

Appendix A – Technical Appendix

Notes and caveats for the various indicators

It is essential that users read the following notes for each of the datasets included in this document, before interpreting any of the data presented.

Demography

SUBJECT:	Mid Year Estimates of Population: 2001 (population pyramids)
DENOMINATOR SOURCE:	Office for National Statistics Mid Year Estimates of Population
NUMERATOR SOURCE:	N/A
GEOGRAPHY:	Wales and Welsh local authorities
PERIOD:	2001
DEMOGRAPHY:	Males, females: all ages
STATISTICS:	Populations and %
CAVEATS:	Data are based on Census 2001. There is on-going debate regarding the completeness of the data, particularly in urbanised areas
NOTES:	Data are rounded to the nearest 100 Worksheets show: population by sex and 5 year ageband % of total population by sex and 5 year ageband population pyramids for both measures

SUBJECT:	Population trends: 1990-2001
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DENOMINATOR SOURCE:	Office for National Statistics Mid Year Estimates of Population (Revised - see notes)
NUMERATOR SOURCE:	N/A
GEOGRAPHY:	Wales and Welsh local authorities
PERIOD:	1991-2001
DEMOGRAPHY:	Persons: under 14 & over 65
STATISTICS:	Population counts
CAVEATS:	Data are based on Census 2001. There is on-going debate regarding the completeness of the data, particularly in urbanised areas
NOTES:	Worksheets show: Population of Local Authorities between 1991 and 2001, for under 14 and over 65 age groups
Revised estimates:	The ONS mid-year estimates shown in this file are part of the revised set published in Spring 2003 for the years 1982 to 2000. ONS took the decision to revise their estimates because it was believed that there were serious flaws in the 1991 Census (on which the previous estimates were based). The revised estimates tend to show lower populations than the previous data in urbanised areas.

Births

SUBJECT:	Live Births
DENOMINATOR	
SOURCE:	Live Births (ONS Healthshow Classic V2003.1)
NUMERATOR	
SOURCE:	Live Births (ONS Healthshow Classic V2003.1)
GEOGRAPHY:	Wales and local authorities in Wales
PERIOD:	1990-2001
DEMOGRAPHY:	Live Births
STATISTICS:	Annual number of live births per year
	Live births as a proportion of 1990 Births

SUBJECT:	Low birthweight babies (LBW)
DENOMINATOR	All Births with a known birthweight: Source: Healthshow
SOURCE:	Classic V2003.1 (1993-2000 AWPS/CHS; 2001:ONS)
NUMERATOR	Low Birth Weight (Healthshow Classic V2003.1 (1993-2000
SOURCE:	AWPS/CHS; 2001:ONS))
GEOGRAPHY:	Wales and local authorities in Wales
PERIOD:	1993-2001
DEMOGRAPHY:	Live and still births with a known birthweight
STATISTICS:	Three -year rolling average annual number of low birth weight babies Three - year rolling average percentage of low birth weight babies 95% confidence intervals for proportions using the Wilson

	method without continuity correction
CAVEATS:	<p>It is important to note that statistical significance is not the same as clinical significance (or public health importance).</p> <p>Caution should be exercised when dealing with small numbers of events</p> <p>It is likely that the proportion of low birthweight babies reported in Merthyr Tydfil during 2001 over estimates the true proportion of low birthweight babies. This is due to a recording error. ONS have advised that this problem has now been resolved. Data from Child Health System/All Wales Perinatal Service reported for earlier years is not affected.</p>
PROPORTION OF LOW BIRTH WEIGHT BABIES	Babies weighing <2500g per 100 live and stillbirths with a known birthweight.

Deaths in infancy

SUBJECT:	Still birth rate: 1993-2001
DENOMINATOR SOURCE:	Live births and still births (Live births: ONS, stillbirths: AWPS)
NUMERATOR SOURCE:	AWPS (All Wales Perinatal Survey)
GEOGRAPHY:	Unitary authorities in Wales
PERIOD:	1993-2001
DEMOGRAPHY:	Mortality
STATISTICS:	Three - year rolling average rates. Average annual number of deaths over three-year period. 95% confidence intervals for rates using the Wilson method without continuity correction.
CAVEATS:	Caution should be exercised when dealing with small numbers of events
	It is important to note that statistical significance is not the same as clinical significance (or public health importance).
STILLBIRTH RATE:	Stillbirths per 1000 total live and stillbirths.

SUBJECT:	Infant mortality rate: 1993-2001
DENOMINATOR SOURCE:	Live births (ONS)
NUMERATOR SOURCE:	AWPS (All Wales Perinatal Survey)
GEOGRAPHY:	Unitary authorities in Wales
PERIOD:	1993-2001

DEMOGRAPHY:	Mortality
STATISTICS:	Three - year rolling average rates,
	Average annual number of deaths over three-year period
	95% confidence intervals for rates using the Wilson method without continuity correction
CAVEATS:	Caution should be exercised when dealing with small numbers of events. It is important to note that statistical significance is not the same as clinical significance (or public health importance).
INFANT MORTALITY RATE:	Deaths under 1 year per 1,000 live births

Mortality

SUBJECT:	EASR, persons all ages: 1990-2001 <ul style="list-style-type: none">○ All Causes○ Ischaemic heart disease (IHD)○ All Cancers○ Chronic obstructive pulmonary disease (COPD)
DENOMINATOR SOURCE:	Office for National Statistics Mid Year Estimates of Population (in HealthShow 2003)
NUMERATOR SOURCE:	Office for National Statistics Mortality data (in HealthShow 2003)
GEOGRAPHY:	Wales and Welsh local authorities
PERIOD:	1990-2001
DEMOGRAPHY:	All Causes, Persons, Under 75s
STATISTICS:	European Age Standardised Mortality Rates (EASR)
CAVEATS:	<p>When interpreting the significance of results it must be borne in mind that analyses of large datasets can produce statistically significant results that may be of no clinical significance.</p> <p>Conversely, analysis of small datasets may not report as statistically significant results that are of clinical significance.</p> <p>Change in cause coding, 2001. From 01/01/2001, the coding of mortality registrations moved from the International Classification of Diseases (ICD) version 9 to ICD version 10.</p> <p>In order to facilitate the production of a continuous set of statistics in this document, the 2001 mortality records have been mapped back from ICD 10 to ICD 9. As ICD 10 has</p>

	<p>many more classifications than ICD 9, this mapping process is not always straightforward, but has been carried out in keeping with guidance available from the Office of National Statistics.</p> <p>Users should bear in mind that any sudden changes in trend seen in 2001 may be the result of the coding change rather than reflecting a real change in mortality rate. More information about the effects of the coding changes can be found at:</p> <p>http://www.statistics.gov.uk/about/classifications/ICD10/default.asp</p>
NOTES:	<p>Average annual counts represent the average number of cases each year during the three year period and are rounded to the nearest single unit</p>

Cancer registrations

SUBJECT:	EASR, persons all ages: 1990-2001 <ul style="list-style-type: none">○ All malignancies○ Lung○ Female Breast
DENOMINATOR SOURCE:	Office for National Statistics Mid Year Estimates of Population (in HealthShow 2003)
NUMERATOR SOURCE:	Welsh Cancer Intelligence & Surveillance Unit (in HealthShow 2003)
GEOGRAPHY:	Wales and Welsh local authorities
PERIOD:	1990-2001
DEMOGRAPHY:	Males; Females; Persons: All ages
STATISTICS:	European Age Standardised Registration Rates (EASR)
CAVEATS:	<p>When interpreting the significance of results it must be borne in mind that analyses of large datasets can produce statistically significant results that may be of no clinical significance.</p> <p>Conversely, analysis of small datasets may not report as statistically significant results that are of clinical significance.</p> <p>In addition, when interpreting significance over long periods of time particular attention should be paid to the trend analysis.</p>
NOTES:	<p>Average annual counts represent the average number of cases each year during the three-year period and are rounded to the nearest single unit.</p> <p>HealthShow Classic 2003.1 contains the Public Health Common Dataset which includes data from the Welsh Cancer</p>

	Intelligence & Surveillance Unit and the Office for National Statistics
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Morbidity and lifestyle

SUBJECT:	Morbidity - mental component summary (MCS) score Morbidity - physical component summary (PCS) score Lifestyle - smoking Lifestyle - obesity
DENOMINATOR SOURCE:	Welsh Health Survey 1998 (number of respondents)
NUMERATOR SOURCE:	Welsh Health Survey 1998
GEOGRAPHY:	Wales & 22 unitary authorities
PERIOD:	1998
DEMOGRAPHY:	Adults (persons aged 18 and over)
STATISTICS:	<ul style="list-style-type: none">- crude (weighted**) means for each of the 22 unitary authorities (UAs) and Wales- age standardised ratios (weighted**), standardised to Wales- 95% confidence intervals for ratios- statistical significance was derived using the Breslow and Day method for the difference of two ratios
CAVEATS:	It is essential to use the <i>Welsh Health Survey 1998</i> report when interpreting the data
NOTES:	** The figures have been weighted to adjust for the non-

	<p>responders</p> <p>Crude (weighted) proportions have been included to enable comparisons to be made with the statistics reported by NafW (<i>Welsh Health Survey 1998</i>).</p> <p>Standardised ratios are preferable to crude proportions as they adjust for differences in age structures for each of the 22 UAs.</p>
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Teenage conceptions

SUBJECT:	Teenage conceptions under 16's: 1999-01
DENOMINATOR	Revised ONS mid year population estimates 1999-2001 (females aged 13-15 years) (Healthshow)
SOURCE:	
NUMERATOR	Conceptions to all women aged under 16 years, 1999-2001
SOURCE:	(ONS). Data for 2001 are provisional
GEOGRAPHY:	Wales and Welsh local authorities
PERIOD:	1999-2001
DEMOGRAPHY:	Females aged under 16 years, Wales and 22 Unitary Authorities
STATISTICS:	Number of conceptions, rate per 1000 population, 95% confidence intervals
CAVEATS:	Caution should be exercised when dealing with small numbers of events. The numerator is all females under 16 years of age. The denominator is females aged 13-15.

Benefits

SUBJECT:	Children (<16) living in households dependent upon Income Support: 2001
DENOMINATOR SOURCE:	ONS mid-year estimate 2001 (based on 2001 census)
NUMERATOR SOURCE:	Department for Work and Pensions
GEOGRAPHY:	Wales and 22 unitary authorities
PERIOD:	August 2001
DEMOGRAPHY:	Children aged 0-15 years
STATISTICS:	Crude proportion, standardised claimant ratio (SCR) standardised to Wales, 95% confidence interval
NOTES	
SCR:	Standardised claimant ratio. This is calculated in the same way as a standardised mortality ratio. It shows the ratio of the observed number of cases to the number that would be expected if the proportions of cases in each age group were the same as the Wales average. A ratio of 100 is the Wales average and a ratio of 125, for example, indicates 25 percent more cases than the Wales average.
PROPORTION:	The proportion is not adjusted for age structure. It is calculated as the number of cases (children in Income Support dependent households) divided by the total number of children.
SIGNIFICANT?	This indicates whether the estimated SCR or proportion is higher or lower than the Welsh average and whether the

	difference is statistically significant.
DENOMINATOR AGE STRATA	The denominator data used for SCR calculation is available only in 5-year age groups 0-4, 5-9, 10-14, 15-19 etc, whereas this analysis is for an age range spanning 16 years (0-15 years). We have made the assumption that 20 percent of children in the 15-19 years age group are aged 15 years. The age strata used for SCR calculation are thus 0-4, 5-9, 10-14, and 15 years.

Deprivation

SUBJECT:	Welsh Index of Multiple Deprivation (WIMD) score for electoral divisions in Wales
SOURCE:	NAfW (Oxford University Index Team)
GEOGRAPHY:	1998 version EDivs in Wales (n=865)
PERIOD:	2000
STATISTICS:	Welsh Index of Multiple Deprivation - overall index (see notes)
CAVEATS:	Concerns have been expressed regarding the methodology. These cover:
	<p>1) The variables used</p> <p>Some of the variables may not be statistically robust at electoral division level. Others were not available at electoral division level and were modelled using data at a higher spatial level. A lack of data availability affected some domains, particularly Housing and Access. Some variables may not be measuring what, at face value, they appear to be. An example is benefit uptake data, which is included in some of the domains. Benefit uptake rates are not affected solely by need: other factors such as awareness of eligibility, stigma, income and culture may also be influential.</p> <p>Random variation associated with small numbers of events may have had an undue influence on some of the variables used in the Index.</p> <p>The limiting long term illness variable included in the health and disability domain included persons resident in residential homes, nursing homes and long-stay hospitals. Therefore, supply-side factors may have influenced LLTI in some electoral divisions.</p>

2) Repetition of data

Some variables appear in more than one domain and the domains are therefore not independent. The Oxford Team justified this by stating that a single factor may lead to two different types of deprivation.

3) Method for combining the domains

The Oxford Team combined the six domains into one overall multiple deprivation score by exponentiating their ranks to exaggerate differences (so that high and low ranks in different domains will not cancel each other out).

Notes

The WIMD contains the following six domains and weightings:

Income (25%)

Employment (25%)

Health and disability (15%)

Education, skills and training (15%)

Housing (10%)

Geographical access to services (10%)

The domains are combined to form the overall index of deprivation.

The tables show the overall score for each electoral division and the rank (out of 865). The higher the rank, the more deprived the area is as measured by WIMD.

Maps show deprivation by fifth of deprivation across Wales using the equal count method.

Census 2001

SUBJECT:	Limiting long term illness (LLTI): 2001
DENOMINATOR SOURCE:	Census 2001
NUMERATOR SOURCE:	Census 2001
GEOGRAPHY:	Local Authorities 2001
PERIOD:	29 April 2001
DEMOGRAPHY:	All persons
STATISTICS:	Crude percentage
CAVEATS:	<p>- It should be noted that the data are not age / sex standardised. Therefore, variation between local authority areas may be due, in part, to differences in the population structure rather than true variation in LLTI.</p> <p>- LLTI is a self-reported measure of limiting illness and is not based on a confirmed medical diagnosis.</p>
NOTES:	<p>- A standardised measure of LLTI will be available by Autumn 2003.</p> <p>- The data are based on the response to question 13 in the 2001 Census which required a YES / NO answer:</p> <p>Do you have any long-term illness, health problem or disability which limits your daily activities or the work you can do?</p>

Oral health

SUBJECT:	% decayed, missing and filled teeth (dmft) 5 year olds: 1994-2002
SOURCE:	Welsh Oral Health Information Unit
GEOGRAPHY:	Wales and Welsh local authorities
PERIOD:	Between 1994- 2002
DEMOGRAPHY:	5 year olds
STATISTICS:	Percentage of children with one or more decayed missing or filled teeth (dmft); 95% confidence limits.
CAVEATS:	The data are based on a sample of randomly selected schools in Wales.
FURTHER INFORMATION:	Dental data for children in Wales are collected as part of a rolling programme of annual national surveys, gathered from a randomly selected sample of schools throughout Wales. Five year olds are surveyed every two years whilst 12 and 14 year olds are surveyed every four years. The prevalence of dental caries experience is measured using the decayed, missing or filled teeth index for deciduous (dmft) or permanent teeth (DMFT).
NOTES:	
dfmt	decayed missing or filled deciduous (baby) teeth
DMFT	decayed missing or filled permanent (adult) teeth

Immunisation

SUBJECT:	Immunisation Uptake rates
SOURCE:	Healthshow 2003/1 (Child Health System)
GEOGRAPHY:	Wales, Local Authorities
PERIOD:	1995-2001
DEMOGRAPHY:	Children <24 months
STATISTICS:	% of children vaccinated by the child's second birthday
CAVEATS:	
NOTES:	The statistics are taken from the Child Health System. Immunisation coverage is calculated for children aged two years and below as at 1 April of the year under consideration.
	<p>Meningitis C vaccinations are not yet included in the Public Health Common Minimum Data Set.</p> <p>Polio- Poliomyelitis is an acute viral infection of the nervous system. Polio is spread by the faecal oral route. Man is the only reservoir. Most cases present with a sore throat or diarrhoea or are asymptomatic. Before vaccinations were available, polio was a common disease. But with immunisation programmes there were fewer than 2000 cases around the world in 1999.</p> <p>Haemophilus Influenzae Type B- HIB is a bacteria responsible for a range of infections, primarily in young children (4 and under) including meningitis and epiglottitis. The vaccination is given with the other primary immunisation at 2, 3 and 4 months of age. In 2003 all children aged between 6 months and 4 years were offered an additional dose of the Hib vaccine.</p> <p>Diphtheria- Diphtheria is an infection of the upper respiratory tract, and sometimes the skin. It is caused by toxogenic strains of <i>Corynebacterium Diphtheriae</i> and occasionally by <i>Corynebacterium Ulcerans</i>. The symptoms are a low grade fever, nausea, vomiting headache and a fast heart rate, these symptoms usually begin within 1 to 5 days of catching the disease. Immunisation is given as part of the child's primary immunisation course whilst aged 2, 3 and 4 months old.</p> <p>Tetanus- Commonly known as lockjaw, it is caused by the bacteria, <i>Clostridium tetani</i>, which can be found in soil or manure, being picked up through a scratch or wound of some type. The bacteria release toxins which act locally at the site of the injury and central nervous system. Once again, immunisation is given as part of the primary immunisation course to children aged 2, 3 and 4 months</p>

old.

Pertussis- (Whooping Cough) caused by the bacteria *Bordetella Pertussi*. The disease is highly infectious from between seven days after exposure to three weeks after the beginning of the typical whooping cough. Pertussis ranges from a mild disease to one which could result in death.

Symptoms could range from a cold to coughing and choking spells, leading to difficulty eating, drinking and breathing. Immunisation against this is included as part of the primary immunisation course at 2,3 and 4 months old.

Measles- Measles is an acute viral infection. It is transmitted by contact with infectious droplets.

Symptoms can include rash, pyrexia, conjunctivitis and flu like symptoms. It is highly infectious from the onset of symptoms and remains so, up to 4 days after the appearance of a rash.

Hospitalisation is sometimes necessary due to the severity of the symptoms and the occurrence of secondary infections i.e. chest infection (3-7%), otis-media (5%). A rare but fatal complication of measles infection is subacute sclerosing pan-encephalitis (SSPE).

Mumps- Mumps is a viral illness characterised by unilateral or bilateral parotid swelling. The incubation period varies between 14-21 days. The person affected is infectious several days before onset of symptoms and remains so for up to 7-9 days after. It is transmitted via contact with respiratory droplets. Prior to the MMR vaccine the mumps virus was a common cause of viral meningitis in children under 15 years of age.

Rubella- Rubella presents as a mild infectious disease. Prior to the MMR vaccine it presented most commonly in children aged between 4-9 years. Symptoms include a rash and swollen lymph glands.

It is hard to diagnose accurately as the rash produced is very similar to that caused by any number of viral illnesses. A particular threat posed by the Rubella virus is to pregnant women up to 16 weeks gestation. Infection during this period can result in foetal damage and severe congenital defects. The risk of damage to the foetus declines substantially after this period.

MMR Vaccine- The combined, live measles, mumps and rubella vaccine was introduced into the immunisation schedule for infants aged 13-15 months in the UK in 1988. The booster dose, given at 4 1/2 years, was introduced in October 1996. The full combined vaccine provides protection from all three infections in 98-99% of vaccines.