



Modern Standards and Service Models

Coronary Heart Disease

**national
service
frameworks**

National Service Framework
for Coronary Heart Disease

National Service Framework for Coronary Heart Disease

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National Service Framework for

Coronary Heart Disease

Modern Standards & Service Models

Foreword by the Secretary of State

The Government is committed to building a new NHS: faster, fairer and more convenient for patients; a health service fit to face the challenges of the new Millennium. Ours is a radical and far reaching programme to transform the NHS. It will remain true to its values – based on need and not the ability to pay – but the changes we are making will make the NHS of old unrecognisable by the time we have finished our ten year programme of modernisation.

For far too long it was accepted that NHS treatment and care would be better in some parts of the country than in others – not any more. We are determined to make sure that, in future, people in every part of our country can get the top quality and treatment and care they need, whether from their local doctors or community services, local district general hospitals or specialist regional centres. National Service Frameworks set out plans, based on the evidence of what works best, to ensure that in future these standards of care are available to everyone.

Coronary heart disease is among the biggest killers in this country. More than 1.4 million suffer from angina. 300,000 have heart attacks every year. More than 110,000 die of heart problems in England every year. But the effects of heart disease are unequal: among unskilled men the death rate is almost three times higher than it is among professionals. These differences have more than doubled in the past twenty years. Heart disease is much more common in deprived areas, yet treatment and care is often better in more prosperous areas. This “postcode” lottery of care is unacceptable and we are determined to end it.

This National Service Framework for Coronary Heart Disease is our blueprint for tackling heart disease. It has been prepared by an independent expert group led by Professor Sir George Alberti, President of the Royal College of Physicians. It sets out the standards and services which should be available throughout England. It recognises the importance of modern prevention and primary care as well as the contribution of the more specialised services. It describes wide-ranging action to help people avoid getting heart disease. It then sets out the high quality treatment and care which those people who do become ill should have: early diagnosis, prompt and effective ambulance and emergency services, high quality medical, surgical and nursing care, specialist services including heart surgery and rehabilitation to help those people who have had a heart attack or heart operation to recover more quickly and to stay well.

This is part of our aim to enable everyone to enjoy better health. We have already set out in the White Paper *Saving Lives: Our Healthier Nation* our commitment to reducing the death rate from heart disease and related illnesses such as stroke in those aged under 75 by two-fifths by 2010. We have already taken action across Government to combat some of the root causes of ill health, causes like poverty which we are fighting through the New Deal to help people get jobs and the National Minimum Wage to end low pay. We have provided help for people who want to stop smoking and we are determined to ban tobacco advertising.

No one should doubt the Government's determination to tackle heart disease. In common with many others, those parts of the NHS dealing with heart disease have suffered from decades of neglect. The programme we have set out is challenging and won't be achieved overnight. We know that it will need more doctors and nurses and that training these key professionals takes time. But we are committed to a ten year action plan to modernise and to bring the whole service up to the standards of the best – people will see a real difference. And we have identified immediate priorities for action in this NSF that will begin to make a real difference from the start.

This Framework will transform the prevention, diagnosis and treatment of coronary heart disease. It will help professionals to give better, fairer and faster care everywhere, to everyone who needs it. We want a service that is the best in the world. Our people deserve nothing less.



Alan Milburn
Secretary of State for Health



Standards table

Standards 1 & 2: Reducing heart disease in the population	1. <i>The NHS and partner agencies should</i> develop, implement and monitor policies that reduce the prevalence of coronary risk factors in the population, and reduce inequalities in risks of developing heart disease.
	2. <i>The NHS and partner agencies should</i> contribute to a reduction in the prevalence of smoking in the local population.
Standards 3 & 4: Preventing CHD in high risk patients	3. <i>General practitioners and primary care teams should</i> identify all people with established cardiovascular disease and offer them comprehensive advice and appropriate treatment to reduce their risks.
	4. <i>General practitioners and primary health care teams should</i> identify all people at significant risk of cardiovascular disease but who have not developed symptoms and offer them appropriate advice and treatment to reduce their risks.
Standards 5,6 & 7: Heart attack and other acute coronary syndromes	5. <i>People with symptoms of a possible heart attack should</i> receive help from an individual equipped with and appropriately trained in the use of a defibrillator within 8 minutes of calling for help, to maximise the benefits of resuscitation should it be necessary.
	6. <i>People thought to be suffering from a heart attack should</i> be assessed professionally and, if indicated, receive aspirin. Thrombolysis should be given within 60 minutes of calling for professional help.
	7. <i>NHS Trusts should</i> put in place agreed protocols/systems of care so that people admitted to hospital with proven heart attack are appropriately assessed and offered treatments of proven clinical and cost effectiveness to reduce their risk of disability and death.
Standard 8: Stable angina	8. <i>People with symptoms of angina or suspected angina should</i> receive appropriate investigation and treatment to relieve their pain and reduce their risk of coronary events.
Standards 9 & 10: Revascularisation	9. <i>People with angina that is increasing in frequency or severity should</i> be referred to a cardiologist urgently or, for those at greatest risk, as an emergency.
	10. <i>NHS Trusts should</i> put in place hospital-wide systems of care so that patients with suspected or confirmed coronary heart disease receive timely and appropriate investigation and treatment to relieve their symptoms and reduce their risk of subsequent coronary events.
Standard 11: Heart failure	11. <i>Doctors should</i> arrange for people with suspected heart failure to be offered appropriate investigations (eg electrocardiography, echocardiography) that will confirm or refute the diagnosis. For those in whom heart failure is confirmed, its cause should be identified – treatments most likely to both relieve their symptoms and reduce their risk of death should be offered.
Standard 12: Cardiac rehabilitation	12. <i>NHS Trusts should</i> put in place agreed protocols/systems of care so that, prior to leaving hospital, people admitted to hospital suffering from coronary heart disease have been invited to participate in a multidisciplinary programme of secondary prevention and cardiac rehabilitation. The aim of the programme will be to reduce their risk of subsequent cardiac problems and to promote their return to a full and normal life.

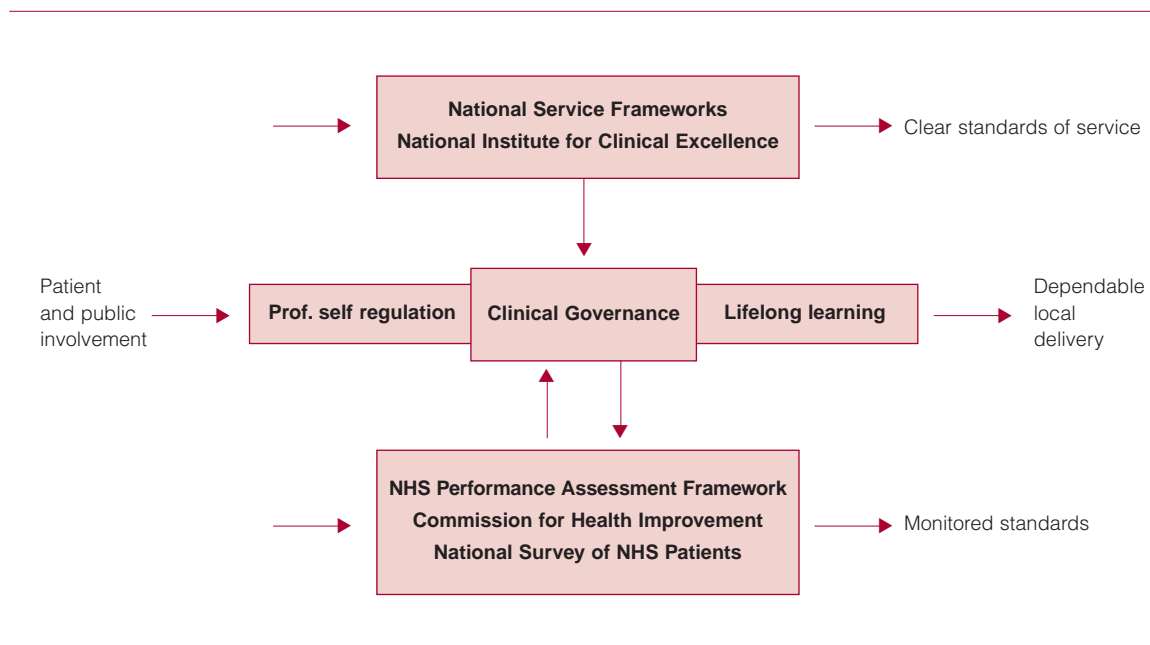
1.0 National Service Framework for Coronary Heart Disease

- **developing the National Service Framework for coronary heart disease**
- **a new vision for coronary heart disease**
- **a Government-wide agenda**
- **effective services available to all who can benefit**

Introduction

- 1.1 *The new NHS*¹ announced the Government's intention to modernise the NHS. It set out a number of important principles and a range of measures to improve the quality of care and reduce unacceptable variations. Services should be accessible on the basis of need irrespective of age, gender, race, culture, religion, disability, sexual orientation or where people happen to live, and be responsive to individuals' needs. *Modernising Social Services*² similarly included proposals for ensuring the delivery of high quality personal social services.
- 1.2 The Government is committed to modernising all aspects of care and treatment. But the priority is to deal with the biggest killers, including CHD and stroke. This will help tackle inequalities as the burden of these diseases falls heavily on the most disadvantaged. Effort needs to be focused on making services faster, stepping up prevention work and improving primary and community as well as acute services. This is outlined in the *National Priorities Guidance 2000/01-2002/03* (HSC 1999/242, LAC (99)38).
- 1.3 *A First Class Service*³ explained how standards would be set, delivered and monitored (see Figure 1). Clear quality standards will be:
- set by the National Institute for Clinical Excellence (NICE) and National Service Frameworks (NSFs)
 - delivered by means of clinical governance, underpinned by professional self-regulation and lifelong learning
 - monitored by the Commission for Health Improvement (CHI), the NHS Performance Assessment Framework and the National Survey of NHS Patients.
- 1.4 These elements together form the quality framework (Figure 1)

Fig. 1 Quality Framework from *A First Class Service*



- 1.5 Other parts of the modernisation programme include improving the NHS IT infrastructure, *Information for Health*⁴, and the NHS human resources strategy on staffing and training, *Working Together*⁵.
- 1.6 The first two National Service Frameworks (NSFs) extend the modernisation programme for the first time into specific patient services. They build on the work already done on cancer services following the Calman-Hine Report⁶ and on paediatric intensive care. A rolling programme of work to develop NSFs was set out in HSC 98/074 (*National Service Frameworks*)⁷. The next will be for older people to be published in 2000, followed by an NSF for diabetes in 2001.
- 1.7 For these first NSFs, two of the most significant causes of ill health and disability in England have been selected – coronary heart disease (CHD) and mental health. Both are priorities in *Saving Lives: Our Healthier Nation*⁸. This NSF will contribute to progress towards the targets in *Saving Lives: Our Healthier Nation* and shares the goals of reducing the incidence of illness and death caused by CHD and reducing undesirable variations in access to services and in quality of care.
- 1.8 CHD is the single commonest cause of premature death in the UK. It is a condition that makes a significant impact on every aspect of an individual’s life including their quality of life, future employment and personal relationships, as well as increasing the risk of their dying early. Much can be done to reduce the suffering caused by CHD and to stop it developing in the first place. The Government sees this as a major priority.

- 1.9 The burden of CHD is not distributed equally in society. The death rate among men from manual classes is 40% higher than for non-manual workers. Men of working age in social class V are 50% more likely to die from CHD than men in the population as a whole. The wives of manual workers have nearly twice the risk compared to wives of non-manual workers. This social class gradient is also reflected in morbidity rates, with angina, heart attack and stroke all more common amongst those in manual social classes.
- 1.10 There are also ethnic variations. For people born in the Indian sub-continent, the death rate from heart disease is 38% higher for men and 43% higher for women than rates for the country as a whole.
- 1.11 Death rates are higher for people living in the north of the country. The death rate from heart disease in people under 65 is almost three times higher in Manchester than in Kingston and Richmond.
- 1.12 Inequalities between rich and poor have increased over the last 20 years; CHD death rates have declined faster among the more affluent in society than among those who are less well off. Evidence indicates that much more can be done to prevent and reduce the suffering caused by CHD.
- 1.13 The evidence shows that:
- rates of CHD vary according to social circumstances, gender and ethnicity
 - differences across the social spectrum have been growing
 - many people are not receiving or acting on advice and help that could stop them developing CHD in the first place
 - many people with CHD are not receiving treatments of proven effectiveness
 - there are unjustifiable variations in quality and access to some CHD services.
- 1.14 There is also evidence that timely effective treatment can reduce suffering and the risk of death from CHD and that a more systematic approach to the delivery of care can ensure that all those likely to benefit do gain access to appropriate services. However, staff working in the NHS need better ways of identifying people who need services and of monitoring the delivery of those services to ensure that the anticipated outcomes are delivered.
- 1.15 The aim of NSFs is to:
- specify interventions that are known to be effective
 - identify, where possible, models of care that deliver those interventions reliably
 - provide the means to implement improved systems of care
 - develop audit tools and performance indicators to help ensure services are being delivered to an acceptable standard
 - indicate milestones and goals by which the NHS can monitor progress towards delivery

- identify gaps in knowledge or standards to inform the research and other agendas
- institute a system for reviewing and updating the contents of the NSF in line with medical developments.

1.16 The effect of the NSF will be to reduce undesirable variations and inconsistencies in service delivery and access, improve overall quality of care for CHD and thereby improve the overall health of the population (contributing to the achievement of targets set out in *Saving Lives: Our Healthier Nation*). Not only will the NSF reduce the burden of CHD, but it will also have benefits for patients with stroke and other diseases.

Guiding values and principles

1.17 In drawing up the NSF there are a number of fundamental values and guiding principles which provide the foundation for developing national policies for CHD. It is these that underpin the drive to promote health and reduce inequalities, raise the quality of clinical care, and reduce variations in access to, and the quality of, services.

- **Quality:** Members of the public, wherever they live, rightly expect to receive high-quality services, delivered when they need them, to a high technical standard and compassionately by well-trained, competent staff, regardless of gender, disability, ethnicity and age. Quality of care depends not only on the quality of interaction between the clinician and the patient, but also on the quality of the organisation and the environment in which this takes place.
- **Information:** Consistent, accurate and clear information should be readily available for members of the public about how they can play their part in preventing and managing CHD. Health professionals and others should be actively involved in educating members of the public, and should be supported in communicating information about risks and how to reduce them. Patients should expect, at every stage of their care, to be treated with respect and sensitivity. They should be provided with accurate, relevant and clear information, so that they and their families can understand the illness and its treatment and be as involved as they wish in the planning of their care.
- **Health impact:** The Government's actions influence the wider determinants of health which include the distribution of wealth and income. A wide range of its policies will have an impact on CHD including social and legal policies and policies on transport, housing, employment, agriculture and food, environment and crime. Health impact assessments will be used when new policies are under consideration to determine the likely effects on the health of the population.
- **Public health programmes:** Health and local authorities should lead the development and implementation of effective public health programmes to ensure that targets set in *Saving Lives: Our Healthier Nation* for circulatory disease are met and that health inequalities associated with CHD are reduced. CHD prevention and treatment policies will be determined and agreed following consultation among the key agencies, including the NHS, local and national government, the voluntary sector and the public themselves. Every Health Authority (HA) will have a local CHD implementation team and every NHS Trust and Primary Care Group/Primary Care Trust (PCG/PCT) will be expected to appoint a CHD lead.

- **Inequalities:** CHD policies should aim to reduce inequalities in health. Resources will be targeted at those in greatest need and with the greatest potential to benefit.
- **Evidence-based:** CHD policies are to be based on the best available evidence; wherever possible, these will be well-conducted, updated systematic reviews of valid, relevant evidence. Policies will evolve to incorporate the conclusions of important new research as it becomes available. The research base will include the causes and mechanisms of CHD, evidence on clinical and cost-effectiveness of interventions, health impact assessments of major Government policies and the monitoring of the effects of the CHD NSF. Information about the effectiveness and cost-effectiveness of interventions, the CHD needs of the population and the performance of services will be shared openly with the public. NHS and Department of Health Research and Development programmes will embrace CHD as one of their highest priorities.
- **Integrated approach:** The prevention and treatment of CHD will be tackled in every aspect of health policy, health promotion, primary care, community care and hospital care. There will be effective communication and collaboration between the different agencies and their staff. The initial aim will be to improve the health of, and services for, people and communities with the greatest disease burden, and to raise quality where services are demonstrably weak.
- **Ethics and standards of professional practice:** The NHS will expect that its staff adopt professional codes of ethics and standards of professional practice such as those in the General Medical Council's publication *Good Medical Practice*, and the *Code of Professional Conduct* published by the United Kingdom Central Council for Nursing, Midwifery and Health Visiting.
- **Volunteers:** Voluntary organisations and carers at home and in the community have a major role in tackling the causes of CHD, in supporting people who are suffering from CHD – including those in need of palliative care – and in providing emergency care for people suffering heart attacks in public places.

1.18 Four important principles underpin this NSF:

- firstly, reducing the burden of CHD is not just the responsibility of the NHS. It requires action right across society
- secondly, the quality of care depends on:
 - ready access to appropriate services
 - the calibre of the interaction between individual patients and individual clinicians
 - the quality of the organisation and environment in which care takes place
- thirdly, excellence requires that important, simple things are done right all the time
- fourthly, delivering care in a more structured and systematic way will substantially improve the quality of care and reduce undesirable variations in its provision.

Developing the National Service Framework

- 1.19 This NSF on CHD has been developed with the assistance of an expert External Reference Group (ERG). The ERG was co-chaired by Professor Sir George Alberti, President of the Royal College of Physicians, and Dr Graham Winyard (until December 1998) and Dr Sheila Adam (from January 1999), Deputy Chief Medical Officers in the Department of Health. The ERG brought together health and social care professionals, service users and carers, health service managers, partner agencies, and other advocates. A full range of views was sought by the ERG, which was assisted by the Department of Health.
- 1.20 The ERG agreed early on that the NSF should cover the whole spectrum of CHD from primary prevention through primary, emergency and secondary care to rehabilitation. The ERG also agreed that it had to set formal standards in each area of care which the NHS would be expected to achieve. Those standards of care had to be based on clear evidence that the interventions required to achieve the standards are both clinically and cost-effective. The ERG set up a number of focus groups to review the evidence in each area.
- 1.21 Emerging findings of the ERG were published in November 1998 under cover of HSC 98/218/LAC 98/29 (*National Service Framework for Coronary Heart Disease*).⁹ These outlined the initial action which health and local authorities working with their partners need to undertake jointly to start to plan local implementation of the standards through their local Health Improvement Programmes (HImPs).
- 1.22 The ERG went on to decide that setting standards alone was not enough. Those working in the NHS and Social Services needed more than information about what was of proven effectiveness. They would need advice about the best means of delivering those interventions reliably. This meant wherever possible identifying models of care or systems of service delivery which had been shown to be effective. Some would need additional resources to achieve the standards, others would need additional training. New IT systems developed in conjunction with the NHS *Information for Health* strategy could make a major contribution to both service delivery and monitoring. Furthermore, people needed to know when they had achieved the desired level of service and whether it was delivering the expected benefits. This would require new audit tools and performance indicators.
- 1.23 The ERG recognised two further important principles:
- Such a programme of change cannot be achieved overnight. Overall the programme could take 10 or more years to achieve. There had to be a set of milestones for measuring progress against the standards and scope for modifying those milestones if circumstances changed.
 - Even though CHD had been the focus of a very great deal of research, there were gaps in the knowledge base. The effectiveness of some treatments had not been fully evaluated. New treatments would come on stream and further clinical guidance would be required.

- 1.24 There would need to be a system for monitoring the implementation of the NSF and for promulgating new findings and for modifying systems of care, milestones, performance criteria in line with new evidence.
- 1.25 Gaps in knowledge and clinical guidelines identified during the development of the NSF have been used to develop the future programmes for research bodies and for NICE and other bodies responsible for producing clinical guidance.
- 1.26 Other Government policies of direct relevance to the NSF which have been taken into account in the standards and service models include:
- *Smoking Kills*¹⁰
 - *Saving Lives: Our Healthier Nation*⁸
 - *Report of the Independent Inquiry into Inequalities in Health* (Acheson Report)¹¹
 - *A New Deal for Transport: Better for Everyone*¹²
 - Social exclusion initiatives
 - Health Action Zones and Healthy Living Centres
- 1.27 The ERG felt that implementing the NSF would also go a long way to helping NHS staff to deliver other important parts of the modernisation programme, in particular the need for audit and clinical governance. The programme would facilitate lifelong learning and revalidation of clinical staff.

Scope

- 1.28 This NSF is a practical, evidence-based and flexible approach to tackling CHD which:
- sets national standards (clinical and organisational) for preventing and treating CHD
 - defines service models for preventing and treating CHD
 - establishes initial milestones, goals and performance indicators against which progress within agreed timescales will be measured
 - identifies practical tools to support implementation.
- 1.29 For the NSF to be successful, a wide range of people in many different agencies will have to play their part in promoting continuous quality improvement in services throughout the country. It will involve people working in social services, public health specialists, primary care teams, and hospital staff. Voluntary agencies, local authorities, education authorities, HAs, PCGs/PCTs and NHS Trusts will all contribute. The NSF is intended to bring together all those involved in any area who could influence CHD to work together to introduce systems that enable high quality services to be delivered by all.

National standards and service models

- 1.30 This NSF sets out twelve service standards that cover the following areas:
- Reducing heart disease in the population
 - Preventing CHD in high-risk patients
 - Heart attack and other acute coronary syndromes
 - Stable angina
 - Revascularisation
 - Heart failure
 - Cardiac rehabilitation.
- 1.31 In defining which standards and interventions are important for the NSF, and deciding on the rationale for each one, each has been considered against the following criteria:
- strength of evidence
 - impact on individuals and the population
 - cost-effectiveness and affordability
 - robustness of monitoring arrangements
 - practicality of implementation
 - extent of significant variations in current practice.
- 1.32 **Service models** are described for all of these areas. There are many different existing service models for CHD, though to date little robust evidence of the relative clinical and cost-effectiveness of these. Different models will apply in different settings taking account of prevalence and geography. Some arrangements appear to work better and to make intuitive sense. The NSF draws upon examples of good practice which could be applied more widely throughout the service.
- 1.33 The twelve **national service standards** are summarised in the table at the front of this book on page 4 and are described in Section 2. The evidence base for each of the standards, the rationale for their selection, and the service and organisational models required to deliver them are set out in greater detail in the clinical chapters.
- 1.34 To help the NHS and its partners locally to plan and implement this ambitious programme of change, the NSF identifies some immediate priorities. Initial **milestones** for each standard have been identified to help mark progress along the way towards **goals** resulting in improved services and better health. Further milestones will be set as change is rolled out. These will be more challenging for some parts of the NHS than others and it is not intended that every organisation will reach each milestone at the same time. It is particularly important that time is allowed in some areas to allow an all-inclusive approach for meeting the diverse needs of local communities, particularly hard to reach or high risk groups, e.g. the elderly, people from ethnic minorities, and people with diabetes mellitus.

- 1.35 **Clinical audit criteria** are identified to enable staff to monitor the effectiveness of the services they deliver. Not all of these can be implemented immediately. The more sophisticated audits, particularly national systems, will need further development. Some **performance indicators** will be included in the NHS Performance Assessment Framework. Systematic service reviews will be undertaken by the Commission for Health Improvement working with the Audit Commission as appropriate (see Section 4). The National Survey of NHS Patients will also provide valuable information about patients' experiences.
- 1.36 In Section 5 a number of **practical tools** that are already available to help with implementation are described. Others have been commissioned, and more will be commissioned, in a number of interlinked key areas essential to the delivery of the NSF. The five underpinning national programmes which will assist with this are:
- finance: revenue and capital
 - human resources, workforce planning, education and training
 - research and development
 - practical tools, especially clinical decision support systems
 - information for health.

Timing and immediate priorities

- 1.37 Such an ambitious programme of change cannot be implemented overnight. There are a number of standards which will affect all parts of the NHS and some other agencies. The achievement of some will require additional facilities or staff. In the case of recruiting and training some medical staff this may take 5-10 years. For the whole NHS and other bodies to implement the NSF in its entirety could take 10 years or more. Such practical difficulties should not stop the NSF being implemented in all those areas in which progress is possible. For this reason a number of interventions have been identified in which progress can be made within existing policies and resources. And there are a number of immediate priorities in which rapid progress will be made.

Immediate priorities

- 1.38 There are important life-saving improvements that can and should be achieved quickly. The Government expects rapid improvement in the following areas:
- by April 2001, Health Authorities will introduce specialist smoking cessation clinics, helping 150,000 people
 - by April 2001, there should be 50 rapid-access chest pain clinics, to help ensure that people who develop new symptoms that their GP thinks might be due to angina can be assessed by a specialist within two weeks of referral. There should be 100 rapid-access chest pain clinics by April 2002 and nationwide roll-out thereafter

- by April 2001, reducing call-to-needle time for thrombolysis for heart attacks (the time from the initial call is made until clot-dissolving thrombolytic therapy begins); this involves:
 - improving ambulance response times so that 75% of category Aⁱ calls receive a response within 8 minutes
 - increasing to at least 75% the proportion of A&E departments able to provide thrombolysisleading to
75% of eligible patients receiving thrombolysis within 30 minutes of hospital arrival by April 2002 and within 20 minutes by April 2003
- by April 2002, improving the use of effective medicines after heart attack (especially use of aspirin, beta-blockers and statins) so that 80-90% of people discharged from hospital following a heart attack will be prescribed these drugs
- by April 2002, increasing the total number of revascularisation procedures, providing an extra 3,000
- by October 2000, beginning to modernise services for CHD by delivering the first milestones of the NSF on systematic approaches to delivery of care.

Achieving systematic change

- 1.39 The national standards in this NSF will be achieved by:
- recognising that change needs to be systematic and sustainable – change will be paced, with both early priorities and longer-term goals
 - measuring change with milestones
 - building a programme which is both ambitious and realistic – ambitious standards and realistic local delivery systems with underpinning national programmes
 - applying concerted action – using local mechanisms including the HImP, the service and financial framework, the clinical governance framework and long term service agreements
- 1.40 Local delivery is fundamental to the success of this NSF. Section 3 outlines arrangements for local delivery.

Remaining relevant

- 1.41 During the implementation of the NSF, there will be other changes, for example in treatment methods, patient expectations or delivery systems which this NSF will have to take on board if it is to remain relevant. There will also be scope to set more challenging milestones, once the early ones are reached. The NSF will continue to evolve to stay relevant and credible in a changing environment. To ensure this NSF stays up-to-date, a national group, outlined in Section 3, will oversee both implementation and future development. The Department of Health will seek the advice of the National Institute for Clinical Excellence where appropriate.

ⁱ Category A represents life threatening emergencies

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- 9 Department of Health: *National Service Framework for Coronary Heart Disease (Emerging Findings)* (HSC 1998/218).
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2.0 National Standards and Service Models

- **national standards**
- **interventions and evidence base**
- **immediate priorities**
- **service models**
- **milestones and goals**
- **measuring performance**
- **overview**

Introduction

- 2.1 This section of the NSF sets out the standards which relate to each of the seven areas of CHD covered by the NSF. These seven areas are:
- 1 Reducing heart disease in the population (standards one and two)
 - 2 Preventing CHD in high risk patients (standards three and four)
 - 3 Heart attack and other acute coronary syndromes (standards five, six and seven)
 - 4 Stable angina (standard eight)
 - 5 Revascularisation (standards nine and ten)
 - 6 Heart failure (standard eleven)
 - 7 Cardiac rehabilitation (standard twelve).
- 2.2 In addition to specifying the relevant standards, there are details of appropriate interventions, service models, immediate priorities, milestones and goals marking progress in implementation, and CHD high level performance indicators in each of these seven areas. The last part of this section summarises what this means for NHS organisations (especially primary care, and hospital and ambulance Trusts) and highlights priority action.
- 2.3 More detail on each of these is given in the clinical chapters of the NSF.

Reducing heart disease in the population

Standards

The standards for prevention of CHD are that:

Standard one

The NHS and partner agencies should develop, implement and monitor policies that reduce the prevalence of coronary risk factors in the population, and reduce inequalities in risks of developing heart disease.

Standard two

The NHS and partner agencies should contribute to a reduction in the prevalence of smoking in the local population.

Interventions

The interventions that should be put in hand to improve the cardiac health of the local population are:

Effective policies

- development and implementation of a comprehensive local programme of effective policies for reducing smoking, promoting healthy eating and physical activity, and for reducing overweight and obesity – led by the NHS in collaboration with partner agencies

Health & Health Inequality Impact Assessments

- public agencies are encouraged to estimate and report publicly on the likely impact of their major decisions on the cardiac health of the local population, including inequalities

Smoking

- development of effective local smoking cessation services by the NHS (see HSC 1999/087)

Community development

- local organisations should facilitate and co-ordinate the establishment of community development programmes that address at least one of the determinants of coronary heart disease in the most disadvantaged, hard-to-reach and high-risk communities that they serve

Exemplary employers

Public agencies are encouraged to provide healthy workplaces by:

- developing organisational policies which help promote job control
- making a variety of healthy foods readily available to staff
- providing staff with opportunities for physical activity
- ensuring that their premises have no-smoking policies
- encouraging staff and visitors to use alternatives to the car.

Service models

The service models for delivering effective prevention policies and programmes should include:

The Health Improvement Programme:

Local players, co-ordinated by the HA, should work together to produce a Health Improvement Programme (HImpP) that:

- makes clear the priority they attach to improving health and to reducing inequalities in health
- refers explicitly to the recommendations in the Director of Public Health's annual report
- refers explicitly to the Local Equity Profile
- specifies the actions for which each organisation takes responsibility and is held accountable for delivering
- creates local links to relevant prevailing national policies
- specifies the structure, process and outcome measures by which local delivery of the policies will be judged.

Key stakeholders

Local players will establish a local implementation team to develop and oversee the implementation of the local delivery plan to put this NSF into practice. The team should consult and involve key stakeholders.

Health Impact Assessment

Local players are encouraged to undertake and make public a prospective health impact assessment of major policy decisions that are likely to have a direct or indirect effect on cardiac health. Retrospective assessments or evaluations of policy will help to monitor how a policy is affecting or has affected health following its implementation and to modify or inform future direction.

Local Equity Profile

Directors of Public Health are expected to produce an Equity Profile for the population they serve. The Equity Profile is intended to identify inequalities in heart health and in access to preventive and treatment services. It will comment on the needs of individuals and groups, particularly those for whom special consideration is warranted. It will complement HIAs, and will directly inform the HImpP.

Smoking cessation

HAs, with PCGs/PCTs, will be expected to establish specialist smoking cessation services for smokers who wish to quit. The services should aim to target disadvantaged communities, young people and pregnant women and should be available in a variety of settings. Services should be high profile, accessible and accept self-referral or referral by primary and secondary health care professionals and dentists, pharmacists, *NHS Direct*, schools and voluntary organisations. The services will feature support, advice and follow-up to individuals or groups and will offer one week's free nicotine replacement therapy (NRT) to smokers least able to afford it. Members of the primary health care team will be expected to provide advice to smokers opportunistically.

Community development

A community development approach helps communities to make their own decisions about how to achieve better health for themselves, their families and the wider community. Professionals are required to act as facilitators, rather than imposing an agenda on the community.

HAs, LAs and PCGs/PCTs need to work together, so that there is at least one community development project with a focus on CHD under way in one of the most deprived communities in every local authority area. Health visitors will be a vital resource in securing successful community development.

Workplace policies

The NHS and LAs should develop and implement policies to protect and improve the health (including the heart health) of staff, and to report progress regularly to their Boards and Councils.

Immediate priorities

The immediate priorities for implementing this area of the NSF are:

- by April 2001, Health Authorities will introduce specialist smoking cessation clinics, helping 150,000 people
- delivering the early milestones.

Milestones

The milestones marking progress in implementing this area of the CHD NSF for reducing the risk of heart disease in the population are:

Milestone 1

By October 2000 all NHS bodies, working closely with LAs, will:

- actively participate in the development of the HImP
- have agreed their responsibilities for and contributions to specific projects identified in the HImP
- have a mechanism for being held to account for the actions they have agreed to deliver as part of the HImP
- have a mechanism for ensuring that progress on health promotion policies is reported to and reviewed by the Board
- have identified a link person to be a point of contact for partner agencies.

Milestone 2

By April 2001 all NHS bodies, working closely with LAs, will:

- have agreed and be contributing to the delivery of the local programme of effective policies on: a) reducing smoking; b) promoting healthy eating; c) increasing physical activity; and d) reducing overweight and obesity
 - have a mechanism for ensuring all new policies and all existing policies subject to review can be screened for health impacts
 - as an employer, have implemented a policy on smoking
 - be able to refer clients/service users to specialist smoking cessation services, including clinics
 - have produced an equity profile and set local equity targets.
-

Milestone 3

By April 2002 every local health community will:

- have quantitative data no more than 12 months old about the implementation of the policies on:
 - reducing the prevalence of smoking
 - promoting healthy eating
 - promoting physical activity
 - reducing overweight and obesity
 - as employers, have developed 'green' transport plans and taken steps to implement employee-friendly policies.
-

Milestone 4

By April 2003 every local health community will:

- have implemented plans to evaluate progress against national targets associated with *Saving Lives: Our Healthier Nation* and local targets.
-

The NSF goal

- to contribute to the target reduction in deaths from circulatory diseases as outlined in *Saving Lives: Our Healthier Nation* of up to 200,000 lives in total by 2010.
-

Holding the NHS to Account: the NHS Performance Assessment Framework

Nationally, the Performance Assessment Framework (PAF) and the associated High Level Performance Indicators (HLPis) can be used to assess overall performance of the NHS. Equally the PAF can be used to assess performance of a specific aspect of the NHS, supported by suitable indicators. The CHD performance indicators, relevant to this part, fit within the areas of the PAF as follows (those shown in italics cannot yet be derived from routinely available data):

Fair access

- *the number and % of smokers using smoking cessation services*
- *the number of smokers provided with free nicotine replacement therapy (NRT)*

Effective delivery of appropriate health care

- *the number of smoking cessation services (i.e. specialist smoking cessation clinics and “intermediate interventions”)*
- *the number of smokers using smoking cessation services who are still not smoking four weeks after the quit date*

Efficiency

- *cost per one-month-quitter of smoking cessation service by type of service*

Health outcomes of NHS care and Health Improvement

- age standardised or age and sex standardised CHD mortality rates by HA (and 10 yearly by socio-economic class)
 - smoking prevalence by age and sex in England and in each Region
 - % of population aged 16 or more who achieve or exceed the recommended half an hour a day of at least moderate intensity physical activity.
-

Preventing coronary heart disease in high risk patients in primary care

Standards

The standards of care that the NHS will aim for are that:

Standard three

General practitioners and primary care teams should identify all people with established cardiovascular disease and offer them comprehensive advice and appropriate treatment to reduce their risks.

Standard four

General practitioners and primary health care teams should identify all people at significant risk of cardiovascular disease but who have not yet developed symptoms and offer them appropriate advice and treatment to reduce their risks.

Interventions

The interventions that patients at high risk of CHD should receive, unless contraindicated, are:

First step – people *with* diagnosed CHD or other occlusive arterial disease

- advice about how to stop smoking including advice on the use of nicotine replacement therapy
 - information about other modifiable risk factors and personalised advice about how they can be reduced (including advice about physical activity, diet, alcohol consumption, weight and diabetes)
 - advice and treatment to maintain blood pressure below 140/85 mm Hg
 - low dose aspirin (75 mg daily)
 - statins and dietary advice to lower serum cholesterol concentrations EITHER to less than 5 mmol/l (LDL-C to below 3 mmol) OR by 30% (whichever is greater)
 - ACE inhibitors for people who also have left ventricular dysfunction
 - beta-blockers for people who also have had a myocardial infarction
 - warfarin or aspirin for people over 60 years old who also have atrial fibrillation
 - meticulous control of blood pressure and glucose in people who also have diabetes
-

Second step – people *without* diagnosed CHD or other occlusive arterial disease with a CHD risk greater than 30% over ten years

- advice about how to stop smoking including advice on the use of nicotine replacement therapy
 - information about other modifiable risk factors and personalised advice about how they can be reduced (including advice about physical activity, diet, alcohol consumption, weight and diabetes)
 - advice and treatment to maintain blood pressure below 140/85 mm Hg
 - add statins to lower serum cholesterol concentrations EITHER to less than 5 mmol/l (LDL-C to below 3 mmol) OR by 30% (whichever is greater)
 - meticulous control of blood pressure and glucose in people who also have diabetes
-

Service Models

Practices should put in place models of care so that they:

Use a systematic approach for:

- identifying people at high risk of CHDⁱⁱ
 - identifying and recording of modifiable risk factors of people at high risk of CHD
 - providing and documenting the delivery of appropriate advice and treatment and offering regular review to people at high risk of CHD.
-

Care will usually be provided in one of the following settings:

- Consultations in routine general practice surgeries, in which care is structured by the active use of a paper or electronic practice protocol/guideline and a supporting data template/summary form.
 - Special ‘practice cardiac prevention clinics’ in general practice (typically nurse run and doctor supported) to which patients with CHD from within a practice are invited and in which care is structured by the active use of a paper or electronic practice protocol/guideline and/or a patient-held record.
 - Special ‘multi-practice or PCG/PCT cardiac prevention clinics’ (typically nurse run and doctor supported) to which patients of more than one practice at high risk of cardiac events are invited with practices sharing scarce resources (e.g. skilled nursing) and in which care is structured by the active use of a paper or electronic practice protocol/guideline and/or a patient-held record.
-

ⁱⁱ The priority here is to identify those with clinical evidence of coronary heart disease, TIA or stroke, and with peripheral vascular disease (PVD).

Immediate priorities

The immediate priorities for implementing this area of the NSF are:

- by April 2002, improving the use of effective medicines after heart attack (especially use of aspirin, beta-blockers and statins) so that 80-90% of people discharged from hospital following a heart attack will be prescribed these drugs
- delivering the early milestones.

Milestones

The milestones marking progress in implementing this area of the CHD NSF for the care of people with clinical evidence of CHD and other occlusive arterial disease are:

Milestone 1

By October 2000 every practice should have:

clinical teams that meet as a team at least once every quarter to plan and discuss the results of clinical audit and, generally, to discuss clinical issues.

Milestone 2

By April 2001 every practice should have:

all medical records and hospital correspondence held in a way that allows them to be retrieved readily in date order

appropriate medical records containing easily discernible drug therapy lists for patients on long-term therapy

a systematically developed and maintained practice-based CHD register in place which is actively used to provide structured care to people with CHD.

Milestone 3

By April 2002 every practice should have:

a protocol describing the systematic assessment, treatment and follow-up of people with CHD agreed locally and being used to provide structured care to people with CHD.

Milestone 4

By April 2003 every practice should have:

clinical audit data no more than 12 months old available that describe all the items listed in the bottom half of page 23 (“first step”).

The NSF goal

Every practice should:

offer advice about each of the specified effective interventions to all those in whom they are indicated, demonstrated by clinical audit data no more than 12 months old.

Most practices will want to achieve these milestones well ahead of these dates.

Holding the NHS to Account: the NHS Performance Assessment Framework

The CHD performance indicators, relevant to this part, fit within the areas of the Performance Assessment Framework as follows (those shown in italics cannot yet be derived from routinely available data):

Health improvement

- age standardised or age and sex standardised CHD mortality rates by HA (and 10 yearly, by socio-economic class)

Fair access and effective delivery of appropriate health care

- *the number and % of practices in a PCG/PCT with a systematic approach to following up people with CHD (new collection from 2001/02)*
- *the number and proportion of people aged 35 to 74 years with recognised CHD whose records document advice about use of aspirin*

Patient/carer experience of NHS

- *the national survey of CHD patients will provide information on variations and provide a baseline against which future surveys will be analysed*

Health outcomes of NHS Care

- *age-sex standardised rate of cardiovascular events in people with a prior diagnosis of CHD, PVD, TIA or occlusive stroke.*
-

Heart attack: acute myocardial infarction and other acute coronary syndromes

Standards

The standards of care that the NHS will aim for are that:

Standard five

People with symptoms of a possible heart attack should receive help from an individual equipped with and appropriately trained in the use of a defibrillator within 8 minutes of calling for help, to maximise the benefits of resuscitation should it be necessary.

Standard six

People thought to be suffering from a heart attack should be assessed professionally and, if indicated, receive aspirin. Thrombolysis should be given within 60 minutes of calling for professional help.

Standard seven

NHS Trusts should put in place agreed protocols/systems of care so that people admitted to hospital with proven heart attack are appropriately assessed and offered treatments of proven clinical and cost effectiveness to reduce their risk of disability and death.

Interventions

The interventions that patients with *acute myocardial infarction (AMI)* should usually receive, unless contraindicated, are:

Pre-hospital

- cardio-pulmonary resuscitation and defibrillation in the event of cardiac arrest
- high concentration oxygen
- pain relief (e.g. 2.5 to 5mg diamorphine i.v., 5 to 10mg morphine i.v. with anti-emetic)
- aspirin (at least 300mg orally)
- immediate transfer to hospital

Hospital

- aspirin (at least 300mg orally), if not already given
- oxygen
- pain relief (e.g. 2.5 to 5mg diamorphine i.v., 5 to 10mg morphine i.v. with anti-emetic, if still in pain)
- thrombolytic therapy (given WITHOUT DELAY, i.e. within an hour of the onset of symptoms)
- beta-blockers (to be continued for at least one year)
- ACE inhibitors (review after four to six weeks)
- consider insulin-glucose infusion for people with diabetes

Continuing care (see also Chapter 2: *Preventing CHD among those at high risk in primary care*, Chapter 5: *Revascularisation* and Chapter 7: *Cardiac rehabilitation*)

- risk factor advice about smoking cessation, physical activity, diet, weight and diabetes
 - give low dose aspirin (75 mg daily)
 - give beta-blockers for at least one year
 - provide advice and treatment to maintain blood pressure below 140/85 mm Hg
 - give statins to lower serum cholesterol concentrations EITHER to less than 5 mmol/l (LDL-C to below 3 mmol) OR by 30% (whichever is greater)
 - give ACE inhibitors for people with symptomatic heart failure, echocardiographic evidence of left ventricular dysfunction, or extensive Q-wave infarcts
 - control glucose levels meticulously as well as blood pressure in people who also have diabetes
 - assess the potential to benefit from coronary revascularisation (see Chapter 5)
 - arrange systematic individualised rehabilitation and prevention (see Chapter 7).
-

The interventions that patients with ***unstable angina*** should usually receive, unless contraindicated, are

General measures

- bed rest, oxygen, pain relief, ECG and haemodynamic monitoring

Anti-thrombotics

- aspirin (300mg, if not already given, then 150mg daily)
- heparin (i.v. heparin for 2 to 5 days or sub-cutaneous low-molecular weight heparin)

Anti-ischaemics

- beta-blocker
- nitrates
- calcium antagonists (usually reserved for second or third line therapy after beta-blockers and nitrates, or when beta-blockers are contra-indicated)

Re-assess risk

- re-assess 12 to 24 hours after admission to hospital to determine further management.

Continuing care (see AMI interventions on pages 27-28)

Service models

The ambulance service, the hospital service and primary care teams should plan their services together and put in place *systems of care* in which:

NHS Direct

- provides immediate advice to people calling about suspected heart attack and arranges for the ambulance service to send appropriately trained and equipped help immediately (see below)

Primary care teams

- call '999' for an ambulance *before* attending when someone calls with symptoms suggestive of heart attack

Ambulance services

- provide immediate advice to people calling with symptoms of suspected heart attack
- maintain telephone contact with the caller, providing advice on cardiopulmonary resuscitation in the event of cardiac arrest until appropriately trained and equipped help arrives
- despatch ambulances using a uniform call prioritisation system
- get an individual trained in the use of, and equipped with, a defibrillator to people with suspected heart attack within 8 minutes of the call for help
- ensure that ambulance paramedics and technicians provide and record the delivery of appropriate pre-hospital treatment to people with suspected heart attack
- transfer people with suspected heart attack to hospital in less than 30 minutes from the call
- ensure that a defibrillator and someone trained in its use remain at the patient's side for the whole of the journey from the initial response to the hand-over in hospital

Hospitals

- make detailed arrangements for administering thrombolysis without delay and without the need to transfer patients first to a different place in the hospital; thrombolysis should be available in A&E if direct CCU admission is not possible.
- arrange for the systematic provision and recording by all relevant clinical teams of appropriate advice, treatment and follow-up (including consideration of need for revascularisation – Chapter 5 and the offer of rehabilitation and secondary prevention – Chapter 7) to people with confirmed AMI.

Immediate priorities

The immediate priorities for implementing this area of the NSF are:

- by April 2001, reducing call-to-needle time for thrombolysis for heart attacks (the time from the initial call is made until clot-dissolving thrombolytic therapy begins); this involves:
 - improving ambulance response times so that 75% of category A calls receive a response within 8 minutes
 - increasing to at least 75% the proportion of A&E departments able to provide thrombolysis

leading to

75% of eligible patients receiving thrombolysis within 30 minutes of hospital arrival by April 2002 and within 20 minutes by April 2003

- by April 2002, improving the use of effective medicines after heart attack (especially use of aspirin, beta-blockers and statins) so that 80-90% of people discharged from hospital following a heart attack will be prescribed these drugs
- delivering the early milestones

Milestones

The milestones marking ambulance Trusts' progress within this area of the CHD NSF are:

Milestone 1

By October 2000 every ambulance service should have:

an effective means for setting service clinical standards for common conditions

a systematic approach to determining whether agreed clinical standards are being met.

Milestone 2

By April 2001 every ambulance service should have:

an agreed service-wide protocol for the management of suspected AMI.

Milestone 3

By April 2002 every ambulance service should have:

clinical audit data no more than 12 months old that describe all the relevant items listed in bold in paragraph 44 of Chapter 3 of the clinical chapters. Where relevant these data are derived from participation in national audits.

The NSF goal

Every ambulance service should:

offer complete and correct packages of audited effective interventions to all people assessed as having a suspected AMI, demonstrated by clinical audit data no more than 12 months old.

The milestones marking hospitals' progress within this area of the CHD NSF are:

Milestone 1

By October 2000 every acute hospital should have:

an effective means for setting hospital-wide clinical standards for common conditions
a systematic approach to determining whether agreed clinical standards are being met.

Milestone 2

By April 2001 every acute hospital should have:

an agreed hospital-wide protocol for the management of suspected and confirmed
AMI and other acute coronary syndromes.

Milestone 3

By April 2002 every acute hospital should have:

clinical audit data no more than 12 months old that describe all the items listed in bold
in paragraph 44 of Chapter 3 of the clinical chapters. Where relevant these data are
derived from participation in national audits.

The NSF goal

Every acute hospital should:

offer complete and correct packages of audited effective interventions to all people discharged with a diagnosis of AMI, demonstrated by clinical audit data no more than 12 months old.

Holding the NHS to Account: the NHS Performance Assessment Framework

The CHD performance indicators, relevant to this part, fit within the areas of the Performance Assessment Framework as follows (those shown in italics cannot yet be derived from routinely available data):

Health Improvement

- age standardised or age and sex standardised CHD mortality rates by HA (and 10 yearly, by socio-economic class)

Fair access and effective delivery of appropriate health care

- *the number and % of patients eligible for thrombolysisⁱ receiving it within 60 minutes of call for professional help ('call-to-needle time')*
- *the number and % of patients discharged from hospital with a diagnosis of AMI prescribed beta-blockerⁱⁱ*

Efficiency

- Reference costs for:
 - AMI (HRG codes for E11 and E12)
 - Chest pain (E35 and E36)
 - Cardiac arrest (E28)
 - Pacemaker implant for AMI, heart failure or shock (E07)

Health outcome of NHS care

- the age and sex standardised rate of people aged 35 to 74 yearsⁱⁱⁱ in a PCG/PCT and HA area with a diagnosis of AMI who die during their index admission to hospital (*this indicator will be replaced by the indicator below once the necessary data capture systems are in place*)
- the number and age-sex standardised proportion of people aged 35 to 74 yearsⁱⁱⁱ in a PCG/PCT and HA area with a diagnosis of AMI who die in hospital within 30 days of their infarct
- *the number and age-sex standardised proportion of people age 35 to 74 yearsⁱⁱⁱ in a PCG/PCT and HA area with a diagnosis of AMI who die within 30 days of their infarct.*

ⁱ Eligible patients are those suspected of acute myocardial infarction with ECG evidence of ST elevation or left bundle branch block, and no contraindications to immediate thrombolytic treatment.

ⁱⁱ Beta-blocker rather than aspirin has been proposed as the national indicator because there is greater variation in the use of beta-blocker. Aspirin use post acute myocardial infarction is already thought to be widely used.

ⁱⁱⁱ An age limit for the population based case-fatality indicator is proposed because of the difficulty of case ascertainment and diagnosis in the very elderly outside hospital.

Stable angina

Standards

The standard of care that the NHS will aim for is that:

Standard eight

People with symptoms of angina or suspected angina should receive appropriate investigation and treatment to relieve their pain and reduce their risk of coronary events.

Investigations and Interventions

The investigations and interventions that people with stable angina should usually be offered unless contraindicated are:

Aetiological investigations

- haemoglobin (Hb), 12-lead resting ECG (e.g. to exclude HOCM)

Estimation of risk

- plasma glucose, serum cholesterol
- assessment of severity of myocardial ischaemia (e.g. exercise ECG, thallium scan)

Treatment to relieve symptoms

- sublingual nitrates for immediate symptom control
- background beta-blockers and/or nitrates and/or calcium antagonists

Treatment to reduce cardiovascular risk (see Chapter 2)

- advice about how to stop smoking including advice about the use of nicotine replacement therapy
- information about other modifiable risk factors and personalised advice about how they can be reduced (this includes advice about physical activity, diet, alcohol consumption, weight and diabetes)
- advice and treatment to maintain blood pressure below 140/85 mm Hgⁱ
- low dose aspirin (75 mg daily)
- statins and dietary advice to lower serum cholesterol concentrations EITHER to less than 5 mmol/l (LDL-C to below 3 mmol) OR by 30% (whichever is greater)
- education about symptoms of heart attack and, should they develop, instruction to seek help rapidly by calling '999'

Assessment of benefits of revascularisation (see Chapter 5)

- referral for angiography for people who are candidates for revascularisation if they have either evidence of continuing extensive ischaemiaⁱⁱ (e.g. a strongly positive exercise test) or angina that persists despite optimal medical therapy and lifestyle advice.

ⁱ The blood pressure target of 140/85 mmHg is challenging but it represents an appropriate target. In practice, it will not be possible to achieve this for every patient. However, practitioners should not be satisfied with pressures greater than 150 mmHg systolic OR 90 mmHg diastolic in these high-risk groups.

ⁱⁱ There are several ways in which severe ongoing ischaemia can be recognised. These include a) a resting ECG with ST depression in multiple leads in someone who has recently had unstable angina, b) a strongly positive stress test and c) strongly positive myocardial perfusion scan.

Service models

Primary care teams and hospitals should put in place models of care so that they:

use a systematic approach for:

- assessing and investigating people suspected of suffering from angina
 - providing and documenting the delivery of appropriate advice and treatment
 - offering regular review to people at high risk of CHD.
-

Care will usually be provided in one or more of the following settings:

Primary care

- initial consultations in routine general practice surgeries, in which care is structured and guided by the active use of a paper or electronic practice protocol/guideline which includes the indications and arrangements for accessing:
 - specialist advice (*e.g. via out-patients or chest pain clinics*)
 - exercise testing (*e.g. via cardiac out-patients, open access, or chest pain clinics*)
 - other cardiac investigations (*e.g. via cardiac out-patients or chest pain clinics*)
- long-term systematic and structured follow-up in primary care using structured consultations or cardiac prevention clinics (see Chapter 2)

Hospital care

- specialist advice provided from out-patients or chest pain clinics. (*Where there is more than one clinic or team in a hospital that investigates and manages people with suspected angina, the care they provide should be guided by a locally agreed hospital-wide protocol*)
 - clear protocols and guidance specifying the indications and routes of referral for angiography within the local network of cardiac care (*see Chapter 5 and Section 3*).
-

Immediate priorities

The immediate priorities for implementing this area of the NSF are:

- by April 2001, there should be 50 rapid-access chest pain clinics, to help ensure that people who develop new symptoms that their GP thinks might be due to angina can be assessed by a specialist within two weeks of referral. There should be 100 rapid-access chest pain clinics by April 2002 and nationwide roll-out thereafter
- delivering the early milestones.

Milestones

The milestones marking progress in **primary care** for this area of the CHD NSF are:

Milestone 1

By October 2000 every practice should have:

clinical teams that meet as a team at least once every quarter to plan and discuss the results of clinical audit and, generally, to discuss clinical issues.

Milestone 2

By April 2001 every practice should have:

all medical records and hospital correspondence held in such a way that they can be retrieved readily in date order

appropriate medical records containing easily discernible drug therapy lists for patients on long term therapy

a systematically developed and maintained practice-based CHD register in place which is actively used to provide structured care to people with CHD.

Milestone 3

By April 2002 every practice should have:

a protocol describing the systematic assessment, treatment and follow-up of people with suspected angina that has been agreed locally and is being used to provide structured care to people with CHD.

Milestone 4

By April 2003 every practice should have:

clinical audit data no more than 12 months old that describe all the items listed in bold in paragraph 46 of Chapter 4 of the clinical chapters.

Most practices will want to achieve these milestones well ahead of these dates.

The NSF goal

Every practice should:

deliver or offer advice about each of the specified effective interventions to all of those in whom they are indicated, demonstrated by clinical audit data no more than 12 months old.

The milestones marking progress in **hospital care** for this area of the CHD NSF are:

Milestone 1

By October 2000 every hospital should have:

an effective means for setting hospital-wide clinical standardsⁱⁱⁱ for common conditions
a systematic approach to determining whether agreed clinical standards are being met.

Milestone 2

By April 2001 every hospital should have:

an agreed hospital-wide protocol for the investigation and management of angina and suspected angina.

Milestone 3

By April 2002 every hospital should have:

clinical audit data no more than 12 months old that describes all the items listed in bold in paragraph 46 of Chapter 4 of the clinical chapters.^{iv} Where relevant these data are derived from participation in national audits.

ⁱⁱⁱ Where national standards exist they should be included as part of the locally agreed hospital-wide standards.

^{iv} Over time NHS organisations will be expected to participate in relevant national audits.

The NSF goal

Every hospital should:

deliver or offer complete and correct packages of audited effective interventions to all people referred with angina or suspected angina, and ensure that everyone is treated within the prevailing waiting time targets, demonstrated by clinical audit data no more than 12 months old.

Holding the NHS to account: the NHS Performance Assessment Framework

The CHD performance indicators, relevant to this part, fit within the areas of the Performance Assessment Framework as follows (those shown in *italics* cannot yet be derived from routinely available data):

Health improvement

- age standardised or age and sex standardised CHD mortality rates by HA (and 10 yearly, by socio-economic class).

Fair access

- age-sex standardised rates of CABG/million population by PCG/PCT and HA
- age-sex standardised rates of PTCA/million population by PCG/PCT and HA
- age-sex standardised rates of angiography/million population by PCG/PCT and HA
- number and % of patients who receive care within the prevailing waiting time targets

Effective delivery of appropriate health care

- *number and proportion of people aged 35 to 74 years with recognised coronary heart disease whose records document advice about use of aspirin*
- *number and % of PCGs/PCTs in a region with PCG/PCT-wide protocols for referral for specialist care agreed with local cardiologists*
- *number and proportion of relevant Trusts with hospital-wide protocols for the investigation and management of people with suspected angina*

Efficiency

- Reference costs for:
 - Angina (HRG codes E33 and E34)
 - Angiography (E13 and E14)
 - Coronary atherosclerosis (E22 and E23)
-

Revascularisation

Standards

The standards of care that the NHS will aim for are that:

Standard nine

People with angina that is increasing in frequency or severity should be referred to a cardiologist urgently or, for those at greatest risk, as an emergency.

Standard ten

NHS Trusts should put in place hospital-wide systems of care so that patients with suspected or confirmed coronary heart disease receive timely and appropriate investigation and treatment to relieve their symptoms and reduce their risk of subsequent coronary events.

Investigations and Interventions

The key investigations and interventions that should be offered to people who are potential candidates for revascularisation and have:

- *angina (Chapter 4)*
- *unstable coronary artery disease, (Chapter 3)*
- *survived AMI (Chapter 3) are*

A **Angiography** for those with

- evidence of continuing extensive ischaemiaⁱ (e.g. a strongly positive exercise test) and/or
- angina that persists despite optimal medical therapy and lifestyle advice followed by

B **Quantitative assessment of urgency/risk/priority** using a published stratification systemⁱⁱ for patients accepting an offer of revascularisation to inform the judgement about the balance of risks and benefits and to help determine each patient's relative priority for treatment (immediate, urgent, soon).

followed by

ⁱ There are several ways in which severe ongoing ischaemia can be recognised. These include a) a resting ECG with ST depression in multiple leads in someone who has recently had unstable angina, b) a strongly positive stress test and c) strongly positive myocardial perfusion scan.

ⁱⁱ The Ontario scoring system is designed to assess the urgency of intervention, the PARSONET and EUROSCORE are designed to estimate the risk of in-hospital operative mortality and the New Zealand priority score is intended to rank people by 'ability to benefit'. The Society of Caridothoracic Surgeons of Great Britain and Ireland is developing its own risk stratification system which initial studies suggest is a better predictor of operative mortality in the UK than other published scores.

C Revascularisation

EITHER

- **Coronary artery bypass surgery (CABG)** for those who meet the criteria for angiography, in whom the risks are judged to be outweighed by the benefits in terms of either
 - a *prognosis* i.e. the angiogram has shown significant narrowing of:
 - left main coronary artery, or
 - three coronary arteries, or
 - two coronary arteries including the proximal left anterior descending coronary artery
 - or
 - b *symptom relief* i.e with suitable coronary anatomy where severe angina persists despite optimal medical therapy

OR

- **Percutaneous transluminal coronary angioplasty (PTCA)¹⁴ with or without stenting¹⁵** for those who have continuing symptoms, in whom the benefits are judged to outweigh the risks and who have operable narrowings of one vessel or two coronary arteries without significant narrowing of the left main stem.

D Effective secondary prevention and rehabilitation (see Chapters 2 and 7)

Revascularisation rates and waiting times

Over many years, the NHS has not invested sufficiently in coronary revascularisation. Revascularisation rates in England are low compared to many other countries and waits for diagnosis and treatment are long. This suggests that currently many people who might benefit are not offered revascularisation and those that do have often waited longer than is acceptable. At present there is insufficient coronary revascularisation capacity in England and there is scope to improve every step on the pathway from presentation to revascularisation.

The NSF addresses these challenges, first with the immediate target of increasing the numbers of revascularisations by 3,000. This will be achieved by April 2002 by investing funds so that more effective use can be made of facilities and the skills and experience of existing staff. In order to reach the level of activity to meet the needs of patients, a further increase in capacity will be required. This must be a longer term objective because of the time needed to train new surgeons, cardiologists and other skilled staff. This area of the service will be developed so that all those needing revascularisation are investigated and treated promptly. Further details of the immediate priorities and milestones are set out below.

The first and second stage waiting time aims are:

- from referral by GP to specialist assessment of those with new onset chest pain thought to be angina: 2 weeks maximum (national roll-out from 2002-03)
- from referral by GP to consultant appointment:
 - first stage aim: 13 weeks maximum
 - second stage aim: 4 weeks maximum
- from decision to investigate to angiography:
 - first stage aim: 6 months maximum
 - second stage aim: 3 months maximum
- from decision to operate to angioplasty:
 - first stage aim: 12 months maximum
 - second stage aim: 3 months maximum
- from decision to operate to CABG:
 - first stage aims:
 - emergency/urgent: not to leave hospital before procedure
 - high-risk priority cases: within 3 months maximum
 - all others: 12 months maximum
 - second stage aims:
 - emergency/urgent: not to leave hospital before procedure
 - high risk priority cases: within 3 months maximum
 - all others: 6 months

The second stage aims above indicate the direction of travel towards longer term goals. In the case of CABGs for example, the goal is to treat within 3 months of the decision to operate. Progress will be made towards the aims and goals as resources and capacity become available and the results of re-engineering of services take effect. The ultimate aim is that patients should experience waits of weeks rather than months for their diagnosis and treatment. The NSF goal in this area and the waiting times goals are shown below on page 45.

Service Models

Hospitals, PCGs/PCTs, practices and HAs should put in place models of care so that they:

Use a systematic approach for:

- identifying people who may benefit from angiography and for referring them to specialists with access to appropriate facilities
 - determining who should be offered angiography
 - determining who should be offered revascularisation
 - assessing and improving the quality of care
 - determining the level of investment in coronary revascularisation based on the CHD needs of their local community.
-

Systems for assuring fair access to care should comprise:

- protocols for referral, investigation, treatment and follow-up
 - an annual review of age-sex standardised angiography and revascularisation rates by PCG/PCT by the boards of the relevant PCGs/PCTs and Trusts that together form a local network of cardiac care
 - regular review of access rates by ethnic group
 - regular review of local investment in coronary revascularisation to achieve satisfactory rates of investigation and treatment and to meet the relevant waiting time targets
 - the triggering of a focused and detailed audit/review of recent practice if access rates are substantially lower than expected.
-

Local systems for improving the quality of care should include:

-
- protocols for referral, investigation, treatment and follow-up
 - regular clinical audit
 - annual review of quality of care indicators by the boards of the organisations that together form a local network of cardiac care
 - the triggering of a focused and detailed audit/review of recent practice if quality indicators are substantially worse than expected.
-

Facility and operator standards for angiography, PTCA and CABG are:

Angiography

- in any single institution undertaking coronary angiography, a minimum of 500 cardiac catheterisation procedures per year should be carried out by a minimum of two operators
- each individual trained operator (consultant level) should perform a minimum of 100 cardiac catheterisations per year

Coronary angioplasty (PTCA)

- in any single institution undertaking coronary angioplasty (PTCA), a minimum of 200 procedures per year should be carried out by a minimum of two trained operators (consultant level)
- each individual trained operator (consultant level) should perform a minimum of 75 angioplasties per year
- PTCA should be performed only with pre-arranged surgical cover and in institutions where emergency cardio-pulmonary bypass can be established within 90 minutes of the decision to refer the patient for emergency CABG. If inter-hospital transfer is required, the journey time between hospitals should not exceed 30 minutes

Coronary artery bypass grafting (CABG)

- in any single institution undertaking coronary artery surgery, a minimum of 400 CABGs per year should be carried out by a minimum of three trained surgeons
 - each individual trained surgeon (consultant level) should perform a minimum of 50 CABGs per year.
-

Immediate priorities

The immediate priorities for implementing this area of the NSF are:

- by April 2002, increasing the total number of revascularisation procedures, providing an extra 3,000
- delivering the early milestones.

Milestones

The milestones marking progress in implementing this area of the CHD NSF are:

Milestone 1

By October 2000 in every local network of cardiac care:

hospitals should have effective means for setting hospital-wide clinical standardsⁱⁱⁱ for common conditions

hospitals should have a systematic approach to determining whether agreed clinical standards are being met

PCGs/PCTs and hospitals that together form a local network of cardiac care should have effective means for agreeing an integrated system for quality assessment and improvement.

Milestone 2

By April 2001 in every local network of cardiac care:

hospitals and PCGs/PCTs should have agreed network-wide protocols for the identification, referral, investigation and treatment of people who may benefit from coronary revascularisation.

Milestone 3

By April 2002 in every local network of cardiac care:

hospitals and PCGs/PCTs should have clinical audit data no more than 12 months old that describe all the relevant audit criteria.^{iv} Where relevant these data should be derived from participation in national audits

By April 2002 throughout England:

the total number of revascularisation procedures will have increased by 3,000.

ⁱⁱⁱ Where national standards exist they should be included as part of the locally agreed hospital-wide standards.

^{iv} Over time, ambulance services, hospitals and clinicians will be expected to participate in national audits such as the national thrombolysis audit.

The NSF goal

Everyone meeting the NSF criteria for angiography and revascularisation is identified and treated within the agreed waiting times to the standards set out in this NSF. Current estimates are that this will equate to a national rate equivalent to at least 750 pmp for PTCA and at least 750 pmp for CABG.

The NSF waiting time goals

Referral by GP to specialist assessment/consultant appointment: two weeks maximum
 Prompt investigation and, for those for whom it is indicated, revascularisation within three months of the decision to operate.

Holding the NHS to account: the NHS Performance Assessment Framework

The CHD performance indicators, relevant to this part, fit within the areas of the Performance Assessment Framework as shown below (those shown in italics cannot yet be derived from routinely available data). The performance indicators should reflect differences in need between communities. Relating the indicators for access to those for CHD mortality will provide an estimate of whether the local need is being met, but the exact relationship between these indicators has still to be determined.

Health Improvement

- age standardised or age and sex standardised CHD mortality rates by HA (and 10 yearly, by socio-economic class).

Fair access and effective delivery of appropriate health care

- age-sex standardised rates of CABG/million population by *PCG/PCT* and HA
- age-sex standardised rates of PTCA/million population by *PCG/PCT* and HA
- age-sex standardised rates of angiography/million population by *PCG/PCT* and HA

Efficiency

- Reference costs for:
 - CABG (HRG code E04)
 - PTCA (E15 and E16)

Health outcomes of NHS care

- number and % of people dying after CABG or PTCA before discharge from hospital. This indicator will be replaced by the following as soon as possible
 - *risk adjusted 30 day and one year mortality rates for CABG or PTCA by Trust*
-

Heart failure and palliative care for people with coronary heart disease

Standards

The standards of care that the NHS will aim for are that:

Standard eleven

Doctors should arrange for people with suspected heart failure to be offered appropriate investigations (eg electrocardiography, echocardiography) that will confirm or refute the diagnosis. For those in whom heart failure is confirmed, its cause should be identified – the treatments most likely to both relieve symptoms and reduce their risk of death should be offered.

Investigations and Interventions

The investigations and interventions that should be considered for patients at high risk of CHD, unless contraindicated, are

Key investigations

- 12 lead ECG (heart failure is unlikely if this is normal)
- echocardiogram
- other investigations that may be helpful, e.g. Hb, chest X-ray, renal function, weight

Clinical management

- an ACE inhibitor (first line treatment which prolongs life, delays progression and improves symptoms)
- diuretics (can provide rapid symptomatic relief). (In severe heart failure, spironolactone added to other treatments in a low dose (e.g. 25mg daily) can reduce mortality and morbidity. Careful monitoring for hyperkalaemia and hypovolaemia is required especially for people taking other diuretics and/or ACE inhibitors)
- a beta-blocker (in people with controlled heart failure beta-blockers started in low doses can reduce mortality when used with other treatments e.g. ACE inhibitors, diuretics and digoxin. Should usually be initiated by a consultant)
- nitrates and hydralazine (for people in whom ACE inhibitors are not tolerated)
- digoxin (does not reduce mortality but may reduce symptoms and hospital admission for worsening heart failure)
- avoid aggravating factors (e.g. advise low salt diet and reduced/no alcohol, review other medication e.g. NSAIDs, short acting calcium channel blockers)

Continuing care (see also Chapters 2 and 5)

- risk factor advice about smoking cessation, physical activity, alcohol consumption and diet
- provide advice and treatment to control blood pressure
- offer immunisation against influenza annually and against pneumococcus once
- control glucose levels and blood pressure meticulously in people who have diabetes

Consider the potential to benefit from

- cardiac rehabilitation
 - palliative care services and palliation aids (e.g. home oxygen)
 - long term social support
 - cardiac transplantation.
-

Service Models

Primary care teams and hospitals should put in place models of care so that they:

Use a systematic approach to:

- identify people at high risk of heart failure (e.g. people who have had an AMI)
 - assess and investigate people with suspected heart failure
 - provide and document the delivery of appropriate advice and treatment
 - offer regular review to people with established heart failure.
-

Care will usually be provided in one of the following settings:

Primary care

- consultations in routine general practice surgeries, preferably with care structured by the active use of a paper or electronic practice protocol/guideline and a supporting data template/summary form

Primary/secondary interface care

- “outreach” follow-up by specialist nurses and others of those admitted to hospital with heart failure to provide education and support begun before discharge from hospital.
- “multidisciplinary support in the community” for those with established heart failure including home based interventions with access to social care, the local palliative care team for ongoing support and palliative care advice as needed.
- “heart failure clinics” for investigation and/or follow-up may also be an efficient and effective means of organising care. They could be located in primary care (at PCG/PCT level) or secondary care depending on the locality, and should be multidisciplinary. Initially, heart failure clinics should be set up as evaluated pilot projects. They could be successfully led by nurse practitioners or doctors depending on local circumstances

Hospital care

- specialist advice from out-patients or specialist heart failure clinics (*where more than one clinical team manages people with suspected heart failure in a hospital they should agree and use a locally agreed hospital-wide protocol*). Where relevant, local protocols should be consistent with national guidelines
 - clear protocols and guidance specifying the indications and routes of referral within the local network of cardiac care.
-

Echocardiography by trained operators with competent interpretation can be made available to people with suspected heart failure by one of the following means :

- specialist heart failure clinic
 - cardiology out-patients
 - open access echocardiography from primary care.
-

Immediate priority

The immediate priority for implementing this area of the NSF is:

- delivering the early milestones.

Milestones

The milestones marking **primary care's** progress in implementing this area of the CHD NSF are:

Milestone 1

By October 2000, every primary care team should have:

clinical teams meeting as a team at least once every quarter to plan and discuss the results of clinical audit and, generally, to discuss clinical issues.

Milestone 2

By April 2001, every primary care team should have:

all medical records and hospital correspondence held in a way that allows them to be retrieved readily in date order

appropriate medical records containing easily discernible drug therapy lists for patients on long term therapy

a systematically developed and maintained practice-based CHD register in place (including people with heart failure) and actively used to provide structured care to people with CHD.

Milestone 3

By April 2002, every primary care team should have:

a protocol describing the systematic assessment, treatment and follow-up of people with heart failure agreed locally and being used to provide structured care to people with heart failure.

Milestone 4

By April 2003, every primary care team should have:

clinical audit data no more than 12 months old available that describe all the items listed in bold in paragraph 41 of Chapter 6 of the clinical chapters of this NSF.

The NSF goal

Every primary care team should:

ensure that all those with heart failure are receiving a full package of appropriate investigation and treatment, demonstrated by clinical audit data no more than 12 months old.

The milestones marking the progress of **hospitals** that admit patients with CHD in implementing this area of the CHD NSF are:

Milestone 1

By October 2000, every hospital should have:

an effective means for setting hospital-wide clinical standards for common conditions
a systematic approach to determining whether agreed clinical standards are being met.

Milestone 2

By April 2001, every hospital should have:

an agreed hospital-wide protocol for the management of suspected and confirmed heart failure, consistent with arrangements agreed across the local network of cardiac care.

Milestone 3

By April 2002, every hospital should have:

clinical audit data no more than 12 months old that describe the delivery of the key investigations and treatment listed in paragraph 22 of Chapter 6 of the clinical chapters of this NSF. Where relevant these data are derived from participation in national audits.

The NSF goal

Every hospital should:

offer complete and correct packages of audited effective interventions to all people discharged with a diagnosis of heart failure, demonstrated by clinical audit data no more than 12 months old.

Holding the NHS to account: the NHS Performance Assessment Framework

The CHD performance indicators, relevant to this part, fit within the areas of the Performance Assessment Framework as follows (those shown in italics cannot yet be derived from routinely available data):

Health improvement

- age standardised or age and sex standardised CHD mortality rates by HA (and 10 yearly, by socio-economic class)

Fair access and effective delivery of appropriate health care

- age-sex standardised admission rates for heart failure by *PCG/PCT* and HA
- *palliative care indicator is being developed for Calman-Hine cancer services.*

Efficiency

- Reference costs for:
 - Heart failure (HRG codes E18 and E19)
 - Pacemaker implant (E07)
 - Arrhythmia (E29 and E30)
 - Cardiac valve procedures (E03)
-

Cardiac rehabilitation

Standards

The standards of care that the NHS will aim for are that:

Standard twelve

NHS Trusts should put in place agreed protocols/systems of care so that, prior to leaving hospital, people admitted to hospital suffering from coronary heart disease have been invited to participate in a multidisciplinary programme of secondary prevention and cardiac rehabilitation. The aim of the programme will be to reduce their risk of subsequent cardiac problems and to promote their return to a full and normal life.

Interventions

The investigations and interventions that people who are candidates for cardiac rehabilitation should be offered unless contraindicated are:

Before discharge from hospital (Phase 1)

- assessment of physical, psychological and social needs for cardiac rehabilitation
- negotiation of a written individual plan for meeting these identified needs (copies should be given to the patient and the general practitioner)
- initial advice on lifestyle e.g. smoking cessation, physical activity (including sexual activity), diet, alcohol consumption and employment
- prescription of effective medication (see chapters 2-6) and education about its use, benefits and harms
- involvement of relevant informal carer(s)
- provision of information about cardiac support groups
- provision of locally relevant written information about cardiac rehabilitation

Early post discharge period (Phase 2)

- comprehensive assessment of cardiac risk, including physical, psychological and social needs for cardiac rehabilitation; and a review of the initial plan for meeting these needs
- provision of lifestyle advice and psychological interventions according to the agreed plan from relevant trained therapists who have access to support from a cardiologist

- maintain involvement of relevant informal carer(s)
- review involvement with cardiac support groups
- offer resuscitation training for family members

Four weeks after an acute cardiac event (Phase 3): as early post discharge period plus:

- structured exercise sessionsⁱ to meet the assessed needs of individual patients
- maintain access to relevant advice and support from people trained to offer advice about exercise, relaxation, psychological interventions, health promotion and vocational advice

Long term maintenance of changed behaviour (Phase 4)

- long term follow-up in primary care (see chapter 2)
- offer involvement with local cardiac support groups
- referral to specialist cardiac, behavioural (e.g. exercise, smoking cessation) or psychological services as clinically indicated.

Service Models

Primary care teams and Trusts should put in place models of care so that they:

Use a systematic approach for:

- identifying people who are likely to benefit from cardiac rehabilitation before they are discharged from hospitalⁱⁱ
- assessing individuals' risks and needs for cardiac rehabilitation and developing individualised plans to meet those needs
- providing and documenting the delivery of appropriate advice and treatment and offering regular review to people accepting the offer of cardiac rehabilitation
- integrating care with secondary prevention services provided by primary care teams and others
- assessing and improving the quality of care.

ⁱ Exercise sessions may be structured in a variety of ways to meet the needs of individual patients. Typically they will be provided to groups, last at least 6 weeks, but normally 12 weeks or more and comprise at least 3 sessions per week with a minimum of 2 supervised exercise session. (individual programme often in a group environment) and 1 session of education and information for patients, partners, carers and family. Some people may benefit from individual sessions and others may prefer to exercise at home guided for example, by a self-help manual.

ⁱⁱ The first priority is to offer cardiac rehabilitation to those who have survived a myocardial infarction and those who have undergone coronary artery bypass grafting (CABG) or (PTCA).

Cardiac rehabilitation services will involve:

-
- staff appropriately trained in:
 - provision of advice about exercise and exercise supervision
 - lifestyle interventions (e.g. smoking cessation, and healthy eating)
 - psychological treatments (e.g. cognitive behaviour therapy)
 - defibrillation and advanced life support
 - taught exercise sessions (usually delivered in groups)
 - education, lifestyle and vocational advice (delivered individually and/or in groups)
 - local protocols for advice, treatment, review and referral.
-

Immediate priorities

The immediate priorities for implementing this area of the NSF are:

- by April 2002, improving the use of effective medicines after heart attack (especially use of aspirin, beta-blockers and statins) so that 80-90% of people discharged from hospital following a heart attack will be prescribed these drugs
- delivering the early milestones.

Milestones

The milestones marking progress in implementing this area of the CHD NSF are:

Milestone 1

By October 2000, every hospital should have:

an effective means for setting hospital-wide clinical standardsⁱⁱⁱ for common conditions
a systematic approach to determining whether agreed clinical standards are being met.

ⁱⁱⁱ Where accepted national standards exist they should be included as part of the locally agreed hospital-wide standards.

Milestone 2

By April 2001, every hospital should have:

an agreed hospital-wide protocol for the identification, assessment and management of people who are likely to benefit from cardiac rehabilitation.

Milestone 3

By April 2002, every hospital should have:

clinical audit data no more than 12 months old that describe all the items listed in bold in paragraph 60 of Chapter 7 of the clinical chapters of this NSF. Where relevant these data are derived from participation in national audits.

The NSF goal

Every hospital should:

ensure: a) that all people discharged from hospital with a primary diagnosis of AMI or after coronary revascularisation are offered appropriate cardiac rehabilitation; and b) that one year after discharge at least 50% of survivors are non-smokers, exercise regularly and have a BMI < 30 kg/m²; these should be demonstrated by clinical audit data no more than 12 months old.

Holding the NHS to account: the NHS Performance Assessment Framework

The CHD performance indicators, relevant to this part, fit within the areas of the Performance Assessment Framework as follows (those shown in italics cannot yet be derived from routinely available data):

Health improvement

- age standardised or age and sex standardised CHD mortality rates by HA (and 10 yearly, by socio-economic class)

Fair access and effective delivery of appropriate health care

- *number and % of patients years discharged from hospital after coronary revascularisation OR with a primary diagnosis of AMI with documentation of arrangements for cardiac rehabilitation in discharge communication to GP.*
-

Overview

- 2.4 To help the NHS and its partners locally to plan and implement this ambitious programme of change, the milestones and goals for each standard have been identified to help mark progress along the way. People will start from different points in this process of continuous improvement. Reaching these milestones will be more challenging for some than others, and it is not intended that all will work towards reaching the milestones at the same time.

The milestones and goals relevant to primary care, hospital Trusts, ambulance Trusts, and to all organisations are summarised in the tables on the next pages.

All organisations: organisational and health promotion milestones and goal

Health promotion and general organisation	
October 2000	<p>HAs, LAs, PCGs/PCTs, and NHS Trusts will:</p> <ul style="list-style-type: none"> ● have actively participated in the development of Health Improvement Programmes (HImPs) ● have agreed their responsibilities for and contributions to specific projects identified in HImPs ● have agreed a mechanism for being held to account for the actions they have agreed to deliver as part of the HImP ● have agreed a mechanism for ensuring that progress on health promotion policies is reported to and reviewed by the Board ● have identified a link person to be a point of contact for partner agencies
April 2001	<p>HAs, LAs, PCGs/PCTs, and NHS Trusts will:</p> <ul style="list-style-type: none"> ● have agreed and be contributing to the delivery of the local programme of effective policies on a) reducing smoking b) promoting healthy eating c) increasing physical activity and d) reducing overweight and obesity ● have a mechanism for ensuring all new policies and all existing policies subject to review can be screened for health impacts ● as an employer, have implemented a policy on smoking ● be able to refer clients/service users to specialist smoking cessation services, including clinics ● have produced an equity profile and set local equity targets
April 2002	<p>HAs, LAs, PCGs/PCTs, and NHS Trusts will:</p> <ul style="list-style-type: none"> ● have quantitative data no more than 12 months old about the implementation of the policies on: <ul style="list-style-type: none"> - reducing the prevalence of smoking - promoting healthy eating - promoting physical activity - reducing overweight and obesity ● as an employer, have developed 'green' transport plans and taken steps to implement employee-friendly policies
April 2003	<p>HAs, LAs, PCGs/PCTs, and NHS Trusts will:</p> <ul style="list-style-type: none"> ● have implemented plans to evaluate progress against national targets associated with <i>Saving Lives: Our Healthier Nation</i> and local targets
NSF goal	<ul style="list-style-type: none"> ● contribute to the target reduction in deaths from circulatory diseases as outlined in <i>Saving Lives: Our Healthier Nation</i> of up to 200,000 lives in total by 2010

Primary care: milestones and goals

	Primary care	Stable angina	Heart attack (AMI & ACS)	Revascularisation	Heart failure	Rehabilitation
October 2000	Clinical teams should meet as a team at least once every quarter to plan and discuss the results of clinical audit and, generally, to discuss clinical issues. PCGs/PCITs and hospitals that together form a local network of cardiac care should have effective means for agreeing an integrated system for quality assessment and quality improvement.					
April 2001	All medical records and hospital correspondence must be held in a way that allows them to be retrieved readily in date order. Appropriate medical records must contain easily discernible drug therapy lists for patients on long term therapy.					
April 2002	A systematically developed and maintained practice-based CHD register is in place and actively used to provide structured care to people with CHD.	A systematically developed and maintained practice-based CHD register is in place and actively used to provide structured care to people with CHD.			A systematically developed and maintained practice-based CHD register in place and actively used to provide structured care to people with CHD.	
April 2003	A protocol describing the systematic assessment, treatment and follow-up of people with CHD has been agreed locally and is used to provide structured care to people with CHD.	A protocol describing the systematic assessment, treatment and follow-up of people with CHD has been agreed locally and is used to provide structured care to people with CHD.			A protocol describing the systematic assessment, treatment and follow-up of people with heart failure has been agreed locally and is being used to provide structured care to people with heart failure.	
NSF goals	Clinical audit data no more than 12 months old is available that describe use of relevant effective interventions in primary care chapter (Chapter 2).	Clinical audit data no more than 12 months old is available that describe use of relevant effective interventions in angina chapter (Chapter 4).			Clinical audit data no more than 12 months old is available that describe use of relevant effective interventions in heart failure chapter (Chapter 6).	
	Every practice should offer advice about each of the specified interventions to those in whom they are indicated, demonstrated by clinical audit data no more than 12 months old.	Every practice should offer advice about each of the specified interventions to those in whom they are indicated, demonstrated by clinical audit data no more than 12 months old.			Every primary care team should ensure that all those with heart failure are receiving a full package of appropriate investigation and treatment, demonstrated by clinical audit data no more than 12 months old.	

Hospital trusts: milestones and goals

	Heart attack (AMI & ACS)	Stable angina	Revascularisation	Heart failure	Rehabilitation
October 2000	<p>The hospital has an effective means for setting hospital-wide clinical standards' for common conditions.</p> <p>The hospital has a systematic approach to determining whether agreed clinical standards are being met.</p> <p>Hospitals and PCGs/PCTs that together form a local network of cardiac care should have effective means for agreeing an integrated system for quality assessment and improvement.</p>				
April 2001	<p>The hospital has an agreed hospital-wide protocol for the management of suspected and confirmed AMI and other acute coronary syndromes.</p>	<p>The hospital has an agreed hospital-wide protocol for the investigation and management of angina and suspected angina.</p>	<p>All hospitals and PCGs/PCTs in a local network of cardiac care have agreed network-wide protocols for the identification, referral, investigation and treatment of people who may benefit from revascularisation.</p>	<p>The hospital has an agreed hospital-wide protocol for the management of heart failure consistent with arrangements agreed across the local network of cardiac care,</p>	<p>The hospital has an agreed hospital-wide protocol for the identification, assessment and management of people who are likely to benefit from cardiac rehabilitation.</p>
April 2002	<p>The hospital has clinical audit data no more than 12 months old that describe all the items relevant to the AMI chapter (Chapter 3).</p>	<p>The hospital has clinical audit data no more than 12 months old that describe all the items relevant to the angina chapter (Chapter 4).</p>	<p>Hospitals and PCGs/PCTs in the network have clinical audit data no more than 12 months old that describe all the relevant audit criteria in the revascularisation chapter (Chapter 5).</p> <p>The total number of revascularisation procedures nationally will have increased by 3,000.</p>	<p>The hospital has clinical audit data no more than 12 months old that describe the delivery of the key investigations and clinical management listed in the heart failure chapter (Chapter 6).</p>	<p>The hospital has clinical audit data no more than 12 months old that describe all the items listed in the rehabilitation chapter (Chapter 7).</p>
NSF goals	<p>Every acute hospital should offer complete and correct packages of audited effective interventions to all people discharged with a diagnosis of AMI, demonstrated by clinical audit data no more than 12 months old.</p>	<p>Every hospital should deliver or offer complete and correct packages of audited effective interventions to all people referred with angina or suspected angina, and ensure that everyone is treated within the prevailing waiting time targets, demonstrated by clinical audit data no more than 12 months old.</p>	<p>Everyone meeting the NSF criteria for angiography and revascularisation is identified and treated within the agreed waiting times to the standard set out in this NSF. Current estimates are that this will equate to a national rate equivalent to at least 750 pmp for PTCA and at least 750 pmp for CABG.</p>	<p>Every hospital should offer complete and correct packages of audited effective interventions to all people discharged with a diagnosis of heart failure, demonstrated by clinical audit data no more than 12 months old.</p>	<p>Every hospital should ensure a) that more than 85% of people discharged from hospital with a primary diagnosis of AMI or after coronary revascularisation are offered cardiac rehabilitation; and b) that 1 year after discharge at least 50% of survivors are non-smokers, exercise regularly and have a BMI < 30 kg/m²; these should be demonstrated by clinical audit data no more than 12 months old.</p>
	<p>Waiting time goal:</p> <ul style="list-style-type: none"> - referral by GP to specialist assessment/consultant appointment: 2 weeks maximum - prompt investigation and, for those for whom it is indicated, revascularisation within 3 months of the decision to operate. 				

Ambulance trusts: milestones and goal

	Health promotion	Primary care	Heart attack (AMI & ACS)	Stable angina	Revascularisation	Heart failure	Rehabilitation
October 2000			The ambulance service has an effective means for setting service clinical standards ¹ for common conditions. The ambulance service has a systematic approach to determining whether agreed clinical standards are being met.				
April 2001			The ambulance service has an agreed service-wide protocol for the management of suspected AMI.				
April 2002			The ambulance service has clinical audit data no more than 12 months old that describe all the relevant items listed in the AMI chapter.				
NSF goal			Every ambulance service should offer complete and correct packages of audited effective interventions to all people assessed as having a suspected AMI, demonstrated by clinical audit data no more than 12 months old.				

Where national standards exist they should be included as part of the locally agreed hospital-wide standards. Over time, ambulance services, hospitals and clinicians will be expected to participate in national audits.

3.0 Local delivery

- **wide ownership of standards**
- **key elements of delivery**
- **preparing for implementation**
- **national and regional systems to support local implementation**

- 3.1 This NSF provides local health communities with a sound evidence base for action, together with standards and suggested service models. Local health communities need to translate the national standards and service models into local delivery plans, which should spell out clearly what has to be done at local level to implement the NSF.
- 3.2 Local NHS organisations are ultimately responsible for ensuring the implementation of these national standards and service models. Their strategies for implementation must be reflected in Health Improvement Programmes and underpin commissioning agreements. This means that the milestones set will be firmly performance-assessed by Regional Offices in order to ensure delivery of an overall national framework of high quality CHD services.
- 3.3 This section concentrates on local delivery by the NHS. The purpose is to improve health, reduce inequalities and raise the quality of care. Local delivery will require systematic and sustained system changes, harnessing existing skills and capabilities and developing new ones, and sharing learning across and between organisations. Strong leadership, with the clear commitment of managers, clinicians and other practitioners, a determination to target resources and a readiness to promote learning from other organisations, will be essential to secure and sustain change.
- 3.4 Change requires the time, effort and energy of already hard-pressed and committed staff. The Government will provide the NHS with five national programmes of support for local action: practical tools outlined in Section 5 will help staff achieve the standards of care that they, the Government and most importantly the public, expect.
- 3.5 These changes will need:
- ownership of the guiding values and standards set out in the NSFs
 - shared understanding within and across agencies and stakeholder groups of the priorities for action
 - involvement of patients, users and carers who provide a unique and indispensable perspective on services
 - involvement of staff in shaping services and planning change
 - incentives for individuals and organisations to change practice, perspectives and attitudes

- effectively targeted resources which lever change as well as fund additional services
- strong leadership and co-ordination, to drive forward and sustain change with clear commitment from both clinicians and managers
- a sharp focus on delivering improvements for local communities and individuals through the delivery of immediate priorities and initial milestones.

3.6 This section sets out what has to be done for dependable local delivery of the NSF standards and service models. It includes:

- who is to take local action – this involves each HA identifying the key stakeholders: local NHS organisations and partner agencies including LAs and the voluntary sector
- establishing a local implementation team – this will include all key local players, have a named operational lead, and have explicit accountability arrangements
- creating local networks of cardiac care – to agree and use common referral criteria, treatment protocols and quality improvement processes
- how the NSF can be delivered – key elements of local delivery plans: identifying service developments, organisational and systems development, and professional and personal development
- Health Improvement Programmes – specifically the inclusion of the CHD strategy and key elements of the delivery plans in the HImP, in line with the National Priorities Guidance
- commissioning services – a major part of the responsibility for ensuring the effectiveness of this NSF lies with those who commission CHD services, with the development of long term service agreements
- clinical governance – the mechanism through which NHS organisations will be expected to deliver improved quality of services
- preparing for implementation – five phases
- regional and national support for implementation – through regional CHD implementation teams, through five national programmes of support for local action, and through a National Coronary Heart Disease Implementation Group.
- a summary timetable for action.

Local action

3.7 Locally, every HA should make contact with all local NHS organisations and partner agencies to establish a local implementation team. This will work on behalf of the local health community with members representing relevant stakeholders, including users and carers.

Local implementation teams

3.8 The local implementation team's roles include:

- identifying key local players in implementing the NSF
- building an understanding of the guiding values and principles of the NSF
- ensuring the local implementation team has a named operational lead, with a clear remit and explicit accountability arrangements
- taking forward work that is currently underway to assess readiness and prepare for implementation
- mapping the whole CHD system for patients who live locally
- assessing the needs of each organisation for organisational and personal development; and agreeing a development strategy
- reviewing local performance data and identifying local priorities for service developments to meet the requirements of the NSF
- assessing the most significant local pressures and gaps, including workforce, information and leadership
- developing the CHD component of the HImP, which provides the framework for implementation
- producing the local delivery plan, which should be integrated within the overall HImP, be consistent with the development plan for clinical governance, and be reflected within the Service and Financial Frameworks and local communications strategies
- planning and co-ordinating local implementation
- ensuring effective reporting of local progress publicly through such means as annual business plans and annual reports.

3.9 Each local NHS organisation should identify a board member who will be responsible for ensuring that their organisation delivers its agreed contribution towards implementation of this NSF. Partner agencies may also wish to identify an individual with a lead responsibility.

Local networks of cardiac care

3.10 In addition, PCGs/PCTs, NHS Trusts (including ambulance Trusts and tertiary centres) and HAs should come together to form a local network of cardiac care. It will agree and then use common referral criteria, treatment protocols and quality improvement processes. The geographical boundaries of these networks will typically cover more than one health authority area and relate to patients referred to particular specialist centres. They will generally match the boundaries of the HAs whose populations are served by referral centres. The practical implications of this will need to be considered by the relevant parties in some detail. This is particularly so where there are several Trusts providing cardiac services in close proximity to each other.

Key elements of delivery plans

Three key elements of NSF delivery are:

- 1 identifying service developments – what needs to be done differently?
 - 2 organisational and systems development – how will the service developments be delivered?
 - 3 professional and personal development – what skills are needed and who needs them?
-

- 3.11 These provide a broad structure through which implementation activity can be planned, effected and supported. These elements are interdependent and a sustainable programme will need to address all three in parallel. Ensuring capacity to deliver the organisational systems and personal development will need to be underpinned by programmes of education and training where appropriate. As well as having appropriate clinical skills, increasingly clinical teams need to be skilled in information technology and in organisational development.
- 3.12 For each of the three elements a development plan should be drawn up to identify the current position, the future position, and the resources and timetable for getting there. In doing so delivery plans should consider:
- barriers to implementation in each relevant setting
 - which approaches to changing behaviour should be adopted
 - how the various approaches can be effectively co-ordinated (e.g. developing a primary care support unit for each HImP and for each PCG/PCT that brings together audit, education, facilitation, IT support and prescribing support)
 - the tools that would help in delivering effective methods of behaviour change (e.g. centrally commissioned audit and educational packages, public information campaigns – see Section 5).
- 3.13 A major challenge at every level and in every organisation is to improve the co-ordination of people's efforts. It is necessary to look for collaboration and co-operation between agencies and organisations.

1 Identifying service developments

Every organisation will need to consider carefully what changes are needed to improve its services in line with the NSF and with National Priorities Guidance. The HImPs, together with long term service agreements, provide the local framework for recording decisions that will need to be made. A systematic approach to service development will be needed to meet the standards in the NSF for ensuring continuing improvement.

2 Organisational and systems developments

This element of a local delivery plan is designed to ensure organisational fitness for improving quality and implementing change. Examples of organisational systems which a local delivery plan will need to address include user and carer involvement, care programmes, partnership working, clinical governance, arrangements for continuing professional development, recruitment and retention, information system development, business planning, monitoring and evaluation, and communications.

3 Professional and personal development

Another key to delivery is an assessment of the workforce to ensure that current capability is recognised, and shortfalls in skills tackled. A whole-system approach to the workforce is needed through the local arrangements for workforce planning overseen by local education and training consortia, which Regional Offices have a responsibility to performance manage.

- 3.14 To achieve the basic requirement of clinical governance, each local employer should have in place training and development plans for the majority of health professionals by April 2000, including the leadership and management capacity to deliver the changes.
- 3.15 All NHS organisations that are contributing to delivery of the HImP and the local delivery plan will need to:
- assess the workforce implications of new service developments
 - map the skills required
 - identify the skills gaps in their current workforce
 - put in place action to ensure that newly qualified and existing staff are in a position to deliver quality services.
- 3.16 Effective services for CHD require a well-educated and appropriately trained workforce at all levels. This includes a commitment to lifelong learning and personal development alongside a focus on specific skill areas and an understanding of whole system working. Work on specific education and training priorities has been undertaken nationally as part of workforce planning. Each local delivery strategy will need to maximise existing skills and take account of gaps and overlaps in the current local workforce.
- 3.17 Education and training consortia have a key role in ensuring local employers can access the education and training provision that is needed for their staff. Consortia provide the opportunity for local employers to consider what will be needed to deliver the NSF locally.

Health Improvement Programmes

- 3.18 Each HA, working with its local health community, will need to prepare for delivery of the NSF within the context of the HImP and the National Priorities Guidance.
- 3.19 The HImP will set out overall local action over a wide range of services. However, local delivery plans for the CHD NSF will be a key element of every local HImP. The timescale for achievement will vary for each health community, as a result of the extent of service change and resources required. PCGs/PCTs and primary care teams will be expected to work with Trusts, HAs and other stakeholders to develop the local delivery plans for this NSF. LAs and others will have important contributions to make in handling the wider determinants of ill-health as set out in *Saving Lives: Our Healthier Nation*. All these plans should form part of local HImPs. HImPs should include a description of the action that is being taken to ensure that all national minimum milestones are reached. They should also include a description of the local arrangements for primary care support.

Commissioning services

- 3.20 A major part of the responsibility for ensuring the effectiveness of this NSF lies with those who commission CHD services.
- 3.21 PCGs/PCTs are responsible for commissioning most services for CHD (including revascularisation). However, PCGs/PCTs may choose to act collectively or to delegate the commissioning of some CHD services to their local HA or seek to have some elements provided under the regional specialised service commissioning arrangements.
- 3.22 The guidance HSC 1998/198 *Commissioning Services in the New NHS: 1999/2000* specified that national priorities for commissioning specialised services in 1999/2000 would include the specialised services which come within the remit of the NSFs for mental health and CHD. A small proportion of specialised services for CHD are clearly in the “specialised services” category. Central to the Regional Office role is establishing the arrangements for commissioning such specialised services. These are needed where one specialised centre covers the population of a number of health authorities. Regional Offices are accountable for ensuring that effective arrangements for commissioning these services are established, and they will ensure clear quality control and assurance mechanisms are in place while bureaucracy is minimised.
- 3.23 In producing this NSF, account has been taken of the whole spectrum of CHD including diagnosis, presentation in primary care, secondary care, emergency admissions and transport issues. Within that spectrum, only a very small number of CHD service elements have been identified for definite commissioning under the arrangements for specialised services. These are:

- cardiothoracic transplantation, for those with end-stage heart failure. This service is provided from eight designated units in England. Regional Offices have a responsibility to ensure that non-designated units do not undertake this treatment. The National Specialist Commissioning Advisory Group (NSCAG) has commissioned a study to determine the most clinically and cost-effective configuration of cardiothoracic transplant units in England. Regional Offices have been asked to support the existing commissioning arrangements until such time as any agreed configuration has been established
- complex electrophysiology, including implantable defibrillators: complex electrophysiology services are required for the investigation and management of patients with complex arrhythmia.

3.24 Whatever commissioning mechanism is selected, long term service agreements (LTSAs) will be appropriate in many cases. They will enable a sustained programme of development to be carried through. The LTSAs will need to take into account the actions necessary to deliver this NSF and will be able to take advantage of the more flexible arrangements, including pooled budgets, lead commissioning and integrated provision following the passage of the Health Act 1999.

Clinical governance

3.25 Clinical governance is the mechanism through which NHS organisations are expected to assure and improve the quality of health care they deliver. It offers a systematic approach to improving clinical services.

3.26 Guidance issued in March 1999 (HSC 1999/065) describes the development of clinical governance over the coming years and sets out the first practical steps that NHS organisations must take toward implementation. Quality of care is determined not only by the interaction between clinician and patient, but also by the organisation and the environment in which care is delivered.

3.27 Clinical governance development plans, based on a baseline assessment of capability and capacity, will identify how an organisation intends to put clinical governance arrangements in place. The plans should identify areas in which the organisation will concentrate its efforts in the first year of implementation. The clinical governance arrangements for responding to the CHD NSF should be clearly identified within the local delivery plan and should be consistent with the organisation's development plan for clinical governance.

3.28 Equally, the various clinical guidelines, treatment protocols and audit tools being developed for this NSF will provide a framework through which all staff involved in the management of CHD will be able to demonstrate, possibly for the first time, the quality of service they are providing. This will enable them to fulfil clinical governance criteria and other requirements, such as revalidation.

3.29 The approaches to assessing and improving the quality of care set out in this NSF are examples of the systems that PCGs, PCTs and NHS Trusts will be expected to put in place as part of clinical governance. The Commission for Health Improvement will be a

further source of advice on the development of clinical governance through its national leadership role and in highlighting and disseminating to the NHS examples of best practice.

Preparing for implementation

- 3.30 The *Emerging Findings* report, published in November 1998, set out the context for the NSF and outlined the action which health authorities working with their partners needed to undertake. This NSF confirms what is to be delivered locally.
- 3.31 As a guide to the specific action which is needed, preparation for implementation through the issuing of a local delivery plan can be divided into the following phases:
- laying the organisational groundwork for the development of the NSF delivery strategy, ensuring clear accountability, roles and responsibilities
 - establishing local arrangements for delivery through the local implementation team
 - identifying priorities for service development to meet the NSF standards along with any organisational and personal development required to underpin effective and efficient delivery
 - ensuring organisational fitness to deliver the NSF through a “whole system” approach, particularly through effective clinical governance
 - producing a professional development strategy.
- 3.32 HAs will lead on these key areas for delivery, with engagement of all local players. A table setting out these key local tasks and responsibilities is shown in the annex to this section on page 72.
- 3.33 A successful and comprehensive strategy for delivery will be characterised by:
- an integrated approach to service, organisational and professional development
 - robust and sustainable mechanisms for implementing the NSF
 - clear delivery outcomes and value for money
 - being action-orientated, with a sharp focus on the immediate priorities
 - being supported and understood by all stakeholders
 - engaging Primary Care
 - promoting and supporting leadership and management development
 - delivering through partnerships
 - ensuring effective service networks, particularly local networks of cardiac care.

Regional and national support for implementation

3.34 The following regional and national arrangements are being put in place to support local delivery:

Regional action

3.35 Local delivery will be co-ordinated by Regional Offices of the NHS Executive. Each Regional Office will:

- identify a board level Director with responsibility for ensuring delivery of this NSF and monitoring progress
- establish a regional focus on CHD through a regional CHD implementation team or a comparable approach
- set out a clear description of the region's arrangements for programme management, ensuring understanding and ownership, harnessing local expertise, and identifying champions
- ensure that all local health communities and all key players are properly involved
- agree a programme of development with each local health community
- oversee commissioning arrangements for those parts of the services to be provided under the specialised service arrangements
- implement a system of performance monitoring and management.

National action

- **five national programmes of support for local action** will underpin implementation: financial resources; workforce planning, education and training; research and development; clinical decision support systems; and information strategy. Further details are in Section 5.
- **a National Coronary Heart Disease Implementation Group** will oversee national progress towards the standards, milestones and goals. It will take the lead in driving forward progress with the NSF, ensuring delivery of the immediate priorities and milestones, and ensuring progress is made towards achieving the goals. Support will be offered in ensuring progress is made on each of the five national programmes underpinning implementation (see section 5). It will also take the lead in ensuring the NSF is kept up to date.

3.36 Arrangements will be made to help co-ordinate programmes of CHD-related work undertaken by a number of bodies such as NICE, CHI and the NHS Information Authority, as well as the Departmental and NHS research programmes. This NSF will make an important contribution to the overall strategy set out in *Saving Lives: Our Healthier Nation* to reduce the burden of CHD and stroke, and there will be close co-ordination between the implementation of the NSF and the wider programme of work to follow up the Public Health White Paper.

Timetable for action

Key local delivery dates

- 3.37 The tables at the end of section 2 on pages 57 to 60 summarise the milestones relevant to each part of the NHS, together with dates for implementation. The table at the end of Section 4 summarises the CHD performance indicators for each part of this NSF.
- 3.38 The early milestones and immediate priorities identify those areas where rapid progress is expected. To prepare to implement these, comprehensive local delivery plans for implementing this NSF should be in place and agreed by all the relevant local players by October 2000.

In order to make this happen:

- local health communities will need to translate the national standards and service models into local delivery plans, through local implementation teams
- local delivery plans should:
 - spell out what has to be done locally
 - be consistent with evidence of effectiveness and any relevant national guidelines, with involvement from local networks of cardiac care
 - be reflected in HImPs
- there will be national and regional systems and strategies to support local implementation
- there will be a National CHD Implementation Group, providing overall leadership for the NSF
- Regional Offices will monitor performance and work with the NHS locally to ensure good progress.

Conclusions

- 3.39 The NSF represents an ambitious change agenda, driving up quality and tackling variations and inconsistencies in present services.
- 3.40 Effective local delivery plans, with the ownership and commitment of all local partners, will be essential if local milestones are to be achieved. Regional Offices will play a key role in monitoring and supporting delivery.

Annex

Laying the foundations for delivery

Key Areas for Delivery	Health Authorities to lead with engagement of all local players
<p>1 Laying the organisational groundwork for the development of the NSF delivery strategy.</p>	<ul style="list-style-type: none"> ● Develop NSF communication plan to gain commitment of members of the local health community (may want to name them) with initial communications having been undertaken. ● Gain an understanding of the need for a ‘whole health community’ approach with explicit commitment of accountable officers. ● Agree joint timetable and process to prepare for implementation.
<p>2 Establishing local arrangements for delivery through the local implementation team.</p>	<ul style="list-style-type: none"> ● Establish fully functional implementation team working on behalf of the local health community. ● Ensure team has recognition and support of local community (key players), local politicians, chief officers, clinicians, senior managers, and staff. ● Ensure team has named operational lead(s), clear remit and accountability and adequate information (including needs assessment) on which to begin to develop a local strategy for Coronary Heart Disease designed to meet the requirements of the NSF.
<p>3 Identifying priorities for service development to meet the NSF standards along with any organisational and personal development required to underpin effective and efficient delivery.</p>	<ul style="list-style-type: none"> ● Ensure a shared understanding of the requirements of the NSF, communicated widely within the local health community. This should include a plan for public education. ● Ensure a factual, shared understanding of current position including; range of local services, total allocation of resources, and assessment of local need. ● Address requirements and local needs with an agreed process for prioritising service developments to meet these gaps. This will include the perceived needs for capital developments. ● Identify clear and shared view of the priorities to be tackled to address the gaps and their likely cost that have local community commitment and accountable officers support.
<p>4 Ensuring organisational fitness to deliver the NSF through a “whole system” approach.</p>	<ul style="list-style-type: none"> ● Gain comprehensive understanding of the ‘whole system’ organisational and management arrangements that will be needed to implement the priorities for service development. ● Share agreement of an organisational development strategy that addresses the gaps between current and future arrangements, to overcome obstacles and take advantage of opportunities. ● Agree priorities for organisational development to address the gaps and their likely costs to be agreed in principle with accountable officers.
<p>5 Producing a professional development strategy.</p>	<ul style="list-style-type: none"> ● Identify leadership, professional, clinical and managerial capability and capacity. ● Address gaps and overlaps in the system. ● Implement continuing professional development: plans for programmes aimed at meeting the development needs of individual health professionals, to deliver the local service priorities.

4.0 Ensuring progress

- **assessing progress**
- **managing performance**

Introduction

- 4.1 *The new NHS* made a commitment to an NHS which will deliver high quality care and reduce variations in performance, securing better health for the population and closing the health gap. Efficiency remains important, but there will be a new, complementary focus on the quality and outcome of health care.
- 4.2 The *NHS Performance Assessment Framework* (PAF), published in April 1999, provides a broad basis for the NHS to plan and assess its work. It has six areas in which NHS organisations should review their performance, and seek out and implement good practice. Each area is populated with performance indicators. An overview of the PAF areas is outlined in Table 1. Performance indicators have been developed for CHD.
- 4.3 Each HA will make an annual performance agreement with its Regional Office, covering all the key objectives of the HA for the year, and incorporating the plans set out in the Service and Financial Framework. Annual accountability agreements between each HA and its PCGs/PCTs will contain key targets, objectives and standards for service delivery, consistent with national priorities and the local Health Improvement Programme. Long term service agreements between HAs, PCGs/PCTs, NHS Trusts and other partners will include jointly owned targets and measures of performance. Commitments to progress on the standards and milestones in this NSF will be an important strand of all these performance agreements.
- 4.4 LAs have an important contribution to make in particular to Standards One and Two of the NSF on reducing heart disease in the population. Their overall performance is subject to the *Best Value* regime.

Table 1 The NHS Performance Assessment Framework

Areas	Aspects of performance
Health Improvement	The overall health of populations, reflecting social and environmental factors and individual behaviour as well as care provided by the NHS and other agencies
Fair access	The fairness of the provision of services in relation to need on various dimensions: <ul style="list-style-type: none"> ● geographical ● socio-economic ● demographic (age, ethnicity, gender) ● care groups
Effective delivery of appropriate healthcare	The extent to which services are: <ul style="list-style-type: none"> ● clinically effective ● appropriate to need ● timely ● in line with agreed standards ● provided according to best practice models of organisation ● delivered by appropriately trained and educated staff
Efficiency	The extent to which the NHS provides efficient services including: <ul style="list-style-type: none"> ● cost per unit of care/outcome ● length of stay in hospital ● labour productivity
Patient/carer experience	Service users' and carers' perceptions of the delivery of services including: <ul style="list-style-type: none"> ● responsiveness to individual needs and preferences ● the skill, care and continuity of service provision ● service users' and carers' involvement, information and choice ● waiting times and accessibility ● the physical environment, organisation and courtesy of administrative arrangements
Health outcomes of NHS care	NHS success in using its resources to: <ul style="list-style-type: none"> ● reduce levels of risk factors ● reduce levels of disease, impairment and complications of treatment ● improve quality of life ● reduce premature death

Developing performance indicators for CHD: aim and rationale

- 4.5 In the past, NHS performance indicators have been criticised for focusing on the volume and cost of activity without giving sufficient emphasis on the quality, appropriateness or effectiveness of care. Developing indicators across the six areas of the Performance Assessment Framework overcomes this weakness.
- 4.6 The External Reference Group (ERG), working with the National Centre for Health Outcomes Development (NCHOD) and the Department of Health, has developed clinical audit criteria and performance indicators specifically for this NSF. Their aim has been to identify indicators that will be of real practical value. Conscious that the NSF provides a framework of care for the next ten years, the ERG and the NCHOD have not been constrained by present limitations of data availability. The indicators that they have identified are intended to influence the implementation of the information strategy and the development of the electronic patient record (EPR) because, wherever possible, the indicators should be derivable from data that is collected as part of the process of providing care, rather than requiring a separate data collection exercise.
- 4.7 A wide range of indicators have been identified but, as their name implies, performance indicators are indicators and not absolute measures of access and quality of care. Together, the performance indicators will generate information that will be of use to a variety of different audiences including:
- patients and the public
 - clinicians
 - service managers
 - NHS and NHS Executive performance managers
 - quality assessment staff
 - information systems developers
 - the Government.
- 4.8 A particular innovation is that many of the new indicators describe the use of interventions that high quality research has shown to be effective in specific groups of patients. These indicators will generate information that is a proxy for the health outcomes of health care. They will also act as a practical guide to service providers, helping them to identify how best to target their effort for improving the quality of care.

Developing CHD performance indicators

- 4.9 A set of High Level Performance Indicators (HLPIs) has been mapped to the six areas of the Performance Assessment Framework, and covers a wide range of services, including some indicators relevant to CHD. This NSF now proposes some further indicators across the six areas of the PAF, for use in performance management, both nationally and locally. These indicators will be reflected in the HLPI set.
- 4.10 These will be collated centrally and published annually. The intention is to use the indicators set out for each standard to ensure that progress is being made towards achieving the milestones and to facilitate discussion locally about the issues to be addressed.
- 4.11 The criteria for the new high level performance indicators have been derived from the consultation undertaken to develop the performance frameworks for health and social care service, and from the work of the External Reference Group. Indicators should:
- be specific, robust, responsive, measurable and fit for the purpose
 - be attributable – that is, relate to the target activity for which the standard is set
 - be evidence-based
 - be understandable by professionals, service users and carers
 - be consistent with the performance frameworks set out by the Government for health and social care services
 - cover a range of input, process and outcome measures
 - avoid perverse incentives
 - be usable and timely
 - be supported by existing and future data sets.
- 4.12 The table at the end of this section on pages 81 and 82 outlines the CHD indicators.

Monitoring progress on the immediate priorities

- 4.13 The Government expects rapid improvement in the following areas:
- by April 2001, Health Authorities will introduce specialist smoking cessation clinics, helping 150,000 people
 - by April 2001, there should be 50 rapid-access chest pain clinics, to help ensure that people who develop new symptoms that their GP thinks might be due to angina can be assessed by a specialist within two weeks of referral. There should be 100 rapid-access chest pain clinics by April 2002 and nationwide roll-out thereafter
 - by April 2001, reducing call-to-needle time for thrombolysis for heart attacks (the time from the initial call is made until clot-dissolving thrombolytic therapy begins); this involves:
 - improving ambulance response times so that 75% of category A calls receive a response within 8 minutes

- increasing to at least 75% the proportion of A&E departments able to provide thrombolysis

leading to

75% of eligible patients receiving thrombolysis within 30 minutes of hospital arrival by April 2002 and within 20 minutes by April 2003

- by April 2002, improving the use of effective medicines after heart attack (especially use of aspirin, beta-blockers and statins) so that 80-90% of people discharged from hospital following a heart attack will be prescribed these drugs
- by April 2002, increasing the total number of revascularisation procedures, providing an extra 3,000
- by October 2000, beginning to modernise services for CHD by delivering the first milestones of the NSF on systematic approaches to delivery of care.

4.14 Clinical Chapter 1 sets out the proposed indicators for smoking cessation: work on these is already in hand in response to *Saving Lives: Our Healthier Nation*. Performance on the second priority will be monitored by regional offices and performance indicators for the third and fourth priorities will be based on criteria identified in Clinical Chapter 3. The Royal College of Physicians will shortly be publishing a report describing detailed data definitions for the relevant indicators. NICE will be commissioning a national audit of the care of people with suspected AMI (heart attack). The increase in numbers of revascularisation procedures will be monitored nationally through Regional Offices. And Regional Offices will be assessing progress with each of the early milestones, the introduction of rapid access chest pain clinics, and thrombolysis. Overall progress with these immediate priorities will be monitored by the National CHD Implementation Group.

Monitoring progress locally

4.15 Only a small number of indicators will be collated, analysed, interpreted and published nationally. However, local health communities will need to assess performance (especially quality of care) using a wider range of indicators across the six areas of the PAF. The clinical chapters of this NSF propose criteria that can be used locally for each of the standards and service models. Many of these relate to inputs and processes, where health communities and their regions will need to assure early progress, and where data can be analysed at a local level. Outcome measures can, on the whole, only be assessed regionally or nationally, where the numbers will be large enough to show trends over time.

Commission for Health Improvement

- 4.16 Overall progress on implementing the NSF will be reviewed by the Commission for Health Improvement (CHI). CHI will conduct a rolling programme of reviews, visiting every NHS Trust and Primary Care Trust over a period of 3-4 years. The reviews will look for evidence that clinical governance arrangements are working, and that NSFs and NICE guidance are being implemented. The focus will be on both processes and outcomes.
- 4.17 To support the local review visits and to inform the wider work on NSFs, it is envisaged that CHI will conduct national ‘sample’ studies of the implementation of NSFs, to assess progress and provide feedback on implementation. CHI’s national studies and local reviews on NSFs will be closely co-ordinated with the Audit Commission’s programme of value-for-money studies. The two Commissions are expected to agree a joint programme of national work and to conduct the national and local reviews in a way that makes best use of their combined resources and expertise.
- 4.18 CHI started its work in November 1999 and begins its first full year’s work programme in 2000. Further information on the Commission and the ways in which it will work with the NHS will be made available at a later stage.

Performance monitoring in the longer term

- 4.19 The Information for Health Strategy anticipates that data will be held in electronic patient records coded in clinical terms, and structured in a way that allows access to relevant parts of the record. Electronic messages will be defined to ensure accurate transmission and receipt of information. This structure and consistency of information will allow extraction of data and analysis for several purposes. In particular it will support audit of the process and outcome of care and much of the information required for the indicators in the NHS Performance Assessment Framework will be collectable in this way. The electronic record will therefore provide the source of detailed clinical information to monitor how well services are delivered.
- 4.20 For the information to be really valuable, however, it needs to be comparable with benchmarks and reference sources. If this is to be achieved, then the clinical record needs to be completed accurately and consistently, and this will require considerable education and organisational development work with clinicians.
- 4.21 Another major task will be the resolution of the practical difficulties in extracting and using the information. Although the information may be held in electronic format, it may be difficult to extract the relevant data items and analyse them consistently. Many units do not yet have the necessary skills or resources to exploit the information potentially available to them, and even if they do, they cannot be sure that they are extracting and analysing data consistently with other units. To enable local units to have comparable benchmarking information, and for the NHS Executive to have reliable monitoring information, a nationally agreed way of extracting and analysing data from electronic patient records is required.

- 4.22 A “Healthcare Framework”, based on sets of standard groupings of records, is being developed to resolve these issues, and support the analyses required for the NHS Performance Assessment Framework. In time, this will be a potential tool to support performance assessment at a local level.
- 4.23 Two basic types of groups can be defined:
- *groupings of patients with conditions* (with similar diagnoses, levels of severity or other characteristics – Health Benefit Groups) e.g. patients with uncomplicated AMI
 - *groupings of interventions* (of similar cost and clinical meaning – Healthcare Resource Groups) e.g. coronary artery bypass grafts.
- 4.24 These two types of groups could then be combined in a matrix to form a Healthcare Framework in which the conditions of groups of people can be mapped to the interventions that they have (or should have) received and linked to appropriate indicators of performance, as shown in the table below.

Characteristics of a model Healthcare Framework

	Prevention & Health Promotion	Investigation & Diagnosis	Clinical Management	Continuing Care	Outcome indicators
At risk	Matrix 1				
Presentation		Matrix 2			
Confirmed disease			Matrix 3		
Continued consequences of disease				Matrix 4	
Structure & process indicators					

- 4.25 This Healthcare Framework will support audit of the process and outcome of care. The information it provides will assist the construction of indicators across the areas of the NHS Performance Assessment Framework.
- fair access (*have all of those eligible for treatment received care?*)
 - effective delivery of appropriate care (*is the intervention provided appropriate for that condition?*)

- efficiency (*does the intervention represent good value for money?*) as well as the outcomes of the delivery of care to specific types of individuals
- outcomes of health care (*is the outcome for a particular condition the one expected?*)
- patient carer experience (*are the patients with specific conditions content with their experience of the service?*).

4.26 Some of the components of this Healthcare Framework are already available, and others are in production. However, the lack of widely available electronic patient records and the difficulties of linking data across the primary/secondary care boundary limit its full application. The production of example data from published surveys is, however, still helpful to local commissioners and providers in giving a systematic picture of the needs of the population, and the provision of care. Data for the CHD matrix are in the process of being compiled from published sources.

4.27 Making progress on these issues will be one of the key challenges for the implementation process.

Conclusion

4.28 The performance assessment arrangements are designed to ensure that progress in implementing the NSF can be clearly seen. Their aim is to help clinicians, managers, service users and the public track performance against the standards and milestones, compare performance across the health service, identify issues that need further work, and ensure through increased accountability that there is good progress in delivering the high quality services and improved health outcomes which are the aim of the NSF.

Coronary heart disease performance indicators

The CHD NSF proposes a range of indicators to be used at various levels of the organisation. The indicators detailed below would be used to assess performance at all levels up to and including the Department of Health. For an informed diagnosis of performance, a range of other indicators and data will be necessary. However, the CHD performance indicators will provide a starting point with the aim of providing a balanced view across the areas of performance.

There is a need to identify practical and robust indicators which can be produced and used in the near future, and more sophisticated indicators which will take longer to develop. The following table includes both categories with the latter category shown in *italics*.

	Primary prevention	Preventing CHD among those at high-risk	AMI and other acute coronary syndromes	Stable angina and revascularisation	Heart failure	Cardiac rehabilitation
Health improvement	<p>CHD mortality rates¹ by HA. Available annually from existing Public Health Common Data Set</p> <p>Additionally, once every ten years it will be possible to produce figures by socio-economic class in England and in each region. Uses national census data.</p>					
Fair access and effective delivery of appropriate health care	<p>Additional indicators of lifestyle:</p> <ul style="list-style-type: none"> - Smoking prevalence by age and sex in England and in each region (available annually from General Household Survey) - Prevalence of physical inactivity (from Health Survey for England) <p>Number and % of smokers using smoking cessation services.</p> <p>Number of smokers provided with free NRT.</p> <p>Number of smoking cessation services (i.e. specialist smoking cessation clinics and "intermediate interventions").</p> <p>Number of smokers using smoking cessation services who are still not smoking 4 weeks after quit date.</p>	<p>Number and % of practices in a PCC/PCT with a systematic approach to following up people with CHD. New collection from 2001/02.</p> <p>Number and proportion² of people aged 35 to 74 years with recognised CHD whose records document advice about use of aspirin.</p>	<p>Number and % of patients eligible for thrombolysis receiving it within 60 minutes of call for professional help ('call-to-needle time').</p> <p>Number and % of patients discharged from hospital with a diagnosis of AMI prescribed beta blocker.</p>	<p>Rate¹ of CABG/million population by HA and PCC/PCT. Can be produced annually from existing data (HES).</p> <p>Rate¹ of PTCA/million population by HA and PCC/PCT. As above.</p> <p>Rate¹ of angiography/million population by HA and PCC/PCT. As above.</p> <p>Number and proportion² of people aged 35 to 74 with recognised CHD whose records document advice about use of aspirin.</p> <p>Number and % of PCCs/PCTs in a region with PCC/PCT-wide protocols for specialist care agreed with local cardiologists.</p> <p>Number and proportion² of relevant Trusts with hospital-wide protocols for the investigation and management of people with suspected angina.</p> <p>Number and % of people who receive care within prevailing waiting time targets.</p>	<p>Admission rates¹ for heart failure by PCC/PCT and HA. Can be produced from existing data (HES).</p> <p>PI for palliative care – being developed for Calman-Hine cancer services.</p>	<p>Number and % of patients discharged from hospital after coronary revascularisation or AMI with documentation of arrangements for cardiac rehabilitation in discharge communication to GP. New collection from 2001/02.</p>

¹ Age standardised rate or age and sex standardised rate.

² The proportion is suitably standardised.

Coronary heart disease performance indicators

	Primary prevention	Preventing CHD among those at high-risk	AMI and other acute coronary syndromes	Stable angina and revascularisation	Heart failure	Cardiac rehabilitation
Efficiency³	<i>Cost per one-month-quitler of smoking cessation service by type of service.</i>		Reference costs for: AMI (HRG codes E11 and E12) Chest pain (E35 and E36) Cardiac arrest (E28) Pacemaker implant for AMI, heart failure or shock (E07)	Reference costs for: Angina (HRG codes E33 and E34) Angiography (E13 and E14) Coronary atherosclerosis (E22 and E23) CABG (E04) PTCA (E15 and E16) Available annually from existing data (Trust unit costs)	Reference costs for: Heart failure (HRG codes E18 and E19) Pacemaker implant (E07) Arrhythmia (E29 and E30) Cardiac valve procedures (E03)	
Patient/carer experience of the NHS	<i>Indicator from National CHD Survey of NHS Patients</i>					
Health outcome of NHS care		<i>Rate of cardiovascular events in people with a prior diagnosis of CHD, PVD, TIA or occlusive stroke.</i>	Proportion ¹ of people aged 35 to 74 years in a PCC/PCT and HA area with a diagnosis of AMI who die during their index admission to hospital. Can be produced from existing data (HES). ² Proportion ¹ of people aged 35 to 74 years in a PCC/PCT and HA area with a diagnosis of AMI who die in hospital within 30 days of their infarct. ² Proportion ¹ of people aged 35 to 74 years in a PCC/PCT and HA area with a diagnosis of AMI who die within 30 days of their infarct. ²	Number and % of people dying after CABG on PTCA before discharge from hospital. Can be produced annually from existing data (Hospital Episode Statistics). <i>Risk adjusted 30 day and one year mortality rates for CABG or PTCA by Trust.</i>		

¹ Age standardised rate or age and sex standardised rate.

² The proportion is suitably standardised.

³ Efficiency Measures for CHD services are being developed alongside the emerging Long Term Service Agreements, which will provide the data on the volume, cost and types of treatment being commissioned. As a first step, commissioners will be advised to make use of Reference Costs for inpatient procedures such as CABG and PTCA when drawing up LTSAs, examining the relative costs of this work when performed by different providers.

5.0 National support for local action

- **improving clinical and managerial practice to achieve change**
- **financial resources: revenue and capital**
- **workforce planning, and education and training**
- **research and development**
- **practical tools and clinical decision support systems**
- **information for health**

Introduction

5.1 Although successful implementation of this NSF will depend ultimately on the efforts of people planning and delivering services locally, there is much that can be done nationally to support local implementation. This Section sets out the national support that is currently available or being developed, and sets it in the context of the lessons derived from the evidence about changing professional and managerial practice in health and related services.

Managing change: using evidence

5.2 One of the key opportunities and challenges is to use the increasing body of evidence about how to improve quality of care through organisational change and to influence professional behaviour at every level. Much of this evidence is well summarised in an Effective Health Care Bulletin¹. There is also a substantial body of literature to guide effective managerial practice.

Five underpinning national programmes

5.3 There are five national programmes that will underpin the implementation of this CHD NSF:

A finance: revenue and capital

B human resources: workforce planning, and education and training

C research and development

- improving the evidence base for NHS care by funding research and development that is likely to be of practical importance to the NHS
- improving access to research findings

D practical tools and clinical decision support systems

E information for health

¹ NHS Centre for Reviews and Dissemination. Getting Evidence into Practice. Effective Health Care 1999; 5 (1).

Underpinning programmes

A Financial resources: revenue and capital

- 5.4 People working locally need adequate resources if they are to deliver high-quality accessible services. The Government has provided resources for implementing the NSF and for reducing inequalities by:
- the increase of £18 billion in NHS funding for England over three years announced in July 1998 following the first Comprehensive Spending Review. The next Spending Review will allocate further resources for the three year period beginning April 2001. These are the main sources of funding to implement this NSF, supporting improvements in primary and secondary care and funding increased prescribing of effective medicines, for example statins and antihypertensives. Local investment in CHD is a national priority
 - the Government has provided a specific allocation of £50m to increase the number of revascularisation procedures by 10% (approximately 3,000) over the next two years
 - additional funding in 2000-01 to support new rapid access clinics and begin to tackle long outpatient waits
 - working to develop a new formula for allocating NHS resources which better reflects the needs of the most disadvantaged communities
 - using £10 million capital from the NHS Modernisation Fund specifically to fund:
 - the purchase of equipment improving the treatment of life-threatening cardiac emergencies e.g. defibrillators for treating cardiac arrest
 - the purchase of equipment for diagnosing CHD e.g. echocardiography equipment that can be used to diagnose heart failure
 - funding the new Information Strategy for the NHS within which developing information tools to support the implementation of this NSF is an early priority
 - creating a Public Health Development Fund to tackle health inequalities. The Fund will principally support the four priority areas of the White Paper, *Saving Lives: Our Healthier Nation*, including CHD and stroke
 - funding will be made available in 2000-01 through the Health Improvement Programme Performance Scheme to encourage the implementation of this NSF through support for preventative and community-based initiatives in particular.
- 5.5 These resources will support the early implementation of the NSF including action on the immediate priorities and initial milestones, and speed of achievement depends on the availability of resources. The future speed of implementation will be shaped by this early progress, by the total resources available to the NHS, by further work on service re-engineering and workforce developments, and emerging evidence of cost effectiveness and rigorous performance management. This will be underpinned by the Government's commitment to give continued priority action on CHD.

B Human resources: workforce planning, education and training, and strengthened self-regulation**Workforce planning**

- 5.6 The Government has published a new national workforce strategy for the NHS, *Working Together*. This is a key underpinning strategy for the NSF. Its aims are to ensure that the NHS is served by a high quality workforce, in the right numbers, with the right skills and diversity, organised in the right way, to deliver the Government's objectives for health and social care. An important challenge is to ensure that equality of opportunity is integral to everything the NHS does – not only in service delivery but in how staff are treated and valued.
- 5.7 There are shortages of key groups of staff, e.g. nurses and perfusionists, who are vital to the successful implementation of this NSF. Action has already begun to reduce these shortages. For example, nurses' pay and working conditions have been improved and made more family-friendly; new senior nursing posts have been created that, at the same time as giving nurses more responsibility and more pay, will allow them to progress in their careers and to stay in clinical practice; and new courses have been set up to encourage trained nurses who have left nursing to return to the NHS.
- 5.8 The Specialty Workforce Advisory Group (SWAG) advises on the number of higher specialist trainees required in each specialty. This advice will be reviewed regularly. A substantial increase in consultant numbers over the next five years and beyond will be required to meet the needs of this NSF.
- 5.9 Consultant numbers in the sub-specialties are taken into account as part of national workforce planning for the main specialties. A proportion of training placements may be tailored for sub-specialty training with the agreement of Trusts, Postgraduate Deans and Specialty Training Committees and which are approved for such use by the Specialist Training Authority.
- 5.10 In primary care, plans are being developed for growth in General Medical Services (GMS) and Personal Medical Services (PMS), reflecting the continuing shift of care into a primary care setting. Alongside this, there are a number of recruitment and retention measures already in place to attract new doctors, nurses and other staff to primary care and to plan services creatively and flexibly to meet new ways of delivering services.

Education and training

- 5.11 The NSF will influence the education and training agenda and curricula content for all staff involved in the prevention and treatment of CHD. *Lifelong learning* is crucial to the delivery of this agenda in ensuring that staff have the relevant, contemporary skills and knowledge to deliver service requirements competently.
- 5.12 The Department of Health will work with organisations that commission and provide education to support the development of learning opportunities that promote this and other NSFs. These will include:
- *undergraduate medical education.* The standards and curriculum framework are set and monitored by the GMC. *Medical schools* set detailed curricula. Theoretical teaching takes place largely within the medical school and is provided by *university academic staff* while clinical teaching takes place largely in the NHS and is carried out by *NHS and university employed clinicians, GPs and other health professionals*
 - *postgraduate medical education.* Standards and curricula for post-graduate medical education for general practitioners are set by the *Joint Committee on Postgraduate Training for General Practice (JCPTGP)* and for specialists by the *Specialist Training Authority (STA)* in conjunction with the *medical Royal Colleges*. Postgraduate training is overseen and supervised by GPs and consultants working in the NHS and the overall delivery of training is managed by *postgraduate deans*
 - *non-medical education and training.* Education consortia commission pre-registration education and training for the non-medical professions from *higher education institutions (HEIs)*, who develop the curricula in partnership with the service and validate the courses. The appropriate *professional regulatory body* approves the course as a requirement of state registration. Post-registration education should be driven through a partnership between education consortia, HEIs and the professional and regulatory bodies
 - *Continuing Professional Development.* The approach set out in *Continuing Professional Development: Quality in the new NHS* (HSC 1999/154) refers to innovative approaches to continuing professional development such as multi-disciplinary team based learning across traditional professional and service boundaries. All health care professionals should have a personal development plan (PDP) to assess their development needs in the context of their area of clinical practice, with easily accessible learning resources, libraries and IT support
 - *leadership and management development.* Successful implementation of this NSF will depend on committed leadership and a focused management contribution to support the necessary changes. New initiatives are being developed to support leadership and management development across the NHS. These offer new opportunities for clinicians and managers to learn together. Nationally, opportunities are being developed by the *NHS Development Unit at the NHS Executive* (e.g. the Leadership Programme), and through *NHSP* (the Career Management Service for more junior managers).

- 5.13 With the emphasis on clinical governance, education providers need to design and deliver educational outcomes which focus on personal development planning and working in clinical teams. In support of this, a flexible framework of educational delivery will need to be developed with greater emphasis on distance and work based learning.
- 5.14 An example of a nationally available education resource for primary care (which would also be useful for nurses working in NHS Direct and the walk-in centres) is:

The British Heart Foundation Heart Save Project. This provides training designed to help primary care nurses implement structured care for the secondary prevention of CHD. Training includes: a) a three day course that enables nurses working within practice to deliver structured care in line with the Joint British Recommendations for Prevention of CHD (BHF Certificate awarded) and b) an additional two days to equip nurses to undertake the wider role of a specialist CHD nurse working in the context of PCGs/PCTs (30 CATS points at level 2).

The course curriculum includes: a) a practical session on assessing and prioritising care using the cardiac risk assessor computer programme/coronary prediction chart; b) organisational aspects of care, e.g. establishing a disease register, audit and evaluation, aids to implementation – protocols for either an opportunistic/nurse-led clinic approach, computer templates/monitoring cards/patient-held cards/reminder systems; c) new technologies in surgery and a review of current drug therapy; and d) effecting change at local level and in practices. The project also provides extra training for future course co-ordinators to deliver courses in their own PCG/PCT or HA.

Further information can be obtained from: Elaine Fullard, Sue Weston, and Steph Williams, BHF Heart Save Project, Division of Public Health & Primary Health Care, Institute of Health Sciences, Old Road, Headington, Oxford OX3 7LJ.
Tel: 01865 226975; fax: 01865 226739; email: heartsave@dphpc.ox.ac.uk

Strengthened professional self-regulation

- 5.15 Modern professional self-regulation is an important mechanism for raising standards and protecting the public and is central to dependable delivery of high quality standards. The statutory regulatory bodies provide guidance on the standards of conduct of healthcare professional staff. The General Medical Council (GMC) has set out the standards which are expected of all doctors in their guidance *Good Medical Practice* and *Maintaining Good Medical Practice*.
- 5.16 The Government is working with the statutory regulatory bodies to strengthen the effectiveness of professional self-regulation. The Health Act 1999 provides for the replacement of the United Kingdom Central Council for Nursing, Midwifery and Health Visiting (UKCC) and the four National Boards for Nursing with a new Nursing, Midwifery and Health Visiting Council. It also provides for the replacement of the Council for Professions Supplementary to Medicine (CPSM) with a new Health Professions Council. The Government is committed to initial consultation on the proposals for the new legislation, followed by statutory consultation on the draft Order with a report to Parliament on the outcome. In November 1999, the Department of Health issued the consultation document *Supporting Doctors, Protecting Patients*.
- 5.17 Recent changes in the self-regulation of the medical profession include:
- the GMC's introduction, in July 1997, of the Performance Procedures, which allow them to investigate allegations of seriously deficient performance. Previously, the GMC could only intervene where there was evidence of serious professional misconduct or serious mental or physical impairment. Similar procedures are proposed for the other healthcare professions
 - the development of proposals for the introduction of compulsory revalidation for all doctors. This will be underpinned by annual appraisal. In February 1999 the GMC decided that doctors' continued registration should be linked to the regular demonstration that they remain fit to practise in their chosen field. The GMC plans to issue a consultation document after May 2000 on proposals for the revalidation of all doctors. The precise mechanisms for revalidation have not yet been decided. However, it is certain that clinical audit will play some part. The audit systems to support the implementation of the NSF (see below) may therefore help many doctors assemble the sort of information about their clinical practice which is likely to be required by the GMC as part of the process of revalidation.

C Research and development

- 5.18 Resources alone are not enough to ensure the dependable delivery of high quality services. Considerable knowledge and skill are required to provide and deliver the right services to meet the needs of individuals and communities. Historically, in clinical practice much of this necessary knowledge has been grounded in clinical experience and the basic biological sciences. Increasingly, the importance of using evidence derived from valid, relevant clinical studies to guide practice is being recognised.
- 5.19 Many countries, including the UK, have invested in and undertaken high-quality research the findings of which have led to the identification of many effective methods for the prevention and treatment for CHD. The UK's contribution has been important internationally – for example, in identifying the link between smoking and heart disease, and in identifying the life-saving benefits of treatments such as aspirin, beta-blockers and clot-dissolving medicines. Information about current UK based CHD research programmes are given at Annex A at the end of this section on pages 105-110.
- 5.20 But the results of research undertaken in one country can be of relevance to clinical practice in another country. And research is of little value to patients and the public unless it is used to guide clinical practice and the development of health policy. It is therefore important that the NHS and its staff make the best possible use of valid, relevant research wherever it has been undertaken – in the UK or elsewhere.

Improving access to and the use of research findings

- 5.21 Traditionally, research findings are made available to clinicians by researchers publishing their findings in peer-reviewed academic journals. However, the publication of research findings in academic journals does not guarantee that they will be used to guide clinical practice. Indeed, internationally, the use of the results of research is often haphazard and inconsistent. One reason for this is the sheer volume of the medical literature. There have been more than two million bio-medical articles published in more than 25,000 different journals.
- 5.22 The task of identifying, reading and interpreting all the relevant articles in any field of health care is time-consuming and complex. It is no longer realistic to expect busy clinicians to be able to keep up-to-date by personally identifying and reading all the articles that might be relevant to their practice.
- 5.23 Well-conducted and well-presented systematic reviews can help by bringing together the results of all valid, relevant articles on a particular topic and summarising their results in a readily accessible way. As new research findings are constantly emerging, the conclusions of reviews can rapidly become outdated. It is both financially efficient and scientifically important that well-conducted systematic reviews are updated regularly.

5.24 Two valuable sources of updated reviews, both of which have been important sources of evidence for the development of this NSF are:

- *The Cochrane Collaboration* which prepares and maintains regularly updated reviews of randomised controlled trials. The Cochrane Collaboration has five review groups whose work is particularly relevant to cardiovascular disease and this NSF:
 - the Cochrane Tobacco and Addictions Group
 - the Cochrane Stroke Group
 - the Cochrane Peripheral Vascular Group
 - the newly formed Cochrane Heart Group
 - the Cochrane Effective Practice and Organisation of Care Group.

The updated reviews are published electronically in the Cochrane Library. The Cochrane Library also includes a database of controlled trials, a database of abstracts, reviews of effectiveness appraised by reviewers from the Centre for Review and Dissemination (see below) and details of how to contact relevant review groups. The Cochrane Library is available on the web at: www.cochrane.org/cochrane/cdsr.htm and from the publishers at: www.update-software.com. The UK Government is one of the Cochrane Collaboration's principal sources of funding.

- *Clinical Evidence*, which is a recently launched six-monthly, updated compendium of evidence of the effects of common clinical interventions. It is produced jointly by the BMJ Publishing Group and the American College of Physicians/American Society of Internal Medicine.

Based on up-to-date searches of the literature, it summarises the best available evidence and where there is no evidence, it says so. It addresses clinical questions identified by practising clinicians and classifies interventions as a) beneficial, b) likely to be beneficial, c) of unknown effectiveness, d) likely to be ineffective or harmful, and quantifies their effects on outcomes that matter to patients. Its contents are updated and expanded twice a year.

Its first edition includes sections on a number of topics relevant to the CHD NSF including acute myocardial infarction, unstable angina, secondary prevention of ischaemic cardiac events, primary prevention, changing patient behaviour and cardiovascular diseases in diabetes.

Contact: BMJ Clinical Evidence, BMJ Publishing Group, BMA House, Tavistock Square, London WC1H 9JR; website: www.evidence.org

5.25 Well-conducted, one-off reviews that are not updated can also be of use. However, inevitably users need to be aware that they can rapidly become out-of-date. Useful reviews and summaries of the evidence include those produced by:

- *The Centre for Reviews and Dissemination*, at York University. The Centre has been funded by the Department of Health to produce high quality research reviews and summaries published under the series titles *Effective Health Care Bulletins* and *Effectiveness Matters*. A list of their reviews which are relevant to this NSF are in Annex B on page 111. The internet address is: www.york.ac.uk/inst/crd/welcome.htm
- *Bandolier and ImpAct*. These monthly publications provide succinct and readable reviews of research findings and of research on methods of service delivery. They are produced for the NHS R&D Directorate. They are available electronically and on paper. Their internet address is: www.jr2.ox.ac.uk/Bandolier/

5.26 Advances in information technology have transformed the speed of searching, retrieving and transmitting data. Both these advances can be harnessed to improve the delivery of valid relevant information to those who need it, when they need it. The Government is investing in the development and application of such tools. For example:

- *The National Research Register*. This is a register of DH and NHS funded research. It is available now and can be a valuable resource for those planning and commissioning new research. It can be accessed online at: www.doh.gov.uk/research/nrr.htm
- *The National Co-ordinating Centre for Health Technology Assessment website*. The NCCHTA publishes a regularly updated website that lists the research it has commissioned, research priorities identified by the programme, and summaries and full reports of completed projects. Its website can be found at: www.hta.nhsweb.nhs.uk
- *The National electronic Library for Health (NeLH)*. In future, the NeLH will be important for both NHS staff and the public to help them identify valid, relevant research findings. A cardiac 'branch library' is currently being developed. Further details are provided on page 102 and from: www.nelh.nhs.uk

D Practical tools and clinical decision support systems

Getting evidence into practice

5.27 There are many managerial and organisational tools that can be used by clinicians and managers to introduce and sustain change. It is important that people are aware of what is available and how they can be used effectively. Some tools are more effective than others, and some work best in particular circumstances. Examples of specific methods of changing professional behaviour that have been shown to be effective include:

Clinical decision support

- printed or electronic prompts and reminders e.g. checklists and templates for secondary prevention of CHD. These are most effective when used as a decision is being taken e.g. during a consultation
- valid, well-presented guidelines supported by a planned programme of dissemination and implementation.

Audit and feedback

- audit and feedback has been shown to be effective, especially for improving prescribing and ordering tests.

Education

- educational outreach (i.e. education delivered to clinical teams at or near their place of work), for example, prescribing support teams
- interactive workshops and educational sessions are especially suited to identifying and overcoming barriers that are related to people's attitudes and skills. A practical example is given on page 87.

Management, organisation and systems

- organisational approaches such as continuous quality improvement
- aligning financial and other incentives with improving quality of care
- sharing good practice.

Involving patients

- patients' expectations are an important determinant of the outcome of a clinical consultation. Improving the public's access to clinically relevant information can help improve the quality of care.

5.28 Some approaches to supporting change have an uncertain or limited effect when used in isolation. They can, however, be effective when used as one component of a planned programme of implementation. These include:

- guidelines *without* a planned programme of dissemination and implementation
- dissemination of educational materials
- local opinion leaders
- passive dissemination of information.

- 5.29 The NHS has used some of these tools for many years e.g. clinical audit. But some effective methods for changing clinical practice have not yet been introduced systematically e.g. the NHS currently makes little use of patient-specific prompts and reminders or of educational outreach/facilitation.

Implementation plans

- 5.30 National, regional and local implementation plans should lead to the widespread co-ordinated use of effective tools for changing behaviour. In many parts of the country there is scope to improve the co-ordination of the work undertaken by those responsible for clinical audit, education, continuing professional development, prescribing support and IT support.
- 5.31 Further details of the evidence about getting evidence into practice can be found in an Effective Health Care Bulletin (see Footnote 1). Information about some of the practical tools that are currently available or are being developed that can be used to support local implementation of this NSF is set out below.

Clinical decision support

- 5.32 Clinical decision support involves the provision of readily usable information to clinicians that is directly relevant to specific decisions they have to make about the care of individual patients. It should reflect both the available evidence and relevant local circumstances. It is most effective when it is available as a decision is being taken; this often means that the information should be presented during the consultation itself.
- 5.33 Clinical decision support can be presented in various ways e.g. as guidelines and protocols or as written or electronic prompts and checklists. Advances in information technology permit the provision of increasingly complex and extensive information, advice and guidance.

Guidelines

- 5.34 The Department of Health has funded the development and appraisal of a number of nationally available guidelines that are relevant to the prevention and treatment of CHD. These may be used, adapted where necessary, to support the delivery of the interventions and standards set out in this NSF. Many other groups, e.g. professional societies, have also produced relevant guidelines. When using non-DH appraised guidelines, users should satisfy themselves that the guidelines are likely to contain relevant and valid advice. Guidelines that may be useful include:

Clinical Guidelines

Published Guidelines	Date	Authors/Publication
Pacemaker prescription	Produced 1991, to be updated	British Cardiac Society
Pacemaker follow-up	To be updated	British Cardiac Society
The early management of patients with myocardial infarction	1994	British Heart Foundation
Management of acute myocardial infarction	1994	British Cardiac Society/ Royal College of Physicians Journal of Royal College of Physicians of London 1994; 28 :312-317
Cardiac Rehabilitation in the UK	Published 1996, to be reviewed	British Cardiac Society
Cholesterol-lowering therapy (statins)	August 1997	Standing Medical Advisory Committee
ACE inhibitors in the primary care management of adults with symptomatic heart failure	1998	North of England Guidelines Group
Aspirin for secondary prophylaxis of vascular disease in primary care	1998	North of England Guidelines Group
Prevention of CHD in Clinical Practice	December 1998	British Cardiac Society, British Hyperlipidaema Association, British Hypertension Society, British Diabetic Association
Smoking Cessation Guidelines for Health Professionals - A Guide to Smoking Cessation	December 1998	Raw M, McNeill Thorax 53 Supplement 5
Investigation and management of stable angina	revised 1998	British Cardiac Society/ Royal College of Physicians Heart 1999; 81 :546-555
The management of stable angina in primary care	1996 updated 1999	North of England Guidelines Group
Guidelines for Management of Hypertension	1999	British Hypertension Society Journal of Human Hypertension 1999; 13 :569-592
Under Development		
Guidelines on primary care drug therapy for patients who have had a heart attack	Expected Autumn 2000	North of England Guidelines Group

5.35 The *National Institute for Clinical Excellence* was established in April 1999 as a new Special Health Authority. A key part of its work will be to commend, and where necessary commission, guidelines and audits that support the implementation of this NSF. It will also appraise specific technologies and treatments and advise the NHS on the circumstances in which their use is likely to be effective and cost-effective. The first topic relevant to this NSF to be dealt with in this way is that of intra-coronary stents.

5.36 The decision to establish another new Special Health Authority – the *Health Development Agency* – was announced in *Saving Lives: Our Healthier Nation*. Its purpose will be to promote and support high standards of public health practice. Its work will include setting standards and commending guidelines for public health and health promotion practice. It too will be a key resource for NSF implementation, as it will be responsible for providing the evidence base for public health practice, for advising on the implementation of evidence-based standards and for providing tool kits and guidance to practitioners.

Prompts and reminders

5.37 Traditionally, guidelines and clinical guidance have been disseminated on paper. Often, their presentation has not encouraged the rapid retrieval of relevant information. Increasingly, new and easier to use paper and electronic formats are being developed. For example:

- *PRODIGY (Prescribing RatiOnally with Decision Support In General Practice Study)* is a computerised prescribing decision-support system for primary care clinicians to use during their consultations. It can also provide information for patients. Developed at the University of Newcastle in collaboration with major software companies, it presents prescribing recommendations and advice on non-drug treatments for a range of conditions including aspects of CHD. Importantly, the GP retains control of diagnosis and management. The system has been piloted in 200 GP practices and can be integrated fully with current primary care clinical computer systems. NICE will oversee the development of the advice delivered by PRODIGY which will include advice consistent with the interventions, standards and clinical audit criteria recommended in this NSF.

By the end of 1999, 40% of practices had access to the first release of PRODIGY, and eventually all GPs will be able to use the system. PRODIGY software will be integrated into NHS-accredited primary care clinical systems. Further information about PRODIGY can be obtained from its website: www.schin.ncl.ac.uk/phcsg/conferences/cambridge1998/prodigy

- *computer templates*. Most general practices now use an NHS-accredited primary care IT system which supports the use of computer templates or prompts. These templates and prompts can either be developed centrally or written locally. They can be used by doctors and nurses to structure the care that people with CHD receive, for example, by reminding clinicians of the topics that need to be addressed within the consultation. Their use also facilitates the efficient recording and analysis of data that allows practitioners to better understand the quality of care that they are providing. Computer templates that support the delivery of care consistent with this NSF should be developed and made available for all NHS-accredited primary care systems

- *pre-printed paper or electronic forms*. Often, much of the advice contained within clinical guidelines can be incorporated into well-designed electronic or paper forms. For example, the appendices of Clinical Chapter 3 on heart attack and other acute coronary syndromes illustrate forms that structure and prompt the appropriate care of people suspected of having a myocardial infarction. The National electronic Library for Health (NeLH) and the NHS Learning Network are newly available routes for disseminating advice.

Telemedicine

- 5.38 Telemedicine and telecare offer new opportunities for supporting patients and delivering faster, fairer and more convenient services. Trials have so far been on a small scale and further evaluation is needed. However, there is some evidence to suggest that real benefits can be obtained from carefully planned applications, targeted to address identified needs. Telemedicine is already being used to demonstrate the transmission of ECGs from ambulances to hospitals, for sharing specialist expertise among clinicians, for remote vital signs monitoring, event recording and remote monitoring of pacemakers. Telemedicine has the potential to play an even more significant role and options should be actively considered in implementing this NSF. However, they should only be implemented on a large scale where there is evidence to show that they provide a safe and appropriate solution in meeting identified clinical needs.

Audit and Feedback

- 5.39 Multi-professional clinical audit can be a valuable and effective tool for improving quality of care. But to be effective, clinical audit has to be done well. Too often, clinical audit has been afforded a low priority and has been of poor quality. Nationally available audit systems will make it easier to undertake high quality audits and will promote the generation of valid, relevant comparable data.
- 5.40 Although the main aim of clinical audit is to improve the quality of care, an important by-product is data about the quality of care. The value of these data is increased if comparable data have been collected by others.
- 5.41 The Government and the GMC expect all doctors and all clinical teams to take part in clinical audit. As part of their clinical governance arrangements, all NHS organisations will be expected to have systems for receiving, learning and acting upon the lessons of clinical audit that relate to the impact of the management of services on the quality of care.
- 5.42 National support for clinical audit includes:
- *consultants' job plans* now include time in 'flexible' sessions specifically set aside for clinical audit
 - *clinical audit criteria* as recommended in each of the clinical chapters that can be used to support the implementation of this NSF. These criteria have been developed with the advice of the expert External Reference Group and the National Centre for Health Outcomes Development (NCHOD). The Department of Health is working with the Royal College of General Practitioners and the Royal College of Physicians to develop detailed data definitions of these audit criteria and to consider the development of practical tools to support their use

- *the National Institute for Clinical Excellence (NICE)* will commission the development of high quality audit packages to support the implementation of this NSF, the first of which will address the management of acute myocardial infarction (heart attack).

Support for clinical audit of the CHD NSF in primary care

5.43 Important initiatives that support clinical audit of the CHD NSF in primary care are:

- *the Clinical Governance Research and Development Unit, University of Leicester* (the successor to the Eli Lilly National Clinical Audit Centre) provides practical support on clinical governance to PCGs/PCTs which includes support for clinical audit and training. The Unit has developed evidence-based review criteria for use in audits in primary care; 3,500 practices have made use of them so far. The topics covered include angina, heart failure, hypertension and smoking cessation. Work is also underway to prepare electronic versions of the criteria which can be used to guide the creation of templates for computerised data entry and extraction. Further information is available from Professor Richard Baker, Director, Clinical Governance Research and Development Unit, Department of General Practice and Primary Health Care, University of Leicester, Leicester General Hospital, Gwendolen Road, Leicester, LE5 4PW; tel: 0116 258 4873; email: cgrdu@le.ac.uk; website: www.le.ac.uk/cgrdu
- *the Clinical Practice Evaluation Programme (CPEP)* which forms part of the Royal College of General Practitioners' quality initiative and the National Sentinel Audit is a new professionally-led system designed to enable all primary care teams to evaluate and compare the quality of their care in CHD (as well as Type 2 diabetes, asthma and depression). Using evidence-based review criteria, CPEP's aim is to enable practice teams to compare their own standards of care with, for example, those of similar practices in equivalent populations throughout the country. When fully operational, CPEP would continually feed back information that will assist practitioners in improving their clinical practice. CPEP offers a quality improvement system with built-in flexibility and choice that is compatible with general practice computer systems. Initially, the CHD criteria are being developed for the management of stable angina, heart failure and post-MI care. Further information is available from Professor Allen Hutchinson, School of Health and Related Research, University of Sheffield, Regent Court, 30 Regent Street, Sheffield, S1 4DA; tel: 0114 222 0812; fax: 0114 222 0791; email: CPEP@sheffield.ac.uk; website: www.shef.ac.uk/~scharr/public/cpep

Support for clinical audit of the CHD NSF in NHS Trusts

5.44 Important initiatives that support clinical audit of the CHD NSF in NHS Trusts are:

- the British Cardiac Society, the Society of Cardiothoracic Surgeons and the Association of Cardiothoracic Anaesthetists have developed national registries that allow various aspects of the care of people with heart disease to be audited. It is expected that all relevant NHS practitioners will collaborate with and participate in these national schemes
- the Royal College of Physicians (RCP) through its *Clinical Evaluation and Effectiveness Unit* has developed detailed data definitions for the clinical audit criteria proposed in this NSF for the care of people with acute myocardial infarction. NICE will commission a national audit of care of people with acute myocardial infarction. It is also proposed that the RCP and Regional Offices of the NHS Executive will work together to undertake a national audit of the systems of care for acute myocardial infarction

- *a Central Cardiac Audit Database (CCAD)* has been developed and piloted in six sites to assess the feasibility of centralising the collection, analysis and dissemination of data from the six separate cardiac-related registers established by the professional societies (see above). The dataset used in the CCAD pilot has been widely published to enable software manufacturers to develop suitable data collection packages. Further information is available from Dr David Cunningham, Project Manager, CCAD, Department of Cardiothoracic Surgery, Hammersmith Hospital, Du Cane Road, London W12 0NN; tel/fax: 020 8383 1902; email: adc@bio.gla.ac.uk or cbalcon@rpms.ac.uk
- *the British Cardiac Society Peer Review Scheme* is being developed and piloted to assess and improve the quality of care and to support clinical governance and re-validation. If the pilot is successful, it is proposed that the scheme will be developed so that all UK adult and paediatric cardiology units should be visited once every five years.

Management organisation and systems

Incentives

- 5.45 There are many managerial tools and methods which can be used in the NHS for improving the systems and individual behaviour that determine the quality of care. These include a range of incentives: personal financial reward, resource allocation to a clinical team, education and career development, peer recognition and performance feedback.
- 5.46 In April 1998, the Government introduced a new tool for providing incentives in primary care:
- *General Medical Services (GMS) Local Development Schemes (LDSs)* give Health Authorities the flexibility to improve the development and responsiveness of general medical services by giving local GPs financial incentives beyond those set out in the Statement of Fees and Allowances. GPs in a local development scheme will be rewarded for enhancing GMS in specified ways or to specified standards to tackle particular local health needs. HAs can use LDSs to provide services which help to address health inequalities and, particularly in areas of deprivation, to enhance the development of GMS above that currently provided. Proposals should be in line with local and national health priorities, provide value for money and be evidence-based. LDSs can be used to support primary care initiatives for people with CHD. For example, HAs might agree to fund a specific patient management programme run by a practice for a service not covered by the existing national contract programmes, but which is a key priority in the local health strategy.
- 5.47 East Kent Health Authority have used new financial incentives to help develop primary care:
- *the Primary Care Clinical Effectiveness programme (PRICCE)* was launched in April 1998 to help GPs and primary care teams in East Kent to improve the quality of primary care. A set of challenging evidence-based criteria and targets was developed for a range of important conditions including CHD. Developmental support was offered to primary care teams to help them improve care in a systematic way. A series of proxy measures complement the standards to allow progress to be measured. Practices are rewarded for demonstrating that they have met the clinical standards. Further information is available from Dr Tony Snell, Medical Adviser, East Kent Health Authority, Protea House, Marine Parade, Dover CT17 9HQ; tel: 01304 222230; fax: 01304 222213; email: Tony.Snell@ccmail.ekent-ha.sthames.nhs.uk

Planning tools

- 5.48 Local circumstances and needs vary enormously around the country. Every local health economy and every local organisation needs to develop its own plans for using the resources at its disposal as effectively and efficiently as possible. The Government is developing and commissioning new tools that will be available nationally to help people plan locally. These include:
- *Health Needs Assessment*. Advice on needs assessment was issued in 1994 and is currently being updated to inform the NSF. A new contemporary description of the frequency of CHD, its clinical manifestations in the community, management and the potential for prevention will be published in the *Health Care Needs Assessment* series in 2000
 - *HBG/HRG Healthcare Framework*. As part of the CHD Information Strategy (see below), consideration is being given to the distribution of software that would provide an integrating mechanism for viewing needs, interventions, performance indicators and outcome measures together. Uses of such a tool include comparative analysis and service planning, based on national standard groupings of data
 - *A Step-by-Step Guide to Epidemiological Health Needs Assessment for Ethnic Minority Groups* has been developed from a project to develop strategies for commissioning services for CHD and diabetes for black and minority ethnic populations in four pilot sites in England. It identifies effective approaches, gaps in knowledge and provides guidance on developing services for minority ethnic groups. It may be used in the planning of appropriately targeted services and for increasing levels of awareness and understanding of cardiovascular disease and diabetes among NHS staff and others. Further information is available from Lorna Hutchinson; email: lorna.hutchinson@ncl.ac.uk

Patient and user information and involvement

- 5.49 Patients' expectations influence the outcome of consultations. And the more information that patients have, the more they can be involved in making the decisions that affect their care. In addition, the White Paper *The new NHS: Modern and Dependable* set out a commitment to rebuilding public confidence in the NHS. This will only be achieved if the NHS is made more accountable to patients, open to the public and shaped by their views. Patient partnerships will have a vital role to play in this.
- 5.50 Locally, developments such as the new Health Improvement Programmes (HImPs) and Health Action Zones (HAZs) offer new opportunities for involving users, carers and communities in shaping local services. There are also a number of specific national developments that are designed to improve people's access to high quality information about health. These can be used to support the implementation of this NSF. They include:
- *the Centre for Health Information Quality (CHIQ)*, launched in November 1997 to increase the quality of information available to patients and their carers, the NHS, patient representatives and self-help organisations, aims to improve the ability of patients to influence their own care. Contact: Centre for Health Information Quality (CHIQ), Highcroft, Romsey Road, Winchester, Hampshire SO22 5DH; tel: 01962 863511; fax: 01962 849079; email: chiq@hsft.org; website: www.hfht.org/chiq

- *DISCERN*, a validated tool for critically appraising the quality of patient information. It can also be used in the development of high quality understandable patient information. Further information can be obtained from: Website: www.discern.org.uk; Deborah Charnock, University of Oxford Division of Public Health and Primary Healthcare, Old Road, Headington, Oxford OX3 7LF; tel: 01865 226712; email: deborah.charnock@dphpc.ox.ac.uk or from Sasha Shepperd, Department of Primary Health Care and General Practice, Division of Primary Care and Population Sciences, Imperial College School of Medicine, St Mary's Campus, Norfolk Place, London W2 1PG; tel: 020 7594 3364; email: s.shepperd@ic.ac.uk
- The opportunity to get advice quickly and without the need for face-to-face contact can help some people take more control over their own health. Nationally, telephone advice is or will be available from:
 - *NHS Direct*, set up to provide people at home with easier and faster advice and information about health and the NHS so that they are better able to care for themselves and their families. The service aims to provide clinical advice to support self-care and appropriate self-referral to NHS services as well as access to more general advice and information. Advice given for CHD and related conditions will be consistent with the NSF and, where relevant, advice will be based upon the same treatment algorithms. *NHS Direct* is now available in many parts of the country, and coverage will be total by the end of 2000. The telephone number is 0845 4647. The *NHS Direct* healthcare guide is available from pharmacists. In addition, the *NHS Direct* online service can be accessed on: www.nhsdirect.nhs.uk
 - *the Health Information Service*, which provides confidential information on a range of health-related issues (tel: 0800 665544 between 10am and 5pm Mondays to Fridays)
 - *Don't Give Up Giving Up*, which provides information and support on giving up smoking and is part of the Government's health education campaign on smoking (tel: 0800 169 0 169): www.givingupsmoking.co.uk
- *the British Heart Foundation*, which published a new edition of *the Heart Information series* in July 1999. It contains 18 patient leaflets about many aspects of heart disease, including angina, heart attack, cardiac rehabilitation and cardiac investigation.

Sharing good practice

5.51

There are many examples of good practice in the NHS. But too often relevant lessons are not shared and applied elsewhere. One of the opportunities open to those responsible for implementing this NSF will be learning from the achievements of others. The NHS Executive is working across the NHS to encourage and enable sharing good practice in service delivery and management. This national support for local delivery will be available through the *NHS Learning Network* which comprises:

- *a Directory of Service Delivery Models. The National Database of Service Delivery Practice (SDP)* has been available on the NHS Web since March 1999. Its purpose is to encourage the greater spread of information about good practice in the broad area of service delivery, and where NHS staff have tried to improve local services. Housed in the "Learning Zone", the SDP database is interactive, allowing NHS staff to enter or search for examples of good practice in implementing the NSF. It will include details

of a particular practice or project, whether or not it has been evaluated, and how to obtain further information. The database is also intended to be an aid to learning. Entries will be automatically e-mailed to a contact at the local NHS Executive Regional Office, who will be able to organise learning networks, or workshops on specific topics using examples from the database (nww.learningzone.nhsweb.nhs.uk)

- *Learning Centres*, where people will have the opportunity to discuss individual practice with others face to face. Learning Centres will be supported in each region, providing a focus for sharing learning and practice in a number of areas, including the delivery of National Service Frameworks. Learning Centres will be places for peer-group problem solving.
- *NHS Beacons*. During May 1999, NHS Beacon Services were chosen in six areas of service delivery – CHD was a recurring theme throughout the 290 services selected. A Beacon is a high quality service within the NHS that has been selected because of the contribution it is making to modernising the NHS. Examples of good practice from Beacons that have a CHD theme are listed in Appendix D (page 124). Beacons have financial support to enable them to disseminate their learning to other NHS organisations, including through the Learning Zone and Service Delivery Practice (SDP) database. Further information about the interactive learning activities offered by CHD Beacons is available from Status, who run a central booking service for those who want to visit Beacons. To contact Status please call 01730 235014 (for GP Practices) or 01730 235018 (for NHS Trusts and others) or by e-mail at: nhsbeacons@statusmeetings.co.uk. An on-line catalogue of all learning activities offered by Beacons can be found at: www.nhsbeacons.org.uk

5.52 Examples of good practice relevant to this NSF, some of which can be found on the Learning Network, include:

- *the Framework for Appropriate Care Throughout Sheffield (facts) Project* which has developed, delivered and evaluated programmes to implement evidence-based practice in general practices for three interventions used to treat aspects of CHD – aspirin, statins and anti-coagulants. For each intervention, manuals describing the identification and treatment of appropriate patients, summaries of the evidence, template leaflets and letters to patients and administrative aids have been developed. These, together with a report describing the main lessons of the project are available from the Centre for Innovation in Primary Care, First Floor, Walsh Court, 10 Bell's Square, Sheffield S1 2FY or email: cipc@innovate.org.uk
- *the PACE Programme (Promoting Action on Clinical Effectiveness)* which was funded and managed by the Kings Fund. The project established a network of sixteen diverse demonstration projects across the country several of which addressed aspects of care for CHD. Each project aimed to improve clinical practice in a particular aspect of care where there was reason to believe that valid, relevant evidence was incompletely reflected in practice. The programme documented improvements in the quality of care in the project sites and identified a number of apparently generalisable lessons about promoting clinical effectiveness in the NHS. A full report of the project can be obtained on request from: www.kingsfund.org.uk/

- *the Centre for Best Practice* which provides advice based on practical experience of business process re-engineering in a health care environment. Further information is available from: The Centre for Best Practice, Leicester Royal Infirmary NHS Trust, Infirmary Square, Leicester, LE1 5WW; tel: 0116 258 6642; fax: 0116 258 6833
- *Successful Cardiac Care Based on Evidence for Effectiveness in Dorset (SUCCEED)*. The aim of the SUCCEED Programme is to decrease morbidity and mortality following significant cardiac events through personalised health care pathways. It provides evidence-based cardiovascular care pathways founded on recently published data. Over 80% of General Practices in Dorset are now following these care pathways to provide an achievable standardised method of practice which now works across Primary and Secondary Care. The programme is now written into the Dorset Health Authority's Health Improvement Plan. Provisional data indicates significant decrease in cardiovascular morbidity and mortality as a result of the SUCCEED programme of care in Dorset. A sample of the card which is issued to patients in this programme is shown in the appendix to Chapter 2 of the Clinical Chapters. (For further details, contact Dr Graham Archard; email: archard@eluk.co.uk; tel: 07768 910273.

E Information for Health

- 5.53 Many of the tools described in this section (such as clinical guidelines and audit) can be implemented most effectively by using modern information technology. *Information for Health*, the information strategy for the NHS, published in November 1998, set out the way forward for the development of information for patients, the public, clinical professionals and managers up to 2005. It is a crucial underpinning programme of support for this NSF. The Information Authority will lead the development of a *CHD Information Strategy*. Further details can be obtained at: www.nhsia.nhs.uk
- 5.54 The standards, clinical audit criteria, milestones and performance indicators set out in this NSF will be used to guide the implementation of the information strategy. They will also be used to guide the development of tools that will deliver four types of information to support the implementation of this NSF:
- i) Evidence about the effectiveness and cost-effectiveness of interventions and specific service models.
- Relevant tools include:
- *the National electronic Library for Health (NeLH)* which will be organised on four virtual 'floors': 1) a 'know how' floor which will contain guidelines and systems of care; 2) a 'knowledge floor' which will contain high quality sources of knowledge such as the Cochrane Library; 3) the '*NHS Direct* online' floor for patients and the public; and 4) a 'knowledge management floor' which will contain critical appraisal and research tools (www.nelh.nhs.uk)
 - clinical decision support tools e.g. *PRODIGY*
 - *the Directory of Service Delivery Models*
 - *the National Research Register*.

ii) Clinically relevant information about individual patients.

The relevant tools will be:

- *the Electronic Health Record* which will form a lifelong electronic record of clinical information which will enable, for example, the transfer of patient records between GPs
- *the Electronic Patient Record (EPR)*.

iii) Information to support the management of clinical activity.

Relevant tools include:

- *systems to support professionally defined national audits* e.g. CCAD or an equivalent
- tools for extracting and analysing electronically held data about the care of people with CHD e.g. *MIQUEST*, which was developed as part of the *Collection of Health Data from General Practice (CHD GP)* project. This pilot project has successfully demonstrated that it is possible to produce information from computerised clinical records about the morbidity of practice populations and the care they receive from GPs and other practice staff. CHD was included when this project was piloted. This or a system like it will be important for improving understanding about the effectiveness and quality of primary care. Further information is available from the CHDGP team tel: 0115 919 4495 or on the following websites: www.nottingham.ac.uk/chdgp/; www.clinical-info.co.uk/miquest.htm
- health authorities already have access to the *Public Health Mortality File* whose uses include 'list cleaning', record linkage, clinical audit and geographical analysis
- *the Healthcare Framework* based on HRGs and HBGs is a tool with the potential for integrating data about interventions, needs, resource use and performance indicators. Its uses include comparative analysis and 'benchmarking' based on manageable numbers of clinically and organisationally relevant national standard groupings of data.

iv) *Information for the Public*. People need clear and concise information about how they can stay healthy. If they are they are unwell they need understandable and accurate information about what is wrong with them and about relevant treatments. Modern information technology can be used to provide new routes for the public to get the information they need. New important initiatives being developed that will support implementation of this NSF are:

- *NHS Direct* telephone service and *NHS Direct* online
- the National electronic Library for Health (NeLH) which will be accessible to the public as well as to the NHS.

5.55 Development of a CHD Information Strategy will start during the latter half of 1999/2000 to specify the practical and cost-effective steps to support the information requirements of this NSF. This will include consideration of a Healthcare Framework (see Section 4) and its application in different data environments. This Healthcare Framework will

provide an integrating mechanism for viewing needs, interventions, and performance indicators together. It will also be a vehicle for comparative analysis based on a national standard groupings of data.

Synergy

5.56 Each of the information technology tools listed in this section has considerable potential individually to support the delivery of the NSF. But their impact will be much greater when the potential synergy between these projects is exploited. New methods of integrating the different tools will be explored.

Annex A

Research activities

NHS R&D Programme: new structure for producing new knowledge

The NHS R&D Programme has recently been organised into three main streams of work:

- *Health Technology Assessment (HTA)*: to deliver high quality research information on the costs, effectiveness and broader impact of health technologies for those who manage, work in and use the NHS. It defines technologies broadly to include methods to promote health, prevent and treat disease and improve rehabilitation and long term care
- *Service Delivery and Organisation (SDO)*: to produce and promote the use of research evidence about how the organisation and delivery of services can be improved to increase the quality of patient care, ensure better patient outcomes, and contribute to improved population health
- *New and Emerging Applications of Technology (NEAT)*: to promote the use of new or emerging technologies to develop healthcare products and interventions to enhance the quality, efficiency and effectiveness of health and social care.

These three main programme blocks are complemented by other programmes:

- *methodology*, addressing the most important methodological challenges to developing work of relevance to NHS policy and practice
- *service users and the research agenda*, which explores how service users can influence the research agenda in each of the three main programme blocks. For example, consumer representatives are now included on all HTA priority-setting groups, and it is intended that learning from this is generalised to other programmes of work
- *Health Survey for England*, which, in a series of annual surveys, uses self-reported questionnaires, and physical and laboratory measurements to report on the health of the people of England.

The *Department of Health Policy Research Programme* supports broadly-based public health R&D, including projects on CHD, and on the effects of nutrition and of air pollution on health.

Research priorities

A review led by the Central Research and Development Committee of the NHS has been established to identify research priorities for the NHS. This review was supported by a series of Topic Working Groups including a group whose remit was CHD, chaired by Professor Sir Michael Marmot, Chair of Epidemiology and Public Health, University College Hospital. This group has completed its work and its report is due to be published shortly.

Links to other research funders

The Department of Health works closely with other research funders through a national forum chaired by the Director of Research and Development and through bilateral discussions. The aim is to share priorities and to promote a coherent overall programme of research. Partner organisations include the research councils e.g. the Medical Research Council, charities e.g. the British Heart Foundation, and industry.

The Department of Health has also published a *Statement of Partnership* on non-commercial R&D in the NHS that sets out how funders and researchers should take account of NHS needs and priorities.

UK based research programmes

Significant UK based research programmes, which have provided and will continue to provide evidence for preventing and treating CHD include:

- research funded by the Medical Research Council
- work funded by the Department of Health including the Health Survey for England, and policy related research
- programmes of relevant R&D funded by the Department of Health via the NHS R&D Levy
- charitable research funders
- industry-based programmes of research.

(i) Medical Research Council

The MRC funds a considerable portfolio of research into many aspects of cardiovascular disease. This amounted to £12.3m in 1998/9 with additional expenditure on stroke. Over the next few years the MRC will give priority to building research capacity in clinical research by developing one or more new world class centres of excellence.

Under the Department of Health concordat with the MRC, the Department of Health can ask the MRC to address specific important topics.

Examples of MRC-funded CHD research findings:

The MRC Environmental Epidemiology Unit at Southampton, in collaboration with a group in Finland, has uncovered a possible explanation for the rise and subsequent fall in heart disease as poor populations grow in affluence.

Aspirin combined with warfarin can cut the risk of heart attack in middle-aged men by 15% more than using either drug alone, according to results from a trial by the MRC's General Practice Research Framework. The work was co-ordinated by the MRC Epidemiology and Medical Care Unit, London.

(ii) Health Survey for England

The Health Survey for England is a series of annual surveys of the health of people in England that combines questionnaire answers, physical measurements and objective measures such as analysis of blood samples. Some of the risk factors for heart disease are included in each survey year, and in 1993, 1994 and 1998, the emphasis of the Health Survey was on cardiovascular disease.

(iii) Department of Health Policy Research Programme

This programme supports broadly-based public health R&D related to CHD. As well as projects on CHD, there are relevant programmes on nutrition and air pollution. Further work is planned to support the White Paper, *Smoking Kills*.

Examples of research on CHD funded by the Policy Research Programme:

The British Regional Heart Study, a longitudinal study, has investigated the prevalence, natural history and management of cardiovascular disease over many years. In 1998, the study was extended to include the risk factors and management of CHD in women (Prof. Shah Ebrahim, Department of Social Medicine, University of Bristol; tel: 0117 928 7350, email: shah.ebrahim@bristol.ac.uk, and Prof Peter Whincup, Department of Public Health Sciences, St George's Hospital Medical School; tel: 020 8725 2793).

A series of linked literature reviews on the opportunities for and barriers to good nutritional health in the dietary behaviour of elderly people, minority ethnic group, women of childbearing age, pregnant women, infants under 1 and children aged 1 to 5. (Contact: Dr Sandra Williams, NHS Executive; tel: 020 7972 5629).

Air pollution and cardiovascular disease: an investigation of the relationship between particulate air pollution and blood coagulation factors (Prof. Anthony Seaton, Dept. of Environmental and Occupational Medicine, University of Aberdeen; tel: 01224 552459).

The relationship between urban pollution and cardio-respiratory ill health (Dr Raymond Agius, Dept. of Public Health sciences, University of Edinburgh; email: raymond.agius@ed.ac.uk).

(iv) Support from the NHS R&D Levy

A wide range of research on CHD is undertaken in and by NHS Trusts and general practices funded through the "Culyer arrangements" for supporting R&D. It is thought that research under these arrangements amounts to over £30m per annum – an indication of the priority which is accorded to CHD by the NHS.

(v) NHS R&D programme on cardiovascular disease and stroke

Cardiovascular diseases was an early priority within the NHS R&D programme. The scope of the programme was defined by an NHS Advisory Group which identified R&D priorities for the NHS. 58 projects were commissioned from 1993. Most of these have now been completed and the findings published. This topic based programme is now being replaced by the HTA, SDO and NEAT programmes.

Examples of projects from the original NHS R&D Programme:

A case-control study of acute myocardial infarction and HRT.

Oestrogen therapy in the prevention of re-infarction: a multi-centre trial.

Coronary atherosclerosis: regression in diabetes study.

Carotid and vertebral artery transluminal angioplasty study.

Secondary prevention of cardiovascular disease in general practice.

Development of interventions to reduce the risk of CHD in South Asians.

A study of the rehabilitation needs of women cardiac patients.

Developing methods in primary care for prevention of vascular disease and diabetes in high-risk ethnic groups.

Nutritional factors and cardiovascular risk in the very elderly.

An evaluation of behavioural methods for CVS disease risk reduction in general practice.

Exercise and health: a proposal to evaluate different models of promoting physical activity in patients registered with an inner city general practice.

Family study of cardiovascular disease (FASTCARD).

An RCT of the cost-effectiveness of exercise in the over 65s.

Rehabilitation after myocardial infarction: multi-centre randomised controlled trial.

Timing, targeting and psychosocial emphasis in cardiac rehabilitation.

MAVERIC: Midlands trial of empiric amiodarone versus electrophysiology guided intervention and cardioverter implant in ventricular arrhythmias.

Cardiac pacing for the prevention of recurrent falls in carotid sinus hypersensitivity.

Management and care of adolescent and adult patients with congenital heart disease (one-year pilot).

Contact point Anne Butcher: R&D Directorate, NHS Executive, Quarry House, Leeds; tel: 0113 254 6148. Further details can also be found on the National Research Register: www.doh.gov.uk/research/nrr

(vi) NHS R&D: Health Technology Assessment (HTA) programme

This programme assesses the cost, effectiveness and broader impact of any method used by health professionals to promote health, to prevent, diagnose or treat disease, or to improve rehabilitation and long term care. The HTA Programme prioritises topics of importance to the wider NHS following widespread consultation on a regular basis.

Examples from the HTA programme on CHD:

A multi-centre randomised controlled trial of minimally invasive bypass grafting vs angioplasty with stenting for single vessel disease of the left anterior descending coronary artery.

Contact: Prof. G Angelini, United Bristol Healthcare Trust; tel: 0117 928 3145

Resource Allocation for Chronic Stable Angina – a systematic review of costs, effectiveness and cost-effectiveness of alternative interventions.

Contact: CRD, York University, Publications Office; tel: 01904 433 648

A systematic literature review, with decision analytic modelling, on the use of intravascular ultrasound imaging in coronary artery disease.

Contact: Dr E Berry, University of Leeds; tel: 0113 392 2438

(vii) NHS R&D: other programmes

Regional NHS R&D programmes also support work on CHD.

An example of CHD research from a regional programme:

A series of randomised controlled trials of computer-based smoking cessation packages are taking place in the West Midlands. The trials will compare standard smoking cessation interventions with expert computer systems and specific literature based on Prochaska's "stages of change" model. This sees behaviour change as an evolving process. The trials will evaluate the effectiveness and cost-effectiveness of the model for reducing smoking in the UK.

Contact: Department of Public Health, Birmingham University; tel: 0121 414 6767

(viii) Methodological and implementation research

Research is also undertaken whose aim is to improve the quality and appropriateness of research. For example, work is in hand to explore how best to involve consumers in R&D, to develop better research methodologies, and to test the effectiveness of different methods of applying the research results in clinical practice.

Examples of projects from this activity:

Evidence-based secondary prevention of heart disease in primary care: a randomised controlled trial of three methods of implementation.

Computerised Guidelines: Evaluation in the North of England (COGENT) and associated evidence-based clinical practice guideline on the primary care management of stable angina.

Contact: Anne Butcher, Quarry House, Leeds, tel: 0113 254 6148

(ix) Research on CHD funded by charitable trusts

The main research charity which supports R&D on coronary heart disease is the British Heart Foundation which spent £41.8m in 1997/8 and supports numerous projects in basic and clinical cardiovascular research.

Examples of projects funded by the BHF:

The second randomised intervention treatment of angina trial (RITA-2).

MRC/BHF Heart Protection Study – randomised trial of effects on mortality of substantial and prolonged cholesterol reductions and antioxidant supplementation in a wide range of patients at high risk of CHD.

Contact: www.bhf.org.uk

(x) Industrial R&D

Many of the most important developments in the prevention and treatment of CHD have come from commercially funded research. And many of the most significant advances made in treatment for CHD would not have been possible without the R&D investments of pharmaceutical companies. Much is due too to the medical devices industry. The research partnership between industrial interests and the NHS is highly valued.

Annex B

Effectiveness Bulletins

Effective Health Care Bulletins and *Effectiveness Matters* are produced by the Centre for Reviews and Dissemination at the University of York. Those relevant to this NSF are:

Effective Health Care Bulletins:

Volume 2, Number 8 - December 1996

Hospital volume and health care outcomes, costs and patient access

Volume 3, Number 2 – April 1997

The prevention and treatment of obesity

Volume 3, Number 5 – October 1997

Management of stable angina

Volume 4, Number 1 – February 1998

Cholesterol and coronary heart disease: screening and treatment

Volume 4, Number 4 – August 1998

Cardiac Rehabilitation

Volume 5, Number 1 – February 1999

Getting Evidence into Practice

Volume 5, Number 5 – October 1999

Preventing the uptake of smoking in young people

Effectiveness Matters:

Volume 1 (1995)

Aspirin and myocardial infarction

Volume 3 (1998)

Smoking cessation: what the Health Service can do

Volume 4 (1999)

Drug treatment of essential hypertension in older people

Further information is available from: The NHS Centre for Reviews and Dissemination, University of York, York YO10 5DD; tel: 01904 433648/434565; fax: 01904 433661; email: crdpub@york.ac.uk

Appendix A

External Reference Group membership

Professor Sir George Alberti (Co-Chair)	President, Royal College of Physicians of London
Dr Graham Winyard (Co-Chair)	Director of Health Services, NHS Executive until December 1998
Dr Sheila Adam (Co-Chair)	Director of Health Services, NHS Executive from January 1999
Mr Robert Anderson	Economics and Operational Research Division, Department of Health
Professor Raj Bhopal	Bruce and John Usher Professor of Public Health, University of Edinburgh
Dr Roger Boyle	Consultant Cardiologist, York District Hospital
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Appendix B

National Service Framework abbreviations

ACE inhibitors	Angiotensin Converting Enzyme Inhibitors
A&E	Accident & Emergency
AMI	Acute Myocardial Infarction
BACR	British Association for Cardiac Rehabilitation
BCIS	British Cardiovascular Intervention Society
BCS	British Cardiac Society
BHF	British Heart Foundation
BMI	Body Mass Index
BP	Blood pressure
CABG	Coronary Artery Bypass Graft
CATS	Credit Accumulation Transfer Points
CCAD	Central Cardiac Audit Database
CCU	Cardiac Care Unit
CGRDU	Clinical Governance Research and Development Unit
CHD	Coronary Heart Disease
CHI	Commission for Health Improvement
CPD	Continuing Professional Development
CPEP	Clinical Practice Evaluation Programme
CPR	Cardio Pulmonary Resuscitation
CVD	Cardiovascular disease
CVS	Cardiovascular system
DETR	Department of the Environment, Transport and the Regions
DfEE	Department for Education and Employment
ECG	Electro Cardiograph/Cardiogram
ERG	External Reference Group
Facts	Framework for appropriate care throughout Sheffield
GMC	General Medical Council
GP	General Practitioner
HAs	Health Authorities
HAW	Health at Work
HAZs	Health Action Zones
Hb	Haemoglobin
HBGs	Health Benefit Groups
HDA	Health Development Agency
HEA	Health Education Authority
HEIs	Higher Education Institutions
HImpPs	Health Improvement Programmes
HLPIs	High Level Performance Indicators
HCM	Hypertrophic cardiomyopathy
HR	Human Resources
HRGs	Health Resource Groups
HSC	Health Service Circular
HTA	Health Technology Assessment

ICU	Intensive Care Unit
IT	Information Technology
IV	Intravenous
JCPTGP	Joint Committee on Postgraduate Training for General Practice
JVP	Jugular venous pressure
LA s	Local Authorities
LR	Likelihood ratio
LTSA	Long Term Service Agreement
LVAD	Left Ventricular Assist Device
MRC	Medical Research Council
NCHOD	National Centre for Health Outcome Development
NeLH	National electronic Library for Health
NHS	National Health Service
NICE	National Institute for Clinical Excellence
NRT	Nicotine Replacement Therapy
NSAIDS	Non-steroidal anti-inflammatory drugs
NSCAG	National Specialist Commissioning Advisory Group
NSF	National Service Framework
OD	Organisational Development
PACE	Promoting Action on Clinical Effectiveness
PAF	Performance Assessment Framework
PCGs	Primary Care Groups
PCTs	Primary Care Trusts
PDP	Personal Development Plan
PIs	Performance Indicators
Pmp	Per million population
PMS	Personal Medical Services
PTCA	Percutaneous Transluminal Coronary Angioplasty
PVD	Peripheral vascular disease
R&D	Research and Development
RCGP	Royal College of General Practitioners
RCP	Royal College of Physicians
REDG	Regional Education and Development Group
SCTS	Society of Cardiothoracic Surgeons
SDP	Service Delivery Practice
STA	Specialist Training Authority
SWAG	Speciality Workforce Advisory Group
TIA	Transient Ischaemic Attack
UKCC	United Kingdom Central Council for Nursing, Midwifery and Health Visiting

Appendix C

Glossary

Accident and Emergency Department (A&E)

A hospital department specialising in the initial assessment and treatment of sudden illness or accident.

ACE inhibitors

Angiotensin converting enzyme inhibitors. A class of drug that reduces blood pressure and improves the function of the heart muscle by inhibiting the action of certain circulating hormones (angiotensins) which are raised in heart failure.

Acute myocardial infarction

Heart attack. Refers to the death of heart muscle (myocardium) which follows sudden reduction in or cessation of the flow of blood down the coronary arteries, e.g. narrowing due to atheroma of the vessels, leading to thrombosis in the coronary arteries.

Advanced life support

Attempt to restore spontaneous circulation following cardiac arrest using basic life support, defibrillation, advanced airway management and drugs.

Angina, angina pectoris

Literally pain in the chest. Usually gripping or crushing in nature in the chest and/or left arm and jaw felt when there is insufficient blood supply to the heart muscle.

Stable angina is the term used for angina (pectoris) which is relatively predictable and the intensity and frequency of which remains similar over long periods.

Unstable angina is angina (pectoris) which is severe and unpredictable and which threatens to progress to an acute myocardial infarction.

Angiogram

A procedure in which a fine catheter is inserted via a blood vessel to inject x-ray opaque dye into the coronary arteries to obtain an x-ray image of the anatomy of the coronary arteries.

Angioplasty

A procedure in which a small balloon on the end of a catheter is inserted into an artery (in CHD the coronary arteries) and inflated to widen a narrowed artery.

Anti-emetic

A drug administered to relieve nausea and vomiting.

Anti-ischaemics

Drugs administered to treat angina by reducing the heart's workload and improve coronary blood supply, e.g. nitrates, beta-blockers and calcium antagonists.

Anti-thrombotics

Drugs administered to reduce blood clotting, e.g. aspirin, heparin.

Arrhythmia

An abnormal rhythm of the heart.

Artery

A blood vessel that carries blood away from the heart.

Atheroma

Deposits of fatty material and cholesterol inside the walls of arteries.

Atherosclerosis

Narrowing and thickening of arteries due to the development of fibrous tissue in the wall and sometimes calcium deposits. Usually associated with atheroma.

Atrial fibrillation

Irregular electrical activity in the atria (the receiving chambers of the heart) leading to irregular contraction of the heart muscle.

Beta-blocker

A class of drugs used to treat raised blood pressure and slow the heart rate by reducing adrenergic stimuli.

CABG

Coronary artery bypass grafting. An open-heart operation in which blockages to the coronary arteries are bypassed by grafting on a length of artery or vein to bring a fresh blood supply to the heart muscle.

Cardiac arrest

Complete cessation of the heart beat.

Cardio-pulmonary resuscitation (CPR)

The techniques of treating arrest of the heart by artificial respiration and cardiac compression.

Cardiothoracic

Of the heart and chest contents e.g. oesophagus and lungs.

Cardioversion

The application of electric shock or drugs to attempt restoration of a normal heart rhythm in a patient with cardiac arrhythmia.

Catheter, cardiac

A long, narrow tube which, when passed through the veins or arteries into the heart cavities is used for measuring pressures or injecting x-ray opaque dye for outlining the heart and blood vessels.

Catheterisation laboratory

The x-ray laboratory in which an angiogram is performed.

Cerebro-vascular

Of the blood vessels and circulation to the brain.

Cholesterol

A substance found in many foods and in all cells. Most of the cholesterol in the body is manufactured in the liver. An important constituent of atheroma.

Community development programmes

Where the community sets its own agenda and decides for itself how to improve health, with professionals acting as facilitators.

Coronary angiogram

An angiogram of the coronary arteries.

Coronary arteries

The arteries that supply the heart muscle with blood.

Coronary heart disease

Narrowing or blockage of the coronary arteries by atheroma, leading to angina, coronary thrombosis or heart attack, heart failure, and/or sudden death.

Criterion based dispatch systems

Systems which permit the prioritisation of 999 calls by the ambulance service to ensure that the most serious conditions receive top priority.

Defibrillator

An instrument for delivering an electric shock in an attempt to terminate ventricular fibrillation.

Electrocardiogram (ECG)

A recording of the heart's electrical activity obtained from electrodes positioned on the chest wall and limbs. An exercise (stress) ECG is taken before and during exercise (usually using a treadmill or stationary bicycle) to obtain objective and quantitative recording of myocardial ischaemia on exertion.

Echocardiogram

An image and measurement of the heart obtained using ultrasound.

Embolism

The migration through the bloodstream of a blood clot from one part of the body to another where it causes an occlusion.

Fibrillation

Fast, irregular, electrical activity leading to fast irregular beating of the atria or ventricles.

Heart failure

A condition in which the pumping action of the heart is inadequate. It can result in the accumulation of fluid in the body and/or congestion of the lungs.

High density lipoprotein

A complex of fat and protein that may serve to remove cholesterol from the tissues. Sometimes described as the 'good' form of cholesterol.

Hypercholesterolaemia

Raised levels of cholesterol in the blood.

Hypertension

Raised blood pressure.

Infarction

Death of tissue following interruption of the blood supply.

Ischaemia

Blood supply inadequate for tissue needs especially during exercise.

Left ventricular dysfunction

Disordered pumping action of the main chamber of the heart.

Likelihood ratio

The likelihood that a given test result would be expected in a patient with the target disorder compared to the likelihood that the same result would be expected in a patient without that disorder.

Low density lipoprotein

A complex of fat and protein which is associated with an increased risk of coronary disease.

NHS Direct

Nurse-led telephone helpline provided by the NHS

Nicotine Replacement Therapy (NRT)

Nicotine supplied in the form of chewing gum, patches etc. to reduce craving for nicotine in people attempting to give up smoking.

Non-Q-wave infarction

An ECG manifestation of myocardial infarction where no pathological 'q' waves are present.

Occlusion

Blockage

Perfusionist

Specially trained staff who manage the heart-lung bypass equipment used during open heart surgery.

Plaque

A deposit of atheroma.

Primary care

The conventional first point of contact between a patient and the National Health Service.

Primary prevention

The prevention of the development of a condition e.g. CHD, by avoidance of factors known to contribute to its development e.g. smoking, lack of exercise. See also secondary prevention.

Protocols

A plan detailing the steps that will be taken in the treatment of a patient or in a research study.

Percutaneous transluminal coronary angioplasty (PTCA)

Angioplasty of the coronary arteries i.e. the introduction of a balloon on a catheter through the skin (percutaneous), into a blood vessel (transluminal) and into the coronary arteries to widen them.

Pulmonary oedema

Congestion of the lungs associated with heart failure

Q-wave infarcts

An ECG manifestation of myocardial infarction where 'q' waves are present.

Refractory angina

Angina that persists despite anti-ischaemic medication and/or revascularisation

Revascularisation

A procedure to improve the blood supply. In the case of CHD these include CABG and PTCA.

Saturated fat

A form of fat which, when consumed, increases the blood cholesterol; found mainly in meat and dairy products.

Secondary prevention

In the case of CHD, interventions such as lifestyle changes or drugs aimed at slowing or reversing the progression of disease.

Sensitivity

The proportion of people with disease who have a positive test.

Specificity

The proportion of people free of a disease who have a negative test.

Statins

A class of drugs used to treat raised blood cholesterol and reduce the risk of CHD.

Stent

An artificial structure inserted into a coronary artery following PTCA to support the vessel wall and reduce the risk of re-occlusion.

Tachycardia

A heart rate of 100 beats per minute or greater.

Tertiary centre

A major medical centre providing open-heart surgery and PTCA, which receives referrals from both primary and secondary care.

Thrombolysis

The lysis (dissolving) of blood clots by the use of thrombolytic drugs.

Thrombolytic therapy

A class of drugs used to achieve thrombolysis

Thrombosis

The process of clot formation (thrombus – clot).

Troponin-T

A protein released by injured heart muscle. Increasingly used to estimate risk of complications in people with heart attack or unstable angina.

Unstable angina pectoris

Angina which threatens progression to heart attack.

Ventricles

The two main pumping chambers of the heart.

Ventricular fibrillation

Rapid and chaotic beating of the ventricles caused by irregular electrical activity. The most common cause of cardiac arrest and death associated with myocardial infarction.

Warfarin

A drug used to treat blood clots.

Appendix D

Examples from NHS Beacons

The first NHS Beacons (announced on 26 May 1999) have been chosen from NHS Trusts, General Practices and other NHS funded centres that have improved the way they deliver services in a number of areas. A Beacon is a service within the NHS which has been selected as a particularly good example of what it does.

Beacons have financial support to enable them to disseminate their learning to other NHS organisations, including through the Learning Zone and Service Delivery Practice (SDP) database. Further information about the interactive learning activities offered by CHD Beacons is available from Status, who run a central booking service for those who want to visit Beacons. To contact Status please call: 01730 235014 (for GP Practices) or: 01730 235018 (for NHS Trusts and others) or by e-mail at: nhsbeacons@statusmeetings.co.uk

Those which have undertaken work which relates to Coronary Heart Disease include:

NHS Executive West Midlands Regional Office

“Saving Time, Saving Lives”: The West Midlands Thrombolysis Project. This collaborative venture resulted in significant improvements in the NHS response for patients with suspected heart attack, reducing delays in call-to-needle time across the region.

Nutrition & Diabetic Service, Luton and Dunstable Hospital NHS Trust

Bedfordshire’s ‘Asian Cookery Club’. This project was developed to encourage Asian women to learn new skills and information to help them make changes to their family diet and to encourage them in the use of healthier recipes and healthy cooking techniques.

Central Middlesex Hospital NHS Trust

The management of angina and myocardial infarction. The key features of this project are a cardiac chest pain protocol and a comprehensive secondary prevention programme. The protocol is a dynamic, multi-disciplinary tool which defines standards of care.

Institute of Psychiatry and the Maudsley Hospital Smoker's Clinic

The Maudsley Smoking Cessation Clinic. The Addiction Resource Centre at the Bethlem and Maudsley NHS Trust runs a specialist smoking cessation clinic. Smokers can refer themselves or be referred by a doctor. This clinic achieves a success rate of 20-25% a year, compared to 1% of smokers giving up on their own. Smokers are helped by trained staff, either in group therapy or in one-to-one sessions. They are also given nicotine replacement therapy at a reduced cost. The team at the Maudsley not only help people to give up smoking, but also train professionals such as GPs and practice nurses to help people quit.

Biscot Road Surgery, Luton

Clinical Governance. One person nominated to co-ordinate health promotion and audit in the practice, arrange regular clinical meetings, assess training needs of staff, and develop good project management.

Bellevue Medical Centre, Birmingham

Clinical Services, anti-coagulant clinic. This is a service rolled out to all patients aged over 65 who are in atrial fibrillation. A nurse-led clinic, using regular audits to monitor proportion of patients whose INR is within target range.

Hampstead Group Practice, 75 Fleet Road, London

Health Improvement. In line with the local HImP on CHD, the practice has developed a number of innovative multidisciplinary initiatives giving all patients access whatever their mobility.

Lower Lemon Street Surgery, Truro

Health Improvement. The project provides early assessment and support for all patients after heart attack or cardiac surgery. The British Heart Foundation fund two liaison nurses to ease discharge and train a lead nurse in each practice to carry out home-based cardiac rehabilitation and secondary prevention. The PCG fund practices to create a CHD register, set up a call and recall system and improve the links with secondary care.

Wyke Regis Health Centre, Weymouth

Health Improvement. Support for patients who wish to give up smoking. The “smokestop” group offers support from other patients who wish to give up smoking as well as professional advice. Members identify their own smoking patterns.

The Surgery, Hardingham Street, Norwich

Health improvement. Primary prevention of Coronary Heart Disease using calculation of absolute risk (Framingham Score). Early identification of high and low risk patients and rapid, appropriate treatment.

Bewsey Street Medical Centre, Warrington

Health improvement. Targeted structured reviews on all patients with known IHD in a specialised clinic in the area of high morbidity and mortality for IHD.

Dr J P Cooke, la Wellbeck Road, Chesterfield

Clinical Governance. Secondary prevention of myocardial infarction: audit of secondary prevention measures after myocardial infarction including aspirin, beta-blockers and active lipid monitoring and lowering.

Lytham Road Surgery, Fulwood, Preston

Clinical Services. Secondary Prevention Against Coronary Events (SPACE). SPACE provides a package for the nurse led dissemination and implementation of an evidence based programme for the effective core management of patients with established coronary heart disease. Its design includes a complete management framework. The programme adopts a holistic and patient focused approach for total secondary prevention, including reviewing all risk factors and managing these in line with current evidence.

Blyth Health Centre, Marine Medical Group, Blyth, Northumberland

Health Improvement. From July 1997, a Healthy Heart Programme was established to improve the recording of risk factors, review and update protocols for risk factor modification and disease management, and target prevention of CHD for high-risk patients.

Grasmere Street Health Centre, Leigh

Clinical Governance: Coronary Heart Disease Management. In this single-handed practice, all patients with CHD are identified and monitored. Evidence-based medicine shows that the most important priority is that of secondary prevention.

National Service Framework for Coronary Heart Disease

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