



rural health

A profile of rural health in Wales



Wales Centre for Health
Canolfan Iechyd Cymru

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Acknowledgements:

With thanks to the following for their help with this report: Riti Desai, Diana Greaves (Powys County Council), Rhian Huws, Gareth John (HSW), Su Mably, Joanne Menzies, Sally Taylor (HSW), Lynnette Thomas.

Special thanks to Nathan Lester (NPHS), Nick Holmes (LGDU) and Julie Hopkins (LGDU) for reviewing the final draft.

Publication details:

Title: A Profile of Rural Health in Wales

Publisher: Wales Centre for Health

Date: March 2007

ISBN: 0-9545544-2-6

This publication is also available in electronic format
(portable document format) on our website:

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Key messages

- Wales has a comparably rural environment and around 1 in 3 people in Wales live in an area classed as rural. In England around 1 in 5 people live in rural areas.
- Rural health is influenced by many determinants such as income, housing, education, access to services and deprivation in general. In this report these indicators are compared between rural and urban areas. Health outcome indicators analysed are: life expectancy, hospital admissions and mortality.
- The assumption that rural environments are inevitably 'healthier' is increasingly open to challenge, particularly as some individual rural areas have considerably poorer figures than the Welsh average, for example on income indicators.
- The health status in rural Wales is not uniform. There is a pattern for most indicators where the less populated rural areas tend to have better health outcomes and determinants of health than more populated rural areas. Urban areas, on average have poorer figures than rural areas.
- Some deprivation measures are considered to be more suitable to detect urban deprivation, such as car ownership, which is considered essential in rural areas. The Welsh Index of Multiple Deprivation 2005 (WIMD) defines rural areas in Wales as more deprived than the Townsend index, suggesting that the WIMD may be more suitable.
- The pattern for elective admissions to hospital is different to most indicators, as the rates for urban areas are similar to those for more populated rural areas, whilst the less populated rural areas have lower rates. This may be due to issues of access to hospitals.
- More complex analysis is required to understand the differences between rural and urban areas, and within rural parts of Wales.

1. Introduction

The perception of what a rural environment means for health varies. Many people think of a “rural idyll” of green countryside, fresh air and better health. However, the assumption that rural environments are inevitably ‘healthier’ is increasingly open to challenge. It is thought that poorer health outcomes are masked by favourable averages, as people from diverse backgrounds, income level and health need are living in close proximity. This is in stark contrast to urban areas, where people with similar characteristics and needs may be concentrated in particular areas, such as in urban deprived council estates or urban affluent areas. Figures for particular health outcomes in rural areas may be small, as the affected people may be dispersed over a wide area. Masking by favourable averages is particularly the case if data is analysed at larger area level such as local authorities. This report therefore uses small area data by Lower Super Output Area (LSOA) where available, which improves detection of smaller pockets of poor health and environmental factors thought to contribute to poor health such as low income, poor housing and access to services.

Access to healthcare services is particularly topical with recent media reports on hospital closures in rural areas, and individual case reports on problems with ambulance services. As with most statistical reports, data are presented at population group level, in this case by area type, rural or urban or by LSOA, and not for individuals. It is clear that not everyone is healthy in an area with good health averages, and not everyone living in an area with poor health averages is in poor health. Similarly, not everyone living in an area considered to have good access to health services finds it easy to access their local health services. This report cannot convey personal experience, but gives an overview of possible outcomes.

The indicators chosen in this report reflect a broader understanding of health. Dahlgren and Whitehead (1992) suggest a model that looks at wider determinants of health such as living and working conditions, which are important in understanding possible reasons for inequalities. Some of the indicators for the section on determinants of health are based on suggested measures for rural deprivation by Asthana et al. (2002) and rural poverty by Palmer (2004).

A recent report by the Commission for Rural Communities (2006) covered rural disadvantage in England, generating renewed interest in the subject. This Wales Centre for Health report aims to investigate inequalities in Wales between rural and urban areas in health outcomes and factors thought to influence health outcomes. The two approaches used are by geographically mapping data by LSOA for individual indicators to show patterns and areas of particular concern, and by comparing data for the aggregated urban, sparsely populated rural areas (“rural sparse”) and less sparsely populated rural areas (“rural less sparse”) to show any differences. It is not intended to single out individual areas or communities by name, but to investigate broader patterns and differences between classes and types of area.

This report is aimed at public health professionals and the interested public, and intends to use as little technical jargon as possible.

1.1 Which areas are defined as rural?

A number of different statistical classifications have been used to analyse datasets relating to the same topic. This can lead to difficulties in comparing different studies. Conclusions based on one set of classifications may not apply to another set as different geographical areas are included in a different class. There are, for example rural areas contained within the predominantly urban areas of the South Wales Valleys.

In 2004 the latest Rural and Urban Area Classification was launched, sponsored by the Office for National Statistics (ONS); Department for Environment, Food and Rural Affairs (Defra); Department for Communities and Local Government (DCLG), the Countryside Agency (CA) and National Assembly for Wales (NAfW). It has been adopted as the standard for National Statistics by the ONS, and this report will be using this new classification.

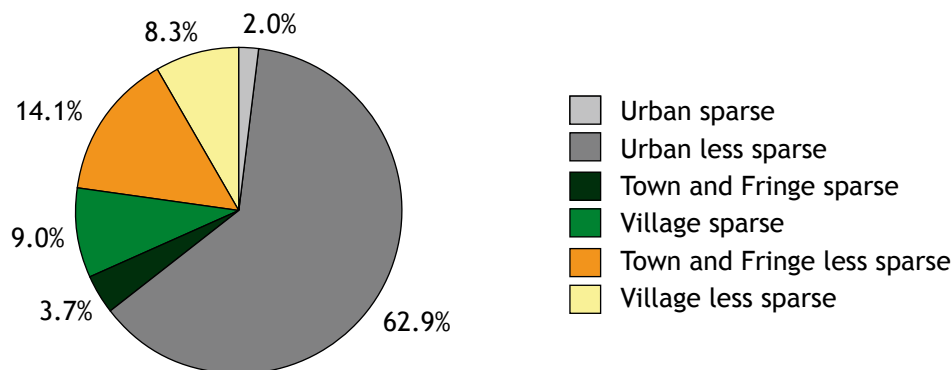
The definition and classification of urban and rural areas places its main emphasis on the type of rural settlements (i.e. settlement type such as town and fringe) and the wider geographic context of such settlements (sparsity) (Bibby & Shepherd, 2004). Settlements with more than 10,000 people are treated as urban, and all other settlements as rural (Bibby & Shepherd, 2004). Table 1 below shows the structure of the classification for LSOAs, where the rural areas are divided further into settlement types.

Table 1: Areas and population shares in Wales by Rural and Urban Area Classification 2004

	Context	Settlement type	Number of areas (LSOAs)	% population
Urban	Sparse	<= 10000 people	37	2%
	Less Sparse	> 10000 people	1201	62.9%
Rural	Sparse	Town and fringe	72	3.7%
		Village and dispersed	167	9%
	Less Sparse	Town and fringe	265	14.1%
		Village and dispersed	154	8.3%

Source: ONS

Fig. 1: Percentage of population living in areas by classification

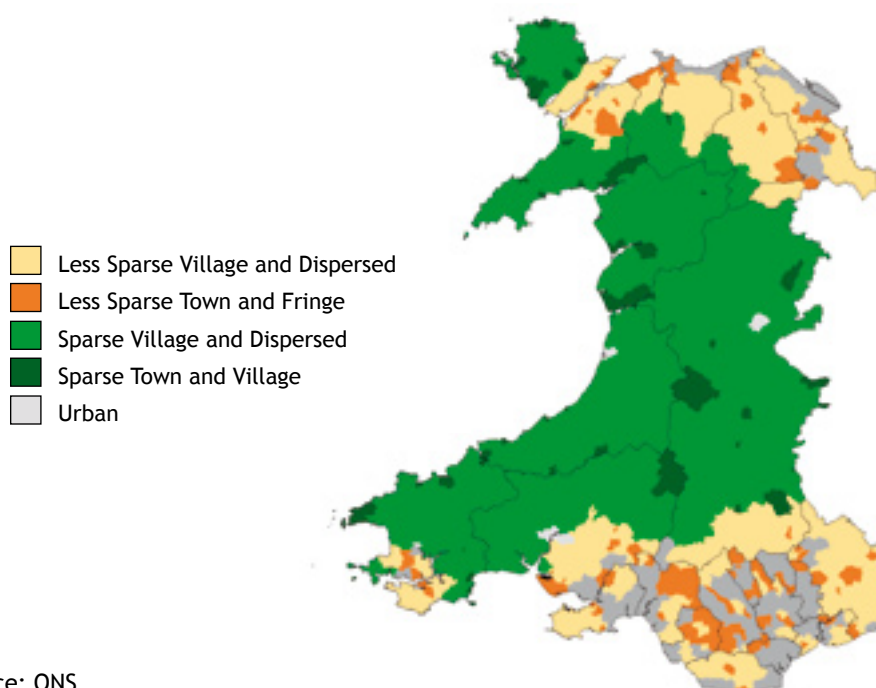


Source: ONS

Both Table 1 and Fig. 1 describe the proportions of the population living in the six different types defined by the new classification. A total of 64.9% of the Welsh population live in urban areas, compared to 35.1% living in rural areas. The map in Fig.2 shows the geographical spread of the areas defined by the classification. The two urban classes (urban sparse and urban less sparse as shown in Fig. 2) have been combined to one urban area shown in grey. The map illustrates that the urban areas, shown in grey colour, cover only a relatively small area

of Wales but they are home to 64.9% of the population. Similarly, the rural areas (shown in all colours but grey) cover the majority of the landmass of Wales and are home to 35.1% of the population. The rural sparse areas in particular, shown in two shades of green, cover a very large proportion of Wales. LSOAs have on average a population of 1500 people, and less densely populated rural LSOAs cover larger areas than densely populated rural and urban areas. See section 1.2 for details on the selection of geographical areas.

Fig. 2: LSOAs by Rural and Urban Area classification 2004



Source: ONS

It has initially been investigated, whether the data in the report should be compared by all six classes, by rural and urban, or by either settlement type or sparsity. The comparison by all classes has been done internally for some of the indicators but display of the final maps and charts in this report has been prepared by urban and rural subdivided by density, into rural sparse and rural less sparse. These three classes have been considered to have the most similar characteristics for the indicators investigated, and the wider context of a rural area was considered to be of greater importance than the settlement types, for example for hospital admission data.

1.2 Geographical areas

This report uses data by LSOA wherever possible, as analysis at small area level should assist in detecting pockets of poorer outcomes which at higher geographies may be lost to averages. In terms of classification as rural or urban, using LSOAs should also give more detail, as for higher geographies the dominant category would be assigned. LSOAs have the advantage of not being subjected to boundary changes over time as opposed to wards or electoral divisions, so that a comparison in time may be possible for future work using the same indicators. LSOAs have comparable population sizes of an average of 1500 people, and comparisons can be made by percentages of LSOAs falling into quintiles or deciles of for example WIMD scores. Some data, however, are not available by LSOAs or, in the case of benefit claimant data from DWP, is not available by five year age bands so that standardised claimant ratios cannot be established. Therefore raw proportions have to be displayed and compared across the classes, using appropriate caveats. The population estimates used (MYE 2003) published by the ONS are classed as experimental, but apart from proportions displayed on maps are used in aggregate form for comparisons.

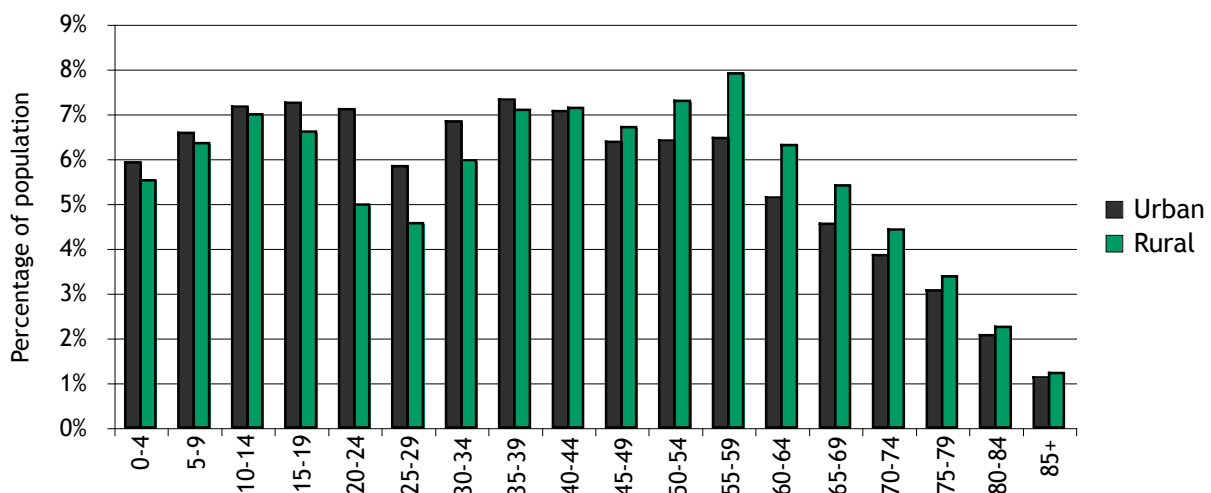
LSOA boundaries have been removed for the maps and local authority boundaries added. Urban areas have been removed to show areas of particular concern in rural areas, as otherwise they would be difficult to distinguish and urban areas may dominate.

2. Demography

The population of the rural areas of Wales tends to be older on average than that of urban areas. The charts below (Fig. 3 and Fig. 4) show slightly higher percentages in the age groups above 45 in rural areas. More 20-29 year olds live in urban areas compared to rural, which may in part be due to young people moving to urban areas for University

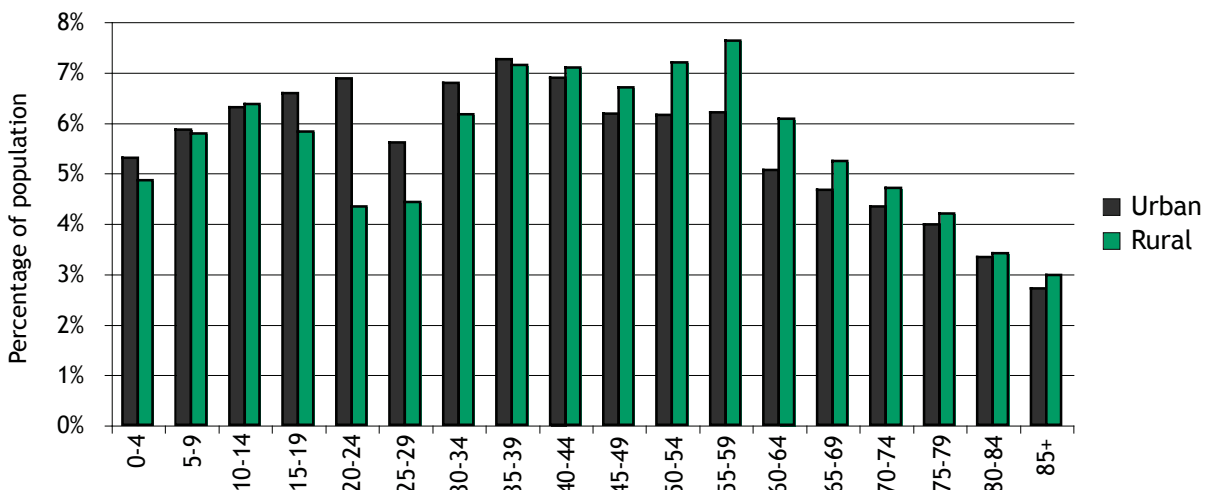
and employment opportunities. Many rural areas have experienced migration patterns that have led to an ageing population, and this may mean that rural healthcare practitioners need to deal with higher levels of chronic diseases such as heart disease, stroke and mental illness (BMA, 2005).

Fig. 3: Males in age groups by urban/rural



Source: ONS

Fig. 4: Females in age groups by urban/rural



Source: ONS

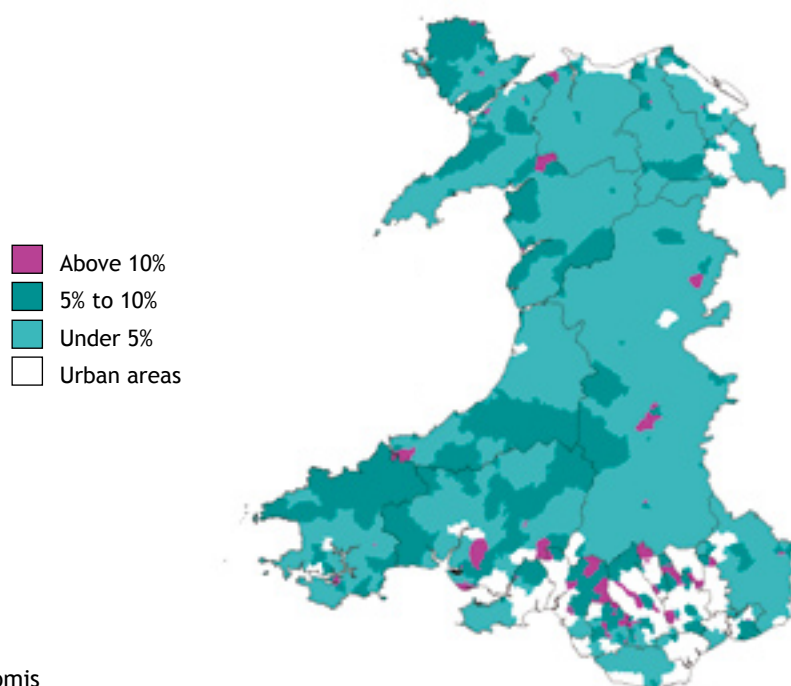
3. Social determinants of health

3.1 Low income

Low income and lack of work are causes of rural poverty and contributing factors to poor health and wellbeing (Asthana et al, 2002). Research indicates that rural deprivation and poverty tend to be the consequences of low pay, self-employed, part-time and seasonal work rather than long-term unemployment (Asthana et al, 2002). However, robust, routinely collected data are not available for these factors. Data is available for

receipt of income support, job seeker's allowance and pension credits and these are illustrated below. The figures are based on actual claimants, but there are lower levels of benefit uptake in rural areas, further accentuated by generally higher costs of living (Asthana et al, 2002). Thus, the figures are likely to be higher than illustrated for rural areas.

Fig. 5: Percentage receiving income support in 2003 amongst working age population (16-59) in rural areas



Source: DWP Nomis

Table 2: Percentage receiving income support - an indicator of low income

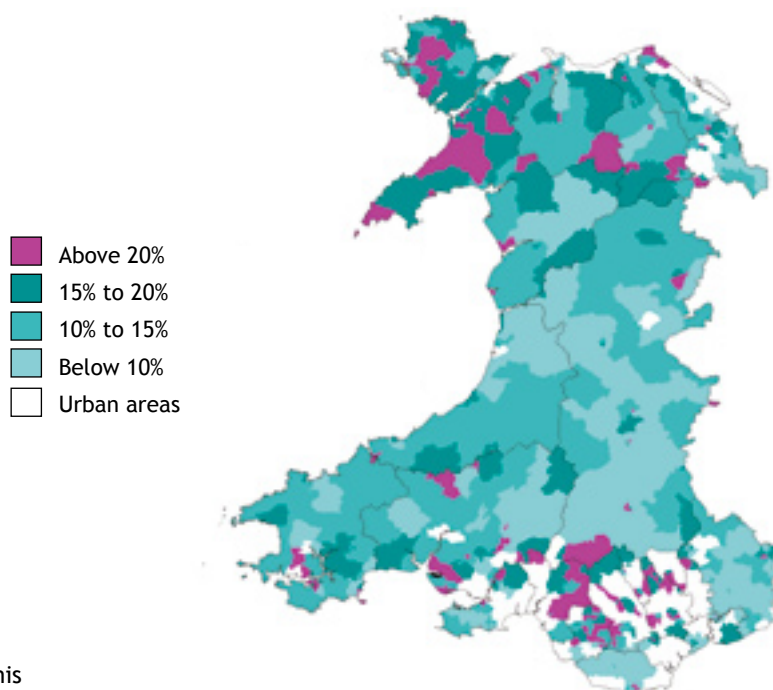
	Range lower	Range upper	Average [95%CI]
Urban	0.5%	36%	9.2% [9.1%;9.2%]
Rural less sparse	0.5%	31.9%	6.7% [6.6%;6.8%]
Rural sparse	1.5%	20.9%	5.5% [5.4%;5.6%]
Wales			8.2% [8.1%;8.2%]

Source: DWP Nomis

The map in Fig. 5 shows the percentages of people receiving income support, which is an income-related benefit and indicator of poverty. Income support can be claimed by persons aged 16 to 59 who work less than 16 hours per week (and/or with a partner working under 24 hours) and are not required to be available for full-time employment. The main eligible groups

are lone parents, the long and short term sick and people with disabilities. Although average percentages of receiving income support are lower in rural areas compared to urban areas, there are rural areas particularly in rural less sparse areas with significantly higher percentages than the Welsh average.

Fig. 6: Percentage receiving pension credits in 2003 amongst 60+ population



Source: DWP Nomis

Table 3: Percentage receiving pension credits - an indicator of low income in older people

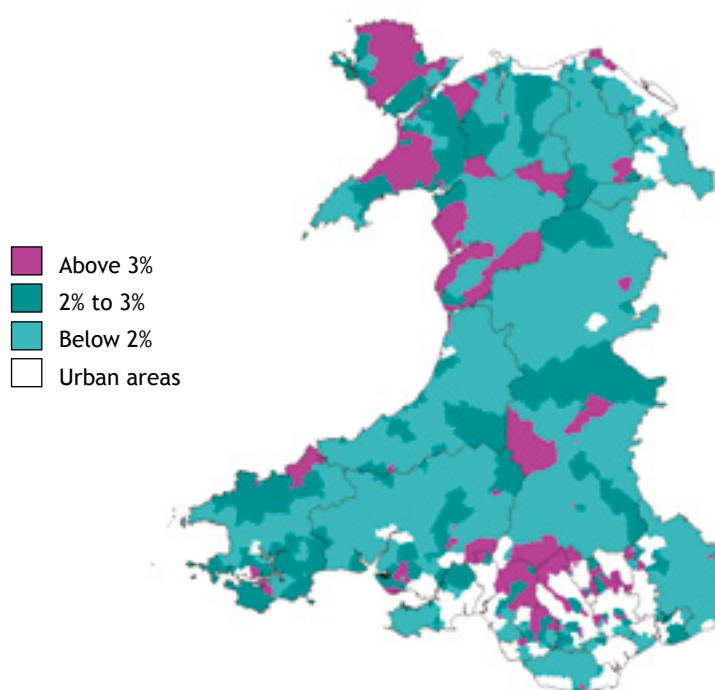
	Range lower	Range upper	Average [95%CI]
Urban	1.3%	71.4%	20.4%[20.3%;20.5%]
Rural less sparse	2.6%	44.1%	16.7% [16.5%;16.9%]
Rural sparse	2.6%	31%	14.4% [14.1%;14.6%]
Wales			18.6% [18.5%;18.7%]

Source: DWP Nomis

The map in Fig. 6 shows the percentage of older people in rural areas receiving pension credits, which is a means tested benefit. There are two elements to pension credits, the 'guarantee credit' element for age 60 and over which guarantees a minimum income for low income pensioners, and also a 'savings credit' element for age 65 and above. The areas coloured in pink show the areas where over

20% of the eligible population receive pension credits. Levels of benefit uptake are lower in rural areas compared to urban areas (Asthana et al, 2002) and the data and map are illustrating pockets with high levels of known poverty. True levels are therefore likely to be higher than illustrated and the difference between rural and urban at least narrowed.

Fig. 7: Percentage receiving jobseeker's allowance in 2003 amongst working age population (16-59) in rural areas



Source: DWP Nomis

Table 4: Percentage receiving jobseeker's allowance - an indicator of lack of work

	Range lower	Range upper	Average
Urban	0.3%	15.6%	3% [3%;3.04%]
Rural less sparse	0.4%	8.1%	2.44% [2.4%;2.5%]
Rural sparse	0.4%	8.5%	2.26% [2.2%;2.3%]
Wales			2.79% [2.77%;2.82%]

Source: DWP Nomis

Although the average percentage of people receiving job seeker's allowance is relatively small, there are some pockets of higher percentages in rural areas, shown in pink on the map Fig. 7. Caution is advised in interpreting these figures as an indicator of lack of work. People may choose not to register as unemployed, for reasons such as stigma (Deaville et al, 2002). There may be differences in registration behaviour and the local labour market between rural and urban areas (Asthana et al, 2002). It may therefore not be appropriate to draw firm conclusions from the difference between the urban and rural claimant figures. This indicator is

included here to illustrate actual claimant patterns, particularly as claimant data are also used in the Welsh Index of Multiple Deprivation (National Assembly for Wales, 2005).

The summary table (Table 5) below shows the raw proportions for three different benefits described earlier. All three display a tendency to higher percentages for the urban areas, lower percentages for the rural less sparse areas and lowest percentages for the rural sparse areas. The limitations of interpreting job seeker's allowance as an indicator of lack of work are described above.

Table 5: Summary table - Percentage receiving benefits indicating low income and lack of work

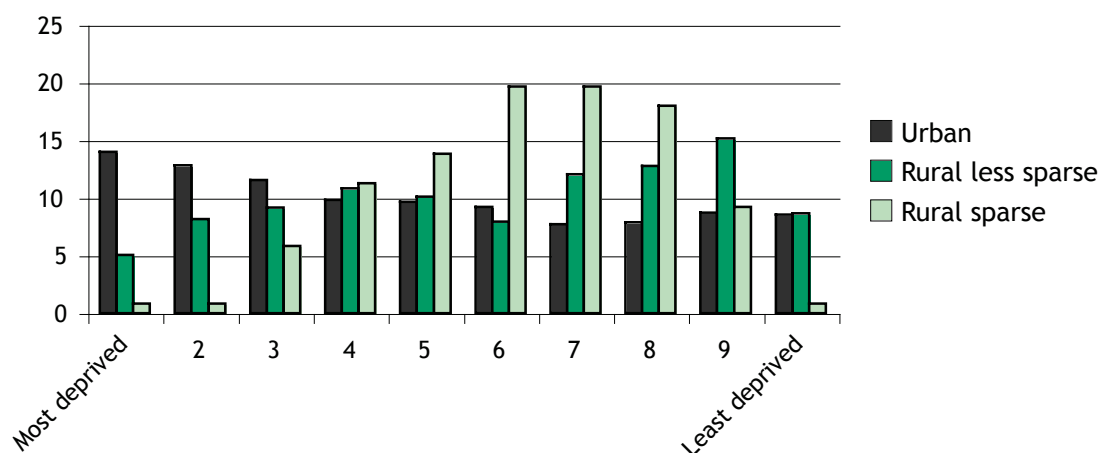
	% receiving income support [95%CI]	% receiving pension credits in ages 60+ [95%CI]	% receiving job seeker's allowance in ages 16-59 [95%CI]
Urban	9.2% [9.1%;9.2%]	20.4% [20.3%;20.5%]	3% [3%;3%]
Rural less sparse	6.7% [6.6%;6.8%]	16.7% [16.5%;16.9%]	2.44% [2.4%;2.5%]
Rural sparse	5.5% [5.4%;5.6%]	14.4% [14.1%;14.6%]	2.26% [2.2%;2.3%]
Wales	8.2% [8.1%;8.2%]	18.6% [18.5%;18.7%]	2.79% [2.77%;2.82%]

Source: DWP Nomis

Fig. 8 below shows the percentage of LSOAs in each tenth, as defined by the income section of the Welsh Index of Multiple Deprivation (WIMD). It appears to show a similar pattern to that observed above for other indicators. More urban areas fall into the three most deprived tenths compared to rural LSOAs according to the WIMD income domain scores, and also very few rural sparse areas. The rural sparse areas are predominantly classed into the fifth to eighth tenth. Although urban areas tend to fall into the more deprived tenths, the rural less sparse areas are also of concern with significant proportions in the most deprived tenths. The rural sparse areas appear not to contain as wide a spectrum as the other two classes, as proportions in the two most deprived and the least deprived are comparably very low. There is some

uncertainty in the data for the least deprived tenths and caution in the interpretation is advised. The difference between rural sparse and rural less sparse areas overall is not entirely clear without further analysis, but certainly the rural less sparse areas in the three most deprived tenths are of concern. This may reflect some of the observations made on high levels of income support and pension credits in the few areas with high upper ranges in less sparse areas.

Fig. 8: Percentage of LSOAs in WIMD income domain tenths



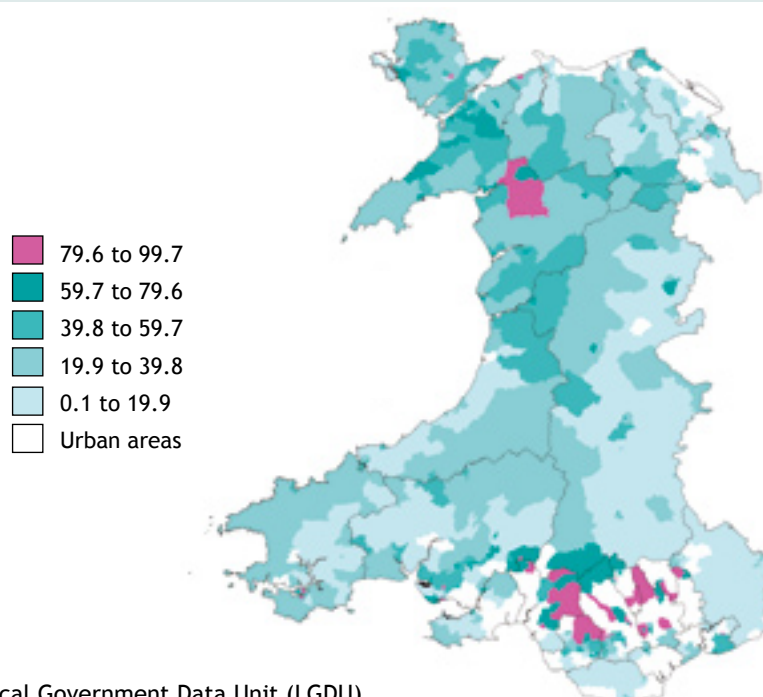
Source: WIMD 2005 income domain

3.2 Housing

The quality of housing can impact on the health of individuals. Poor housing can cause and aggravate chronic diseases such as respiratory disease and can also affect

an individual's mental health. The impact is especially felt amongst the elderly and the younger populations (Shelter, 2000).

Fig. 9: Percentage of A & B Council Tax Valuation Bands

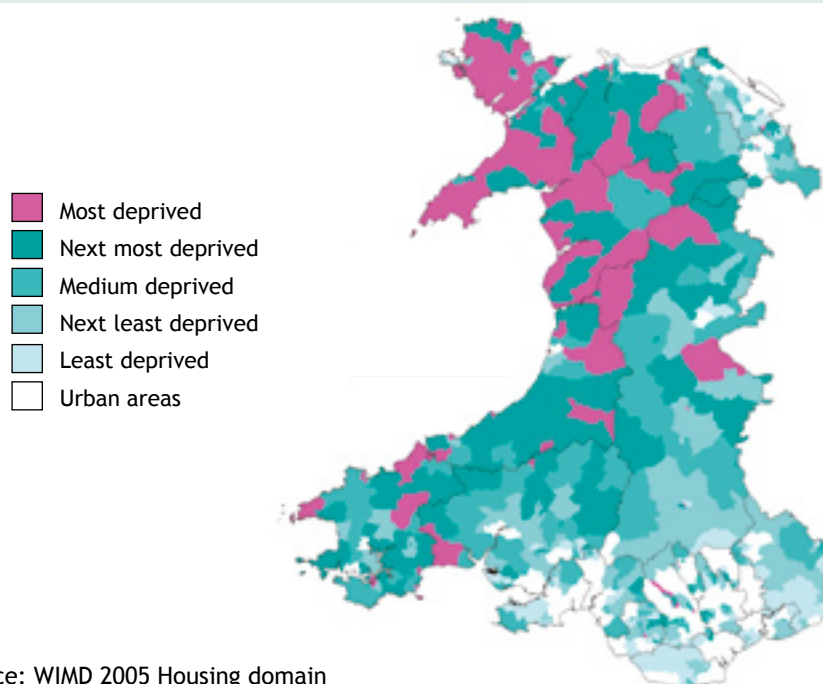


Source: Local Government Data Unit (LGDU)

The council tax valuation bands (CTVB) are a categorical assessment of UK property values and amenities governing local tax levies. The bands in the data used range from A to H, where A has the lowest value properties and H has the highest values. Caution should be exercised however, when interpreting these data as the distribution of bands varies according to Local Authority and an additional band I has since been introduced in Wales. Research has been undertaken in the past to link CTVB with specific determinants of health and causes of pre-mature death (Beale et al, 2002). Research suggests that those living in CTVB A and B suffer worse health outcomes than the other bands. Also, CTVB has been

identified as a marker for deprivation, and correlations have been made between CTVB and Jarman scores in England (Beale et al, 2001).

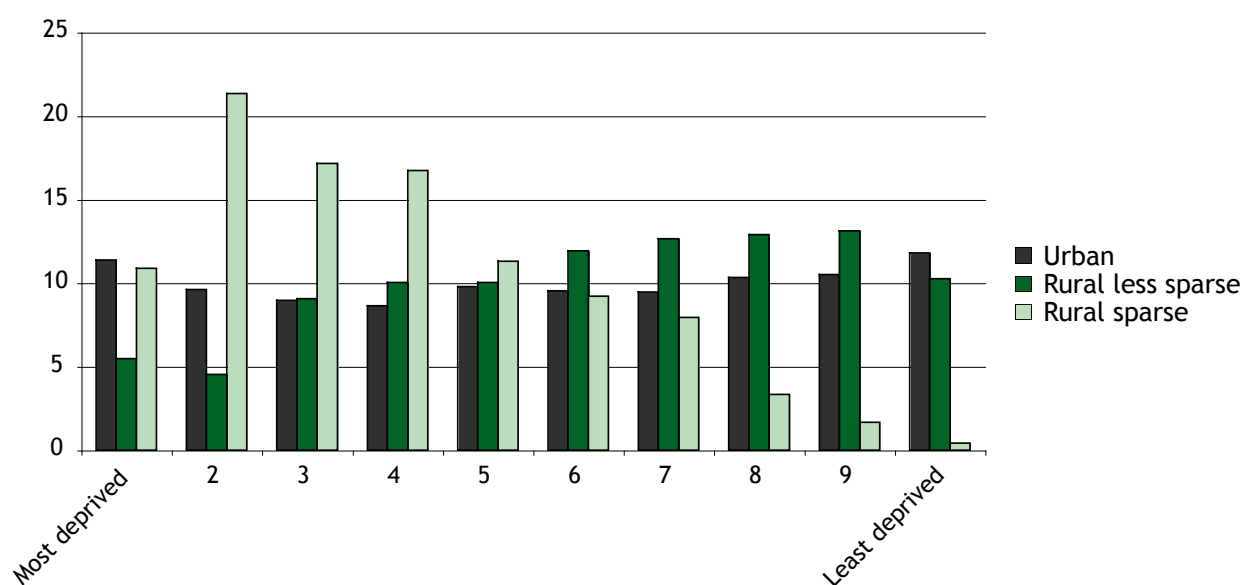
The map (Fig. 9) shows CTVB for A and B by 2001 LSOA across rural areas in Wales. There are relatively low proportions of CTVB A&B in the rural areas of Wales. However, the pattern is influenced by the poorer South Wales valleys where deprivation is comparably high. There are rural areas in North and Mid-West Wales with relatively high proportions of A and B CTVB houses, however, these are dispersed and therefore do not form clusters.

Fig. 10: Housing Deprivation: WIMD housing deprivation

Source: WIMD 2005 Housing domain

The map in Fig. 10 shows the fifths according to the housing deprivation domain from the WIMD by LSOA. This domain is made up from those households with a lack of central heating and those households classed as overcrowded, excluding student households (National Assembly for Wales, 2005). The map suggests that poorer housing domain scores tend to be in the more rural areas of North and East Wales.

Despite the limitations of some of the data sources used in this domain, the WIMD highlights the poorer housing conditions that exist in rural areas.

Fig. 11: Percentage of LSOAs in WIMD housing domain by tenths

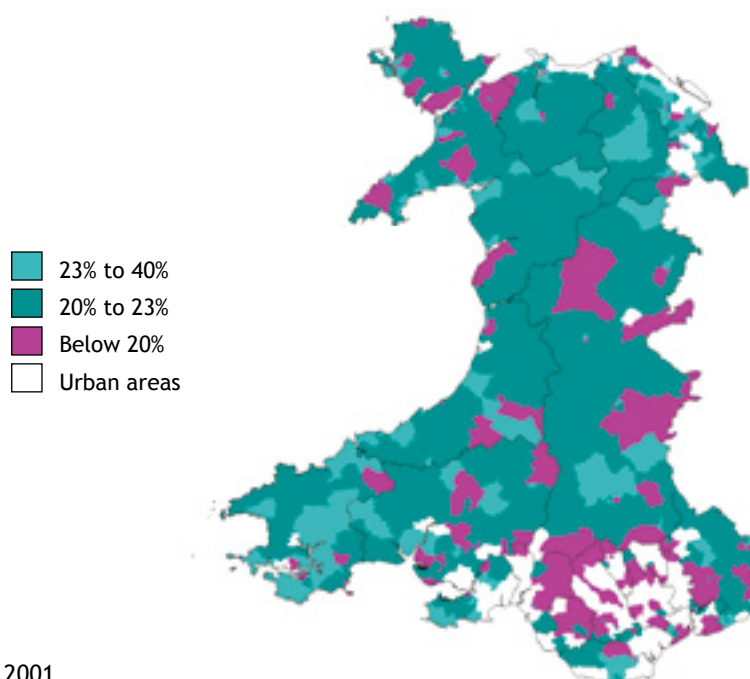
Source: WIMD 2005 housing domain

Fig. 11 shows the percentage of LSOAs by tenths of deprivation according to the WIMD housing domain results. The chart illustrates that urban housing domain scores are evenly distributed across the tenths. This is not the case in rural areas. There is a general increase

in the percentage of LSOAs in the tenths as deprivation decreases amongst the rural less sparse areas. The rural sparse areas show a high number of LSOAs in the most deprived tenths, indicating poor housing conditions in some of the most rural areas.

3.3 Education

Fig. 12: Percentage of people with 5 or more GCSEs (A* - C)



Source: Census 2001

Table 6: Percentage of the population with 5 or more GCSEs (A* - C)

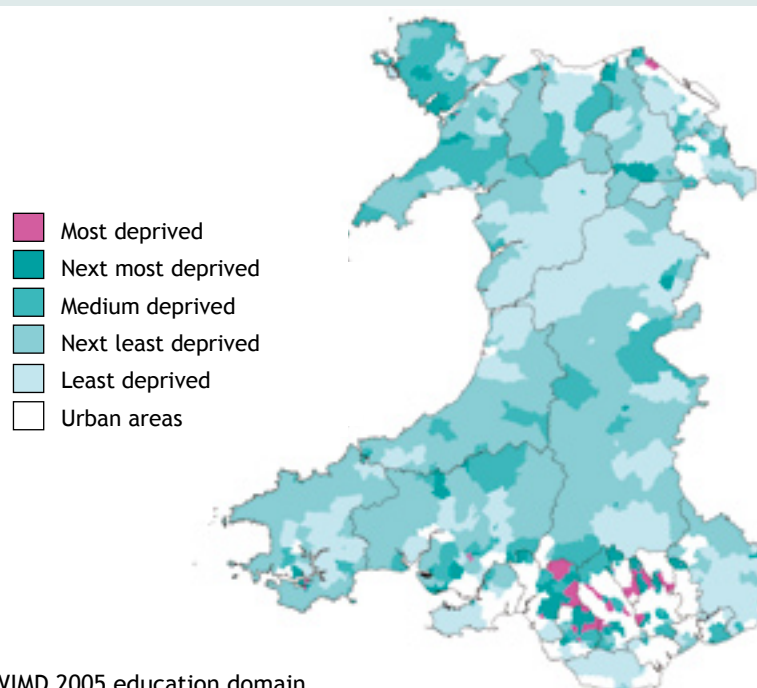
	Lowest	Highest	Average [95% CI]
Urban	5.8%	31.4%	19.3% [19.2%;19.4%]
Rural less sparse	10.7%	28.3%	20% [20%;20.2%]
Rural sparse	14.5%	27.9%	21.7% [21.5%;21.9%]
Wales			19.8 [19.7%;19.8%]

Source: Census 2001

The map in Fig. 12 shows the proportion of people with qualifications of 5 or more GCSEs (grade A* - C). It has to be noted that qualifications are dependent on the population structure and that areas with fewer older people or fewer children under 16 may have higher proportions than areas with other

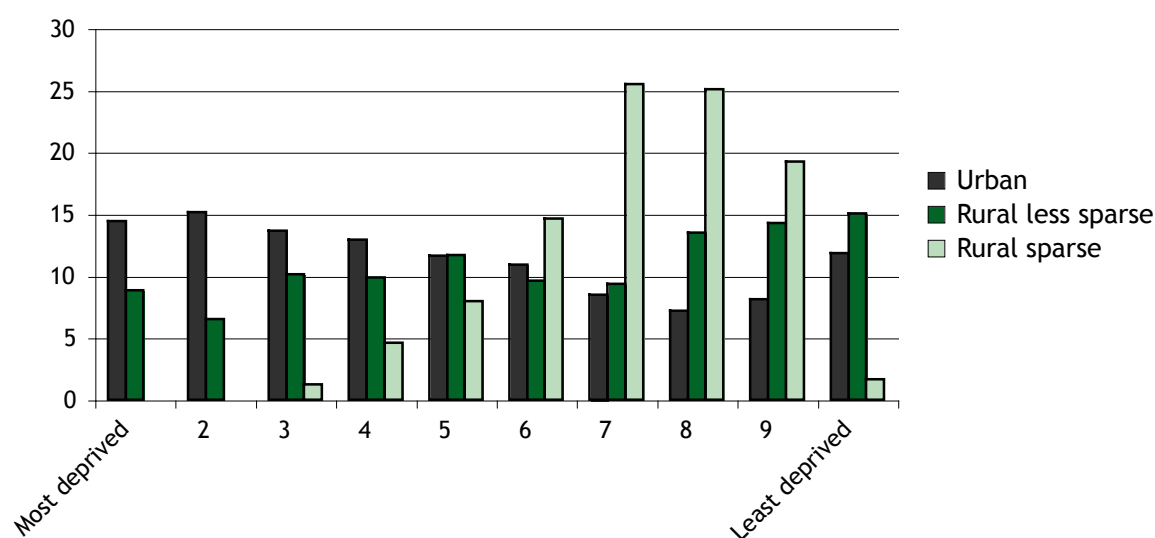
profiles. The rural averages as displayed in Table 6 show slightly higher proportions, particularly in the rural sparse areas. This indicates that slightly more people in rural areas tend to have 5 GCSEs and higher compared to those in urban areas.

Fig. 13: Education, Skills and Training Deprivation WIMD 2005



Source: WIMD 2005 education domain

Fig. 14: Percentage of LSOAs in WIMD 2005 education, skills and training domain tenths



Source: WIMD 2005 education domain

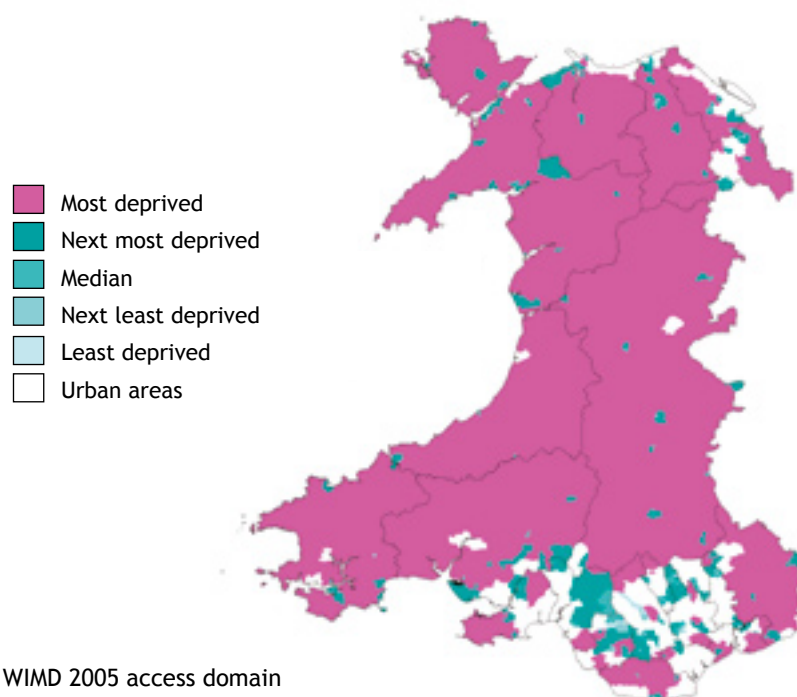
The map in Fig. 13 shows the fifths in the WIMD 2005 education, skills and training domain. It is calculated from the average point scores in key stage 2-4, proportion of adults with low or no qualifications, proportion of 17 and 18 year olds not entering further or higher education and secondary school absence rates. The areas coloured in pink indicate the most deprived areas according to the index, i.e. those with the lowest levels of education, skills and training. The most deprived fifth in the rural LSOAs tend to be predominantly in the South Wales Valleys area. This is also the case for the urban South Wales valley areas, although this is not shown on the map. Rural areas in the next most deprived fifth are scattered more widely. The graph in Fig. 14 shows the percentage of LSOAs falling into

tenths according to the WIMD 2005 education, skills and training domain scores. The data is shown in tenths, rather than fifths as in the map, to show the data in more detail. More urban areas fall into the four most deprived tenths compared to rural less sparse areas. None of the rural sparse areas fall into the two most deprived areas, and they show the highest percentages in the sixth to ninth tenth. It appears that rural sparse areas tend to have higher education levels compared to urban and rural less sparse. It has to be noted that education levels are dependent on the population structure, as for example areas with a large student population are likely to have higher education levels in the relevant age groups than areas without.

3.4 Access to services

Access to healthcare services is particularly topical with recent media reports on hospital closures in rural areas and associated loss of access to those services.

Fig. 15: Access to services: WIMD access deprivation

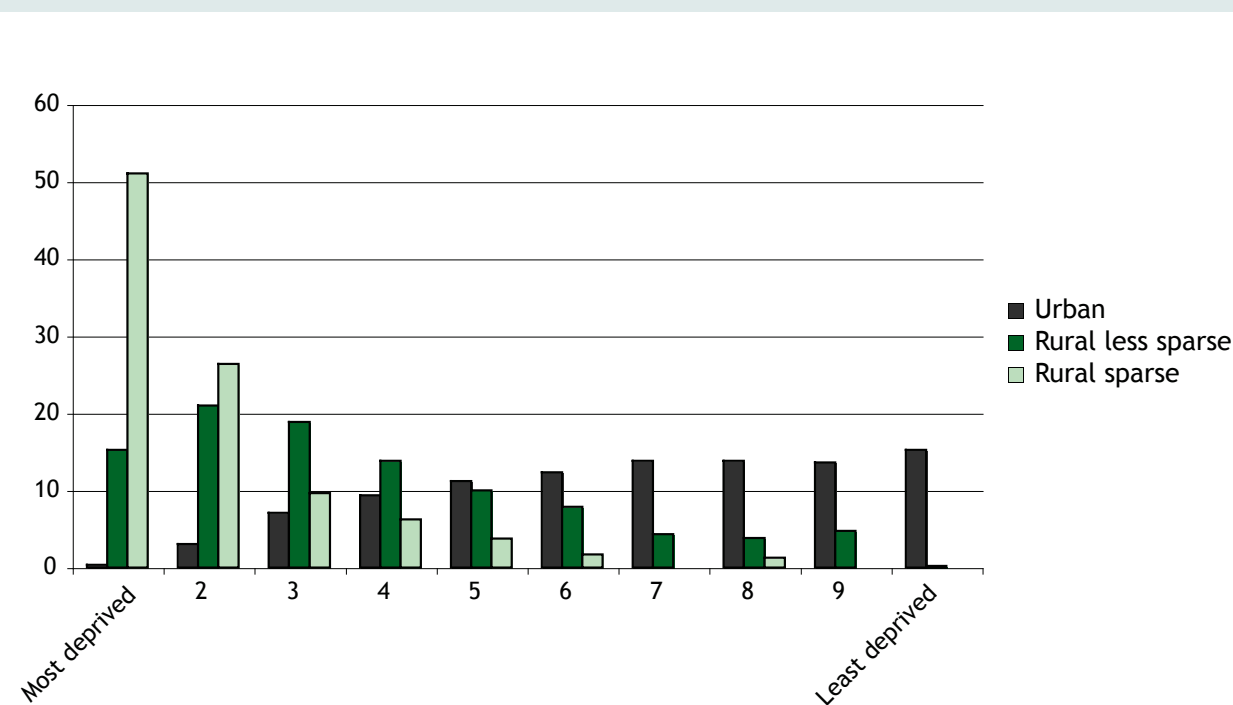


Source: WIMD 2005 access domain

The map in Fig. 15 illustrates how accessibility to services via public transport and pedestrian access score. Since Wales has a comparatively rural environment there are some expected difficulties for people accessing services without a car. The elderly population is the group that is less likely to own, or have access to private transport and yet have some of the greatest need for public transport access to reach services, for example health care services. Distance is an important factor when it comes to maintaining and improving health. Issues that arise include time and distance for cases of heart attacks and the ability to make and keep hospital and doctors' appointments (Gibbon et al, 2006).

The map shows almost uniformly those rural areas, which include parts of the Vale of Glamorgan and Monmouthshire, which have relatively poor access to services via public transport; therefore car ownership is a necessity. Thus indicators using car ownership to calculate deprivation indices, for example in the Townsend index, can mask some of the rural poverty issues.

Fig. 16: Percentage of LSOAs in WIMD access domain tenths

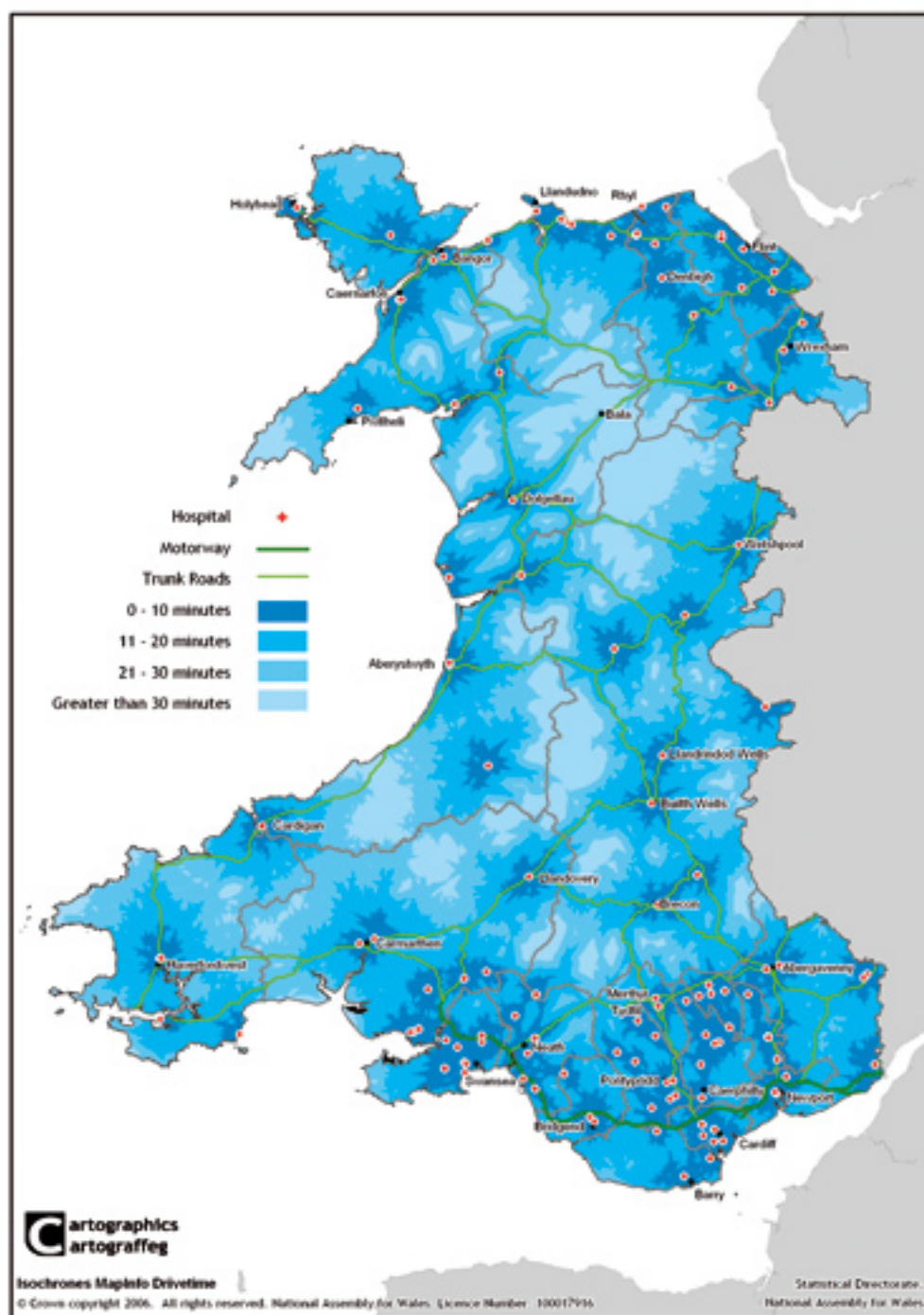


Source: WIMD 2005 access domain

The chart in Fig. 16 shows the percentage of LSOAs based on rural class by tenths of deprivation derived from the WIMD access domain. The chart illustrates that there is a very low proportion of urban LSOAs in the

most deprived tenths, whilst rural less sparse and rural sparse areas have a high proportion of LSOAs in the poorer tenths. This reflects the poor access associated with living in rural areas and the necessity therefore to own a car.

Fig. 17: Time and distance analysis to hospitals in Wales

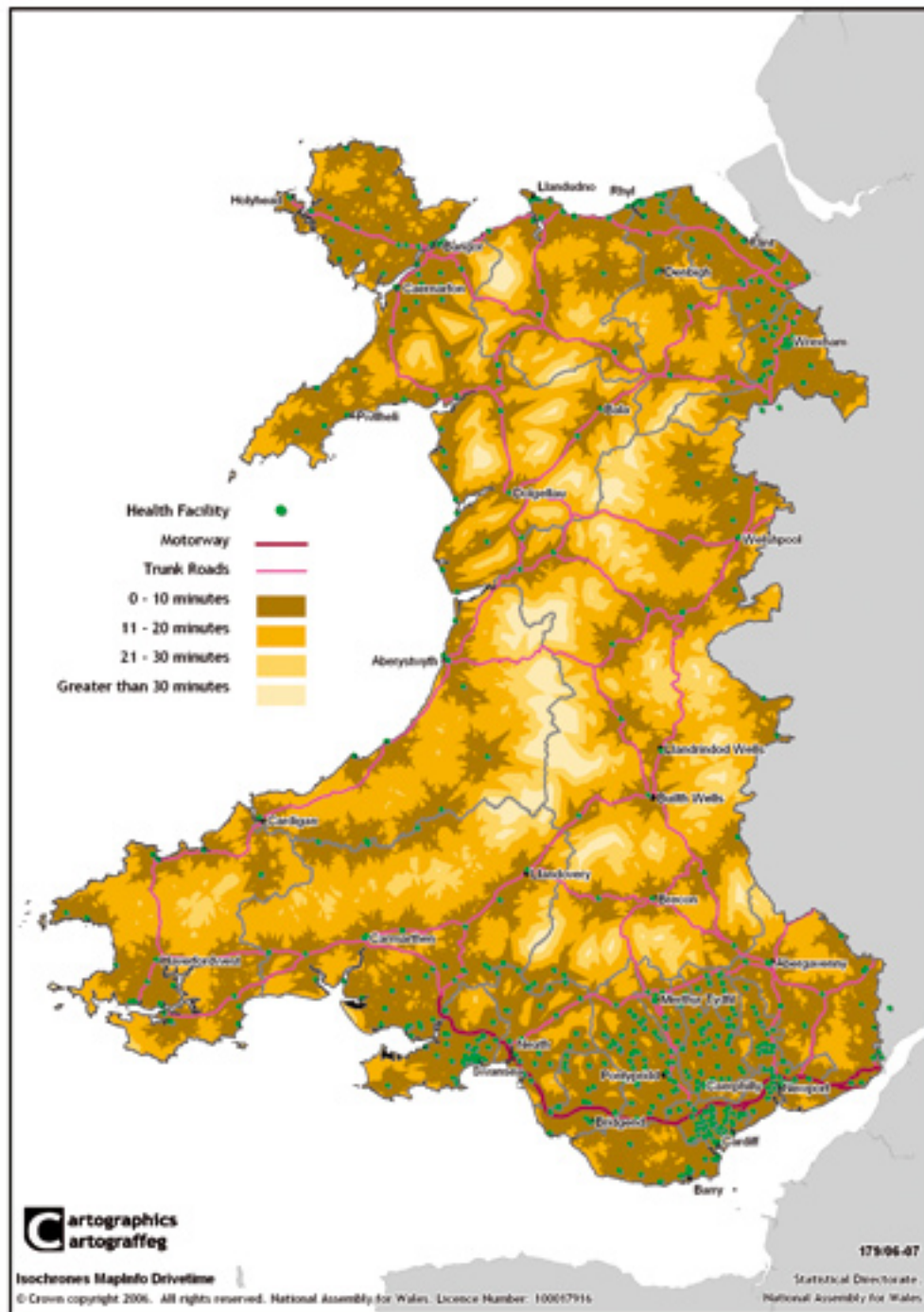


Source: Welsh Assembly Government

The map in Fig. 17 shows a time and distance analysis for access to hospitals across Wales. The darker colours indicate less travel time to the nearest hospital, whereas a lighter colour indicates more travel time to reach the nearest hospital. It is calculated as the amount of time it takes to travel to the hospital from a location using main roads, some of which

are shown on the map as 'trunk roads'. The map illustrates that the more central areas of Wales, that tend to be rural, although not uniformly, have poorer access to hospitals. Caution should be exercised as it is difficult to determine the difference between the rural and urban areas due to the difficulty in defining rural and urban boundaries.

Fig. 18: Time and distance analysis to GP surgeries, clinics & health centres



Source: Welsh Assembly Government

The map in Fig. 18 shows a time and distance analysis for access to GP surgeries, clinics and health centres. The darker colours indicate less travel time to the nearest GP, clinics and health centres, whereas a lighter colour indicates more travel time to these services. The map illustrates, in a similar way to the

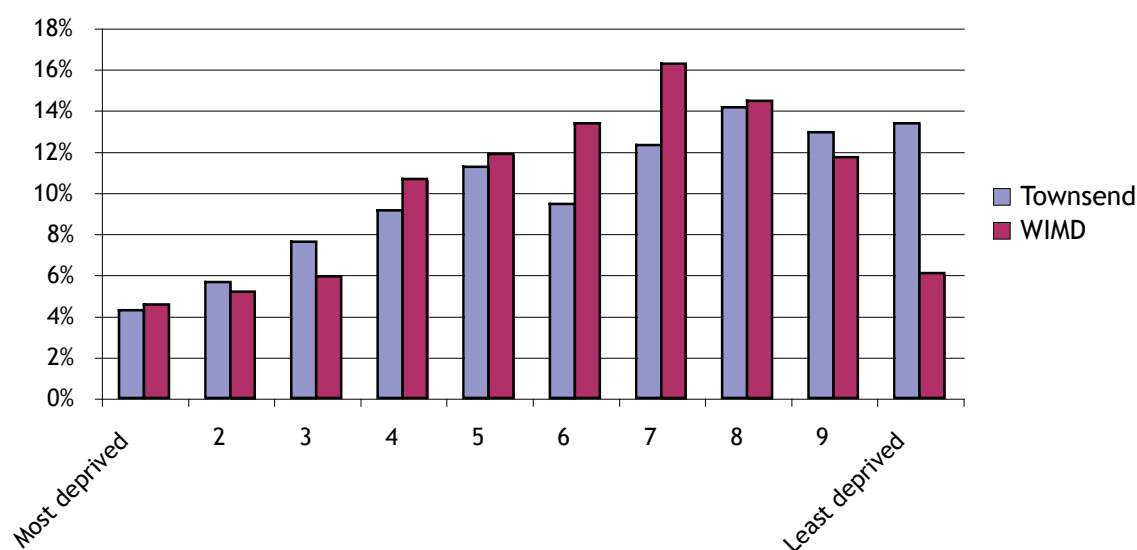
hospital time and distance analysis, that the increased journey times are located towards the central, predominantly rural, parts of Wales. Services are concentrated near the main settlements of South East Wales, and the North and South Wales Coast.

3.5 Rural deprivation

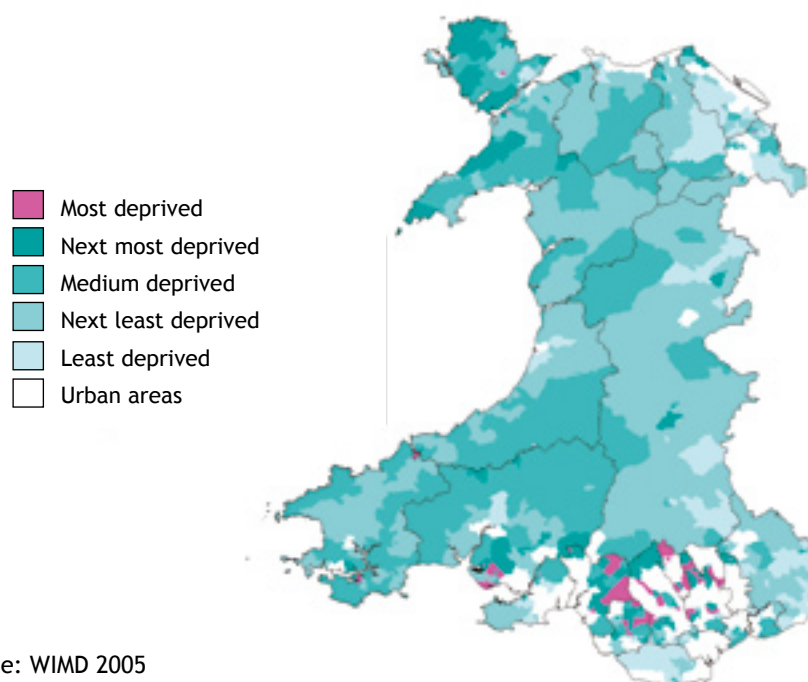
There is some dispute over the suitability of deprivation indices for rural areas, as they generally use indicators which are considered to be more suitable to detect urban deprivation. One of these indicators is car ownership, which in rural areas is considered essential. Also, benefit uptake was found to be lower in rural areas (Asthana et al, 2002) and benefit counts are used to assess for example unemployment or low income. It is therefore argued that such indicators are inappropriate to detect deprivation in rural areas. Different deprivation indices are used for different purposes, such as the Townsend index and the Welsh Index of Multiple Deprivation (WIMD). Although they use different components with the Townsend concentrating on material deprivation, they have been compared here as they are both used in practice to identify deprivation. The

chart in Fig. 19 shows the difference in rural areas being classed in deprivation tenths. The Townsend index places more rural areas into the least deprived tenth than the WIMD, whilst the WIMD index places more areas into the sixth and seventh tenth than the Townsend index. The pattern indicates that the Townsend index defines rural areas as less deprived than the WIMD. One reason for this may be the inclusion of the indicator on car ownership in the Townsend index but not in the WIMD. It has to be noted that exact Townsend scores are not available at LSOA level, as employment figures are only available for the age band 16-74 and not 16-59/64 as required. The Townsend scores calculated (Source: NPHS) are therefore an estimate. Also, the exact distribution of the WIMD amongst the five least deprived tenths is less certain due to limitations of the data used.

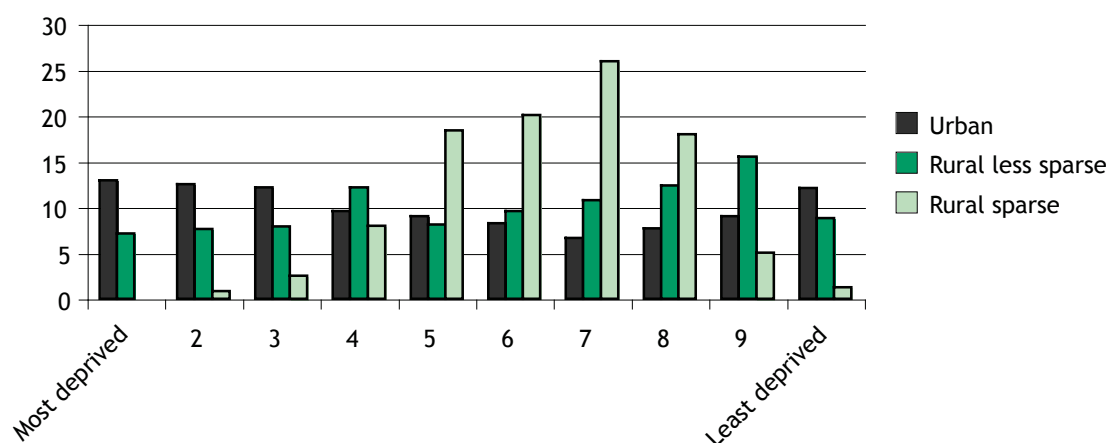
Fig. 19: Percentage of rural LSOAs in deprivation tenths



Source: WIMD 2005, NPHS

Fig. 20: WIMD 2005 overall deprivation

Source: WIMD 2005

Fig. 21: Percentage of LSOAs in WIMD deprivation tenths

Source: WIMD 2005

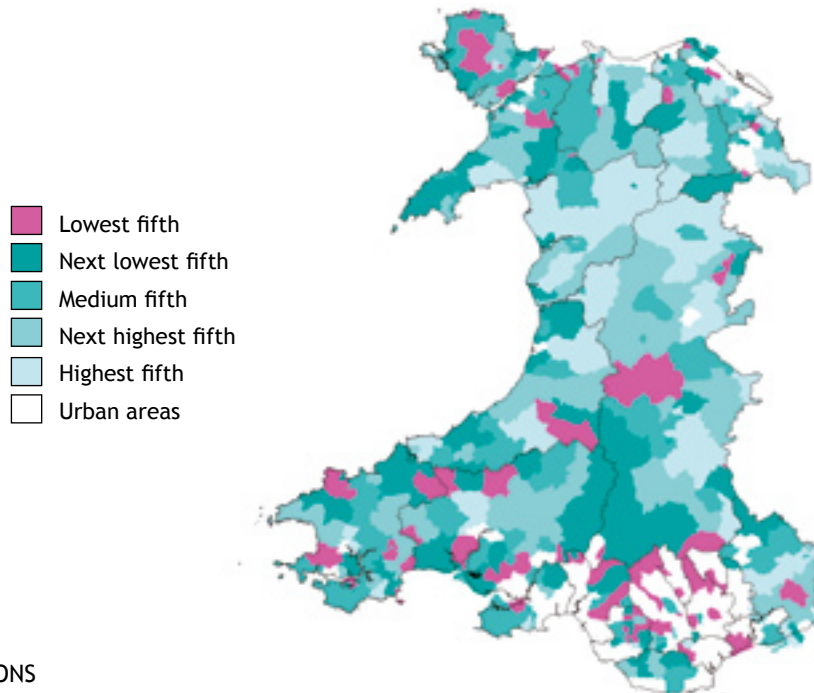
The map in Fig. 20 above shows the deprivation fifths according to the Welsh Index of Multiple Deprivation 2005 with the pink colour indicating the most deprived of the rural areas. These are predominantly in the South Wales Valleys area and only a few areas in the South West and on Anglesey. The graph above shows the percentage of urban, rural less sparse and rural sparse areas in each

WIMD deprivation tenth. Although the urban areas tend to show higher proportions in the three most deprived tenths, rural less sparse areas in those tenths are also of particular concern. The rural sparse areas tend to have the largest proportions between the fifth and eighth tenth, defining them as less deprived compared to the other two groups.

4. Health outcomes

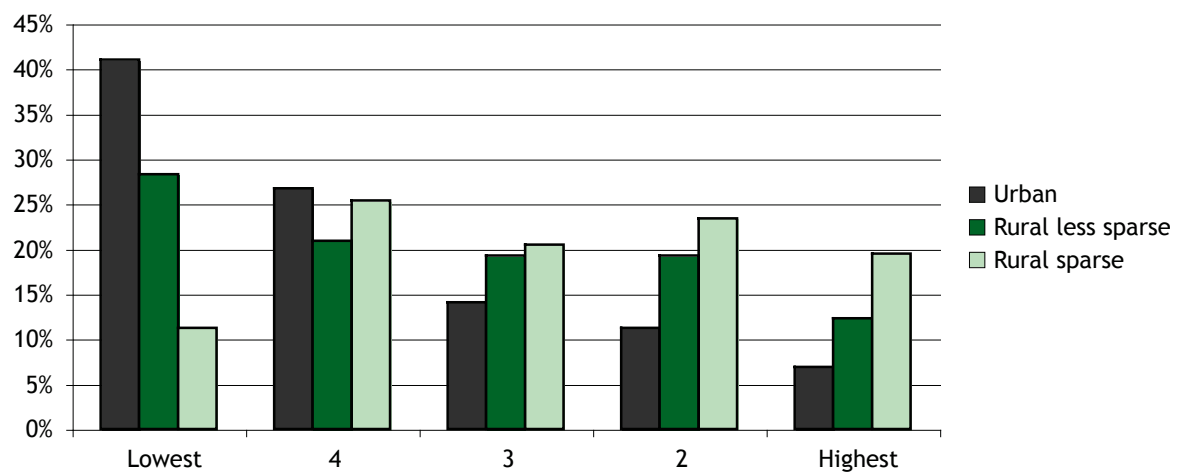
4.1 Life Expectancy

Fig. 22: Life expectancy at birth in fifths for persons 1999-2003



Source: ONS

Fig. 23: Percentage of wards in life expectancy fifths 1999-2003



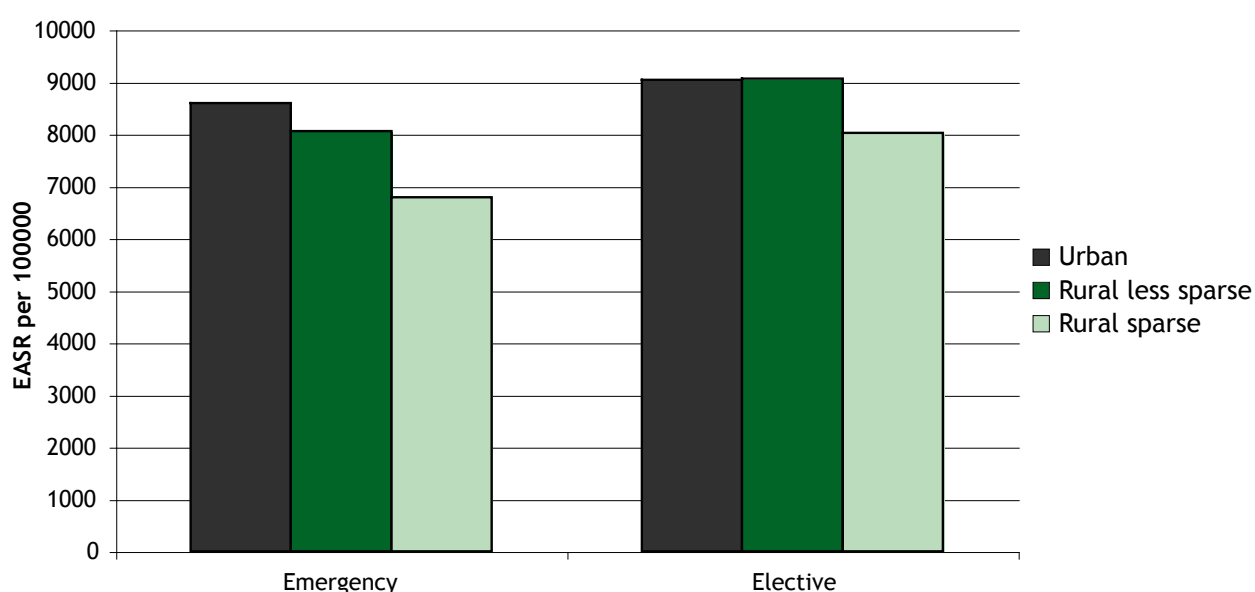
Source: ONS

The map in Fig. 22 shows the life expectancy fifths at birth for persons in Wales based on five years of data from 1999-2003. The wards coloured in pink on the map have the lowest life expectancy in Wales. Ward level data were used here as data at LSOA level were not available. The graph in Fig. 23 shows the percentage of wards in each life expectancy fifth. More urban wards fall into the lowest life expectancy fifth than rural areas. However, the rural less sparse wards are also of concern, as rural less sparse wards are more numerous in the lowest life expectancy fifth than rural

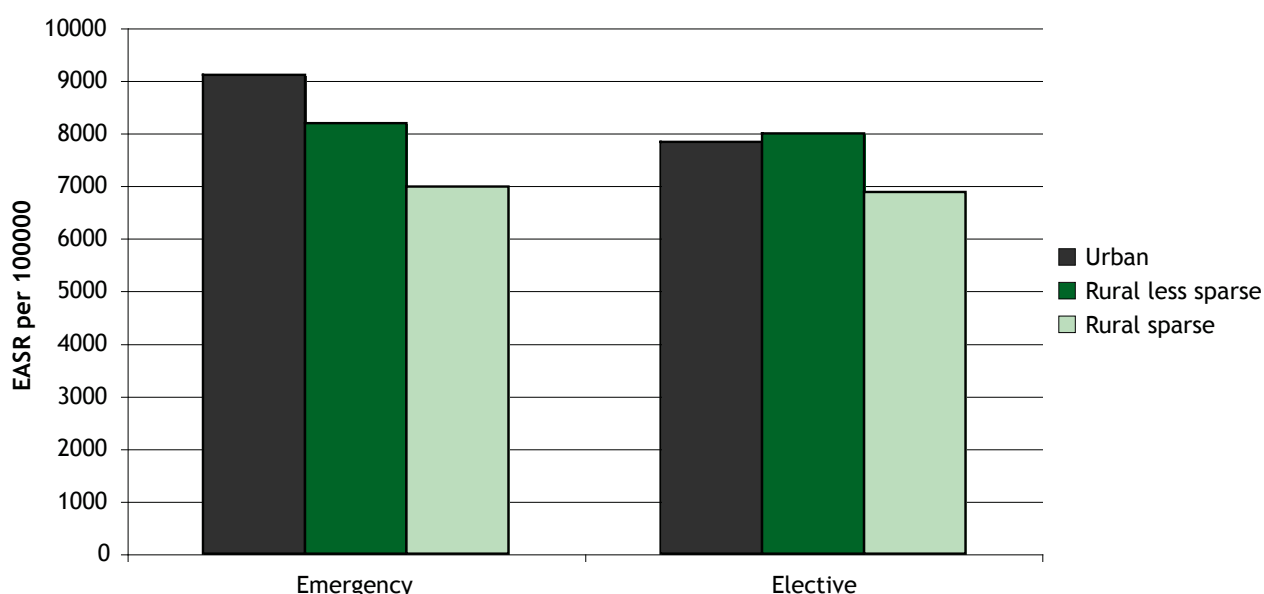
sparse wards. More rural wards fall into the two highest life expectancy fifths than urban wards, with the rural sparse wards outnumbering the rural less sparse wards. It could be concluded that life expectancy tends to be higher for rural wards than for urban wards, and tends to be higher in rural sparse wards compared to rural less sparse wards. It has to be noted that unlike for LSOAs, ward populations vary in size considerably and the proportions of wards in the graph for a given fifth are unlikely to reflect the corresponding proportion of the population.

4.2 Hospital Admissions

Fig. 24: Female emergency admissions vs. elective admissions 2001-2003



Source: PEDW 2001-2003

Fig. 25: Male emergency admissions vs. elective admissions 2001-2003

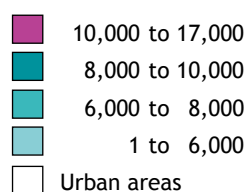
Source: PEDW 2001-2003

Fig. 24 and Fig. 25 above show the rates for emergency and elective admissions to hospital for males and females. The rates have been directly age-standardised to the European standard population and abbreviated to EASR. The emergency admissions follow the pattern found for many other indicators, where the urban rate is the highest, rates in rural less sparse areas are lower than urban areas and in rural sparse areas the lowest. For elective admissions the pattern is different, as the rates for urban areas are similar to those for rural less sparse areas, whilst the rural sparse areas have lower rates. This may be due to issues of access to hospitals in rural sparse

areas, as patients in rural less sparse areas live nearer urban facilities and may be more likely to opt for elective procedures. There is also a difference between the sexes, as the rates for overall elective admissions are higher than emergency rates for females. For males it is the opposite with higher rates for emergency admissions than elective admissions. This pattern could be due to a number of factors such as differences in specific health problems for males or females, differences in contributing lifestyle factors and health behaviours such as women being more likely than men to visit their GP with a health problem.

Fig. 26: Male emergency admissions 2001-2003

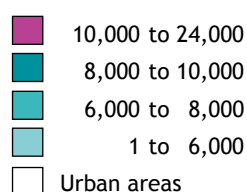
EASR per 100000



Source: PEDW 2001-2003

Fig. 27: Male elective admissions 2001-2003

EASR per 100000



Source: PEDW 2001-2003

Fig. 26 and Fig. 27 show the rates for male emergency and elective admissions on the map. Areas with the highest rates of admission to hospital are shown in pink colour, and display a different pattern for the emergency and elective admissions.

4.3 Mortality

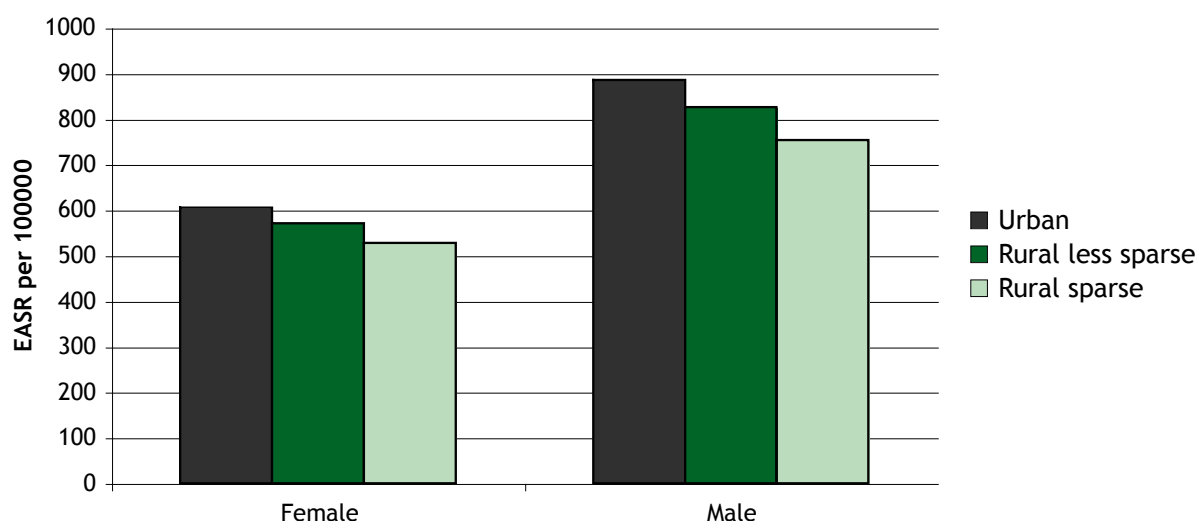
Mortality is an important indicator of the general health of populations. Mortality data are routinely collected and are considered to be robust and reliable.

Research on rural/urban mortality differences in Wales (Senior et al., 2000) reported that rural areas tended to have relatively low average rates of mortality by most causes (except suicides and road accidents), compared to urban areas.

High rates of premature mortality are closely associated with high rates of poverty (Townsend, 2001), and several studies have investigated the rural/urban differences by controlling for deprivation (Senior et al., 2000).

Senior et al found that mortality differences disappeared or were greatly reduced, if deprivation was taken into account. This does, of course, depend on the deprivation measures used as the authors acknowledge, and difficulties in measuring deprivation in rural areas have been discussed in Section 3.5. It would be outside the scope of this report to adjust for deprivation when comparing mortality rates. The rates have been directly age-standardised to the European standard population and abbreviated to EASR. These rates have been displayed to illustrate a pattern of rates measured and care needs to be taken when interpreting the rates presented, as they are not proof of the urban or rural environment itself causing the difference.

Fig. 28: Male and female mortality rates for all causes 2001-2003



Source: ONS

Table 7: Deaths from all causes 2001-2003 all ages per 100000

	EASR Females [95%CI]	EASR Males [95%CI]
Urban	604.9 [599.1;610.8]	886.4 [878.6;894.1]
Rural less sparse	570.6 [561.3;579.8]	826.6 [814.8;838.3]
Rural sparse	528.5 [517.1;539.9]	753.6 [739.1;767.9]
Rural all	554.2 [547.1;561.4]	797.2 [788.1;806.2]
Wales	586.1	852.4

Source: ONS

Fig. 28 and Table 7 above show the mortality rates (EASR) for all causes of death in the rural/urban classes by male and female. The rates are higher for urban areas than rural less sparse areas, and the rates in rural sparse areas the lowest. This pattern is the same for males and females.

The rate of deaths in the community is a useful indicator of whether changes in technologies and promotions of lifestyle changes are effective. Over the course of the 20th Century, the rate of deaths in the community has continually decreased. In the context of this report, these results may indicate healthier influences on rural sparse communities.

Table 8: Premature deaths (under 75) from circulatory disease 2001-2003 per 100000

	EASR Females [95%CI]	EASR Males [95%CI]
Urban	81.1 [75.8; 86.6]	173.5 [165.3; 182.0]
Rural less sparse	68.6 [60.7; 77.3]	152.8 [140.5; 165.8]
Rural sparse	60 [50.7; 70.4]	131 [116.9; 146.3]
Rural all	65.3 [59.2; 71.8]	144.3 [135;154.1]
Wales	75.3 [71.2; 79.4]	162.2 [156; 168.6]

Source: ONS

Table 8 above shows the standardised rates for premature deaths from circulatory disease for three years in rural and urban areas. There is a pattern of highest rates in urban areas, lower in rural less sparse areas, and lowest in rural sparse areas.

Circulatory disease is the largest cause of death of the people of Wales. Deaths from this cause account for 41% of all deaths in Wales between 2001 and 2003. In people under age

75 circulatory diseases account for one death in three. Factors that can lead to death from circulatory disease include diet, exercise, and tobacco. From the Welsh Health Survey 2003-2005, it can be seen that the Local Authority areas where these lifestyle factors are comparatively poorer, are dominated by urban settlements. Further work needs to be undertaken to see whether the type and shape of a settlement has an impact on these factors across Wales.

Table 9: Deaths from respiratory disease 2001-2003 all ages per 100000

	EASR Females [95%CI]	EASR Males [95%CI]
Urban	75.5 [72.5; 78.6]	106 [102.5; 109.7]
Rural less sparse	72.2 [65.8; 79.1]	100.7 [91.3; 110.8]
Rural sparse	53.2 [46.4; 60.6]	77.1 [67.2; 88]
Rural all	64.7 [61.3; 68.3]	90.6 [87.1; 94.9]
Wales	71.5 [69.3; 73.9]	100.3 [97.6; 103]

Source: ONS

Table 9 shows the mortality rates for respiratory disease for all ages in the rural/urban classes by male and female. The rates are highest in urban areas, slightly lower in rural less sparse areas, and the rates in rural sparse areas the lowest. This pattern can be observed for both males and females.

For historical reasons a significant number of people in communities across Wales were exposed to factors leading to respiratory

disease such as mining and heavy industry. Even though the coal mines have mostly closed, the legacies of people's experiences are now contributing to analyses of mortality. There is some difference between the mortality rates for rural sparse and rural less sparse areas. This may be due to the classification of a number of former mining villages in the South Wales Valleys in the rural less sparse classification.

Table 10: Premature deaths (under 75) from cancer 2001-2003 per 100000

	EASR Females [95%CI]	EASR Males [95%CI]
Urban	120.7 [114; 127.6]	153.1 [145.3; 161.1]
Rural less sparse	114.4 [103.8; 125.8]	136.6 [125;149.1]
Rural sparse	105.7 [92.8; 119.8]	119.3 [105.8; 134.1]
Rural all	111.2 [102.9; 119.9]	129.9 [121; 139.3]
Wales	117 [111.8; 122.4]	144 [138.2; 150.1]

Source: ONS

Table 10 above shows the standardised rates for premature cancer deaths for three years in rural and urban areas. There is a pattern of highest rates in urban areas, slightly lower in rural less sparse areas, and lowest in rural sparse areas.

Deaths from cancers account for 1 in 4 deaths in Wales for people of all ages. For people under the age of 75, cancer accounts for one death in three and is the leading cause of death for that age group. There are many elements that lead to deaths from cancers, an

important one being smoking. Smoking rates are thought to be generally lower in rural areas than urban areas which may account for some of the differences. Conversely one of the main interventions for lowering the numbers of deaths from treatable cancers, i.e. breast, cervical and prostate cancers, are screening services. Anecdotal reports suggest that there may be problems of access to screening services in the more rural areas, and therefore it is recommended that more work is conducted to understand some of these geographic issues.

Table 11: Suicides 2001-2003 per 100000

	EASR Females [95%CI]	EASR Males [95%CI]
Urban	3.0 [2.0; 4.3]	13.7 [11.4; 16.3]
Rural less sparse	2.9 [1.4; 5.5]	14 [10.1; 18.9]
Rural sparse	3.8 [1.4; 7.9]	13.6 [8.4; 20.5]
Rural all	3.3 [1.9; 5.3]	13.9 [10.8; 17.7]
Wales	3.2 [2.7; 3.7]	13.8 [11.9; 15.9]

Source: ONS

Table 11 above shows the standardised rates for suicides for three years and all ages in rural and urban areas. In contrast of most other causes of death, deaths from suicides are slightly higher in rural areas compared to urban areas. For females the rates are lowest

in the rural less sparse areas, slightly higher in the urban areas and highest in the rural sparse areas. The number of cases is relatively small and although the rates show the described pattern, the differences between the types of area are very small.

Table 12: Deaths from transport accidents 2001-2003 per 100000

	EASR Females [95%CI]	EASR Males [95%CI]
Urban	1.7 [1; 2.7]	7.3 [5.7; 9.2]
Rural less sparse	2.1 [0.8; 4.2]	11.2 [7.6; 15.7]
Rural sparse	4.2 [1.6; 8.5]	15.7 [10; 23.3]
Rural all	2.8 [1.5; 4.6]	12.7 [9.7; 16.4]
Wales	2.1 [1.4; 2.9]	9.1 [7.6; 10.8]

Source: ONS

Table 12 above shows the standardised rates for transport accidents for three years and all ages in rural and urban areas. In contrast of most other causes of death, deaths from transport accidents are slightly higher in rural areas compared to urban areas. The rates are lowest in the urban areas, higher in the rural less sparse areas and highest in the rural sparse areas. The number of cases is relatively small and although the rates show the described pattern, the differences between the groups are small.

The information presented here relates the residence of people who die from transport accidents. There is some evidence to suggest that it is equally important to look at the location of the transport accident in undertaking analyses of mortalities from road traffic crashes. The geography of Wales is such that there are many winding rural roads where transport accidents happen (RTCs). Coupled with the influences of speed and alcohol, there is the potential for RTCs to be a serious issue in rural areas.

5. Conclusions

Health data and need are not uniform across rural Wales. Data for this report were analysed at small area level (LSOA) to improve detection of smaller pockets of poor health outcomes or determinants of health. Some small areas in the rural less sparse areas are of particular concern, as they show considerably poorer figures than the Welsh average for example on income indicators. If analysed at higher level geographies such as local authorities, figures for these particular areas could be hidden by favourable averages across local authorities that contain areas with far better outcomes. This report does not single out or name particular areas, but areas have been grouped into the rural/urban classifications to compare figures or grouped together into bands to illustrate patterns on the map.

A pattern has emerged from our analysis for most of the indicators used in this report, whereby urban areas tend to show the poorest outcomes and determinants of health. The rural areas with less sparsely populated surroundings follow closely behind with slightly better results, and the rural areas with sparsely populated surroundings have the best results. Some of the more deprived areas in the South Wales Valleys are classed as rural less sparse, and are likely to contribute substantially to the poorer results in the rural less sparse areas. This pattern was also observed in mortality rates for most causes of death.

Some deprivation measures are considered to be more suited to detect urban deprivation, such as car ownership, which is considered essential in rural areas. The Welsh Index of Multiple Deprivation 2005 (WIMD) defines rural areas in Wales as more deprived than the Townsend index. While recognising the importance of using comparative measures of deprivation, we would urge caution in the selection of appropriate indices when considering rural issues.

Further analysis in the future could include the use of lifestyle data such as smoking figures from the Welsh Health Survey, which although not available now are planned to become available by rural and urban areas in the future. Non-traditional emerging sources of data such as MOSAIC or Health ACORN may also be appropriate to better understand issues in rural areas.

Wales is known for its beautiful countryside, including the Brecon Beacons and Snowdonia for example. However, it is not very well understood, how and why the health of the people in such areas varies from those in the country's more populated areas. In *Designed for Life* (Welsh Assembly Government, 2005), the Welsh Assembly Government's statement for future health services, Wales will have world class health services by 2015. If this vision is to be achieved, then there needs to be a better understanding of the needs of the whole population, in urban and rural settings.

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