Evercare model in nine PCTs in England. The objectives of this agreement include:

- Targeted improvement in a population's health based on individual patient need and evidence-based medicine
- Development of primary and community services as core assets in care delivery.
- Management of health care budgets for defined populations
- Optimisation of a health system's capacity and capabilities

2.55 As a part of the project, Evercare is conducting ongoing programme monitoring and assessment to determine the extent to which the core principles of the model have been successfully implemented and to examine the effects on outcomes for both patients and care providers. The project focussed on 3 areas critical to the success of the NHS Plan:

- To look at the entire system from a patient's point of view and to remedy the most serious gaps or duplications in the care pathway
- To ensure that care is delivered in the least intensive setting consistent with patient needs and the most effective use of NHS resources
- To reallocate existing resources to new purposes rather than to seek additional resources.

2.56 Five principles underpin the Evercare model:

- apply an individualised, whole person approach to the care of patients
- use primary care as the central organising force across the continuum

- provide care in the least invasive manner, in the least intensive setting
- avoid adverse effects of medications and polypharmacy
- use data to strengthen decision-making

2.57 These principles translate into the core elements of the Evercare approach:

- Process re-engineering interventions that will improve the capability of the system to respond to the special needs of the targeted population. This is through collaborative partnerships and effective CPD and appraisal systems are put in place
- Role re-engineering to prepare a workforce skilled in addressing all the needs of the target population. The GP and nursing roles are extended
- Data are collected and analysed to ensure high-risk populations are identified and outcomes measured after implementation of the programme.

2.58 An evaluation of this project is awaited (the first draft was due at the DoH in February 2004) when it will be seen whether or how the skills and techniques of the Evercare programmes can be applied across the NHS to other patient groups. However, this has not been published by May 2004, so that published evidence of its effectiveness relates only to the USA. It would seem particularly applicable to the management of patients with coronary heart disease. On March 11th 2004 the PCTs involved in the pilot held a workshop to share their learning so far from their involvement in the Evercare Project. (9) It is clear from the report that there is general enthusiasm about the relevance and applicability of Evercare to elderly care and the key findings from this day are:

- The need to make educational and training links to develop work-based learning programmes at levels up to Masters and to build into pre-registration training
- The project should be linked into other local work around service redesign, skill mix analysis and build into the LDP using GMS
- Successes with this project should be disseminated to enhance mainstreaming
- More interprofessional working should be developed
- Managerial support essential
- The right people need to be attracted into the project
- Some PCTs have developed documentation in order to retain corporate memory on implementing the proactive model.
- Incorporate project into residential and nursing homes. Though most high-risk elderly live in their own homes there are significant numbers in these settings
- Further development of appropriate criteria needed – the Evercare criterion of 2 or more admissions in the last year has helped identify the vulnerable population but more sophisticated criteria would help target need with even greater accuracy. These could include the use of chronic disease registers,

social risk factors, greater understanding of existing local services, protocols for liaison with GPs and teams working together to provide 24 hour nursing care

- Develop quality markers to ensure standards
- Develop permanent systems in order to make the new approach a permanent feature of the local system.
- The Evercare model has direct relevance and transferability potential to other clinical areas, including CHD.

3. INNOVATIONS IN PROCEDURES AND ACUTE SERVICE DEVELOPMENTS

Primary Angioplasty

- 3.1 Thrombolysis has been the treatment of choice until the introduction of primary angioplasty. However, until the latter is generally available, thrombolysis will still be very important. Therefore, there are recommendations later in the report relating to thrombolysis as primary angioplasty in Birmingham and the Black Country is currently only provided at Birmingham Heartlands and Solihull Hospitals.

Primary Angioplasty at Birmingham Heartlands and Solihull Hospital

This service was introduced more than a year ago and 100 primary angioplasties have been completed, representing slightly fewer than two a week. However, only a third of which represents new work, as the other patients would have had an angioplasty at a later stage. It is estimated that there will 900 infarct patients of whom 200 to 250 will require angioplasty for a population of 500 to 600,000. This gives a rate of 164 infarcts and between 36 and 45 angioplasty per 100,000 population.

Only a few patients require this intervention at night time. In addition, catheter laboratories need to offer a 24/7 capability, even if it is not called upon often.

The trust operates two laboratories, one of which concentrates on elective procedures and the other undertakes two booked angioplasties a session that offers enough spare capacity for primary angioplasty.

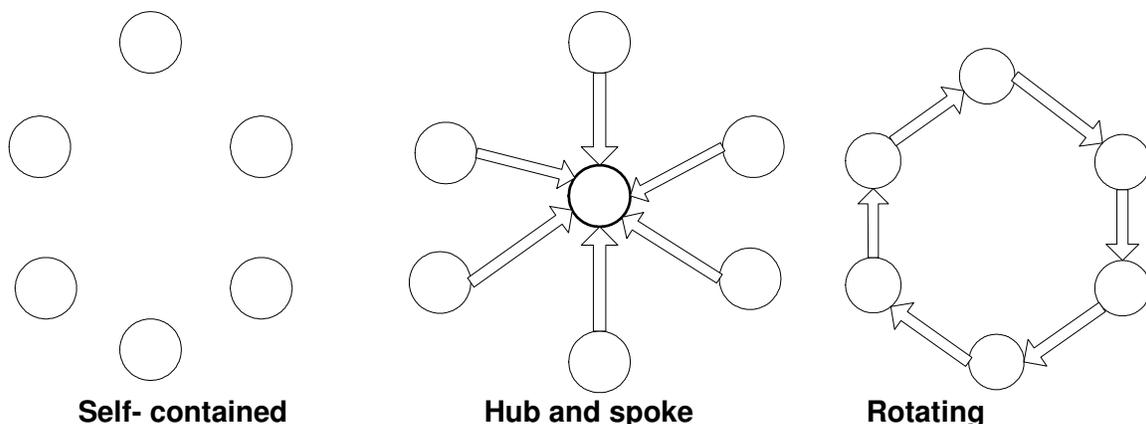
Primary angioplasty is only slightly more expensive than the treatment it replaces. The costs of the additional staff required to provide the spare capacity needed for rapid emergency access, only slightly outweighs the savings from a reduction in length of stay from seven to five days and savings in thrombolysing drugs.

- 3.2 In order to explore the impact of primary angioplasty and the catheter laboratory of the future, a workshop on the topics was held. The keynote speaker was Michael Norell, Cardiologist, Royal Wolverhampton Michael. The main points from the workshop follow.
- 3.3 Primary angioplasty needs to be seen in the context of the many developments in cardiology. The additional volume of activity that AMI AMI-PCI brings is not large. Some 70% or so of AMI patients will end up having angiography within a few months of their admission anyway, with a significant proportion of these being revascularised in due course. A PCI programme simply brings this forward, but as speed is necessary, flexibility becomes the issue.
- 3.4 The demand for percutaneous intervention has been increasing by 10 to 12 per cent a year. The 1,400 interventions per million that are now the agreed target, as compared with 750 achieved in 2002. Consequently, waiting lists for angioplasty are increasing.
- 3.5 Drug eluting stents are being used much more widely. A longer surviving population has impact upon all aspects of healthcare provision. Certainly PCI

developments will broaden its scope, taking patients away from CABG to some extent, but also treating patients that would previously have been managed medically.

- 3.6 Trusts with Integrated care pathways have improved the efficiency of elective surgery and pathways now need to be written for non-elective work. This needs to be supported by properly designed rotas to support seven day a week working.
- 3.7 Multi-disciplinary team meetings are very beneficial for all angiography, even though they are time consuming. They maintain team cohesiveness and improve the understanding between interventionists and non-interventionists.
- 3.8 A team approach to managing patients produces significant dividends. This can entail pooling diagnostic and PCI lists, so that if a particular consultant is unavailable, the patient does not have to wait for their return. This means that a consultant no longer “owns” a patient and the responsibility for wards rotates between consultants, weekly.
- 3.9 There are anxieties around the level at which the National tariff has been set, as it reflects the cost of standard procedures, but not the more recent innovations such as drug eluting stents.

Figure 4 – Hub and Spoke and Rotating Network Models of Service Delivery



- 3.10 Figure 4 illustrates three possible models of service delivery. The self-contained model would mean that each catheter laboratory would offer primary angioplasty. This would mean that ambulance journey times will be short and that patients need not transfer after the procedures. However, it would require a higher level of staffing. The hub and spoke would mean that one centre in the network would provide primary angioplasty and that staff from the spokes would take it in terms to provide cover at the hub centre. Staff would have to be familiar with the equipment, layout and some of the administrative arrangements of that trust. The other option is the rotating model when each catheter laboratory would take it in turn to act as the centre and the ambulance service would need know which one was the designated centre that week and all the various routes to avoid congestion at different times of the day. The hub would possibly change on a weekly basis.

The London ambulance service strongly favours the hub and spoke approach, as it is operationally much more straightforward for them. They favour five centres for the capital, each covering a population of about 1½ million. However, different models are likely to be followed around the country and for instance Birmingham Heartlands and Solihull operates a self-contained model, covering its own population.

- 3.11 Communications between the ambulance service and catheter laboratories is pivotal and includes the electronic transmission of ECG results. Importantly, ambulance personnel ideally will be making the diagnosis themselves with ECG interpretation and possibly finger-prick blood tests, etc. More ambulance time will be needed, as drivers would need to travel further to hospitals with catheter laboratories. This contrasts with the existing practice where patients are taken to the nearest hospital in the first instance and then transferred to a specialist centre. The performance measure would be door to balloon time, instead of the current door to needle time.
- 3.12 The primary angiography centre would need a team co-ordinator to summon the team when they are on-call. This role could be performed by a nurse or specialist registrar. There would need to be a bed for the PCI patient and somewhere for them to remove their clothes. The relatives also need somewhere to wait. The patient might arrive at the laboratory before the staff, in some cases. The nurses could rotate into CCU.

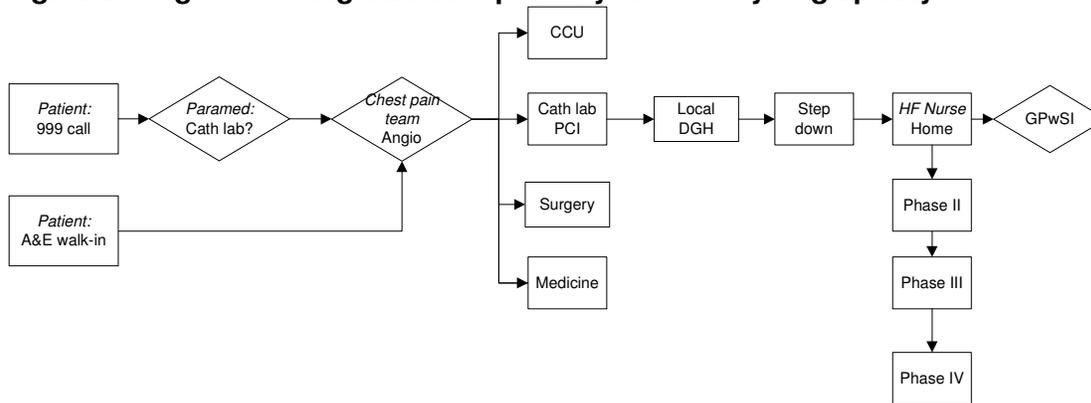
Primary Angioplasty in The Hammersmith Hospital

The Hammersmith Hospital now offers myocardial infarct patients better health outcomes by giving them primary angioplasty, as soon as they arrive in the catheter laboratory, 24 hour a day. Currently, two to three patients a day are brought in from the catchment area of the Hammersmith, Charing Cross and West Middlesex Hospitals, which probably is about 300,000 to 400,000.

The length of stay has been reduced from 9¾ to three days. This was achieved with no additional funding. However, the significant savings accrue to the purchasing PCTs, rather than to the trust's catheter laboratory. It is likely that additional funding will be required when the service increases and more cardiac physiologists will be need who would work four, ten hour shifts compared with five, 7½ hour shifts.

These are early days of implementation and it will take a while before all the necessary supporting arrangements, such as guarantying patients beds are established, as a matter of routine.

Figure 5 – High level integrated care pathway for Primary Angioplasty



Biventricular Pacing

3.13 Biventricular Pacing (BVP) is being introduced more widely. There is evidence (10) to confirm that heart-failure patients suitable for the fitting of a biventricular pacemaker are able to exert themselves more easily and have a higher quality of life. Effects on mortality will not be clearly determined until further trials have been completed but it is likely to become an essential part of heart failure management.

Service developments

New Cross Hospital, Wolverhampton

3.14 When the Heart and Lung Centre at New Cross Hospital Wolverhampton opens in the autumn of 2004, the £60 million centre, funded directly by the NHS, will be the most modern purpose-built heart centre in the country, employing around 550 staff. The three floors will house state-of-the-art facilities with three cardiac surgery theatres, three interventional cardiology catheter labs and 175 beds. At capacity, it is expected to treat around 875 cardiac and 327 thoracic surgery cases and more than 2,000 secondary and tertiary cardiology cases a year from across the Black Country, Shropshire and Staffordshire. The Clinical director Dr Richard Horton said: *“New Cross Hospital is at the centre of one of the UK’s worst heart disease hotspots. The specialist services and expertise at the Heart and Lung Centre will ensure a greatly improved and much closer service for heart disease patients. “We are lucky in that building a stand alone centre from scratch, we can create a service that is truly focused around the needs of heart disease patients which will set new standards of care for cardiac patients. It will also help us tackle the longer term and root causes of heart disease.”*

3.15 At the moment the imminent opening of this specialist centre means that staff are already being attracted and there are no recruitment issues, (but is resulting in retention issues in other cardiac centres). One lead cardiac surgeon is practicing in Brighton until the centre opens. The local University of Wolverhampton already offers a degree course for cardiac physiologists and suitable staff will be able to access this. Already mentorship, clinical supervision and CPD systems are in place to support staff.

- 3.16 However, there is no doubt that a development of this scale will act as a magnet to attract staff from neighboring hospitals, as well as further a field.

New Computer Based Information

- 3.17 The use and integration of information management systems throughout the regions should be prioritised as at present there are too many incompatible systems in operation and full advantage is yet to be taken of the benefits of using ICT, for example in organising and running clinics and appointments, maintaining CHD registers, having region-wide templates for audit procedures etc.
- 3.18 ICT developments may impact on clinician time, particularly if clinicians play an active role in the development of new clinical pathways and data entry. In the longer term, consideration needs to be given to the workforce implications of maintaining IT systems, including data entry and retrieval.

4. THE WORKFORCE

The CHD Workforce Coverage

- 4.1 A definition of the CHD (Chronic Heart Disease) Workforce must include everyone who contributes to the patient journey from the initial diagnosis of heart disease, immediate interventions, ongoing care for those with chronic heart problems through to the management of those with terminal heart disease:
- NHS staff in all sectors
 - Staff employed by partner agencies
 - Voluntary organisations
 - Patients and their carers
- 4.2 It is easy to identify NHS staff who exclusively work with CHD patients, such as Cardiologists and Cardiac Physiologists. However, there is a growing number of staff who play an important role in the care of such patients who have a generic role across numerous disease groups, such as GPs and practice nurses.
- 4.3 The scope of the CHD workforce would be even wider if prevention was considered, as influencing factors known to contribute to the development of heart disease, such as poor diet, lack of exercise, especially in children, and smoking would include the involvement of many government and voluntary agencies. With increasing evidence to suggest that many incidences of heart disease are preventable, in an ideal world the focus should be on maintaining and enhancing wellness rather than treating established illness. In this scenario the configuration of the workforce would move even more to primary and community care with a diminishing role for the front line staff in acute care. The purpose of this report is to focus on the existing CHD issues that the Birmingham and Black Country networks can influence more readily and immediately, but preventative aspects should not be ignored in future policy planning.
- 4.4 Finally, there are the patients and carers themselves, whom as we have seen in the section on the expert patient programme, have a crucial role in managing their symptoms more effectively and reducing the demand for CHD related services.
- 4.5 This section on workforce could be written in a variety of ways. It could follow the patient journey from wellness to disease. This would start with health promotion staff and then cover primary care, following the model of chronic disease management. The next staff groups to cover would be the acute workforce and then finally those staff engaged in rehabilitation. This would be a particularly powerful approach, had integrated pathways charting the patient journey been available. Another approach would be to focus on staffing hotspots that directly impact on the delivery of targets. The main delays are in the acute sector and so are the staff groups prioritised by the CHD Care Group Workforce Team. Therefore, given the need to address the most pressing workforce issues, this section will review the acute staff groups before those in other sectors.

Integrated Care Pathways

- 4.6 Integrated care pathways of cardiac care are an essential foundation for the effective use of staff and to improve the experience and outcomes for all patients with suspected or diagnosed CHD. Once they are written, it is much easier to clarify staff roles and identify training needs. The Black Country is designing pathways that follow the whole patient journey across the various providers of care. However, the Birmingham Network has a few pathways in individual trust that do not link across organisations. However, for this work to be successful, it needs the full support from lead clinicians.

Recommendation on Integrated Care Pathways: *these should be designed to follow the entire CHD patient journey, once this is fully supported by lead clinicians in the Birmingham Network.*

Changes in Staff Roles

- 4.7 The NSF for CHD has set the agenda for the modernisation of CHD services over a 10 year programme and has set standards for improved prevention, diagnosis, treatment and rehabilitation. The implementation of the NSF requires not only more staff but also staff with the right skills, working differently to meet the new standards.
- 4.8 The National Changing Workforce Programme identifies areas of patient services in which testing improvements to current ways of working and/or role design would benefit patients and staff. Within this context role design covers primarily four types of change:
- moving up and down a traditional uni-disciplinary ladder
 - expanding the breadth of a job
 - increasing the depth of a job
 - developing new roles.

Workforce priorities

- 4.9 To meet waiting time targets and improve services to patients key staffing issues have to be addressed in acute trusts. There are many staff groups involved, however the CHD Care Group Workforce Team (2003) (11) identified four key staffing priorities for 2003 –2004 so that scarce resources can be used to best effect:
- Cardiologists
 - Cardiac Physiologists
 - Staff in cardiac catheter laboratories
 - Cardiac critical care nurses

Cardiologists

Table 1 – Cardiologists in Birmingham and The Black Country, as at 31 December 2003

<i>Birmingham and Sandwell</i>	H'count	WTE	Pop	WTE/Pop
Birmingham Heartlands & Solihull	5	4.82		
Good Hope Hospital	4	3.91		
Sandwell and West Birmingham	8	7.91		
University Hospital Birmingham	9	8.64		
<i>Sub total</i>	<i>26</i>	<i>25.28</i>	<i>1.459513</i>	<i>17.3</i>
<i>The Black Country</i>				
Dudley Group of Hospitals	4	3.91		
Royal Wolverhampton	5	4.82		
Walsall Hospitals	3	2.82		
<i>Sub total</i>	<i>12</i>	<i>11.55</i>	<i>0.795238</i>	<i>14.5</i>
Total	38	36.83	2.254752	16.3
DoH data, 2001	576	512.00	49.13883	10.4
DoH data, 2002	609	561.00	49.13883	11.4
RCP data, 2001	563	546.00	49.13883	11.1

- 4.10 The above table shows that Birmingham and The Black Country has more cardiologists per million population (16.3) than England as a whole (10.4 – 11.1) or 11.4, if the DoH September 2002 figure is used. Birmingham has a relatively high concentration (17.3). A possible reason for this is that Cardiologists in the BBC area serve populations outside the area particularly for PCIs for which the centres tend to be in the BBC area. UHBT certainly takes significant numbers from Worcestershire, Herefordshire and South Staffordshire. Good Hope also takes a many patients from South Staffordshire for diagnostic catheter procedures.
- 4.11 The number of cardiologists in Royal Wolverhampton are planned to rise to 6 (12). This would increase the Black Country ratio to 15.4, which is still below Birmingham's current ratio of 17.3.
- 4.12 The higher than average staffing should not be seen as excessive, with the demands of the European Time Working Directive and is very much less than the new British Cardiac Society's recommendations (see Table 2).
- 4.13 In addition, the NHS Plan target is for cardiologists to increase by 10 per cent each year from 1999/2000 to 685 in 2003/4, an increase of 47 per cent. This is in the context of a 50 per cent increase in catheter laboratories (65) to 136 and a rapidly rising number of PTCAs being undertaken at an annual rate of 4,000 a year.
- 4.14 The Care Group Workforce Team (11) estimates that 563 additional cardiologists will be needed in five years' time. This equates to 1,075 wte cardiologists in total, or 22 per million. This is on the assumption that this is calculated using the

DoH's baseline of 512 wte in 2001. The report acknowledges that no account has been taken of the additional demand for children's services.

- 4.15 Applying the recommended growth rates to Birmingham and the Black Country would require a 35 per cent increase in cardiologists (an additional 12.8 wte). The increase for the Black Country being significantly higher, namely 51 per cent more (an additional 5.9 wte).

Table 2 – The additional demand for cardiologists to achieve 22 per million, compared with current staff-in-post

	Pop	Current WTE	22 per million	Increase	
				WTE	%
Birmingham and Sandwell	1.45951	25.3	32.1	6.8	27%
The Black Country	0.79524	11.6	17.5	5.9	51%
Birmingham and The Black Country	2.25475	36.8	49.6	12.8	35%

- 4.16 The BCS calculated a significantly higher demand to also take into account biventricular pacing and primary angioplasty, the latter to be available on a 24/7 basis. The figures point to very large increases in cardiologists ranging an increase of 175 per cent (64 WTE) for 44.9 cardiologists per million to an increase of 125 per cent (126 WTE) for 72 per million.

	Pop	Current WTE	44.9 per million	Increase		72 per million	Increase	
				WTE	%		WTE	%
Birmingham and Sandwell	1.45951	25.3	65.5	40.3	159%	105.1	79.8	316%
The Black Country	0.79524	11.6	35.7	24.2	209%	57.3	45.7	396%
Birmingham and The Black Country	2.25475	36.8	101.2	64.4	175%	162.3	125.5	341%

Supply issues

- 4.17 Cardiologists lead and contribute across the range of services for people with CHD and are critical to delivering a consultant-led service. There are limited numbers of interventional cardiologists coming through training, which has contributed to serious recruitment problems. For example, the City hospital only managed to recruit to a vacancy at the third attempt.

Cardiothoracic Surgeons

Table 3 – Cardiothoracic Surgeons in Birmingham and The Black Country, as at 31 December 2003

<i>Birmingham and Sandwell</i>	H'count	WTE	Pop	WTE/Pop
Birmingham Children's	1	0.82		
Birmingham Heartlands & Solihull*	4	3.73		
Sandwell and West Birmingham	0	0.00		
University Hospital Birmingham	6	5.64		
<i>Sub total</i>	<i>11</i>	<i>10.19</i>	<i>1.459513</i>	<i>7.0</i>
<i>The Black Country</i>				
Royal Wolverhampton	2	2.00		
<i>Sub total</i>	<i>2</i>	<i>2.00</i>	<i>0.795238</i>	<i>2.5</i>
Total	13	12.19	2.254752	5.4
DoH data, 2002	203	197.00	49.13883	4.0

* Only undertake thoracic procedures

- 4.18 The NHS Plan target is for cardiothoracic surgeons to increase by 4.5 per cent each year between 1999/2000 and 2003/4, which is 19 per cent overall. The Care Group Workforce Team endorses this level of increase and did not recommend a steeper rate of increase, as in the case of cardiologists. The Secretary of State announced in March 2001 that no Trust would have a consultant cardiologist working single-handedly by 2004.
- 4.19 Birmingham and the Black Country has slightly more cardiothoracic surgeons per million population (5.4) than England as a whole (4.0). There are marked differences between Birmingham and the Black Country, with Birmingham having 7.0 per million, which is almost double the national figure. However, with the opening of the cardiac centre at New Cross Hospital, the Black Country is planned to have 6 wte cardiothoracic surgeons (12) in 2004, lifting the ratio to 7.5 per million for the Black Country. This is directly comparable with Birmingham's current ratio (7.7). However, this is almost double the 2002 England average. If the full plan of 8 cardiothoracic surgeons were adopted, this would raise the ratio for the Black Country to 10.1 and for Birmingham and the Black Country to 8.1.
- 4.20 A significant reason why Birmingham has higher staffing on a resident population basis is that this measure would not include the patients from Coventry, South Staffordshire and Worcestershire. They accounted for 24 per cent of University of Birmingham cardiac surgery patients for the year to October 2003. This shows that it would be useful to conduct a similar exercise to include the other two Strategic Health Authorities in the West Midlands so that there can be a more
- 4.21 Waiting times for revascularisation, including CABG, are falling but need to fall still further to deliver the target of a maximum three-month wait by March 2005. Although, the activity rates for surgery are likely to be overtaken by PCTA (Percutaneous Transluminal Coronary Angioplasty) performed by cardiologists, there is likely to be an increase in the complexity and length of heart operations as the population ages.

Cardiac Anaesthetists

4.22 Cardiac anaesthetists are anaesthetists with specialist cardiac skills. As the number of cardiac care centres and the increasing complexity of cases the demands for cardiac anaesthetists will grow. There is limited scope to use skill mix in the area of cardiac anaesthesia because of the complexity of the procedures but as this is a popular speciality increases in posts in this area might draw anaesthetists away from other areas of service.

Cardiac Physiologists

Table 4: Cardiac Physiologists, December, 2002

Hospital	Support worker		Trainee		Practitioner		Adv. practitioner		Total	
	Est	Actual	Est	Actual	Est	Actual	Est	Actual	Est	Actual
<i>Birmingham</i>										
City Hospital B'ham	4.70	4.00	0.00	0.00	5.00	2.41	3.78	3.76	13.48	10.17
Good Hope	2.50	1.50	1.00	1.00	3.00	1.00	7.00	7.00	13.50	10.50
Heartlands	5.12	3.85	0.00	0.00	6.00	1.41	3.00	1.00	14.12	6.26
Sandwell	5.41	4.60	0.00	0.00	2.50	1.00	5.47	5.02	13.38	10.62
UHB	6.00	6.21	4.00	4.00	7.50	4.50	12.00	7.00	29.50	21.71
<i>Sub total</i>	<i>23.73</i>	<i>20.16</i>	<i>5.00</i>	<i>5.00</i>	<i>24.00</i>	<i>10.32</i>	<i>31.25</i>	<i>23.78</i>	<i>83.98</i>	<i>59.26</i>
<i>Black Country</i>										
Dudley Group	9.85	8.59	2.00	2.00	2.66	3.47	6.66	6.66	21.17	20.72
Walsall	3.00	3.00	2.00	2.00	4.17	4.61	3.43	2.84	12.60	12.45
Royal Wolverhampton	6.40	5.40	8.00	8.00	3.57	4.00	3.97	4.00	21.94	21.40
<i>Sub total</i>	<i>19.25</i>	<i>16.99</i>	<i>12.00</i>	<i>12.00</i>	<i>10.40</i>	<i>12.08</i>	<i>14.06</i>	<i>13.50</i>	<i>55.71</i>	<i>54.57</i>
Total	42.98	37.15	17.00	17.00	34.40	22.40	45.31	37.28	139.69	113.83
Vacancies		14%		0%		35%		18%		19%

Table 5: Cardiac Physiologists, December, 2003

Hospital	Support worker		Trainee		Practitioner		Adv. practitioner		Total	
	Est	Actual	Est	Actual	Est	Actual	Est	Actual	Est	Actual
<i>Birmingham</i>										
City Hospital B'ham	4.00	2.61	0.00	1.00	0.00	0.00	7.92	7.08	11.92	10.69
Good Hope	4.50	1.50	2.00	2.00		*	9.00	6.00	15.50	9.50
Heartlands*	5.15	5.17	0.00	0.00	6.00	3.00	3.00	3.41	14.15	11.58
Sandwell	4.41	3.16	1.00	1.00	1.50	1.00	5.47	5.03	12.38	10.19
UHB	7.00	7.41	3.00	3.00	7.50	7.50	12.00	9.00	29.50	26.91
<i>Sub total</i>	<i>25.06</i>	<i>19.85</i>	<i>6.00</i>	<i>7.00</i>	<i>15.00</i>	<i>11.50</i>	<i>37.39</i>	<i>30.52</i>	<i>83.45</i>	<i>68.87</i>
<i>Black Country</i>										
Dudley Group	10.19	8.62	4.00	4.00	2.97	3.47	6.66	6.66	23.82	22.75
Walsall	3.00	3.00	3.00	3.00	4.17	2.42	3.25	2.81	13.42	11.23
Royal Wolverhampton	8.00	7.86	4.00	4.00	9.00	9.00	5.37	6.00	26.37	26.86
<i>Sub total</i>	<i>21.19</i>	<i>19.48</i>	<i>11.00</i>	<i>11.00</i>	<i>16.14</i>	<i>14.89</i>	<i>15.28</i>	<i>15.47</i>	<i>63.61</i>	<i>60.84</i>
Total	46.25	39.33	17.00	18.00	31.14	26.39	52.67	45.99	147.06	129.71
Vacancies		15%		-6%		15%		13%		12%

* 3 trainees in post on 12 July 2004

Staffing trends

- 4.23 The above figures show that the numbers of all types of cardiac physiology staff-in-post increased by 14 per cent (16 wte) between 2002 and 2003, with vacancies falling from 19 to 12 per cent. The establishment also grew by 5 per cent (7 wte), reflecting an increase in demand. The main growth was in advanced practitioners whose numbers increased by 22 per cent (7 wte).
- 4.24 There are 3,000 cardiac physiologists according to the Care Group Workforce Team Recommendations national recommendation (11) in England, which equates to 61 per million. This is more than The Black Country, 52 and Birmingham, 34 per million (this includes practitioners, advanced practitioners and trainees). However, the report goes on to recommend an increase of 33 per cent from 3,000 to 4,000, meaning the new target is 81 per million population.

The role of cardiac physiologists

- 4.25 Cardiac Physiologists undertake a number of diagnostic procedures that aid in the diagnosis of cardiac diseases. Advance practitioner cardiac physiologists have taken over some tasks from consultant cardiologists. The former now run pacemaker clinics without immediate medical supervision. Cardiac physiologists do most of the echocardiography reporting and will only seek advice from cardiologists on problematic readings. Given the shortage of cardiologists, consideration needs to be given extending the cardiac physiologists role further, particular regarding the creation of a consultant grade. Cardiac physiologists in The Hammersmith will be implanting pacemakers, from January 2005.

Recommendation: creation of consultant cardiac physiologist post

Consideration should be given to creating a consultant cardiac physiologist post, particular if there could be agreement in extending their role further.

- 4.26 The demand for cardiac physiologists will increase with the opening of more catheter laboratories and the development of heart failure services within primary care. Plans are not fully funded so the demand for cardiac physiologists is under-stated in Local Delivery Plans. In terms of overseas recruitment, Birmingham Heartlands and Solihull was successful in recruiting cardiac physiologists from the Philippines.
- 4.27 Some cardiac courses particularly nursing courses are unnecessarily uni-professional, which hinders staff in becoming more multi-skilled.

Recommendation: extending multi-professional education and training

Cardiac courses should be reviewed to remove profession specific requirements, unless there are exceptionally good reasons not to.

Multi-skilling in catheter laboratories

- 4.28 Teams in cardiac catheter laboratories undertake a range of procedures including angiography, angioplasty and pacing. Such teams need a variety of skills and often consist of a cardiologist, cardiac physiologist, cardiac radiographer and cardiac nurse. However catheter laboratories can be staffed by using skills differently. In the North West Changing Workforce programme and the CHD

Collaborative the themes that are emerging from the CHD pilot are that a catheter laboratory practitioner career framework should be developed which will promote multi-skilling of staff and facilitate the development of staff to work at levels from assistant to advanced practitioner. In this pilot, initial findings indicate that between 12 and 34 hours per week of the catheter laboratory assistant's time are spent undertaking tasks that would previously have been performed by nurses, radiographers or cardiac physiologists. Increases in productivity will reduce the cost per case and going some way to mitigate the demands being made by increasing the number of catheter laboratories. The likelihood is that it is diagnostic radiographers who would drop out of the team, as they are in shortest supply. In addition, radiography is simpler now that digital images have replaced film stock. A multi-skilling training course is planned to start in South Bank University.

- 4.29 Southampton has adopted a radical approach by going down from three to one professional member of staff in support of the clinicians. They have one professional in reserve. However, they are able to do this as they have four laboratories that can be observed from a central location.

Recommendation: multi-skilled training

A multi-skilled training course should be commissioned along the lines of the one in South Bank University.

Generic support worker

This is a junior member of staff at NVQ III level who acts like a runner and applies pressure to the patient when required.

Education and training

- 4.30 The Changing Workforce Programme North West is exploring the following innovations:

- fast track graduate programme for cardiac physiologists;
- practice tutors for cardiac physiologists;
- roll-out programme for assistant practitioners;
- foundation degree in applied medical technology

- 4.31 Students obtain a diploma after successfully completing their first two years of training and this is funded by the WDC. The third and fourth years cover basic catheterisation, echocardiography and pacing and students are awarded a degree on successful completion. However, this has to be funded by trusts, some of which are unwilling to do so. When cardiac physiologists become state registered, a degree qualification will become compulsory.

Part-time diploma and degree course

- 4.32 In Birmingham and the Black Country, students obtain a diploma after successfully completing their first two years of training and this is funded by the WDC. The third and fourth years cover basic catheterisation, echocardiography and pacing. Students are awarded a degree on successful completion.

However, this has to be funded by trusts, some of which are unwilling to do so. When cardiac physiologists become state registered, a degree qualification will become compulsory.

- 4.33 A new course has been commissioned from Wolverhampton University. Students are at university two weeks out of eight with the remaining time spent on 'placement' developing practical skills. Consideration was given to running the course on a day release basis, but this would be unpopular with those who have far to travel. Commissions have increase from 6 in 2001 to 15 – 20 in 2002. There are very few dropouts.

Fast track course

- 4.34 Those with a similar degree could benefit from APL that could mean that they could combine years one and two. Only real excellent candidates with special experience could complete the course in two years.

MSc

- 4.35 Ideally this would be a multi-disciplinary course that would include nursing modules. The course would cater for the approximately 10 per cent of the profession would become the leaders of the future in exercises such as organisational change or undertaking research. In addition, Agenda for Change places a bar on those without an MSc or PhD qualification.

Recommendation: Multi-professional MSc in Cardiac Physiology

Consideration should be given to supporting the development of a modular MSc course in cardiac physiology, catering for a range of professions.

Technicians

- 4.36 The view of respondents was that the starting point needs to be below foundation degree, but technicians should be supported to progress to up the skills escalator.

Critical Care Nurses

- 4.37 The Workforce Development Confederation asked trusts to produce Local Delivery Plans for the main nursing staff groups, including critical care. However, only University Hospital Birmingham and the Dudley Group of Hospitals provided plans for critical care staff. The other trusts included them under adult, elderly and general nurses.

Table 6 – Critical Care Nurses: Staff-in-post and Local Delivery Plans

	Sep-02	Mar-04	Mar-05	Mar-06	Change 02/06	
<i>Birmingham and Sandwell</i>						
Birmingham Heartlands & Solihull						
Good Hope Hospital						
Sandwell and West Birmingham						
University Hospital Birmingham	241	280	317	319	78	32%
<i>Sub total</i>	<i>241</i>	<i>280</i>	<i>317</i>	<i>319</i>	<i>78</i>	<i>32%</i>
<i>The Black Country</i>						
Dudley Group of Hospitals	55	55	57	57	2	3%
Royal Wolverhampton						
Walsall Hospitals						
<i>Sub total</i>	<i>55</i>	<i>55</i>	<i>57</i>	<i>57</i>	<i>2</i>	<i>3%</i>
Total	297	335	374	376	80	27%

4.38 The two trusts that supplied the information show quite marked differences in planned growth between September 2002 and March 2006 of 32 per cent (78 wte) in the case of University Hospital Birmingham and 3 per cent (2 wte) in the case of Dudley.

Adult, Elderly and General Nurses

Table 7 – Adult, Elderly and General Nurses: Staff-in-post and Local Delivery Plans

Trusts	Sep-02	Mar-04	Mar-05	Mar-06	Change 02/06	
<i>Birmingham and Sandwell</i>						
Birmingham Heartlands & Solihull	1125	1245	1265	1286	161	14%
Good Hope Hospital	561	615	599	588	27	5%
Sandwell and West Birmingham						
University Hospital Birmingham	1134	1316	1489	1500	366	32%
<i>Sub total</i>	<i>2821</i>	<i>3176</i>	<i>3354</i>	<i>3374</i>	<i>553</i>	<i>20%</i>
<i>The Black Country</i>						
Dudley Group of Hospitals	772	779	797	823	51	7%
Royal Wolverhampton	914	995	1100	1101	187	20%
Walsall Hospitals	390	430	445	450	60	15%
<i>Sub total</i>	<i>2076</i>	<i>2204</i>	<i>2342</i>	<i>2374</i>	<i>298</i>	<i>14%</i>
Total	4897	5379	5696	5748	852	17%

4.39 Care should be taken when making deductions from the above table, as in the case of all but two trusts it includes critical care nurses. What it does show is that planned growth in Birmingham (20 per cent) is significantly more than that of the Black Country (14 per cent). The overall growth for Birmingham and the Black Country being 17 per cent.

4.40 Accident and emergency nurses are trained in extended role thrombolysis at only a few Trusts at present. However, this until primary angioplasty becomes widespread, extending the availability of thrombolysis is an issue at some trusts.

Recommendation accident and emergency nurses

Acute Trusts should train these nurses in extended role thrombolysis where primary angioplasty is not available and where adequate services are not provided by cardiac nurses

4.40 The senior nurses who were interviewed made the following observations:

- Nurse-led, rather than medically-led care across primary and secondary care is a welcome development
- In the Walsall Hospitals NHS Trust a key skills framework which is competency-driven has just been introduced for nurses
- Hospital-at-Night schemes are seen as an initiative to enhance patient care.
- Much nurse training is task orientated and could be re-focused to become patient-centred and holistic rather than addressing specific medical issues
- Health Care Assistants (HCAs) are being used more widely as qualified nurses are being up-skilled through courses and training packages. However, the role and capabilities of HCAs should be clarified so that they are not asked to undertake inappropriate tasks.
- Multi-disciplinary education and training opportunities need to be extended and expanded

Prescribing Initiatives

4.41 Momentum for non physician prescribing is growing, particularly in the light of organisations concern regarding the legal situation with Patient Group Directions (PGD). This will mainly affect nurses and pharmacists. It is likely that many more nurses and pharmacists will become Supplementary Prescribers following appropriate study. This will impact on the workforce and particularly in relation to the follow-up of patients through Post MI, Heart Failure & Primary/Secondary CHD Prevention clinics. These trends are support by *Making a Difference* (1999) (17) and *the NHS Plan* (2000) (18).

4.42 There will also be an impact on the way different clinical groups interact and how services are staffed in the future. Nurse prescribing will enable many more Nurse - led services to be developed which will reflect in different skill mixes and new ways of working.

Cardiac Critical Care Nurses

4.43 A survey of adult cardiac critical care nursing staff carried out by the Northern England CHD WDC in 2002 revealed problems with recruitment and retention – vacancies were more than double those for all nursing and midwifery staff. As cardiac surgical capacity has expanded, so the demand for critical care staff has increased. To meet this shortfall it is suggested that appropriately trained health care assistants (NVQ Level III) can support cardiac critical care nurses. This is a model that has been implemented successfully in Liverpool. Rotation schemes between cardiac critical care and general critical care or general cardiac care can

help encourage staff to enter cardiac critical care and also help staff develop expertise in other areas to help their development and aid retention.

Recommendation: improving the recruitment of cardiac nurses

A career structure should be developed that includes placements in both acute and community settings should be established, due to the need to have senior cardiac nurses with in both experience and the shortages of cardiac nurses generally. Promotion should depend on attaining competencies. This should attract newly qualified nurses into the speciality and offer them a career that will take them to G grade, with the necessary training and development mapped out for them.

GPs with a Special Interest

4.44 This is quite an attractive concept, as GPs are ideally placed to provide echocardiography and exercise testing. However, it will take two to three years for them to develop the necessary skills, due to GP time constraints. It is unlikely, that GPs with a Special Interest will be able to make a large contribution to the care of CHD patients, as they are in such short supply. Another option would be to explore the use of a consultant practitioner/nurse to perform this role with appropriate training.

Physicians' Assistants

4.45 Physicians Assistants (PAs) practice at a level between nurse practitioner and a doctor and work in both primary and acute care in the USA. They manage patients with complex, chronic diseases with protocols. A PA can take medical histories, perform physical exams, diagnose illnesses, develop and carry out treatment plans, order and interpret lab tests (blood tests, ECGs, x-rays, etc.), provide patient education and preventative health care counselling, as well as appropriate referral to other medical professionals, including consultants.

4.46 A project, employing two US-trained PAs in two general practices, has been so successful that Rowley Regis and Tipton primary care trust is leading the recruitment of 12 more to the area and the extension of the initiative to emergency care. The two PAs work under a supervising GP and are paid £40-45,000 a year compared to a £60-80,000 for a salaried GP. They manage their own patient lists and carry out most of the routine duties of a GP – although as yet they cannot sign prescriptions.

4.47 The PCT is working with Birmingham University School of Medicine to develop a model for the UK. It is also exploring with the professional registration councils how PAs might become a career-grade medical post. The intention is to recruit graduates from disciplines such as biology and train them for two further years. Once the new role has been established, it would be logical map an access route for advanced nurse practitioner to become PAs, should they choose to do so.

Recommendation: Physicians' Assistants

More use should be made of Physicians' Assistants and the lessons from the local PA project should be widely disseminated with a view to increasing their numbers significantly.

Practice Nurses

- 4.48 Practice nurses fulfil vital roles in GP surgeries. They have been described as expert generalists. However, increasing demands are being made on them to take on extra responsibilities such as running diabetic and CHD clinics – in other words requiring them to become expert specialists as well. Many practice nurses, whose work loads are steadily increasing, do not want to take on further major responsibilities, particularly when quite intensive extra training is required (Heart Save and Heart Failure courses for example). Some practice nurses have been trained through the Heartsave course but Birmingham PCTs have experienced high drop-out rates. Some PCTs are trying to redesign the course to better meet the practice nurses' capabilities and time constraints. Heart of Birmingham has commissioned the University of Central England to design a course for practice nurses in conjunction with CHD nurse facilitators.
- 4.49 However, the experience in Wolverhampton has been very different, with a very low drop out rate. Wolverhampton has run three Heartsave courses (approximately 60 nurses) and, in addition to this, had nine nurses on a separate course and four undertook the Bradford distance learning programme with only three dropping out (from the exam/presentation; otherwise they attended the whole course).

Recommendation: Practice Nurse training

The course developed by the Heart of Birmingham and the University of Central England should be reviewed with a view to using it across Birmingham.

Heart Failure Nurses

Table 8 – Heart Failure Nurses: Establishment and Staff-in-post

	Est	Staff-in-post	Vacancies	
			Actual	%
<i>Birmingham</i>				
Sandwell	4	4		
Heartlands	2	2		
City	3	3		
University Hospital Birmingham	2	1		
Good Hope	2	1		
<i>Sub total</i>	13	11	2	15%
Walsall Manor	5.5	5.5		
Dudley Group of Hospitals	7	4		
Wolverhampton	6	3		
<i>Sub total</i>	18.5	12.5	6	32%
Total	31.5	23.5	8	25%

- 4.50 Patients have experienced delays in accessing community rehabilitation in North Birmingham. However, some heart failure nurses, who divide their time equally between community heart failure and rehabilitation, have recently been appointed

by PCTs. A hospital clinical nurse specialist who trained them also provides clinical supervision. Table 8 shows that there are significant recruitment problems for Heart Failure Nurses with vacancy rates being 25 per across the two Networks and being particularly high in The Black County (32 per cent).

- 4.51 There is a need to clarify reporting lines, as they are employed by acute trusts but as they work much of the time in the community there is an argument that they should have PCT contracts. From the nurses point of view there is a concern that they will have less opportunity to receive support from their acute colleagues and feel professionally isolated in the community, as a consequence. In addition, there is no agreed core job description for Heart Failure Nurses. There would be value in involving the nurses to agree core elements that could be supplemented to reflect local needs. This work could be assisted by the new CHD Workforce Competence Framework (19). This would make career routes into the new role easier to undertake and facilitate training and development programmes.

Recommendation: Common Core Job Descriptions for Heart Failure Nurses

Heart Failure Nurses and other interested parties should agree a common core job description to which other duties and tasks could be added to reflect local differences

- 4.52 Heart failure nurses tend to be recruited from a limited pool of coronary care nurses who are also in short supply. However, many nurses are interested in being trained in coronary care.
- 4.53 Pharmaceutical companies have funded the British Heart Foundation three week, Heart save course in Sandwell. The course is very well regarded by community cardiac nurses as it enables them to play a more major role in CHD care, for example, to run clinics with medical back-up only if necessary. However not all PCT cardiac nurses have yet received this training opportunity.

District Nurses

- 4.54 District nurses are being trained in palliative care as part of the Cancer NSF. Therefore, they are in a position to be able to provide such care to patients with terminal heart failure. They may require some additional training, which could be provided by a clinical nurse specialist from the acute sector. District Nurses would be extremely valuable as part of a CHD integrated pathway mainly in relation to the needs of patients who are house bound, such as in nursing homes who cannot or do not access either acute settings or GP CHD clinics. However, additional community nurses would be required due to the large and growing terminal cancer workload. Cardiac rehabilitation could take place in the community, if practice and district nurses are suitably trained.

Recommendation: District Nurse CHD training

A HeartSave or equivalent course should be offered to District Nurses.

Admin and clerical staff

- 4.55 Clinical staff in all settings spend too much of their time on administrative tasks, because of inadequate administrative support. In addition, there is a lack of a

career structure for administrative staff. There are serious concerns that wastage and vacancy rates will increase if administrative and clerical staff are down graded as *Agenda for Change* is implemented. According to recent research (20) these staff are already paid well below the public sector median (grade 3 are 16% below and grade 4 are 17% below using national figures that exclude London and the South East).

Ambulance staff

- 4.56 A&E consultants have become the medical directors of Ambulance Trusts in some areas: this is seen as a very positive move.
- 4.57 The recruitment of ambulance staff is not a problem and there is a waiting list of those wanting to join. The standard training programme is 12 weeks and three weeks driving experience. On successful completion, the next step is to become an ambulance based trainee technician. Staff are assessed every two to three months. If competent, after 12 months as a technician they can apply to become a paramedic. However, this is a very intense role and staff retention is an issue.
- 4.58 Previously, a cadet system for 18 year olds was run that attracted good calibre staff who tended to stay. However, the scheme was terminated on cost grounds, but consideration is being given to re-introducing it.
- 4.59 An issue for the West Midlands Ambulance Trust is that some staff have been trained in thrombolysis and their skills are not being utilised by the PCTs, and some of these staff now feel demoralised. A complication for ambulance staff is that different trusts have different arrangements for admitting CHD cases (e.g. A&E, direct to CCU, etc).
- 4.60 Staff have a crucial role in supporting primary angioplasty so that patients receive this treatment within two to three hours. The air ambulance is used on occasions to help achieve this target.

Fitness trainers in gyms

- 4.61 A health fitness advisor has been appointed by jointly by a PCT and a council. However, a hospital exercise physiologist has to assess phase 3 rehabilitation patients, as the advisor had not received the necessary training. Patients would like more rehabilitation in community facilities rather than hospital, for ease of access and to avoid the inconvenience and high cost of hospital parking.

Diagnostic radiographers and nuclear medicine technicians

- 4.62 Diagnostic radiographers and nuclear medicine technicians have an important role to play for CHD patients. However, their needs are not being addressed in this report, as this work is being undertaken separately by Birmingham and The Black Country under work streams for diagnostic services and cancer.

5. Future CHD Workforce Planning Frameworks

Review of Existing CHD Workforce Information

Consultant staff-in-post information

- 5.1 The Workforce Planning section of the Strategic Health Authority now produces a monthly workforce report showing CHD staff-in-post and vacancies for consultant posts in CHD related specialties. This is supported by information on new posts, by trust are unfilled because of lack of suitable applicants.

Cardiac Physiologists

- 5.2 The January report included cardiac physiologists. However, trust HR payroll based information can be unreliable for some smaller staff groups, due to the use of incorrect occupation codes. The information in this report was obtained by the lead cardiac physiologist for Birmingham and the Black Country

Recommendation: Cardiac Physiologist staff-in-post data

The lead cardiac physiologist for Birmingham and the Black Country should collect this information on an annual basis, as it is likely to be much more accurate than payroll based information.

Heart Failure Nurses

- 5.3 Information on these nurses was obtained from the Networks who have their details, as they organise events for them. Like Cardiac Physiologists, trust payroll based information is likely to be unreliable, due to errors in occupational codes.

Recommendation: Heart Failure Nurses staff-in-post data

The Networks should collect this information annually, as it is likely to be much more accurate than payroll based information.

Critical Care Nurses

- 5.4 The information is collected annually from trusts. However, most trusts do not supply this information. A recommendation that this should be addressed was made in chapter 4.

The Local Delivery Plan

- 5.5 This is a key source of information on new posts. However, the Department of Health only wanted this information at a very high level of aggregation so that it was not possible to identify the demand for groups like cardiac physiologists. The Strategic Health Authority later went back to trusts to obtain this information.

Recommendation: Local Delivery Plan level of detail

The Strategic Health Authority should collect this information from trusts at the level of staff group and then aggregate the information up to a level required by the Department of Health.

Proposed CHD Workforce Planning Framework

Recommendation: Annual CHD Workforce Report to Cardiac Network Boards

The Workforce Planning section of the Strategic Health Authority should produce and annual review of staff-in-post trends, updating the information in this report, using the sources suggested previously. It should include commissioning information, where relevant, e.g. cardiac physiologists. The review should highlight priorities for action for the Networks and include Local Delivery Plan information.

Appendix A

Those interviewed

The assistance of the following who gave up their time to be interviewed is gratefully acknowledged:

Nicola Adamson, Modernisation Agency
Dr Rajai Ahmad, Cardiologist, Lead Network Clinician
Professor Julie Barlow, Coventry University
Mike Beveridge, Divisional Manager, Oncology & Acute Medicine, Dudley Group of Hospitals
Kate Burley, Clinical Partnerships Co-ordinator, W. Midlands Ambulance Trust
Pam Camelio, Information Analyst, Birmingham & Black Country SHA
Sara Chipping, Heart Attack Project Manager
Sophia Christie, Chief Executive, Eastern Birmingham PCT
Carol Cooper, Workforce Development Manager, Birmingham and The Black Country, Strategic Health Authority
Richard Coverdale, Director of Strategy & Chair of CHD LIT
Jon Crockett, Chief Executive, Wolverhampton PCT, Black Country Network Chair
Linda Cropper, Commissioning Manager Dudley Beacon & Castle PCT
Mary Fairfield: CHD & Diabetes Lead; Sandwell PCTs
Dr Jane Flint, Cardiologist, Dudley Group of Hospitals/BCC Network
Dr Paul Giles, Consultant Clinical Pathologist & Chairman CHD LIT
Lynn Graff, Divisional Manager, Cardiac Services, Royal Wolverhampton Hospitals
Bev Ingram, Locality Gen Manager & Lead Nurse, Dudley Beacon & Castle PCT
Sue McKie, NSF Co-ordinator (Nurse) CHD, Wolverhampton PCT
Richard Mendelsohn, Director of Public Health, Eastern Birmingham PCT
Richard Miller, General Manager, Acute Medicine, Walsall Hospitals NHS Trust
Dr Gordon Murray, Cardiologist, Birmingham Heartlands and Solihull Hospital
Karen Nicholas, Cardiac Physiologist, Royal Wolverhampton Hospitals
Andrea Price, Cardiac Information Manager, Birmingham & Black Country SHA
Corrine Ralph, Birmingham and Sandwell CHD Network Manager
Carol Reilly. Acting Programme Manager- Black Country CHD Collaborative
Dr Rosie Thorns, Clinical Governance Lead, Dudley South CHD
Ken Timmis, patient representative
Dr Andrew Turner, Coventry University
Trefor Watts, Principal Physiologist, Walsall Hospitals, Chair of West Midlands Clinical Physiology Group
Walsall Hospitals
Sue Weston, Director Heart Save
Graham Wilde, Director of Clinical Services, Oncology & Acute Medicine, Dudley Group of Hospitals

Appendix B

The CHD Workforce and the GMS Contract Workshop

Those attending:

Mary Fairfield, CHD/Diabetes Lead Sandwell PCT, Keynote speaker
Julie Bush, Project Co-ordinator, Cardiac Rehabilitation
Rob Chadwick, Charge Nurse Cardiac Rehabilitation, Royal Wolverhampton
Gurinder Dhaliwal, CHD Nurse Facilitator, Heart of Birmingham PCT
Jacqui Elson-Whittaker, Community Heart Failure Nurse, Oldbury & Smethwick PCT
N Hems, Community Heart Failure Nurse, Wolverhampton PCT
Narinder Moor, Workforce Development Manager, Wolverhampton PCT
Nicola Randall, Senior Commissioning Manager, South Birmingham PCT
Jane Stublely Heart Failure Lead Nurse, Sandwell PCT
Maxine Wright, Cardiac Nurse, Sandwell and West Birmingham Hospital

Heart Failure and the Lessons from Kaiser Workshop

Those attending:

Mike Bleby, GP, Solihull, Keynote speaker
Suzanne Cleary, Strategy and Commissioning Manager CHD and Diabetes
Russell Davies Consultant Cardiologist
Sally Jerome, Heart Failure Specialist Nurse, S. Birmingham PCT/ UBH
Saj Kahmed, Programme Manager, CHD Diabetes, Eastern Birmingham PCT
Patricia Lowry, Consultant Cardiologist, Birmingham Heartlands
Narinder Moor, Workforce Development Manager, Wolverhampton PCT
Nicola Randall, Senior Commissioning Manager, South Birmingham PCT

Primary Angioplasty and the Catheter Laboratory of the Future

Those attending:

Micheal Norell, Cardiologist, Royal Wolverhampton, Keynote speaker
Rajai Ahmed, Cardiologist, Sandwell/BSS Network Lead
Marie Poole, Sister, Royal Wolverhampton
Gail Beddows, Auxiliary, Royal Wolverhampton
Amy Page, Sister, Royal Wolverhampton
Karen Nichols, Cardiac Physiologist, Royal Wolverhampton
Jane Flint, Cardiologist, Dudley Group of Hospitals/BCC Network
Sara Chipping, CHD Collaborative Project Manager
Rebecca Sallian, Cardiac Catheter Suite Manager, Royal Wolverhampton
Hayley Kemp, PDN, Royal Wolverhampton
Chris Adams, Superintendent Radiographer, Royal Wolverhampton
Tony Ruffell, Head of Commissioning, Eastern Birmingham PCT

Appendix C

New GMS Contract

Secondary Prevention in Coronary Heart Disease- Quality Indicators - Clinical

Medical Indicators		Range %
CHD 1	The practice can produce a register of patients with coronary heart disease	
Diagnosis and Initial Management		
CHD 2	The percentage of patients with newly diagnosed angina (diagnosed after 01/04/03) who are referred for exercise and/or specialist assessment	25% - 90%
Ongoing Management		
CHD 3	The percentage of patients with coronary heart disease, whose notes record smoking status in the past 15 months, except those who have never smoked where smoking status needs to be recorded only once	25% - 90%
CHD 4	The percentage of patients with coronary heart disease who smoke, whose notes contain a record that smoking cessation advice has been offered within the last 15 months	25% - 90%
CHD 5	The percentage of patients with coronary heart disease whose notes have a record of blood pressure in the previous 15 months	25% - 90%
CHD 6	The percentage of patients with coronary heart disease, in whom the last blood pressure reading (measured in the last 15 months) is 150/90 or less	25% - 70%
CHD 7	The percentage of patients with coronary heart disease whose notes have a record of total cholesterol in the previous 15 months	25% - 90%
CHD 8	The percentage of patients with coronary heart disease whose last measured total cholesterol (measured in the last 15 months) is 5mmol/l or less	25% - 60%
CHD 9	The percentage of patients with coronary heart disease with a record in the last 15 months that aspirin, an alternative anti-platelet therapy, or an anti-coagulant is being taken (unless a contraindication or side effects are recorded)	25% - 90%
CHD 10	The percentage of patients with coronary heart disease who are currently treated with a beta blocker (unless a contraindication or side-effects are recorded)	25% - 50%
CHD 11	The percentage of patients with a history of myocardial infarction (diagnosed after 1 April 2003) who are currently treated with an ACE inhibitor	25% - 70%
CHD 12	The percentage of patients with coronary heart disease who have a record of influenza vaccination in the preceding 1 September to 31 March	25% - 85%
Subset - Left Ventricular Dysfunction		
LVD 1	The practice can produce a register of patients with CHD and left ventricular dysfunction	
LVD 2	The percentage of patients with a diagnosis of CHD and left ventricular dysfunction (diagnosed after 1/4/03) which has been confirmed by an echocardiogram	25% - 90%
LVD 3	The percentage of patients with a diagnosis of CHD and left ventricular dysfunction who are currently treated with ACE inhibitors (or A2 antagonists)	25% - 70%

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