

## Wirral CHD Equity Audit 2010

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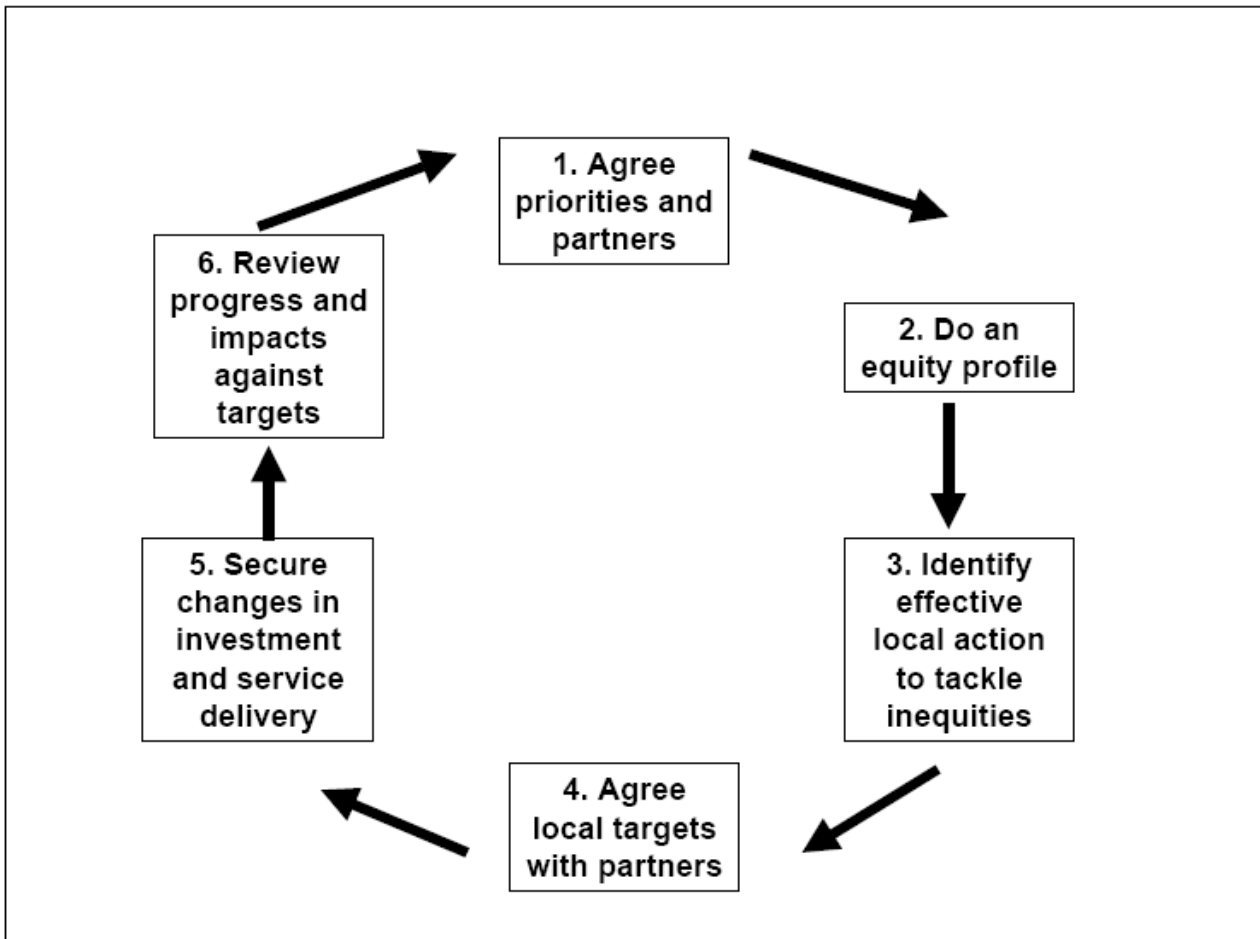
## Overall Key Messages

- Overall mortality from CHD both nationally & locally has continued to fall in recent years, but the gap between the deprived wards in the east of Wirral and more affluent wards in the west has not narrowed
- Rates of CHD mortality are higher amongst males in Wirral (and nationally) and the gender difference is particularly marked for premature (<75) mortality, where SMRs for men is three times that of women.
- Overall mortality rates from CHD in Wirral are slightly higher than Sefton, Wirral's 'near neighbour', but lower than all the other Merseyside districts and the North-West region.
- Estimates indicate that they may be around an extra 4,200 CHD patients in Wirral who are not currently recorded on the QOF
- The Wirral Lifestyle & Weight Management Service and Stop Smoking Service appear to be performing well in terms of equity with the majority of clients originating from the most deprived areas of Wirral. In addition, those quit at 4-weeks appear to originate from the wards with the highest smoking rates and rates of CHD
- The primary care CVD checks programme needs to ensure that an increased *proportion* of those checked are from the target groups (e.g those living in areas of deprivation)
- Referral rates to cardiac rehabilitation from the wards of Birkenhead, Seacombe and Bidston are not sufficient or equitable, given the rate of CHD mortality in these areas.
- Rates of referral to the Intermediate Heart Centre are lowest in Bebington Locality and highest in Wallasey locality. Referrals (by practice) to the Intermediate Heart Centres are *not* correlated with practice rates of CHD (as might be expected). These effects could be due to factors such as some patients choosing to go to services located closest to them.
- Referrals to secondary care cardiology appear (overall) lower in practices in the east of Wirral and higher in practices in the west of Wirral. When referrals are examined as a rate by ward (standardised for age), Wallasey, Clatterbridge & Heswall appear to have the lowest rate of referral to secondary care. As above, this could be due to patients choice about where they are referred.
- There is a difference in equity between CABG and PTCA procedures. PTCAs appear to be carried out in a broadly equitable way (i.e wards with high death rates from CHD have high PTCA procedure rates). For reasons which are unclear, this is not the case with CABG provision, which appears to be inequitable.
- Overall, Wirral needs to perform approximately 30% more revascularisations to bring us into line with the England average. Although rates are highest in the areas with the highest rates of CHD mortality, they need to increase still further.

## 1. Introduction

Health Equity Audit (HEA) is used to identify how fairly services and resources are distributed in relation to the health needs of different groups and areas. The process usually identifies what actions are required to provide services in relation to need (i.e more equitably). The overall aim is to ensure resources are distributed according to how much they are needed to reduce inequalities in health. The process of Health Equity Audit is summarised well by Figure 1 below.

Figure 1: The cycle of Health Equity Audit



Source: Health Development Agency, 2003

Equity Audit on the provision of services relating to Coronary Heart Disease was completed in Wirral in 2001 and 2004.

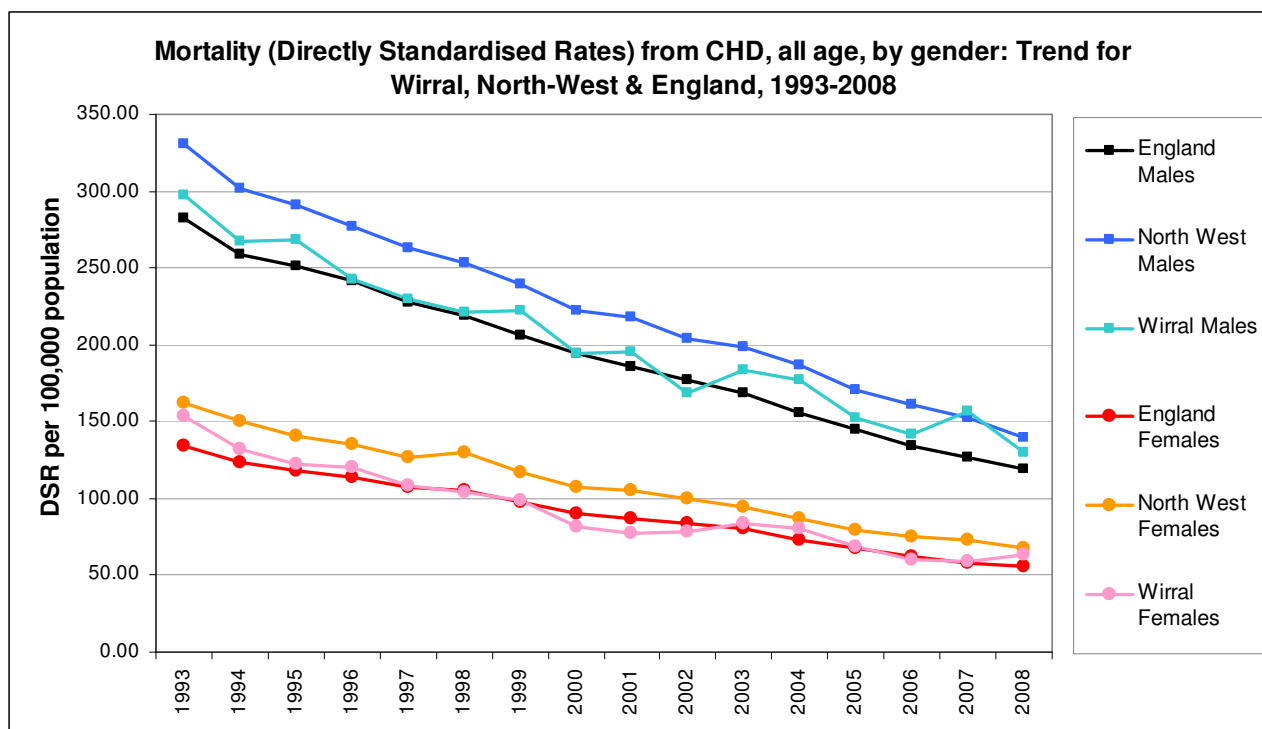
The most recent HEA (2004) focused on four main themes: Primary prevention, secondary prevention, treatment and information/other (for a full list of the 17 recommendations arising from this HEA, please refer to the appendices of this document). The CHD Modernisation Team requested that this current HEA revisit the themes and data of the previous HEA (with the addition of various data sources which have become available since 2004), hence the layout of this report. An additional first section dealing with current prevalence of CHD has also been added to supplement this equity audit.

## 2. Epidemiology

### 2.1 Mortality from CHD

Mortality from CHD has been steadily falling in both England and Wirral for many years. Figure 2.1a shows this trend, split by gender for Wirral, the North-West and England since 1993.

**Figure 2.1a: Mortality (DSRs) from CHD, all ages, by gender: Trend for Wirral, North-West & England, 1993-2008**

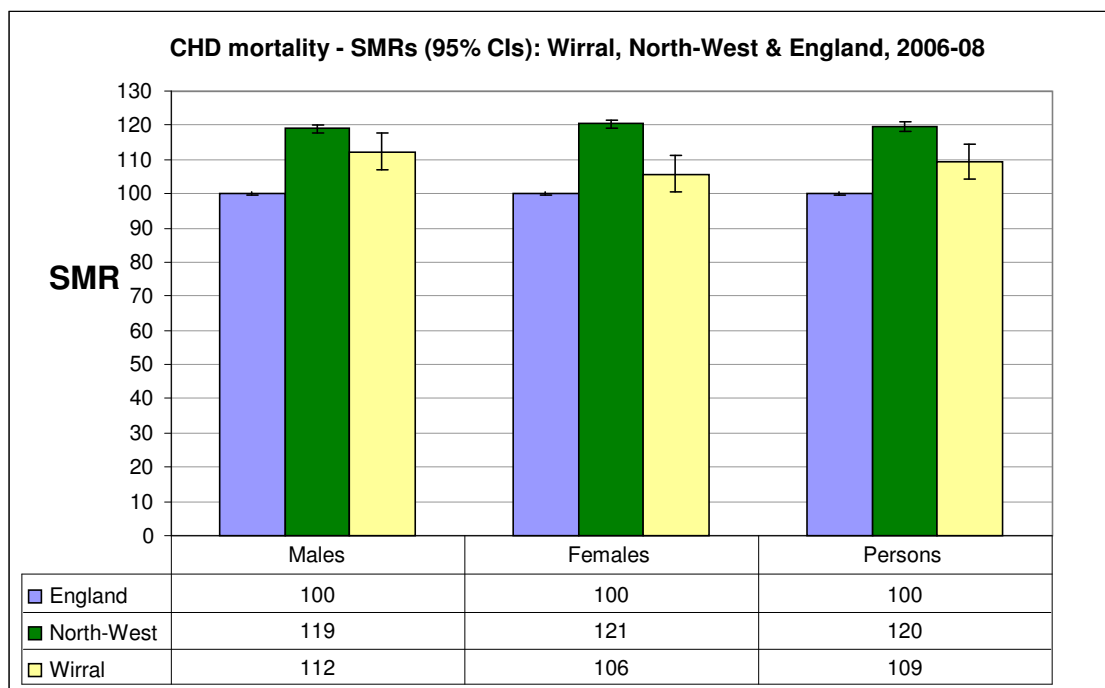


Source: NCHOD (Information Centre), 2010

As Figure 2.1a shows, in 2008, Wirral's death rate from CHD for both men and women was above that of England, but below that of the North-West Strategic Health Authority region. With the exception of a few years in the earlier in the decade, this has not changed since 1993. The chart also shows that mortality from CHD has fallen steadily over the last 15 years, with the decline slightly steeper for men than women. This has had the effect of narrowing the gap between the sexes slightly. Fluctuations are more apparent in the Wirral figures because of smaller numbers.

Figure 2.1b below shows mortality rates (SMRs), but focuses solely on the most recent time period for which data is available (2006-08).

**Figure 2.1b: Standardised Mortality Rates (SMRs) for Wirral, North-West & England, 2006-08**

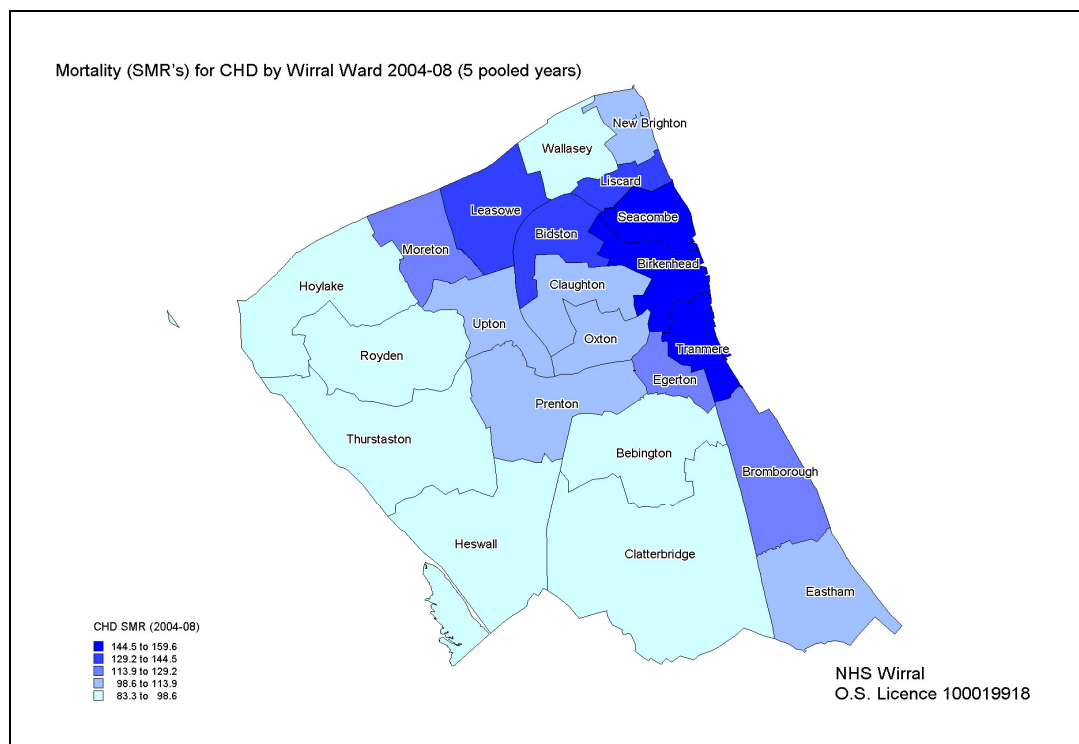


Source: Information Centre, 2009

As Figure 2.1b shows, mortality from CHD in males in Wirral is 12% higher than England. The rate for females is 6% higher than England. Rates for males in Wirral are closer to the North-West average (which is high relative to England). In Wirral females however, the rate more closely resembles that of England than the North-West.

Map 2.1a below shows mortality rates by Wirral ward for the last 5 years.

**Map 2.1a: Standardised Mortality Rates from CHD by Wirral ward, 2004-08 (5 years pooled)**

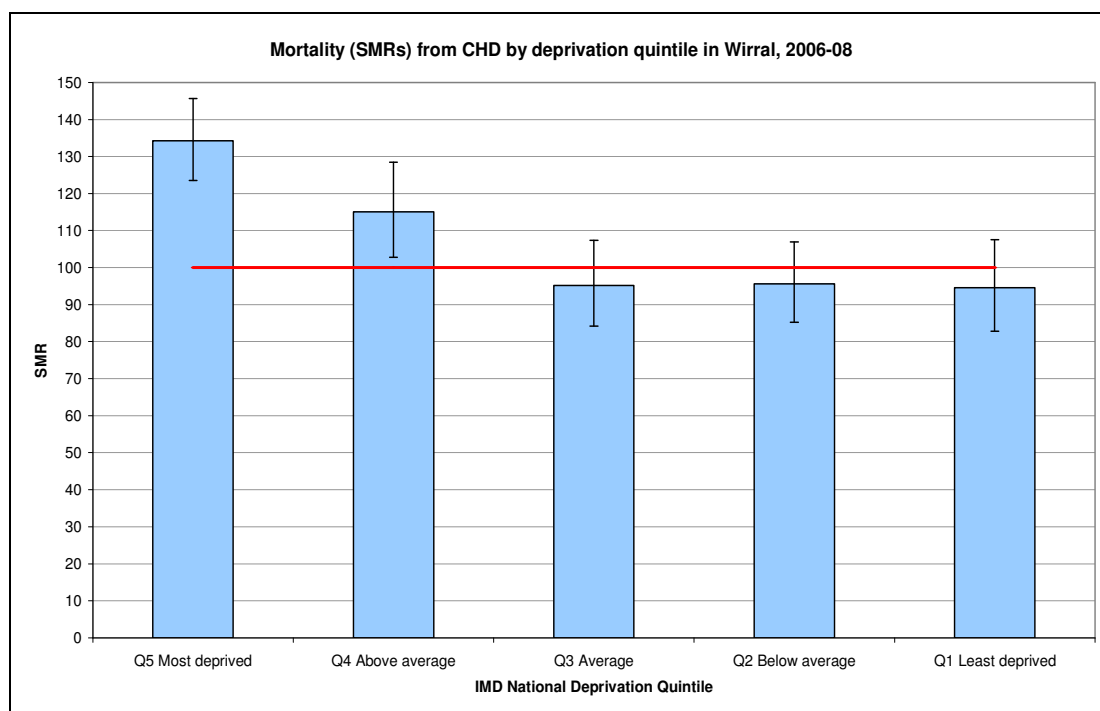


Source: PHMF, 2010

As Map 2.1a shows, the most deprived wards in Wirral have the highest rates of mortality attributable to CHD, namely Tranmere, Birkenhead & Seacombe.

Another way to examine equity is to look at an issue by deprivation quintiles. Figure 2.1c below, shows mortality from CHD by IMD (Index of Multiple Deprivation) national quintiles.

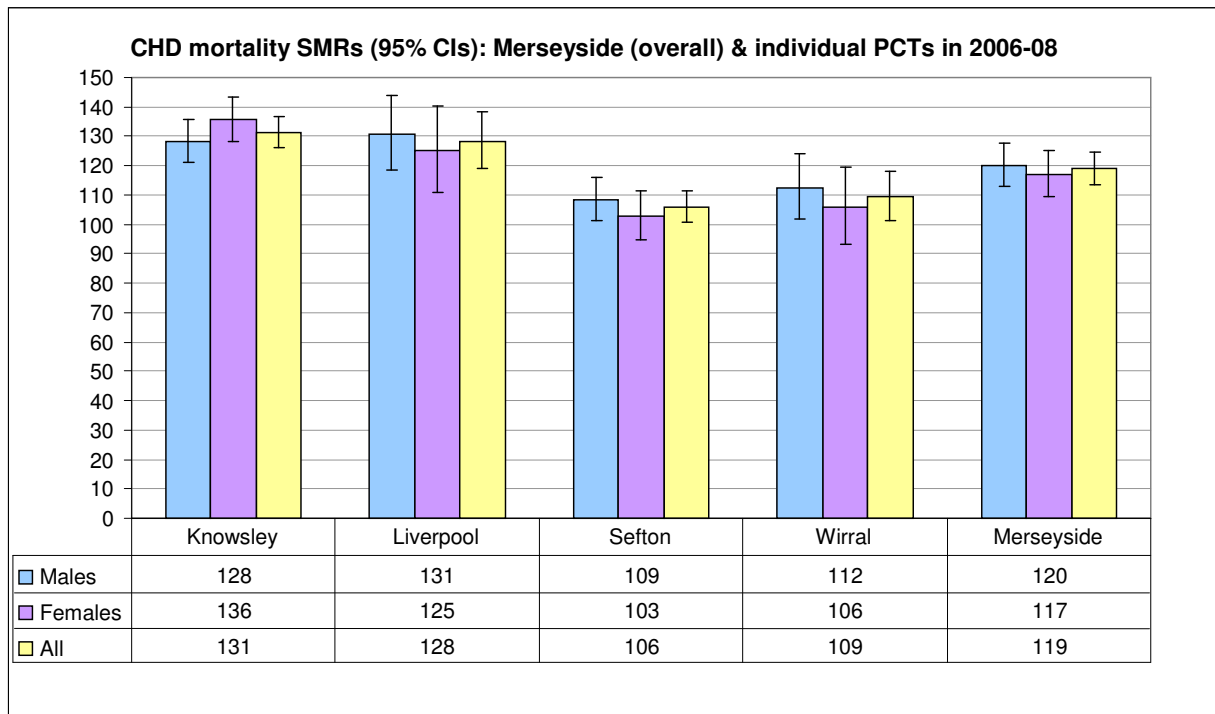
**Figure 2.1c: CHD Mortality (SMRs) by IMD 2007 Deprivation quintile**



Source: Dr.Foster, 2010

As Figure 2.1c shows, mortality from CHD in Wirral is clearly associated with deprivation. The two most deprived quintiles have significantly higher rates of mortality from CHD than England average (100). The least deprived quintiles have rates which are lower than England (but not significantly so).

**Figure 2.1d: CHD mortality, by gender in Merseyside & its constituent PCTs in 2006-08**

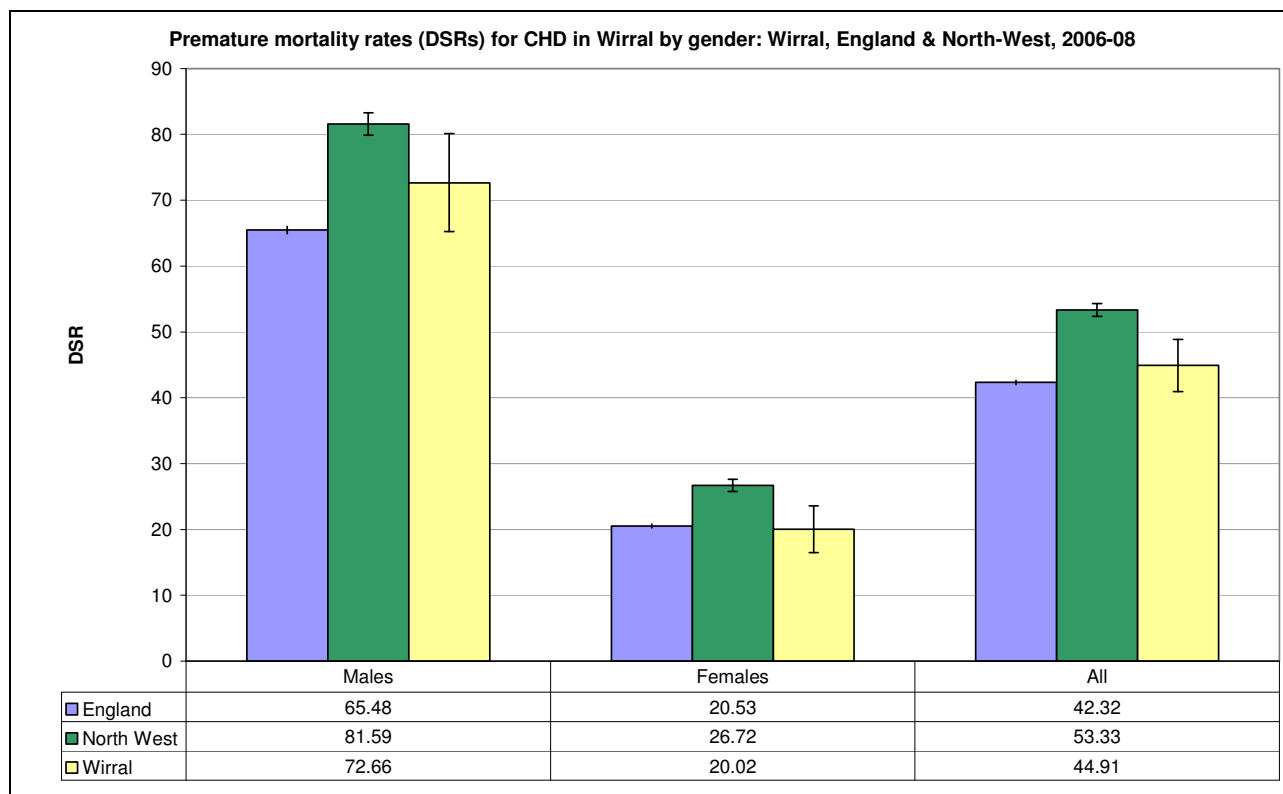


Source: NCHOD, 2010

As Figure 2.1d shows, mortality from CHD in Wirral compares favourably with other PCTs in the Merseyside region. SMR's for CHD in Wirral are below those for Merseyside overall, well below those of Liverpool and Knowsley PCT, but slightly above those for Sefton PCT (widely considered our 'near neighbour' because of its similarity to Wirral demographically).

## Premature Mortality from CHD

**Figure 2.1e Premature mortality (deaths in <75s) rates for CHD in Wirral by gender: Directly standardised rates for Wirral, England & North West, 3 years pooled 2006-08**



Source: Information Centre, 2010

As Figure 2.1e shows, the rate of premature death (that is, deaths under the age of 75) from CHD in Wirral is higher than that for England (not significantly so), but lower than the rest of the North West for both men and women (also not significantly so). It also shows that the rate of premature mortality from CHD for men is more than double the rate for women and this is also true of the region and England, not just Wirral.

**Key Message:** Mortality is higher amongst males in Wirral (and nationally) and higher in the deprived wards in the east of Wirral compared to the more affluent wards in the west. The gender difference is particularly marked for premature (<75) mortality, where the rate for men is three times that of women. The overall mortality rate from CHD in Wirral is slightly higher than Sefton (but not significantly so), Wirral's 'near neighbour', but lower than all the other Merseyside districts and the North-West region.

## 2.2 Prevalence of CHD in Wirral

### QOF Prevalence of CHD in Wirral

Prevalence of CHD in Wirral is estimated from QOF (Quality & Outcomes Framework) data from GP practices. The QOF is likely to give a good indication of CHD prevalence, but can never achieve 100% accuracy, as there will be some patients who will have CHD, but be undiagnosed.



**Table 2.2a: QOF (Quality & Outcomes Framework) recorded prevalence of CHD in Wirral**

| Locality                | Actual CHD List size | % of total practice population recorded as having CHD |
|-------------------------|----------------------|---|
| Birkenhead              | 6259                 | 4.2%  |
| Wallasey                | 2939                 | 4.2%  |
| Bebington & West Wirral | 4770                 | 4.4%  |
| <b>Wirral overall</b>   | <b>13,968</b>        | <b>4.3%</b>   |

Source: QMAS, 2010

As Table 2.2a above shows, Bebington & West Wirral appears to have a higher proportion of their population recorded as having CHD compared to the other localities and Wirral overall. For the recorded prevalence of CHD in Wirral as of 1<sup>st</sup> February 2010 by individual GP practice, please see Appendices 7b.

### Comparison of QOF and modelled estimates of CHD prevalence

Data generated by the models are estimates of the expected prevalence of disease taking into account factors such as age and deprivation. Information on how the Eastern Region Public Health Observatory (ERPHO) generate these models can be found on their website at: <http://www.apho.org.uk/resource/view.aspx?RID=48308> .

The ERPHO estimates indicate that there may be around **an extra 4,200 CHD patients in Wirral who are currently unrecorded on the QOF system as of February 2010**. The table below shows the breakdown of actual numbers of potential extra patients by locality.

**Table 2.2b: Potential undiagnosed CHD patients by Wirral locality**

| Locality                | Approximate no. of undiagnosed CHD patients | % of all patients with undiagnosed CHD |
|-------------------------|---|--|
| Birkenhead              | 2500  | 1.6%                                   |
| Wallasey                | 1040  | 1.4%                                   |
| Bebington & West Wirral | 690   | 0.7%                                   |
| <b>Wirral overall</b>   | <b>4230</b>                                 | <b>1.4%</b>                            |

Source: QMAS (actuals), ERPHO (modelled estimates)

As Table 2.2b above shows, Bebington & West Wirral appears to have the lowest number and percentage of undiagnosed CHD patients compared to the other localities and Wirral overall. According to QOF data, they had the highest recorded prevalence, so the estimates 'fit' with that picture.

It should be remembered however, that although models are generated using local data such as age and deprivation of the population – some degree of inaccuracy is to be expected and numbers will not be exact.

Modelled estimates of CHD prevalence at practice level, compared to numbers already diagnosed and recorded on QOF are shown by GP and locality in the Appendices.

**Key Message:** Prevalence of diagnosed CHD in Wirral is 4.3% of the population, just over 13,000 people. There are thought to be an additional (approximate) 4000 people with CHD who are currently undiagnosed (an additional 1.4% of the Wirral practice population). Bebington & West Wirral appear to have a lower percentage of patients undiagnosed than the other two localities (0.70%).

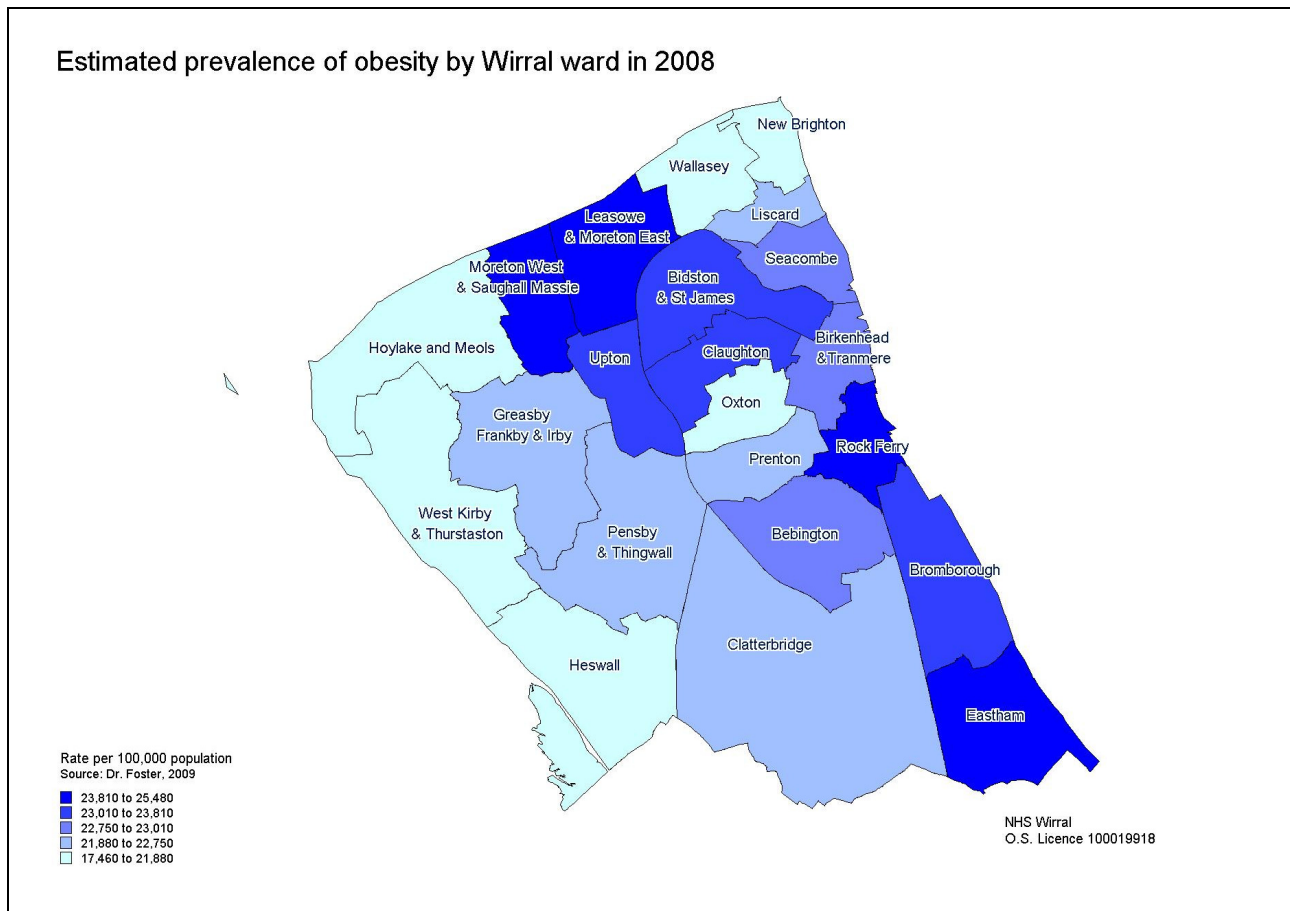
### 3. Primary Prevention

#### 3.1 Obesity, physical activity & healthy diet

Obesity is associated with increased risk of CHD, so reducing obesity rates is clearly a priority when attempting to reduce CHD risk in the population. The map below shows estimated rates (per 100,000) of obesity in Wirral by ward from Dr.Foster\*.

\*Estimates from Dr.Foster are produced using modelled data from the last UK Healthy Lifestyle Behaviours Survey (2003-05) and population figures from ONS.

**Map 3.1a: Estimated prevalence of obesity by Wirral ward in 2008**



Source: Dr. Foster, 2010

Map 3.1a appears to show some link between deprivation and obesity in Wirral. Wards which appear to have particularly high rates are Eastham, Rock Ferry, Leasowe and Moreton East and Moreton West and Saughall Massie. It should be noted that these modelled figures do not take into account age. As it is well accepted that obesity increases with age, it is likely that if we were able to produce age-adjusted figures (currently not possible), it would make the above picture more pronounced. As the map shows, the areas of Wirral where older age groups predominate (i.e the west) show a much lower rate of obesity than the areas characterised by a younger age structure (i.e the east) even without any adjustment for age.

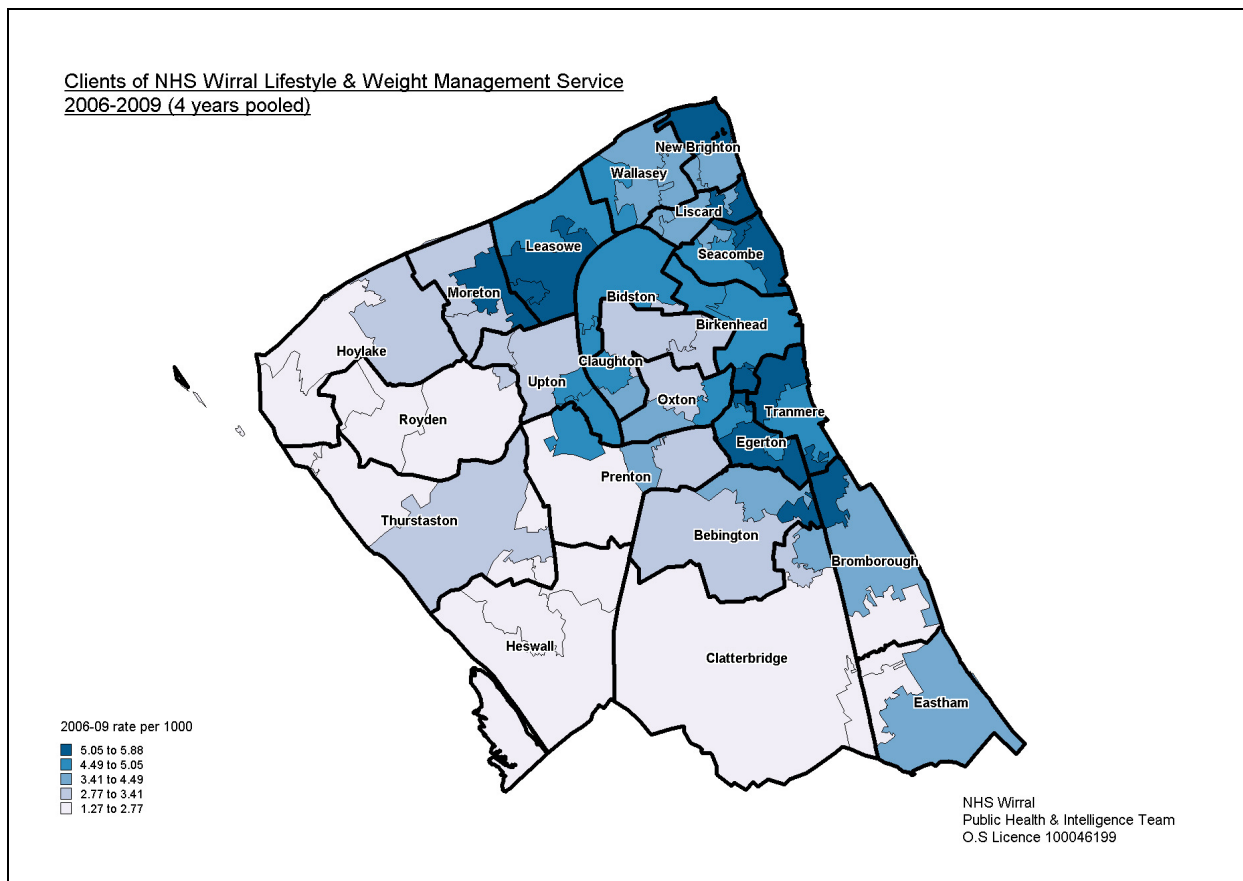
## Weight management services

There are now a number of options for clients who have been referred for lifestyle and weight management services in Wirral. For the referral pathways and criteria for each service, see Appendices to this report. The services are: NHS Wirral Specialist Lifestyle & Weight Management Service, Pharmacy Weight Management Service and Slimming World.

### NHS Wirral Specialist Lifestyle & Weight Management Service (L&WMS)

This is a referral only service for clients who are obese (or overweight if they have other co-morbidities such as impaired glucose tolerance). Map 3.1b shows clients of the service by their ward of residence during the past four years. Data is by MSOA (so comparisons with obesity estimates which are only available by MSOA are possible), but with ward boundaries overlaid.

**Map 3.1b: Clients of Wirral L&WMS, 2006-09 (4 years pooled)**

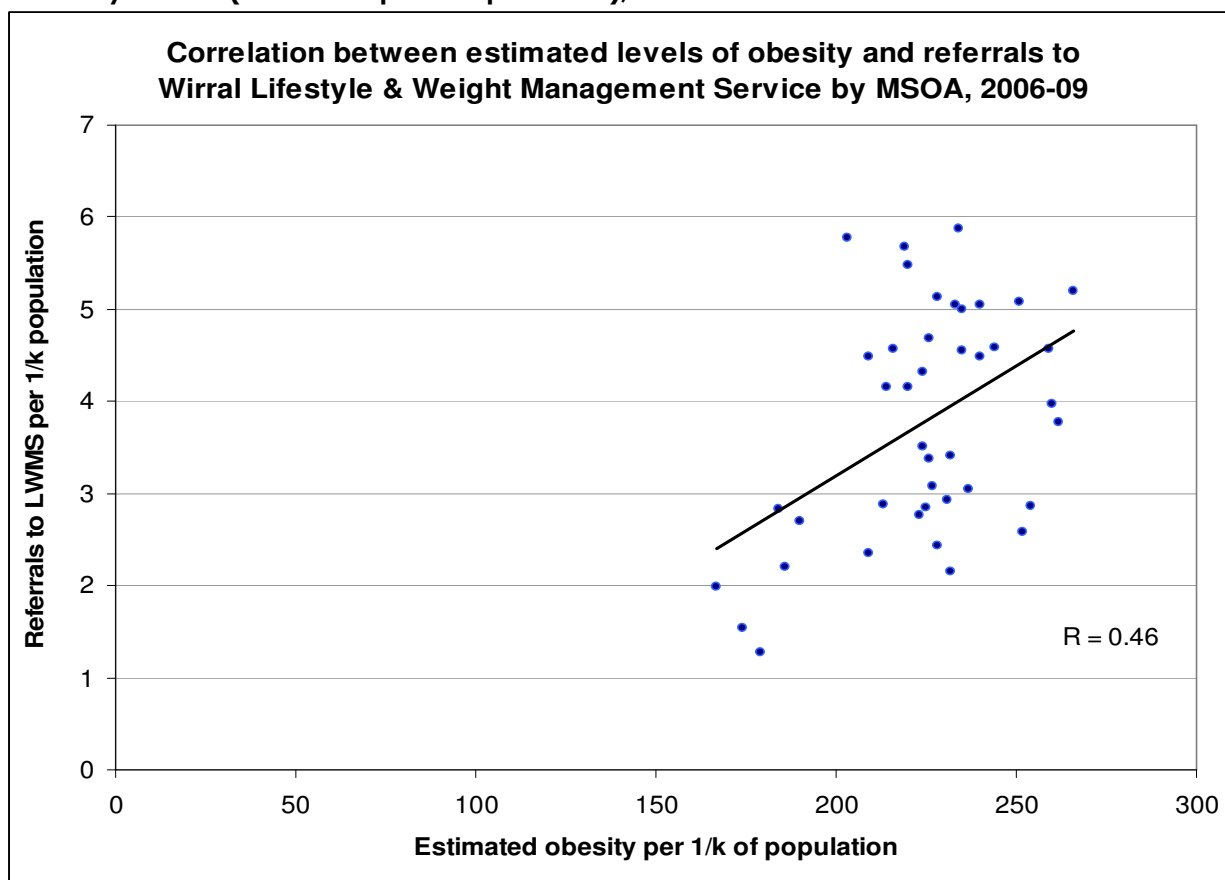


Source: NHS Wirral Lifestyle & Weight Management Service, 2009

As Map 3.1b shows, referrals to the L&WMS appear to be equitable. As the map clearly shows, the majority of referrals come from the east of Wirral where deprivation and obesity are more prevalent. The areas of Leasowe, Seacombe, Tranmere and Egerton all show large concentrations of referrals. The only area from which we may have expected more referrals are some areas of Birkenhead and Claughton, but taking an overall view, clients appear to originate from those postcodes with the highest rates of deprivation, obesity and CHD.

Figure 3a below, shows the correlation between rate of referral to the Lifestyle & Weight Management Service (per 1,000 population) and estimated rates of obesity (per 1,000 population).

**Figure 3a: Correlation between referral to the L&WMS and estimated rates of obesity in Wirral by MSOA (Middle Super Output Area), 2006-09**



Source: Wirral L&WMS (referral rates) and Dr.Foster, 2010 (obesity rates)

As Figure 3a shows, referral to the L&WMS is correlated with estimated levels of obesity (both per 1,000 of population). A correlation co-efficient of 0.46 indicates a fairly strong correlation (i.e, an increase in one, is associated with an increase in the other variable). This is positive as it indicates that referrals to this service are indeed coming from areas in which obesity is highest, in other words, referrals appear to be broadly equitable.

In 2008 and 2009 (calendar years) a total of 3,848 individuals were referred to the LWMS. Of these, 29% were male and 41% were from the most deprived quintile. 36% were aged 55 or over. As with the other services described here, primary care and others able to refer clients to the LWMS should be aiming to send larger numbers of older men from the most deprived areas if we are to really contribute to narrowing health inequalities.

**Table 3a: Proportion of service users from key target groups, LWMS**

| Measure                                | Time period |      |       |
|--|-------------|------|-------|
|  | 2008        | 2009 | Total |
| Proportion from most deprived quintile | 40%         | 42%  | 41%   |
| Proportion who are male                | 29%         | 30%  | 29%   |
| Proportion who are aged 55 or over     | 38%         | 35%  | 36%   |

Source: NHS Wirral Performance & Public Health Intelligence Team (Public Health Commissioning Analysts)

## Slimming World and Pharmacy Weight Management Service

Both of these programmes were introduced during the 2009-10 financial year. Therefore, we do not have a full years worth of data for either of them. As of the end of 2009-10 financial year, staff from 25 Wirral pharmacies had received the required training needed to take part in the programme, with a further 20 pharmacies and their staff awaiting the next course.

146 clients have so far been referred by a health professional and gone on to take up the pharmacy weight management service. No further data is available at present.

183 clients have so far accessed Slimming World following referral by a health professional. No further data is available at present.

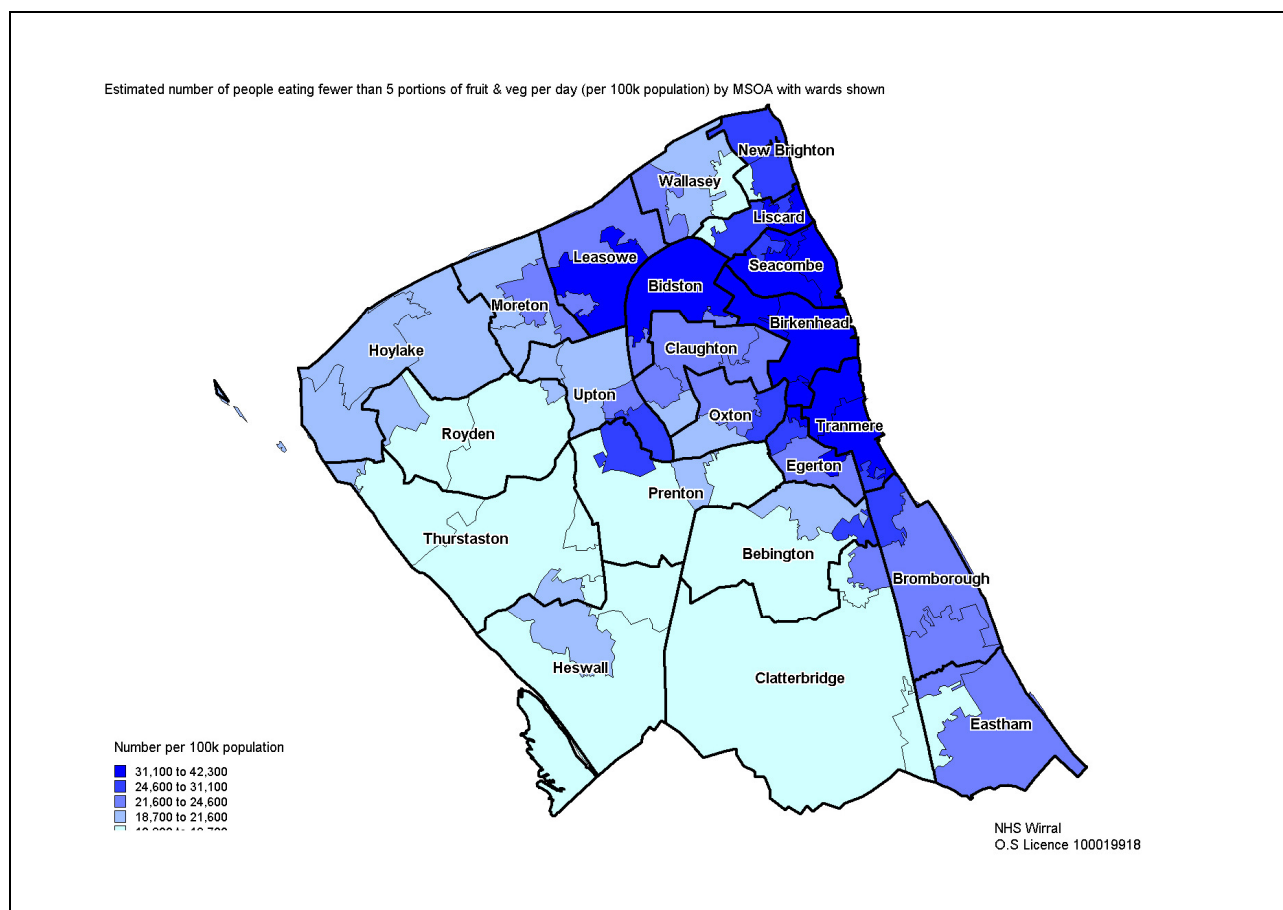
## Healthy diet

The last CHD Equity Audit recommended ensuring that fruit and vegetables were readily available in deprived areas of Wirral to support people in eating the recommended five or more portions per day. This is because high consumption of fruit and vegetables is associated with lower levels of heart disease.

As with smoking rates it is difficult to ascertain the levels of consumption of fruit and vegetables in the population but synthetic estimates can be used. The estimates below come from Dr.Foster, using TGI (Target Group Index) data from Experian\*.

\* The Target Group Index (TGI) is an annual survey is produced by the British Market Research Bureau on lifestyle, behaviour and consumption of every postal sector in the UK. It covers a wide range of variables, including lifestyle, media and purchasing habits. It is based on a representative sample of 25,000 adults.

Map 3.1c: Estimated number of people eating fewer than 5 portions of fruit & veg per day (per 100k population) by MSOA with wards shown



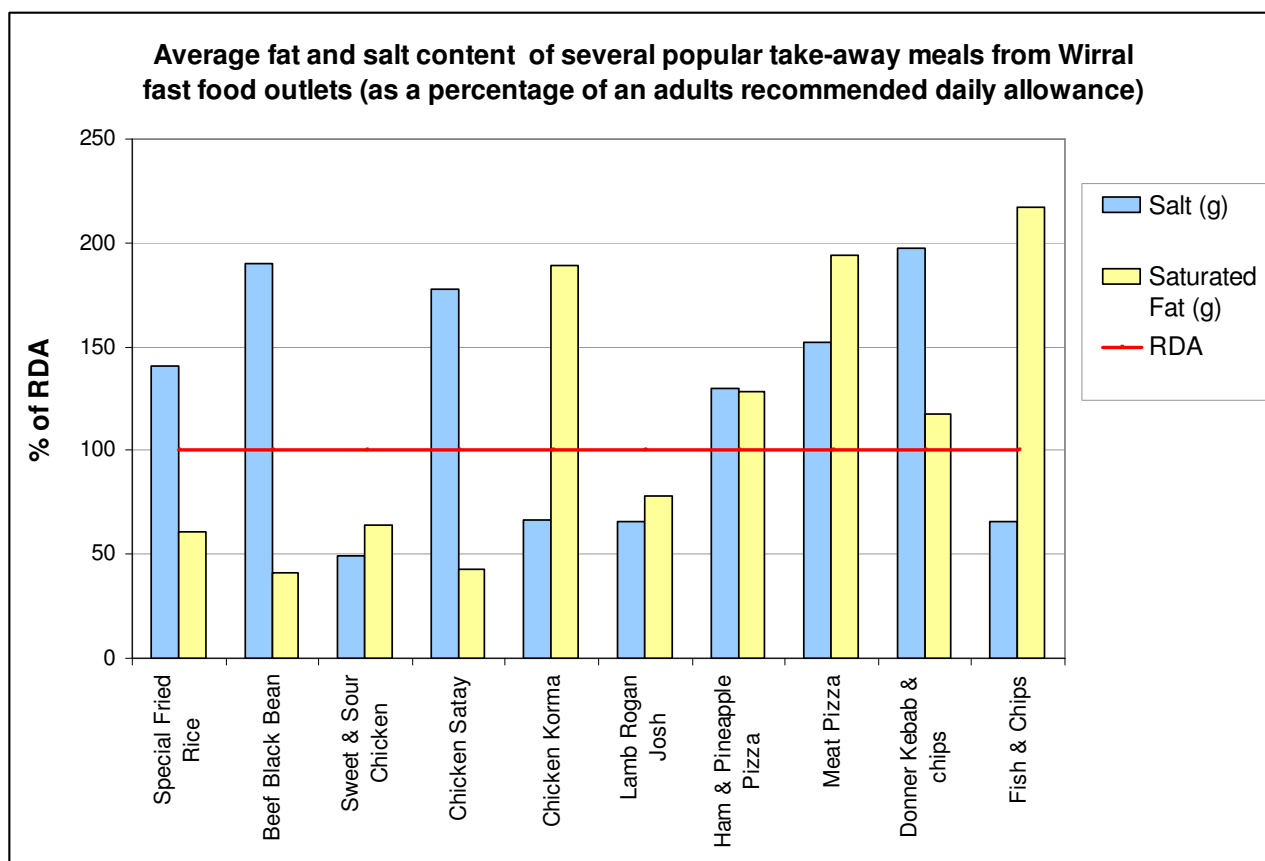
Source: Dr.Foster, 2010

Map 3.1c shows that the likelihood of eating fruit and vegetables appears to be related to deprivation. The most deprived wards in Wirral (Birkenhead, Bidston & Secombe) have large proportions of the population eating less than the recommended five portions per day. Areas such as Tranmere, Liscard, Woodchurch & New Brighton also appear to have high proportions of people eating less than the recommended amount.

A recent Lifestyle Survey estimated that 27.4% of the Wirral adult population eat five daily portions of fruit and vegetables, higher (but not significantly so) than the national and regional averages of 26.3% and 23.6% respectively [3].

In 2008, Wirral Trading Standards conducted an audit of take-away food outlets in Wirral to assess the salt and fat content of some popular meals in relation to average daily recommended allowances for adults. At least 10 outlets were surveyed per popular meal (in the case of fish and chips, over 30 outlets were tested) and an average for saturated fat and salt was calculated from the outlets tested. The results are shown in Figure 3b.

**Figure 3b: Average fat and salt content of several popular take-away meals from Wirral fast-food outlets expressed as a percentage of an adults recommended daily allowance**



Source: Metropolitan Borough of Wirral Trading Standards Department, 2008

As Figure 3b shows, the majority of the most popular take-away dishes have levels of saturated fat and salt which far exceed an adult's recommended daily allowance. An adult consuming a meal of fish and chips or chicken korma for example, would eat around twice their recommended daily amount of saturated fat in just one sitting. Similarly, a donner kebab and chips or beef in black bean sauce meal has twice the recommended daily amount of salt an adult should eat in just one meal.

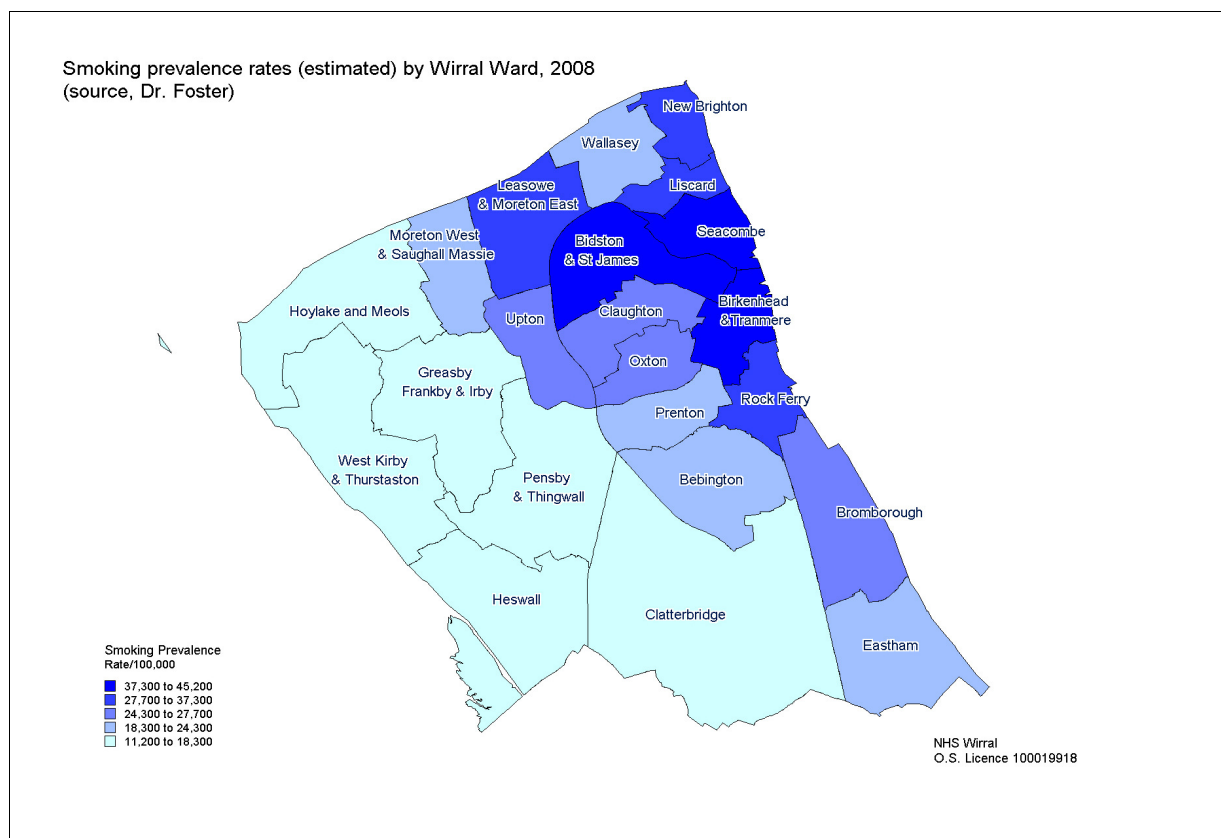
Other insight and research (for example, Mosaic) tells us that people living in deprivation are more likely than average to eat take-away and convenience foods. If most take-away meals are exceeding daily guidelines for saturated fats and salt, both of which contribute to CHD, this will contribute to inequity.

### 3.2 Smoking

Smoking is the biggest single cause of preventable illness and premature death in the UK. Half of all smokers will die early as a result of their tobacco use. It is linked to a range of chronic and debilitating conditions, including heart disease.

Map 3.2a below shows the estimated prevalence of smoking in Wirral in 2008.

**Map 3.2a: Estimated prevalence of smoking by Wirral Ward in 2008**



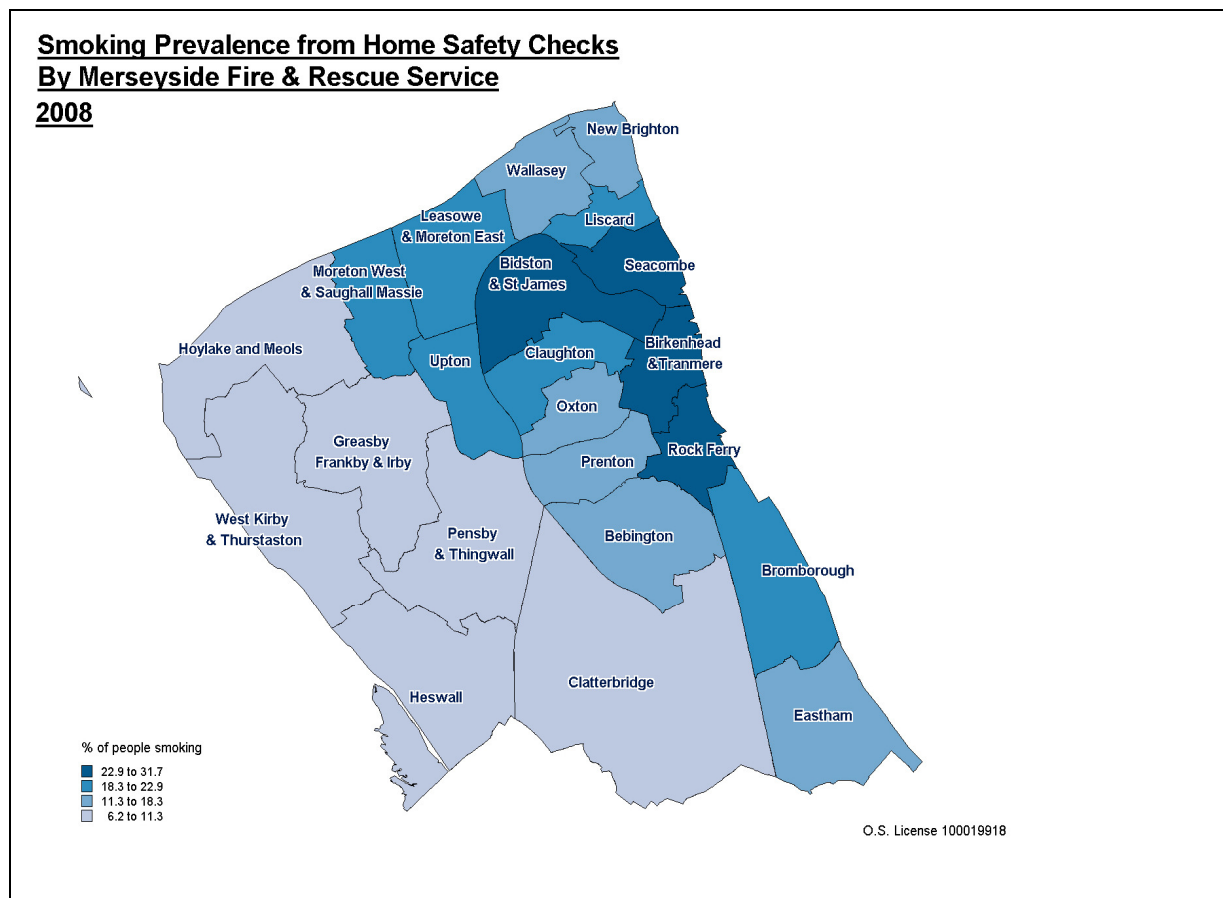
Source: Dr. Foster, 2010

As Map 3.2a shows, smoking is clearly associated with deprivation, with Wirral's areas of deprivation having the highest rates of smoking.

Merseyside Fire & Rescue Service also have data from the same year (collected during their Home Fire Safety check process) which is useful to corroborate the above estimates from Dr. Foster.

Map 3.2b shows the estimated prevalence of smoking in Wirral wards as recorded by Merseyside Fire & Rescue Service in 2008

**Map 3.2b: Smoking Prevalence as recorded by Home Safety Checks carried out by Merseyside Fire & Rescue Service, 2008**



Source: Merseyside Fire & Rescue Service Home Fire Safety Check data, 2008

The Merseyside Fire & Rescue Service data supports the link between deprivation and smoking shown by estimates from Dr. Foster. Wards with highest levels of deprivation show the highest percentage of the population smoking. New Brighton, Leasowe and Liscard appear to have slightly lower rates than the estimates from Dr. Foster indicated, but overall, the two data sets concur.

**Wirral Stop Smoking Service data**

Stop smoking services are measured on the percentage of clients they see who are still quit at 4 weeks. Quit percentages should be viewed against the backdrop of increasingly ambitious targets services must achieve. See below for target number of 4 week quitters from 2000-01 when the service was introduced, up to the most recent year of 2009-10.

Table 3.1a: NHS Wirral Stop Smoking service targets 2000-2010

| Year    | Target |
|---------|--------|
| 2000/01 | 300    |
| 2001/02 | 610    |
| 2002/03 | 1,220  |
| 2003/04 | 1,880  |
| 2004/05 | 1,926  |
| 2005/06 | 1,971  |
| 2006/07 | 1,861  |
| 2007/08 | 1,889  |



|         |       |
|---------|-------|
| 2008/09 | 2,287 |
| 2009/10 | 3,000 |

Source: Wirral Stop Smoking Service, 2010

Wirral Stop Smoking Service have exceeded the targets set for them every year they have been in operation. Table 3.1b below shows total number of people accessing the service in 2008-09, the number who successfully quit (at 4 weeks) and the percentage who successfully quit, all by locality.

**Table 3.1b: Stop Smoking Service quit numbers and percentages by locality, 2008-09**

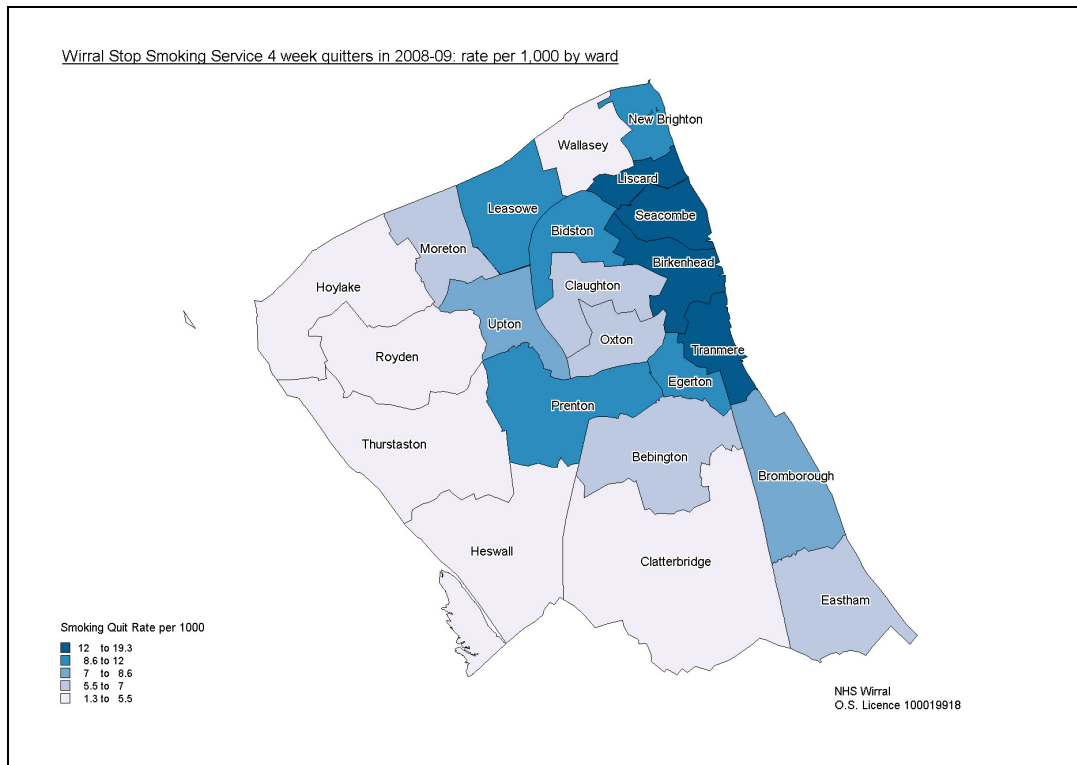
| LHD                     | No. attended | No. quit    | % quit     |
|-------------------------|--------------|-------------|------------|
| Birkenhead              | 2796         | 1160        | 41%        |
| Wallasey                | 1713         | 771         | 45%        |
| Bebington & West Wirral | 1015         | 489         | 48%        |
| <b>Wirral</b>           | <b>5884</b>  | <b>2569</b> | <b>44%</b> |

Source: Wirral Stop Smoking Service, 2010

As Table 3.1b shows, clients from more affluent areas (e.g Bebington & West Wirral locality) appear more likely to quit compared to the Wirral average, whilst clients from Birkenhead have a quit rate slightly below the Wirral average. The overall 4-week quit percentage for Wirral in 2008-09 of 44% is a considerable improvement on the previous year (it was 36% in 2007-08).

This information however, is just raw numbers and does not take into account ward or locality populations. Rates, which do take this into account are show in Map 3.2c. The map shows 4 week quitters as a rate per thousand of the ward population in 2008-09.

**Map 3.2c: Wirral Stop Smoking Service 4 week quitters (rate per 1,000) by ward 2008-09**



Source: Wirral Stop Smoking Service, 2010

Map 3.2c clearly shows that when ward population is taken into account, Wirral Stop Smoking Service is achieving high 4-week quit rates in those areas of deprivation where it is acknowledged that we have more smokers (Birkenhead, Seacombe and Tranmere).

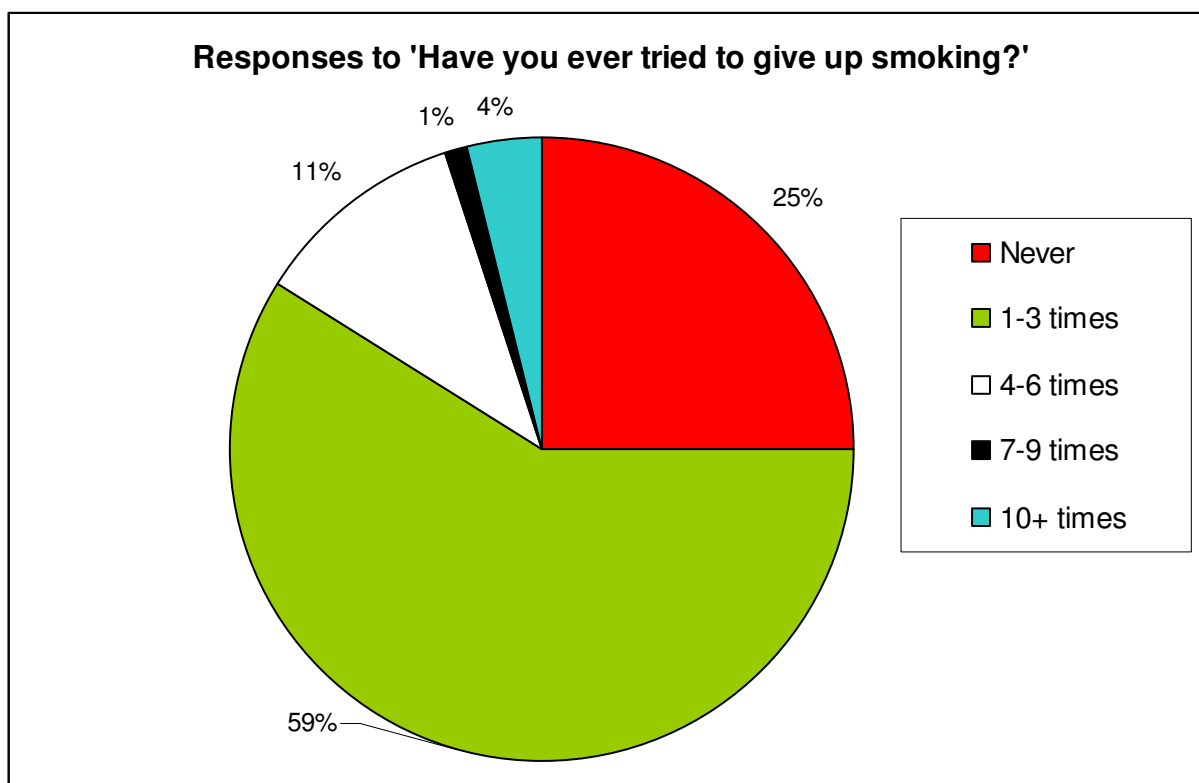
Rates for the wards of Bidston, Egerton and Claughton could perhaps be higher, but overall, stop smoking services in Wirral do appear to be providing an equitable service to clients.

For the exact number and percentage of those who were still quit at 4 weeks by Wirral ward, please see the **Appendices**.

In 2009, three separate surveys were conducted looking at different aspects of smoking in Wirral and produced some useful information. For full copies of these three surveys, please go to [Surveys](#) section of the NHS Wirral JSNA website. Briefly, some key highlights were that amongst those living in the most deprived areas of Wirral, around 35% of residents smoke.

This compares to an estimated 22.8% of the adult population of Wirral overall. Another notable finding was that 54% of smokers would like to quit (33% did not want to quit and 13% were unsure). People were also asked how many times (if any) they had tried to quit, see table below for results.

**Figure 3.2a: Quit attempts by people living in the 20% most deprived areas of Wirral**



Source: Quantitative Smoking Survey, NHS Wirral, 2009 <http://info.wirral.nhs.uk/intelligencehub/localsurveys.html>

This information underlines the importance of attracting those who have already tried to quit before back into services. We know from research that people are often embarrassed about failing in their previous attempts to quit, so health services should be mindful of this and provide reassurance that services are always available no matter how many times a person has tried to quit before.

### **Quit & Win Stop Smoking initiative ('Your Reason, Your Way')**

Wirral currently has a target to achieve of 8,000 quitters per annum in 2010-11. Three thousand of these will be seen by the Specialist Stop Smoking Service, while the additional 5,000 quitters will be reached by the 'Your Reason, Your Way' social marketing initiative,

preparatory work for which commenced in 2009-10. The initiative includes a website to support residents quit attempts which also offers the opportunity to win regular prizes for those still quit at various points. The approach and 'tone' of the campaign and website have been extensively tested with local people from the target areas and groups using social marketing methodology and the programme will start imminently. For further information on the background research, insight gathering and market testing of campaign materials relating to this project, please go to the [Surveys](#) and section of Wirral information portal.

### 3.3 CVD checks

**NOTE:** Although this is a CHD equity audit (*not* CVD, which includes a larger group of diagnoses and patients than CHD), this section examines the extensive local work recently carried out targeting patients at risk of CVD, as this will clearly have an impact on CHD.

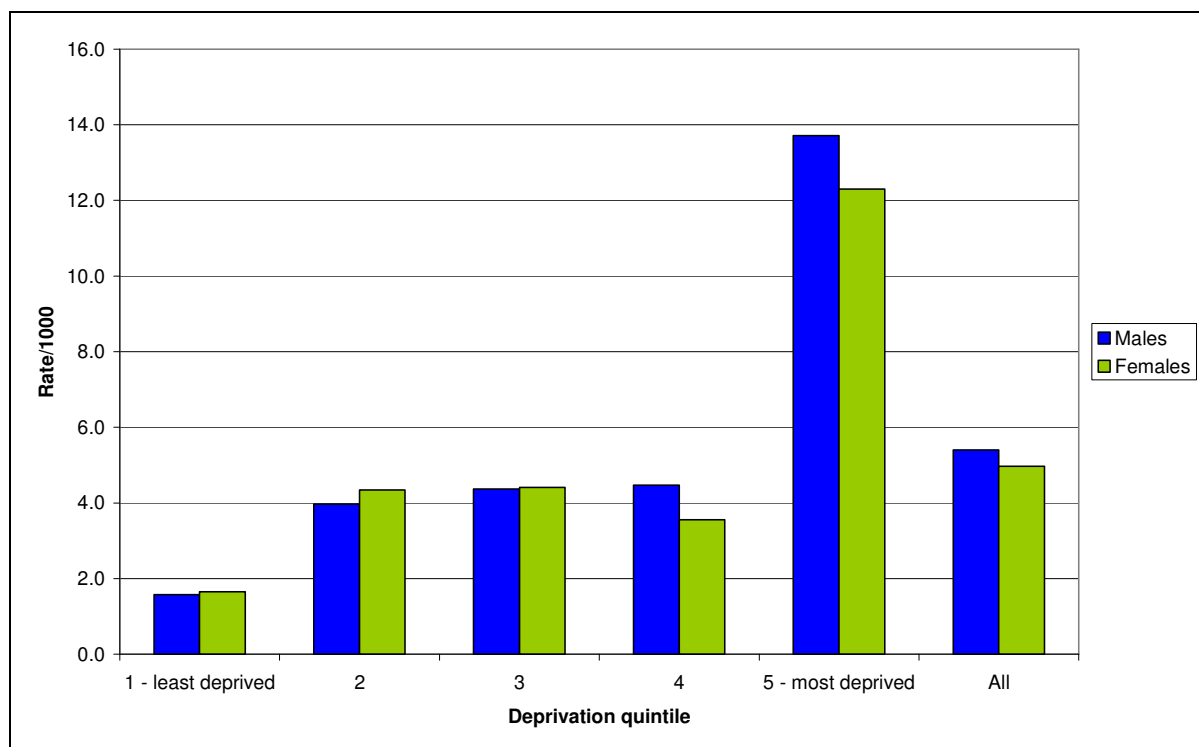
Modelling work completed by NHS Wirral Information Team has shown that identifying patients at risk of CVD would have the biggest immediate impact in terms of reducing the life expectancy gap both within Wirral and between Wirral and England. Currently in Wirral, efforts to identify people at risk of CVD through screening are taking place both in the community (as part of the Health Action Area initiative, checks carried out by Healthworks) and in primary care (via a Locally Enhanced Service agreement). 'At risk' is defined as individuals who have a risk of 15% or greater of having a cardiovascular event in the next ten years.

#### **CVD checks in the community (carried out by Healthworks)**

Wirral residents aged 40-74 are offered a 30 minute health check in different venues around the borough to target those thought to be less likely to attend their GP practice. The health check is used to calculate an individual's CVD risk and clients are then given comprehensive, personalised advice about their health, reducing their risk and signposted to appropriate services. The results from the health check are fed back to the individuals GP so that they can be followed up if necessary.

In 2009-10, 1,605 people were given a 30 minute health check. Figure 3.3a shows how clients were distributed across the deprivation quintiles.

**Figure 3.3a: Rate of clients attending community (Healthworks) CVD checks in 2009-10 by deprivation quintile and gender**



Source: NHS Wirral Performance & Public Health Intelligence Team (Locality Analysts)

As Figure 3.3a shows, the highest rate of attendance to community CVD checks was by clients from the most deprived quintile.

### **CVD checks via primary care LES (Locally Enhanced Service)**

The CVD LES (Local Enhanced Service) was set up in Wirral as a service for GPs to identify and invite individuals for review where they had a risk of 15% or greater of a cardiovascular event in the next ten years. Risk scores were based on a calculation from the following information about the patient:

- Age
- Gender
- Smoking status – all smokers should be asked if they want to quit and referred to smoking cessation services
- Family history of CHD
- Ethnicity
- Body mass index
- Total fasting cholesterol
- Blood pressure

The main risk calculators used by Wirral GPs are QRISK and Framingham. Practices sometimes use average readings for individuals where a blood pressure or cholesterol reading is missing. The programme aims to screen everyone in Wirral aged between 40 and 74 on a five year cycle.

Up to the end of June 2010, a total of 53,987 patients were screened for vascular risk (46% of the target population for screening). Figure 3.3b shows the percentage of patients assessed for cardiovascular risk broken down by gender and deprivation

**Figure 3.3b: Percentage of patients assessed for cardiovascular risk by deprivation (as of June 2010)**

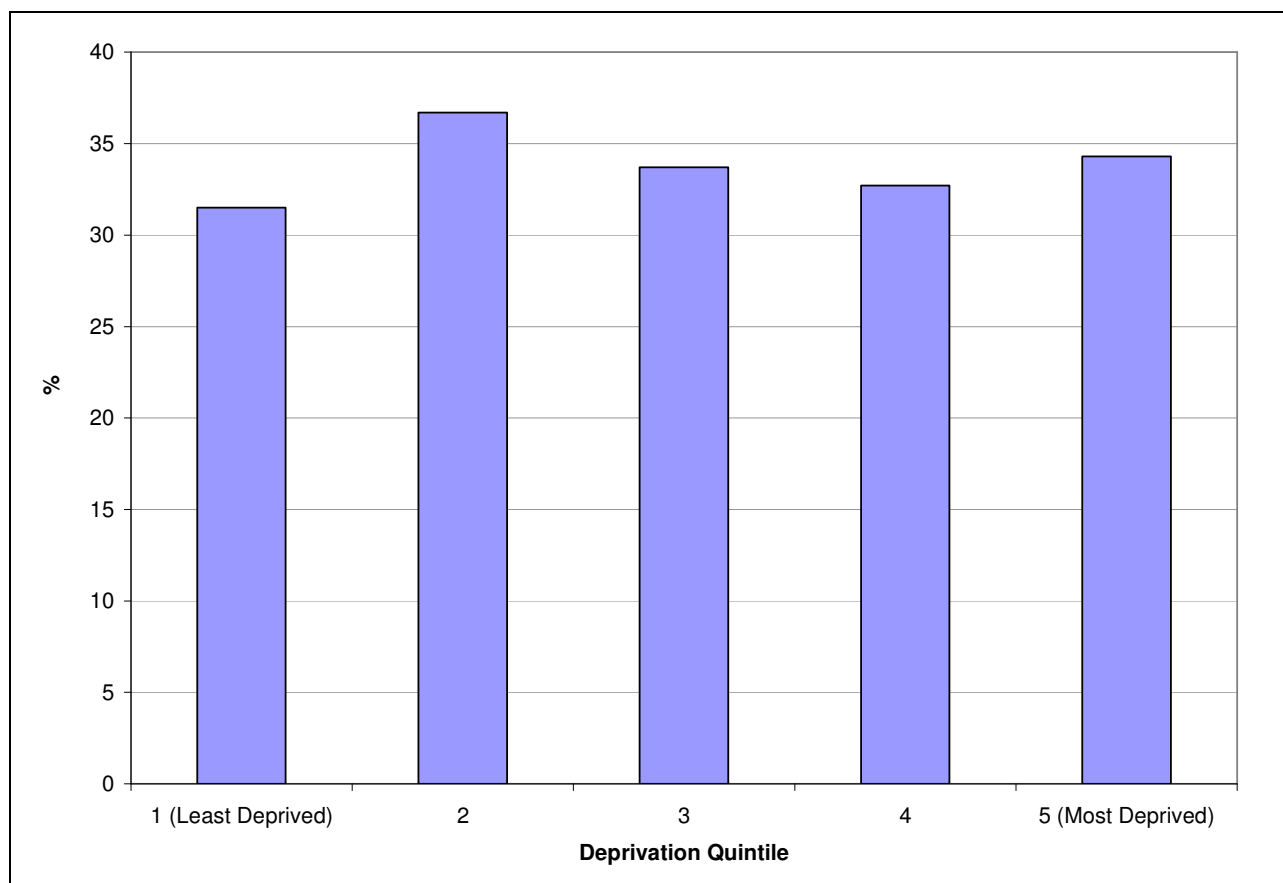


Figure 3.3b shows that there is no clear pattern for the proportion of patients assessed for cardiovascular risk currently. These figures however, should be interpreted with caution as the deprivation quintiles for each patient are based on the patients' registered GP practice IMD (Index of Multiple Deprivation) score, *not* the patient postcode. Patient postcode data is currently unavailable for CVD LES data.

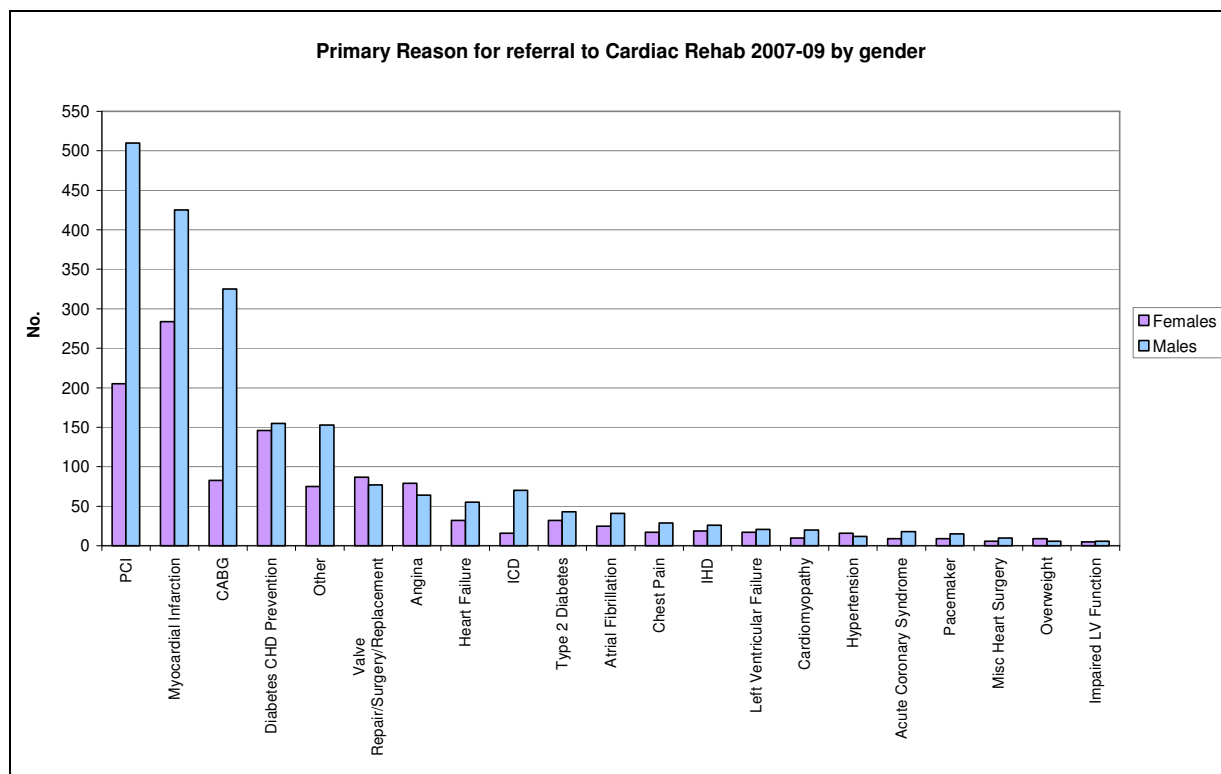
**Key Messages:** The Wirral Lifestyle & Weight Management Service and Stop Smoking Service appear to be performing well in terms of equity with the majority of clients originating from the most deprived areas of Wirral. Community based CVD checks had a high proportion of clients from the target groups in 2009-10. The primary care LES has resulted in very large numbers of clients having had a check as of June 2010, but there could be an increased emphasis on targeting the most deprived groups/practices with large numbers of deprived patients.

## 4. Secondary prevention

### 4.1 Cardiac Rehabilitation

Cardiac Rehabilitation is referral only service for clients who have a diagnosed cardiac condition, with the bulk of referrals coming from secondary care (following Mi or revascularisation for example). Figure x below shows the main reason for referral into the service for the three years 2007-2009 (inclusive) by gender.

**Figure 4.1a: Reason for referral to cardiac rehabilitation by gender 2007-09 (3 years pooled)**



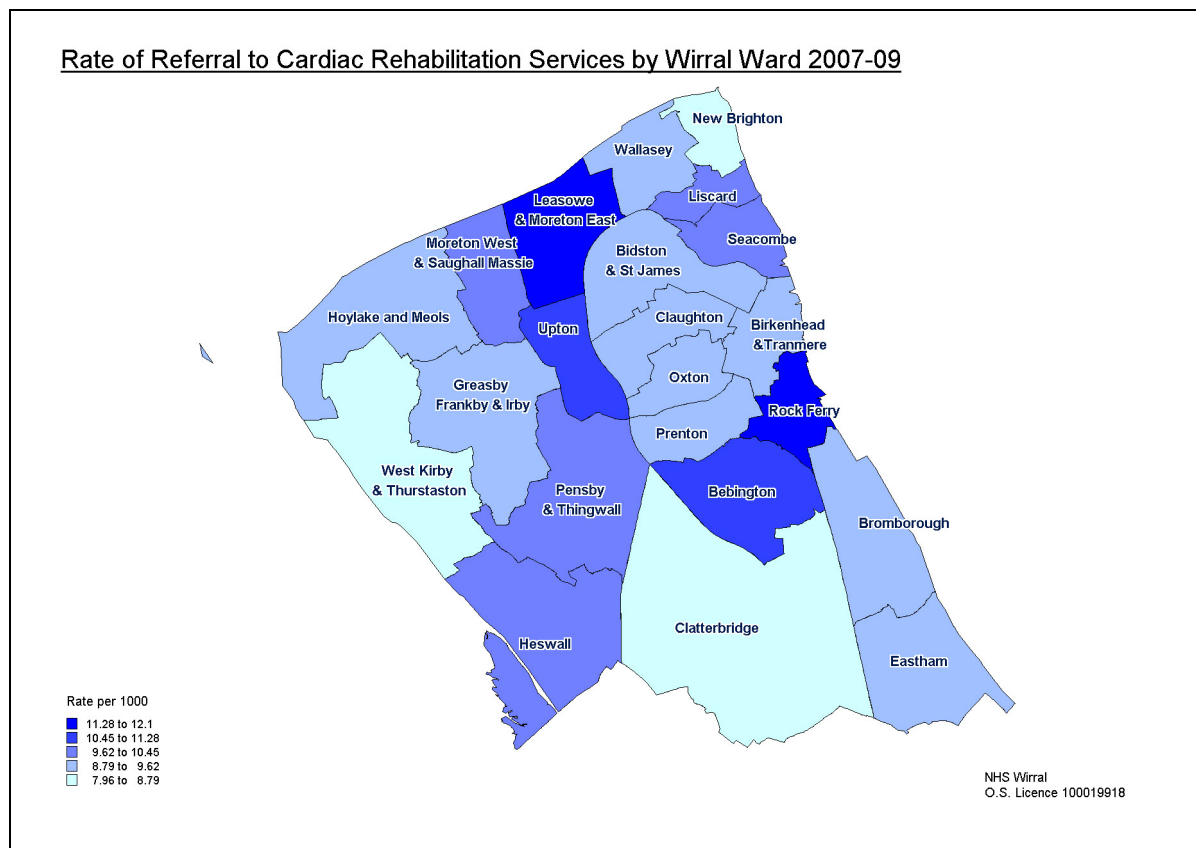
Source: Wirral Cardiac Rehabilitation Database, 2010

Notes: Referrals numbering less than 10 in total not shown. Some categories from the original service database combined (e.g angioplasty, PTCA and PCI)

As Figure 4.1a shows, men are referred to Cardiac Rehab in much greater numbers than women by a ratio of almost 2:1. As men have higher mortality rates from CHD (and premature mortality), this to be expected. The most common reason for referral is Myocardial Infarction followed by Percutaneous Coronary Intervention and Coronary Artery Bypass Graft.

Map 4.1a shows where referrals to Cardiac Rehab have come from (clients home postcodes) over the past three financial years. Data is shown by ward.

**Map 4.1a: Rate (per 1,000 of ward population) of referral to Cardiac Rehabilitation Service by Wirral ward: 2007-09 (3 years pooled)**



Source: Wirral Cardiac Rehabilitation Centre, 2010

The rate of referral to cardiac rehabilitation by ward shows a mixed picture. Referrals appear highest for Rock Ferry and Leasowe and Moreton East, both wards with significant levels of deprivation, so this is positive. However, it would be expected that rates of referral to cardiac rehab from Birkenhead & Tranmere and Bidston & St. James would be higher, given their level of deprivation and mortality from CHD (see Section 2, CHD mortality and prevalence). Also, it should be noted that due to limitations of the current cardiac rehabilitation database, this picture does not necessarily reflect those who actually attended the service, only those who were referred. Currently, there is no way to accurately distinguish those who attend from those who do not attend. This makes looking at attendances from the point of view of equity impossible. This may change however, when the service implements a new system, planned for the end of 2010.

**4.2 Referral to Intermediate Heart Centres (IHCs)**

There are two IHC's in Wirral, Birkenhead and Wallasey. Table 4.2a below shows the number and rate of referrals to the IHCs between January and December 2009.

**Table 4.2a: Number & rate of referral to IHCs by locality, Jan-Dec 2009**

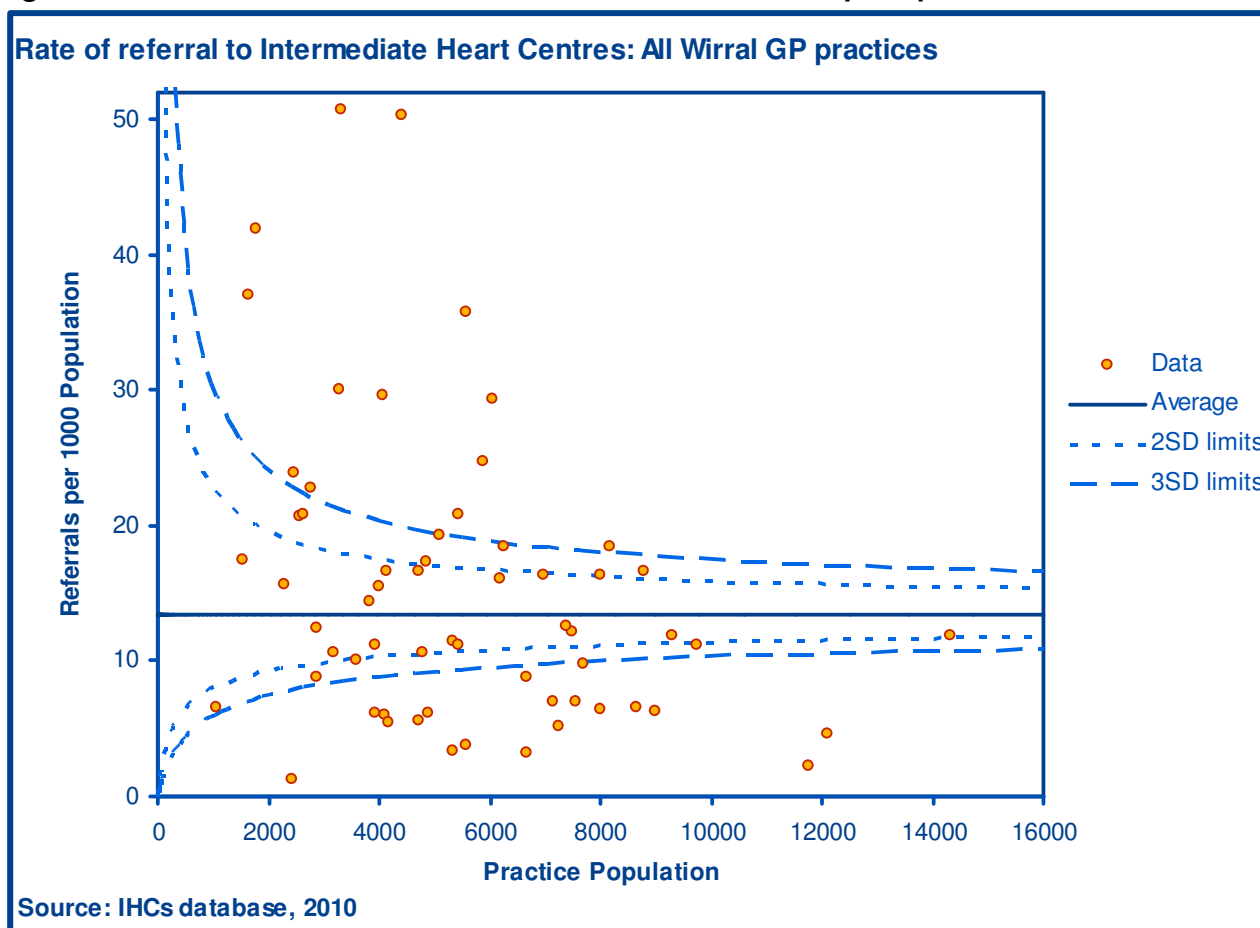
| Locality      | No. of referrals | Rate of referral (per 1k practice populations) |
|---------------|------------------|--|
| Birkenhead    | 2360             | 15.49  |
| Wallasey      | 1395             | 19.36  |
| Bebington     | 830              | 7.74   |
| <b>Wirral</b> | <b>4585</b>      | <b>13.83</b>                                   |

Source: IHCs database, 2010

As Table 4.2a shows, Bebington locality has the lowest *rate* of referral to the IHCs, Wallasey the highest. Birkenhead has the highest *number* of referrals, Bebington the lowest.

Figure 4.2a below shows the rate of referral (per 1,000 practice population) for all Wirral GP practices in a funnel plot chart. Funnel plots make it easier to identify practices which are *significantly* different in their referral rates compared to the whole group (of all Wirral practices).

**Figure 4.2a: Rate of referral to Intermediate Heart Centres, by GP practice, Jan-Dec 2009**



Source: IHCs database, 2010

As Figure 4.2a above shows, there are 18 practices with rates of referral which are significantly lower than the overall Wirral average (shown by dots *below* the line of 3 standard deviations away from the mean). Of those 18 practices which are low referrers (significant at 0.001 level), 11 are Bebington Locality practices, 1 is a Wallasey practice, the remaining 6 are Birkenhead practices (see Appendices for full list by practice name).

There are 12 practices with rates of referral which are significantly *higher* than the overall Wirral average (shown by dots *above* the line of 3 standard deviations away from the mean). Of those 12 practices which are high referrers (significant at 0.001 level), 6 are in Wallasey and 6 in Birkenhead. There are none in Bebington Locality.

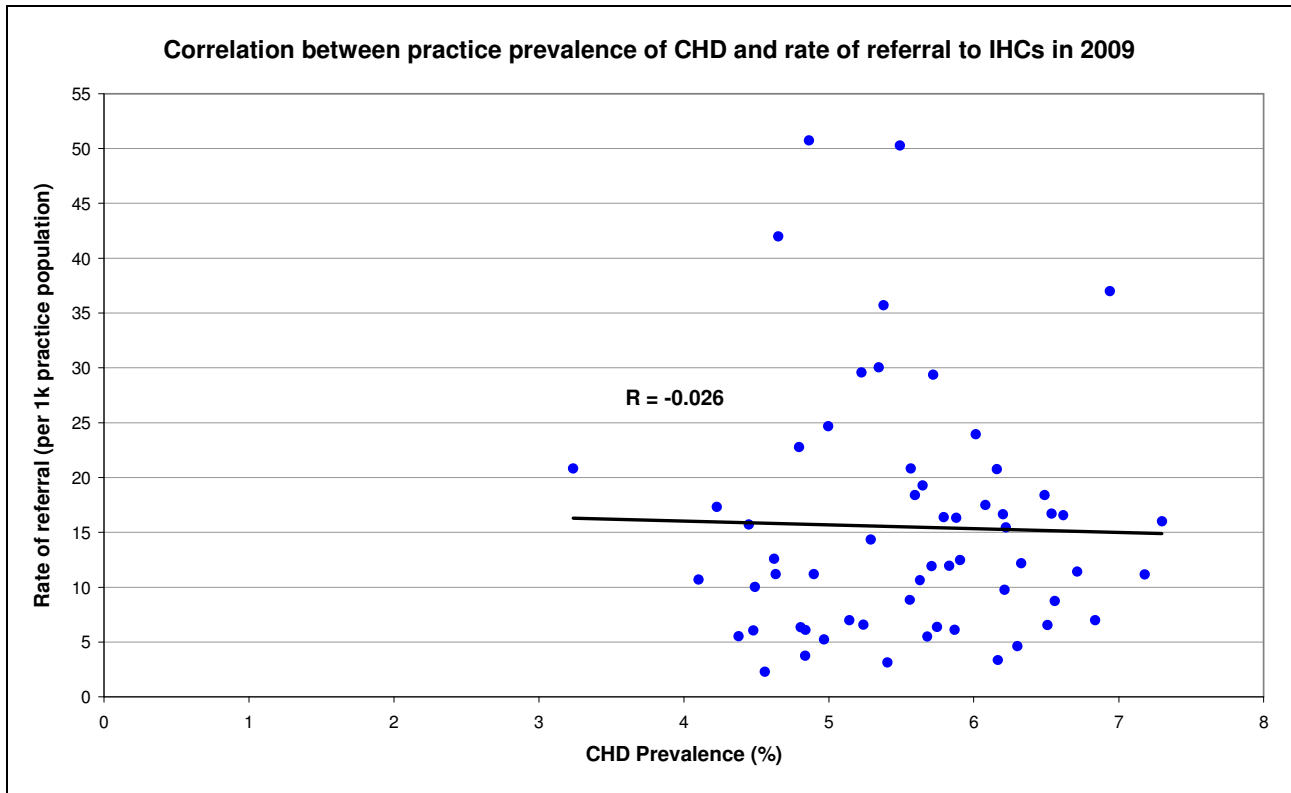
It appears that Bebington locality has a low rate of referrals compared to their population. This supports the information in Table 4.2a above. This may be due to patients from West Wirral being more likely to opt to go to Arrowe Park, rather than Birkenhead or Wallasey Heart Centre's. This may be due to geography or other factors such as patient beliefs about the different services available.



It is also useful however, to take into account practice prevalence of CHD and see whether this is associated with rate of referrals to the IHCs (we would expect it to be, if referrals were equitable).

Figure 4.2b shows the correlations between the rate of referral to IHCs and practice CHD prevalence, for each of Wirral's GP practices in 2009.

**Figure 4.2b: Correlation between referral rate to IHCs & practice prevalence of CHD, 2009**



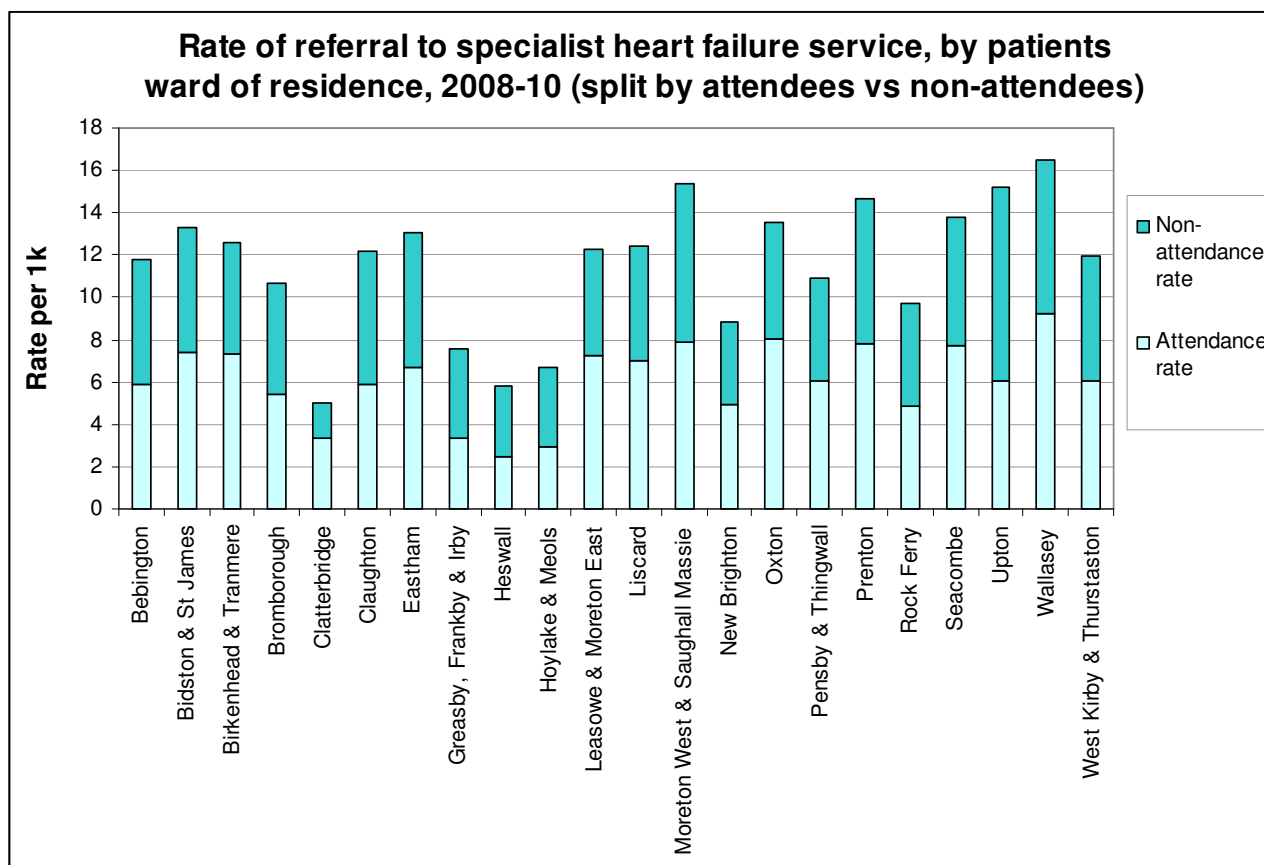
Source: ERPHO estimates of practice population and IHCs database, 2010

Figure 4.2b above shows an extremely weak negative correlation equation of  $R = -0.026$  which if anything, shows that practices with higher prevalence of CHD tend to refer less. This is not an equitable picture, as it would be expected that referrals would be associated with high prevalence of CHD (however, this could be due to a factor already mentioned, i.e. that some patients may just choose to go to services located closest to them).

### Specialist Heart Failure Service

The IHC database separates out patients attending the Heart Failure service. Figure 4x below shows the rate of referral specifically for heart failure patients to the Intermediate Heart Centre specialist Heart Failure service during 2008-2010 by ward.

Figure 4.2c: Rate of referral to specialist heart failure service, by ward, 2008-10



Source: Intermediate Heart Centre database, 2010

Pattern shown above may reflect geographical location of services, with high rates of referral for patients from Birkenhead and Wallasey areas where the two centres are located. Low referrals from areas such as Heswall, Clatterbridge and Hoylake & Meols could mean patients from these wards electing to go to Arrowse Park because it is nearer to their home.

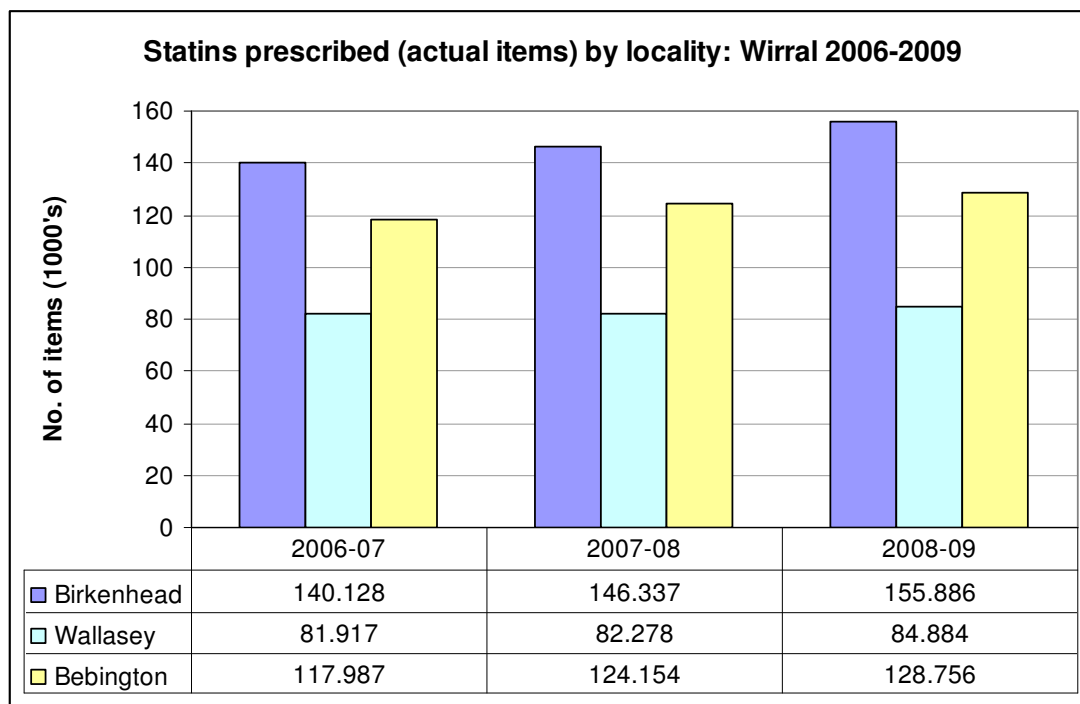
### 4.3 Prescribing information

Statins are the main types of medicine for lowering cholesterol in the prevention and treatment of CHD (and CVD). Statins can help particularly when used with other interventions including eating healthily, undertaking regular physical activity and stopping smoking. In the three years to 2007, the level of statin prescribing in the UK more than doubled and is thought to be significantly responsible for cutting the number of deaths from coronary heart disease and heart attacks each year [1]. NICE recommends that low-cost statins are prescribed where clinically appropriate in the first instance to all adults over the age of 16 who have clinical evidence of CVD and to all those who are assessed as being at 'high risk' of developing CVD, but currently may have no signs or symptoms [2].

Prescribing information for Wirral is available by GP practice and the charts below shows prescribing information for statins over the last three financial years (both items and prescribing costs).

For a fuller breakdown by GP practice of costs and items prescribed, please refer to the Appendices.

**Figure 4.3a: Statin prescribing (items) by Wirral locality: 2006-09**



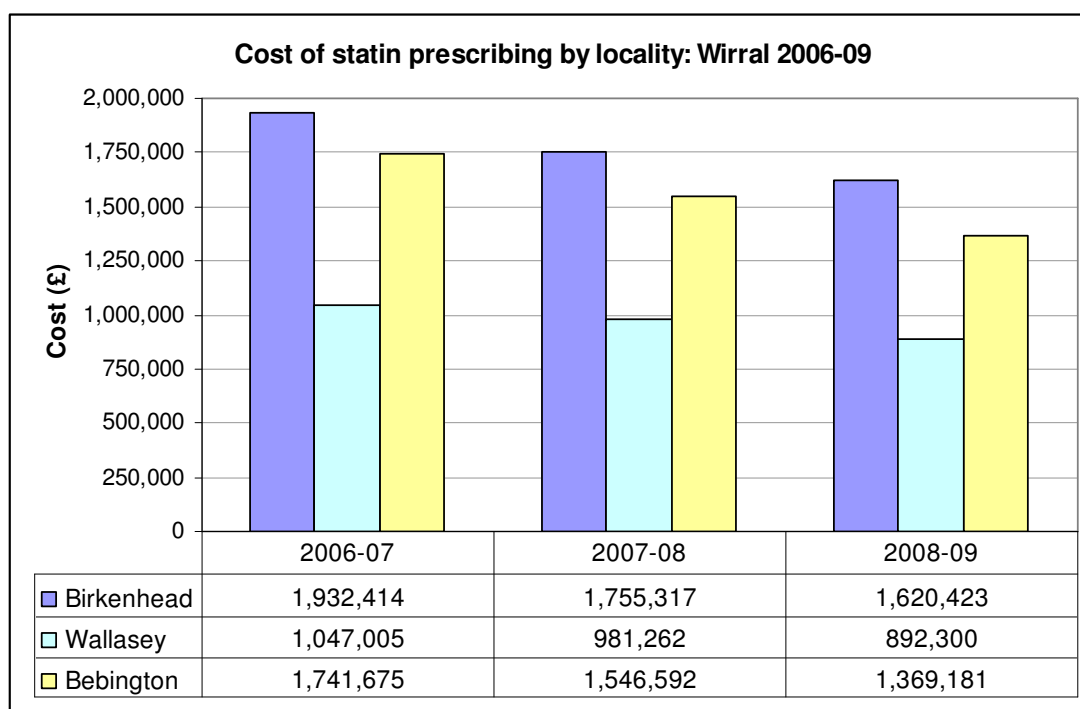
Source: NHS Wirral Information Team.

Note: includes Rosuvastatin Calcium, Simvastatin & Ezetimibe, Atorvastatin, Cerivastatin, Fluvastatin Sodium, Lovastatin and Pravastatin Sodium, Simvastatin

As Figure 4.3a shows, statin prescribing has increased every year over the last three financial years in all three Wirral localities.

Between 2006-07 and 2008-09, prescribed items (of statins) increased by 11.2% in Birkenhead, 3.6% in Wallasey and 9.1% in Bebington & West Wirral.

**Figure 4.3b: Cost of statin prescribing by Wirral locality: 2006-09**



Source: NHS Wirral Information Team.

Note: includes Rosuvastatin Calcium, Simvastatin & Ezetimibe, Atorvastatin, Cerivastatin, Fluvastatin Sodium, Lovastatin and Pravastatin Sodium, Simvastatin

As Figure 4.3b shows, the cost of statin prescribing has fallen in all three Wirral localities in the last three financial years. In Birkenhead, costs have fallen by 19%, in Wallasey by 17% and in Bebington by over a quarter (27%). This is despite increases in the number of items prescribed and would indicate NICE guidelines to prescribe low-cost statins are being implemented. Statin prescribing information which would enable analysis by patients ward of residence is not available by patient postcode (only by GP practice and locality) so we cannot comment on equity.

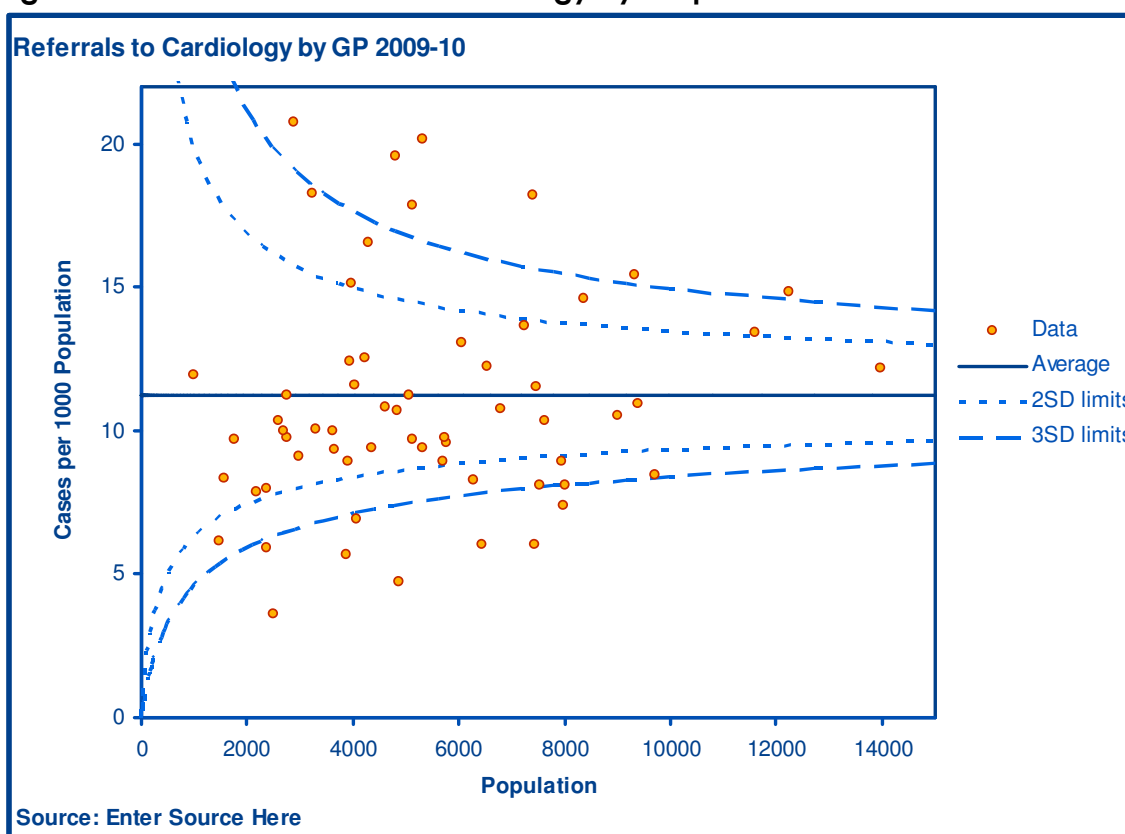
**Key Messages:** Referral rates to cardiac rehabilitation from the wards of Birkenhead, Seacombe and Bidston are not equitable, given the rate of CHD mortality in these areas. Rates of referral to the Intermediate Heart Centre are lowest in Bebington Locality and highest in Wallasey. Referrals (by practice) to the Intermediate Heart Centres are also not correlated with practice rates of CHD. These effects could be due to factors such as some patients choosing to go to services located closest to them. The number of items of statins prescribed is increasing, while at the same time, costs are decreasing. This would indicate NICE guidelines are being followed. We cannot be sure prescribing is equitable however, as data is not available by patient postcode.

## 5. Treatment

### 5.1 Referrals to secondary care

Referrals to secondary care in 2009-10 by Wirral GP practice is shown below in a funnel chart. Funnel charts are a useful estimate of expected 'performance' of a system. They show the group average and whether there are any 'outliers' worthy of further investigation (outliers are those practices with rates of referral which are more than 3 standard deviations away from the group mean).

**Figure 5.1a: Rates of referral to cardiology by GP practice**



Source: NHS Wirral Information Team, and APHO Analytical Tool

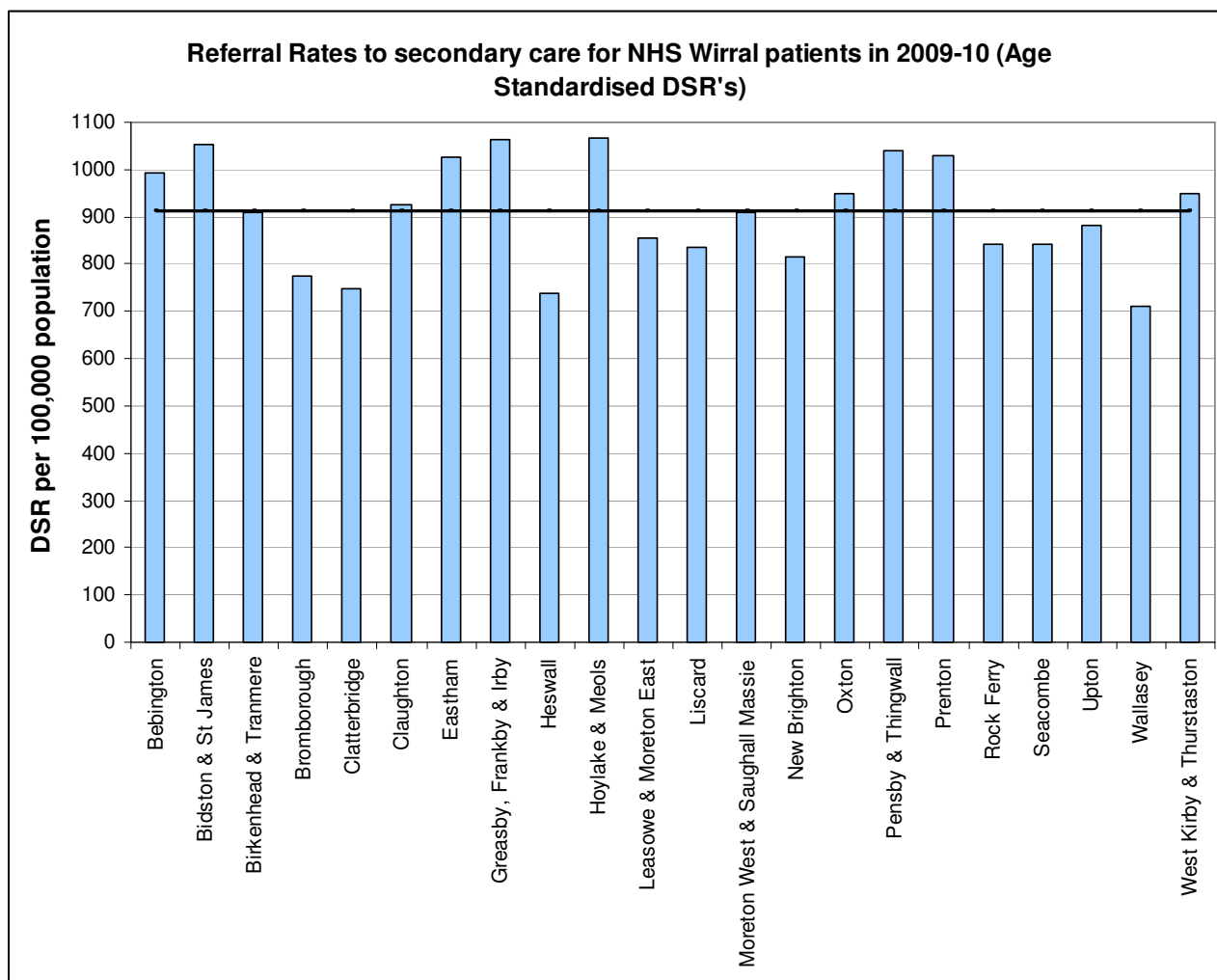
Figure 5.1a above shows a number of practices which have significantly higher and lower rates of referral to cardiology, compared to the group average.

Those practices referring significantly **higher** numbers of patients than average to cardiology are: West Kirby Health Centre (Parry), West Kirby Health Centre (Smethurst), Greasby Medical Centre, Silverdale Medical Centre, Civic Medical Centre, Heswall & Pensby Medical Centre and Gladstone Medical Centre.

Those practices referring significantly **lower** numbers of patients than average to cardiology are: Miriam Medical Centre, Parkfield Medical Centre (Chesters), Moreton Health Centre, Somerville Medical Centre, Grove Surgery, Liscard Group Practice, Spital Surgery and Woodchurch Medical Centre.

Rate of referral to secondary care by patients ward of residence is shown below (age standardised).

**Figure 5.1b: Rate of referral to secondary care by ward, 2009-10 (age standardised DSRs)**



Source: SUS (referrals) & ONS 2007 Mid-Year population estimates (ward populations)

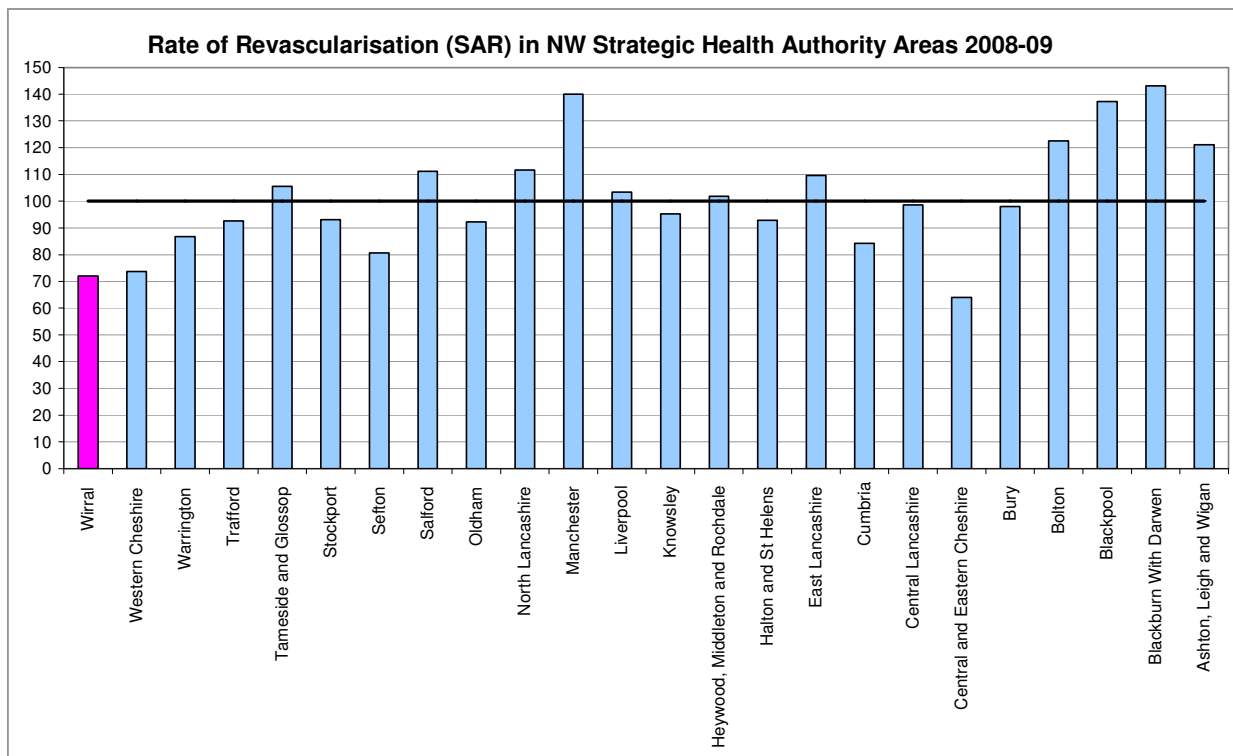
Figure 5.1b shows rate of referral to secondary care by Wirral ward (Wirral rate is shown by black line). Hoylake & Meols ward has the highest rate of referral, followed by Greasby, Frankby & Irby ward, Bidston & St. James ward. Lowest rate of referral is from Wallasey.

**Key Messages:** Referral to secondary care appears lower in practices in the deprived, east of Wirral and higher in practices in Wirral west. When referrals are examined as a rate by ward (age standardised), Wallasey, Clatterbridge & Heswall appear to have the lowest referral rates to secondary care (relative to the ward population).

## 5.2 Revascularisations

Coronary revascularisation is carried out to improve the flow of blood to the heart via vessels that have suffered narrowing due to build up of fatty deposits. The two main procedures to deal with this occlusion are Coronary Artery Bypass Graft (CABG) and angioplasty (or PCI or PTCA – Percutaneous transluminal coronary angioplasty). PTCA is a less invasive procedure than CABG and outcomes have improved following the introduction of drug-eluting stents. It also costs significantly less than CABG, so rates have increased in recent years. There has however, been wide variation in the provision of angioplasty and UK-wide, NHS provision was found to be inequitable and insufficient to meet demand or meeting the needs of the population in 2006 [4]. Figure 5.2a below shows the Wirral revascularisation rate compared to other PCTs in the North-West.

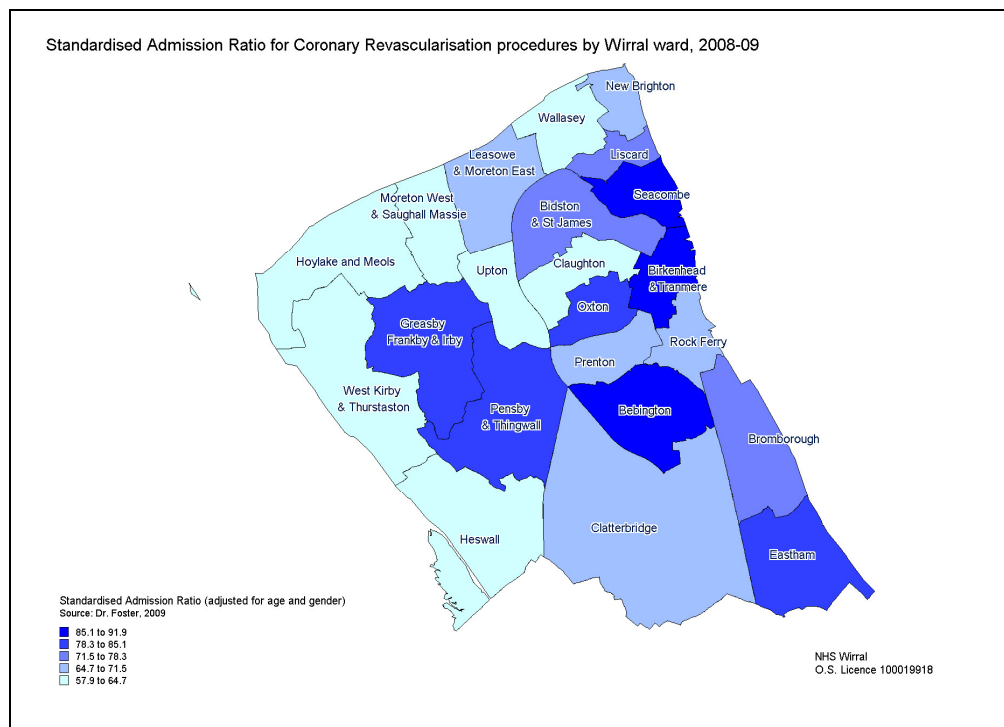
**Figure 5.2a: Revascularisation rate for North-West Strategic Health Authority PCTs 2008-09**



Source Dr.Foster, 2010

Figure 5.2a shows that in 2008-09, Wirral performed around 30% less revascularisations than the average for England overall (Wirral SAR = 72). In the NW Strategic Health Authority area, only Central & Eastern Cheshire had a lower rate of revascularisation procedures.

### Map 5.2a: SARs for coronary revascularisation procedures by Wirral ward 2008-09



Source: Dr.Foster, 2010

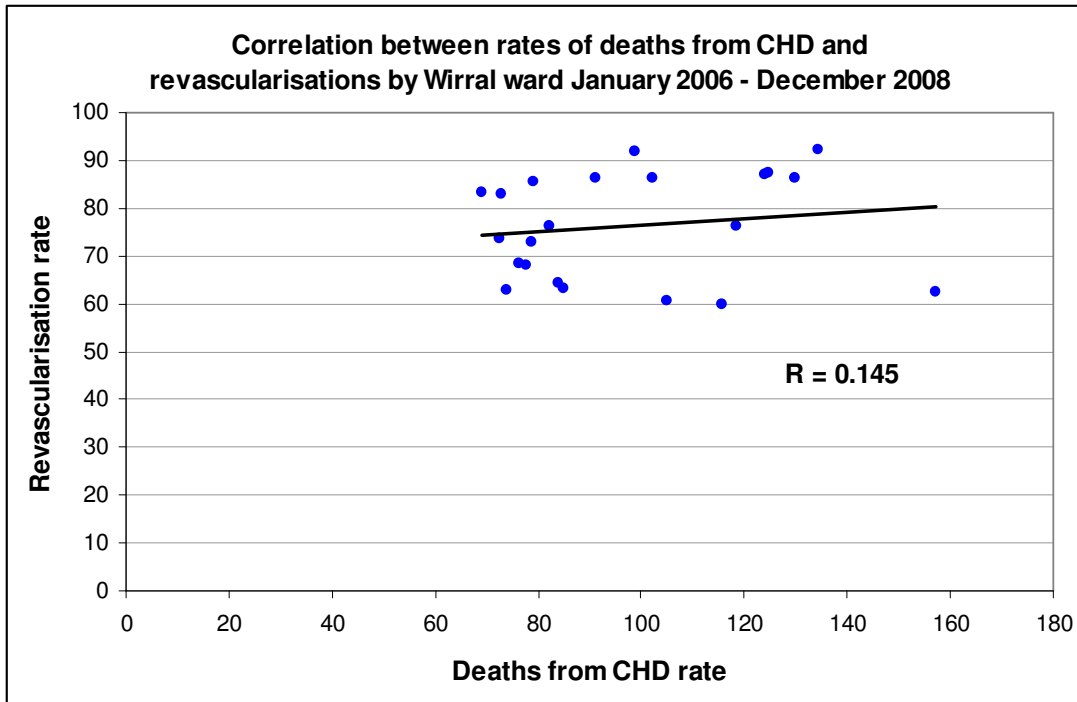
As Map 5.2a shows, although rates of revascularisation in Birkenhead & Tranmere and Seacombe are the highest in Wirral, they are still less than 100 and so are below the England average. Although it is encouraging that the highest rates of revascularisations in Wirral are to be found in the areas with high rates of mortality from CHD, rates in these areas need to be still higher. Also, rates in Rock Ferry, Bidston, Liscard and Leasowe & Moreton East (which also all have high mortality rates from CHD) could be increased considerably, which would further reduce inequity. Table 5.3a below shows the trend in number of revascularisations in Wirral since the last equity audit.

**Table 5.3a: Trend in number of revascularisation procedures in Wirral**

|                                 | 2004-05    | 2005-06    | 2006-07    | 2007-08    | 2008-09    |
|---------------------------------|------------|------------|------------|------------|------------|
| PCI                             | 185        | 232        | 248        | 268        | 267        |
| CABG                            | 167        | 181        | 190        | 131        | 135        |
| Wirral Population               | 313,400    | 312,300    | 311,200    | 310,900    | 310,800    |
| <b>Total revascularisations</b> | <b>352</b> | <b>413</b> | <b>438</b> | <b>399</b> | <b>402</b> |

In order to assess how revascularisations compare to levels of CHD related ill-health, Figure 5.3b below shows the correlation between rates of revascularisation and rates of death from CHD. If revascularisation procedures are taking place in an equitable way, then we would expect to see the wards (represented by the dots on the graph) with the highest rates of death from CHD, also showing the highest rates of revascularisations.

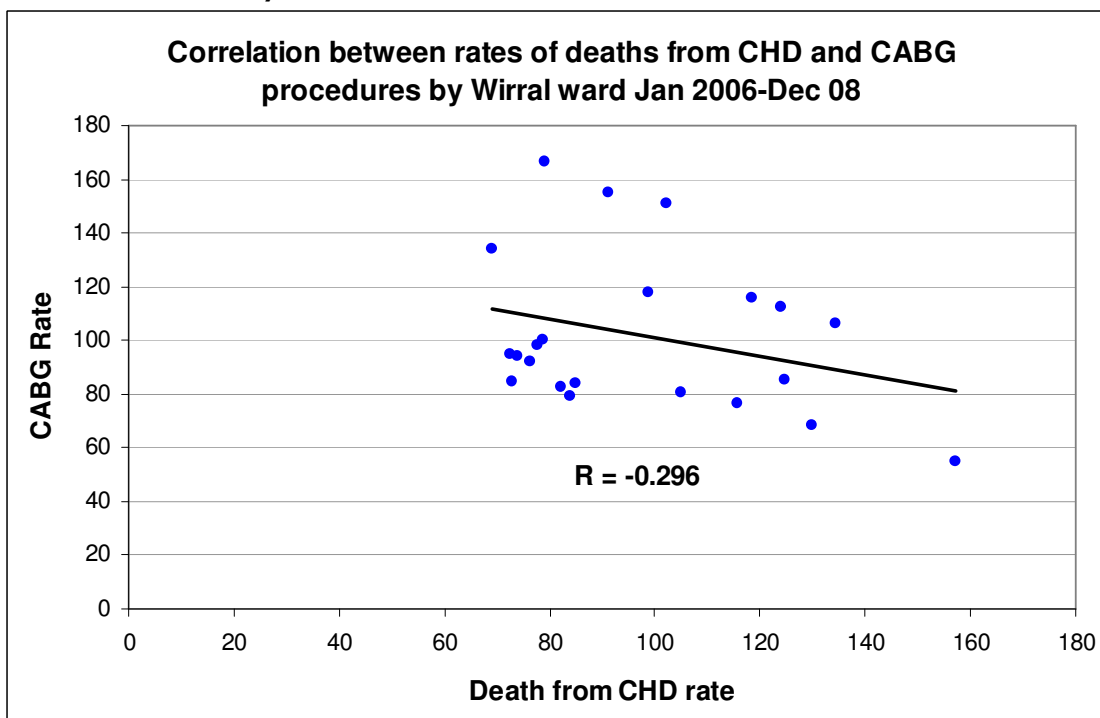
**Figure 5.3b: Correlation between rates of death from CHD and revascularisations by Wirral ward 2006-08**



Source: Dr.Foster, 2010

As Figure 5.3b shows, there is a weak, positive correlation between death rates from CHD and rates of revascularisation. In other words, although the correlation is in the direction you would expect, there is significant room for improvement in increasing the rate of revascularisation in patients living in the wards with the highest death rates. Figures 5.3c and 5.3d below show the same correlations, but examine CABG and PTCA's separately.

**Figure 5.3c: Correlation between rates of deaths from CHD and CABG procedures by Wirral ward January 2006 - December 2008**

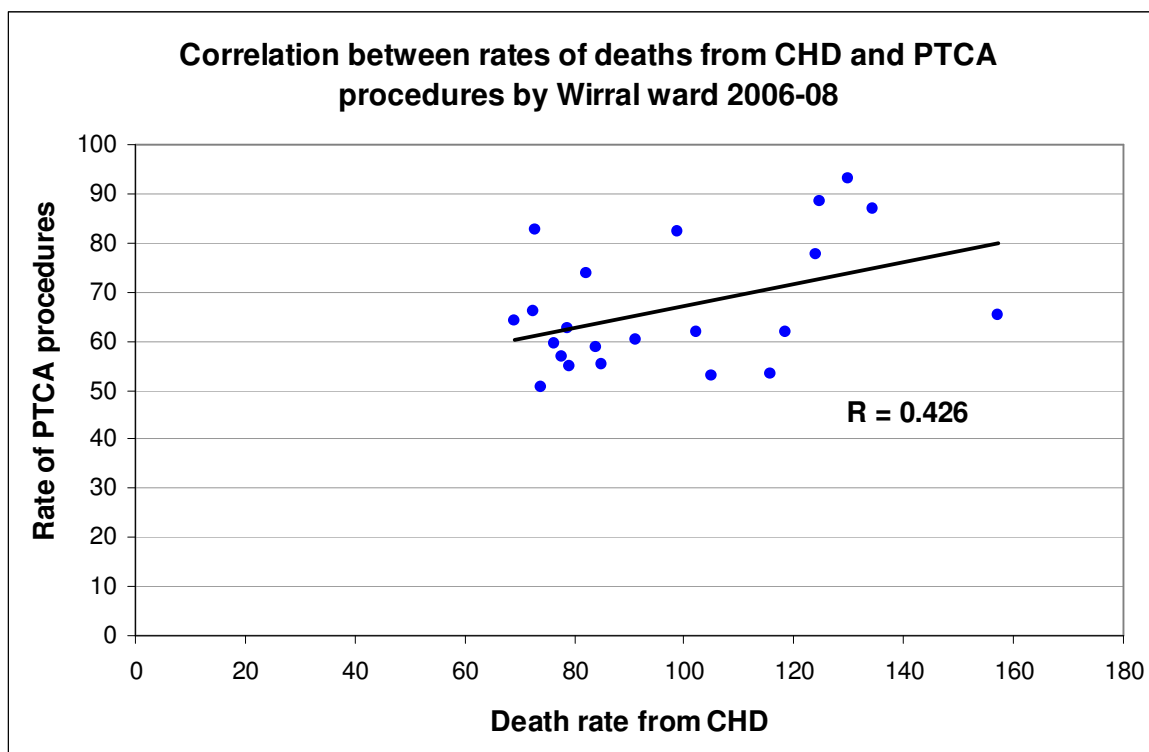


Source: Dr.Foster, 2010



Figure 5.3c shows a weak, negative correlation between CABG procedures and CHD death rates. In other words, the wards with the highest CHD death rates are those with the lowest CABG procedure rates, which is not equitable.

**Figure 5.3d: Correlation between rates of deaths from CHD and PTCA (PCI) procedures by Wirral ward January 2006 - December 2008**



Source: Dr.Foster, 2010

Figure 5.3d is showing a positive correlation between PTCA procedures and deaths from CHD. In other words, the wards with high rates of death from CHD tend to be those which also have the highest rates of PTCA procedures. This is what would be expected and is encouraging. It is unclear as to why CABG's show a different (and less equitable) pattern than PTCA's.

**Key Messages:** Wirral needs to be performing at least 30% more revascularisations than was the case in 2008-09 to bring us into line with the England average. Although rates are highest in the areas with the highest rates of CHD mortality, they need to increase still further. There appears to be a difference in equity between CABG and PTCA procedures. PTCAs appear to be carried out in a broadly equitable way (i.e wards with high death rates from CHD have high PTCA procedure rates). For reasons which are unclear, this is not the case with CABG provision, which appears to be inequitable.

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