

## Newcastle JSNA - Cardiovascular Disease – Secondary Prevention January 2009

### Introduction

Cardiovascular disease (CVD) covers a number of different problems of the heart and circulatory system, such as coronary heart disease (CHD), stroke, and peripheral vascular disease (PVD)<sup>1</sup>. CVD is also strongly linked with other conditions, notably obesity and diabetes, and is more prevalent in lower socio-economic and minority ethnic groups<sup>2</sup>.

CVD is the main cause of death in the United Kingdom, with just over 208,000 deaths each year. About half (48%) of all deaths from CVD are from CHD and more than a quarter (28%) are from stroke<sup>2</sup>. CVD is also a major contributor to health inequalities. Approximately 30% of the gap between the national average life expectancy and that in the fifth of areas with lowest life expectancy (i.e. Spearhead areas) is attributable to CVD mortality.

The term “secondary prevention” refers to interventions that aim to prevent further events, such as heart attacks and strokes in people who already have CVD. Interventions include lifestyle measures such as smoking cessation, increased physical activity and diet modification as well as drug treatments to lower cholesterol and control blood pressure. The term “primary prevention” refers to interventions that aim to prevent cardiovascular events in people who as yet have no clinical evidence of CVD.

This document focuses on secondary prevention of CVD.

### Where are we now ?

#### Facts and Figures

##### Contribution of CVD to Inequalities gap in Newcastle

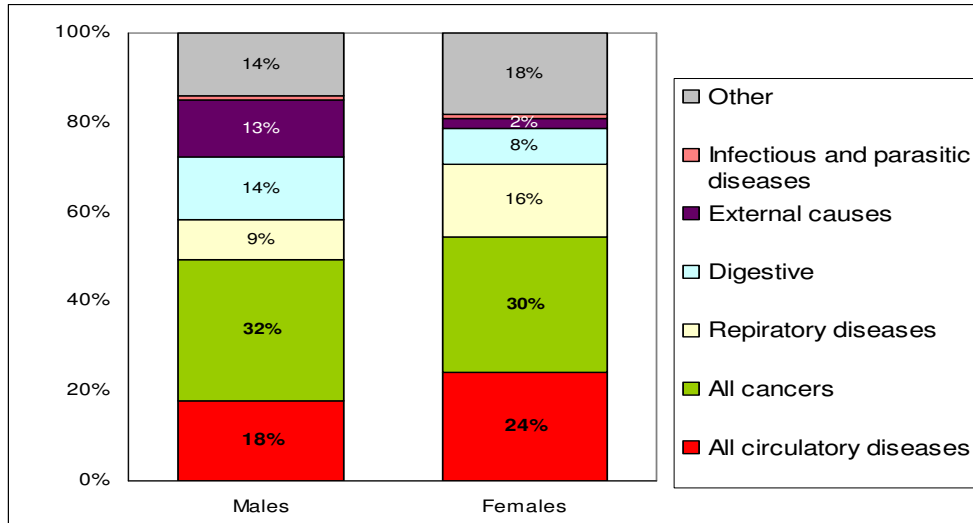
In Newcastle CVD is a major contributor to health inequalities. Approximately 18% of the gap in male life expectancy between Newcastle and the national average is accounted for by premature deaths from CVD. Approximately 24% of the gap in female life expectancy is due to premature deaths from CVD (Figure 1).

---

<sup>1</sup> Cerny, F.J. and Burton, H.W. (2001) *Exercise Physiology for Health Care Professionals*, Human Kinetics

<sup>2</sup> Healthcare Allender, S., Peto, V., Scarborough, P., Boxer, A. and Rayner, M. (2007) *Coronary heart disease statistics*, British Heart Foundation Statistics Database [www.heartstats.org](http://www.heartstats.org)

**Figure 1: Breakdown of life expectancy gap by disease area (2003-05)**



## Targets

The government has set two national targets aimed at:

- 1) reducing the death rate from cardiovascular disease in people under 75 by at least 40% by 2010.
- 2) reducing the inequalities gap between spearhead areas with the worst health and deprivation indicators and the population as whole by 40% by 2010.

These national targets have been translated into a local target for each PCT as part of the Annual Operational Plan (AOP) (Table 1).

**Table 1: Newcastle's AOP target for cardiovascular disease**

Indicator	Targets		
	2009	2010	2011
Mortality rate per 100,000 (directly standardised) population from heart disease and stroke and related diseases in people aged under 75 years.	80.3	75.3	70.7

Table 2 shows the progress that Newcastle has made in closing the health inequalities gap. Mortality due to circulatory diseases has declined by 41% in

the period between 1995-97 and 2004-06, compared to 40% nationally. However, Figure 2 below shows that despite this progress Newcastle is unlikely to meet its AOP targets if past trends continue into the future (Figure 2).

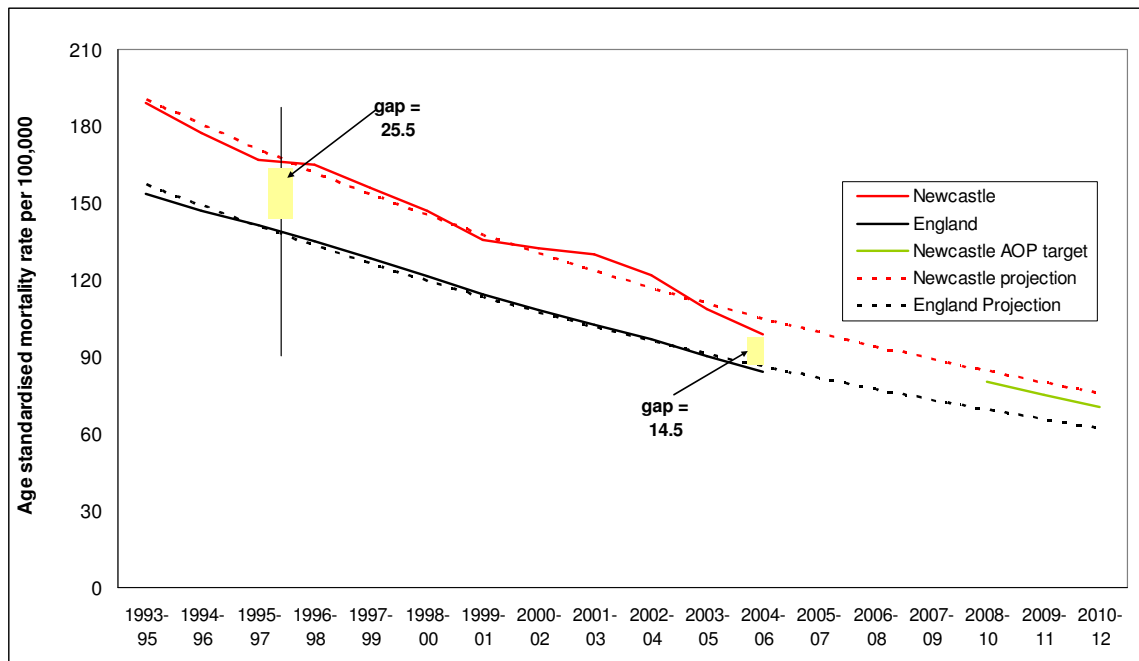
**Table 2: Progress in Newcastle in tackling inequalities in Circulatory Disease mortality**

	Directly age standardised mortality rate per 100,000		% change between 1995-97 and 2004-06	Absolute gap		% change in the gap
	1995-97	2004-06		1995-97	2004-06	
Newcastle	166.8	98.78	-41%	25.5	14.5	-43.0%
England	141.3	84.2	-40%			

Sources: Compendium of Clinical and Health Indicators / Clinical and Health Outcomes Knowledge Base (nww.nchod.nhs.uk) / Annual Operational Plans.  
 Department of Health. © Crown Copyright. December 2007

**Figure 2: Trends in Mortality from all Circulatory Diseases: Newcastle compared to England**

Directly Standardised rates per 100,000, Persons aged less than 75 years  
 (Projections based on exponential trend)



## Performance

### Secondary prevention

The secondary prevention of CVD is largely undertaken in the primary care setting. The performance of primary care in relation to secondary prevention can be assessed via the Quality and Outcomes Framework (QOF), a system that measures GP practice achievement against a range of evidence-based

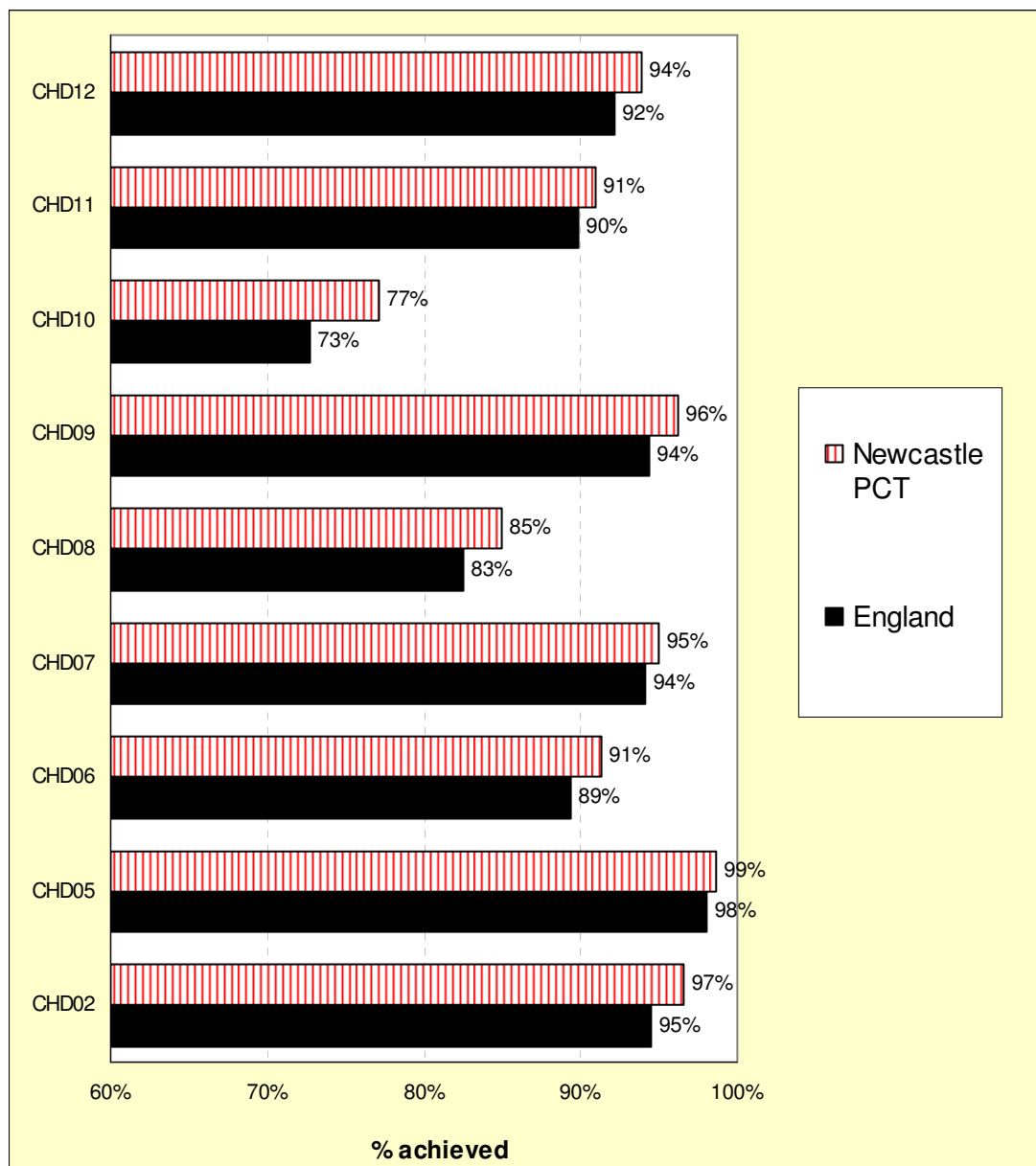
indicators, with points and payments awarded according to the level of achievement.

### QOF Performance 2007/08

#### Coronary Heart Disease

Newcastle Primary Care Trust achieved all of the QOF Coronary Heart Disease (CHD) indicators above the average for England for 2007/8 as shown in Figure 3. A description of each indicator can be found in Table 3.

**Figure 3: Coronary Heart Disease: Achievement of Newcastle PCT by QOF indicator compared to national average**  
(Source: 2007/08 QOF)



However when individual GP practice data is examined, there are wide variations between practices on some of the indicators. The percentage of

practices achieving below the national average ranges from 22.9% to 40% depending on the indicator (Table 3).

**Table 3: Coronary Heart Disease: Number and % of Newcastle practices achieving below the national average by QOF Indicator**

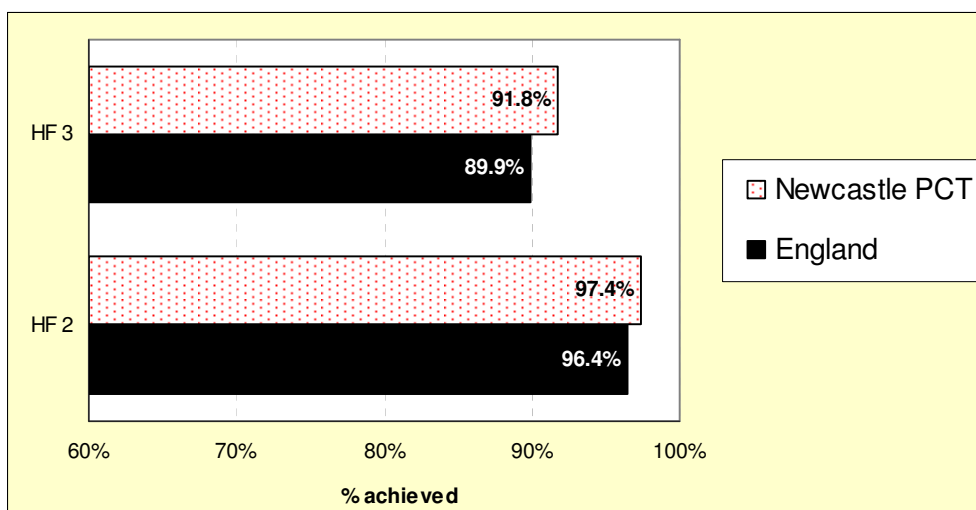
QOF Indicator		Number (%) of practices achieving below the England average	
CHD02	% of patients with newly diagnosed angina (diagnosed after 1 April 2003) who are referred for exercise testing and/or specialist assessment.	11	31.4%
CHD05	% of patients with CHD whose notes have a record of blood pressure in the previous 15 months.	8	22.9%
CHD06	% of patients with CHD in whom the last blood pressure reading (measured in the last 15 months) is 150/90 or less.	11	31.4%
CHD07	% of patients with CHD whose notes have a record of total cholesterol in the previous 15 months	11	31.4%
CHD08	% of patients with CHD whose last measured total cholesterol (measured in the last 15 months) is 5 mmol/l or less.	12	34.3%
CHD09	% of patients with CHD with a record in the last 15 months that aspirin, an alternative anti-platelet therapy, or an anti-coagulant is being taken (unless a contraindication or side-effects are recorded).	11	31.4%
CHD10	% of patients with CHD who are currently treated with a beta blocker (unless a contraindication or side-effects are recorded).	12	34.3%
CHD11	% of patients with a history of myocardial infarction (diagnosed after 1 April 2003) who are currently treated with an ACE inhibitor or angiotensin II antagonist.	14	40.0%
CHD12	% of patients with CHD who have a record on influenza vaccination in the preceding 1 Sept to 31 March.	10	28.6%

### Heart Failure

As with CHD, Newcastle Primary Care Trust achieved both of the QOF heart failure indicators above the average for England for 2007/8 as shown in Figure 4.

**Figure 4: Heart Failure: Achievement of Newcastle PCT by QOF indicator compared to national average**

(Source: 2007/08 QOF)



However, almost a quarter (23.5%) of practices were below the national average in terms of performance on Indicator HF 2 with over a third (35.3%) achieving below the national average on indicator HF 3 (Table 4).

**Table 4: Heart Failure: Number and % of Newcastle practices achieving below the national average by QOF Indicator**

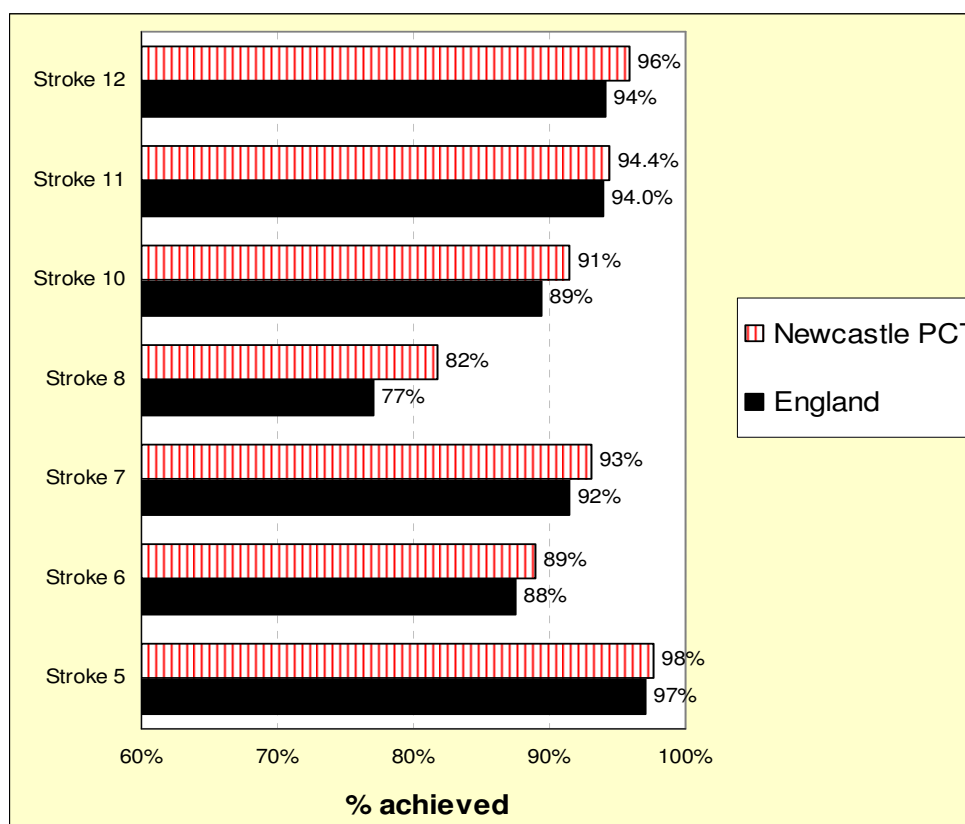
QOF Indicator		Number (%) of practices achieving below the England average	
HF 2	% of patients with a current diagnosis of heart failure (diagnosed after 1 April 2006) which has been confirmed by an echocardiogram or by specialist assessment.	8	23.5%
HF 3	% of patients with a current diagnosis of heart failure due to LVD who are currently treated with an ACE inhibitor or Angiotensin Receptor Blocker, who can tolerate therapy and for whom there is no contraindication.	12	35.3%

### Stroke / Transient Ischaemic Attack (TIA)

A similar pattern emerges with regard to the management of Stroke and TIA, with PCT achievement levels above the national average on all of the QOF indicators but with variation between practices (Figure 5 and Table 5).

**Figure 5: Stroke / TIA: Achievement of Newcastle PCT by QOF indicator compared to national average**

(Source: 2007/08 QOF)



**Table 5: Stroke / TIA: Number and % of Newcastle practices achieving below the national average by QOF Indicator**

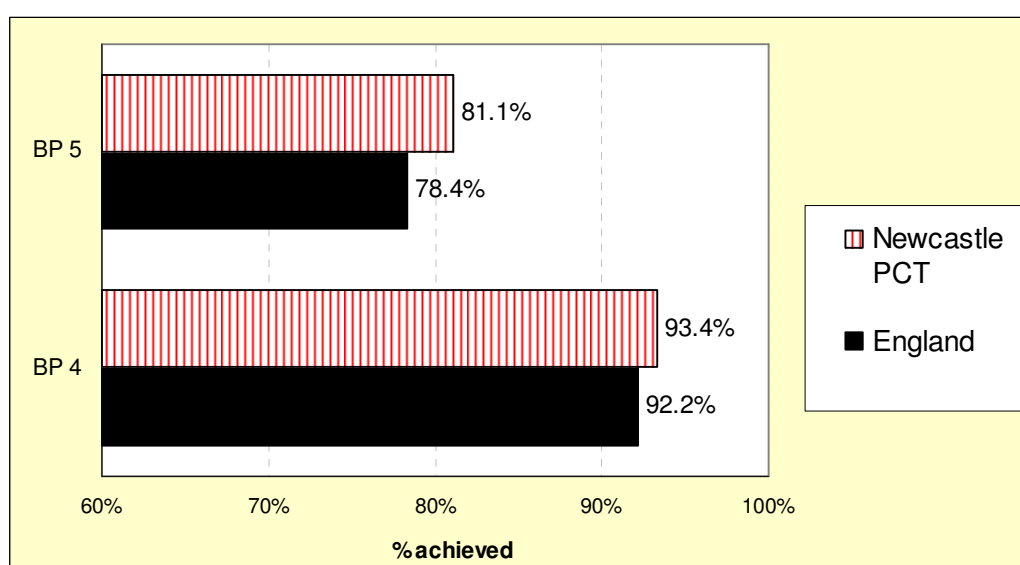
QOF Indicator		Number (%) of practices achieving below the England average
Stroke 5	% of patients with TIA or stroke who have a record of blood pressure in the notes in the preceding 15 months.	11 31.4%
Stroke 6	% of patients with a history of TIA or stroke in whom the last blood pressure reading (measured in the previous 15 months) is 150/90 or less.	10 28.6%
Stroke 7	% of patients with TIA or stroke who have a record of total cholesterol in the preceding 15 months.	5 14.3%
Stroke 8	% of patients with TIA or stroke whose last measured total cholesterol (measured in the last 15 months) is 5 mmol/l or less.	7 20.0%
Stroke 10	% of patients with TIA or stroke who have had influenza immunisation in the preceding 1 Sept to 31 March.	10 28.6%
Stroke 11	% of new patients with a stroke who have been referred for further investigation.	11 31.4%

Stroke 12	% of patients with a stroke shown to be non-haemorrhagic, or a history of TIA, who have a record that an anti-platelet agent, or an anti-coagulant is being taken (unless a contraindication or side-effects are recorded).	10	28.6%
-----------	---	----	-------

## Hypertension

Performance in relation to the management of hypertension is slightly above the national average (Figure 6) across Newcastle PCT, but 28.6% of practices perform at a level that is below the England average (Table 6).

**Figure 6: Hypertension: Achievement of Newcastle PCT by QOF indicator compared to national average**  
(Source: 2007/08 QOF)



**Table 6: Hypertension: Number and % of Newcastle practices achieving below the national average by QOF Indicator**

QOF Indicator		Number (%) of practices achieving below the England average	
BP 04	% of patients with hypertension in whom there is a record of the blood pressure in the previous nine months.	10	28.6%
BP 05	% of patients with hypertension in whom the last blood pressure (measured in the previous 9 months) is 150/90 or less.	10	28.6%

## **Local Views**

There is an on-going programme of local engagement events which are held across the North of Tyne area on a regular basis (12 in 2007/08 - eight of these were in Newcastle and North Tyneside). These events have focused on a wide range of issues, including access to services, the type of services

and schemes local people wish to see to help them stay healthy, and how people wish to receive health information.

Newcastle PCT has a significant service level agreement with Community Action on Health which works across the city with hard to reach groups to ensure their involvement on a wide range of health issues. Newcastle PCT has good working relationships with the patient and public involvement forums and are looking forward to developing similar with the new Local Involvement Networks (LINKs). In addition, additional funding has been made available to the Health and Race Equality Forum to do more work with BME communities.

## **National and local strategies**

### **National**

1. National targets aimed at:

- reducing the death rate from cardiovascular disease in people under 75 by at least 40% by 2010.
- reducing the inequalities gap between spearhead areas with the worst health and deprivation indicators and the population as whole by 40% by 2010.

2. The National Service Framework (NSF) for CHD set national standards for the secondary prevention of CHD and acted as a stimulus for the establishment of structured systematic care.

## **Current Activity and services**

### **Cardiac Rehabilitation**

Community Cardiac Care (CCC) have three main components within their remit - rehabilitation, facilitation and education. A further remit is to support the British Heart Foundation (BHF) Heart Failure Nurses across North of Tyne.

The Rehabilitation aspect of the role supports clients with cardiac problems and their families by home intervention, Phase 2 of Cardiac Rehabilitation, using either the Heart Manual or Revascularisation Booklet supported by a trained facilitator. This is followed by attendance at a Phase 3 Cardiac Rehabilitation Programme based in the community close to where the client resides. This approach has been shown to increase attendance particularly in the hardest to reach groups (a Home Based Programme is also available for those clients who are unsuitable for group sessions). All community Phase 3 programmes now link into a Phase 4 exercise programme which is provided by Leisure Services or the Voluntary Sector. The aim of this approach is to increase long-term physical activity and other lifestyle changes. Structured annual reviews (phase 4) are offered to clients in nursing homes.

Phase 3 cardiac rehabilitation group sessions are held at four venues across the city: East End Pool, Kenton Sports Centre, Simonside Community Centre, and the West End Health Resource Centre. The programme offers two sessions per week for eight weeks covering the following topics – healthy eating; medication; managing stress; making changes; exercise.

### **Weight management**

Across Newcastle there are numerous services available to help people to manage their weight by creating opportunities to increase physical activity levels and improving nutritional knowledge.

- There are also more specialised services run by the NHS to help support weight management across Newcastle. The weight management service has two tiers. .
- Anti obesity medications Orlistat and Subramine are available to clients through prescription from GP practices and health professionals.
- Bariatric surgery is available to residents of Newcastle.

### **Infrastructure – North of Tyne**

A review of the infrastructure and governance arrangements across North of Tyne for long term conditions was undertaken in 2007 and a proposal put forward to the Executive Director (Acute Commissioning) for a proposed North of Tyne model.

With the advent of the reconfiguration of the North East Cardiovascular Network to include stroke, work is in progress to establish a North of Tyne Coronary Heart Disease (CHD) Local Network of Cardiac Care (LNCC) to agree governance and reporting arrangements, and to indicate action required and progress to date for implementing the National Service Framework (NSF) for CHD (including Chapter 8 on Arrhythmia) across the LNCC area. This is the model which is being promoted by the North East Cardiovascular network. The terms of reference and membership of the LNCC will encompass the three PCT areas across North of Tyne and set the strategic direction for the delivery of the NSF.

### **Expenditure and Outcomes for CVD**

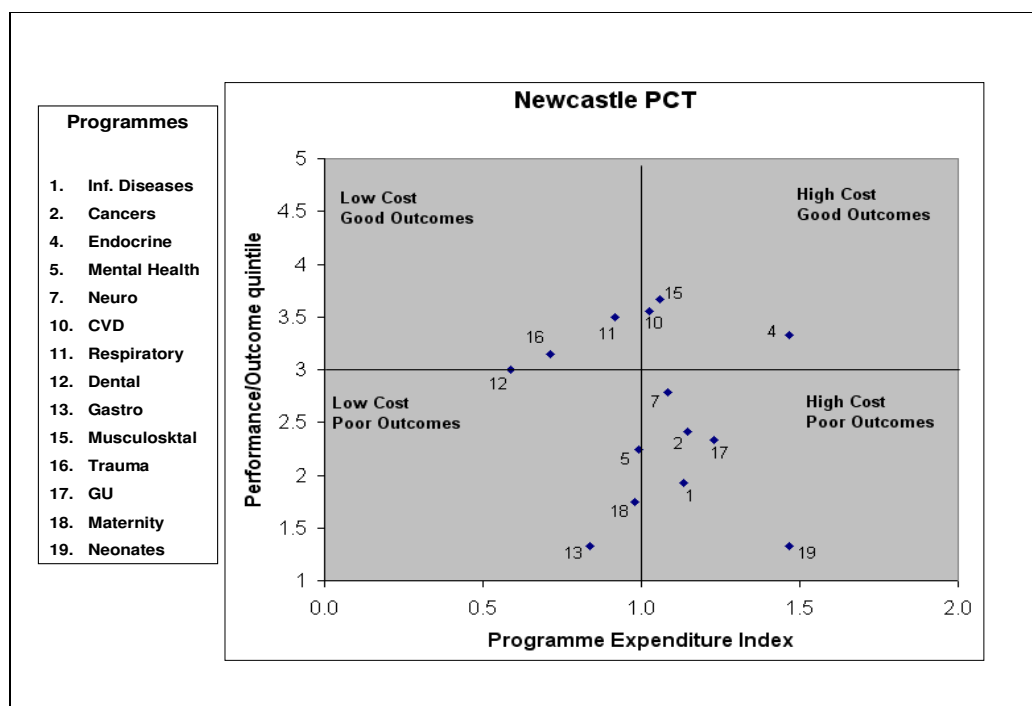
In mid-2007, an exercise was undertaken across the three North of Tyne PCOs, which compared health expenditure and outcomes across a range of programmes including cardiovascular disease. National programme budgeting data for 2005-06 was analysed alongside QOF data and the data from the National Centre for health Outcomes Development (NCHOD).

The PCT cost-outcome performance is represented in the chart below. The CVD programme category is identified by its programme budget category number (i.e. 10).

The result of the analysis was as follows:

### High Cost: Good Outcomes

#### Newcastle PCT



It is important to attach a 'health warning' to the analysis undertaken and the conclusions reached, and to emphasise that this was only the first step in a process of investigation. The routinely available data identified *what appear to be* relatively high spending programme areas, relatively low spending areas, relatively low performing areas, and relatively inefficient areas. There are several possible explanations for these findings including:

- errors in the data;
- differences in the way different PCTs have calculated programme expenditure;
- inadequate adjustment for health needs when comparing expenditure across PCTs;
- a genuine, intentional, and appropriate increase in expenditure in response to poor health outcomes, such that the increased expenditure has not yet had time to impact on outcomes;
- an inappropriate or poor measure of outcome is used to measure performance;

- a genuinely inefficient, ineffective, underfinanced programme of services, or a programme where not enough resources are allocated toward prevention.

## **Health Equity Audit**

In early 2007 the Directorate of Public Health undertook a Health Equity Audit which included an analysis of the quality of care (as measured by specified QOF indicators) in relation to the secondary prevention of CHD across all the GP practices in Newcastle.

A 'Dashboard' of information was produced and circulated to each practice. This gave the practice a snapshot of its clinical performance in relation to CHD Secondary Prevention in 2005/06, in addition to information on CHD prevalence, and the deprivation and age profile of the patients registered with the practice.

A similar updated dashboard is currently being prepared which will contain 2007/08 data and a comparison with performance in 2005/06, so that progress since 2005/06 can be assessed.

## **Process Mapping Pilot**

Following the Health Equity Audit in 2007, a decision was made to undertake a process mapping exercise in a small number of GP practices, which it was hoped would help us understand how clinical management and practice processes differed between high and low performing practices. With input from the Northern Network of Cardiac Care, a process mapping pilot was undertaken in 4 practices. Unfortunately the process mapping was not sophisticated enough to highlight differences between practices, and therefore was not successful in identifying differences between those practices that were high achievers in relation to QOF performance and those with significant room for improvement. However, some issues were identified - delays in practices receiving discharge letters from hospital, the inaccessibility of the weight management service, and issues around management of atrial fibrillation and heart failure. It is hoped to undertake a further pilot in the future using Lean techniques to help us improve the quality of secondary prevention of CVD in primary care.

## **What is this telling us?**

### **What are key inequalities?**

Although Newcastle has made progress in closing the gap with England in relation to cardiovascular disease mortality, the city is unlikely to meet the inequalities target set by government, if past trends continue.

Whilst the quality of care provided in relation to the secondary prevention of CHD by Newcastle practices overall is above the national average, significant variation exists between practices.

## **What should we do next?**

The following challenges, barriers and risks have been identified for Newcastle/North of Tyne PCTs:

1. There is a lack of consistent Local Implementation Team structure across North of Tyne.
2. Opportunity to bridge gaps with new infrastructure (LNCC) and governance arrangements.
3. Lack of primary care strategy across North of Tyne for the management of cardiovascular disease (CVD) maximising the use of Quality Outcomes Framework data in a manner to drive quality improvement.
4. Multiplicity of CVD pathways.
5. Lack of engagement with primary care (restructuring of primary care lead GPs).

## **Key supporting documents**

1. *Newcastle: CVD Secondary Prevention Health Equity Audit & Quality Improvement Programme in Newcastle*
2. *A briefing on inequalities in life expectancy and deaths from CVD and cancer, North of Tyne – May 2008*
3. *Better Health: Fairer health Strategy – Regional Director of Public Health North East, 2007*
4. *Report: Analysis of health expenditure and outcome data using National Programme budgeting, NCHOD atlas and QOF data. September 2007*
5. *Community cardiac care: Annual report, Newcastle 2006-2007*