NATIONAL SERVICE FRAMEWORK
ON
CORONARY HEART DISEASE - EMERGING FINDINGS REPORT

November 1998
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Chapter One: A National Service Framework for Coronary Heart Disease

Introduction

1. This report sets out the emerging findings of the external reference group charged with advising the Department of Health on the national service framework (NSF) for coronary heart disease (CHD).

2. The new NHS announced that NSFs would be developed to improve the quality and consistency of services in a number of key areas. Building on the service frameworks for cancer (Calman-Hine) and paediatric intensive care, CHD and mental health, both key themes in Our Healthier Nation, are the first two NSFs to be developed. Health and local authorities need to plan for the implementation of this national service framework from April 1999 as set out in Modernising Health and Social Services: National Priority Guidance 1999/00-2001/02. Monitoring will begin in April 2000.

3. The purpose of this report is:

   to define the scope of the NSF for coronary heart disease and to indicate what it will include;

   to set out the emerging findings of the external reference group;

   to give an early outline to assist health and local authorities and their partner agencies to begin to plan for implementation through Health Improvement Programmes from April 1999.

   to highlight for all those involved the incremental progression of the implementation process

Rationale

4. CHD is the single commonest cause of premature death in the UK, accounting for about a quarter of all deaths under the age of 65. Each year, about 16,000 people die of CHD before reaching their 65th birthday. Circulatory diseases, of which CHD is the most common, are estimated to cost the NHS and the personal social service some £3.8bn annually, to account for 35 million working days lost each year, and to cost industry more than £3 billion a year.

5. From the point of view of the patient and those close to them, it is a condition likely to make a significant impact on every aspect of an individual's life including their future employment and their personal relationships. Importantly, much can be done to reduce the suffering caused by CHD. The burden of CHD is not distributed equally in society. For example, men of working age in the lowest social class are 50% more likely to die from coronary heart disease than men in the population as a whole, as are people living in the North of the country compared with the South. There is also inequity in access to services provided by the NHS and other agencies to prevent and to treat the disease.

6. 15-20% of CHD deaths are linked to cigarette smoking, and men under 50 suffering heart
attacks are nearly five times more likely to be smokers than non-smokers. This is particularly important as tobacco consumption is thought to account for a significant proportion of the differences in death rates between the best and the least well-off in society. The NSF will aim to align with the policies in the forthcoming Tobacco White Paper.

Scope

7. The NSF for CHD will address the prevention and treatment of CHD. This includes:

- population approaches to health promotion and the prevention of CHD;
- the identification and management of people at high risk of developing CHD (including cardiac rehabilitation);
- the treatment of various aspects of CHD including:
  - chest pain (angina pectoris);
  - heart attack (acute myocardial infarction);
  - irregular heart beat (arrhythmia);
  - heart failure.

In addressing CHD, there will also be benefits for those suffering from other circulatory diseases, including stroke.

Process

8. The NSF for CHD is being developed by the Department of Health advised by an external reference group jointly chaired by Professor George Alberti, President of the Royal College of Physicians, and Dr Graham Winyard, Medical Director of the NHS Executive. The membership of the reference group is set out in Annex A. The group formed five different sub-groups to consider:

i) health promotion and primary prevention, and the wider population aspects of this;
ii) role of primary care in the primary and secondary prevention of CHD;
iii) management of myocardial infarction including emergency treatment, and care in and out of hospital;
iv) specialist care for the management of angina including revascularisation; and
v) cardiac rehabilitation and secondary prevention

9. In each of these areas, the range of policies and interventions for prevention and treatment will be considered and the evidence reviewed. The external reference group has already identified a number of interventions where there is a strong evidence base. These interventions are seen as priorities for change because there are currently substantial inequalities in provision, some inappropriate targeting of treatment and, in a few instances, underprovision at a national level. Standards will be set for all of these in due course.
Chapter Two: Fundamental values, guiding principles, evidence base

1. This chapter describes a set of fundamental values and guiding principles which provide the foundation for policies for CHD that promote health and reduce inequalities, raise the quality of clinical care and reduce variations in access to, and the quality of, services.

Fundamental values and guiding principles

2. ▶ Members of the public rightly expect to receive high quality services, delivered safely and compassionately by well-trained, competent staff, wherever they live, and regardless of gender, ethnicity and age.

▶ Consistent, accurate and clear information should be readily available for members of the public about how they can play their part in preventing CHD. Health professionals and others will be actively involved in educating members of the public, and will 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 and to 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 authorities will lead the development and implementation of effective public health programmes to ensure that targets set in 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. After agreement, these groups will work together in a concerted way to implement those policies;

▶ CHD policies will be based on the best available evidence; wherever possible, this 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. This research base will cover 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;

▶ CHD policies will be based on the best possible understanding of the range of factors influencing health, including poverty. They will aim to reduce inequalities in health. Resources will be targeted at those in greatest need and with the greatest potential to benefit;

▶ The approach to preventing and treating CHD will be integrated across all areas of health policy, health promotion, primary care, community care and hospital care and there will be effective communication and collaboration between the different agencies and their staff in delivering services; and
- The NHS will ensure that its staff adopt professional codes of ethics such as those in the General Medical Council publication *Good Medical Practice*, and the *Code of Professional Conduct* published by the United Kingdom Central Council for Nursing, Midwifery and Health Visiting.

**Evidence base**

3. Although the mortality rate from CHD has decreased by one third in the last 20 years, England still has one of the highest rates in the world. There is good evidence of clinical and cost-effectiveness to support many of the interventions available for CHD. There is also evidence that clinically effective interventions are incompletely applied in practice. Some examples are:

- the provision of advice about smoking cessation, the promotion of physical activity, a healthy diet, and the avoidance of passive smoking;

- the detection and treatment of high blood pressure;

- the use of aspirin, cholesterol-lowering drugs, beta-blockers in people with recognised coronary heart disease

- coronary revascularisation in people with severe coronary artery disease;

- rapid access to resuscitation, analgesia, aspirin and thrombolysis in people suffering a heart attack;

- appropriate investigation and treatment eg with angiotensin-converting enzyme inhibitors of people with suspected heart failure; and

- provision of cardiac rehabilitation for people with coronary heart disease.
Chapter Three: Standards, interventions and performance indicators

1. The sub-groups were asked to identify possible topics for inclusion in the NSF for CHD. Their suggestions cover:
   - Preventive measures
   - The investigations and treatments that people should receive
   - The best ways to provide services to reduce death and suffering from CHD (including suggestions about staffing and configuration of services), and
   - Obstacles to be overcome

Criteria for standards

2. These topics will be the basis from which national standards are developed after review against:
   - the strength of evidence;
   - the impact on individuals and the population;
   - cost-effectiveness;
   - the robustness of monitoring arrangements;
   - the practicality of implementation; and
   - the extent of significant variations in current practice.

3. Over time, the quality of services for CHD will improve as will the ability of the NHS to measure and assess the quality of care that it provides. This implies that, in monitoring the implementation of the NSF for CHD, the standards and the variables that are measured will continue to evolve. The standards set in the CHD NSF will be constructed so that this is recognised and so that the NSF can support the continuous improvement of services for CHD.

Standards

4. It is proposed that the NSF should include a number of standards setting out, in broad terms, what members of the public can expect of a high quality service. Taken together these standards will describe a long term vision of how CHD should be prevented and treated. Each standard will be expanded to reflect detailed aspects of the care to be provided. The standards will be challenging and will exceed current performance in many areas. Where appropriate, a benchmarking approach will be taken to define for each standard what is:
   - i) the minimum acceptable;
   - ii) good practice; and
   - iii) better practice.

5. These emerging findings summarise the work to date on setting standards. Further work will be undertaken between now and the publication of the NSF. At present the standards cover the following areas:
Primary prevention and health promotion

Prevention is better than cure. Where possible we should help people avoid developing heart disease in the first place; where this is not possible we should work with them to identify and manage risk factors or early disease.

Pre-hospital care

As many as 70% of deaths caused by heart attacks take place outside hospital. Prompt and skilful resuscitation could prevent a proportion of these deaths.

Emergency and hospital care

Some modern treatments are most effective when given as soon as possible after a heart attack begins. High quality research has demonstrated that a number of straightforward effective treatments reduce the risk of death and disability. People need to be confident that these effective treatments will be offered to them and provided to a high standard when they need them.

Secondary prevention and cardiac rehabilitation

About 80% of people admitted to hospital with a heart attack survive. Experience shows that many people need support and advice to help them regain confidence in their ability to lead a normal life. Someone who has had a heart attack has an above average risk of having another one. This can be substantially reduced by adopting a healthy lifestyle (eg not smoking and taking regular exercise) and by taking appropriate medicines (eg aspirin and cholesterol-lowering agents). All such people should be given the best possible advice to help reduce their risk of further heart attack. Not everyone can recover good health. Palliative care will receive further consideration from the external reference group.

Proposed Standards

7. Based on preliminary discussion, the following standards or areas for standard setting are proposed. Further work over the coming months will refine these:

i) Publicly funded agencies should develop and deliver policies that improve people's chances of enjoying prolonged good health and that also reduce the prevalence of coronary risk factors.

ii) Primary care groups and health authorities in collaboration with their partner agencies should put in place arrangements so that people who want to stop smoking have access to smoking cessation advice, including advice about nicotine replacement therapy.

iii) Communities should provide for those who live and work in them affordable opportunities to participate in safe and regular physical activity and healthy eating to reduce their risk of developing CHD.
iv) General practitioners and primary health care teams should aim to identify all people at significant risk of cardiovascular disease but who have not yet developed symptoms and offer them appropriate advice and treatment.

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

vi) Doctors should arrange for people with suspected heart failure to be offered appropriate investigations (eg ECG, ECHO) that will confirm or refute the diagnosis and, for those in whom heart failure is confirmed, offer the treatments most likely to both relieve their symptoms and reduce their risk of death.

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

viii) 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.

ix) 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.

x) General practitioners should refer people with newly diagnosed or rapidly worsening angina to a specialist to receive appropriate investigation and treatment that will relieve their pain and reduce their risk of coronary events. This will include a non-invasive assessment of their risk of a subsequent coronary event and, for those who meet predetermined criteria, angiography.

xi) NHS Trusts should put in place agreed protocols/systems of care so patients with suspected or confirmed coronary heart disease who meet predetermined criteria will be offered timely access to exercise ECG/ angiography /coronary revascularisation / and other appropriate investigations and treatment.

xii) 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.
Key interventions.

8. Many of these standards can be achieved through the application of a range of key evidence-based interventions, which are illustrated in Table 1. These include actions offered directly to the patient or the public (e.g., advice and information, medication, X-ray investigation, and surgery). They also include interventions that will improve the ability of staff or organisations to offer a better service (e.g., changes to the organisation or management of care, the recruitment and training of staff, the introduction of better clinical decision support systems).

Table 1: Examples of evidence-based interventions and systems changes which will be required to achieve the proposed standards.

<table>
<thead>
<tr>
<th>Examples of Standards</th>
<th>Key clinical interventions</th>
<th>Key systems changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary care groups and health authorities in collaboration with their partner agencies should put in place arrangements so that people who want to stop smoking have access to smoking cessation advice, including advice on nicotine replacement therapy and other support.</td>
<td>Access to local smoking cessation services which include advice about nicotine replacement therapy (NRT).</td>
<td>Ensuring that relevant clinicians are trained and organised to identify those who wish to stop smoking and to offer the range of smoking cessation services, including advice about NRT.</td>
</tr>
</tbody>
</table>
**General practitioners and primary health care teams should aim to identify all people with recognised cardiovascular disease and offer them comprehensive advice and appropriate treatment to reduce their risks.**

People with cardiovascular disease should:
- Have those risk factors which can be reduced assessed and documented.
- Receive information about their risk factors and the scope for reducing these.
- Receive advice about how to stop smoking including advice on the use of nicotine replacement therapy.
- Receive appropriate medication, on the basis of the available evidence, including:
  - low dose aspirin for those with proven atherosclerosis
  - beta blockers for those who have had a heart attack in the past year
  - ACE inhibitors for those with left ventricular dysfunction
- Have their blood pressure maintained below 140/90 mm Hg.
- Have their blood cholesterol concentrations lowered to less than 5mmol/l and LDL-C below 3mmol/l or by 30%.
- Have their blood glucose concentration

**General practitioners and other primary care providers should develop and implement systematic methods for identifying patients with cardiovascular disease.**

General practitioners and other primary care providers should develop and implement systems to ensure that people identified as having cardiovascular disease are encouraged to have their risk factors for CHD assessed, receive appropriate lifestyle advice and support, and are helped to continue to take appropriate medication to reduce their risks.
<table>
<thead>
<tr>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unless contraindicated all patients with a proven /likely myocardial infarction should receive:</td>
</tr>
<tr>
<td>▶ Aspirin: 300 mg prior to or on admission followed by 75 to 150mg per day indefinitely.</td>
</tr>
<tr>
<td>▶ Thrombolysis: as quickly as possible, and ideally within 60 minutes of the onset of symptoms, to all patients with ECG evidence of ST elevation or new bundle branch block. (Where this is not possible thrombolysis within 12 hours is still of proven benefit.)</td>
</tr>
<tr>
<td>▶ Intravenous beta blockade should be considered on admission (eg 5mg atenolol) followed by oral therapy for at least 1 year.</td>
</tr>
<tr>
<td>▶ assessment/investigation of left ventricular function: patients with clinical evidence of heart failure or of left ventricular function should be considered for an oral ACE inhibitor.</td>
</tr>
<tr>
<td>▶ An assessment and documentation of their cardiac risk factors and advice on reducing of their risk of further disease.</td>
</tr>
<tr>
<td>Hospitals should develop and work to an agreed protocol for the management of patients with suspected acute myocardial infarction. This protocol should, as a minimum, address the issues shown and be used by all those who care for people admitted with a heart attack.</td>
</tr>
</tbody>
</table>
NHS Trusts should put in place agreed evidence-based 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.

All patients admitted to hospital because of CHD should, with the advice and support of a member of a multidisciplinary cardiac rehabilitation programme, develop an individualised plan for reducing their risk of subsequent cardiac problems.

As part of the protocol for managing CHD, hospitals should develop and implement a systematic approach to identify people admitted with coronary heart disease, to ensure that their cardiac risk factors are assessed and documented and that individually relevant advice is provided, treatment is prescribed and follow-up arranged.
Performance Indicators

11. Each standard will require performance indicators. Table 2 illustrates possible indicators for the management of myocardial infarction (heart attack).

Table 2: Example of performance indicators for myocardial infarction (heart attack)

<table>
<thead>
<tr>
<th>Domains of performance</th>
<th>Possible Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Health improvement</td>
<td>- Standardised mortality ratios (at national and HA level) for CHD</td>
</tr>
<tr>
<td></td>
<td>- other indicators proposed in <em>Our Healthier Nation</em></td>
</tr>
<tr>
<td>II Fair access</td>
<td>- Thrombolysis audits *</td>
</tr>
<tr>
<td>Access to aspirin and thrombolysis</td>
<td></td>
</tr>
<tr>
<td>Access to cardiological assessment as inpatient</td>
<td>- Finished Consultant Episodes*</td>
</tr>
<tr>
<td>Access to revascularisation</td>
<td>- CABG and PTCA rates *</td>
</tr>
<tr>
<td>Access to cardiac rehabilitation</td>
<td>- Audits of rehabilitation uptake</td>
</tr>
<tr>
<td>III Effective delivery of appropriate health care</td>
<td></td>
</tr>
<tr>
<td>Known to be clinically effective</td>
<td>- CABG and PTCA rates*</td>
</tr>
<tr>
<td>Appropriate to need</td>
<td>- Annual hospital admission rates *</td>
</tr>
<tr>
<td>Timely</td>
<td>- Audits of discharge prescriptions by diagnosis</td>
</tr>
<tr>
<td>Compliance with standards</td>
<td>- Thrombolysis audits*</td>
</tr>
<tr>
<td>Service organisation</td>
<td>- Local implementation of human resource strategy by agreed workforce plans, and training and development plans</td>
</tr>
<tr>
<td>IV Efficiency</td>
<td>- Costed Healthcare Resource Groups (HR Gs)/Healthcare Benefit Groups (HBGs)</td>
</tr>
<tr>
<td></td>
<td>- Unit costs</td>
</tr>
<tr>
<td></td>
<td>- Value For Money indicators</td>
</tr>
<tr>
<td>Domains of performance&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Possible Indicators</td>
</tr>
<tr>
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</tr>
</tbody>
</table>
| **V Patient/Carer experience**       | ▶ Patients who wait more than 60 minutes from call to receiving thrombolysis  
▶ National Survey of NHS patients  
▶ Waiting times for elective surgery  
▶ NHS Charter  
▶ Complaints |
| **VI Health outcomes of NHS care**   | ▶ % of people per annum who report having ceased smoking  
▶ Statins/other drugs such as aspirin prescribed in primary care*  
▶ Audits of referral rates for cardiac rehabilitation  
▶ Case fatality rates for patients admitted to hospital alive  
▶ Mortality from CHD under 65 (30 day mortality rates following myocardial infarction)* |

* data currently available

Chapter Four: Next steps in developing the National Service Framework

1. The external reference group will continue to work with the Department of Health to develop the NSF for CHD over the coming months. An important element will be recommending targets for each standard. These targets, though challenging, will reflect a realistic assessment of current practice and the capacity of the NHS to deliver these changes.

2. Identified in the table below are some of the key priorities to be tackled over the coming months:

<table>
<thead>
<tr>
<th>Priority</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Research and development</td>
<td>The external reference group will identify areas where evidence is weak and draw up a list of research needs to inform the selection of future priorities. This may be commissioned through the Health Technology Assessment (HTA) programme and/or the NHS Research and Development Service Delivery and Organisation programme, currently under development. Current relevant research is summarised at Annex C.</td>
</tr>
<tr>
<td>Clinical decision support</td>
<td>Work will be commissioned to develop further clinical decision support tools some of which are already in use. Following evaluation and wider implementation these will help clinicians in all care sectors to make appropriate decisions at the time of consultation. In addition, the external reference group will identify areas where further guidelines or the updating of existing guidelines are required to be included in the work programme of the National Institute for Clinical Excellence. Current available clinical decision support systems are summarised at Annex D.</td>
</tr>
<tr>
<td>Revenue and capital funding</td>
<td>The funding implications of the NSF and possible standards are currently being considered. This analysis will be taken into account in developing the standards which will be reviewed against criteria including the affordability and cost-effectiveness of the interventions under consideration.</td>
</tr>
<tr>
<td>Human Resources including lifelong learning</td>
<td>The implications of the NSF for the clinical professions involved in delivering services to people are significant. Work is in hand to develop a closer understanding of the impact of the NSF on workforce planning and education for the key professions (including nursing staff, general practitioners, cardiologists, cardiac surgeons, geriatricians, radiologists, physiotherapists and perfusionists). This will also be informed by the development of guidance on continuing professional development, which is being taken forward as part of the quality agenda, &quot;A First Class Service&quot;.</td>
</tr>
</tbody>
</table>
| Information | The external reference group, in the context of Information for Health, will explore the implications for this NSF. Specifically, development of the electronic patient record will:  
  - help with the extraction of data for the purposes of clinical audit and performance measurement, including the development of the UK Central Cardiac Audit Database (UKCCAD);  
  - lead to better inter-disciplinary and cross-sectoral information sharing which will be necessary for the delivery of the NSF;  
  - enable clinicians to monitor clinical outcomes more readily since patients with problems can be flagged and their clinical management monitored more closely;  
  - ensure that patients who are at high risk of CHD can be identified earlier.  
The introduction of Health Benefit Groups and Healthcare Resource Groups will facilitate the collection and analysis of clinically relevant data. The National Electronic Library for Health will provide access to important accredited clinical reference material. This may also include material for patients and carers. |
| Performance assessment | The external reference group will identify performance indicators to enable the Regional Offices of the NHS Executive and the Commission for Health Improvement to track implementation and achievement of the targets. |
Communications strategy

This will include the use of the Internet, NHS Net, intranets and extranets to establish websites and other communication tools eg CD ROMs, to assist:

- sharing good practice; and
- the development, and local adaptation of various toolkits to facilitate implementation.

It is envisaged that these systems would be available to clinical professionals and managers, and other government departments, agencies and patients and carers where appropriate.

Work is also under way to develop health promotion and educational material for both patients and professionals with responsibility for the care of CHD patients.

Conclusion

The Government is determined to reduce inappropriate variations in the quality of NHS care for heart disease. The development of a National Service Framework for Coronary Heart Disease is a new and innovative way forward. It will address both the prevention and treatment of CHD. The emerging findings demonstrate that the NSF represents an end to short termism in the NHS by setting out to influence services for a decade or more. It aims to build an approach that allows standards and targets to change over time to ensure that the NHS can continuously improve the services that it provides. It also recognises that the quality of care depends not only on the relationship between clinician and patient but also on the quality of the organisation in which care is delivered.

The NSF will set out broad standards that together describe a vision of the way in which the services for the prevention and treatment of CHD should be provided and importantly, the NSF will also include tools to help the NHS and others turn the vision of the NSF into practice. During the coming months, further work will be undertaken to define the interventions within each of these areas, to develop comprehensive service models and set challenging but achievable targets for the NHS.
ANNEX A

*External Reference Group membership*

Professor George Alberti (Chairman)  
President, Royal College of Physicians of England

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Director of Health Services, NHS Executive

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Head of Department of Epidemiology and Public Health, University of Newcastle

Dr Roger Boyle  
Consultant Cardiologist, York District Hospital

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Nurse Executive Director, Oxfordshire Community Health NHS Trust

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General Practitioner, Moorfield House Surgery, Leeds

Dr Peter Doyle  
Health Services Directorate, NHS Executive

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Professor in Epidemiology of Old Age, University of Bristol

Professor Martin Eccles  
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Ms Elaine Griffiths  
Consultant Cardiothoracic Surgeon, Cardiothoracic Centre, Liverpool NHS Trust

Professor Rod Griffiths  
Regional Director of Public Health, West Midlands Regional Office

Dr Nicholas Hicks  
Consultant in Public Health, Oxford Health Authority and NHS Executive

Professor Richard Hobbs  
Department of General Practice, University of Birmingham

Dr Roger Johnson  
Medical Director, Manchester Health Authority

Mr Michael Knight  
Patient Representative, British Cardiac Patients Association (BCPA)

Mrs Eve Knight  
Patient Carer, BCPA

Mr Paul Lincoln  
Director, Health Education Authority

Professor Michael Marmot  
Department of Epidemiology and Public Health, University College, London

Ms Patricia McCann  
Chief Executive, St Mary's Hospital NHS Trust

Ms Jane McKessack  
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Dr Ruth Milton  
Senior Registrar in Public Health, Kingston and
Professor Brian Pentecost
Medical Director, British Heart Foundation

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Health Services Directorate, NHS Executive

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Patient Representative

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Mrs Roberta Wallis
Mrs Diana Paine
Coronary heart disease results from the reduction or complete obstruction of the blood flow through the coronary arteries by narrowing of the arteries (atherosclerosis) and/or a blood clot (thrombus). There is evidence that if CHD is properly managed, progression of the disease can be slowed down and possibly reversed in some people. If untreated, it is progressive and will lead to death either from a heart attack (acute myocardial infarction) or from heart failure. CHD causes:

- chest pain (angina pectoris)
- heart attack (acute myocardial infarction)
- irregular heart beat (arrhythmia)
- heart failure

all of which are within the scope of the NSF though not all have been covered in detail in this report.
1. A considerable amount of Department of Health research investment has been directed towards CHD covering many aspects of prevention, investigation, treatment and care.

2. The Department of Health Policy Research Programme supports broadly based public health work related to CHD. For example, the Nottingham Heart Attack Register, which documents the services that the population of a defined area receive when they have a heart attack, and the impact of those services. The Policy Research Programme also funds the British Regional Heart Study, a prospective investigation of prevalence, natural history and management of cardiovascular disease. This study has recently been extended to include women as well as men.

3. There is also a major programme of work on nutrition. This looks at the relationship with obesity, with CHD and with other conditions, and reviews opportunities and barriers to healthy eating in a number of at risk population groups.

4. Smoking is being addressed in a number of current projects.

5. The NHS Health Technology Assessment (HTA) Programme assesses the cost, effectiveness and broader impact of any method used by health professionals to promote health, or 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.

6. A time limited NHS R&D programme in Cardiovascular Disease and Stroke has also commissioned relevant projects. Examples of projects are:
   - the Oxford community myocardial infarction incidence study
   - timing targeting and psychosocial emphasis in cardiac rehabilitation
   - a comparison of long-term effect of specialised pacing on ejection fraction
   - a brief intervention to prevent smoking relapse in cardiac patients - a controlled trial
   - a case-controlled study of acute myocardial infarction and Hormone Replacement Therapy
   - an evaluation of behavioural methods for cardiovascular disease risk reduction in general practice

7. Regional Offices also fund NHS Research and Development on CHD. A series of randomised controlled trials of computer based smoking cessation packages are taking place in the West Midlands. Four groups are involved: pregnant women, young people, the general adult population, and the primary care population. The trials will compare standard smoking cessation interventions with expert computer systems and specific literature based on Prochaska's "stages of change" model. This model conceives behaviour change as an evolving process. The trials will evaluate for the first time the effectiveness and cost-effectiveness of the model for reducing smoking in the UK.
8. A register of NHS funded research (the National Research Register) will be launched in early 1999, and will be a valuable resource for those planning and commissioning new research.

9. The Department is funding a project to develop a micro-simulation model. This will enable policy makers to analyse the likely impact on costs and benefits, over different time horizons, of alternative strategies for the treatment and prevention of CHD. The project is a collaboration between the London School of Hygiene and Tropical Medicine, Southampton University and Birmingham University. It is in the early stages of development but will provide a planning tool for the future.

10. An epidemiologically based health care needs assessment sponsored by the NHS Executive is currently being updated. (Health Care Needs Assessment, the epidemiologically based needs assessment reviews Volume 1, Eds. Stevens & Raftery 1994)

ANNEX D

CLINICAL DECISION SUPPORT SYSTEMS

The NHS Executive has commissioned work to develop a range of clinical decision support systems, on which this NSF can draw.

Effective Health Care Bulletins and Effectiveness Matters

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

*Effective Health Care Bulletins:*

Volume 1 (1992-95):  
- Cholesterol: screening and treatment  
- Implementing clinical practice guidelines

Volume 2 (1995-96):  
- Hospital volume and health care outcomes, costs and patient access

Volume 3 (1997-98):  
- The prevention and treatment of obesity  
- Management of stable angina

- Cardiac Rehabilitation

*Effectiveness Matters*

Volume 1 (1995):  
- Aspirin and myocardial infarction

Volume 3 (1998):  
- Smoking cessation: what the Health Service can do.

The Centre for Reviews and Dissemination at York have also have been commissioned to produce a publication on hypertension.
Clinical audit

Since 1989 the NHS Executive has funded the development of clinical audit. General allocations to Health Authorities include provision for their support of clinical audit at local level. Additionally the NHS Executive has funded a pilot project to develop a comprehensive computerised clinical audit system for cardiac services. This brings together several pre-existing databases including the heart valve register and paediatric surgical register into one database, the UK Central Cardiac Audit Database.

Clinical guidelines

Well-produced, valid, relevant clinical guidelines can be important tools for improving the quality of care. Large numbers of guidelines are published each year. Not all are of high quality. A few guidelines have been commissioned by the Department of Health, either directly or through the NHS Research and Development Programme. In addition, The Department of Health has funded the formal appraisal of some of the guidelines that it has commissioned. Guidelines that have been wholly or partly funded by the Department of Health include:

- ACE inhibitors in the primary care management of adults with symptomatic heart failure (North of England Guidelines Group);
- the management of stable angina (North of England Guidelines Group and the British Cardiac Society); and
- the pharmacotherapy of obesity (Royal College of Physicians).

The guidance from the Standing Medical Advisory Committee on cholesterol-lowering therapy (statins) which was published in August 1997 is also relevant to the NSF for CHD. Statins were then and remain the fastest-growing drug prescribed by general practitioners, and the NSF will provide further advice on the use of these and other pharmaceutical products used to treat CHD.

Other clinical guidelines funded by the Department of Health that are under development include:

- guidelines on primary care drug therapy for patients who have had a heart attack (North of England Guidelines Group); and
- smoking cessation guidelines

The Health Education Authority has also developed a range of guidance on risk factors, including healthy eating, physical activity and exercise on prescription schemes which, although not clinical guidelines, can support initiatives in health promotion.
Although the Department of Health can commission guidelines, the majority of guidelines are developed, commissioned and produced by others. Professional societies are an important source. These have included:

- The early management of patients with myocardial infarction (British Heart Foundation)
- Management of acute myocardial infarction (British Cardiac Society / Royal College of Physicians)
- Cardiac rehabilitation in the UK (British Cardiac Society / Royal College of Physicians)
- Hypertension guidelines (European Hypertension Society / Joint British Specialist Societies)

**Implementation projects**

There are several relevant projects in progress which will support implementation which include:

*Framework for Appropriate Care Throughout Sheffield (FACTS)*

The work of the facts project and the facts national learning network address the key issue of how to bring clinical behaviour more closely into line with the evidence, across a whole district, so that:

- the change is based on best evidence from current research findings;
- participants in the change perceive it to be in their interests to co-operate
- the change supports the implementation of the NSF and Health Improvement Programmes

The facts project focuses on CHD and specifically on aspirin, anti-coagulation, ACE inhibitors and statins.

*PRODIGY (Prescribing Rationally with Decision Support in General Practice Study)*

This NHS Executive-funded project at the University of Newcastle aims to develop and evaluate a computerised decision-support system for general practice. It presents clinical advice and prescribing recommendations, as well as non-drug treatments and patient information leaflets, across a wide range of clinical conditions. A refined version of PRODIGY is currently being evaluated; and

*Evidence 99*

This is a compendium of clinical evidence being developed jointly by the British Medical Journal and the American College of Physicians. The first issue is expected in early 1999. It has developed from the Clinical Effectiveness Directory which was supported by the NHS Executive.

The Heartsave project funded by the British Heart Foundation is developing resources and training material to promote a systematic approach to secondary prevention in primary care.
The PACE Programme (Promoting Action on Clinical Effectiveness),

This project which was funded and managed by the Kings Fund. It established a network of 16 diverse demonstration projects across the country each of which worked 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 has documented improvements in the quality of care in the project sites and has also sought to identify a number of generalisable lessons about promoting clinical effectiveness in the NHS.
### ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACE inhibitors</td>
<td>Angiotensin converting enzyme inhibitors</td>
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<tr>
<td>CABG</td>
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<td>CHD</td>
<td>Coronary heart disease</td>
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