



**Cynulliad Cenedlaethol Cymru  
The National Assembly for Wales**

## **Tackling CHD in Wales: Implementing Through Evidence**

*A framework within which health professionals, patients and the communities of Wales can improve services, ensure modern practice and measure their achievement.*

This plan will:-

- ♥ *empower patients to take responsibility;*
- ♥ *enable health professionals to provide high quality services, which have the capacity to develop and keep pace with new evidence;*
- ♥ *ensure health authorities, local authorities, local health alliances, local health groups and NHS trusts deliver in partnership;*
- ♥ *decrease the number of people at risk of developing coronary heart disease and improve outcomes for people with the disease*



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## 5 EVIDENCE BASED STANDARDS FOR TACKLING CORONARY HEART DISEASE IN WALES

1. Health authorities through their local health groups and with local authorities in partnerships through local health alliances should develop, implement, and monitor evidence-based programmes to address tobacco use, diet and physical activity, targeted at the most disadvantaged communities in Wales.
2. Everyone at high risk of developing coronary heart disease (CHD) and all those who have been diagnosed as having the disease should have access to a multifactorial risk assessment and be offered an appropriate treatment plan.
3. Everyone with an acute episode of coronary heart disease should receive high quality evidence based care.
4. Everyone with heart failure should be recognised and offered appropriate evidence-based care.
5. Everyone diagnosed with atrial fibrillation should be offered appropriate evidence-based care.



# CHAPTER 1: Setting the Scene

## *Putting evidence-based standards for coronary heart disease (CHD) into practice*

**1.1** This is a plan to implement five evidence-based standards for tackling CHD in Wales. In common with England's National Service Framework action plan, it has a very clear purpose which is to:

- *DRIVE up quality*
- *TACKLE variations in access and clinical care*
- *INCREASE the cost-effectiveness of care*
- *ENHANCE the users' experience*

## *The seven Welsh NHS core values*

**1.2** The plan promotes the seven Welsh NHS core values set out in Putting Patients First. These are Fairness, Effectiveness, Efficiency, Responsiveness, Integration, Accountability and Flexibility. This is done in part by using the findings of the baseline review of CHD services in Wales, undertaken from March to August 2000 by the Specialised Health Services Commission for Wales (SHSCW). The results of the review make explicit the inequalities which exist at present in Wales due to the different levels of service provision and access. Recognition of this led to the Government's decision to develop National Service Frameworks (NSFs).

## *High quality evidence-based care*

**1.3** Ensuring that consistent services are available across Wales is a key part of this plan. The population of Wales must be assured that high quality care is available to them wherever they live.

When considering a programme for CHD, all aspects of the disease process need to be taken into account and all those who need care identified. It must be emphasised that such services can only provide effective care if high quality services are in place in the primary care setting, at district general hospitals and tertiary centres to ensure a co-ordinated service between primary, secondary and tertiary care.

## *Providing the facilities and the resources*

**1.4** This plan will be supported by a resource plan which will identify the investment required to improve the facilities and services available to treat the people of Wales who have CHD or are at risk of the disease. This investment plan includes the development of policies, the provision of staff, medicines training and physical facilities. Investment is required in these areas to ensure that the plan can be achieved.

## *Empowering the patient*

**1.5** This implementation plan ensures that individuals are enabled to minimise their CHD risk factors, working in partnership with those who provide their care. It also includes the commitment to develop clear pathways to make care co-ordination more explicit to the patient and clinicians involved. A set of model patient pathways will be published in 2001 in support of this plan along with a model patient held record.

## *A balanced plan*

**1.6** A successful, comprehensive plan for tackling CHD must achieve a balance between prevention, diagnosis, treatment and ongoing care. All interventions should be clinically effective, have the support of those required to implement them and be feasible. There is no doubt that the implementation of such a plan will lead to a reduction in the excess morbidity and mortality associated with CHD and to significant population health gain.

## *Risk factors*

**1.7** There is a large amount of evidence about the reasons why some individuals develop premature CHD and also consensus that there are key contributory risk factors. People at high risk of developing CHD are those with one or more of the following risk factors, multiple risks being especially dangerous: -

- *diabetes;*
- *hypertension (high blood pressure);*
- *hyperlipidaemia (high blood cholesterol and/or triglyceride);*
- *a family history of CHD;*
- *a smoking habit;*
- *too overweight;*
- *too little exercise.*

## *Tools for measuring the level of risk*

**1.8** A number of "risk assessment tools" have been developed to estimate an individual's total risk of CHD. The tools identify the risk factors and apply a calculation which gives a score that is the estimate of that person's increased risk over and above the risk of someone of the same age and sex. Risk assessment tools need to be appropriate for people with and those without CHD.

Each Local Health Group (LHG) will need to agree with the local district general hospital (DGH) and the major specialist tertiary care provider which assessment tool is to be used in that locality, in order to achieve a consistency of approach across primary, secondary, and tertiary care. The consistent use of these assessment tools by primary care teams, hospitals and tertiary care providers, and the entry of the results into a patient held record, will enable patients and those providing their care to see their risk factors at a glance. An appraisal of the risk tools available for use will be published with the model protocols and patient held record in 2001.

### *Involving the patients or people at high risk*

**1.9** It is important that each member of the population has information about the factors which influence their individual risk of developing, or worsening pre-existing, CHD. A central feature of this implementation plan is the aim that all patients diagnosed with CHD, and all people identified as being of high risk of developing it, will be provided with:

- *a written personal assessment of their risk factors;*
- *information on how the risks of either developing CHD or worsening the CHD they already have can be minimised or reduced;*
- *a written, holistic, personal treatment plan, incorporating an agreed prevention or rehabilitation programme*

### *The CHD patient held record*

**1.10** A model patient held record is being developed for use throughout NHS Wales and will be available in 2001. All LHGs, their local DGH and tertiary care provider will be required to develop the model to reflect the local service provided. By December 2002, all patients in Wales with CHD, or at a high risk of developing it, must have been offered such a record. All the professionals caring for the patient (general practitioners, nurses, consultants, pharmacists, physiotherapists, dietitians, and many others) should develop systems to keep the record up to date. Patients will also be encouraged to enter relevant information in their records.

### *Rehabilitation*

**1.11** The implementation plan encourages a situation where people who are at high risk and patients who have been diagnosed with CHD should be enabled to take action to minimise or reduce their risk. To support them, it is proposed that a section of the personal treatment plan should address prevention and rehabilitation, including for example an exercise plan and advice on diet.

Rehabilitation must be provided in an agreed way across primary, secondary and tertiary care, and should be accessible and acceptable to the patients.

In the case of patients who have experienced an episode of acute coronary syndrome, rehabilitation will form part of an integrated treatment programme. This action plan recommends that a specialised nurse be appointed in each LHG to work with the DGHs and tertiary centres, to organise locally based programmes in collaboration with the DGH rehabilitation team, building on the expert programmes already in place in parts of Wales. Rehabilitation programmes should continue to be the subject of research evaluation.

### *Tackling coronary heart disease in a collaborative way*

**1.12** This implementation plan provides a mechanism to ensure a consistent approach to tackling CHD.

CHD must be tackled by the concerted effort of a large number of individuals and organisations all of whom have a major part to play. These include: -

- *communities and schools;*
- *patients and carers;*
- *professionals in primary, secondary and tertiary care;*
- *the ambulance service;*
- *rehabilitation services;*
- *occupational health services;*
- *local health groups and health authorities;*
- *local authorities, health alliances;*
- *health promotion groups;*
- *voluntary sector organisations;*
- *employers;*
- *employment services;*
- *the National Assembly for Wales;*
- *the media;*
- *all Wales Health Professional Groups;*
- *exercise practitioners.*

## CHAPTER 2: The Evidence Base

### *Definition of CHD:*

**Coronary heart disease** occurs when the coronary arteries become narrowed or blocked sufficiently to reduce the blood supply to the heart muscle. This deprives the heart muscle of oxygen (ischaemia) and gives rise to chest pain (angina) and irregular heart beats (arrhythmias).

**A heart attack (myocardial infarction)** occurs when the reduction in the oxygen supply to the heart muscle is so severe that a portion of the heart muscle dies.

**Heart failure** occurs when symptoms and signs arise because heart function is so badly impaired that the circulation is unable to match appropriately the requirements of the patient.

### *The facts about coronary heart disease in Wales*

**2.1** Coronary heart disease is a leading cause of death in the United Kingdom, and particularly in Wales, where the death rate is greater than in the majority of the countries in Western Europe. There are significant geographic variations in the prevalence of the disease in Wales, caused by differences in risk factor prevalence and service provision. When this plan is implemented it should be targeted initially towards those patients and communities that have the highest prevalence of risk factors and/or the lowest levels of service provision.

There were 7,933 deaths in Wales from CHD during 1997. People with CHD were and continue to be the major users of hospital services: 8,811 admissions in 1997 with a diagnosis of angina, 5,901 admissions with acute myocardial infarction (AMI) and 1,278 coronary artery bypass grafts (CABG) during 1998/1999.

### *Some stark facts about coronary heart disease:*

- ♥ *During the first three hours after a heart attack, every minute of delay in giving thrombolysis (clot busting) treatment leads to a loss, on average of 11 days of life.*
- ♥ *75% of the patients who die from heart attacks do so before they reach hospital.*
- ♥ *The prospects of a successful outcome after cardiac arrest are slight if definitive treatment cannot be given within 8 minutes*
- ♥ *The availability of defibrillators in the community and the training of the population to resuscitate can and does save lives.*
- ♥ *A large proportion of CHD is preventable with lifestyle changes.*

### *The size of the challenge of coronary heart disease*

**2.2** The number of premature deaths attributed to CHD is the best measure available of the level of disease in the population. In the future LHGs will establish chronic disease management systems with information on all patients with CHD. These systems will be a source of data of the incidence and prevalence of the disease in the population, and associated morbidity. It will improve the planning of services and make it possible to target those most in need.

### *The challenge for primary care teams and local health groups*

**2.3** The large number of people in Wales affected by CHD has major implications for primary care teams and LHGs. They will need to identify all those at risk, tell them about their risk and provide an appropriate treatment plan. A number of LHGs are making considerable progress towards this objective.

### *Coronary heart disease in Ynys Môn/Isle of Anglesey*

**2.4** Recent work by the Ynys Môn/Isle of Anglesey LHG to establish a chronic disease management system for all patients with CHD on the island has identified 2,700 people with, or at a high risk of developing, CHD - approximately 4% of the population. All are now in the process of being offered:-

- *a multifactorial risk assessment identifying their risk factors;*
- *information about the disease and how the risk can be reduced;*
- *smoking cessation advice;*
- *an appropriate treatment plan;*
- *regular review and support.*

Using the Ynys Môn figures, it is estimated that there are at least 118,000 people in Wales who must be offered risk assessments and a personal treatment plan. As other LHGs establish their CHD management systems, a more accurate figure will be available.

### *The challenge for those with, or at high risk of, developing coronary heart disease*

**2.5** Those with, or at high risk of, developing coronary heart disease will need positive support and be required to modify risk factors - a process that many will find difficult and challenging, including as it does the requirement to achieve: -

- dietary changes;
- an increase in the amount of exercise taken;
- Smoking cessation;
- compliance with the agreed medicine regimen.

## *Coronary heart disease is a chronic disease*

**2.6** CHD is a common and chronic disease. This means that people with it need a lifetime of care, risk factor management, treatment and a personal understanding of their disease.

## *Deaths of those below 65 years of age*

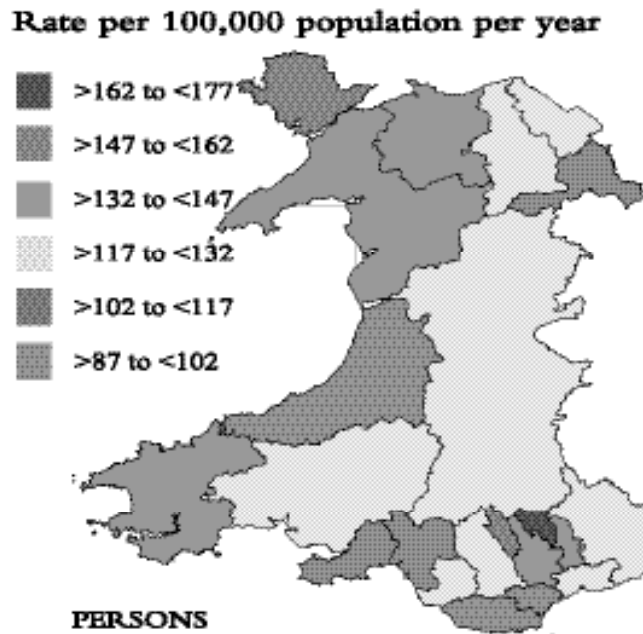
**2.7** Of particular importance are the deaths below the age of 65, a large number of which take place before the patient reaches hospital. A significant number of these lives could be saved by better and more rapid intervention making the pre-hospital care chapter identified in this action plan so critical. This plan stresses the importance of involving communities in tackling the disease. There is a need to provide resuscitation training and/or refresher training across the community including the NHS, local government, the voluntary sector, and local business/enterprise. In addition, there is a need to provide resuscitation training to all school children and NHS staff. Such schemes need to be initiated in communities that have the highest levels of deaths under the age of 65 which occur before reaching hospital.

## *The death rate from myocardial infarction (heart attack)*

**2.8** The death rate from myocardial infarction (MI) is standardised in order to take account of the age structure of the population.

The average annual European age-standardised MI mortality rates for all ages by Welsh unitary authority area, over the six-year period 1990-1995, are shown in Table 1. This shows a considerable difference between unitary authority areas with the age-standardised mortality rate varying from 87 to 177. The Standard Morbidity Rate for Wales as a whole is 108.

**Table 1: Age-standardised mortality rates for myocardial infarction (heart attack) 1990-1995**



Source :-An Atlas of Health Inequalities between Welsh Local Authorities Welsh Local Government Association Dr Stephen Monaghan

### **Ethnic minority differences in the prevalence of coronary heart disease**

**2.9** There are ethnic variations in the prevalence of CHD due in part to the differences in the prevalence of the risk factors. Diabetes and hypertension are particularly prevalent in people of South East Asian and African origin; therefore, targeted and specific plans need to be developed for these ethnic minority groups in Wales.

### **The evidence base**

**2.10** The Protocols for Investment in Health Gain in Wales were written in the early 1990s and covered topics where the introduction, or more widespread use of effective practice could lead to worthwhile improvements in the health of the people of Wales. In 1997, the protocols were revised with the intention of building on the previous work to ensure that evidence-based practice was at the centre of the Welsh NHS. The revised protocols were published as Health Evidence Bulletins.

## *The Health Evidence Bulletins Wales – Cardiovascular Disease and Healthy Living*

**2.11** *The Health Evidence Bulletin Wales - Cardiovascular Disease* was prepared by reviewing and updating the earlier *Protocol for Investment in Health Gain: Cardiovascular Disease*. It provided evidence about the prevention, diagnosis and treatment of CHD. The Bulletin was published in 1999 and an update will be published on the Internet in the near future. In keeping with the original protocols, the revised documents are designed to assist health authorities in developing local strategies and in commissioning high quality health care for CHD.

## *The Health Evidence Bulletin Wales – Healthy living*

**2.12** *The Health Evidence Bulletin Wales – Healthy Living* was published in the summer of 2000, and has informed this implementation plan.

## *The Health Evidence Bulletin team*

**2.13** The Health Evidence Bulletin team has advised on the evidence base for this implementation plan. The statements in the Bulletin and the evidence-based standards, on which this implementation plan is based, have been derived from a methodical summary of the evidence found through a formal literature search across a wide range of sources and critically appraised using internationally accepted methods. This has been compiled into a technical document under the direction of a public health physician, and reviewed by a multidisciplinary team directly involved in patient care.

## *Keeping the evidence base up to date*

**2.14** It is important that a CHD implementation plan is based on the most up to date evidence. In order to ensure this, a regular review of the Health Evidence Bulletin - Cardiovascular Disease should be undertaken. This will be particularly relevant in relation to heart failure and atrial fibrillation where the evidence base concerning treatment is developing rapidly.



# CHAPTER 3: The Five Evidence Based Coronary Heart Disease Standards for Implementation in Wales

## *Evidence-based standards for tackling coronary heart disease in Wales*

**3.1** These standards are built on the work of the External Reference Group of the National Service Framework for Coronary Heart Disease chaired by Professor George Alberti, President of the Royal College of Physicians (England and Wales) and published in England in January 2000. They are evidence-based and supported by the work of the project teams responsible for the *Evidence Based Health Bulletins on Cardiovascular Disease and Healthy Living*. These standards, if implemented carefully and consistently, have the potential for enormous health gain in Wales.

## *Five evidence based standards*

- 1. Health authorities through their local health groups and with local authorities in partnerships through local health alliances should develop, implement, and monitor evidence-based programmes to address tobacco use, diet and physical activity, targeted at the most disadvantaged communities in Wales.*
- 2. Everyone at high risk of developing coronary heart disease (CHD) and all those who have been diagnosed as having the disease should have access to a multifactorial risk assessment and be offered an appropriate treatment plan.*
- 3. Everyone with an acute episode of coronary heart disease should receive high quality evidence based care.*
- 4. Everyone with heart failure should be recognised and offered appropriate evidence-based care.*
- 5. Everyone diagnosed with atrial fibrillation should be offered appropriate evidence-based care.*

## *The National Service Framework Standards*

**3.2** These five standards for implementation in Wales are consistent with the twelve English Standards. In addition a standard specifically addressing Atrial Fibrillation, a cause of significant morbidity has been included in this implementation plan.

The Standards for Wales encompass those set out for England as follows: -

### **Welsh Standard:**

### **English Standard:**

1	1 & 2
2	3,4,8,9,10 & 12
3	5,6 & 7
4	11
5	-

### **An action plan**

**3.3** A detailed action plan has been developed to implement these five standards; it consists of 30 key actions each of which have a series of implementation steps with a clear statement of:

- *the timescales for implementation;*
- *who is responsible for the action;*
- *how implementation is to be performance managed on an all Wales basis;*
- *the information required.*

The key actions have been informed by the work of the Steering Board members, and a large number of experts and individuals who gave time to preparing papers, participating in masterclasses and attending a 2-day workshop in August 2000.

Consequently, this implementation plan has the support of many, including patients and those representing them, who have been closely involved in the work.

### **A baseline review**

**3.4** A baseline review was undertaken between March and August 2000 in order to ascertain the level of cardiac services available to patients in NHS Wales. The key findings are referred to in this document. The review has established a baseline against which the progress in achieving the key actions can be measured. This will be published separately in 2001 to provide a detailed baseline to staff responsible for implementing the plan. A baseline review has not been undertaken of the health promotion programmes in place in Wales, but has been built into the action plan (key action 1).

### **A meaningful Plan sensitive to Wales**

**3.5** The Plan is short, clear, unambiguous and purposeful. It recognises the diversity of Wales, and stakeholders have been involved in its production. Its target is to achieve results in the areas that will lead to the greatest improvements. It requires investment in services, the recruitment of new staff and the necessary training infrastructure. It is not meant to detail all aspects of the provision of CHD services but to lay down a framework within which local services can develop and grow. It is ambitious and will require the concerted effort of everyone involved in the care of those with CHD and those with the disease to implement it. It is achievable and auditable.

# CHAPTER 4: The Implementation of Standard 1

## *Standard 1:*

Health Authorities, through their local health groups and in partnership with Local Authorities and their Local Health Alliances should develop, implement and monitor evidence based programmes to address the impact of tobacco use, diet and physical activity, targeted at the most disadvantaged communities in Wales.

### *Reducing the incidence of risk factors in the population*

**4.1** This standard is aimed at reducing the incidence of risk factors in the population. It builds on the work of Health Promotion agencies in Wales including the Tobacco Programme in Wales agreed by the NAW in October 1999, and is consistent with the existing Promoting Health and Well Being Strategy following on from Better Health - Better Wales. The standard was informed by the Health Evidence Bulletin Wales - Healthy Living published in the summer of 2000 (It is important for there to be a consistent and evidence based approach to the advice given about healthy living).

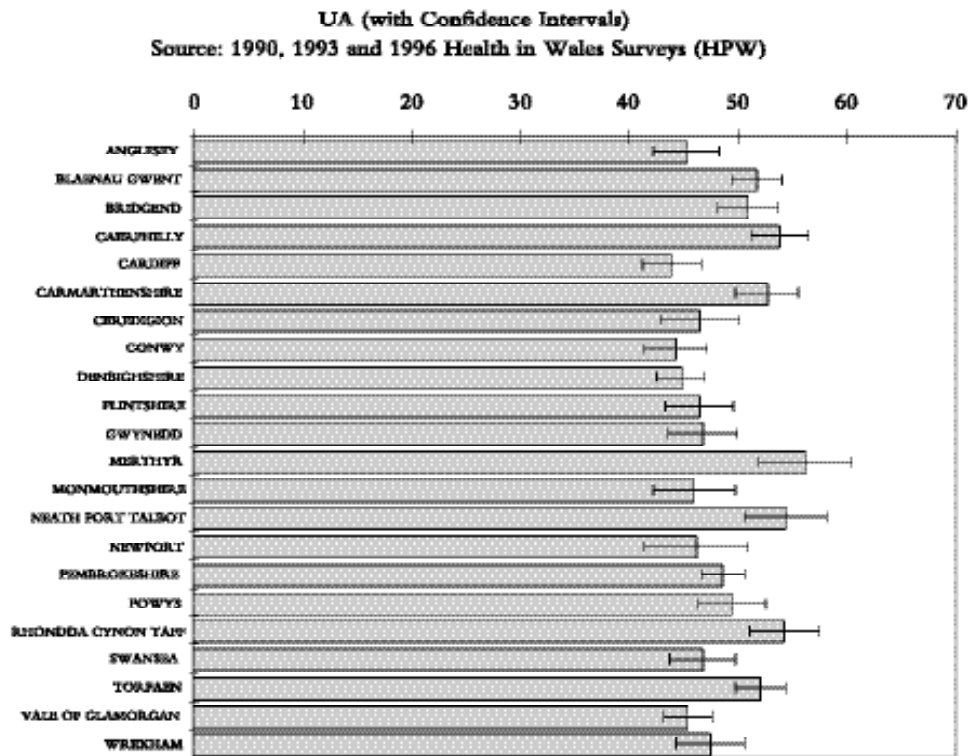
### *The present situation*

**4.2** Tables 3 and 4 illustrate the level of obesity and smoking in the population as measured by the Welsh Health Surveys. There are high numbers of people who are overweight and who smoke in Wales. Conversely, the consumption of fruit and vegetables and the taking of exercise is low. There is a difference between local authority areas that should be taken into account when action plans are being developed. During the baseline service review, information was collected in relation to the existence of healthy eating and smoking policies in the hospitals visited. In the majority of hospitals, such policies existed but in a third of hospitals, there was a lack of knowledge regarding the detail of the policies.

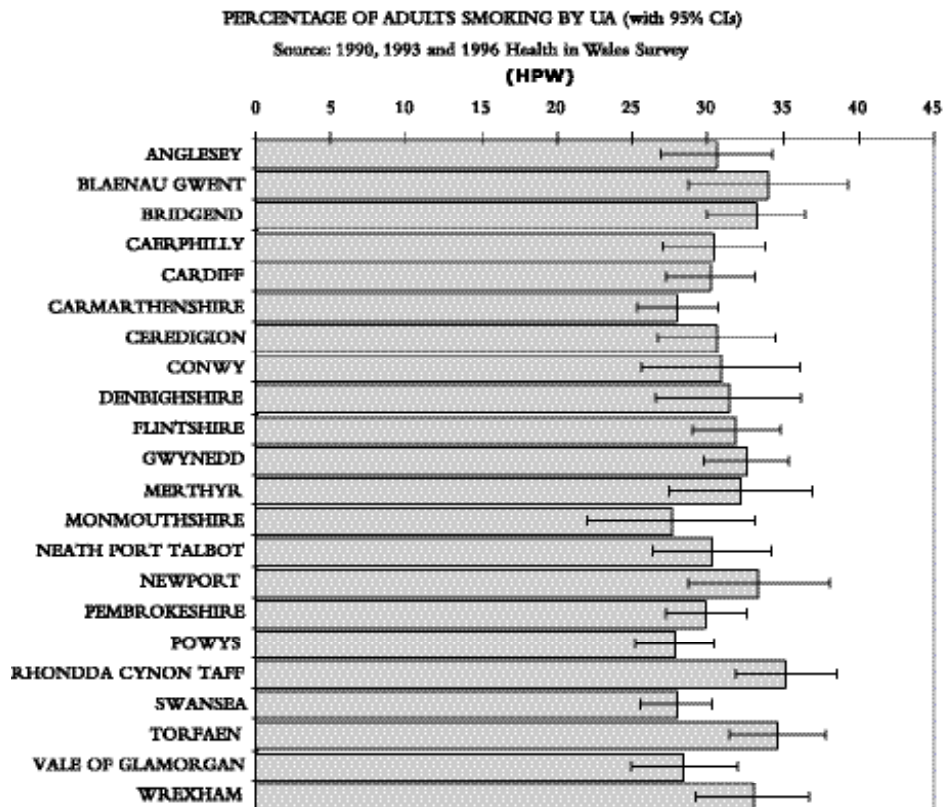
### *The importance of the life styles of young people*

**4.3** It is recognised that it is important to influence young people from an early age to live healthy lives. This means the appropriate encouragement to take exercise which needs to be facilitated by the provision of sports facilities where accessible.

**Table 2: Percentage of Overweight or Obese Adults by Unitary Authority**



**Table 3: Percentage of Adults Smoking by Unitary Authority**



### **Key Action 1:**

By 2001/2 health authorities and their local health groups, in partnership with local authorities and their local health alliances, will have undertaken an assessment of need for programmes of health promotion and a baseline review of all the health promotion programmes in place relating to tobacco, diet, and physical activity. This review should include all integrated programmes, the accessibility of the programme, the investment made and how each programme meets the evidence base as published in the Health Bulletins of Cardiovascular Disease and Healthy Living. This review will be conducted using a common methodology developed by the National Assembly's Health Promotion Division in collaboration with Health Authorities.

Responsibility for Implementing:	<ul style="list-style-type: none"><li>• National Assembly for Wales</li><li>• Health Authorities</li><li>• Local Authorities</li><li>• Local Health Alliances</li><li>• Local Health Groups</li></ul>
Performance Target:	<ul style="list-style-type: none"><li>• Common methodology</li><li>• Outcome of needs assessment</li><li>• Publication of baseline review</li></ul>
Information Required:	<ul style="list-style-type: none"><li>• Baseline audit data on programmes in place</li></ul>

### **Key Action 2:**

During 2002/3 health authorities, local authorities and their local health alliances, and local health groups using the results of the baseline review should agree the priorities for investment. The resulting plan must identify and target those communities most at risk of coronary heart disease and the most disadvantaged communities. The agreed plan must consolidate existing effective programmes in order to enable them to extend their reach before introducing new initiatives.

From 2002/3, onwards health authorities, local authorities and their local health alliances, and local health groups should publish an annual report using the baseline review as a starting point and detailing the progress made.

Responsibility for Implementing:	<ul style="list-style-type: none"><li>• Health Authority (lead)</li><li>• Local Health Groups</li><li>• Local Authorities</li><li>• Local Health Alliances</li></ul>
Performance Target:	<ul style="list-style-type: none"><li>• Published multi-agency plan focussed on communities most at risk and most disadvantaged</li><li>• Annual report of progress</li></ul>
Information Required:	<ul style="list-style-type: none"><li>• Implementation monitoring framework to be included in plan</li></ul>

### **Key Action 3:**

From 2001/2, the National Assembly for Wales will develop a methodology for a periodic survey of smoking, diet and physical activity to enable LHGs, local authorities and local health alliances to monitor and evaluate the impact of their programmes.

Responsibility for Implementing:	<ul style="list-style-type: none"><li>• National Assembly for Wales</li></ul>
Performance Target:	<ul style="list-style-type: none"><li>• Published Reports</li></ul>
Information Required:	<ul style="list-style-type: none"><li>• Survey Data</li></ul>

### **Key Action 4:**

By 2002/3 all NHS bodies and Local Authorities should have comprehensive tobacco policies that address:-

- Smoking on the premises by staff, patients and visitors;
- The recording of the smoking status of all patients;
- The provision of programmes to support people to give up smoking;

The development of a programme whereby all public buildings work towards being smoke free.

Responsibility for Implementing:	<ul style="list-style-type: none"><li>• NHS bodies</li><li>• Local authorities</li></ul>
Performance Target:	<ul style="list-style-type: none"><li>• Policies in place</li></ul>
Information Required:	<ul style="list-style-type: none"><li>• Smoking status of all patients</li><li>• Details of smoking programme attendance</li></ul>

### **Key Action 5:**

From 2001, the Assembly will continue to deliver a national smoking prevention and cessation programme based on the measures outlined in the 1998 UK Tobacco White Paper, and will develop national programmes on diet and physical activity.

Responsibility for Implementing:	<ul style="list-style-type: none"><li>• National Assembly for Wales</li></ul>
Performance Target:	<ul style="list-style-type: none"><li>• National Smoking Prevention and Cessation Programme in place</li><li>• Framework for national programmes on diet and physical activity developed</li></ul>
Information Required:	<ul style="list-style-type: none"><li>• National lifestyle surveys to measure the effect</li></ul>

## CHAPTER 5: The Implementation of Standard 2

### *Standard 2:*

Everyone at high risk of developing coronary heart disease and all those who have been diagnosed as having the disease should have access to a multifactorial risk assessment and be offered an appropriate treatment plan.

### *The identification of those at higher risk of developing coronary heart disease, and those with the disease*

5.1 It is important to identify those who are at high risk of developing CHD, and those with the disease, so that they are offered the appropriate examination, assessment of risk factors, investigation, referral and treatment.

The identification and management of those at high familial risk is an essential element of this initiative. Recognition of the clearly inherited disorder, familial hypercholesterolaemia is particularly important. At present the proportion of patients with early CHD identified as being due to familial hypercholesterolaemia is low, and even fewer of their healthy relatives at high risk of developing CHD are detected and offered treatment. There is a need for carefully constructed and monitored Research & Development pilot programmes based in primary and secondary care, which can give information in both the feasibility of systematic detection of familial hypercholesterolaemia and also on the benefits and possible harmful effects of testing healthy relatives.

The management of patients with hyperlipidaemia, including familial hypercholesterolaemia in adults and children, is important. A specialised service needs to be provided for them including LDL Apheresis for the very few who need it.

Some patients will already have been diagnosed as having CHD and their inclusion in a CHD management system will ensure that they are provided with appropriate treatment, followed up regularly and, when clinically indicated, referred to a cardiologist for further investigation and treatment. Others will present to the General Practitioner (GP) for the first time with chest pain (angina) and need to be assessed and, when appropriate, referred to a cardiologist for investigation and advice on treatment.

If the diagnosis of CHD is confirmed or if they have clinically likely angina, they will be included in the CHD management system. It is important for the GP to identify those with Acute Coronary Syndrome (ACS) and refer them as emergencies to the DGH.

### *The care of those with diabetes*

5.2 Patients with diabetes have a greater risk of developing CHD. There is a case for aggressive cholesterol and triglyceride reduction and the control of any hypertension so

achieving a Blood Pressure (BP) consistently below 130/80. Multi-risk factor intervention in diabetes provides an opportunity to make a difference.

### *Chronic disease management system (CHD)*

**5.3** The development of a CHD management system by each Primary Care Team is an essential part of caring for patients with CHD in a consistent manner. Such a system will ensure that all patients and those at high risk (> 30% risk over 10 years) of developing the disease are offered appropriate ongoing care and the necessary support and information to make informed decisions. The patients will then be empowered to work in partnership with those caring for them, to manage their risk factors and have confidence in their care. The CHD management system will also allow the care given to be audited.

### *Multifactorial risk assessment*

**5.4** A multifactorial risk assessment is an essential part of the management of patients with CHD, and those at high risk of developing it. The risk factors are identified, and through the use of a multifactorial risk assessment tool, it is possible to quantify the increased risk to an individual and as a consequence agree a treatment plan which aims to decrease the risk. To do this in an agreed way across primary and secondary care is essential so that there is a consistent approach to patients. There are a number of multifactorial risk assessment tools available and a working group is reviewing them with a view to publishing an appraisal in 2001 together with the model patient held record, a series of model protocols and patient pathways for use in Wales.

### *Forming working partnerships*

**5.5** Local health groups will need to develop structured relationships with their local secondary care provider(s) and agree with them clear patient pathways for the assessment, investigation and treatment of those with chest pain (stable angina) using the model patient pathways to be published in 2001.

Joint protocols must be developed between primary and secondary care for the management of ACS, heart failure, atrial fibrillation, rehabilitation and secondary prevention. Model outline protocols will be published in support of this implementation plan in 2001. It is expected that they will form the basis of the locally agreed joint protocols.

### *Audit*

**5.6** Each Primary Care Team and each LHG will need to establish a system of auditing the management of CHD patients. The audit must include levels of compliance with the locally agreed patient pathways and protocols. The audit should be undertaken jointly by primary and secondary care and the results should be published as a joint annual report by LHG and DGH.

A clinical information report is being produced to support this plan to assist the production of information, in particular the appropriate "Read coding". It is recognised that at present the primary care information systems are unable to provide the information required in a consistent way.

### *Coronary heart disease resource centres*

**5.7** A patient centered approach to the management of CHD in Wales will require time to achieve the consent and support of patients for the process, and high quality information in the form of leaflets and easily accessible advice. A key aspect of this approach is the patient held record that will contain details of risk factors and agreed treatment plans. LHGs in partnership with secondary care must develop ways of providing a locally accessible source of advice to patients. This source of advice must be acceptable to those with CHD, who should be involved in deciding the most appropriate way in which this is done locally. It might be based in a community setting (e.g. healthy living centres), general practices, or an LHG, a secondary care setting, or electronic access via public libraries or other Internet points. The establishment of such "resource centres" would provide easily accessible information and support to patients and their relatives and could be developed to provide a focus for: -

- *rehabilitation programmes;*
- *the management of those with CHD;*
- *multifactorial risk assessment clinics;*
- *training for resuscitation;*
- *self help groups.*

### *The challenge to primary care*

**5.8** Some general practices in Wales will have already made progress towards the standards laid out in this plan. Nevertheless, they will require additional support from LHGs to enable them to continue to reach the targets in the plan without prejudicing the care of other patients or their access to the practice.

In some areas of Wales, in particular the deprived areas, where general practice is already under severe pressure, LHGs should consider alternative ways to deliver the programme set out in this document. The provision of local resource centres, which would enable patients to receive the care and time the plan demands, would also reduce some of the pressure on the local practices.

It is recognised that it is in these areas of greatest medical need that the existing pressures on general practice are already intense. The delivery of this plan should not be at the expense of non-cardiac patients.

It is vital that health authorities and LHGs recognise the need to support primary care to address this ambitious and evidence based initiative.

### *The present situation*

**5.9** The service review identified only a small number of agreed patient pathways between primary and secondary care although the intention to develop them existed in a number of LHGs and DGHs. However, what was identified was an enthusiasm for tackling the challenge of CHD in a co-ordinated and evidenced-based way. A number of LHGs have started to make considerable progress in partnership with the local DGH and many of them have identified CHD as the most important health issue to be tackled.

The average waiting times for angiography vary from two months to seven months across the centres, although individual patients are waiting in excess of twelve months. (It is recognised that waiting lists held by some DGH consultants in Tertiary Centres are manually held and may be considerably longer).

<b>Key Action 6:</b>	
By 2002/3, each Primary Care Team must develop an opportunistic screening programme for CHD risk factors amongst the practice population and agree how those identified as being at high risk should be managed within the framework of the model patient pathway.	
Responsibility for Implementing:	<ul style="list-style-type: none"> <li>• Primary Care Team</li> </ul>
Performance Target:	<ul style="list-style-type: none"> <li>• Increase in those offered risk modification programmes and included on the CHD management system prior to an episode of CHD;</li> <li>• Achievement of a protocol for the management of those with Familial Hypercholesterolaemia</li> <li>• Increase in those identified with Familial Hypercholesterolaemia and referred for specialist advice and treatment and included on the CHD management system</li> </ul>
Information Required:	<ul style="list-style-type: none"> <li>• Numbers on CHD management system at high risk of developing CHD and those with Familial Hypercholesterolaemia</li> </ul>

**Key Action 7:**

By 2006/7, local health groups and district general hospitals in partnership will have established resource centres which will provide a locally accessible and acceptable source of advice to patients. These centres will where appropriate develop to provide a base for other services for those with CHD and their families.

Responsibility for Implementing:	<ul style="list-style-type: none"><li>• LHGs</li><li>• DGHs</li></ul>
Performance Target:	<ul style="list-style-type: none"><li>• Establishment of an accessible and acceptable source of advice for patients and their relatives by each LHG and DGH</li></ul>
Information Required:	<ul style="list-style-type: none"><li>• Number and type of resource centre</li></ul>

**Key Action 8:**

By 2002/3 all those at high risk of and those with established CHD should be identified by the primary care team and included on a CHD management system that conforms to the model specification. This management system will include those:-

- who have had a proven Myocardial Infarction
- with proven angina
- with clinically likely angina
- with Diabetes Mellitus\*

\* This will need to be undertaken in collaboration with the NSF for Diabetes, when published.

Responsibility for Implementing:	<ul style="list-style-type: none"><li>• LHGs</li><li>• Primary Care Teams</li></ul>
Performance Target:	<ul style="list-style-type: none"><li>• Established Chronic Disease Management System</li><li>• Annual report of progress</li></ul>
Information Required:	<ul style="list-style-type: none"><li>• Consistent recording of:-<ul style="list-style-type: none"><li>- Read codes;</li><li>- Risk factors;</li><li>- Investigations;</li><li>- Interventions;</li><li>- Treatment;</li><li>- Drug therapy;</li></ul></li></ul> <p>As laid down in the model specification.</p>

### **Key Action 9:**

By 2003/4 all those included on primary care CHD Management systems will have been offered a Multifactorial Risk Assessment and an appropriate treatment plan. Each patient will have been offered a personally held "patient record" of their risk factors, how these can be influenced, their medicine record and their treatment plan. For each patient on the chronic disease management system, the following are the aims, based on best evidence at time of publication, which will need to be updated over time in light of the research:-

- Avoiding B.P. consistently more than 140/85 (in diabetes <130/80);
- Cholesterol <5mmol/L; or a reduction by 2 mmol/L;
- LDL cholesterol < 3 mmol/L;\*
- A fasting blood sugar should be recorded to exclude diabetes;
- On dispersible aspirin 75mg, Opidogrel or Warfarin ( unless contraindicated);
- On  $\beta$  blockers/ACE inhibitors (unless contra indicated) after a myocardial infarction;
- Enrolled in a smoking cessation programme if applicable;
- A record of the body mass index(BMI)
- An individual nutrition programme overseen by a State Registered Dietitian
- An exercise programme;
- Advice about alcohol intake;
- Regular review

This will be supported by the appointment of a specialist nurse or nurses in each LHG  
 \* **Greater use of statins to achieve these levels should be considered.**

Responsibility for Implementing:	<ul style="list-style-type: none"> <li>• LHGs</li> <li>• Primary Care Team</li> </ul>
Performance Target:	<ul style="list-style-type: none"> <li>• All LHGs and Primary Care Teams have started to provide systematic care for those on the CHD management system by 2001/2:-               <ul style="list-style-type: none"> <li>- 60% achieved by 2002/3</li> <li>- 90% achieved by 2003/4</li> </ul> </li> <li>• Annual report by LHG on progress and results</li> </ul>
Information Required:	<ul style="list-style-type: none"> <li>• Recording on Chronic Disease Management System of:-               <ul style="list-style-type: none"> <li>- BP;</li> <li>- Cholesterol;</li> <li>- LDL;</li> <li>- Blood Sugar;</li> </ul> </li> </ul>

<b>Key Action 9 continued:</b>	<ul style="list-style-type: none"> <li>- Aspirin dose;</li> <li>- Medication regimen</li> <li>- Whether on smoking cessation programme;</li> <li>- Pattern of exercise undertaken;</li> <li>- Alcohol consumption;</li> <li>- Review frequency</li> <li>- BMI and whether referred to a dietitian;</li> </ul>
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<p><b>Key Action 10:</b></p> <p>By 2002/3 LHG's and their local secondary providers must develop a patient pathway for the Assessment, Investigation, Treatment and Audit of the care of those presenting with suspected CHD and those with stable angina. This must include:-</p> <ul style="list-style-type: none"> <li>• An agreed patient pathway for those with suspected CHD and those with stable angina;</li> <li>• The establishment of an audit system of compliance with the pathway and the identification of the responsible person to undertake the audit;</li> </ul> <p>The pathway must ensure that the time between the request for a patient to be seen by the secondary care provider, the completion of the necessary investigations including exercise testing and Angiography must not be more than three months for a patient with stable angina.</p>	
Responsibility for Implementing:	<ul style="list-style-type: none"> <li>• LHGs</li> <li>• DGHs (Lead DGH)</li> </ul>
Performance Target:	<ul style="list-style-type: none"> <li>• Agreed pathway for those with suspected CHD and stable angina, in place by 2002/3</li> <li>• Annual audit reports</li> <li>• Compliance with 3 month referral to angiography time</li> <li>• 30% compliance by 2002/3</li> <li>• 60% compliance by 2003/4</li> <li>• 80% compliance by 2004/5</li> <li>• 100% compliance by 2005/6</li> </ul>
Information Required:	<ul style="list-style-type: none"> <li>• Information required to audit pathways:- <ul style="list-style-type: none"> <li>- Linkage patient episodes across hospitals</li> <li>- Waiting times</li> <li>- Whole pathway coordination</li> </ul> </li> </ul>

### **Key Action 11:**

Primary Care Teams and LHGs should develop medicine management systems as part of their community pharmaceutical services, to provide ways of developing a partnership approach (for example concordance) with patients, many of whom will need complex medicine regimens, with the intention of increasing compliance with treatment.

Additionally LHGs need to establish an appropriate level of pharmacy advice which works closely with secondary care:-

- To ensure a smooth transition for the pharmaceutical needs of CHD patients from secondary care through to community pharmacy;
- To ensure that information flows across this interface

To inform Community Pharmacists, GPs and LHGs of the current patterns of prescribing for CHD and to co-ordinate change.

Responsibility for Implementing:	<ul style="list-style-type: none"><li>• LHG</li><li>• Community Pharmaceutical Services</li><li>• Primary Care Team</li></ul>
Performance Target:	<ul style="list-style-type: none"><li>• Improved patient compliance with treatment as measured by audit</li></ul>
Information Required:	<ul style="list-style-type: none"><li>• Information on medication from CHD management system</li></ul>

### **Key Action 12:**

Health Authorities and SHSCW must ensure that the Health Improvement Programmes (HIPs) take account of the need to achieve agreed patient pathways, based on the model pathways, for those with chest pain and stable angina. This needs to include appropriate access to exercise testing and angiography to ensure that the time from referral by general practitioner to completing the investigations, including angiography, is no more than 3 months by 2005/6. 2000 Angiograms per million population are needed for those with stable Coronary Heart Disease. The patient pathway will ensure that waiting lists for angiography are managed so that all patients have equity of access by the use of pooled waiting lists..

Responsibility for Implementing:	<ul style="list-style-type: none"><li>• Health Authorities</li><li>• SHSCW</li></ul>
Performance Target:	<ul style="list-style-type: none"><li>• Health Improvement Programme</li></ul>
Information Required:	<ul style="list-style-type: none"><li>• Monitoring of achievement of HIPs</li></ul>

## CHAPTER 6: The Implementation of Standard 3

### *Standard 3:*

Everyone with an acute episode of Coronary Heart Disease should receive high quality evidence based care.

### *Acute coronary syndromes*

**6.1** The Acute Coronary Syndromes\* (ACS) comprise a number of conditions that include Myocardial Infarction (Heart Attack) and unstable angina. These patients usually present with acute chest pain that is anginal in character, of new onset, or occur at rest, or in a crescendo and accelerated fashion. All patients with acute chest pain should be clinically assessed as a matter of urgency.

In some patients with ACS, the Electrocardiogram (ECG) may be normal on presentation but this may rapidly evolve to an abnormal pattern or show change only during episodes of pain. Repeat tracings are therefore very important.

There is wide recognition of the limitations of previously standard biochemical enzyme tests which have unsatisfactory low sensitivity and specificity for the diagnosis of myocardial damage in ACS. It is now possible to measure the cardiac Troponins T and I, which are specific for cardiac muscle damage. A positive Troponin test indicates the presence of recent myocardial injury and confirms the diagnosis of ACS. The Troponin levels may need to be repeated for patients diagnosed as having ACS as the Troponin level indicates the extent of the damage to the heart muscle and whether it is progressive. Patients with, or suspected as having, ACS should be assessed, and treated as emergencies. They need quickly accessible expert care and that care has three distinct parts:

- *pre hospital care;*
- *secondary (D G H) care;*
- *tertiary care*

\* "ST" segment elevation usually warranting thrombolysis, non-ST segment elevation myocardial infarction and unstable angina.

### *Laboratory services*

**6.2** Providing responsive high quality services to those with CHD is dependent on being able to investigate those patients appropriately and in a timely way.

Clinical biochemistry has as a specialty made a major contribution to the care of those with CHD. This has not been restricted to undertaking the necessary biochemical tests but

also on being involved in the clinical management of those with high cholesterol and lipid levels. It is important for Health Authorities, Trusts and LHG's to ensure that when plans are made to improve services the implications this has for clinical biochemistry departments and the laboratory service are taken into account. This is of particular significance with regard to

- *the increased demand for cholesterol and lipid testing;*
- *the availability of Troponin T and I testing in all DGHs daily;*
- *the development of blood testing for Heart Failure;*
- *the management of those with high cholesterol levels some of who will have Familial Hypercholesterolaemia.*

### ***The key aspects of emergency care for those with a myocardial infarction or a cardiac arrest***

**6.3** There are a number of key aspects to the immediate and emergency care of a patient who has a Myocardial Infarction (MI) or a Cardiac Arrest. All of which contribute to the patients overall outcome.

#### ***Key Aspects to the Immediate Care of a Patient who has a Myocardial Infarction a Cardiac Arrest***

- *The time they or the nearest person to them takes before calling for help – Pain to Call Time*
- *The skills of the bystander*
- *The response time of a skilled response*
- *The availability of a defibrillator*
- *The time it takes to assess the patient at the scene*
- *The time it takes to get the patient into contact with a person who is able to diagnose a MI and give clot busting drugs (Thrombolysis) if indicated*
- *The time it takes to get the patient to a hospital from the time of call – Call to Door Time*
- *The time it takes from the door of the hospital to giving Thrombolysis- Door to Needle Time*

#### ***Delays cost lives***

**6.4** The main problem in the immediate and emergency care of those with a myocardial infarction or a cardiac arrest is the delay in getting appropriate care to the patient. The Pain to Thrombolysis Time is critical for each individual patient, recognising that during the first three hours after a heart attack every minute of delay in giving thrombolysis leads to a loss, on average, of 11 days of life. There are a number of steps in the process of getting a patient to thrombolysis, all of which need to be undertaken in the quickest time, possible.

## *Pain to needle time*

**6.5** Thrombolysis (clot busting drugs) have their greatest effect if given during the first hour after a MI measured from the continuous onset of pain. After that they may be effective to a decreasing extent for up to twelve hours. In those patients where treatment is appropriate, the aim must be to achieve a pain to thrombolysis time of not more than one hour, which is known to have the best results.

The pain to thrombolysis time is made up of pain to call, call to door and door to thrombolysis time. In order to achieve a call to needle time of sixty minutes, a concerted effort is required to reduce the time taken in each part of the process.

The time it takes a patient to call for help once they have continuous pain is extremely variable and no standards can be set for it. The standard set in this action plan is a maximum call to thrombolysis time of **sixty minutes** of which not more than **twenty minutes** should be door to thrombolysis time for those patients for whom thrombolysis is the treatment of choice. Thrombolysis is not indicated in all patients and any contra-indications must be addressed prior to the administration of the medicine.

Achieving this standard will mean close and collaborative working between the ambulance service and district general hospitals where a call to door time of thirty minutes is not achievable because of geography then thrombolysis must be delivered in settings other than the DGH.

Some patients may contact NHS Direct: appropriate advice needs to be given to these patients.

## *The response to cardiac arrest*

**6.6** There is an important need to enable those in the community to respond when faced with a person having a cardiac arrest. Initiatives in this area have been developed throughout the World and have been evaluated as very successful. The work done in Wales by HeartStart Wales is one of the acknowledged initiatives. It is important to recognise the geography of Wales, with the existence of a large number of isolated communities and the time taken to get skilled help to some of them in an emergency. It is essential therefore that a programme of community involvement in resuscitation is developed in a consistent and evidence based way targeted towards the most isolated communities. Such a programme must include as a minimum: -

- *community access to defibrillation;*
- *first responder schemes (where individuals in the community are trained to respond to emergencies and equipped with defibrillators);*
- a programme of resuscitation training e.g. Heart Start Wales;
- population awareness programmes aimed at ensuring appropriate responses to

emergency situations;

- a programme of emergency life support training for secondary school students, which should follow the European Resuscitation Council Guidelines;
- annual training for all health care professionals (incl. Pharmacists, dentists, etc.) in emergency life support.

Specialist consultants were commissioned by the National Assembly to make recommendations on the efficient use of ambulance service resources and to estimate costs for achieving an 8-minute response to immediately life-threatening cases across Wales at levels of 60%, 75% and beyond. It was evident from this work that significant extra resource would be required to reach 75% achievement equitably across Wales. Although the ultimate aim will be to surpass this level – provided appropriate resource is available – this may prove not to be feasible in some remoter parts of Wales for practical reasons.

### *Community thrombolysis*

**6.7** There is a need to provide thrombolysis in communities where the call to door time is more than 30 minutes in order to ensure that patients receive optimum care. At present there are only a few rural communities in Wales where thrombolysis is undertaken locally. In all of these the patients receive thrombolysis in the community hospital, at home or in the ambulance and it is administered by the on call GPs. There are strategies whereby the ambulance service can help reduce the delay of thrombolysis, including the possibility of the administration of thrombolytic agent on the paramedic's own initiative.

### *A Welsh initiative to improve community access to resuscitation and achieve rapid access to thrombolysis*

**6.8** It is proposed to set up a group to develop a detailed implementation plan for community access to defibrillation, resuscitation training and thrombolysis in communities whose travelling time to a DGH is greater than thirty minutes, which ensures equity of access across Wales.

The group will report by December 2001 with a detailed fully costed plan ready for implementation in 2002. The group will include amongst others representatives of:

- *Health Authorities;*
- *Local Health Groups;*
- *Local Authorities;*
- *Local Health Alliances;*
- The Ambulance Service;
- DGH Cardiologists;

- G Ps;
- Cardiac Nurses;
- Pharmacists

## *Evaluation*

**6.9** The potential exists to place Wales in the forefront of research into pre-hospital care; an area which has been widely neglected leading to paucity worldwide of optimal evidence based practice.

A joint venture between Academic Medicine and the Ambulance Trust should be supported to ensure that this initiative can be delivered and evaluated.

## *The present situation*

### **6.10** *Pain to Thrombolysis Time in DGHs*

The baseline review of Pain to Thrombolysis time identified the following: -

- *there is only one DGH with a Pain to Thrombolysis and a Call to Thrombolysis policy in place;*
- *74% of DGHs have a door to Thrombolysis policy in place ;*
- *58% of DGHs know and regularly audit the Door to Thrombolysis time;*
- *where recorded, the Door to Thrombolysis Times in the DGHs in Wales varies from 14 to 180 minutes.*

### *Community Hospitals*

The Community Hospitals in Wales with Casualty or Minor Injuries Departments were included in the baseline review with the following results: -

- 36% have protocols for the management of those with Chest Pain;
- 48% admit patients with chest pain;
- 79% have an ECG machine;
- 45% have an aspirin policy;
- 81% have a defibrillator;
- 21% administer thrombolysis.

In a small number of community hospitals patients are looked after for the whole episode of care. In others, they are transferred once stable after the administration of thrombolysis, to the local DGH.

**Key Actions Required to Implement Standard 3 in Relation to the Immediate and Emergency Care for Those with MI and/or Cardiac Arrest**

**Key Action 13:**

By 2002/3 the ambulance service will answer and triage all calls received through the 999 system or from a health care professional using an alternative number in an identical manner. At present, 999 calls take priority regardless of clinical need. Identical response standards will apply to patients with the same triage category regardless of the source of the call. Separate response standards will no longer apply to 999 and 'urgent (i.e. GP initiated) calls.

Responsibility for Implementing:	<ul style="list-style-type: none"> <li>Ambulance Trust</li> </ul>
Performance Target:	<ul style="list-style-type: none"> <li>Response times to MI an Cardiac Arrest</li> </ul>
Information Required:	<ul style="list-style-type: none"> <li>Response times to MI and Cardiac Arrest</li> </ul>

**Key Action 14:**

Starting in 2001/2 the ambulance Trust will undertake an annual on-line clinical audit of 3% of cardiac event related calls.

Responsibility for Implementing:	<ul style="list-style-type: none"> <li>Ambulance Trust</li> </ul>
Performance Target:	<ul style="list-style-type: none"> <li>Compliance of:- <ul style="list-style-type: none"> <li>- 70% by 2002/3</li> <li>- 80% by 2003/4</li> <li>- 90% by 2004/5</li> </ul> </li> </ul>
Information Required:	<ul style="list-style-type: none"> <li>Collection of agreed data and audit against standards</li> </ul>

**Key Action 15:**

The ambulance service will aim to ensure that patients with suspected cardiac arrest or acute coronary syndrome receive an initial response within 8 minutes of receipt of the call, either by a trained paramedic or through targeted first response initiatives.

Responsibility for Implementing:	<ul style="list-style-type: none"> <li>Ambulance Trust</li> </ul>
Performance Target:	<ul style="list-style-type: none"> <li>Compliance of:- <ul style="list-style-type: none"> <li>- 75% by 2004/5</li> <li>- 80% by 2005/6</li> </ul> </li> </ul>
Information Required:	<ul style="list-style-type: none"> <li>Response Time Monitoring</li> </ul>

### **Key Action 16:**

By 2002/3 in cases of diagnosed MI, where administration of thrombolytic therapy is appropriate, a pain to thrombolysis time of sixty minutes should be achieved. The maximum times for each step of the pathway are as follows:-

- A maximum forty minute call to door time;
- A maximum twenty minutes for door to needle time.

Cases that fall outside the twenty minutes door to thrombolysis time and the forty-minute call to thrombolysis time should be individually highlighted, the reasons identified and reported to the Ambulance and DGH Trust Boards.

For those living too far away from the DGH for the forty-minute call to door time to be achieved, an implementation plan for community thrombolysis will be developed and implemented from 2002/3 onwards.

Responsibility for Implementing:	<ul style="list-style-type: none"><li>• DGH</li><li>• Ambulance Trust</li></ul> Each Chief Executive (DGH and Ambulance Trust) in consultation with the LHGs must appoint a responsible officer to ensure the collection and reporting of Pain, Call and Door to Needle time for all patients with Myocardial Infarction.
Performance Target:	<ul style="list-style-type: none"><li>• Achievement of call and door to needle time standards;</li><li>• Monthly report to the Trust Board and the LGH;</li><li>• Delays investigated and reported to Trust Board</li></ul>
Information Required:	<ul style="list-style-type: none"><li>• Pain, Call, Door and Thrombolysis Times.</li></ul>

### ***The district general hospital care of those with acute coronary syndrome***

**6.11** All those with **Acute Coronary Syndrome (ACS)** need to be recognised and treated as a priority by the Primary Health Care Team, the DGH admitting team, and the DGH Cardiologist. The adoption of a care pathway for these patients, which is regularly audited, is an important part of this action plan and a model pathway will be published in 2001. 15 – 20% of these patients will be diabetics – the care pathway must take this into account. It has been informed by a paper produced by a small working group set up by the Welsh Cardiac Group. These patients include those admitted with a myocardial infarction and those presenting in general practice or admitted as an emergency with worsening and/or persistent angina.

All those with ACS need access to a bed in a Coronary Care Unit (CCU) or a monitored step-down bed. The agreed pathway for high-risk patients with ACS (unstable angina or non-Q-wave myocardial infarction) should include the use of low molecular weight heparin or therapeutic doses of unfractionated heparin, aspirin and Glycoprotein IIb/IIIa inhibitors (where appropriate taking account of the most up to date research evidence as well as the NICE – Technology Appraisal Guidance No.12, September 2000). Treatment with Glycoprotein inhibitors will also apply to patients undergoing acute or elective percutaneous coronary intervention when appropriate. They all need to be treated urgently and assessed expertly to ensure that the high-risk patients are referred urgently for coronary angiography and revascularisation. These patients need to be fast tracked through to specialist (tertiary) care due to their high risk of death. In Wales at present, between 30% and 40% of patients undergoing revascularisation (Angioplasty and Coronary Artery Bypass Surgery) where the blocked arteries are either unblocked or bypassed surgically are treated urgently without going onto the waiting list because they are diagnosed as having ACS and recognised as being a very high risk. The care of those with ACS takes precedence over those with stable angina on the waiting list for revascularisation.

An agreed patient pathway for these patients is an essential part of the care the NHS in Wales must offer to those with CHD. All those with ACS must complete the pathway of care from diagnosis to revascularisation in a planned way within one month.

The decision regarding the revascularisation method to be used in individual patients should be made in a multidisciplinary way involving the cardiologists, cardiac surgeons, nurses and the patient. This will ensure that the method of revascularisation will match the needs of each patient without any unnecessary waiting.

### *The investigation of those with ACS*

**6.12** An essential part of a DGH cardiology service is a comprehensive and efficient electrophysiological measurement department. This department provides ECGs, echocardiography, and exercise testing for all those who need investigation either because they are suspected as having CHD, have stable angina or have acute coronary syndrome. Those with acute coronary syndrome need rapid access to investigations in a way that does not delay treatment.

### *Audit of care*

**6.13** The Royal College of Physicians has launched the Myocardial Infarction National Audit Project (MINAP) in response to the publication of England's National Service Framework implementation plan. It is important that Wales is part of this initiative which will enable outcomes to be benchmarked across the UK. In addition, a significant number of Welsh residents receive DGH care in England (Shrewsbury, Hereford and Chester).

## *Rehabilitation*

**6.14** Rehabilitation after an episode of ACS is part of an integrated treatment programme.

All cardiac rehabilitation programmes should be based on evidence (NB the guidelines and standards outlined by the British Association of Cardiac Rehabilitation). A cardiac rehabilitation programme needs to be provided for all those who have had an episode of acute coronary syndrome, some of whom will have had a revascularisation procedure. This rehabilitation must be provided in an agreed way across primary, secondary and tertiary care, and should be accessible and acceptable to the patients. This action plan recommends that a specialised nurse/health care professional be appointed in each LHG to work with the DGHs and tertiary centres to identify all suitable/at risk individuals and encourage them to take part in a locally based programme. These nurses would organise local programmes in collaboration with the DGH multidisciplinary rehabilitation team, building on the expert programmes already in place in parts of Wales.

Rehabilitation programmes should continue to be the subject of research evaluation.

## *The present situation*

**6.15** The baseline review of the CCU and Cardiology wards of the DGHs in Wales provided the following information: -

- *63% have CCU treatment policies agreed by all admitting Consultants;*
- *79% have all patients with MI admitted to CCU;*
- *2 hospitals have no CCU.*

In all the hospitals providing services to Welsh residents, the CCU was under considerable pressure and in very few of them they were able to admit all ACS patients. Patients with MI were frequently admitted by transferring the most stable patient into a step down bed.

- *63% had an unstable angina policy in place;*
- *68% had a hospital policy to fast-track unstable angina patients;*
- *The number of cardiologists in the DGHs in Wales without tertiary services varies from none to two.*

**Key Actions Required to Implement Standard 3 in Relation to the Secondary Care for those with MI and/or Cardiac Arrest**

<b>Key Action 17:</b>	
The Health Improvement Programmes of Health Authorities will include a plan to ensure that by 2002/3 all patients admitted to a DGH with a cardiac diagnosis are seen within 24 hours by a Cardiologist.	
Responsibility for Implementing:	<ul style="list-style-type: none"> <li>• Health Authorities</li> </ul>
Performance Target:	<ul style="list-style-type: none"> <li>• All Cardiology patients seen by a Cardiologist within 24 hours</li> </ul>
Information Required:	<ul style="list-style-type: none"> <li>• Number of Cardiologists</li> <li>• All Cardiology patients seen by a cardiologist</li> </ul>
<b>Key Action 18:</b>	
By 2001/2 each DGH will have a dedicated CCU with a designated responsible cardiologist, monitored cardiac "step down" beds and an acute chest pain assessment unit to assess those with or those suspected of having a diagnosis of ACS. A patient pathway will be in place for the care of those with ACS by 2001/2.	
Responsibility for Implementing:	<ul style="list-style-type: none"> <li>• Health Authorities</li> <li>• DGHs</li> </ul>
Performance Target:	<ul style="list-style-type: none"> <li>• Achievement of patient pathway for ACS</li> </ul>
Information Required:	<ul style="list-style-type: none"> <li>• Availability of facilities</li> <li>• Annual report of audit of patient pathway</li> </ul>
<b>Key Action 19:</b>	
By 2002/3, each DGH must have an agreed discharge policy with the LHG for all patients discharged after being treated for ACS. This must include an agreement on the mechanism to be used to ensure that the patient is included on the chronic disease management system in primary care and given a patient held record. All those with ACS must be risk stratified prior to discharge using as appropriate;-	
<ul style="list-style-type: none"> <li>• Troponin T or I</li> <li>• Exercise testing</li> <li>• Echocardiography</li> <li>• Radionuclide scanning</li> </ul>	
Responsibility for Implementing:	<ul style="list-style-type: none"> <li>• DGHs</li> <li>• LHGs</li> </ul>
Performance Target:	<ul style="list-style-type: none"> <li>• Implementation of a cohesive patient pathway and risk stratification</li> </ul>
Information Required:	<ul style="list-style-type: none"> <li>• Audit Report</li> </ul>

### ***Key Action 20:***

Health Authorities must include in their Health Improvement Programmes the provision of a comprehensive cardiac rehabilitation programme for all ACS patients some of whom have had a revascularisation procedure. This must be based on a patient pathway which incorporates the guidelines and standards outlined by the British Association of Cardiac Rehabilitation.

The programmes will be provided by a team working across primary, secondary and tertiary care. There will be a specialist nurse in each LHG who will work with the DGH based team, which will be multi-disciplinary including a state registered dietician.

Responsibility for Implementing:	<ul style="list-style-type: none"><li>• Health Authorities</li><li>• DGHs</li><li>• LHGs</li></ul>
Performance Target:	<ul style="list-style-type: none"><li>• All patients with acute coronary syndrome offered a rehabilitation programme that is accessible</li></ul>
Information Required:	<ul style="list-style-type: none"><li>• Programme attendances</li></ul>

### ***The tertiary cardiac care of those with acute coronary syndrome and those with coronary heart disease***

**6.16** The Specialised Health Services Commission for Wales (SHSCW) Report "The Need for Investment" assessed the future need for Specialised Cardiac Services for the residents of Wales. It reviewed the existing Specialised Cardiac Services including Specialist Investigation, Interventional Cardiology, Pacemakers and Cardiac Surgery provided to Welsh residents at Welsh and English hospitals. It made recommendations for the future provision of these services. It will be updated in 2001 to take account of the action that has occurred to implement its findings. This implementation plan does not repeat the findings of that report; the key findings only are included.

### ***The users of tertiary care***

**6.17** CHD is the main reason why people need to use Specialised Cardiac Services.

The report stressed that a co-ordinated service between primary, secondary and tertiary care was essential for the management of the chronic disease process of CHD for each patient for the whole of his or her life. This implementation plan deals with all aspects of the care.

The report defined Specialised (Tertiary) Cardiac Services in the following way: -

*"Angiography and other invasive investigations of the heart, invasive cardiological interventions including Angioplasty, Pacemaker insertion, and surgery on the heart".*

### *The level of need for angiography*

**6.18** The report recognised the need for 5000 Angiograms per million population in Wales with 4000 as the appropriate initial target (this includes need for other conditions other than CHD). Access to Angiography must be equitable. The report demonstrated evidence of inequity of access in Wales with particularly low levels in North Wales. The situation is improving and there has already been an increase in the capacity in Manchester. Action is taking place to agree LHG quotas of Angiograms for those with stable angina, based on population numbers in the first year, but in future years reflecting need as identified by the reports of the coronary heart disease management systems in LHGs.

### *Revascularisation*

**6.19** Some of those with coronary heart disease are assessed by those caring for them to need revascularisation of their hearts. Revascularisation can be done either by angioplasty with or without stenting or by CABG. A decision about the most appropriate mode of revascularisation for an individual patient should be made jointly by the cardiologists and the cardiac surgeon after they have together reviewed the results of the patient's investigations.

The report identified a need for 750 Angioplasties and 750 CABGs, for the population of Wales, but stated that this figure would need to be reviewed on a regular basis. Targets of 800 per million for Angioplasties and CABGs, and eventually 1100 per million, are likely to be needed in the future. The eventual targets are higher than in the English NSF to take account of the Welsh SMR being 8% higher. The level of CABG in 1998/99 achieved in Wales was 437 per million population. Plans are in place to increase the capacity to achieve 750 of each procedure by 2004.

### *Tertiary cardiac service providers to the population of Wales*

**6.20** The Tertiary Service Providers to the population of Wales are the University Hospital of Wales, Morriston, Liverpool, Manchester, Birmingham and London.

To ensure that the investment in capacity is made in the appropriate Specialised Unit, the following catchment populations are used for planning purposes: -

Morriston Population	933,000
UHW Population	1,338,000
Liverpool/ Manchester	656,000
Birmingham	30,000

The success of this implementation plan depends on the close working relationship between primary, secondary and tertiary care. The identification by the Tertiary Trusts of a manager or Liaison Nurse to communicate regularly with DGHs, GPs and patients is considered to be good practice and will aid this process. In addition, patients and carers must to be offered leaflets, videos and other information about care by a tertiary centre.

### *The present situation*

**6.21** A review of the tertiary cardiac services was included in the "Need for Investment" report. When this is updated in 2001, a further review of the services will take place.

### *The Key Actions to Implement the Tertiary Cardiac Services Element of Standard 2 and 3*

<b>Key Action 21:</b>	
<p>Health Authorities will have in their Health Improvement Programmes that by 2004/5 there should be equity of access to angiography in Wales and the achievement of 5000 per million population with 2000 per million for those with stable angina. By 2002/3 all angiography must be undertaken in facilities that are appropriate and a minimum of 2 operators undertaking at least 500 cardiac catheterisation procedures per year. The unit should publish an annual audit report, and arrange at least a monthly meeting with the medical and surgical revascularisation team to discuss a care plan for those with abnormal findings. All those undertaking angiography and those wishing to do so must achieve these minimum standards.</p> <p>The waiting times for routine angiography should be 6 months by 2002/3 and four months by 2003/4 and three months by 2005/6. For those with ACS, there should be no waiting time.</p>	
Responsibility for Implementing:	<ul style="list-style-type: none"> <li>• Health Authorities SHSCW</li> </ul>
Performance Target:	<ul style="list-style-type: none"> <li>• 2002/3 all angiography facilities to meet minimum standards</li> <li>• 2003/4 equity of access</li> <li>• 2003/4 – 4000 per million</li> <li>• 2004/5 - 5000 per million</li> <li>• The waiting times for routine Angiography should be;- <ul style="list-style-type: none"> <li>- 6 months by 2002/3</li> <li>- 4 months by 2003/4</li> <li>- 3 months by 2005/6</li> </ul> </li> <li>• For those with ACS there should be no waiting time</li> </ul>
Information Required:	<ul style="list-style-type: none"> <li>• Production of report of the audit of patient pathway annually</li> </ul>

**Key Action 22:**

By 2002/3 risk Stratified Waiting Lists to be analysed by Consultant & LHG and made available to GPs and patients. The risk stratification to be done using an agreed methodology.

Responsibility for Implementing:	<ul style="list-style-type: none"><li>• Tertiary Centres</li></ul>
Performance Target:	<ul style="list-style-type: none"><li>• Improved patient access based on clinical need</li></ul>
Information Required:	<ul style="list-style-type: none"><li>• Production of report of the audit of patient pathway annually</li></ul>

**Key Action 23:**

Health Authorities' Health Improvement Programmes should provide that by 2004/5 there should be 750 per million PTCA and 750 per million CABG, and make plans for the numbers to rise eventually to a minimum of 1100 of each, per million. The number will be dependent on the outcome of a review in 2003.

In any institution undertaking Coronary Angioplasty (PTCA), a minimum 200 procedures per year should be undertaken by a minimum of two trained operators at consultant grade, each of which should perform a minimum of 75 Angioplasties a year. Angioplasty must only be undertaken in a tertiary centre with surgical services on site.

Coronary Artery Surgery should be undertaken in institutions doing a minimum of 400 a year and having at least 3 surgeons. Each surgeon should undertake a minimum of 75 a year.

The waiting times for CABG and angioplasty should be twelve months by 2001/2, six months by 2003/4, and three months by 2006/7.

Responsibility for Implementing:	<ul style="list-style-type: none"><li>• Health Authorities</li><li>• Tertiary Centres</li></ul>
Performance Target:	<ul style="list-style-type: none"><li>• Waiting list</li><li>• Acces to revascularisation</li></ul>
Information Required:	<ul style="list-style-type: none"><li>• Production of report of the audit of patient pathway annually</li></ul>

# CHAPTER 7: The Implementation of Standard 4

## *Standard 4:*

Everyone with heart failure should be recognised and offered appropriate evidence based care.

### *The definition of chronic heart failure*

**7.1** Heart failure is a difficult condition to diagnose. It is, however, very important to diagnose it because patients can benefit greatly from treatment and significantly increase their expectation of life. It is difficult to diagnose as it is characterised by a constellation of symptoms and physical signs that are directly or indirectly caused by the poor functioning of the heart muscle. It was recently defined by a Working Group of the European Society of Cardiology as "the presence of the symptoms and signs of breathlessness and/or fatigue either at rest or during exertion, and/or ankle swelling, together with evidence of major cardiac dysfunction at rest as evident on echocardiographical examination".

### *The causes of heart failure*

**7.2** Coronary heart disease and hypertension are by far the most important causes in the UK although there are many others. In younger patients presenting with chronic heart failure, cardiomyopathy (heart muscle damage/weakness) is the main cause (hence, more than 50% of cardiac transplants are performed for this diagnosis).

### *The incidence and prevalence of heart failure*

**7.3** A recent UK population based study using echocardiographic screening reported that CHF was present in approximately 3% of the population. Another recent study assessed all new incident cases of clinically diagnosed heart failure within the catchment population as 1.3 per 1000 population per year. This almost certainly considerably underestimates the true incidence because of the difficulty of diagnosing heart failure mainly because of the non-specific symptoms. The prevalence of chronic heart failure increases sharply with increasing age. The true incidence of symptomatic heart failure is probably close to 1% with a prevalence of at least 3%, the small difference reflecting the known high mortality rate. This means 32,000 expected new cases of chronic heart failure a year in Wales and 96,000 needing ongoing care with a larger number needing to be assessed.

### *Hospital admissions with heart failure*

**7.4** Despite a general reduction in CHD throughout the Western World, there has been a major increase in the number of hospital admissions with chronic heart failure. This appears to reflect a real increase in prevalence rather than improved diagnosis. Heart failure is now the principal cause of acute hospital admission in the over 65s.

The increase in prevalence is partly a result of the ageing population (a trend which will ensure that the increasing prevalence of Heart failure will continue whatever measures we take), but age specific rates are also increasing. The reason(s) for this are not clear. This trend is at odds with the decline in age specific rates for CHD, which is the major cause. It has been suggested that thrombolysis (clot-busting) drugs have prevented deaths in patients with heart attacks, but left some patients with chronic heart failure. It has also been suggested that modern therapies, by improving survival are increasing the prevalence of the disease.

### *Mortality from chronic heart failure*

**7.5** Chronic heart failure has major implications for survival. Overall, affected individuals have a mortality rate 3-4 times that of their peers, but in severe heart failure, the 1-year mortality exceeds 50% despite modern therapy. In this respect, it has prognostic implications worse than most cancers. It also produces greater morbidity than most other chronic disorders. It is clear that chronic heart failure has major health economic consequences, likely to increase markedly over the next two decades at least.

### *The diagnosis of chronic heart failure*

**7.6** Currently chronic heart failure is markedly under diagnosed in general practice. This is because it is difficult to diagnose and the symptoms and physical signs that characterise it are often non-specific (e.g., they also occur in chronic lung disease, obesity). Consequently, patients who might benefit from therapy do not receive it. Conversely, some patients are continuously treated for an incorrect clinical diagnosis of chronic heart failure. It is important to improve the diagnosis of heart failure because there have been major advances in the therapy of chronic heart failure in the past two decades which considerably extend the life expectancy of those treated and improve their quality of life. Furthermore, such therapy is highly cost effective. It is also crucially important that all patients who have suffered myocardial infarction undergo assessment of their heart's function (usually by echocardiography) in order to identify those who should be commenced on ACE inhibitors, to prevent the subsequent development of heart failure by early detection of poor heart muscle function. Patients with significant left ventricular dysfunction following myocardial infarction should also be followed up closely since the development of heart failure can be rapid.

### *Treatment of heart failure*

**7.7** There have been major advances in the therapy of chronic heart failure in the past two decades. ACE inhibitors (Angiotensin converting enzyme inhibitors) were shown to improve both symptoms and survival in CHF over a decade ago. Despite this, less than 30% of all patients who might benefit from these medicines in the UK actually receive them.

Even more seriously, audits of hospital discharge records have revealed that even in patients discharged from hospital with a heart failure diagnosis, less than 50% leave hospital taking these medicines. Even when the medicines are prescribed, they are frequently given in doses much lower than those employed in the major clinical trials. The recently reported ATLAS study demonstrates that such low dose regimens confer only about 50% of the potential benefit in terms of mortality reduction, hospital admission rate and quality of life achievable with a higher dose. The reasons for this under-dosing, are multifactorial but include largely unfounded concerns about side effects at higher dosage and a failure to increase the dosage because of the necessity for close supervision of the patient, monitoring of clinical status and electrolytes.

More recent trials have demonstrated improvements in mortality from a number of other medicines but they require even closer supervision, a factor likely to impede their introduction into routine clinical practice. A variety of non pharmacological therapies such as exercise training, surgical revascularisation, biventricular pacing and cardiac transplantation are also of proven value in selected cases.

Heart failure nurses have a major proven role to play, analogous to that of oncology nurses. They liaise with patients to develop crisis plans, provide patient education and improve compliance with therapy. Such a service may also link with palliative care support – a crucial aspect for end stage heart failure. Such intervention improves symptoms, but also markedly diminishes hospital readmission. It has therefore been shown to be cost effective. A network of such nurses has been established in Greater Glasgow and this venture is proving highly successful. It has also been shown that patients with heart failure benefit from the care of clinical pharmacists. Their inclusion in the heart failure team is essential.

### *The treatment of severe heart failure*

**7.8** Severe heart failure can be markedly improved by tailoring therapy on an individualised basis to optimise the pressure of blood within the heart chambers. This form of therapy, generally undertaken in specialist tertiary units, can produce dramatic improvements in patients who are not responding to other forms of treatment.

### *Advances in treatment of severe chronic heart failure*

**7.9** The treatment of those with severe chronic heart failure is likely to advance considerably during the next few years. The recent success with heart assist devices is evidence of this. Tertiary heart failure units are important in the development and assessment of new therapeutic strategies for those with severe chronic heart failure both pharmacological and non pharmacological (e.g. left ventricular pacing, left ventricular assist devices, myocardial reduction surgery), and in the decision making process regarding revascularisation using techniques such as Radionuclide Imaging or Positron Emission tomography and stress echocardiology.

## *Knowledge about chronic heart failure*

**7.10** There is a need to keep all primary care professionals up to date with the advances in the care of those with heart failure. There is also a need for greater public awareness of the seriousness of the problem.

## *Options for providing a service to those with chronic heart failure*

**7.11** The first stage in providing a service for those with chronic heart failure is to establish agreed patient pathways between primary and secondary care. Such policies need to include explicit treatment plans and referral times. Arrangements must be in place to audit compliance with them.

Health Authorities in partnership with LHG and DGHs need to consider the various options for establishing a heart failure service. It will be necessary to take into account the time-scale for reporting the pilot research study on the opportunity provided by Brain Natriuretic Peptide (BNP) screening, a blood test which is specific to heart failure. However, it must be recognised that its use within an established district wide service has yet to be proven to decrease the levels of referrals for echocardiography on a consistent basis.

### **Option 1: Rapid access heart failure clinics**

It has been considered by some that the optimal solution would be to provide rapid access heart failure clinics to which GPs can refer patients with suspected heart failure for full assessment (including echocardiography where appropriate), and advice regarding therapy. In practice however, this is unlikely to be achievable because it would have huge manpower implications. The experience of such clinics is that only approximately 20% of patients referred to such clinics have heart failure.

### **Option 2: Open access echocardiography clinics**

Open access echocardiography clinics have been piloted in several countries and are popular with GPs. There are two disadvantages; they are staff intensive (both cardiac technician and cardiologist) and only approximately 20% of patients referred have heart failure. Assuming an incidence of CHF close to 1% then, if one aimed in the first instance to identify only half of this patient population, this would equate to 1000 patients per year in a DGH serving a 200,000 population. Given that only 20% of patients referred to open access echo units are found to have CHF, this equates to 5000 Echocardiograms per year of which only 1000 are necessary

### **Option 3: Plasma BNP and specialised heart failure clinics**

It is now considered possible to use a blood test measuring plasma BNP levels as a useful screening tool for chronic heart failure. This option needs to be evaluated using a pilot research study. The test has a very high sensitivity and reasonable specificity (sensitivity 92%

and specificity 72% in patients over 55 years). Recent developments in the BNP assay technique avoid the rapid processing of samples, which was previously necessary, making blood testing in general practice practical. The combination of clinical history, examination, plasma BNP and ECG and chest x-ray would enable general practitioners to identify those patients who have chronic heart failure. The very high sensitivity ensures that very few patients indeed will be missed. GPs would, of course, be free to refer patients in whom they have clinical suspicion of chronic heart failure despite a normal BNP. If the assay were made widely available, then it is considered that the performance of assays in batches would be highly cost efficient. If it is feasible to use BNP as a screen, with its high specificity, the manpower implications of developing specialised heart failure clinics to provide therapeutic advice and support would not be nearly so great. This option may be shown to be a viable and cost-effective way of providing a high quality targeted chronic heart failure service, **but this has yet to be proved by wide spread use.**

### *The present situation*

**7.12** There are a small number of DGHs in Wales that offer open access echocardiography. In the majority of DGHs however, patients have to be seen by a Cardiologist prior to having an echocardiogram. In one hospital, a system exists whereby the GP referral letters are used to assess the need for investigation, and this is undertaken prior to the out-patient appointment so alleviating the need for a second appointment for results in many cases.

There are long waiting lists for echocardiography in a number of DGHs and some shortage of trained physiological measurement staff. The reading of the echocardiography varies with technician reporting being undertaken with a quality assurance in place in a few DGHs, while the remainder are consultant reported. Policies concerning the management of those with heart failure exist in 21% of DGHs and in only one LHG.

#### *Key Action 24:*

Health Authorities will plan in their Health Improvement Programmes to provide an equitable, comprehensive and cost effective heart failure service by 2005. This will include the establishment in all DGHs of appropriately staffed specialist heart failure clinics and the appointment of specialist nurses to support these clinics and work with the LHGs and the patients. It is expected that each Health Authority will have established one such clinic by 2002/3.

Responsibility for Implementing:	<ul style="list-style-type: none"> <li>• Health Authorities</li> </ul>
Performance Target:	<ul style="list-style-type: none"> <li>• Plan in HIP for Heart Failure Services</li> <li>• Clinic for CHF per Health Authority by 2002/3</li> <li>• Clinic at each DGH by 2005/6</li> <li>• Specialist Heart Failure Nurses</li> </ul>
Information Required:	<ul style="list-style-type: none"> <li>• Numbers of clinics and nurses</li> </ul>

**Key Action 25:**

By 2002/3, each LHG must agree with the local DGH a patient pathway for the care of those identified as having chronic heart failure. This pathway should be based on the model pathway and have associated investigation and treatment protocols. The pathway will provide the basis for audit. All those with a presumed diagnosis of heart failure (including those with a raised BNP) must have an echocardiogram within 4 weeks, be incorporated into the primary care based CHD chronic disease management system and have at least a yearly review (more frequent in severe cases).

Responsibility for Implementing:	<ul style="list-style-type: none"><li>Local Health Group</li></ul>
Performance Target:	<ul style="list-style-type: none"><li>Agreed CHF pathway by 2002/3</li><li>Annual audit of compliance with pathway:-<ul style="list-style-type: none"><li>- 40% compliance by 2003/4</li><li>- 60% compliance by 2004/5</li><li>- 80% compliance by 2005/6</li></ul></li><li>Waiting times for Echocardiography including any wait for a clinic</li></ul>
Information Required:	<ul style="list-style-type: none"><li>Waiting times</li><li>Audit of pathways compliance</li></ul>

**Key Action 26:**

Health Authorities should work together to agree a pilot research study for the validation of BNP screening. If this, with WORD, is successful, they should decide the most cost effective way for the NHS in Wales to provide a BNP measurement service.

Responsibility for Implementing:	<ul style="list-style-type: none"><li>Health Authorities</li></ul>
Performance Target:	<ul style="list-style-type: none"><li>The establishment of a pilot research study for the introduction of BNP screening by 2002/3</li><li>The evaluation of the pilot sites and outcomes by 2004/5</li><li>Agreement on future provision of BNP service taking account of any new evidence by September 2004</li></ul>
Information Required:	<ul style="list-style-type: none"><li>Whether established and usage</li></ul>

**Key Action 27:**

By 2002/3 there will be agreement, with not more than two tertiary centres, to assess resistant/end stage heart failure within an agreed protocol. These centres will be part of the network of tertiary cardiac service providers serving the population of Wales. A strategy for palliative management in symptomatic endstage heart failure will be developed.

Responsibility for Implementing:	<ul style="list-style-type: none"><li>• SHSCW</li></ul>
Performance Target:	<ul style="list-style-type: none"><li>• Agreements in place</li><li>• A Strategy for Palliative Management in Symptomatic Endstage Heart Failure</li></ul>
Information Required:	<ul style="list-style-type: none"><li>• Agreements</li></ul>



## CHAPTER 8: The Implementation of Standard 5

### *Standard 5:*

Everyone diagnosed with Atrial Fibrillation should be offered appropriate evidence based care.

### *Definition of atrial fibrillation*

**8.1** Atrial Fibrillation (AF) is a disturbance of rhythm of the heart. It can be classified as paroxysmal, persistent (if it does not spontaneously terminate but reverts to sinus rhythm with electrical /pharmacological intervention), or permanent.

### *Prevalence*

**8.2** AF affects about 5% of the UK population over 65 years of age, with a prevalence rising to 10% in those over the age of 75.

### *Causes of atrial fibrillation*

**8.3** Atrial fibrillation is associated with coronary and valvular heart disease, heart failure, hypertension and diabetes. It occurs with acute myocardial infarction, thyrotoxicosis, and a number of other conditions. It is not only caused by coronary heart disease but the association is strong enough to include it in this action plan particularly because of the high level of morbidity and mortality resulting from atrial fibrillation. 20% of those with persistent or permanent atrial fibrillation have otherwise normal hearts.

### *Mortality and morbidity associated with atrial fibrillation*

**8.4** Atrial fibrillation is a major cause of mortality and morbidity and improved treatment would substantially reduce the burden of illness in society especially from stroke. Those with atrial fibrillation can have palpitations, dizziness, tiredness and heart failure but the most serious consequence is stroke, due to a clot of blood from the left side (atrium) of the heart. The risk of stroke in patients with atrial fibrillation is about 5% per year and the stroke recurrence rate is 12% per year with an annual risk of death of 5%, depending on other risk factors and age.

### *The assessment of those with atrial fibrillation*

**8.5** The optimum assessment of the patient presenting with atrial fibrillation includes a 12 lead ECG and an echocardiogram.

## *The Treatment of atrial fibrillation*

**8.6** The optimal management of atrial fibrillation is complex and requires close collaboration between the primary and secondary health care team. The treatment aims are achieving stable sinus rhythm (SR), or where this is not possible the prevention of embolic complications. This may require the use of potentially hazardous medicines and procedures.

Agreed patient pathways need to be in place between primary and secondary care in order to ensure as much care as possible can be provided in primary care but with a clear understanding of what part of the care needs to be undertaken by the specialist teams (usually a cardiologist) in the DGH.

Recent onset persistent atrial fibrillation requires immediate assessment and anticoagulation with heparin prior to attempts to restore normal rhythm, which may be either pharmacological or electrical (with the need for sedation or a brief general anaesthetic).

In persistent atrial fibrillation of less than 3 months duration, an attempt to restore normal rhythm by cardioversion (usually electrically) should be made with prior anticoagulation with warfarin for 4 weeks and consideration of medication to maintain normal rhythm.

The embolic risk in people with atrial fibrillation is variable, related mainly to their underlying cardiac condition, as is the potential for complications with anticoagulation. (Complications may vary due to "non cardiac" factors.) Thus individualised decisions need to be made on the relative risks and benefits - there are validated stratification protocols available.

The necessary facilities need to be put in place to provide a service for these patients which ensures that they are treated optimally. Patients treated by anticoagulation need to be treated by a programme which is quality assured and audited.

## *The present situation*

**8.7** The findings of the baseline review of services for those with AF were as follows:-

- *47% of DGHs have policies in place for managing those with AF;*
- *Two LHGs have policies in place.*

<b>Key Action 28:</b>	
Health Authorities will plan in their Health Improvement Programmes to provide equitable evidence based service for those with Atrial Fibrillation by 2004/5 including appropriate access to cardioversion.	
Responsibility for Implementing:	<ul style="list-style-type: none"> <li>• Health Authority</li> </ul>
Performance Target:	<ul style="list-style-type: none"> <li>• Plan in HIP for atrial fibrillation service</li> <li>• Waiting time for Cardioversion for recent onset atrial fibrillation</li> <li>• Waiting time for Cardioversion for persistent atrial fibrillation</li> </ul>
Information Required:	<ul style="list-style-type: none"> <li>• Health Authority plan</li> </ul>

<b>Key Action 29:</b>	
By 2002/3, there should be an agreed patient pathway between LHG and the DGH for the care of those with atrial fibrillation based on the model pathway. The compliance with this pathway should be audited yearly by a named individual. The pathway must include a fast tracking procedure for those with recent onset AF in order to assess them for early cardioversion.	
Responsibility for Implementing:	<ul style="list-style-type: none"> <li>• DGH</li> <li>• LHG</li> </ul>
Performance Target:	<ul style="list-style-type: none"> <li>• Agreed pathway for atrial fibrillation by 2002/3</li> <li>• Compliance audits annually</li> </ul>
Information Required:	<ul style="list-style-type: none"> <li>• Stroke incidence</li> <li>• Number of Cardioversions for new atrial fibrillation and percentage in sinus rhythm in 12 months</li> </ul>

<b>Key Action 30:</b>	
All patients with AF must have their need for long term anticoagulation assessed using nationally agreed and validated risk stratification/ assessment of any contraindications and this must be done in a way which explains to them the process and the recommended treatment. The anticoagulation programme must be quality assured and audited.	
Responsibility for Implementing:	<ul style="list-style-type: none"> <li>Local Health Groups</li> </ul>
Performance Target:	<ul style="list-style-type: none"> <li>Local Health Group compliance audit of numbers of patients with AF assessed for long term anticoagulation</li> <li>20% compliant by 2002/3</li> <li>40% compliant by 2003/4</li> <li>60% compliant by 2004/5</li> <li>80% compliant by 2005/6</li> <li>90% compliant by 2006/7</li> </ul>
Information Required:	<ul style="list-style-type: none"> <li>Compliance audit</li> </ul>

## Next Steps

- The following work still has to be completed and is scheduled for completion in 2001:-
  - An appraisal of the available multifactorial risk assessment tools;
  - a series of outline model patient pathways and protocols for use in the NHS in Wales;
  - The production of a model patient held record;
  - a training plan;
  - an information report;
  - the production of a model specification for a primary care CHD management system.
- There is the need for a programme of research and development to support this initiative in Wales, and this should be a high priority of R&D.
- The SHSCW report "The need for investment" will be updated and a second report published in 2001
- A group will be established to progress the production of an implementation plan for community thrombolysis and community involvement in resuscitation.

# Coronary Heart Disease National Service Framework Implementation Plan for Wales

## *Membership of Steering Board*

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Mrs Jacky Austin	Clinical Nurse Specialist Cardiac Rehabilitation, Nevill Hall Hospital
Mr Eric Butchart	Consultant Cardiothoracic Surgeon, University Hospital of Wales, Cardiff
Dr Antony Calland	General Practitioner and Chairman GPC Wales, BMA
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## GLOSSARY

### *Acute myocardial infarction (AMI)*

Heart attack. Refers to the death of a portion 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.

### *AF*

Atrial fibrillation

### *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 relatively predictable, and the intensity and frequency remains relatively similar over long periods. Unstable angina is severe and unpredictable and threatens to progress to an AMI.

### *Angiography*

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.

### *Atheroma*

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

### *Atrial fibrillation*

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

### *Audit*

see clinical audit

### *BACR UK*

The British Association for Cardiac Rehabilitation

### *BHF*

British Heart Foundation

### *BHS*

British Hypertension Society

### *BNP*

Brain Natriuretic Peptide (BNP) is a hormone produced and released by the heart in heart failure. Plasma levels of the Peptide become raised in relation to the severity of heart failure. In a patient presenting with breathlessness, the presence of normal plasma BNP makes Heart Failure exceptionally unlikely.

### ***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.

### ***CCAD***

see Central Cardiac Audit Database

### ***CCU***

Coronary Care Unit

### ***Central Cardiac Audit Database (CCAD)***

A UK clinical audit project of cardiac surgical procedures involving cardiac surgeons, cardiologists and cardiac anaesthetists.

### ***CHD***

see coronary heart disease

### ***CHF***

congestive heart failure

### ***Clinical audit***

A systematic examination of current practice to assess how well an institution is performing against set standards. Audit is a key implementation tool in the National Service Framework, allowing individual practices or primary care groups/trusts to measure performance against targets.

### ***Clinical effectiveness***

The extent to which a treatment achieves its intended purpose for the range of patients who will receive it in practice (as distinct from efficacy).

### ***Clinical governance***

A government strategy that makes NHS organisations accountable for continuously improving the quality and clinical effectiveness of their services. It aims to raise standards in the NHS through the systematic adoption of evidence-based medicine (EBM). Activities such as clinical audit, continuous professional development, research and development, and risk management now come under the auspices of clinical governance. National Service Frameworks will set out the targets for EBM in specific disease areas.

### ***Clinical guidelines***

Documents that provide advice on best management of particular clinical conditions. The guidelines are described as evidence-based if they are based on a systematic evaluation of the best available external evidence.

### ***Commission for Health Improvement (CHI)***

An England and Wales body set up to provide an independent assessment of local efforts to improve quality and to monitor the implementation of clinical governance.

### ***Compliance***

The extent to which patients adhere to the advice given by the healthcare provider (for example, in following medication regimens).

### ***Concordance***

A partnership in medicine taking based on informed agreement between the patient or carer, their doctor and other health professionals, for further information:

[www.concordance.org](http://www.concordance.org)

### ***Coronary heart disease (CHD)***

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

### ***Glycoprotein IIb/IIIa Inhibitors***

A type of drug that may be given in hospital to reduce the stickiness (clotting) of blood.

### ***Health Improvement Programme (HIP)***

An initiative aimed at improving health and healthcare in a local area. HIPs are health authority-led and involve NHS trusts, primary care groups/trusts and other primary care professionals, working in partnership with the local authority and other local interest groups to set up action programmes for the local area.

### ***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-risk individuals/patients***

Defined in the NSF for CHD as: 'people without diagnosed CHD or other occlusive arterial disease with an annual CHD risk greater than 30% over the next ten years'.

### ***Hypercholesterolaemia***

Raised levels of cholesterol in the blood

### ***Hypertension***

Raised blood pressure

### ***Integrated care pathways (ICPs)***

Locally agreed, evidence-based standards used to manage and monitor clinical processes. They attach clinical interventions to a timeline. ICPs are intended to reduce variations in patient care.

### ***Medicines management system***

(as part of community pharmaceutical services) services provided by community pharmacists to individual patients who may find their medicines difficult to take.

### ***MINAP***

Myocardial infarction national audit project, an initiative launched by the Royal College of Physicians in response to the NSF for CHD implementation plan in England.

### ***National Service Frameworks (NSFs)***

A systematic approach to driving up standards to improve quality across health care sectors, in partnership with social care and other organisations has been developed in the form of a National Service Framework (NSF) for Coronary Heart Disease. NSFs set out the targets for evidence based medicine in specific disease areas or population groups.

### ***NHS Direct***

Nurse-led telephone helpline for the public provided by the NHS.

### ***National Institute for Clinical Excellence (NICE)***

A new body set up by the government to promote clinical and cost-effectiveness. NICE will produce and disseminate clinical guidelines and make recommendations to the government on whether treatments should be available to NHS patients. The institute has a published programme of work detailing its priorities in terms of the disease and therapeutic areas that are being considered.

### ***Pathways***

see integrated care pathways.

### ***Performance Assessment Framework (PAF)***

A set of targets that will be used to assess the performance of the NHS nationally.

### ***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, and lack of exercise).

### ***Protocol***

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

### ***PTCA***

Percutaneous transluminal coronary angioplasty. 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.

### ***Regimen***

Systematic way of life or course of therapy.

### ***Risk***

The probability of an event occurring following exposure to a risk factor. The absolute risk is given by the incidence of the event. For example, if 100 patients are given a drug and five develop diarrhoea, then the estimated absolute risk is 5/100 or 0.05. Relative risk compares the risk of people undergoing one intervention (R1) against the risk of people undergoing another intervention (R2) (or against a control group of no intervention). The ratio R1:R2 is known as the risk ratio or relative risk (RR).

### ***Secondary prevention***

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

### ***Specialised Health Services Commission for SHSCW***

A joint venture established by the five Welsh Health Authorities to commission (and/or advise on) specialised health services.

### ***WORD***

Welsh Office of Research and Development

*Glossary Adapted from NSF Navigator for CHD with the kind permission of Hayward Medical Communications*

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