

## Cervical Cancer (women aged 35+) Health Equity Audit

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## Executive Summary

### Incidence

- Incidence of cervical cancer in Wirral appears to be decreasing in the 35-49 age group (the borough has rates which are below England and NW).
- Incidence appears to be increasing for the 50+ age group however (rates are above England and NW). It should be noted however that small numbers make interpretation problematic. One or two extra cases can result in increases in rates.

### Mortality

- The number of deaths from cervical cancer in Wirral annually is small, making robust conclusions difficult
- Mortality is consistently worse in the 50+ age group compared to the 35-49 age group.
- There does not appear to be a clear relationship between deprivation and mortality from cervical cancer in Wirral
- For both of the age groups analysed here, Wirral was performing fairly well in terms of reducing mortality rates compared to England, NW and peers until 2010, but in 2011, rates have worsened

### Survival

- Five year relative survival in the 50+ age group is poor compared to England, the North-West and the younger (35-49s) age group in Wirral.

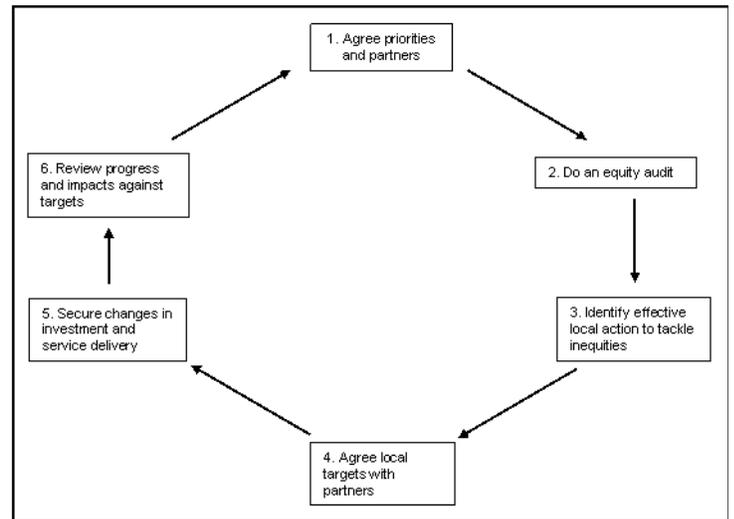
### Screening

- Wirral just missed the 80% screening target in 2010-11(overall), but this hides huge variation by age. After age of 50, screening rates drop off dramatically. Given that women aged 50+ in Wirral have poor (5 year) survival rates compared to England and the North-West, this is a significant issue
- Mosaic does appear to show slight relationship between deprivation and screening, with most deprived groups most likely to have not been screened.

## Health Equity Audit

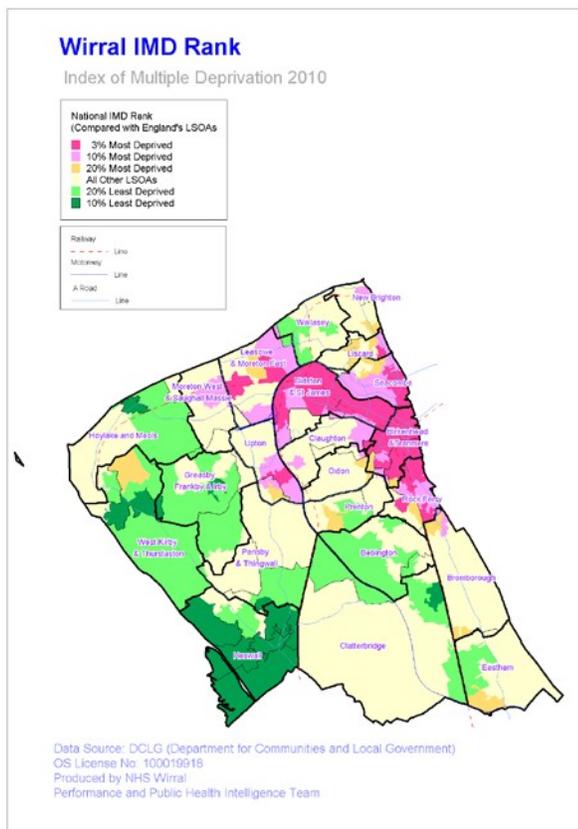
Health Equity Audit (HEA) has been identified as a key tool for embedding evidence on health inequalities into mainstream NHS activity such as planning, commissioning and service delivery. It is now a mandatory responsibility of Primary Care Trusts (PCTs) and was included as part of the National Planning Guidance for 2005-8 as well as the 2004 Healthcare Commission performance ratings for PCTs. Health equity audit aims to identify how fairly services or other resources are distributed in relation to the health needs of different groups and areas, and the priority actions required to provide services relative to need. The overall aim of HEA is to distribute resources relative to need. It is a cyclical process, as illustrated in points 1 to 6 in Figure 1.

**Figure 1: The Health Equity Audit Cycle**



Source: DoH 2003

## Wirral: demographic information



- Wirral is a borough of contrast, both in its physical characteristics and demographics. Rural areas and urban and industrialised areas sit side by side in a compact peninsula of 60 square miles. There is around 30 miles of coastline
- There is a lower proportion of younger adults in their twenties and thirties and a higher proportion of older people in Wirral compared to England and Wales
- The 65+ age group is expected to increase at a faster rate than any other age group over the next two decades. Between 2006 and 2031 it is estimated that this population group will have increased by 45% in Wirral
- The Index of Multiple Deprivation (IMD) 2010, ranked Wirral overall as being in the bottom 20% of areas nationally, but this masks significant health inequalities. The internal life expectancy gap in Wirral is one of the largest in England for example.
- The map (left) highlights the differential in deprivation between the east and west of Wirral
- ONS estimates indicate that 5% of the Wirral population are from black and minority ethnic (BME) groups
- For more information on health and wellbeing in Wirral, consult our JSNA at <http://info.wirral.nhs.uk>

## Background and context

### Cervical Cancer

Cervical cancer accounts for 2 out of every 100 cancers diagnosed in women in the UK [1]. In 2008, 2,369 women were diagnosed with cervical cancer in England. Cervical cancer resulted in 753 deaths in the same year [4].

Common symptoms of cervical cancer are bleeding from the vagina between periods or after sex, vaginal discharge that smells unpleasant and/or discomfort or pain during sex [1].

Around 4 million women are invited for cervical screening each year in England. The programme aims to reduce the number of women who develop invasive cervical cancer and the number who die from it. National Cancer Intelligence Network suggests that the screening programme prevents around 4,500 deaths from cervical cancer each year in the UK [2].

### Cervical Cancer in Wirral

In 2009, there were 18 new cases of cervical cancer diagnosed in Wirral, compared to 43 in 1985. In 2010, there were 10 deaths in Wirral from cervical cancer, 7 of which were in the 50+ age group and 2 of which were in the 35-49 age group. According to the North West Cancer Intelligence service, none of these could be categorised as 'excess' [3]. See Appendix 1 for table showing annual deaths from cervical cancer in Wirral since 1985.

Approximately 24,700 women were called for cervical screening in Wirral in 2010-11, of whom almost 19,800 were screened (Open Exeter, 2012).

### Diagnosis & treatment

The cervical smear test is designed to detect pre-cancerous changes in the cervix (neck of the womb). The majority of women who have an abnormal smear or suspicious symptoms do not have cancer. Women with an abnormal smear (showing moderate or severe cell changes) will be referred for colposcopy.

If cancerous or pre-cancerous changes are detected, further testing to determine the stage (degree of spread) will follow and treatment will commence.

As with other cancers, survival rates are dependent on several factors, most notably stage at diagnosis, but of all women diagnosed in England, about 68 out of every 100 (68%) will live for at least 5 years. About 66 women out of every 100 will live for more than 10 years after diagnosis. Younger women have a better survival rates than older women, partly because younger women tend to be diagnosed at an earlier stage [1].

Inequalities are apparent for cervical cancer. In the most deprived areas of England, 12 women per 100,000 diagnosed with cervical cancer between 2000 and 2004. In the most affluent areas, 6 per 100,000 women were diagnosed with the disease during the same time period [2].

[1] Cancer Research UK. Downloaded from: <http://cancerhelp.cancerresearchuk.org/type/cervical-cancer/about/cervical-cancer-risks-and-causes>

[2] Deprivation doubles cervical cancer risk. Press release from NCIN 02/12/2008 Available at: <http://www.ncin.org.uk/publications/default.aspx>

[3] Additional Wirral PCT tables to the report "Cancer in the North West: Inequalities by PCT of residence and socio-economic status". North West Cancer Intelligence Network (2008) Main report available at: [http://www.nwcis.nhs.uk/documents/publications/inequalities\\_oct2010.pdf](http://www.nwcis.nhs.uk/documents/publications/inequalities_oct2010.pdf)

## Risk Factors

Infection with the **Human Papilloma Virus (HPV) is the major cause of cervical cancer**. There are over 100 types of HPV, only some of which are considered high risk for cancer of the cervix. HPV is passed from person to another through sexual contact and around 8 out of 10 people (80%) in the UK are infected with the HPV virus at some point during their lifetime. For most, the virus causes no harm and goes away without treatment. The high risk types of HPV however, can cause changes in the cells covering the cervix that make them more likely to become cancerous. Other risk factors are **smoking**, taking the **contraceptive pill**, having a **weakened immune system**, **early onset of sexual activity** and having a **large number of children** [1, 2].

Nationally, rates of cervical cancer are **higher amongst women living in deprived areas** and research suggests that these disparities may be due to lower rates of attendance for cervical screening, higher smoking rates and earlier than national average onset of sexual activity [2].

It is noteworthy that in 2006, around 20 per cent of women in England invited for cervical screening did not attend, but women in deprived areas were around 40 per cent less likely again to attend screening [2].

## HPV Triage

HPV triage involves automatically performing an additional test on cervical screening samples that show mild abnormalities (borderline/mild dyskaryosis). Only 15-20% of women require treatment following the detection of mild abnormalities. HPV triage detects the presence or absence of HPV. If HPV is found, the patient will be referred for colposcopy and if HPV is not found she will be returned to routine screening every 3 or 5 years depending on age. The test will also benefit women who have required treatment for cervical abnormalities by reducing the need for frequent screens when HPV is not detected. HPV triage will therefore eliminate unnecessary referrals and additional non-routine screening.

The NHS Cervical Screening Programme is coordinating the roll out of HPV triage during 2012; in Wirral HPV triage will be available from March 2012. The aetiology of cervical cancer with regard to HPV has allowed for the development of specific referral/treatment pathways, dependent on the presence or absence of HPV.

[1] Cancer Research UK. Downloaded from: <http://cancerhelp.cancerresearchuk.org/type/cervical-cancer/about/cervical-cancer-risks-and-causes>

[2] Deprivation doubles cervical cancer risk. Press release from NCIN 02/12/2008 Available at: <http://www.ncin.org.uk/publications/default.aspx>

[3] Additional Wirral PCT tables to the report "Cancer in the North West: Inequalities by PCT of residence and socio-economic status". North West Cancer Intelligence Network (2008) Main report available at: [http://www.nwcis.nhs.uk/documents/publications/inequalities\\_oct2010.pdf](http://www.nwcis.nhs.uk/documents/publications/inequalities_oct2010.pdf)

[4] Profile of Cervical Cancer in England. National Cancer Intelligence Network (2011). Available at: [www.ncin.org.uk](http://www.ncin.org.uk)

## Incidence

Figure 1: Trends in cervical cancer incidence (Directly Standardised Rates- DSRs) in England, North-West & Wirral, 1985-2009 (3 year rolling averages) in women aged 35-49

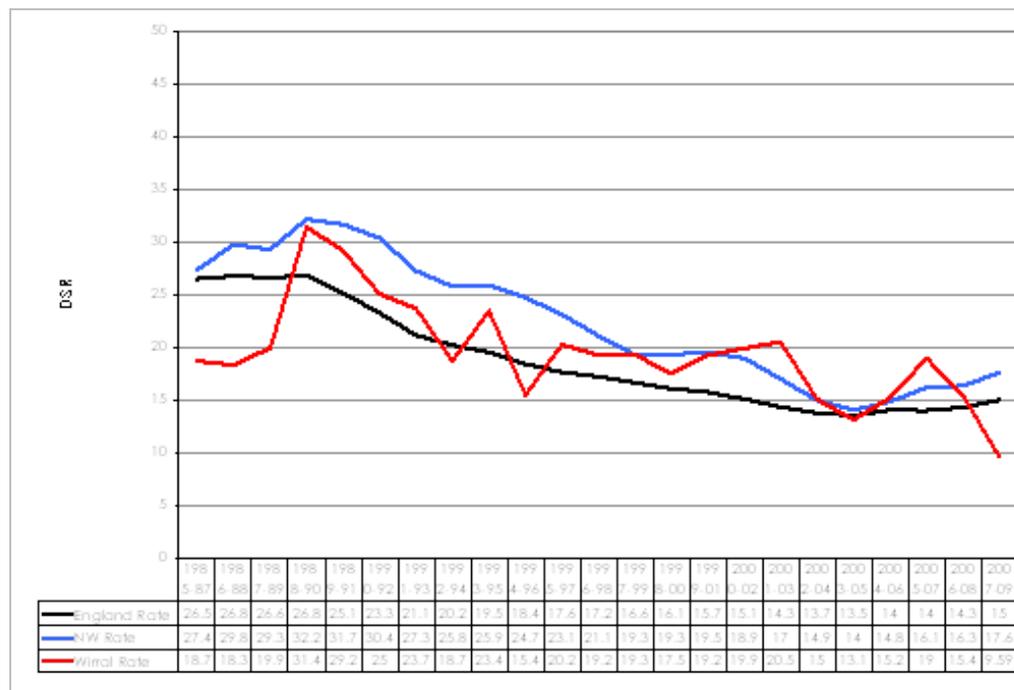


Figure 1 shows that the rate of new cases of cervical cancer in women aged 35-49 in Wirral in 2007-09 was lower than England and the North-West (non significant) and the lowest it has been since 1985. England and the North-West both saw their lowest rates since 1985 during 2003-05, but since then, rates have risen slightly. It should be noted however, that small annual numbers mean there will be more variation in Wirral rates.

Source: National Cancer Intelligence Network, 2012

Figure 2: Trend in cervical cancer incidence (Directly Standardised Rates- DSRs) in England, North-West & Wirral, 1985-2009 (3 year rolling averages) in women aged 50+

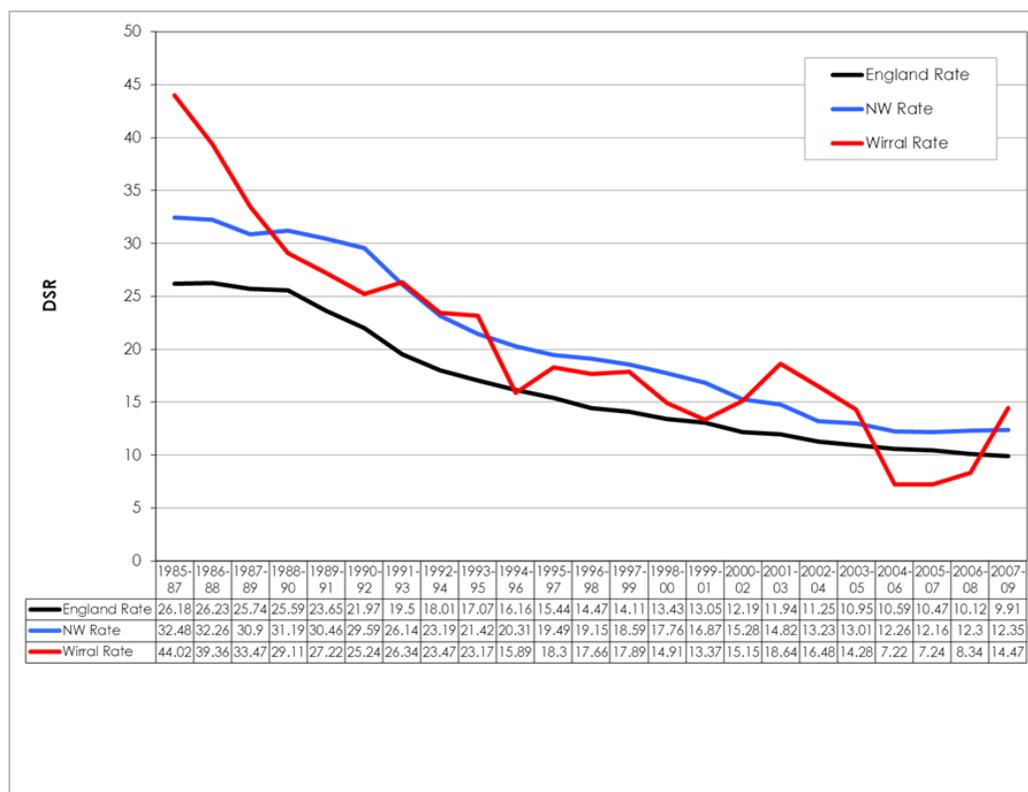


Figure 2 shows that the rate of new cases of cervical cancer in Wirral in 2007-09 in the 50+ age group exceeded that of England and the North-West (non significant). Rates in Wirral have now risen for the last 3 consecutive time periods compared to England and the NW which have plateaued. It should be noted however, that small annual numbers mean there will be greater variation in Wirral rates and the overall trend is downward.

Source: National Cancer Intelligence Network, 2012

## Mortality

### Mortality by region

Figure 3: Cervical cancer mortality (Standardised Mortality Ratios): North-West, Industrial Hinterlands group and Wirral, all ages (2007-09)

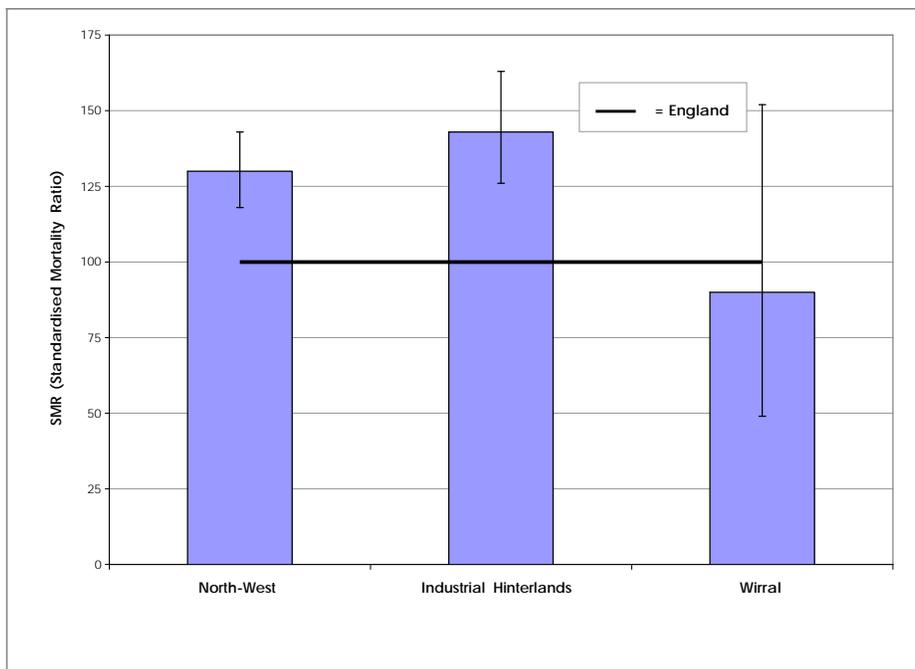
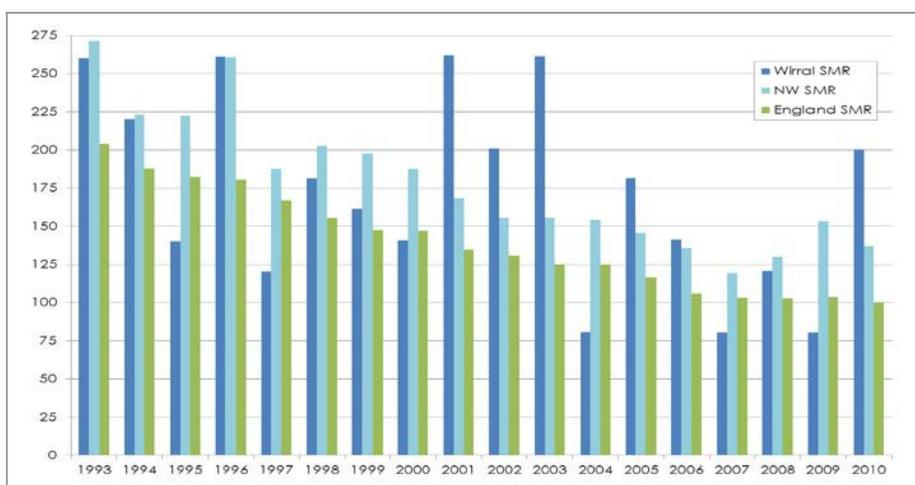


Figure 3 shows that Wirral compares favourably with England, the North West and our Industrial Hinterlands peer group (SMR of 90, or 10% below that of England) in 2007-09. However, note wide confidence intervals due to small numbers (in Wirral). **Note:** the Industrial Hinterlands Group is one of seven groups devised by the Office of National Statistics to classify areas using indicators from the Census such as employment and housing. The groupings enable more relevant comparisons to be made between demographically similar areas.

Source: NHS IC, 2012

### Mortality trend by region

Figure 4: Cervical cancer mortality (Standardised Mortality Ratio or SMR) 1993-2010: England, North-West and Wirral (all ages)



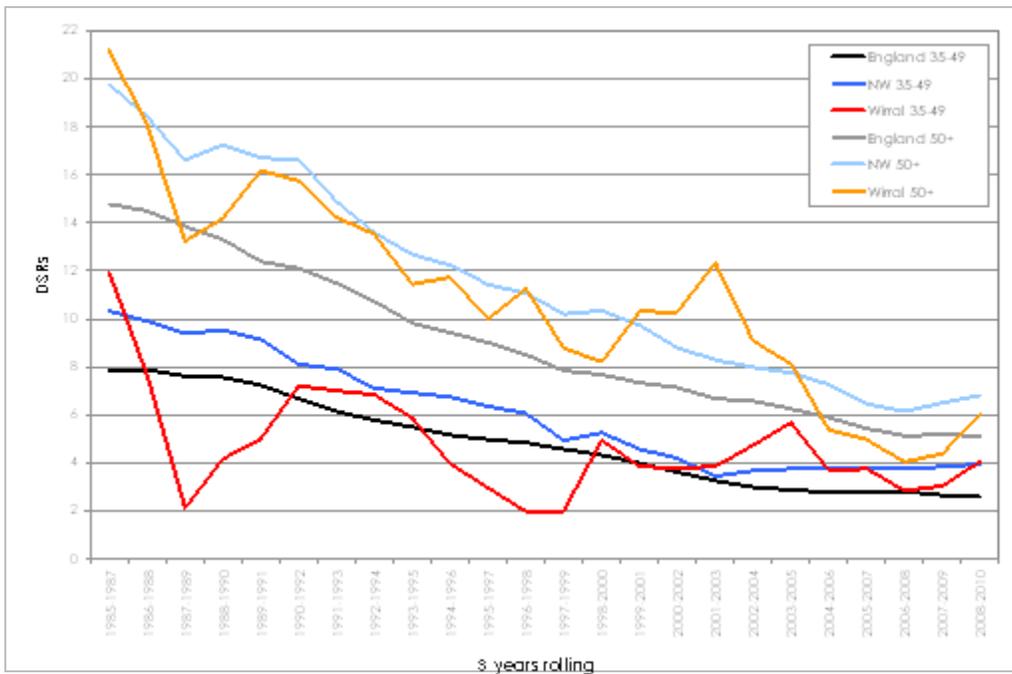
As Figure 4 shows, by 2010, Wirral had an Standardised Mortality Ratio of 200 for cervical cancer – 100% higher than England. This is reversal of the previous year when Wirral had an SMR lower than both England and the North West. It should be noted however, that variation in Wirral rates will be wide due to the small number of annual deaths from cervical cancer in the area.

Source: NHS IC 2012

## Mortality by age

Figure 5 shows DSRs by the 2 age bands being analysed for this audit in Wirral from 1985-2010.

**Figure 5: Mortality (DSRs) for cervical cancer, 1985-2010 (3 years rolling), 35-49s & 50+ age groups**



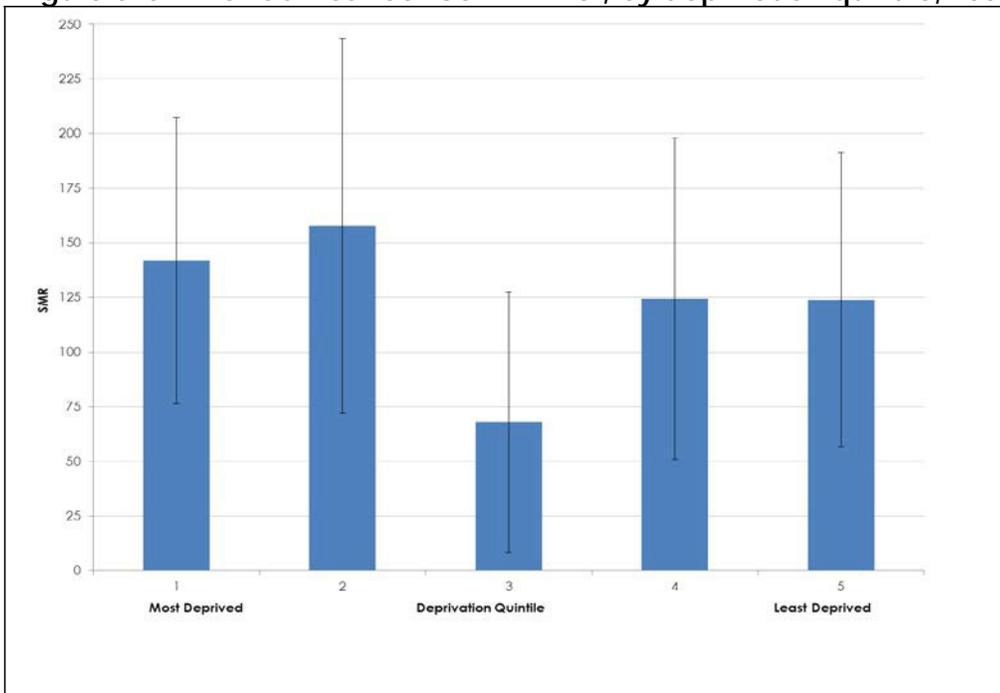
As Figure 5 shows, mortality has shown a downward trend for both age groups over the last 25 years. It has however, remained consistently higher in the 50+ age group compared to the 35-49s. The current rate for the 50+ group is above England, but below the North West. For the 35-49 age group, rates have fallen more slowly over time and are currently above both England and the NW

Source: NWCIS, 2012

## Mortality by deprivation

Due to the small number of annual deaths from cervical cancer in Wirral, 8 years worth of data have been pooled in order to calculate SMRs by deprivation quintile.

**Figure 6: SMR for Cervical Cancer in Wirral, by deprivation quintile, 2001-09 (8 years pooled)**



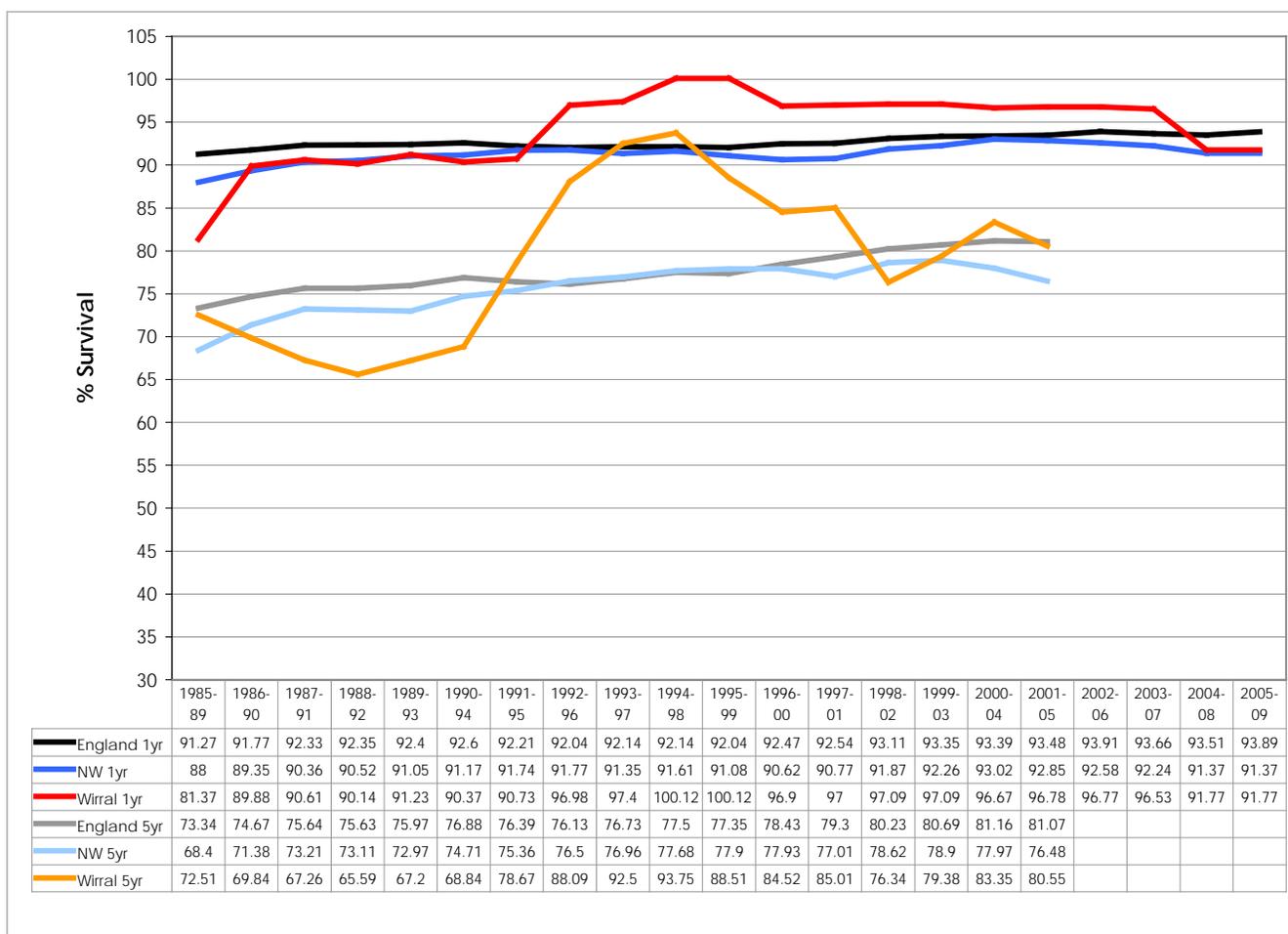
As Figure 6 shows, there does not appear to be a clear relationship between mortality and deprivation from cervical cancer in Wirral. SMRs are higher for the two most deprived quintiles in Wirral, (42% and 58% higher mortality than the England average) but not significantly so (wide confidence intervals due to small numbers, even pooling 8 years of data).

Source: PHMF, 2012

## Survival

In general, the earlier a cancer is diagnosed, the greater the rate of survival. Evidence suggests that late diagnosis of cancer is a major factor in the UK's poor survival rates (compared with some countries in Europe). The most suitable indicator to demonstrate early presentation is the stage of cancer at diagnosis, but this information is not universally available. Low one year survival rates are therefore used as a proxy indicator for late presentation and should be investigated by PCTs.

**Figure 7: Trend in one and five year relative survival from cervical cancer in 35-49 year olds, 1985-2009, Wirral, NW and England**

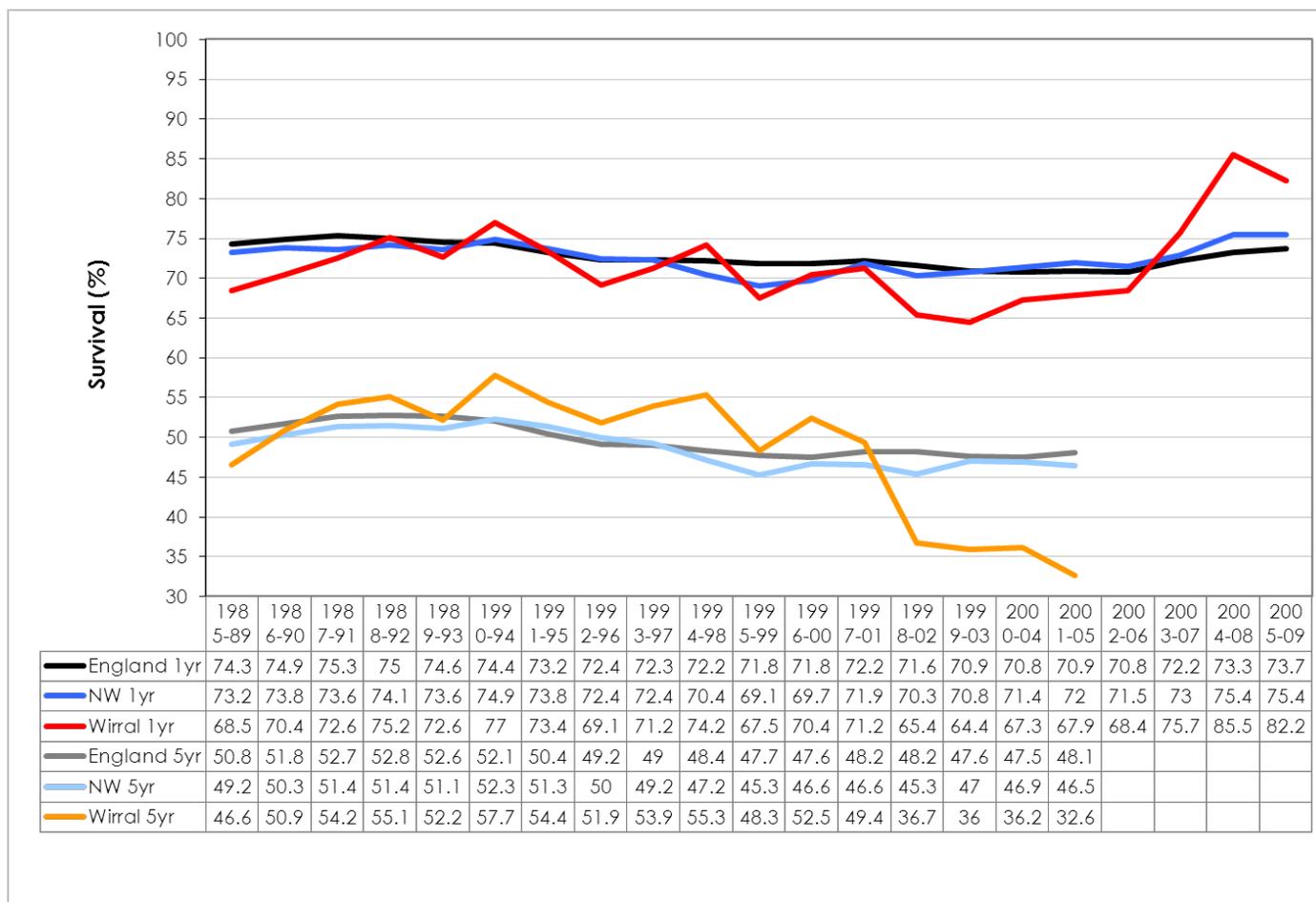


Source: NWCIS, 2012

As Figure 7 shows, 1 year survival in the 35-49s in Wirral is above that of the North-West but below that of England (non significant) after many years of out-performing both. Five year survival in Wirral has been more variable over the last decade or so, and is now below that of England, but above the NW Wirral rates (even when using 5 years pooled) are variable due to small numbers

**Note:** Relative survival is the likelihood of survival for a patient with a selected cancer relative to that of the whole population of the relevant country for the same age and sex.

Figure 8: Trend in one and five year relative survival from cervical cancer in 50+ year olds, 1985-2009, Wirral, NW and England



Source: NWCIS, 2012

As Figure 8 shows 1 year survival in the 50+s in Wirral is above that of the North-West and England (non significant). Five year survival in Wirral however, appears to be falling and is well below that of England the North-West.

**Note:** Relative survival is the likelihood of survival for a patient with a selected cancer relative to that of the whole population of the relevant country for the same age and sex.

## Screening

Most women invited by the NHS screening programme have their initial screening test at their GP practice or an NHS Community Clinic. Women are called for cervical screening in England every 3.5 years for women aged 25-49 and every 5 years for women aged 50-64.

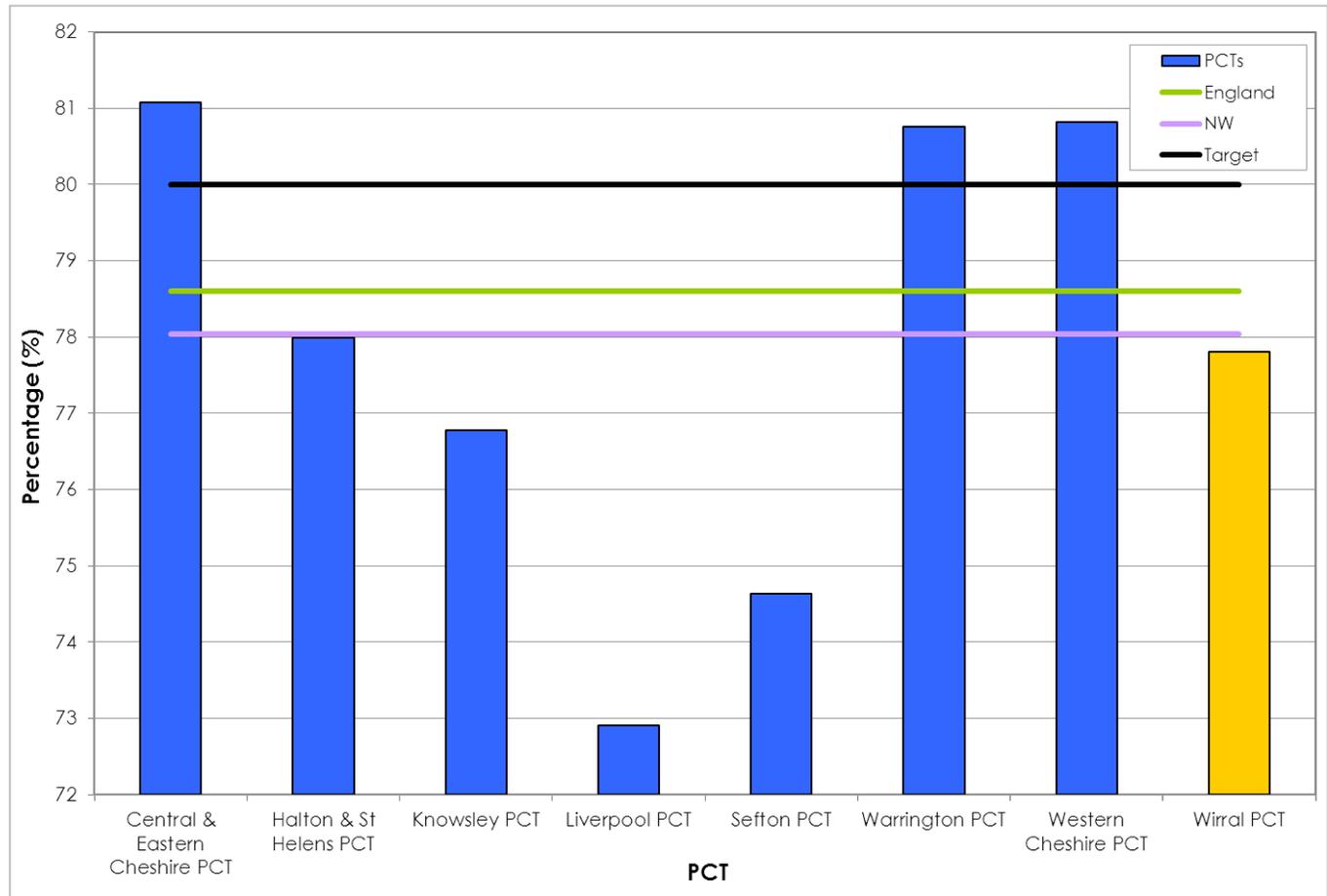
Women aged 65 or over whose last three consecutive tests were negative are removed from the call/recall programme.

Locally, the call/recall system is operated by Central Operations Mersey on behalf of Wirral GPs and the cytology is completed by the Wirral University Teaching Hospital NHS Trust (WUTH) laboratory here in Wirral.

There is some national evidence that certain groups of women are less likely to attend for screening, including women who are older, LGBT (lesbian, gay, bisexual, transgender) or women with disabilities. Data is not available in Wirral to verify whether all of these factors are issues in Wirral. Only information on screening by age group is currently available.

### Screening by region

**Figure 9: Cervical Screening uptake (all ages 25-64): England, North-West and PCTs, 2010-11**

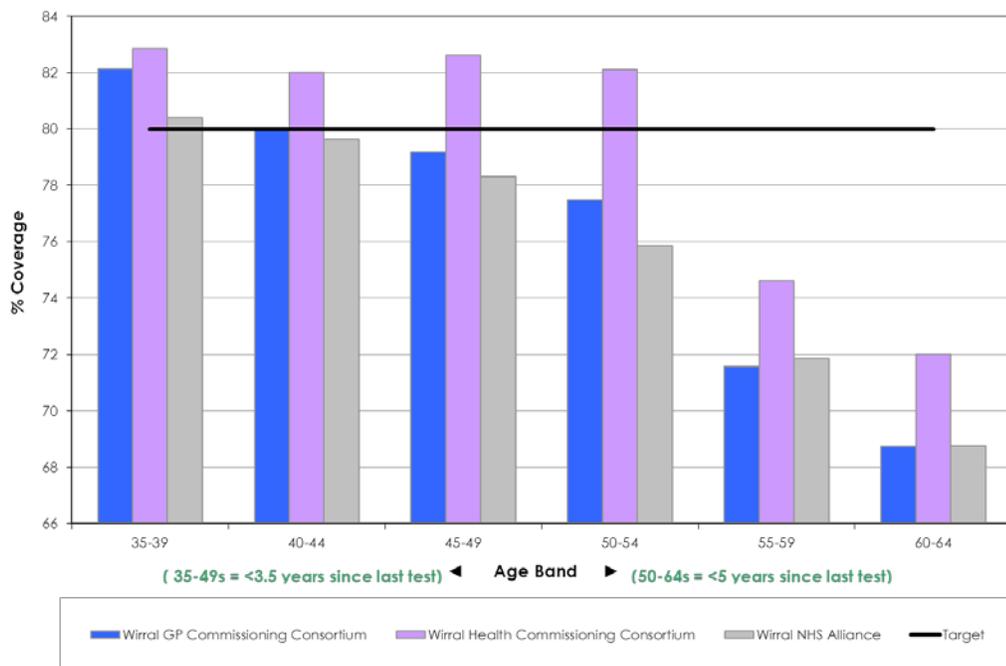


Source: Health & Social Care IC, 2012

Wirral did not meet the overall screening target in 2010-11. In the Cheshire and Merseyside Cancer Network area (MCCN) only Warrington and the two Cheshire PCTs met the target in 2010-11. Uptake by PCT in the MCCN area was not available split into the two age groups being analysed for this equity audit.

## Screening by consortia

Figure 10: Uptake of cervical screening by Wirral GP Consortia



As Figure 10 shows, uptake of cervical screening starts to drop from age 39, but tails off dramatically after the age of 54. In the 35-49 age bands, only Wirral Health Commissioning Consortia are achieving the 80% target. In the 50-64 age band, uptake is particularly poor, mirroring national trends.

Source: Wirral MIS, 2012

The table below shows how many *additional* screens (in numbers) were required by each Consortia in 2010-11 to meet the 80% target.

Table 1: Number of additional screens required in 2010-11 to meet the national 80% uptake target by Wirral Consortia

Consortia	Age Band						Wirral Total
	35-39	40-44	45-49	50-54	55-59	60-64	
Wirral GP Commissioning Consortium	-99	0	41	75	224	295	536
Wirral Health Commissioning Consortium	-167	-134	-180	-85	188	268	-108
Wirral NHS Alliance	-5	6	27	39	67	95	229
<b>Total</b>	<b>-271</b>	<b>-128</b>	<b>-111</b>	<b>29</b>	<b>479</b>	<b>659</b>	<b>657</b>

Source: Wirral MIS, 2012

**Note:** where a minus figure is shown, this indicates the target was exceeded by this amount, e.g Wirral NHS Alliance screened 5 more women than required in the 35-39 age group, but required an extra 6 women in the 40-44 age group to meet the 80% target.

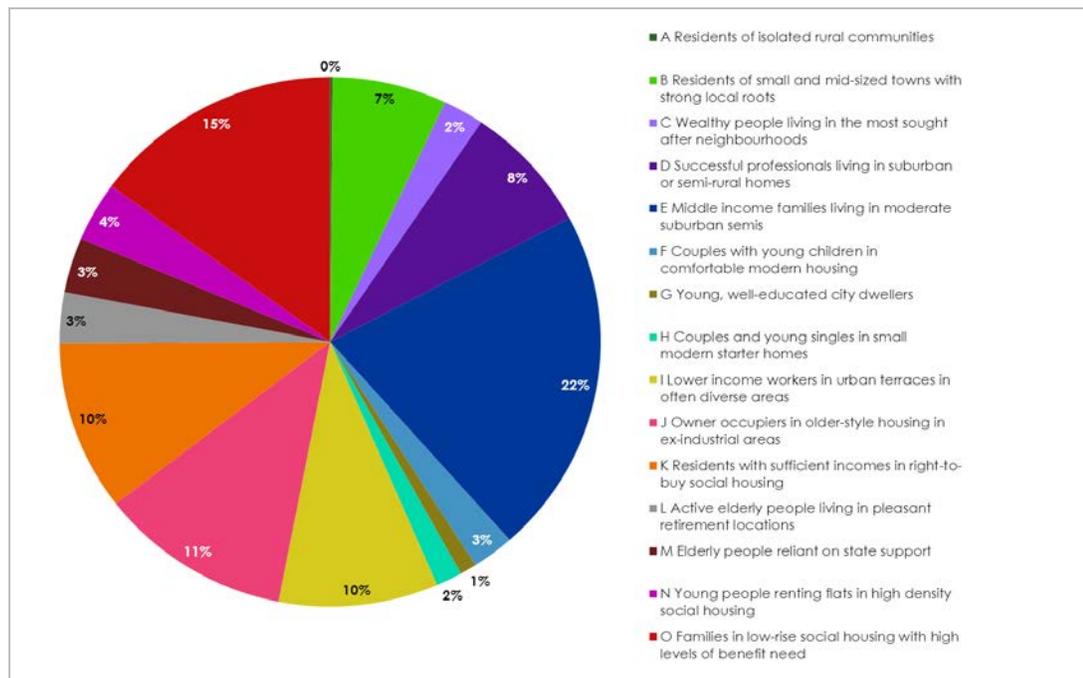
As Table 1 shows, all the Wirral consortia exceeded the target for the 35-39 age group and all required a significant number of additional screens in the 55-59 and 60-64 age bands to meet the target. Wirral Health Commissioning Consortia were the only consortia to achieve the target in the 40-44s, 45-49s and 50-54 age groups and overall exceeded the target by 108 screens.

Overall in Wirral, only another 657 screens were required to meet the 80% target in the year 2010-11.

## Screening by Mosaic

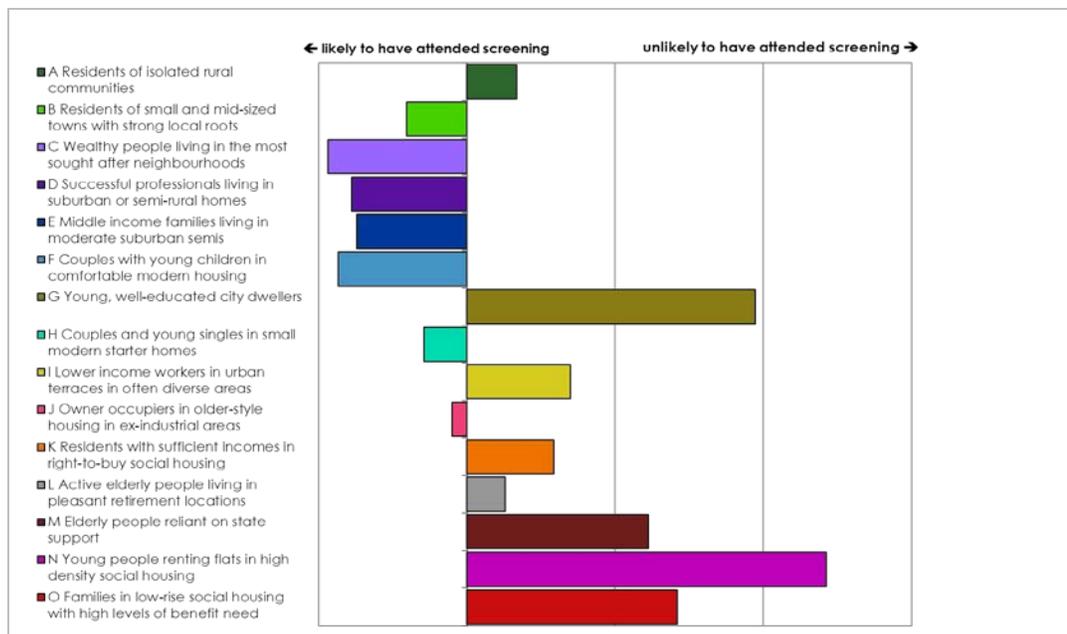
Mosaic is a geo-demographic population classification tool used to classify the population according to the type of neighbourhood in which they live. Mosaic segments the population into 15 Groups based on postcode. The postcodes of the women in Wirral aged 35-64 who had not been screened (n=10,515) in the previous 5 years (up to 31-3-2011) were analysed using Mosaic and compared to the profile of all women invited over the same period (n=58,403).

**Figure 11: Wirral women with no record of a cervical screen (5 years <31.3.2011) by Mosaic group**



As Figure 11 shows, the 2 Mosaic groups most likely to have no record of a screen in the last 5 years were Groups E and O. However, these are also the 2 most common groups in Wirral so this is not surprising. For an indication of likelihood of attendance relative to being invited, see Figure 12.

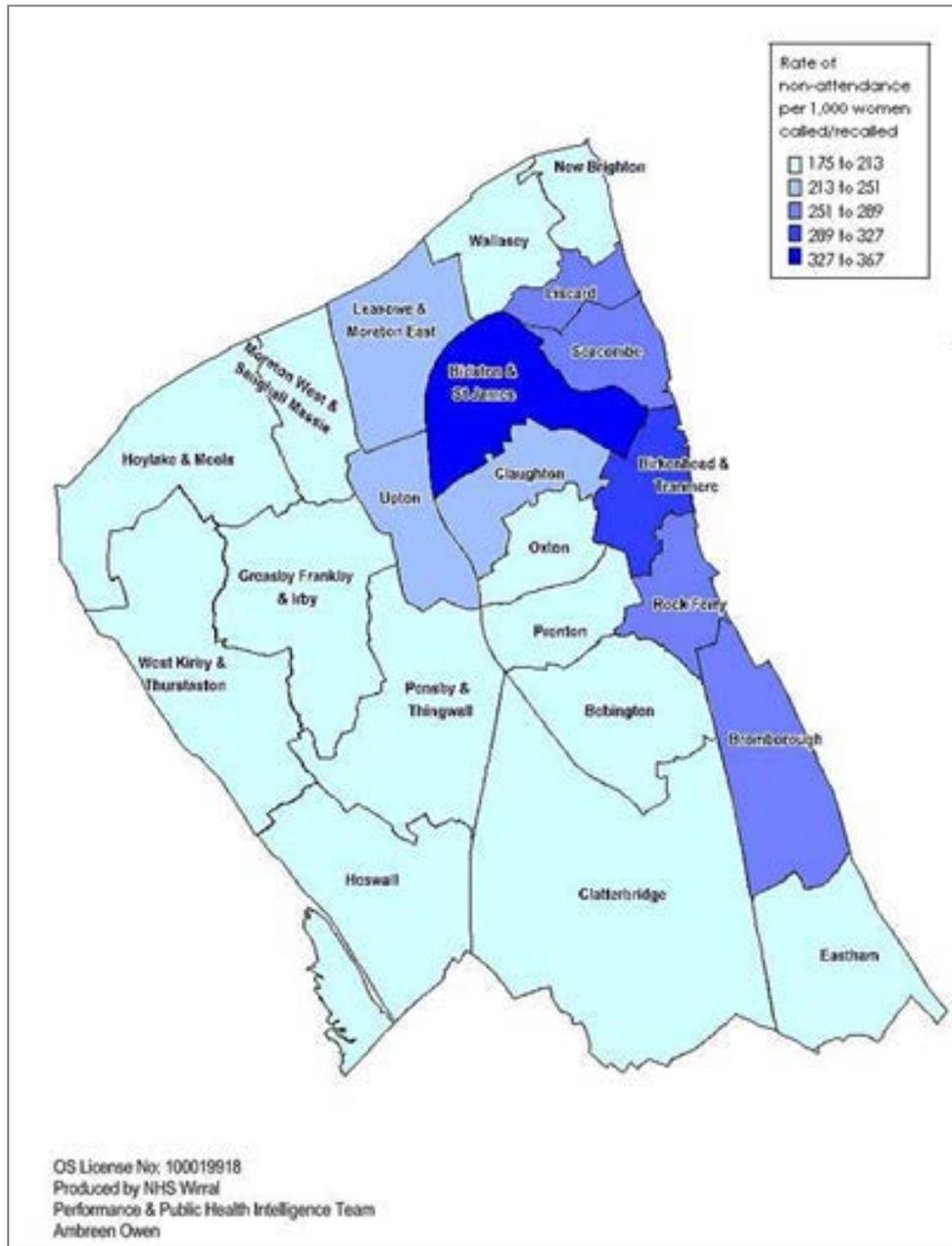
**Figure 12: Likelihood of attending screening by Mosaic group (taking into account numbers invited)**



As Figure x shows, the groups least likely to have attended (given the numbers invited from that group) were groups N, O, G and M. With the exception of Group G (which can probably be disregarded due to very small numbers) these are deprived groups. The most affluent groups (C & D) are most likely to have attended.

## Screening by ward

Map 1: Rate of non-attendance for cervical screening in women aged 35-64, 2006-2011.



As Map 1 shows, non-attendance for cervical screening in women aged 35-64 in Wirral does appear to show a relationship with deprivation. Non-attendance is defined as women who have no record of attending for cervical screening in the five years prior to March 2011. This mapping would seem to confirm Mosaic findings which also suggested a link with deprivation. Rates of non-attendance are highest in the 2 most deprived wards in Wirral and generally lower in the more deprived, eastern area of the borough.

## Concluding remarks

This report complements the [2010 Cervical Screening Equity Audit](#) produced by NHS Wirral Performance & Public Health Intelligence Team which concentrated on the 25-34 age group. It will be shared with the Wirral Cancer Steering Group for their consideration in early 2012 and it is anticipated that the facts and issues highlighted will help to inform future action.

## Appendix

Appendix 1: Table of annual deaths from cervical cancer in Wirral, by age, 1985-2010

Age	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
0-34	..	2	1	1	2	1	..	..	..	..	..	..	..
35-49	4	6	1	..	1	3	1	3	3	1	2	1	..
50+	13	19	14	7	9	13	12	7	10	10	5	12	6
All	17	27	16	8	12	17	13	10	13	11	7	13	6

Age	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
0-34	..	..	..	2	1	..	..	2	1	..	..	..	1
35-49	1	1	3	..	1	3	1	2	1	1	1	1	2
50+	8	7	4	11	8	10	3	5	5	3	5	3	7
All	9	8	7	13	10	13	4	9	7	4	6	4	10

Source: Cancer Registry, 2012