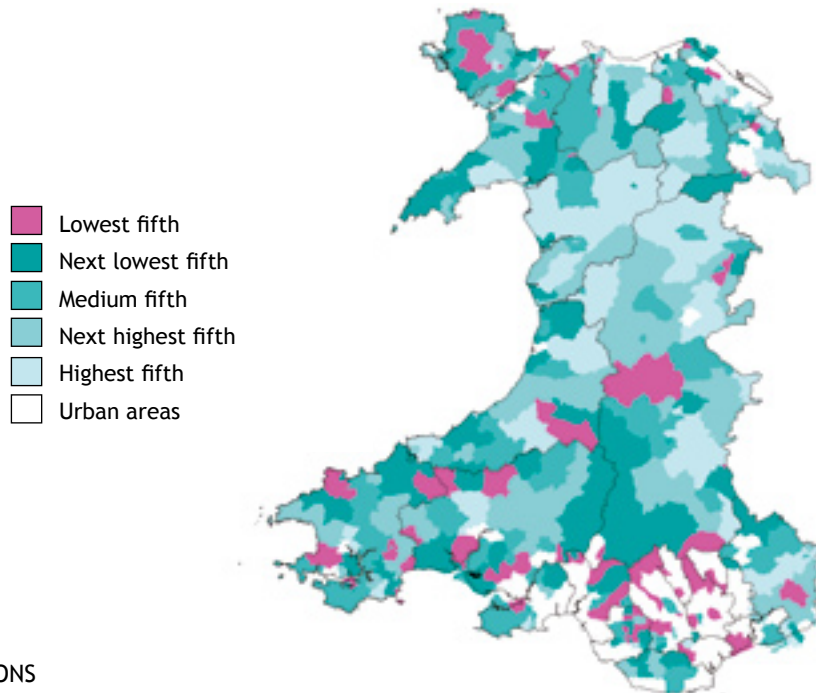


4. Health outcomes

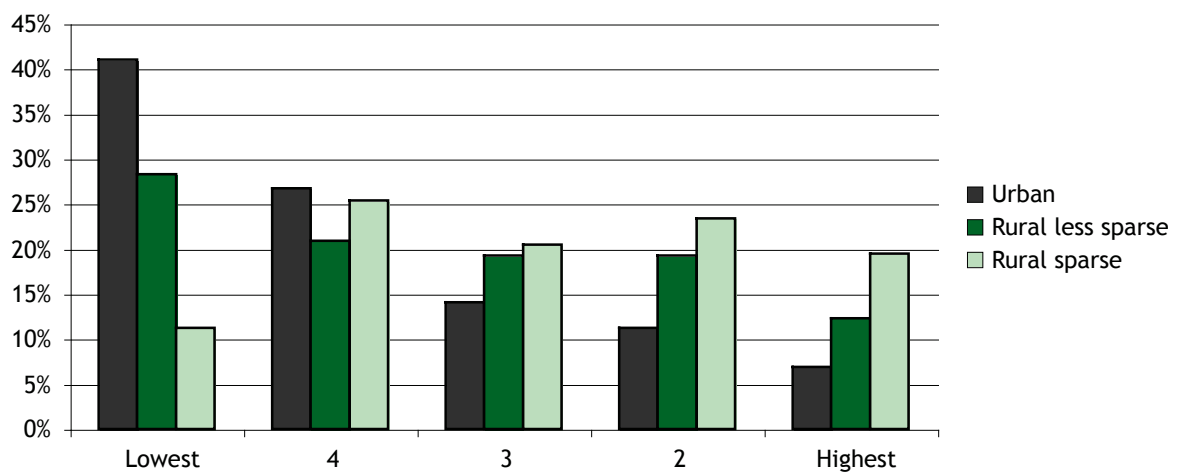
4.1 Life Expectancy

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



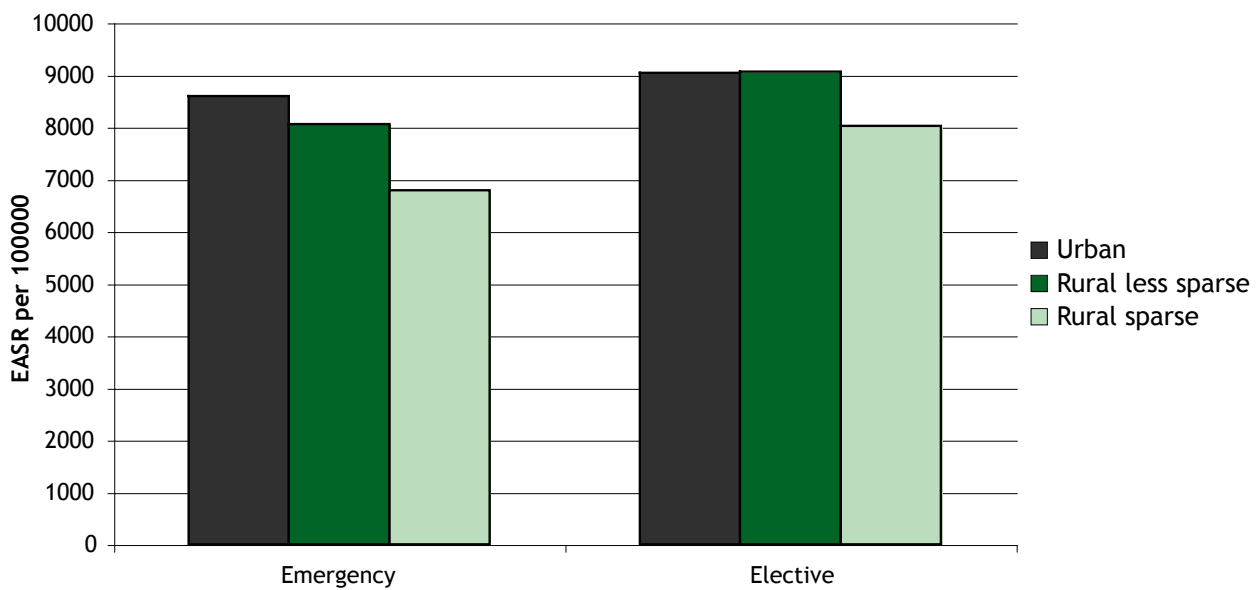
Source: ONS

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.

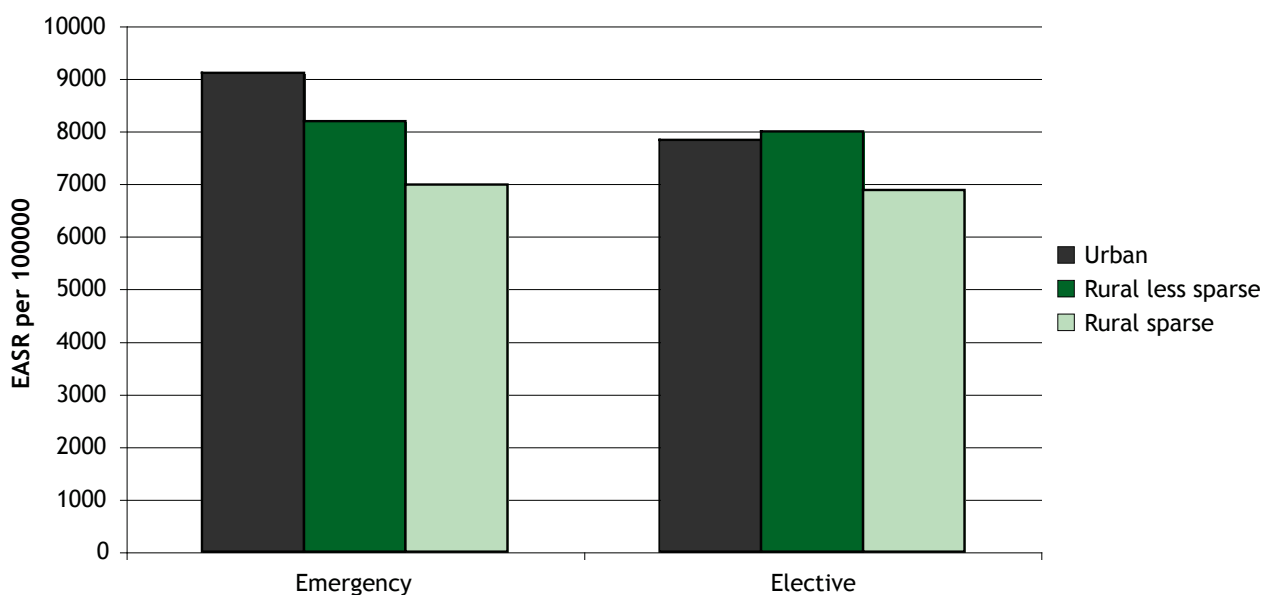
4.2 Hospital Admissions

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



Source: PEDW 2001-2003

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

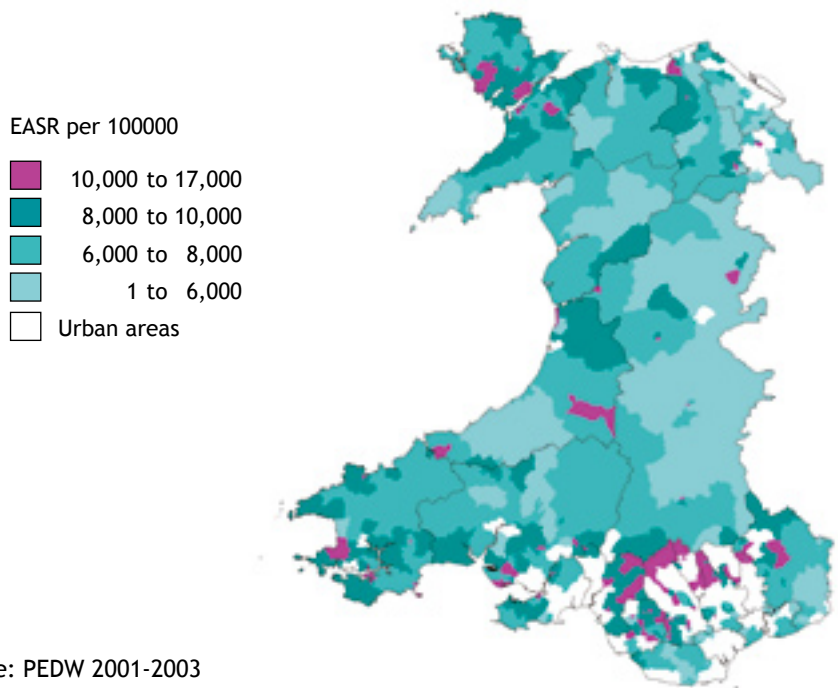


Source: PEDW 2001-2003

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

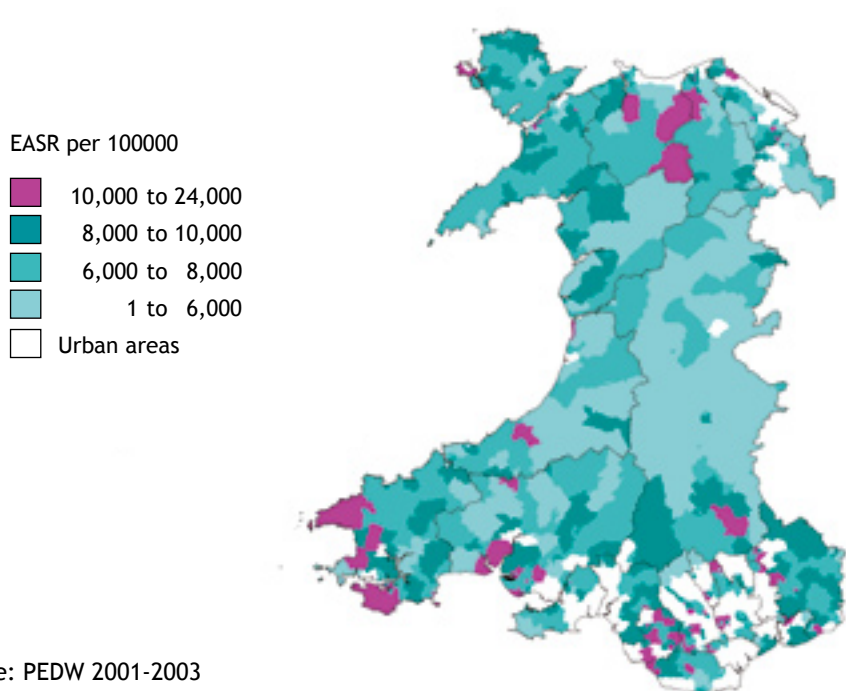
areas, as patients in rural less sparse areas live nearer urban facilities and may be more likely to opt for elective procedures. There is also a difference between the sexes, as the rates for overall elective admissions are higher than emergency rates for females. For males it is the opposite with higher 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



Source: PEDW 2001-2003

Fig. 27: Male elective admissions 2001-2003



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

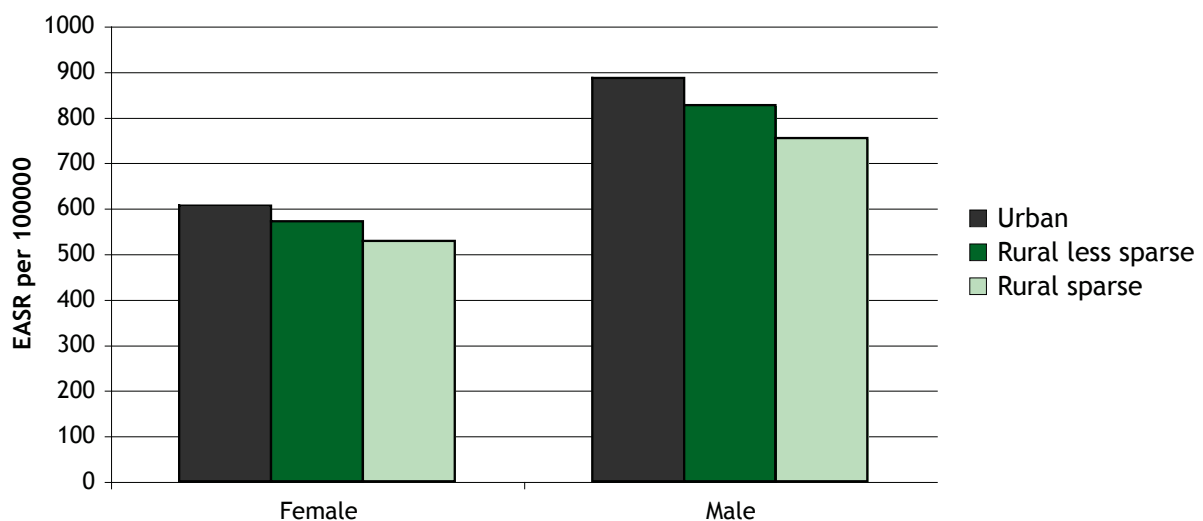
Mortality is an important indicator of the general health of populations. Mortality data are routinely collected and are considered to be robust and reliable.

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.

6. References

- Asthana S., Halliday J., Brigham P., Gibson A. (2002) Rural deprivation and service need: a review of the literature and an assessment of indicators for rural service planning, South West Public Health Observatory.
- Beale, N., Taylor, G., Straker-Cook, D. (2001) Does Council Tax Valuation Band (CTVB) correlate with Under-Privileged Area 8 (UPA8) score and could it be a better 'Jarman Index'? *BMC Public Health* 2001, 1-13.
- Beale, N., Taylor, G., Straker-Cook (2002) Is council tax valuation band a predictor of mortality? *BMC Public Health* 2002, 2-17.
- Bibby, P., Shepherd, J. (2004) Developing a New Classification of Urban and Rural Areas for Policy Purposes - the Methodology. Available at URL www.statistics.gov.uk/geography/nrudp.asp (Accessed 20/11/06).
- British Medical Association, Board of Science (2005) Healthcare in a rural setting. Available at <http://www.bma.org.uk/ap.nsf/Content/healthcarerural-rurality> (Accessed 04/12/06).
- Commission for Rural Communities (2006) Rural Disadvantage: Reviewing the evidence. Available at URL: www.ruralcommunities.gov.uk (Accessed 20/11/06).
- Dahlgren, G. and Whitehead, M. (1992) Policies and strategies to promote social equity in health. World Health Organisation, Stockholm.
- Deaville, J., Mitchinson, K., Wilson, L. (2002) Think Rural Health. Institute of Rural Health, Wales.
- Gibbon, R., Riley, N., Meyrick, J. *et al.* (2006) Pictures of Health in Wales: A Technical Supplement. Wales Centre for Health, Cardiff.
- National Assembly for Wales (2005) Welsh Index of Multiple Deprivation. LGDU, National Statistics, NafW. Cardiff.
- Palmer, G. (2004) Poverty and social exclusion in rural East of England: Observatories Social Exclusion Partnership report 2004. Eastern Region Public Health Observatory.
- Senior, M., Williams, H., Higgs, G. (2000) Urban-rural mortality differentials: controlling for material deprivation. *Social Science & Medicine*, 51, 289-305.
- Shelter Cymru (2000) Somewhere to call home? Housing and Health in Wales: the case for more investment in Welsh housing? A home is the key Briefing Paper. Number 3 July 2000.
- Townsend, P. (2001) Targeting Poor Health: Professor Townsend's Report of the Welsh Assembly's National Steering Group on the Allocation of NHS Resources (Vol.1) Available at URL <http://www.cmo.wales.gov.uk/content/work/townsend/index-e.htm> (Accessed 10/01/07).
- Welsh Assembly Government (2005) Designed for Life: Creating world class Health and Social Care for Wales in the 21st Century. Welsh Assembly Government, Cardiff.