

Child Poverty in Cardiff

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Introduction

- The spatial variation and severity of some child deprivation indicators will be presented this morning followed by a small number of health outcomes that will be shown to closely correlate with deprivation and particularly income deprivation.
- I'm sure the spatial patterns of child deprivation and poverty that I'm going to present come as no surprise to most of you
- I'd like to précis what I'm going to present with what for me is a very important statement derived from Statistical analysis (Multi-Factorial Regression) of past indices of multiple deprivation:

"Income deprivation accounts for approximately 90% of the spatial variation and severity of all other types, or domains, of deprivation and their resultant outcomes."

So in other words I could paint most of the picture with just one map of Cardiff, a table of data and some headlines.....however.....

Child WIMD 2008

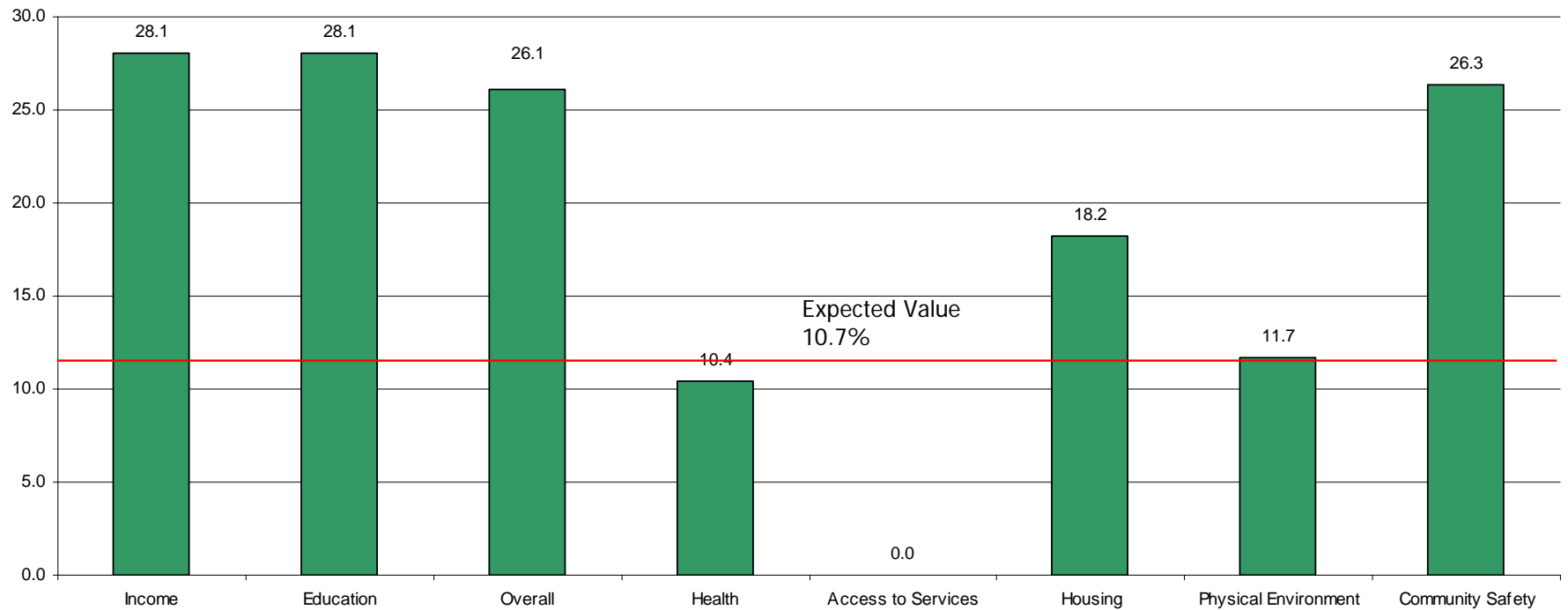
- The Child Wales Index of Multiple Deprivation 2008 was published in 2009. Like the main WIMD 2008 it contains a variety of domains, or types, of deprivation for each of Wales 1,896 Lower Super Output Areas and a composite Overall score of multiple deprivation.
- The separate Domains used to create the overall composite deprivation score were:
 - Income (35%)
 - Education (17%)
 - Health (17%)
 - Access to Services (12%)
 - Housing (6%)
 - Physical Environment (6%) &
 - Community Safety (6%).(Relative Domain Weighting in Brackets)

Each of the Domains and their scores of deprivation can be analysed separately.

Child WIMD 2008 (continued)

- The following slide highlights that Cardiff has significantly more than it's expected share of children aged 0 – 15 living the most deprived 10% of Wales communities for the following types (domains) of deprivation:
 - Income (28.1%);
 - Education (28.1%);
 - Overall Index (26.1%);
 - Housing (18.2%) &
 - Community Safety (26.3%).
- The Income and Education Domains are the most robust of the seven types of deprivation measured in the Index

Percentage of Cardiff's 0-15 Year Olds Living in Wales
10% Most Deprived Communities
(Source: Derived from Child WIMD 2008)

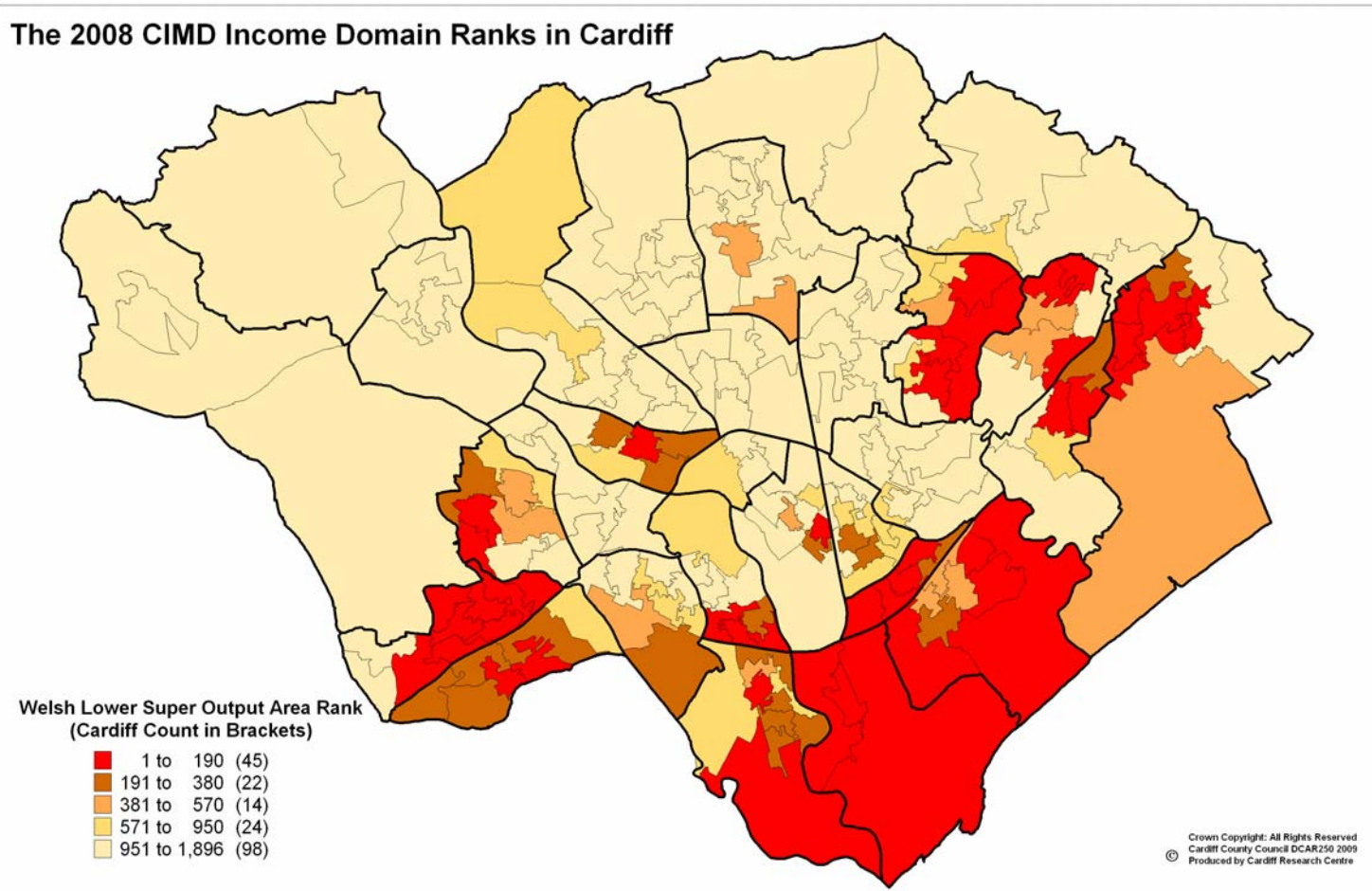


Child WIMD 2008 – Income Deprivation

- The indicators used for the Child Income domain were:
 - Children in Income Support Households;
 - Children in Pension Credit Households;
 - Children in Income-Based Job Seekers Allowance households &
 - Children in Tax Credit households below a low income threshold.

Child WIMD 2008 – Income Deprivation

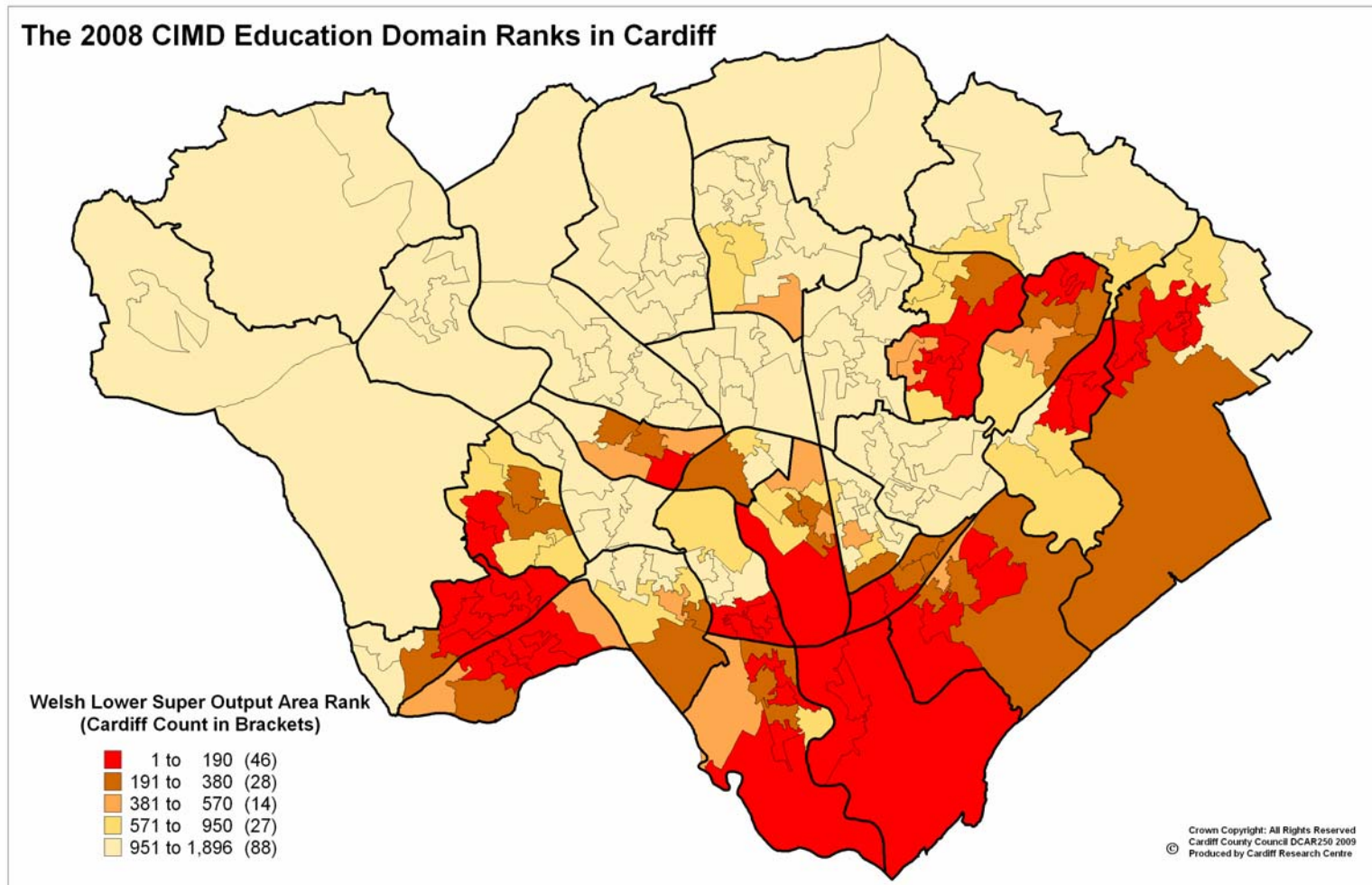
The 2008 CIMD Income Domain Ranks in Cardiff



Child WIMD 2008 – Education Domain Indicators

- The indicators used in the Child WIMD Education domain were as follows:
 - Key Stage 2 average points scores;
 - Key Stage 3 average points scores;
 - Key Stage 4 average points scores;
 - Primary school all absence rate &
 - Secondary school all absence rate.

Child WIMD 2008 – Educational Deprivation

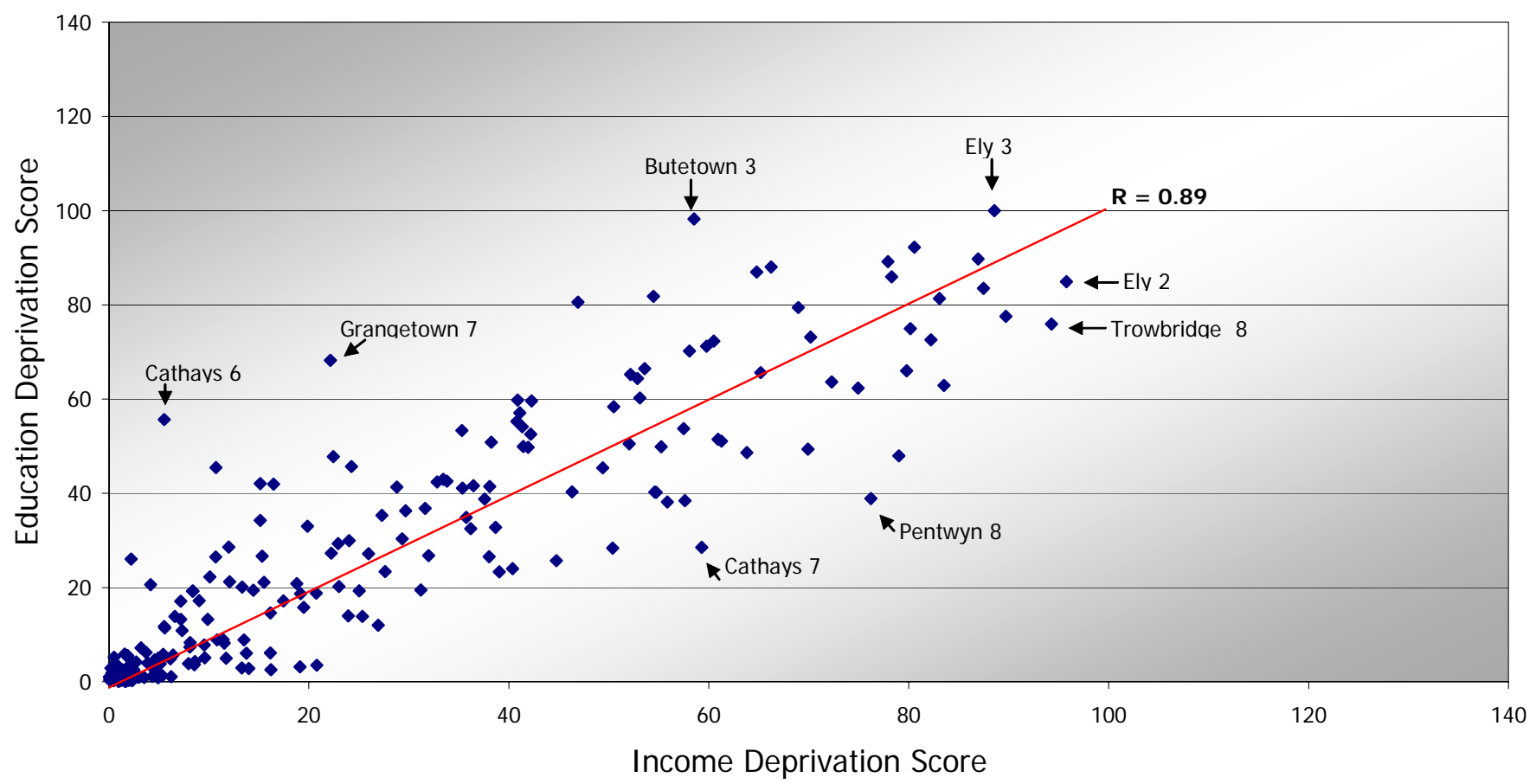


Correlating Income & Education Deprivation

- There is a highly significant ecological (small area) correlation between Income Deprivation and Educational achievement, as measured in the Child WIMD 2008.
- The correlation coefficient for Cardiff's 203 Lower Super Output Areas (LSOAs) is **0.89**. This is the R^2 value on the following scatter plot. A perfect correlation would be represented by the score $R^2 = 1.00$.
- Previous analysis (Cardiff Community Profile 2002) of the ecological correlation between educational achievement and Income Deprivation has shown an increasingly significant correlation as children age through Key Stages 1 > 2 > 3. This suggests the longer children live in areas with high rates of income deprivation the poorer their educational achievement will be, this of course impacts on life chances, including employment, health etc. etc.

The Ecological Correlation Between Income and Education Deprivation in Cardiff at LSOA (203) Level

(Source: Child WIMD 2008)



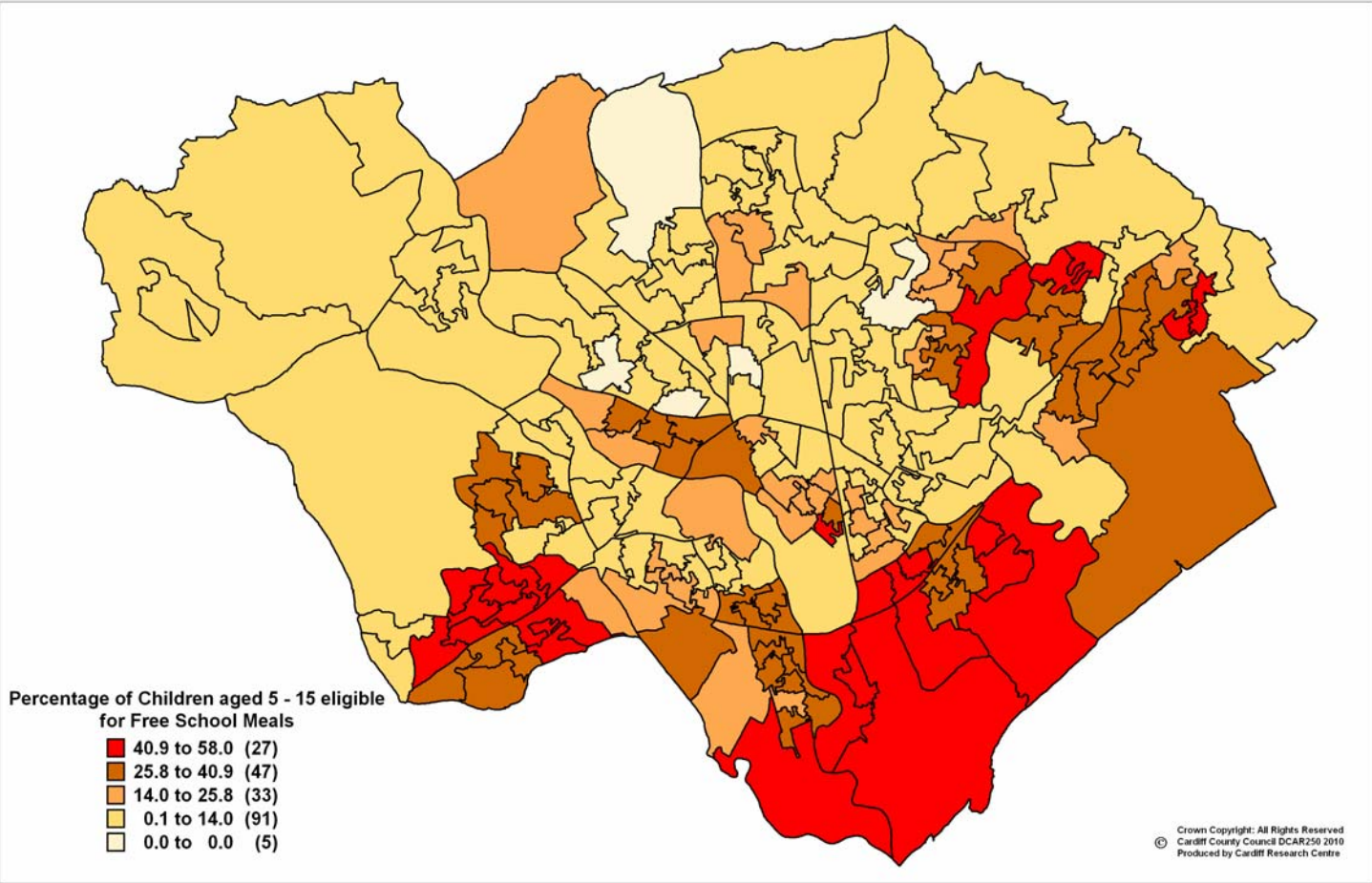
Free School Meal Eligibility

- In January 2009, (the latest available capture date from Schools Services) approximately 7,700 Cardiff school pupils aged between 5 and 15 inclusive were eligible for Free School Meals. This represents 22.2% of all pupils in Cardiff LEA schools, so excludes private and possibly some special schools.
- The eligibility for free school meals is confined to families in receipt of :
 - Income Support,
 - Income Related Employment Support Allowance,
 - Income Based Job Seekers Allowance,
 - Guarantee Element of State Pension Credit & / or
 - Child Tax Credit with an income less than £16,190.

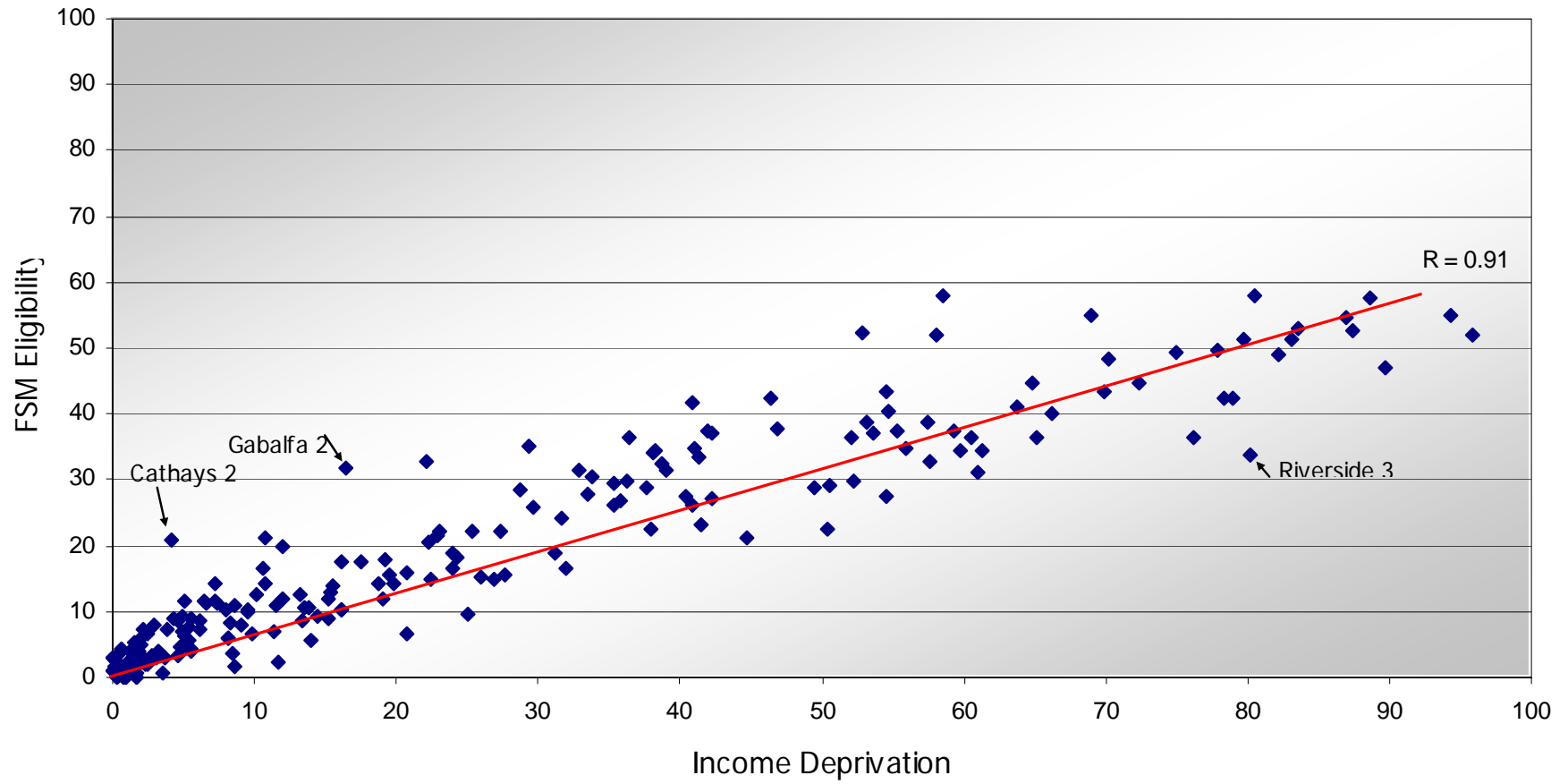
(Any Families in receipt of Working Tax Credit do not qualify).
- The following slides display, firstly, the spatial variation in rates of FSM Eligibility as at January 2009, and secondly, the ecological correlation between FSM Eligibility and Income Deprivation (0.91). The ecological correlation coefficient between Education Deprivation (Child WIMD) and FSM Eligibility is 0.94. This is almost a perfect correlation.

Percentage of Children Aged 5 – 15 in Cardiff LEA Schools Eligible for Free School Meals

(Source: Schools Services: Cardiff Average = 22.2%)



Ecological Correlation Between Income Deprivation and FSM Eligibility In Cardiff at LSOA (203) Level

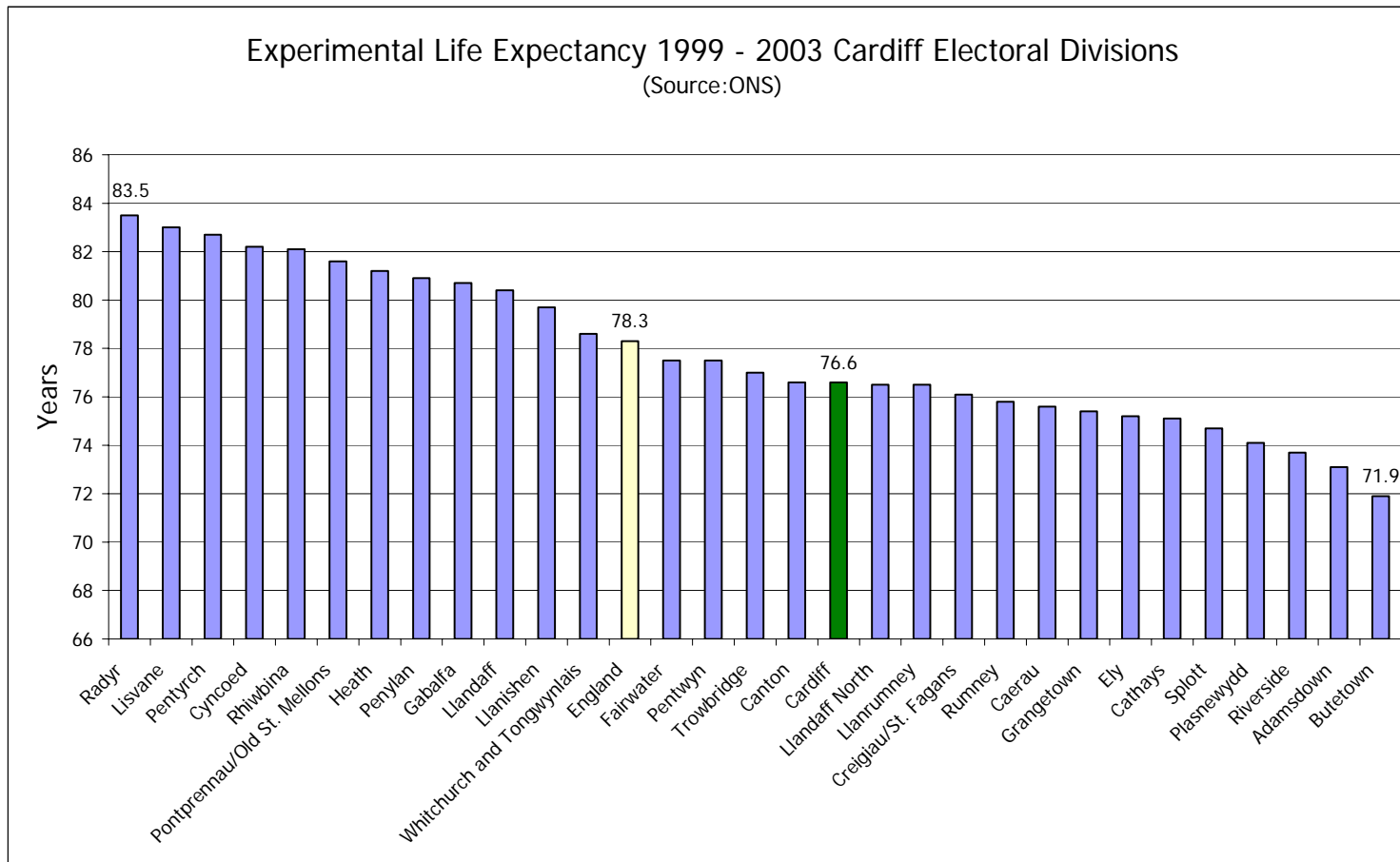


Health Related Outcomes

- The following slides highlight some spatial variation in a small number of health related outcomes that have been shown to be correlated with Income Deprivation. That is to say a true causal relationship exists between income deprivation and health outcomes.
 - Experimental Life Expectancy
 - General Fertility Rate
 - Low Birth Weight Babies
 - Infant Mortality
 - Teenage Under 16 Conceptions
 - Child Pedestrian Injuries
 - Dental Caries aged 5 years

Experimental Life Expectancy, or, Average Age at Death (1999-2003)

- The chart below highlights the variation in the average age at death for Cardiff's 29 Electoral Divisions. The data was an average of five calendar years.



General Fertility Rate (GFR)

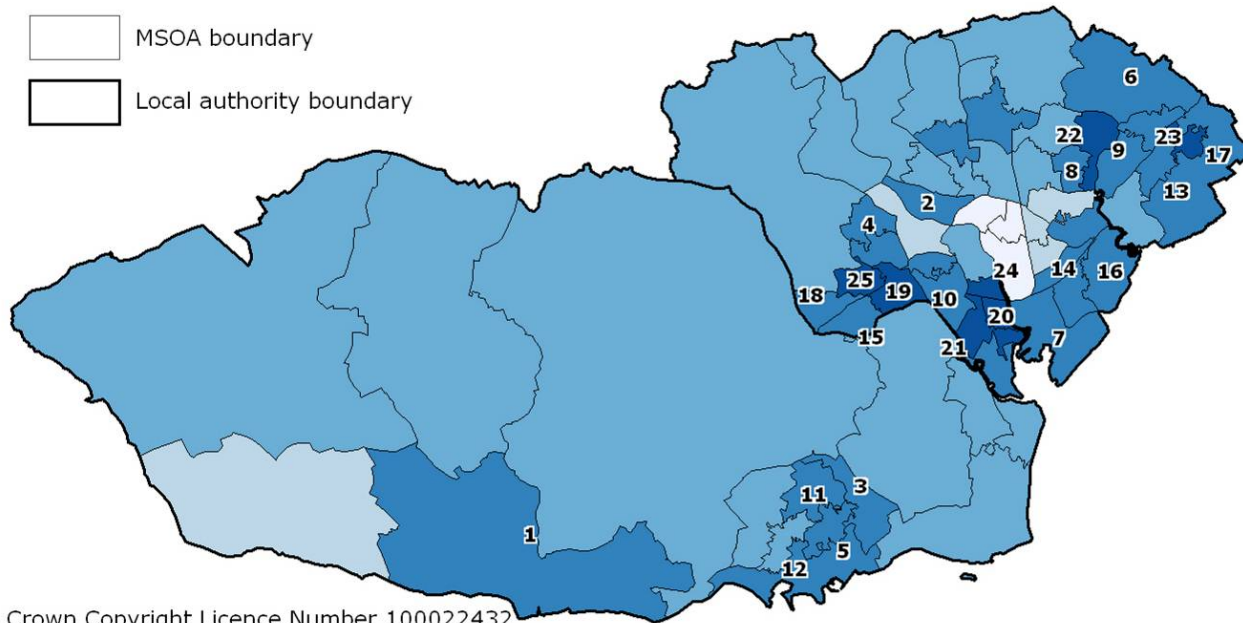
Fertility, 2006-08, females aged 15-44

MSOA, General Fertility Rate per 1,000; source: ADBE, ONS

- 80.3 to 98.0 (7)
- 62.4 to 80.3 (25)
- 44.5 to 62.4 (22)
- 26.6 to 44.5 (5)
- 8.7 to 26.6 (3)

MSOA boundary

Local authority boundary

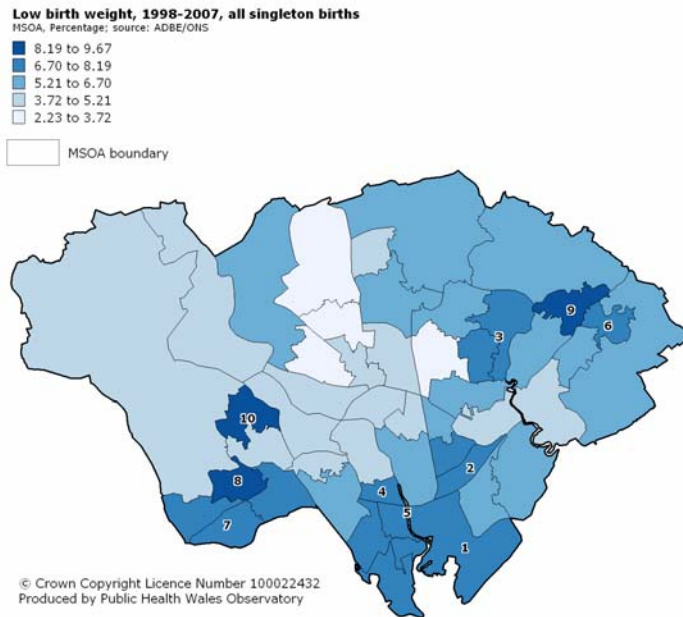


General Fertility Rate (GFR) Continued

| Cardiff MSOAs With a Significantly Higher GFR than the Wales Average | | | | |
|-----------------------------------------------------------------------------|-------------|--------------------|-----------------------------------|------------|
| Map Label | MSOA | MSOA Name | Annual Average Live Births | GFR |
| 25 | Cardiff 039 | Ely | 168 | 97.9 |
| 24 | Cardiff 042 | Riverside | 132 | 87.0 |
| 23 | Cardiff 013 | St Mellons | 140 | 86.3 |
| 22 | Cardiff 009 | Pentwyn | 115 | 83.5 |
| 21 | Cardiff 046 | Leckwith | 116 | 80.9 |
| 20 | Cardiff 044 | Grangetown | 156 | 80.7 |
| 19 | Cardiff 041 | Trelai | 100 | 80.5 |
| 18 | Cardiff 043 | Michaelston | 95 | 77.3 |
| 17 | Cardiff 011 | Wentloog | 133 | 77.0 |
| 16 | Cardiff 037 | Tremorfa | 144 | 75.6 |
| 15 | Cardiff 045 | Caerau | 103 | 75.5 |
| 14 | Cardiff 036 | Adamsdown | 157 | 73.4 |
| 13 | Cardiff 016 | Trowbridge | 86 | 72.9 |
| - | - | Cardiff | - | 57.0 |
| - | - | Wales | - | 60.0 |

Source: Public Health Wales Observatory Health Needs Assessment Support 2010: Key small area indicators

Percentage of Births Classed as Low Birth Weight (1998 – 2007)



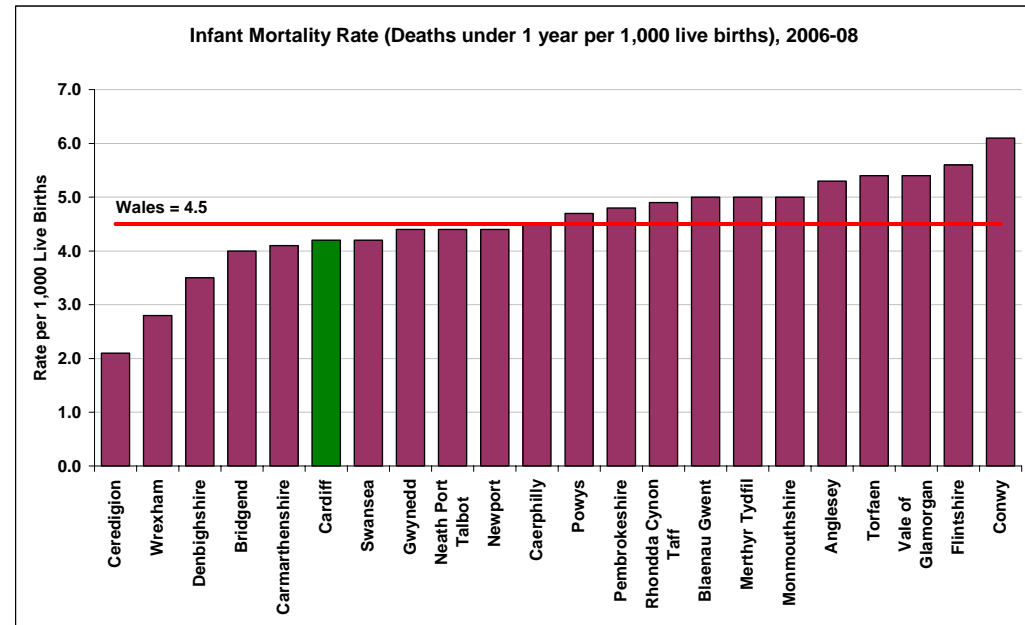
| Areas of Cardiff With Low Birth Weight Percentages Significantly Higher Than Wales Average | | | |
|--------------------------------------------------------------------------------------------|------------------------------|---------------------------------|---------------------------------------|
| Map Legend | MSOA Name | Annual Average Low Birth Babies | Low Birth Weight as a % of All Births |
| 10 | Y Tyllgoed (North Fairwater) | 8 | 9.7 |
| 9 | North Llanrumney | 7 | 9.0 |
| 8 | Ely | 13 | 8.5 |
| 7 | Caerau | 7 | 7.8 |
| 6 | St Mellons | 10 | 7.7 |
| 5 | Grangetown | 10 | 7.6 |
| 4 | Riverside | 9 | 7.6 |
| 3 | Pentwyn | 9 | 7.4 |
| 2 | Adamsdown | 9 | 7.4 |
| 1 | Cardiff Bay | 9 | 7.4 |
| - | Wales | - | 5.8 |
| - | Cardiff | - | 6.2 |

Source: Public Health Wales Observatory Health Needs Assessment Support 2010: Key small area indicators

Infant Mortality (UA Level)

- Measures of Infant Mortality relate to deaths of persons in the first year of life excluding still births. Fortunately there are relatively few of these events in any given year, approximately 150 per annum in Wales as a whole.

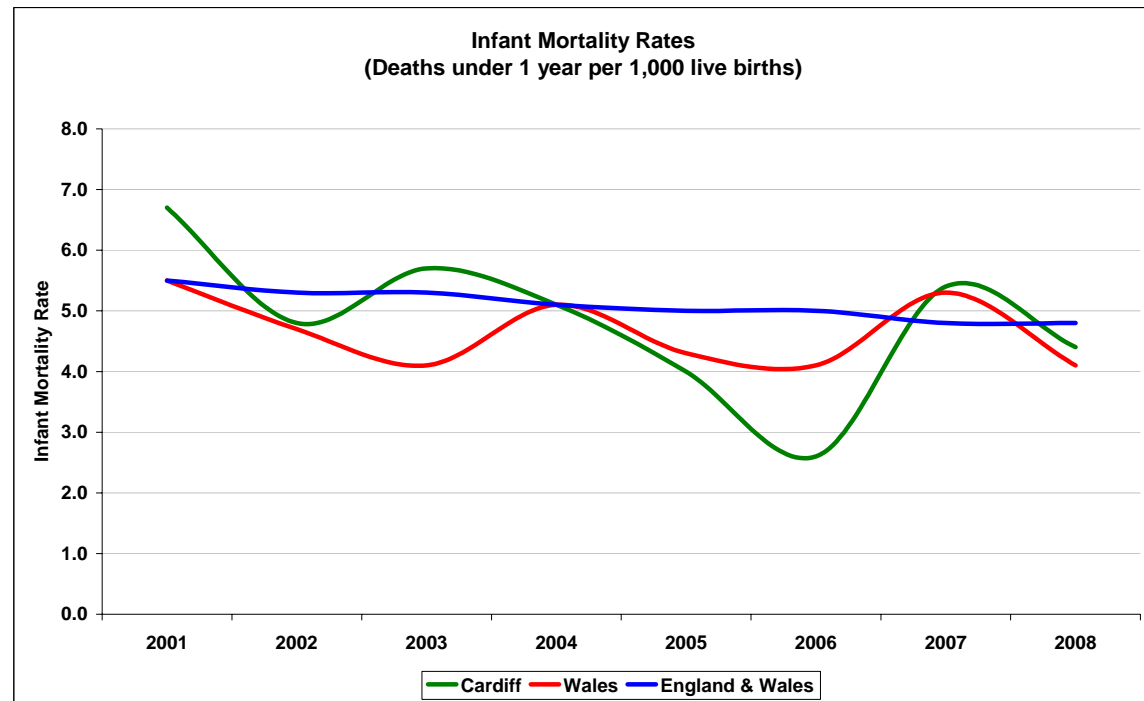
This means trying to present statistically robust measures (rates or percentages) below local authority level is very difficult and prone to significant errors.



Source: WAG Statistical Bulletin: Births & Infant Mortality Statistics 2008 (SB18/2010)

Infant Mortality (continued)

- For the period of 2006 to 2008 Cardiff's infant mortality rate was 4.2 per 1,000 live births. This was the sixth lowest in Wales and was below the Welsh average of 4.5.
- Cardiff's infant mortality rate decreased from 6.7 per 1,000 live births in 2001 to 4.4 in 2008. Over the period the local authority rate fluctuated around those of Wales and England & Wales but in 2008 was above the Welsh rate and below the figure for England & Wales.

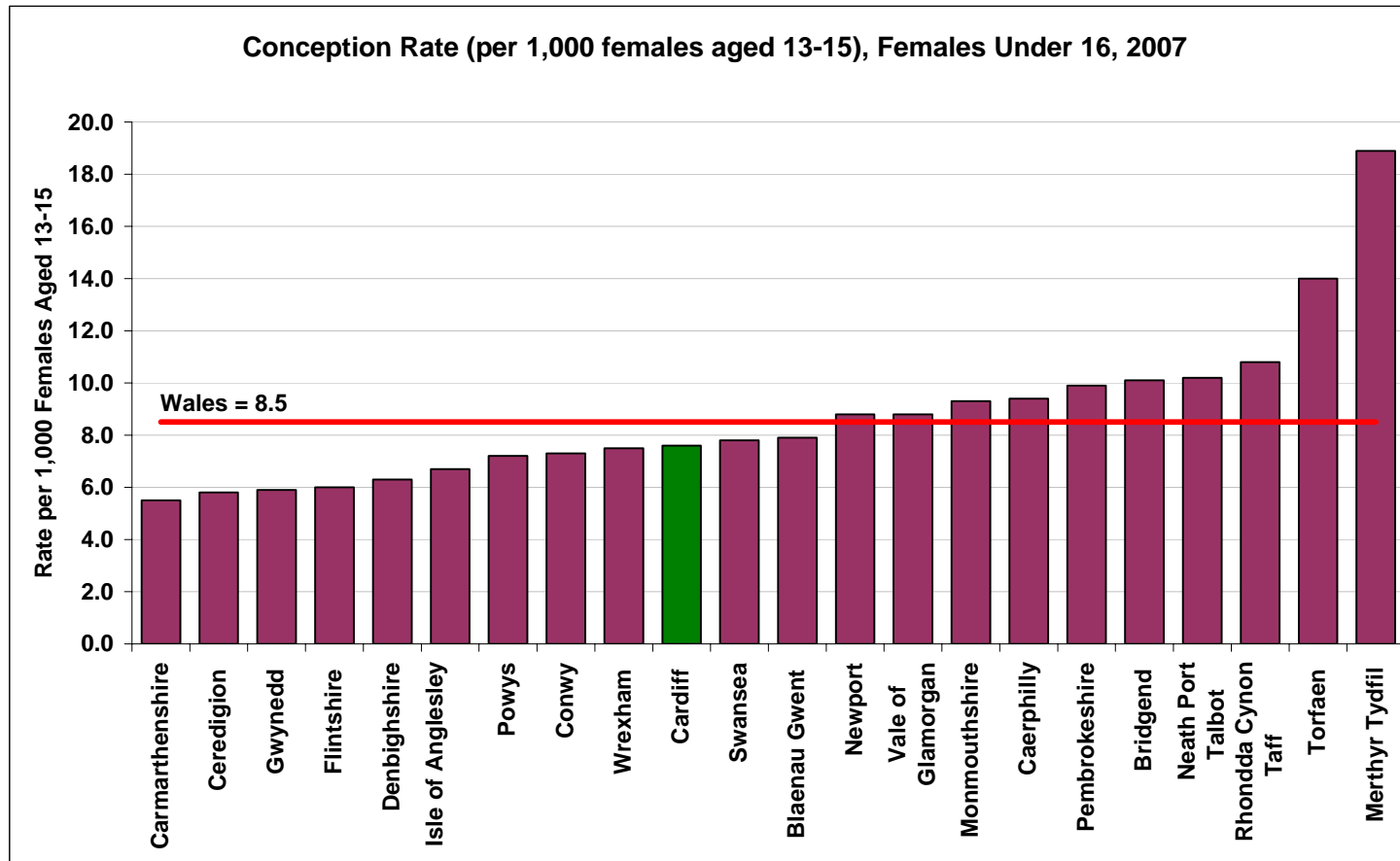


Source: Vital Statistics, ONS

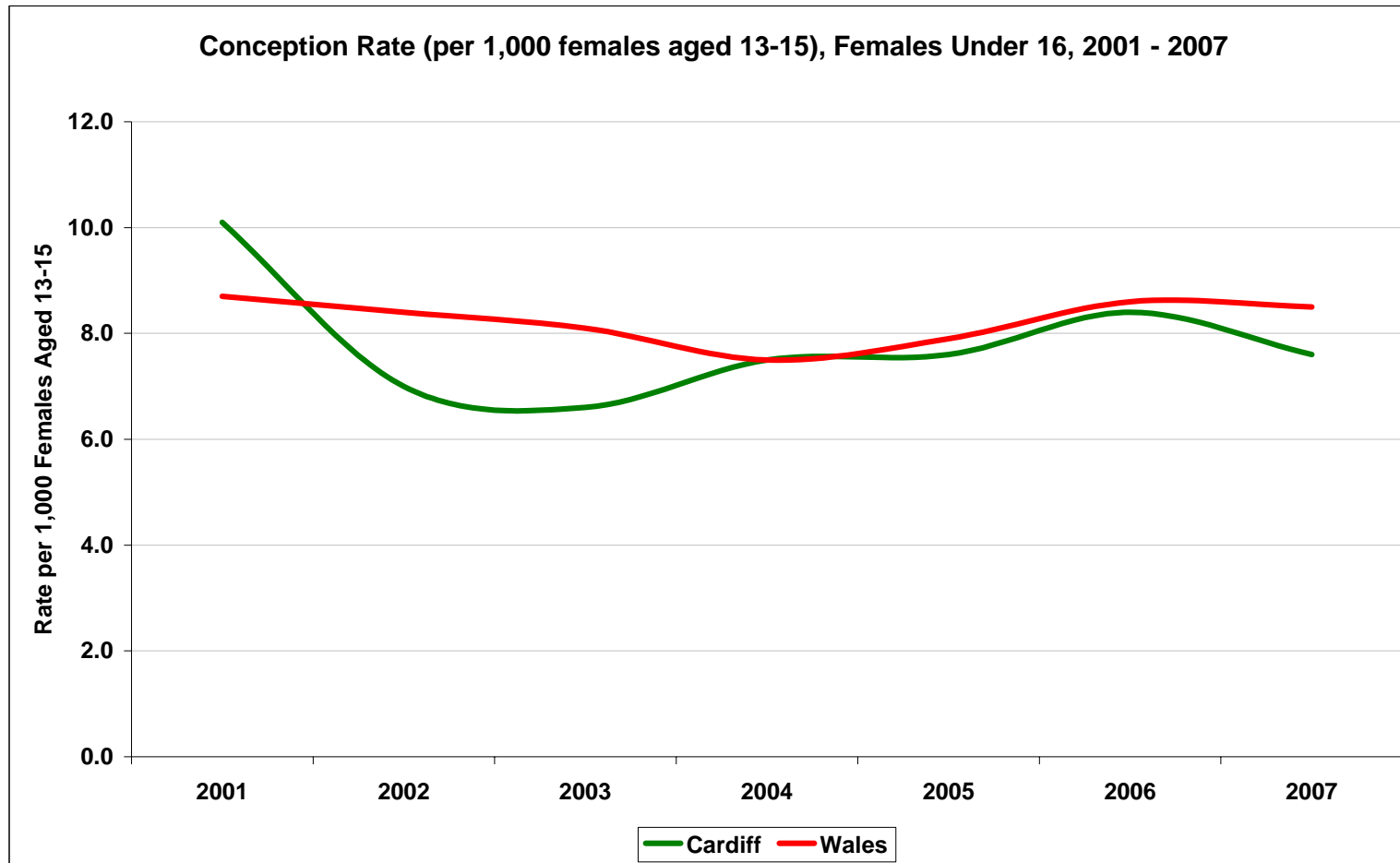
NB. Cardiff rate calculated from less than 20 events for 2002, 2004, 2005, 2006.

Teenage Conceptions (Under 16)

In 2007 Cardiff had a conception rate for females aged under 16 of 7.6 per 1,000 females aged 13 to 15. This was the tenth lowest rate in Wales and was below the national average of 8.5.

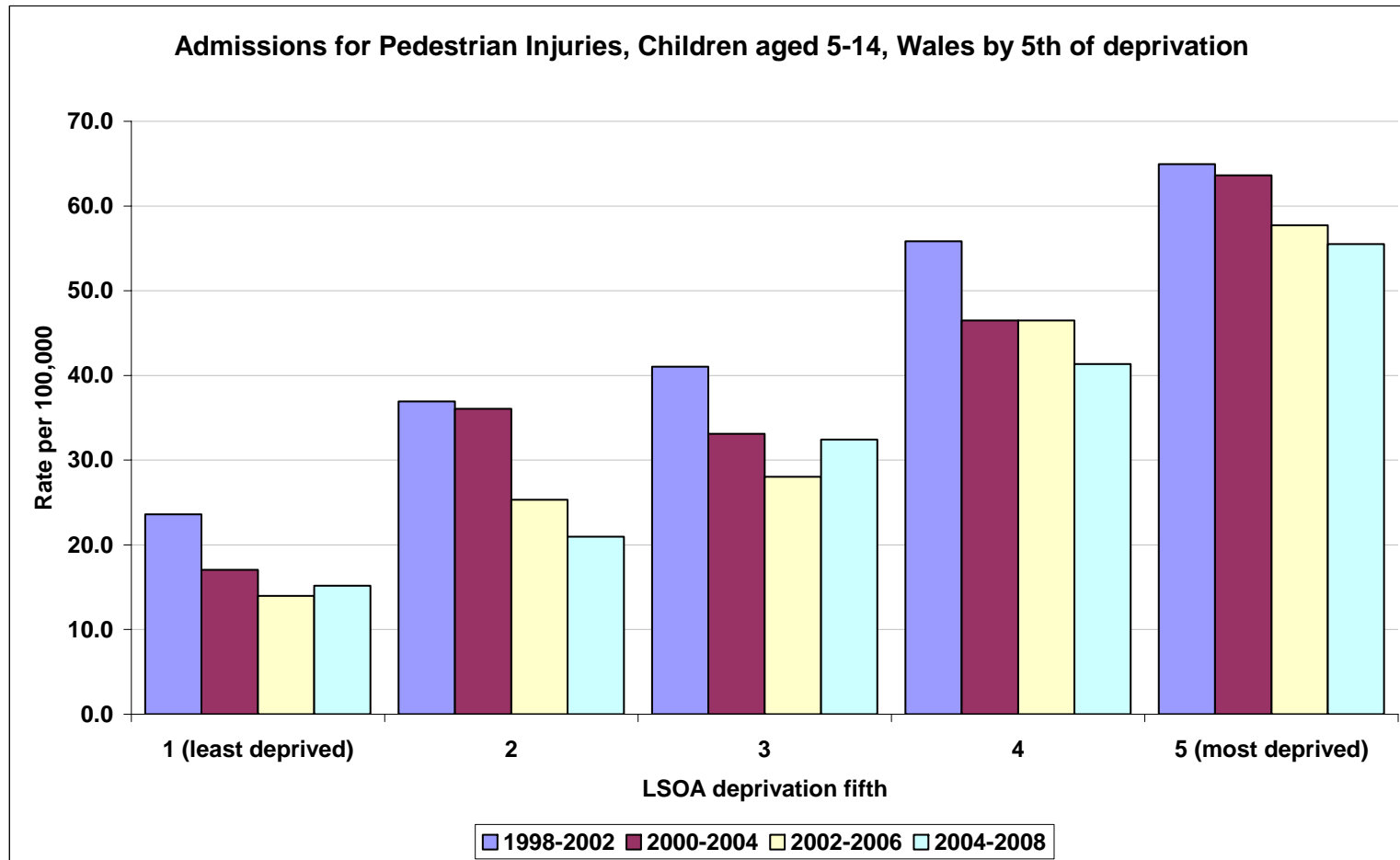


Teenage Conceptions (Under 16) Continued



Source: Health Statistics and Analysis Unit, Welsh Assembly Government, StatsWales

Child Pedestrian Injuries



Source: PEDW /WAG (WIMD)

Five Year Olds With Carious Teeth

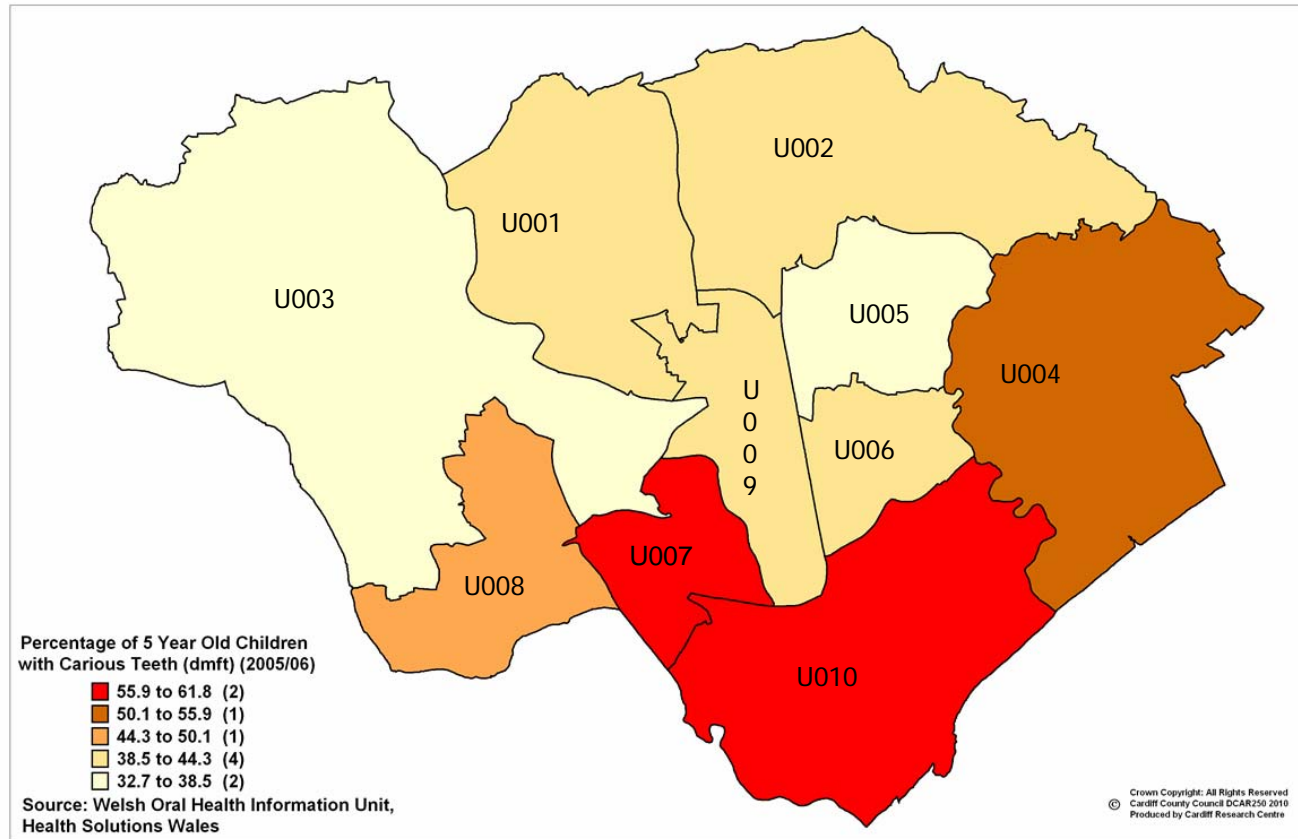
The following slide highlights the percentage of five year olds with a carious tooth or teeth in Cardiff's 10 Upper Super Output Areas.

The table opposite highlights the percentage and the average number of carious teeth per five year old for the year 2005/6.

The spatial variation shows that areas like Butetown, Grangetown, Splott (U010), Riverside and Canton (U007) have twice the proportion of areas like Cyncoed, and more surprisingly Pentwyn (U005).

| Upper Super OA | Percentage With Carious Teeth (dmft) 2005/6 | Ave No. Carious Teeth 2005/6 |
|-----------------------|----------------------------------------------------|-------------------------------------|
| Cardiff U007 | 61.8 | 2.7 |
| Cardiff U010 | 61.6 | 3.0 |
| Cardiff U004 | 51.2 | 2.7 |
| Cardiff U008 | 47.5 | 1.9 |
| Cardiff U009 | 43.6 | 2.3 |
| Cardiff U006 | 41.9 | 1.4 |
| Cardiff U001 | 41.7 | 1.5 |
| Cardiff U002 | 39.1 | 1.6 |
| Cardiff U003 | 37.5 | 1.5 |
| Cardiff U005 | 32.7 | 1.2 |

Percentage of Five Year Olds With Carious Teeth (continued)



Conclusions

- The data presented today, while only scratching the surface, does prove, once again, that Cardiff has more than its expected share of children living in the most deprived communities in Wales, and that areas of the city that are more deprived in terms of Income deprivation will experience:
 - Poorer educational achievement rates (Key Stages) at ages 7, 11 and 14;
 - Lower life expectancy;
 - Higher rates of underweight babies (increasing the risk of other health problems and poorer life chances);
 - Higher rates of fertility (proportionately more babies born to persons living in the more deprived communities, than in less deprived communities)
 - Higher percentage of five year olds with carious teeth &
 - Higher rates of pedestrian injuries.
- While not presented today, it is still true that crime incidence rates and health related means tested benefit rates are still very closely correlated with levels of deprivation, and in particular Income Deprivation.