Coronary Heart Disease and Stroke in Scotland

Strategy Update 2004

NHS SCOTLAND

SCOTTISH EXECUTIVE
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministerial Foreword</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Introduction</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td><strong>Section 1</strong></td>
<td>Coronary Heart Disease and Stroke in Scotland: Trends</td>
<td>8</td>
</tr>
<tr>
<td><strong>Section 2</strong></td>
<td>Prevention</td>
<td>14</td>
</tr>
<tr>
<td><strong>Section 3</strong></td>
<td>Managed Clinical Networks</td>
<td>21</td>
</tr>
<tr>
<td><strong>Section 4</strong></td>
<td>Workforce Issues</td>
<td>25</td>
</tr>
<tr>
<td><strong>Section 5</strong></td>
<td>Access to Treatment and Care: Coronary Heart Disease</td>
<td>29</td>
</tr>
<tr>
<td><strong>Section 6</strong></td>
<td>Access to Treatment and Care: Stroke</td>
<td>37</td>
</tr>
<tr>
<td><strong>Section 7</strong></td>
<td>Information Technology and the Development and Use of Databases</td>
<td>44</td>
</tr>
<tr>
<td><strong>Section 8</strong></td>
<td>Supporting Research and Development</td>
<td>48</td>
</tr>
<tr>
<td><strong>Appendices</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>National Advisory Committee Structures</td>
<td>54</td>
</tr>
<tr>
<td>B</td>
<td>MCN Managers’ Contact Details</td>
<td>57</td>
</tr>
<tr>
<td>C</td>
<td>List of Projects Supported by Strategy Funds</td>
<td>58</td>
</tr>
</tbody>
</table>
Ministerial Foreword

Heart disease and stroke have traditionally claimed many lives in Scotland – often robbing families of mothers or fathers, brothers or sisters who should have been in the prime of their lives.

Throughout the 1990s, much had been done in Scotland and the rest of Europe to reduce levels of CHD and stroke, both in terms of people being diagnosed and people dying before their time. But in 2002, the Scottish Executive drew up a challenging Strategy to build on these good foundations. The Strategy set out action to:

- prevent more people from developing heart disease and stroke
- provide better, faster interventions for people with heart disease and strokes
- involve patients and clinicians from throughout the service in planning and organizing services

The Strategy is working, and premature deaths and heart attacks are falling. We are on course to halve the rate of premature deaths from CHD and stroke between 1995 and 2010. So much so that the Scottish Executive has increased the target for CHD – by 2010 we aim to reduce premature deaths by 60%.

We have seen waiting times fall steadily. At the end of this month, we will cut the maximum waiting times for angiography and cardiac surgery by a third. And by 2007, the maximum waiting times for all cardiac interventions will be cut to less than a half of present levels, with no patient having to wait more than 16 weeks from seeing a cardiologist to intervention.

We have seen the development of Acute Stroke Units throughout Scotland. These offer patients a better chance of survival and a better quality of life by bringing them under the care of a multi-disciplinary team, specifically trained to deal with stroke.

We have more to do if we are going to close the gap on the rest of Europe. The recent announcement by the Scottish Executive that it will seek a ban on smoking in enclosed public spaces will make a huge difference. It sends a signal to the people of Scotland that we are serious about real change, and we're not afraid to lead from the front to achieve this.

People’s expectations from the Health Service are ever-increasing. I commend those involved in CHD and stroke for their readiness to embrace new structures; to embrace the responsibility for planning and designing their own services. And most of all, I commend the people of Scotland for their readiness to take their place at the heart of our service.

Andy Kerr, MSP
Minister for Health and Community Care
Introduction

It is now two years since the Scottish Executive launched its CHD and Stroke Strategy and it is appropriate at this point to review the progress that is being made. This report examines where we are; what we are doing; and sets out the way ahead.

We set out progress on all aspects of the Strategy, looking at developments in prevention, improvements in diagnosis and we report on better, quicker treatment delivered by multi-disciplinary teams working in a co-ordinated way to explicit and measurable standards. The emphasis on individual priorities may vary from time to time and in different parts of the system, but must always reflect the needs of the patients and take account of national standards.

The Strategy is underpinned by three consistent principles of continuous, sustainable improvement in the service:

- patients must be at the centre of all decision making
- services perform to national standards and guidelines; with local implementation and (where appropriate) regional multi-disciplinary decision making to achieve them
- transparent prioritisation and investment processes that are publicly reported and for which we remain accountable

Progress and improvements are reported for all to see on our websites:

www.show.scot.nhs.uk/sehd/CHD    www.show.scot.nhs.uk/sehd/Stroke
As the Strategy moves into its third year, we are building on firm foundations. Managed Clinical Networks have now been established in every NHS Board area and they have benefited from new funds to develop innovative projects. As we move forward, we need to ensure that they remain key to the planning process for both CHD and stroke services.

Patients are at the centre of all our activities and for the first time in Scotland, they have been given a voice at the heart of both local and national policy development. We are grateful to the patients and their carers who give so freely of their time and enthusiasm to improve the service for others. As clinicians, we have learnt so much from hearing how patients perceive our services – and sometimes it can be quite sobering to find out we don’t always get it right. But if we are to meet the Scottish Executive targets of reducing premature deaths from CHD by 60% and from stroke by 50% between 1995 and 2010, we have to embrace all feedback and act on it.

Scotland has taken huge strides in reducing levels of CHD and stroke over recent years and that is an enormous credit to clinicians, health promotion staff and many others. It is an enormous credit to the people of Scotland, who have taken the first tentative steps on the path to a healthier lifestyle. But other countries have made progress too. We must continue to strive for more, and we stand ready to play our parts.

Ross Lorimer

Martin Dennis
Coronary Heart Disease and Stroke in Scotland: Trends
1.1 In recent years, Scotland has seen a dramatic fall in the level of premature deaths from coronary heart disease and stroke – since 1995 mortality rates for CHD and stroke have fallen by more than a third. On a human level, over 3,000 fewer families lost a loved one to CHD or stroke last year than in 1995. There have also been significantly fewer people diagnosed with cardiovascular diseases and stroke. This is a considerable achievement of which Scotland should be proud.

1.2 Of course, Scotland started from a very high base, traditionally being dubbed “the Sick Man of Europe”. Scotland certainly had the scope to improve, but other countries with lower levels of mortality have also seen a fall in the rates of CHD and stroke in recent times. This shows us that we can go further. On the one hand, Scotland is still playing catch-up, but on the other, we know that more improvement is possible.

1.3 The Scottish Executive has set tough targets. The public health White Paper: “Towards a Healthier Scotland” set a target to halve the rate of death from cardiovascular diseases and stroke in those aged under 75 in the 15 years between 1995 and 2010. For CHD, the Scottish Executive has recently made the target even more stringent: the aim now is to have reduced deaths from CHD in those aged under 75 by 60%. These are tough targets that should not be underestimated. Scotland is presently on track to meet them – but only just.

**Coronary Heart Disease**

1.4 Chart 1 shows the improved mortality for CHD over the last 8 years and the reduction necessary to reach the target by 2010. The overall rate for men and women has fallen by 38% and this suggests that the target is achievable. However, the trend for men has shown a recent levelling out and action must be taken to address this.
**Stroke**

1.5 As for CHD there has been a consistent downward trend in stroke mortality in the under 75s. The overall rate for men and women has fallen by 34%. This trend also suggests that the target for 50% reduction by 2010 can be achieved.

![Cerebrovascular Disease for ages under 75 Age Standardised (European Standard Population) Mortality rate per 100,000 population](image)

**Hospital Admissions for CHD and Stroke**

1.6 Despite the reduced prevalence of cardiovascular disease in Scotland, it is unlikely that this will lead to a reduction in hospital admissions. Partly, this is because although older people are at less risk of developing cardiovascular disease than they were ten years ago, there are now more older people in Scotland. In addition, we are seeing more people admitted to hospital for preventative treatment as technologies have improved. Much of this increased hospital activity is through scheduled care rather than through emergency admissions, and this is leading to more scope to manage patient journeys. Chronic Disease Management strategies will have an increasingly important role in future clinical practice.

1.7 The number of admissions due to stroke and stroke related disease has increased by 8% since 1995. Admissions for acute myocardial infarction (AMI) have declined since 1995 by 13% in the under 75 year age group, but have risen by 5% in those aged greater than 75. This overall reduction in heart attack admissions has been offset by an 18% increase in the number of admissions due to angina and chest pain.
1.8 It is likely that the fall in the number of patients presenting with an AMI is due to earlier investigation and treatment of angina. Research in this area has demonstrated that early intervention in patients with acute coronary syndromes results in fewer patients going on to have a major cardiac event.

1.9 More patients survive heart attacks now than in the past. This had led some clinicians to expect an increase in the number of people developing heart failure. However, current data does not indicate that mortality or hospital admissions due to heart failure are increasing.

Deprivation

“Deprivation takes many different forms in every known society. People can be said to be deprived if they lack the types of diet, clothing, housing, household facilities and fuel and environmental, educational, working and social conditions, activities and facilities which are customary, or at least widely encouraged and approved, in the societies to which they belong.”

Health in Scotland 2002

1.10 It has long been accepted that there is a direct correlation between deprivation and ill health. People in the most deprived sections of society are more likely to develop cardiovascular disease and, when they do, they are likely to die sooner than their less deprived counterparts. This is true for both CHD and stroke, although the effect is even more pronounced for stroke.
1.11 All sections of Scottish society have seen downward trends in cardiovascular mortality and the gap in mortality between the least deprived (Quintile 1) and the most deprived (Quintile 5) has narrowed. But the Scottish Executive is attaching increased importance on narrowing the gap further and included the specific commitment in “Closing the Opportunity Gap, the Budget for 2003-06” to provide:

“a clear direction to NHS Boards to ensure resources are used to tackle inequalities, through addressing life circumstances, lifestyles and health priorities such as cancer, coronary heart disease and mental illness (much of which is preventable)”

1.12 The Executive has now set a specific target to reduce CHD mortality by 27% over 5 years for the most deprived communities.
Urban versus Rural Dimension

There is no significant difference in the mortality from CHD between urban and rural communities. Furthermore, the rate of decline between the most and least deprived in both urban and rural communities is similar. The reduction in stroke mortality, though real, has been less marked than the decline in CHD. It shows a similar pattern in rural and urban areas.
Strategy Recommendation

NHS Boards should, through their local MCNs, develop CHD and stroke prevention strategies. The strategies should adopt a “population approach” which should be complemented by “high risk groups approach” that includes the most socially disadvantaged groups within the local population.
2.1 Managed Clinical Networks (MCNs) are in the process of developing CHD and stroke prevention strategies in tandem with their local plans for primary/secondary prevention and health improvement. To assist them in this process, the Heart Health National Learning Network has published a guide to the prevention of CHD and stroke that demonstrates how local primary prevention strategies could link into local health planning structures.

2.2 A Quality Assurance template that takes account of primary and secondary prevention has been developed for stroke, and MCNs across Scotland are undergoing the process of accreditation. A similar template is under development for CHD by NHS Quality Improvement Scotland (NHS QIS). This will be piloted from February 2005 prior to a rolling programme of MCN accreditation later in the year.

The National Picture

2.3 Prevention is not just a matter for local NHS Boards and there is much good work to report at a national level. To a great extent, CHD, stroke and diabetes have common risk factors. Scotland’s response to CHD and stroke prevention has been considerable and sustained, combining action at local, regional and national levels, with three special focus programmes that include physical activity, smoking cessation and healthy eating. The benefits of these initiatives will influence and improve the main chronic conditions affecting people in Scotland.

2.4 The National Heart Forum has estimated the amount of CHD attributable to five key modifiable risk factors. Although each risk factor is independently important, the risk of developing CHD is strongly related to a combination of risk factors and it appears that the effect is synergistic.
2.5 The action set out in the Strategy on risk factor reduction cannot be carried out in isolation. The Scottish Executive has published a number of relevant documents over the last decade. These documents, to a greater or lesser extent, aim to shift some of the emphasis away from treating illness and focus it on preventing the condition in the first place. They all seek opportunities to influence health related behaviour in four key settings: the early years; teenage transition; the workplace; and the community. To support the delivery of this programme, the Scottish Executive established a new fund in 2002 to invest an additional £100m over an initial 4 year period in health improvement.

**The Health Improvement Challenge**

2.6 The action on risk factor reduction within the Scottish population is set out in the white paper: “Improving Health in Scotland: The Challenge” (2003). This set out three special focus programmes: smoking; physical activity; and healthy eating.

**Smoking**

2.7 Smoking is the biggest preventable cause of ill-health and premature death in Scotland. It is a main contributor to CHD and stroke as well as a range of other diseases. It is estimated that nearly one in four people in Scotland smokes. A national “smoking atlas” is being prepared. The atlas compares and contrasts smoking prevalence across different regions in Scotland and is based on the 2001 census and 1995/1998 Scottish Health Surveys.

2.8 In January 2004, the Scottish Executive published an action plan on tobacco control. This plan, “A Breath of Fresh Air for Scotland”, set out proposals for reducing tobacco related ill-health. The Executive recently undertook a wide ranging consultation process on smoking in public places and has now signalled its intention to ban smoking in enclosed public areas.

**Physical Activity**

2.9 Physical inactivity is a major independent risk factor for CHD. Physical activity also has a positive effect upon other risk factors for CHD including reducing blood pressure in people with hypertension, improving blood lipid profiles and improving insulin sensitivity. Inactive people have double the risk of dying from CHD compared with those who are less active. The Scottish Health Survey 1998, published in 2000, found that approximately 60% of men and 70% of women put their health at risk by being below the minimum recommended levels of physical activity.
2.10 The Scottish Executive launched the National Physical Activity Strategy in 2003. This stresses the health benefits of moderate physical activity and provides a broad framework for developing this through active schools, homes, workplaces and communities. It identified strategic objectives to develop and maintain environments to support inactive people to become active; provide education and training to a wide range of people so that they can promote physical activity in their area; and raise public awareness of the benefits of physical activity. To develop and strengthen the implementation of the National Physical Activity Strategy the Scottish Executive will set up a Scottish Physical Activity and Health Council. In partnership with Sustrans Scotland (a sustainable transport charity), the Executive will launch an active travel programme, aiming to make activities such as walking and cycling a part of everyday life.

**Healthy Eating and Diet**

2.11 Poor diet – particularly eating too much fat, salt and sugar and not enough fruit, vegetables and complex carbohydrates – is a major factor in the premature development of cardiovascular disease.

2.12 In July 2004, the Scottish Executive published “Eating for Health – Meeting the Challenge”, which sets out a Food and Health Action Plan for 2004-05. The Executive aims to develop a stronger dialogue with the Food Industry focused on reducing fat, portion sizes and levels of salt in processed food. The Executive has also set up a Healthy Living Food and Health Alliance, which will monitor and evaluate the effectiveness of food and health policies. This will include reporting on progress towards meeting the dietary targets set out in the 1996 Scottish Diet Action Plan.
CASE STUDY
Have a Heart Paisley

One of the three national health demonstration projects, Have a Heart Paisley was initially established in 2000 for a three-year period; a second phase was announced in March 2003 in “Improving Health in Scotland – The Challenge”.

In Phase One, Have a Heart Paisley aimed to provide a united focus for action to prevent heart disease, promote good health and reduce health inequalities in Paisley by addressing life circumstances, environments and local services.

During Phase One, Have a Heart Paisley’s achievements included:

- 140 community projects involving 6,500 local people in health activities
- range of smoking cessation services established in local communities
- CHD register created – better support and treatment for more patients
- 700+ local people involved in “Paisley Heart Awards” – heart health specific scheme
- innovative menu-based cardiac rehabilitation programme/Health at Heart Centre established in the Royal Alexandra Hospital

In Phase Two, Have a Heart Paisley will refocus its activities and act as a testing ground for key policy issues that can be implemented more widely across Scotland. It will have a particular focus on health inequalities. Local CHD and stroke MCNs have been encouraged in the Strategy to draw on the lessons emerging from Have a Heart Paisley and similar projects in other parts of Scotland, to inform their local health improvement strategies.

Have a Heart Paisley has been externally evaluated by Glasgow University and this report is publicly available from the project website: www.haveaheart.org.uk
The Scottish Primary Care Collaborative

2.13 The Scottish Primary Care Collaborative is a programme run by the Scottish Executive’s Centre for Change and Innovation which mirrors an approach that has already delivered results in England. The Collaborative has had considerable success in improving care for patients with diabetes. The Centre for Change and Innovation is considering using the same collaborative methodology in implementing several of the NHS Quality Improvement Scotland recommendations for the care of people who have had AMI. Phase 2 of the programme will bring together primary care professionals for a period of two years to reduce CHD mortality by 10% year on year within the 200 participating practices. Working with the MCNs, the programme will ensure that patients receive the best possible care and the most favourable long term outcomes.

2.14 The programme will look at the validation of registers, active call and recall systems and the use of secondary prevention measures.

2.15 Over the two years, participating practices will work with a designated project manager to implement the standards and provide feedback on a monthly basis. The practices and the local MCN representative will attend a series of three workshops in the first year, where ideas and improvements can be shared with other colleagues.
CASE STUDY
The Heart Health National Learning Network

The Heart Health National Learning Network, hosted by NHS Health Scotland, brings together interested organizations, bodies and individuals to:

- identify, analyse and share evidence and good practice from both the national demonstration project *Have a Heart Paisley* and other initiatives
- develop stakeholders’ ability to translate policy priorities into strategic action
- inform future developments across Scotland

Key developments by the Heart Health Network include:

**Heart Health Website** – providing a range of related information including details of the Network’s activities, forthcoming events and useful links.

**Heart Health Database** – a national database created to disseminate relevant information.

**Cardiovascular Disease: A Guide to Primary Prevention in Scotland** – developed by the Heart Health Executive Group with support from relevant expert groups. The guide sets out:

- Scotland’s current position in relation to cardiovascular disease
- what is currently happening at a national level to combat it
- a framework for local primary prevention, identifying key modifiable risk factors
- how local primary prevention strategies could link with local health planning
- recommendations for local action in the key topic areas of physical activity, smoking, diet and nutrition
- to help MCNs in the development of primary prevention strategies

**Heart Health National Conference** – held in March 2004 and brought together international speakers to examine the current activity around cardiovascular disease prevention; explore how local primary prevention strategies could and should engage local community planning; and review the effectiveness of local community based coronary heart disease prevention projects.

**Heart Health Learning Templates** – the templates draw together all the learning from both the independent, external and project led internal evaluation of Have a Heart Paisley. Information is presented in short, bulleted format and is available on the Heart Health website: www.phis.org.uk/projects

**Have a Heart Paisley Learning Days** – the learning days will allow participants to come to Paisley to learn about the project first hand from its staff, its partners and its users.
3
Managed Clinical Networks

**Strategy Recommendations**

Local health plans should, by December 2002, include provision for the development of local Managed Clinical Networks for cardiac services and stroke. NHS Boards should give consideration to making innovative appointments to MCNs, rather than to institutions.

By April 2004 each NHS Board should have a local cardiac services MCN in operation.

By April 2004 each NHS Board should have a Stroke MCN in operation.
3.1 Managed Clinical Networks (MCNs) represent a way of working which relies on clinicians being part of a virtual organization that actively involves patients in service design and focus. It brings together clinicians from all backgrounds and sectors in the NHS, working together with patients across boundaries between primary, secondary and tertiary care. MCNs were envisaged in the 2002 Strategy as being the key vehicles to deliver real and sustainable service improvement.

3.2 This year saw the last pieces of the MCN jigsaw come into place. Every NHS Board now has an operational MCN for both CHD and stroke. Each MCN has appointed a lead clinician and network managers are in place. And these MCNs sit alongside other Networks, for example in cancer and diabetes. Both stroke and CHD MCNs have received two years’ worth of specific pump priming to help them establish themselves. This funding, worth £3m over two years was made available from April 2003 – although some MCNs were later in getting established, they will not lose out on this funding.

3.3 As an assessment of MCN maturity, network managers were asked this autumn to identify a number of key generic and disease specific components that their MCN had in place. This exercise showed that although these components varied between the NHS Boards, the general picture was that MCNs were demonstrating significant levels of maturity and integration within local health planning structures.

The work of the MCNs

3.4 MCNs for stroke and CHD have a broad remit. They are involved in all aspects of planning stroke and cardiac care in each NHS Board. Each MCN is responsible for establishing its own work plans in identifying local priorities and taking into account those set out in the CHD and Stroke Strategy. These include:

- ensuring access to acute stroke units and neuro-imaging facilities
- development of rapid access out-patient, chest pain and heart failure services
- addressing the issue of pre-hospital thrombolysis for AMI in rural communities
- setting targets for secondary prevention and ensuring inclusive stroke and cardiac rehabilitation and follow-up services
- developing primary care standards and primary prevention strategies for stroke and CHD
- monitoring and reporting on MCN performance indicators
3.5 Where public involvement had previously been restricted to consulting on specific changes, NHS Boards and their MCNs are beginning to see this as a much wider process of informing, engaging and consulting them on health and community care policy and service developments. With patient representation on many MCNs – and a goal to have patient representation on all MCNs – patients are not just consulted on changes, they are actively engaged in shaping and initiating change directly.

3.6 MCNs have also been working with the Commission for Racial Equality, along with the Scottish Executive, to ensure that services are fully accessible to people from minority ethnic groups. This is particularly important for CHD and stroke services, where there is evidence to suggest that people in certain ethnic groups – particularly South Asians – are at greater risk of developing these conditions. There is good practice to build upon – for example, Ayrshire and Arran NHS Board published its Cardiac Disease Equity Audit in 2002. This was a detailed analysis of CHD services across Ayrshire and Arran, which aimed to identify inequalities in service provision and make recommendations for future redesign.

Project Funding

3.7 The Strategy came with significant additional funding – a total of £40m over three years. The lion’s share of this is being allocated to MCNs over the three years of the Strategy to engage in projects, including service redesign, that will bring tangible benefits to patients. NHS Boards were invited to submit bids to the Executive for their relative share of the additional funding. Each Board was encouraged to submit joint stroke and CHD bids in such a manner that would reflect their local priorities but that would balance the development of local stroke and CHD services. So far, some £17m has been made available in this way, and it is already starting to make a difference across some 146 diverse projects. These include:

- establishing an acute stroke unit in Tayside
- establishing a rapid access chest pain service in Highland
- development of CT imaging service for stroke in Argyll and Clyde
- establishing a cardiology outreach clinic in Fife
- publishing “My Stroke” and “My Heart” books for patients in Greater Glasgow
- setting up chronic disease management programme for CHD in Greater Glasgow

3.8 Some NHS Boards were not as quick as others in establishing MCNs, and not all the money that has been made available to the MCNs has yet been spent. But this unspent funding remains available to the MCNs and the Scottish Executive has re-emphasized to NHS Boards the importance of putting the project funding to effective use.
Links with National Advisory Committees

3.9 To support the development and maintenance of local MCNs, and to provide a forum to share best practice, the National Advisory Committees for both stroke and CHD have set up MCN Subgroups. These two Subgroups are each chaired by a member of the National Advisory Committee and bring together the 15 lead clinicians from the MCNs.

Next Steps

3.10 As MCNs grow in experience and confidence, the Scottish Executive expects NHS Boards to explore the potential to integrate their various condition specific MCNs under a single administrative office within their existing planning structures. Enhancing the links between the clinical networks and financial planners within the NHS Boards could only be beneficial to both groups. Whilst lead clinicians have benefited from networking at the national Subgroup on MCNs, network managers and other members have not had this opportunity. The Scottish Executive is therefore planning a series of Network Development Days throughout 2005 to enable all members of MCNs to share ideas and map out the way ahead.
4

Workforce Issues

Strategy Recommendation

A substantial increase in the number of training posts so that by December 2003 there are an additional 10 SpR posts in cardiology and a total of 8 SpR posts in stroke medicine.
4.1 The 2001 Task Force Report had recommended the appointment of an additional 30 consultant cardiologists throughout Scotland. The 2002 CHD and Stroke Strategy recognized that the effective implementation of the Task Force recommendations would require a substantial increase in the numbers of specialist nurses, Allied Health Professions, technicians, pharmacists, intermediate specialists, cardiologists and cardiac surgeons. But the Strategy also recognized the difficulties in recruiting and retaining consultants given that there were few people in Scotland with the appropriate training to fill these posts. It acknowledged that the target of 30 new consultants was unrealistic and focused instead on a substantial increase in the number of training posts. There has been real progress made.

<table>
<thead>
<tr>
<th>Clinicians in post (head count) at 30 September 2001 and 30 September 2003</th>
<th>2001</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardiology</td>
<td>49</td>
<td>53</td>
</tr>
<tr>
<td>Cardiac Surgery</td>
<td>25</td>
<td>27</td>
</tr>
<tr>
<td>Associate Specialist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardiology</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Cardiothoracic Surgery</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Staff Grades</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardiology</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Cardiothoracic Surgery</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Cardiology Training Grades</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registrars</td>
<td>29</td>
<td>49</td>
</tr>
<tr>
<td>Senior House Officer</td>
<td>29</td>
<td>50</td>
</tr>
<tr>
<td>Cardiothoracic Surgery Training Grades</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registrars</td>
<td>15</td>
<td>18</td>
</tr>
<tr>
<td>Senior House Office</td>
<td>34</td>
<td>28</td>
</tr>
<tr>
<td>Nurses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute (qualified)</td>
<td>18,394</td>
<td>19,281</td>
</tr>
<tr>
<td>Allied Health Professions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qualified</td>
<td>7,359</td>
<td>8,094</td>
</tr>
</tbody>
</table>

4.2 Between 2001 and 2003 there has been a slight increase in the number of consultant cardiologists and the number of staff in training grades has almost doubled. The figures for nurses and Allied Health Professionals represent numbers working across the health service and not just those working exclusively on CHD and stroke, but the overall increase is positive.

4.3 Because stroke services have not been provided by a specific stroke specialty, it is not possible to show the numbers of stroke clinicians. Stroke patients are sometimes treated by clinicians from the general medicine, geriatrics and neurology specialties, and these clinicians may not work exclusively on stroke services. The Scottish Executive is aware that the absence of data on stroke clinicians is an obstacle to planning for stroke services and has commissioned a survey of stroke workforce in Scotland. In the longer term, the recent approval of Stroke Medicine as a sub-specialty will help to clarify the number of stroke clinicians, and allow closer monitoring of the workforce.

**Recruitment and Retention Challenges**

4.4 Whilst the 2003 figures show a slight increase in the number of consultants in cardiac services, they clearly fall well short of the increase envisaged by the Task Force. Challenges continue to exist around recruitment and retention of consultant staff, particularly for cardiology and substantial investment has been provided to support additional nurses, AHPs and training posts. The aim is to establish specialist multi-disciplinary teams to deliver local and regional services for both stroke and CHD. MCNs are starting to explore ways of working together at a regional level to share and make best use of their resources. There is considerable interest and merit in exploring the potential for newly appointed cardiologists at local hospitals to have sessions at the tertiary centres as part of their job plans.

**Workforce Planning and Development**

4.5 Following a lack of historic workforce planning in NHSScotland, “Working for Health”, the first ever Workforce Development Action Plan for NHSScotland was launched in August 2002. It heralded new regional and national teams to support workforce development and dedicated personnel to take this forward. It set out plans to drive forward better information, planning and employment data and also the production of an annual Scottish Workforce Plan.

4.6 Implementation of the Workforce Development Plan is continuing with new structures, processes and personnel in place and the Scottish Health Workforce Plan 2004 Baseline was published in April 2004. In addition, the NHS Reform Act imposed a new duty on NHS Boards to have arrangements in place for workforce planning from September 2004.
4.7 Workforce development is being led at national level by the National Workforce Committee through 8 strands of work:

- model of supply and demand
- workforce planning
- commissioning plan for education
- workforce design and workload
- careers recruitment and retention
- workforce performance and effectiveness
- occupational professional and regulatory standards
- workforce observatory

4.8 The Workforce Numbers Group (WoNuG) has been established to determine the number and shape of the workforce for the future. A subgroup of WoNuG is focusing on immediate priorities including medical staff pressure areas and numbers in training.
Strategy Recommendation

Each NHS Board will have a local cardiac services Managed Clinical Network in operation with a Quality Assurance programme agreed with the Quality Standards Board for Health in Scotland. The Network will cover all aspects of CHD from primary prevention to cardiac rehabilitation by April 2004.
Improving access to treatment and care

5.1 The recent fall in premature mortality rates from CHD has been impressive. But there is no room for complacency. As Section 1 of this Report indicates, other parts of the world show us that it is possible to reduce mortality rates even further, and doing so remains a key clinical priority for the Scottish Executive. Section 2 highlights the need to reduce the number of people developing CHD in the first place through changing lifestyles and behaviours. In order to make the most of our opportunity to reduce mortality, we must continue to seek ways to improve the treatment and care of CHD patients.

Waiting Times for Investigation and Treatment

5.2 Timely referral for investigation and treatment is a key component of a modern health service. Reducing waiting times can often have a direct impact in making the treatment more effective. It is also important to patients to help them map out the major milestones as they embark on their various patient journeys. Patients need to be confident that their diagnosis and treatment is well-planned, reliable and available within reasonable timescales.

5.3 Up until now, the Scottish Executive has set waiting time guarantees that no patient would wait more than 12 weeks between seeing a specialist and having angiography, and that no patient would wait more than 24 weeks between angiography and receiving surgery or percutaneous coronary intervention (PCI). At September 2004, only sixteen patients were recorded as waiting for more than 12 weeks for angiography and none recorded as waiting for more than 24 weeks for surgery or PCI.

5.4 From the end of this month, the targets are being tightened. No patient will wait more than 8 weeks between seeing a specialist and having angiography, and no patient will wait more than 18 weeks between angiography and receiving surgery or PCI. This will make a real difference for patients; in September 2004 patients routinely had to wait longer than these times for treatment.

5.5 By the end of 2007 no one will wait more than 16 weeks from specialist referral to treatment for cardiac intervention of any kind. This 16 week maximum waiting time standard includes waiting time to both angiography and any subsequent surgery or PCI. The total maximum waiting time from specialist referral to treatment for CHD will therefore have been cut by more than a half when compared with the targets in place until December 2004. In addition, the waiting time standard will cover not just the patients going on to have surgery and PCI, but cover all forms of cardiac intervention.
Rapid Access Chest Pain Services

5.6 It is important that patients experiencing new chest pain or a sudden increase in their symptoms are seen as soon as possible. Rapid Action Chest Pain Clinics (RACP Clinics) provide a ‘one stop shop’ to confirm or exclude the likelihood of CHD. A number of models have developed for chest pain assessment and these have been driven by local circumstances and examples of good practice in other centres. Strategy funds to a total of £2.3m have been used to support the development and implementation of RACP services. The majority of NHS Boards either now offer this service or are working towards their implementation.

Treatment of Acute Myocardial Infarction

5.7 As treatment of heart disease has improved, heart attacks are becoming less common in Scotland. In 1990-91 there were 20,399 hospital admissions for acute myocardial infarction (AMI) and this decreased to 17,141 in 2003-04. But there have also been developments in the treatment for AMI.

5.8 Thrombolytic treatment has been the established method of treating AMI since the 1990s and is the benchmark against which new therapies and interventions are measured. Trials have demonstrated that, particularly in patients who present within the first hour of the onset of symptoms, thrombolysis reduces heart muscle damage; preserves left ventricular function and offers a better chance of survival.

5.9 A number of innovative strategies have been devised to ensure that treatment is administered promptly. Several studies have demonstrated that administering therapy in the community (pre-hospital thrombolysis) produces results that are superior (17% relative reduction in short-term mortality) to hospital thrombolysis, particularly when the transfer time to hospital is greater than thirty minutes.

5.10 Scotland has a population of over 5 million, of whom over 3 million live in the central belt and 1.38 million live in the cities of Glasgow, Edinburgh, Aberdeen or Dundee. The benefits of pre-hospital thrombolysis are less clear cut in urban settings and if the journey time to hospital is short most clinicians advocate a “scoop and run” policy. Even in rural and remote areas pre-hospital thrombolysis has not been widely adopted for logistical reasons. Nevertheless, the newly acquired ability to fax or telemeter ECGs from an ambulance to a cardiac centre and the development of thrombolytic drugs that can be administered as a single bolus injection have made this form of therapy much easier to deliver.
CASE STUDY

The Scottish Ambulance Service

Pre-hospital ECG telemetry & administration of thrombolysis

The Scottish Ambulance Service is on target to have all its paramedics trained and equipped to provide pre-hospital coronary care and the delivery of thrombolysis by the end of March 2005.

Training has been provided at multiple venues involving staff from all Health Boards in Scotland with training addressing the needs of heart attack patients, the diagnosis of acute coronary syndromes, the use of thrombolytic agents and the interpretation of the 12 lead ECG.

A major contribution to the programme has been the roll-out of the service’s new ‘Lifepak’ defibrillator/monitors and ECG recorder. Linked to this is the development of five telemedicine decision support centres which can transmit the pre-hospital ECG to the receiving hospital.

A joint venture between the Scottish Ambulance Service and Lothian University Hospitals Division has resulted in the 885,000 people of South East Scotland having access to pre-hospital transmission of a 12 lead ECG to the Coronary Care Unit in the Royal Infirmary of Edinburgh. Furthermore, in East/Mid Lothian and the Scottish Borders, patients may also receive pre-hospital administration of thrombolytic therapy. The provisional results of this initiative are greatly encouraging. In the first two full months of the project over 500 successful transmissions were made. Of these, 22 patients were fast tracked direct to a Coronary Care Unit where staff were ready to continue the care in a seamless manner. 16 patients were thrombolysed prior to arrival at CCU.
Percutaneous coronary intervention (PCI) – formerly known as coronary angioplasty – is a very effective treatment for both angina and AMI. PCI can restore the blood flow to the heart for more than 95% patients with no residual narrowing to the artery and a much lower risk of further heart attack.

Next Steps

The National Advisory Committee for CHD has established a working party to draw up an integrated strategy for the management of AMI in Scotland. The Scottish Ambulance Service, the Scottish Cardiac Society, and the SIGN CHD Steering Group will be included in the working party, which has been asked to produce a final report by March 2005. This will include specific guidance on the indications for, and the provision of, pre-hospital thrombolysis, hospital thrombolysis, primary PCI, and rescue PCI.

Revascularisation Rates

The 2001 Task Force Report on CHD and Stroke proposed a target of 1,400 revascularisation procedures per million population. As anticipated, the rates for PCI have continued to increase annually by approximately 7.5%, while rates for CABG have remained stable. The CHD and Stroke Strategy recommended that rates be increased progressively with aim of reducing and ultimately eliminating waiting lists. This is consistent with all the evidence about the benefits of early intervention and the approach taken by the National Waiting Times Unit. Figures from Scottish Revascularisation Register for 2003-04 show the current rate of revascularisation to be 1,318 per million of population. If the rate of PCI in Scotland continues to increase at the present rate, we will exceed our target of 1,400 interventions per million of population in 2004-05.

Adults with Congenital Heart Disease

A national programme for the surveillance and treatment of adults who have ongoing health problems attributable to congenital heart disease has been proposed and is being considered by the National Services Advisory Group. The proposal is sponsored by NHS Greater Glasgow and NHS Lothian and strongly supported by the Scottish cardiology community.

The ongoing clinical needs of this group of patients are well recognised and there have been significant advances in trans-catheter and surgical interventions for patients with congenital heart defects. Certain operations are life saving in infancy or childhood but have the potential to lead to later complications requiring further surgery in adulthood. The number of patients in this group is increasing as a consequence of the success of paediatric intervention in recent times. Several individual elements of the service are already in place but work is still needed on the co-ordination of the supervision and care of the patient population by a core multi-disciplinary specialist team. The National Services Advisory Group is on track to agree a recommendation by April 2005.
In December 2003, the Scottish Executive and the Chairs of the three Regional Planning Groups commissioned a short piece of work around capacity planning for revascularisation services in Scotland. The work arose from a lack of clarity surrounding available capacity within NHSScotland and the likely future requirements, given the anticipated reductions in waiting time guarantees. The group reported in April 2004; its recommendations included:

**Percutaneous Coronary Intervention**

- PCI has demonstrated considerable growth over the last four years and this continued growth is unlikely to change in the near future
- There was wide variation in the efficiency (patient through-put) of catheter laboratories
- Additional capacity will be required to cope with the projected growth in PCI
- Additional catheter laboratories may need to be commissioned at some sites
- Laboratory equipment at several sites will need to be replaced in the next three years
- Consideration should be given to a networked approach to attract consultant staff to regional centres
- Consideration should be given to using the Regional Planning Groups to develop and sustain referral patterns for cardiac investigation and intervention

**Cardiac Surgery**

- The number of bypass grafts has fallen or become stable over recent years
- Theatre capacity does not need to increase but neither should it decrease at this time if waiting times are to be decreased further
- Current theatre capacity needs to be supported by increased ICU capacity to accommodate the more complex needs of patients and longer lengths of stay
- Consideration should be given to an agreed substantive short-term workload for the Golden Jubilee National Hospital to support the achievement of waiting times guarantees

The recommendations are now being translated into a costed implementation plan.
Heart Failure

5.16 Improvements in heart failure management mean patients live longer and have a better health related quality of life. Heart failure is a complex condition in which the heart can no longer pump blood around the body adequately. There are a number of causes of heart failure, the most common of which is CHD. The risk of heart failure increases with age and with an aging population, the management of heart failure is an important element of the CHD and Stroke Strategy. The Strategy suggested that each MCN should work with its NHS Board to establish a local Heart Failure Group and develop an implementation strategy.

5.17 In terms of diagnosis, echocardiography remains the gold standard investigation. It is relatively expensive, but costs and practicalities of carrying out the test in primary care have become an option as equipment has become smaller and cheaper. Other advances in heart failure diagnosis include a blood test for elevated brain natriuretic peptide, a marker for heart failure. Together, these advances have made it possible to develop nurse-led heart failure initiatives in primary care. The role of the nurse specialist is now well established in the management of this group of patients, their interventions focusing upon: early diagnosis, optimisation of medical therapy; symptom control; psychological support and patient education. To date over £1m has been invested in heart failure services from Strategy funds and seven MCNs have nurse-led heart failure programmes in place. The remainder are in the advanced stages of planning the service.

5.18 In July 2004, the Minister for Health and Community Care announced an additional £450,000 to support the development of a National Centre for the Treatment of Advanced Heart Failure. The case mix of the National Centre is expected to be as follows:

- specialist assessment and advice on management
- cardiac resynchronisation therapy
- advanced complex heart surgery
- liaison with cardiac transplantation service

5.19 The creation of this centre of excellence means that Scotland will have a comprehensive heart failure service ranging from the care provided by specialist nurses in patients’ own homes to the most complex interventions provided by the National Centre.
5.20 But even with the best of treatments, few patients survive more than 5 years with a diagnosis of ‘severe’ heart failure and this condition has a prognosis that is worse than that for most cancers. As the Strategy reported, the Scottish Partnership for Palliative Care had established a working group to make proposals for end-stage heart failure. A draft report will be issued for consultation in late 2004/early 2005 and the final report is expected in summer 2005.

**Cardiac Rehabilitation**

5.21 Cardiac rehabilitation is an essential service for patients recovering from cardiac illness. It has been shown to produce physical, psychological and survival benefits for patients who have experienced a heart attack or undergone heart surgery. MCNs are responsible for developing and implementing local plans for cardiac rehabilitation in line with the recommendations set out in SIGN 57. In developing these plans, MCNs have been asked to ensure the participation of excluded groups such as ethnic minorities, women, older patients and those from areas of socio-economic deprivation. Over £1m of Strategy funding has been committed to cardiac rehabilitation to date.
Strategy Recommendations

The stroke component of the Reference Group will be re-constituted as a National Advisory Committee on Stroke.

Each NHS Board will have a Stroke MCN in operation with a Quality Assurance programme agreed with the Quality Standards Board for Health in Scotland [now NHS Quality Improvement Scotland] by April 2004. The Network’s functions will cover the complete spectrum of stroke services, the majority of which are provided in the community.

By June 2003, Trusts will ensure that their radiology departments provide the amount of dedicated time each day needed to ensure access to CT brain imaging for acute stroke patients in order to achieve the target times identified in the SIGN Guidelines.
6.1 Scotland is making real progress in reducing premature mortality from stroke. Since 1995 there has been a 34% fall in mortality and this trend is continuing at a time when more patients are being treated at newly established neurovascular clinics and acute stroke and rehabilitation units across the country.

**Taking the Strategy Targets Forward**

6.2 A joint conference involving 150 stroke physicians and radiologists managing stroke patients throughout Scotland was held in November 2003. The main aim of the conference was to highlight the stroke targets in the Strategy. Particular emphasis was given to providing patients with access to brain imaging; and ensuring that clinicians and radiologists were aware that performance would be monitored through the Scottish Stroke Care Audit and national standards set by NHS QIS. The conference provided many helpful suggestions on making the best use of available resources, including the organization of radiology services so that they can deal with all the competing demands on them. The forthcoming NHS QIS reports on stroke services will indicate whether hospitals are meeting the targets set.

**Strategy Funding**

6.3 The CHD and Stroke Strategy identified specific services that local MCNs will wish to address in conjunction with their NHS Boards. Funding for individual projects was made available through two rounds of funding, the first in spring 2003 and the second a year later. To date £11m has been dedicated to fund 111 prioritised stroke projects across Scotland. Each bid was individually appraised and particular priority was given to those projects which improved access for patients to one of five services:

- acute stroke unit
- CT brain scanning
- neurovascular clinics (sometimes referred to as TIA clinics)
- carotid surgery to reduce the risk of stroke
- specialist stroke rehabilitation

**Acute Stroke Units**

6.4 Research co-ordinated in Scotland has provided strong evidence that people who have suffered a stroke have a better chance of survival, with better quality of life, if their care is organized and delivered by a multi-disciplinary team who have specialised education and training in stroke. The benefits of organised stroke unit care are outlined in the CHD and Stroke Strategy and other documents issued by SIGN, the Royal College of Physicians of Edinburgh and the National Service Framework for Older People in England. These benefits include: more survivors returning home and regaining independence; possible reductions in length of hospital stay and improved long term independence and quality of life.
6.5 In 2002, the Strategy identified an urgent need to ensure that all hospitals in Scotland which admitted patients with an acute stroke could provide immediate stroke unit care. It also highlighted the fact that there was a lack of equity of stroke provision across Scotland. In some NHS Boards such as Highland and Borders there was no provision. In others there were too few designated stroke beds to allow patients early access to a stroke unit. Some hospitals had designated beds but lacked key components of stroke unit care such as a multi-disciplinary team of trained health professionals. Now, all the mainland NHS Boards either have an acute stroke unit in place or are at an advanced stage of planning their implementation. This represents a significant advance on the position in 2002.

**Thrombolysis in Stroke**

6.6 The CHD Task Force highlighted in 2001 the fact that thrombolytic therapy had revolutionised the management of heart attacks and greatly improved survival rates. Over three quarters of strokes are related to arterial obstruction, often due to a blood clot that may be dissolved by a thrombolytic drug. Recent research concerning the effectiveness of thrombolysis for stroke has concluded that the benefits are promising, especially with early treatment, but unfortunately few patients reach hospital quickly enough for thrombolysis to be safely administered.

6.7 The Task Force took a cautious approach and recommended that thrombolytic therapy for stroke should be reserved for use within the terms of its product licence (i.e. within 3 hours of stroke onset, in specialist units). At present, all patients who receive this treatment in Scotland are entered into a national registry, which will provide data to support a decision on its wider use. Further research is ongoing in this area.

**Access to CT Scanning**

6.8 For the majority of stroke patients, a routine CT brain scan performed within no more than 48 hours will confirm the diagnosis and accurately distinguish a haemorrhagic from an ischaemic stroke. The CHD and Stroke Strategy recommended that Trusts admitting patients who have had an acute stroke should ensure that radiology departments provide the appropriate amount of dedicated time each day to ensure access to CT scanning.
CASE STUDY
Ayrshire and Arran Feels the Benefits of a Stroke MCN

Impact of Increased Stroke Beds
Since the increase in the numbers of beds in the acute stroke units in March 2004, stroke patients have benefited by having a more direct method of admission through Accident and Emergency, giving optimum care. The staff feel that the 6 extra beds in 4D at Crosshouse and the 3 extra beds in Station 16 at Ayr are being used appropriately in accordance with the Acute Stroke Protocol. This has improved the flow of patients through the unit with the assistance of the bed managers who can now ensure stroke patients are treated in the acute stroke unit. The multi-disciplinary staff there can offer an improved service to patients in a team environment.

A View from Speech and Language Therapy Staff
Speech and language therapy staff have been pleased to see an increase in therapy sessions in both Ayr and Crosshouse. They report that they feel more focused on stroke and more motivated as a result. The department is developing the use of Care Aims to plan therapy interventions and document outcomes. This has an effect on goal setting and has also encouraged staff to develop reflective practice techniques when planning therapy. The staff are also pleased that there will be opportunities for further training in stroke.

Patient and Carers Involvement Group
This busy group has been looking at information packs for patients on admission and discharge to tailor them to individual needs. Two patients are co-ordinating a new branch of Different Strokes with help from MCN which has meant they can kick start their exercise and social class for young survivors.
‘One Stop’ Neurovascular Clinics

6.9 Well organised stroke services will include rapid access to outpatient assessment, and the approach of MCNs to setting up fast track outpatient clinics is to be commended. The aim of these neurovascular clinics is to see patients promptly at an early sign of stroke related symptoms. Such clinics may provide a full medical assessment, CT scan (if appropriate), carotid Doppler and echocardiography. Ideally these investigations would be available at ‘one stop’ clinics though this will vary according to local circumstances. The mainland MCNs have been very successful in establishing this important part of the patient journey and the island boards have responded with equally innovative solutions to make sure that patients are seen promptly when symptoms first arise.

Carotid Endarterectomy

6.10 A minority of patients who have previously experienced a stroke or TIA have a narrowing located within a carotid artery. Such narrowings are detectable by ultrasound or magnetic resonance imaging. If the narrowing is severe then surgical treatment (carotid endarterectomy) has been shown to reduce the subsequent risk of a stroke, but surgery is not without risks and these must be balanced against the potential benefits of intervention.

6.11 Recent evidence has indicated that surgery is of greatest benefit if performed within a few weeks of the TIA or minor stroke. Those responsible for coordinating neurovascular clinics and arranging surgery are working hard to minimize the delays to surgery.

Rehabilitation after Stroke

6.12 The Task Force Report recommended that Stroke MCNs should pay particular attention to co-ordinated stroke rehabilitation and integrated discharge planning, regardless of the setting in which this is delivered.

6.13 Rehabilitation is an essential part of the recovery process and is ongoing from admission to discharge from hospital and beyond. It helps build the patients’ strength, co-ordination, endurance and confidence. The goal of stroke rehabilitation is to help patients make the best possible recovery and promote independence after a stroke. The interdisciplinary rehabilitation team works closely with each stroke survivor and their family to enable them to take part more fully in family, social, leisure and work activities. The goal to achieve the best level of quality of life and life satisfaction for the patient and their family is at the heart of this process.
CASE STUDY
Tayside Dedicated Acute Stroke Unit

NHS Tayside opened a dedicated acute stroke unit in Ninewells Hospital on 16 August 2004. The unit has 18 beds managed by a multi-disciplinary team to optimise recovery and outcome of patients in the immediate period after a stroke. The opening of the new unit should result in better outcomes for patients as a result of preventing stroke progression in the early stages.

Strategy funding has helped in this first phase of redesign of stroke services. Service mapping of the acute phase of the patient journey has identified the need to enhance the existing nursing team – both in terms of boosting numbers and improving the skill mix. Additional allied health support in the multi-disciplinary teams was also identified as an essential component for an acute stroke unit.

The unit now has six additional trained nursing staff, senior dieticians, a speech and language therapist and an assistant. A framework for acute stroke nursing has been developed to define the nursing role. This new framework has given purpose to activities, identified contribution and effectiveness, identified the learning needs of staff and will guide future development.

The team has worked hard to produce clear protocols for the standardised approach to care and the admission criteria for the unit. Patients with a neurological deficit consistent with acute stroke are admitted initially to the acute general receiving unit. The stroke acute response team will be notified of all acute strokes and will make a rapid assessment with respect to further management.

Staff within the unit will be supported by the Managed Clinical Network to undertake further stroke training through the accredited CATS module of stroke care at Dundee University. Unqualified staff will also be supported to undertake training in stroke care. Multi-disciplinary team meetings are held weekly introducing patients to the team and providing a forum for assessment and goal setting before the patient begins rehabilitation.

Though the unit has been opened only a few weeks, clear benefits are already being seen. Audit figures show that the patient journey within Ninewells Hospital was often erratic with patients being admitted to many different specialities and wards within the hospital. Since the unit opened, there have been fewer inappropriate admissions and Tayside is on track to meet the target of 70% of stroke patients being admitted to the stroke unit within 24 hours of presentation at hospital.
The process of stroke rehabilitation is therefore integral to the functioning of acute stroke units and has been a focus for service development over the last two years. Scottish Stroke MCNs have invested more than £5.5m of strategy funds into acute stroke care pathways and this includes the establishment of stroke units and the provision of community based rehabilitation services. This now means that any patient presenting with a stroke in Scotland should receive dedicated multi professional rehabilitation as part of their care package.

NHS Quality Improvement Scotland Stroke Standards

NHS Quality Improvement Scotland (NHS QIS) published the “Clinical Standards for Stroke Services: Care of the Patient in the Acute Setting” in March 2004. The standards apply to stroke, transient ischaemic attack (TIA), rehabilitation, secondary prevention and discharge. They will reinforce the requirement for the local provision of: acute stroke units; access to CT scanning; neurovascular clinics; and rehabilitation services.

The standards were developed by a multi-disciplinary project group including representatives from healthcare professions, patients, carers and voluntary organisations. The wider service was involved through a full consultation exercise, including open meetings in March and April 2003, and through piloting the standards in various NHS sites across Scotland.

Since publication of the standards, all relevant sectors of NHSScotland have been building up their self-assessment audit data. NHS QIS review teams have started a programme to visit each NHS Board to follow up this self-assessment exercise with an external peer review of performance in relation to the standards. Following each visit, a local report is being sent to each NHS Board and a national overview of the findings will then be published by NHS QIS in November 2005.
Strategy Recommendations

Establishment of systems of data collection, storage and management which will support the development and monitoring of CHD and stroke services and meet the Quality Assurance needs of MCNs.

Adoption of nationally agreed datasets with standard definitions.
7.1 The long term vision for Information Management and Technology (IM&T) is to implement electronic integrated patient records which support clinical and social care. This is realistically a 10 year goal. We currently have many stand alone audit databases, patient/client administration systems, and local clinical systems. These were developed individually to address specific tasks, but they make it difficult to maintain a fully accessible record for each patient as they move from one part of the service to another.

7.2 The CHD and Stroke Strategy set a three year target of building a primary care led database of CHD and stroke in Scotland which would meet similar quality standards to the Scottish Cancer Register.

**CHD and Stroke Audit**

7.3 In the first year of the Strategy, funding was provided to support the roll out of CHD audit tools across Scotland. Resources for the equivalent of 11.5 ‘G’ Grade nurse audit facilitators were made available to NHS Boards operating Catheter Laboratories to improve the quality and completeness of revascularisation and cardiac surgery databases and, in the longer term, to develop quality assurance programmes for broader datasets.

7.4 The Scottish Care Information Programme (SCI) is developing common datasets for various conditions. This is not a straightforward process as customers for the data have different data needs and often seek to record additional, non-core variables. Thought has therefore to be given to the practicality of collecting the data, much of which will be gathered in a hospital setting. Managed Clinical Networks are involved in defining the datasets which must be relevant to clinicians as well as providing useful audit data. Building on the work completed for the SCI Clinical dataset, a minimum dataset for patients with acute coronary syndromes (SCI CHD) has been agreed and Tayside Centre for Clinical Technology has been commissioned to develop a web based data repository. Data collection is being piloted in three NHS Boards to provide information from which to build a full implementation plan across Scotland.

7.5 The new GMS contract for Primary Care provides opportunities for improved information flows. Tayside (HEARTS), Argyll and Clyde, and Greater Glasgow NHS Boards have well developed pilot projects which collect data to describe the patient pathway in CHD and stroke. Work is in train to integrate these datasets to provide a national primary care database.
CASE STUDY
NHS Tayside HEARTS – MCN

Tayside has recently entered an exciting time for CHD IT developments with the release of the HEARTS database. HEARTS – MCN is a new, web-based system which offers users many more functions. It has the benefits of links to the national CHI (Community Health Index), it can offer secondary care investigation results per practice, has an enhanced GMS Contract page and now also covers angina.

The new system is based on the widely used and stable national SCI-DC (Diabetes) Network system, and offers similar functionality. The system is fully secure and password protected, and has been designed to be used by both primary and secondary care clinicians. When a clinician logs in, the system will automatically recognise whether the clinician works in primary or secondary care and the system functions will be attuned to the particular user.

The obvious benefit of the HEARTS – MCN system is the full integration of the patient journey. This means that clinicians can see all the relevant information about their patient collated in the one location and this leads, ultimately, to improved patient care. For example, all the information from primary care systems such as GPASS and from secondary care sources such as Tayside biochemistry results or the most recent ECHO or CCU result is available from one safe, secure, central location. HEARTS – MCN can even display discharge letters for secondary care or allow the users to view the most recent GMS Contract information for their particular practice.

Undoubtedly, this integrated approach to the issues surrounding the sharing of information is a definite step in the right direction. It will have a real benefit for patients as the consultant will have access to the data from the GP practice, and the General Practitioner will be able to see the hospital’s input. Such a system has great potential and developments will continue in the future under the guidance of the CHD Managed Clinical Network.

For further information contact: mandy.andrew@tpct.scot.nhs.uk
National CHD and Stroke Strategy Websites

7.6 The Scottish Executive Health Department has established two new web sites for the dissemination of information on the CHD and Stroke Strategy:

- www.show.scot.nhs.uk/sehd/CHD
- www.show.scot.nhs.uk/sehd/Stroke

7.7 The web sites provide a background to the launch of the Strategy; provide information on the committee structures in place to manage the implementation of the CHD and Stroke Strategy and give details of the various projects supported by Strategy funds.

CASE STUDY
Information Management and Technology Practice

Information Services (ISD), part of NHS National Services Scotland, is working towards a national dataset for both CHD and stroke, covering all aspects of the patient’s journey of care. Better information will support better patient care and help to plan services for the future. ISD’s approach is to work with clinicians, managers, patients and MCNs towards agreement on what should be collected, and they help to provide the tools to gather the data.

ISD has produced nationally agreed datasets for CHD hospital patients, including a subset for acute coronary syndromes, and is currently working on a dataset for cardiac rehabilitation. They have achieved agreement on a core dataset to be part of all data collections on CHD patients. The experience they have gained will soon be used in work towards national datasets for stroke patients.

ISD staff are supporting the collection of data on CHD and stroke patients. This includes the work of the Scottish Coronary Revascularisation Register, new data on acute coronary syndromes and improving patient data already collected through ISD’s existing systems covering all hospital inpatients and day cases.

ISD is making good use of the data that they hold to support the Scottish Executive and MCNs. Data are regularly produced and include mortality and incidence of CHD and stroke, numbers of patients treated in hospital and procedures received, GP prescribing, and on the effect of deprivation on mortality and provision of care. Data are made available to clinicians, managers and policy makers through ISD’s CHD and stroke section in the Scottish Health Statistics website: www.isdscotland.org
Strategy Recommendation

CSO research portfolios for CHD and stroke should link with respective National Advisory Committee structures and with work being conducted on a national level by the Cardiovascular Research Funders’ Forum, of which CSO is a member.
The Chief Scientist Office Portfolio Steering Group

8.1 A cardiovascular disease and stroke portfolio steering group (PSG) was established in September 2003 to inform the Chief Scientist Office (CSO) on how to secure best value from CHD and stroke research funds through a process of identifying gaps and opportunities. The Group is chaired by Professor David Webb of the University of Edinburgh. Membership covers a wide range of expertise in cardiovascular disease, stroke and diabetes research with representation across various medical and related disciplines.

8.2 As promised in the Strategy, this process will link with work being conducted at UK level by the Cardiovascular Research Funders’ Forum and both the stroke and CHD National Advisory Committees are represented on the PSG. Where possible, research opportunities are viewed within the context of the UK portfolio of CHD and stroke research supported by major charity and public funders, as well as the perceived research strengths in Scotland. The work of the PSG has been influenced by the recent English initiative to create a UK Clinical Research Collaboration to manage clinical trials more effectively. Work is in train to establish an economical but effective model for Scotland that can engage successfully with research networks in England. The aim is to facilitate robust multi-centred research in Scotland and increase access of patients to novel treatments, in order to enhance patient care and outcomes. Participation in research will be widened to increase the number of NHS organisations, healthcare professionals and patients participating in both academic and industry led clinical trials. Members of the PSG, along with the British Heart Foundation, are currently pressing for the establishment of a cardiovascular disease research network.

8.3 The Group’s early discussions focused on identifying opportunities to strengthen the present system. PSG members highlighted that the clinical research workforce was being limited significantly by bottlenecks at both the PhD and clinician scientist (post-doctoral) points in clinical research training. CSO is now working with industry and charities to explore the potential for partnership schemes to build capacity, whereby the Scottish Executive would fund project costs and the private or voluntary sector would meet the salary costs.
CASE STUDY
The Orkney Cardiovascular Disease Study (ORCADES)

The Chief Scientist Office has recently provided funding for an Orkney-based study of the role of genetic factors in common diseases such as heart disease and stroke. The Orkney Cardiovascular Disease Study (ORCADES) is being led by Dr Jim Wilson of the University of Edinburgh. The study will include measurement of some well-established risk factors (such as blood pressure and cholesterol levels) as well as some newer measures of cardiovascular risk (such as pulse wave analysis) in approximately 1,000 people. The aims of the study are to identify the relative roles of inheritance and environment in determining the risk of disease and to identify regions of the genome contributing to this risk. Orkney has been chosen as the location of the study both because the stability of the population allows tracking of relationships and also because variation in environmental factors (such as diet and physical activity) is less than in many other populations. It is anticipated that the first results of the study will be available in 2007 and that they will contribute to the development of new approaches to preventing and treating cardiovascular disease.

CASE STUDY
CLOTS Trial (Clots in Leg or TED after Stroke)

The CLOTS study is a prestigious multi-centre international collaboration being led from Edinburgh that received support from the Chief Scientist Office for the start up phase and is now receiving funding from the Medical Research Council and Chest Heart Stroke Scotland.

The project aims to resolve the present uncertainty over whether graduated compression stockings are useful for the prevention of post stroke deep vein thrombosis (DVT). CLOTS aims to find out whether:

- early and routine application of full length graduated compression (TED) stockings reduce the risk of above knee DVT in the weeks following an acute stroke
- full length graduated compression stockings are more effective than below knee stockings in reducing the risk of DVT

It estimated that around 5,500 patients will be involved in the study.

For further information:
Email: clots@skull.dcn.ed.ac.uk
Website: www.clottrial.com
Developing capacity in primary prevention research was also identified as key to implementing primary prevention and access benefits from the wealth of research evidence on risk factors for CHD and stroke. Coincident with this, a National Prevention Research Initiative has been approved by a wide range of funders, including CSO. Funding of £10m over 5 years will be focused towards:

» reducing smoking

» improving diet and nutrition – reducing obesity

» increasing physical activity

**Clinical Research Facility**

With a contribution from the Chief Scientists Office, Edinburgh’s Clinical Research Facility (CRF) provides state of the art resources for clinical researchers from all specialities. The CRF incorporates the Wellcome Trust Clinical Research Facility at the Western General Hospital and the Royal Infirmary of Edinburgh Clinical Research Facility. The CRF is the only facility of its kind in Scotland, and offers access to a broad range of resources including high specification equipment, sample processing/storage facilities, clinical space and the support of highly skilled research nurses. The CRF also offers access to specialist support and expertise through its 5 departmental “core” areas: Epidemiology and Statistics; Integrative Physiology; Mass Spectrometry; Genetics; and Image Analysis. Researchers also have access to an education programme.

To date, 63 studies investigating cardiovascular themes (52 CHD & 11 stroke) have received approval to use the CRF. For example, Dr David Newby, Consultant Cardiologist and Director of the CRF, is developing a programme of cardiovascular research exploring vascular, endothelial and fibrinolytic function. This programme has used the resources of the CRF extensively and has led to several major international collaborations. Recent studies have characterised the adverse vascular effects of cigarette smoking and have led to one of the first demonstrations of the adverse cardiovascular effects of air pollution.
Scottish Intercollegiate Guideline Network CHD Guidelines

8.7 The Scottish Intercollegiate Guideline Network (SIGN) is undertaking a major review of the management of CHD related guidelines. They intend to publish a single, comprehensive guideline in 2005 to make it easier to apply evidence-based therapies in a connected and equitable way. The current evidence is being reviewed under five headings:

- acute coronary syndromes
- chronic coronary disease
- heart failure
- prevention
- arrhythmias

8.8 Membership of the review groups is widely representative and includes contributions from patients, nurses and public health professionals. The British Heart Foundation and Chest Heart and Stroke are also represented.
APPENDICES
Appendix A: National Advisory Committee Structures

National Advisory Committee on CHD

Remit of the NAC

- to advise the Scottish Executive on all aspects of heart disease including the CHD element of the CHD and Stroke Strategy
- to provide advice to the Regional Planning Groups on the commissioning of appropriate services
- to take responsibility for future work on the allocation of additional funding and monitoring of spending
- to review the work of the National Advisory Committee Subgroups

Chairman
Prof AR Lorimer

Members

- Dr C Baker General Practitioner Dumfries and Galloway
- Dr N Boon Consultant Cardiologist Royal Infirmary, Edinburgh
- Mr T Brighton Patient Representative Angus Heart Support Group
- Dr D Davidson General Practitioner Paisley
- Mr A Faichney Consultant Cardiac Surgeon Golden Jubilee National Hospital
- Dr AK Henderson Consultant Physician Lorn & Islands District General Hospital
- Mr JG Hamley Trust Chief Pharmacist Ashludie Hospital
- Mr P Loyden Patient Representative Annan
- Dr A Mordue Consultant Public Health Medicine Borders NHS Board
- Mrs A Sloey Cardiology Clinical Co-ordinator Wishaw Hospital
- Mr J Stuart Patient Representative Dumfries
- Mrs M Sweetland Deputy Director Information and Statistics Division Glasgow Caledonian University
- Dr M Thow Division of Physiotherapy

CHD MCN Subgroup

One of the key tasks of the Managed Clinical Network Subgroup is to help support the development and maintenance of local cardiac MCNs. This includes fostering the involvement of patients and the voluntary sector in the work of networks. The Subgroup also acts as a forum for sharing experience, expertise and problems, and as a conduit for raising issues of common concern with the National Advisory Committee.

Chairman
Dr C Baker General Practitioner Dumfriesshire

Members

- Dr L Bell General Practitioner Motherwell Health Centre
- Dr L Cruickshank General Practitioner Grangemouth
- Dr D Davidson General Practitioner Paisley
- Ms Edgar Lead Clinician for CHD Borders General Hospital, Melrose
- Dr I Findlay Consultant Cardiologist Royal Alexandra Hospital, Paisley
- Dr M Francis Consultant Cardiologist Victoria Hospital, Kirkcaldy
- Dr K Graham Consultant Nephologist Gilbert Bain Hospital, Lerwick
- Dr R Liddell General Practitioner Turriff Medical Practice
- Mr P Loyden Patient Representative Annan
- Dr M Metcalfe Consultant Cardiologist Royal Infirmary, Aberdeen
- Dr C Morrison Consultant Public Health Medicine Greater Glasgow NHS Board
- Dr K Oates Consultant in Public Health Inverness
- Dr D O’Neill Consultant in General Medicine Crosshouse Hospital, Kilmarnock
- Dr D Rigby General Practitioner South Lochs Medical Practice, Isle of Lewis
- Dr C Siderfin Consultant Physician Balfour Hospital, Orkney
- Dr K Smith Clinical Research Fellow Ninewells Hospital, Dundee
- Mr J Stuart Patient Representative Dumfries
- Dr N Uren Consultant Cardiologist Royal Infirmary of Edinburgh
**CHD Intervention Subgroup**

The role the Intervention Subgroup is to provide advice on a Scotland wide basis to the National Advisory Committee on CHD on the delivery of:

- diagnostic cardiac catheterisation
- percutaneous coronary intervention
- cardiac surgical procedures
- electrophysiology, pacing and implantable cardiac defibrillators
- other therapeutic cardiac interventions

**Chairman**

Dr NA Boon  
Consultant Cardiologist  
Royal Infirmary of Edinburgh

**Members**

- Dr P Alston  
  Department of Anaesthetics  
  Royal Infirmary of Edinburgh
- Professor S Cobbe  
  Professor of Medical Cardiology  
  Glasgow Royal Infirmary
- Dr S Cross  
  Consultant Cardiologist  
  Raigmore Hospital, Inverness
- Dr A Hargreaves  
  Consultant Cardiologist  
  Falkirk Royal Infirmary
- Mr RR Jeffrey  
  Consultant Cardiothoracic Surgeon  
  Aberdeen Royal Infirmary
- Ms H Moss  
  Perinatal Effectiveness Facilitator  
  Greater Glasgow NHS Board
- Dr K Oldroyd  
  Consultant Cardiologist  
  Greater Glasgow NHS Board
- Dr J Pell  
  Consultant Public Health Medicine  
  Greater Glasgow NHS Board
- Professor S Pringle  
  Consultant Cardiologist  
  Ninewells Hospital, Dundee
- Mr R Rankin  
  Patient Representative  
  Perth
- Mr A Redpath  
  Programme Manager  
  Information Services Division

**National Advisory Committee on Stroke**

**Remit**

- to advise the Scottish Executive on all aspects of stroke including the stroke element of the CHD and Stroke Strategy
- to ensure stroke services develop in line with the CHD and Stroke Strategy
- to take responsibility for future work on the allocation of additional funding and monitoring of spending.
- to review the work of the Subgroups

**Chairman**

Professor M Dennis  
Professor of Stroke Medicine  
Western General Hospital, Edinburgh

**Members**

- Dr L Armstrong  
  Speech and Language Specialist  
  Perth Royal Infirmary
- Ms M Bennie  
  Consultant in Public Health  
  Lothian NHS Board
- Mr C Chalmers  
  Director of Advice and Support  
  Chest, Heart and Stroke Scotland
- Mr D Clark  
  Chief Executive  
  Chest, Heart and Stroke Scotland
- Ms Y Currie  
  Stroke Co-ordinator  
  Southern General Hospital, Glasgow
- Professor D Hadley  
  Consultant Neurologist  
  Southern General Hospital, Glasgow
- Miss T Jackson  
  Head Occupational Therapist  
  Aberdeen Royal Infirmary
- Professor P Langhorne  
  Professor of Stroke Care  
  Glasgow Royal Infirmary
- Dr J McDonald  
  General Practitioner  
  Roslin Surgery
- Dr R Muir  
  Consultant Public Health Medicine  
  Trinity Park House, Edinburgh
- Dr M Roberts  
  Clinical Director  
  Mansion House Unit, Glasgow
- Mr M Smith  
  Superintendent Physiotherapist  
  Royal Victoria Hospital, Edinburgh
- Ms J Squires  
  Senior Dietician  
  Perth Royal Infirmary
- Mr P Stonebridge  
  Consultant Surgeon  
  Ninewells Hospital, Dundee
Stroke MCN Subgroup

One of the key tasks of the Managed Clinical Network Subgroup is to help support the development and maintenance of local stroke MCNs. This includes fostering the involvement of patients and the voluntary sector in the work of networks. The Subgroup also acts as a forum for sharing experience, expertise and problems, and as a conduit for raising issues of common concern with the National Advisory Committee.

Chairman
Professor P Langhorne
Glasgow Royal Infirmary

Members
Mr D Clark
Chief Executive
Chest Heart and Stroke Scotland

Professor M Dennis
Professor of Stroke Medicine
Western General Hospital, Edinburgh

Dr G Duncan
Consultant Geriatrician
Crosshouse Hospital, Kilmarnock

Dr L Erwin
Consultant Physician
Royal Alexandra Hospital, Paisley

Dr S Grant
Consultant in Geriatric Medicine
Forth Valley Acute Hospitals

Dr S Hamilton
Associate Medical Director
Woodend Hospital, Aberdeen

Dr B Hazelhurst
General Practitioner
Dounby Surgery

Dr I Hay
Consultant Physician
The Royal Infirmary, Dumfries

Dr A Hendry
Consultant Geriatrician
Monklands DGH

Dr M Johnson
General Practitioner
Benbecula Medical Practice

Dr C McAlpine
Consultant Physician
Stobhill Hospital, Glasgow

Dr S Rochow
Consultant in General Medicine
Victoria Hospital, Fife

Dr T Shallcross
Consultant Physician
Caithness General Hospital, Wick

Mrs G Smith
Clinical Services Manager
Forfar Infirmary

Dr P Syme
Consultant Physician
Borders General Hospital, Melrose

Dr J Unsworth
General Practitioner
Lerwick Health Centre

CHD and Stroke Data and IT Subgroup

Remit

- to support development of integrated patient databases for CHD and stroke in line with e-Health Strategy
- to improve the quality of information for clinical effectiveness
- to establish a prioritised work plan, linking with other CHD and stroke initiatives
- to monitor and report on progress to the NAC

Chairman
Mrs M Sweetland
Deputy Director
Information Services Division, NHS

Members
Mr G Berg
Consultant Cardiac Surgeon
Western Infirmary, Glasgow

Mr J Christie
Medical Physicist
Western Infirmary, Glasgow

Mrs J Craig
Senior Health Economist
NHS QIS

Professor M Dennis
Chairman, NAC Stroke
Western General Hospital, Edinburgh

Dr M Denvir
Consultant Cardiologist
Royal Alexandra Hospital, Paisley

Dr I Findlay
Consultant Cardiologist
SEHD

Dr A Hyslop
IM&T Strategy Manager

Professor R Lorimer
Chairman, NAC CHD
Hermitage Medical Practice, Edinburgh

Dr E Morris
General Practitioner
Greater Glasgow NHS Board

Dr J Pell
Consultant Public Health Medicine
Ninewells Hospital, Dundee

Professor S Pringle
Principal Consultant Cardiologist
Information Services Division, NHS

Mr A Redpath
Programme Manager

# Appendix B: Managed Clinical Networks – Managers’ Contact Details

<table>
<thead>
<tr>
<th>CHD</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Argyll and Clyde</td>
<td>Myra White</td>
<td><a href="mailto:myra.white@achb.scot.nhs.uk">myra.white@achb.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Ayrshire and Arran</td>
<td>Denise Brown</td>
<td><a href="mailto:denise.brown@aaaht.scot.nhs.uk">denise.brown@aaaht.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Borders</td>
<td>Laura Bowers</td>
<td><a href="mailto:laura.bowers@borders.scot.nhs.uk">laura.bowers@borders.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Dumfries and Galloway</td>
<td>Linda Lockhart</td>
<td><a href="mailto:l.lockhart@dgrri.scot.nhs.uk">l.lockhart@dgrri.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Fife</td>
<td>Carol MacKinnon</td>
<td><a href="mailto:carol.mackinnon@fifenhsboard.scot.nhs.uk">carol.mackinnon@fifenhsboard.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Forth Valley</td>
<td>David Munro</td>
<td><a href="mailto:david.munro@fvhb.scot.nhs.uk">david.munro@fvhb.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Grampian</td>
<td>Milne Weir</td>
<td><a href="mailto:milne.weir@arh.grampian.scot.nhs.uk">milne.weir@arh.grampian.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Greater Glasgow</td>
<td>Tracy McFall</td>
<td><a href="mailto:tracy.mcfall@gghb.scot.nhs.uk">tracy.mcfall@gghb.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Highland</td>
<td>Sue Menzies</td>
<td><a href="mailto:sue.menzies@hhb.scot.nhs.uk">sue.menzies@hhb.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Lanarkshire</td>
<td>Maureen Carroll</td>
<td><a href="mailto:maureen.carroll@laht.scot.nhs.uk">maureen.carroll@laht.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Lothian</td>
<td>Alison Bramley</td>
<td><a href="mailto:alison.bramley@luht.scot.nhs.uk">alison.bramley@luht.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Orkney</td>
<td>Joy Groundwater</td>
<td><a href="mailto:joy.groundwater@orkney-hb.scot.nhs.uk">joy.groundwater@orkney-hb.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Shetland</td>
<td>Kathleen Carolan</td>
<td><a href="mailto:kathleen.carolan@shb.shetland.scot.nhs.uk">kathleen.carolan@shb.shetland.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Tayside</td>
<td>Mandy Andrew</td>
<td><a href="mailto:mandy.andrew@tpct.scot.nhs.uk">mandy.andrew@tpct.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Western Isles</td>
<td>Pat Welsh</td>
<td><a href="mailto:pat.welsh@wihb.scot.nhs.uk">pat.welsh@wihb.scot.nhs.uk</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stroke</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Argyll and Clyde</td>
<td>Ian Martin</td>
<td><a href="mailto:ian.martin@achb.scot.nhs.uk">ian.martin@achb.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Ayrshire and Arran</td>
<td>Denise Brown</td>
<td><a href="mailto:denise.brown@aaaht.scot.nhs.uk">denise.brown@aaaht.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Borders</td>
<td>Laura Bowers</td>
<td><a href="mailto:laura.bowers@borders.scot.nhs.uk">laura.bowers@borders.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Dumfries and Galloway</td>
<td>Samuel Whiting</td>
<td><a href="mailto:samuel.whiting@nhs.net">samuel.whiting@nhs.net</a></td>
</tr>
<tr>
<td>Fife</td>
<td>Ms Jane Brogan</td>
<td><a href="mailto:jane.brogan@fifenhsboard.scot.nhs.uk">jane.brogan@fifenhsboard.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Forth Valley</td>
<td>Eileen Campbell</td>
<td><a href="mailto:eileen.campbell@fvah.scot.nhs.uk">eileen.campbell@fvah.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Grampian</td>
<td>Milne Weir</td>
<td><a href="mailto:milne.weir@arh.grampian.scot.nhs.uk">milne.weir@arh.grampian.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Greater Glasgow</td>
<td>Tracy McFall</td>
<td><a href="mailto:tracy.mcfall@gghb.scot.nhs.uk">tracy.mcfall@gghb.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Highland</td>
<td>Maimie Thompson</td>
<td><a href="mailto:maimie.thompson@stir.ac.uk">maimie.thompson@stir.ac.uk</a></td>
</tr>
<tr>
<td>Lanarkshire</td>
<td>Moira Forsyth</td>
<td><a href="mailto:moira.forsyth@laht.scot.nhs.uk">moira.forsyth@laht.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Lothian</td>
<td>Alison Bramley</td>
<td><a href="mailto:alison.bramley@luht.scot.nhs.uk">alison.bramley@luht.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Orkney</td>
<td>Ginny Shapter</td>
<td><a href="mailto:ginnys.shapter@nhs.net">ginnys.shapter@nhs.net</a></td>
</tr>
<tr>
<td>Shetland</td>
<td>Kathleen Carolan</td>
<td><a href="mailto:kathleen.carolan@shb.shetland.scot.nhs.uk">kathleen.carolan@shb.shetland.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Tayside</td>
<td>Joyce McDowell</td>
<td><a href="mailto:joyce.mcdowell@thb.scot.nhs.uk">joyce.mcdowell@thb.scot.nhs.uk</a></td>
</tr>
<tr>
<td>Western Isles</td>
<td>Pat Welsh</td>
<td><a href="mailto:pat.welsh@wihb.scot.nhs.uk">pat.welsh@wihb.scot.nhs.uk</a></td>
</tr>
</tbody>
</table>
## Appendix C: List of Projects Supported by Strategy Funds

<table>
<thead>
<tr>
<th>Health Board</th>
<th>Year</th>
<th>Project Title</th>
<th>Amount (£K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argyll and Clyde</td>
<td>Year 1</td>
<td>Development of CHD register</td>
<td>181</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nurse led heart failure Service</td>
<td>287</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Provision of cardiac rehabilitation facilities</td>
<td>61</td>
</tr>
<tr>
<td>Ayrshire and Arran</td>
<td>Year 1</td>
<td>Appointment of consultant cardiologist</td>
<td>175</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Employment of heart failure nurses</td>
<td>249</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Purchase of Echo cardiography machine</td>
<td>113</td>
</tr>
<tr>
<td>Borders</td>
<td>Year 2</td>
<td>E.C.G. Telemetry system</td>
<td>195</td>
</tr>
<tr>
<td>Dumfries and Galloway</td>
<td>Year 1</td>
<td>Implementation of Heart Failure Programme</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Development of Rapid Access Chest Pain Service (RACP)</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CHD Physiotherapist</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cardiac rehabilitation service</td>
<td>37</td>
</tr>
<tr>
<td>Fife</td>
<td>Year 1</td>
<td>Establishment of cardiology outreach clinic</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Appointment of nurse specialist for Pain Liaison</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Appointment of practitioners link nurse</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Appointment of consultant cardiologist</td>
<td>139</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Appointment of primary care nurse</td>
<td>50</td>
</tr>
<tr>
<td>Forth Valley</td>
<td>Year 2</td>
<td>Appointment of additional cardiologist</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Purchase ETT system (X2)</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Purchase of 24 hour Heart Rate monitors</td>
<td>14</td>
</tr>
<tr>
<td>Grampian</td>
<td>Year 1</td>
<td>CABG Infrastructure</td>
<td>355</td>
</tr>
<tr>
<td>Greater Glasgow</td>
<td>Year 1</td>
<td>Development of electronic patient record</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Development of chest pain service</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Development of RACP</td>
<td>290</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Access to out of hours angiography</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Funding for internal cardiac defibrillators</td>
<td>84</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Administration for heart failure services</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rapid Access Chest Pain nurse</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Heart failure education</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Heart failure Web Programme</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chronic Disease Management CHD programme</td>
<td>170</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Locum interventional cardiologist</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IT secondment for CHD</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cardiac Rehabilitation, Aged needs</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Heart Failure PCs</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Catheter Laboratory equipment</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spinal Cord Stimulators</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Purchase of ETT system</td>
<td>43</td>
</tr>
<tr>
<td>Highland</td>
<td>Year 1</td>
<td>Troponin Service</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Development of RACP</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Development of Troponin Service</td>
<td>67</td>
</tr>
<tr>
<td><strong>Health Board</strong></td>
<td><strong>Year</strong></td>
<td><strong>Project Title</strong></td>
<td><strong>Amount (£K)</strong></td>
</tr>
<tr>
<td>------------------</td>
<td>----------</td>
<td>-------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Lanarkshire</td>
<td>Year 1</td>
<td>Development of RACP</td>
<td>125</td>
</tr>
<tr>
<td></td>
<td>Year 1</td>
<td>Thrombolysis pilot</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Pan Lanarkshire RACPS</td>
<td>277</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Cardiac Rehabilitation</td>
<td>218</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Cardiac Rehabilitation</td>
<td>122</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Enhanced staffing: catheter laboratory</td>
<td>224</td>
</tr>
<tr>
<td>Lothian</td>
<td>Year 2</td>
<td>Cardiac Technician</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Echo-Cardiography Service</td>
<td>14</td>
</tr>
<tr>
<td>Shetland</td>
<td>Year 1</td>
<td>Thrombolysis Initiative</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Cardiac rehabilitation</td>
<td>12</td>
</tr>
<tr>
<td>Tayside</td>
<td>Year 1</td>
<td>Development of RACP</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Cardiac rehabilitation Services</td>
<td>224</td>
</tr>
<tr>
<td>Western Isles</td>
<td>Year 1</td>
<td>Development of RACPS</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Cardiac Rehabilitation</td>
<td>6</td>
</tr>
</tbody>
</table>

### Stroke Projects Supported by Strategy Funds

<table>
<thead>
<tr>
<th>Health Board</th>
<th>Year</th>
<th>Project Title</th>
<th>Amount (£K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argyll and Clyde</td>
<td>Year 1</td>
<td>Stroke rehabilitation pilot</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Developing CT imaging service</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Stroke Follow up</td>
<td>139</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provision of Carotid Doppler</td>
<td>127</td>
</tr>
<tr>
<td>Ayrshire and Arran</td>
<td>Year 1</td>
<td>Expansion of acute stroke services</td>
<td>211</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Appointment of clinical nurse specialist</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expansion of acute stroke services</td>
<td>183</td>
</tr>
<tr>
<td>Borders</td>
<td>Year 1</td>
<td>Acute Stroke Unit</td>
<td>140</td>
</tr>
<tr>
<td>Dumfries and Galloway</td>
<td>Year 1</td>
<td>Acute Stroke Unit</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Access to CT scanner</td>
<td>5</td>
</tr>
<tr>
<td>Fife</td>
<td>Year 1</td>
<td>Enhanced staffing</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transient Ischemic Attack clinic</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Specialist nurse</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Provision of stroke psychology support</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provision of local rehabilitation service</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enhanced therapy and nursing equipment</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stroke Psychology Education Group</td>
<td>18</td>
</tr>
<tr>
<td>Forth Valley</td>
<td>Year 1</td>
<td>Purchase of Duplex Scanner</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enhanced staffing</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Establish acute stroke unit</td>
<td>116</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Appointment of community physiotherapist</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provision of outreach occupational therapist service</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Appointment of Stroke Senior House Officer</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diatetic screening</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Purchase of stroke software</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Purchase of Carotid US Scanner</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Purchase of stroke rehabilitation equipment</td>
<td>50</td>
</tr>
<tr>
<td>Region</td>
<td>Year</td>
<td>Project Description</td>
<td>Cost</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------</td>
<td>----------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Grampian</td>
<td>Year 1</td>
<td>Gait trainer</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Neurovascular clinic</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Early Stroke Rehabilitation</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Neuropsychology services</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SpR Training</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stroke/Vascular prevention</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Improved care (South)</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ward upgrade (West)</td>
<td>179</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stroke beds (Stobhill)</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Equipment (North Glasgow)</td>
<td>116</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Equipment (South Glasgow)</td>
<td>77</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Community support</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stroke Psychology services</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stroke Education audit</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stroke Information Technology Secondment</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stroke Care Pathway coordinator</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Education and training</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PCs for Stroke</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stroke Audit Secondment</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>My Stroke book</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MCN Data Analysis</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enhanced ASU nursing capacity</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enhanced ASU equipment</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Acute Stroke Unit</td>
<td>159</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enhanced ASU capacity</td>
<td>242</td>
</tr>
<tr>
<td>Highland</td>
<td>Year 1</td>
<td>Acute Stroke Unit</td>
<td>159</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enhanced ASU capacity</td>
<td>242</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Integrated stroke service</td>
<td>208</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pre hospital thrombolysis</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lanarkshire ASU</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Community stroke service</td>
<td>15</td>
</tr>
<tr>
<td>Lanarkshire</td>
<td>Year 1</td>
<td>Acute stroke service</td>
<td>208</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Community stroke service</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Staff Grade salary</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enhanced stroke capacity</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Access to CT scanning</td>
<td>199</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Psychology service</td>
<td>106</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Primary care stroke audit</td>
<td>134</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Speech therapy</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stroke consultant</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stroke Occupational therapist</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Allied Health Profession (AHP) Consultant</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Integrated stroke service</td>
<td>208</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pre hospital thrombolysis</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lanarkshire ASU</td>
<td>87</td>
</tr>
<tr>
<td>Lothian</td>
<td>Year 1</td>
<td>Staff Grade salary</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enhanced stroke capacity</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Access to CT scanning</td>
<td>199</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Psychology service</td>
<td>106</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Primary care stroke audit</td>
<td>134</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Speech therapy</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stroke consultant</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stroke Occupational therapist</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Allied Health Profession (AHP) Consultant</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Primary care stroke audit</td>
<td>134</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Speech therapy</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stroke consultant</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stroke Occupational therapist</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Allied Health Profession (AHP) Consultant</td>
<td>59</td>
</tr>
<tr>
<td>Orkney</td>
<td>Year 2</td>
<td>Stroke awareness Training</td>
<td>24</td>
</tr>
<tr>
<td>Shetland</td>
<td>Year 2</td>
<td>Enhanced stroke facilities</td>
<td>10</td>
</tr>
<tr>
<td>Tayside</td>
<td></td>
<td>Equipment</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Neurovascular clinic (X2)</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Duplex scanner</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liaison nurse staffing</td>
<td>156</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Redesign of Acute Stroke Services</td>
<td>152</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AHP Support for Stroke care</td>
<td>72</td>
</tr>
<tr>
<td>Western Isles</td>
<td>Year 1</td>
<td>Liaison Nurse</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fluoroscopy chair</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nurse education</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CT scanning training</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stroke Equipment</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stroke Physiotherapist</td>
<td>3</td>
</tr>
</tbody>
</table>