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Our Healthy Future

Chief Medical Officer for Wales Annual Report 2011



Acknowledgements

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Contents

Foreword	4
Chapter 1: The people of Wales – A growing population getting older and more diverse	6
Chapter 2: 2011 – A year in public health	30
Chapter 3: Homes – An important setting for health	50
Chapter 4: Getting fairer health outcomes for all	64
Chapter 5: A fairer, healthier future	84
Data compendium	108
Bibliography	133

Figure 1: Young and elderly populations, 1991-2035	7
Figure 2: Maternal obesity in the UK	9
Figure 3: Smoking in pregnancy	10
Figure 4: Changes in the way babies are born	11
Figure 5: Stillbirths in Wales	12
Figure 6: UK infant mortality rates, 2010	12
Figure 7: Breastfeeding initiation by country of UK, 2005 and 2010	13
Figure 8: Smoking prevalence in teenagers	16
Figure 9: Alcohol use in teenagers	16
Figure 10: Diet in teenagers	16
Figure 11: Exercise in teenagers	16
Figure 12: Health service usage by adults in Wales	20
Figure 13: Health-related lifestyle, by local authority/Local Health Board	21
Figure 14: Cancer incidence and survival	25
Figure 15: Age-standardised mortality rates (ASMR) by sex, UK and constituent countries, 1980-2010	26
Figure 16: Percentage change in age-standardised mortality rates (ASMR) in under 65s, selected causes, 1996-2009	27
Figure 17: Map of male life expectancy at age 65 years by local authority areas in Britain, 2008-10	28
Figure 18: Map showing number of residents surrounding the location of the incident	32
Figure 19: HIV related cases in Wales by exposure group, 2001-2010	37
Figure 20: Rise in NHS Direct Wales visits	45
Figure 21: Notifications of infectious disease	52
Figure 22: Main heating fuel used in Welsh homes	53
Figure 23: Opportunities to prevent falls and reduce harm	56
Figure 24: A short trip, a big difference	64
Figure 25: Male unemployment in Britain 1931 and 2001	66
Figure 26: Mortality by cause of death, rate ratios for the most deprived fifth compared to the least deprived fifth, Wales, 2007-2009	67
Figure 27: Life expectancy and healthy life expectancy at birth among males in the most and least deprived areas (lower super output area fifths) in Wales	68
Figure 28: Primary care access in Wales	71
Figure 29: An illustration of need and supply in Wales	72
Figure 30: Monitoring of the Flying Start Project in Cardiff	74
Figure 31: Uptake of routine immunisations by deprivation group by age two, 2011	76
Figure 32: Mean dmft five-year-olds, Wales compared with West Midlands, 2007-08	77
Figure 33: Teenage conceptions, 1992 to 2010	78
Figure 34: A model of public health in Wales	87
Figure 35: Male mortality, by quintile of deprivation, 2010	88
Figure 36: Stroke bundles in Wales	93
Figure 37: Rate of C.difficile per 1,000 admissions in inpatients aged older than 65 in Wales, January 2005 – December 2011	94
Figure 38: Age-standardised mortality rates for selected broad disease groups, England and Wales, 1911-2003	98
Figure 39: Top twenty milestones for health since 1840	99
Figure 40: The four principle risk behaviours	100
Figure 41: Estimated diabetes prevalence in Wales, 2010 and 2030	101
Figure 42: Proportion of adults that follow advice on risk behaviours, 2010	102

Foreword



Launch of Fresh Start Wales Source: Welsh Government

This is my sixth Chief Medical Officer's Annual Report on the health of the people of Wales. I am pleased to record that health continues to improve with record low levels of infant mortality and increased life expectancy at birth. New data analysis in 2011 from the Public Health Wales Observatory however sets out starkly the challenge on inequalities and inequity across the whole country. It is imperative that we harness the health gain we have made and make sure that all Welsh citizens are enabled to have good health. This can only be achieved by a combination of overall improvement and a reduction in inequalities.

In 2011 Wales did not experience any major national outbreaks of infectious disease but there were a number of incidents that had an impact on the health of the

population. The Fforestfach fire in Swansea presented a major challenge that required multi-agency cooperation to face a serious and ongoing threat. In addition there were significant measles outbreaks in Ceredigion, and more recently in Gwynedd, which further emphasised the need to promote immunisation to protect the health of children across Wales. Our monitoring and surveillance systems have enabled us to allay concerns about the health impact of a cement factory and redevelopment of the Wylfa nuclear power station. Following on from the 2010 UK Chief Medical Officers' guidance on alcohol, the four UK countries collaborated on producing guidelines relating to physical activity in 2011. I am pleased to note the commitment made in 2011 to address the issue of smoking in cars where children are present, however, I think we need to go further and introduce legislation on this issue and consider children's rights in the home too.

This should be seen in the context of the benefit of an overarching Public Health (Wales) Bill, which will be consulted on in 2012.

I focus Chapter 3 on the use of houses and homes as a setting to improve and protect health. We have made good progress in having healthier workplaces and schools, we need to turn our attention to homes as a place we spend a significant proportion of time. This is a multi-sectoral issue with excellent work being conducted across Wales to reduce hazards in the home – including reducing the risk of asthma for children. In addition there has been work by Public Health Wales and 1000 Lives Plus on reducing the risk of falls in the home. Further issues relating to the home and health discussed include the impact of domestic violence and homelessness. We also look at the impact of sustainable energy to keep homes as health improving and protecting environments. This is a devolved issue and something that Wales can lead the way on. It should be remembered that when Bevan created the NHS in 1948 he did so as Minister for Health and Housing. This is a legacy that we need to build upon.

The issue of inequalities remains a central issue for Wales, recognised by the *Programme for Government, Together for Health, Our Healthy Future* and *Fairer Health Outcomes for All*. Inequalities are persistent and have existed in Wales for at least 150 years where we have data. We need to do more than simply measure and are doing more with cross-government action on child poverty and giving children a Flying Start. Some of the social determinants of health are manifest at a UK and global level. Wales needs to play its part globally too through supporting the global framework on tobacco control and the new initiative on alcohol.

Maintaining a focus on reducing inequalities and improving equity is a crucial issue for Wales and needs sustained and ongoing commitment from the NHS, the government and the whole of society.

This is my final report as Chief Medical Officer for Wales and time to reflect on progress since 2006. In order to help me I have reviewed recommendations made in my 2006 Bevan Foundation lecture and my first Chief Medical Officer's report. I am pleased to note that these have largely been endorsed and are setting up progress for the future.

Looking forward there is the threat of non-communicable diseases which is reflected in the data. The NHS and government need to create ways to engage the population in producing a consensus on action on health. Sustainable wellbeing in Wales depends on this and is the only way to have health for all and the Public Health (Wales) Bill is a means of enabling health as a principle objective of government. After all, "The health of the people is the highest law".

A handwritten signature in black ink, appearing to read 'Tony Jewell', with a stylized, cursive script.

Dr Tony Jewell
Chief Medical Officer



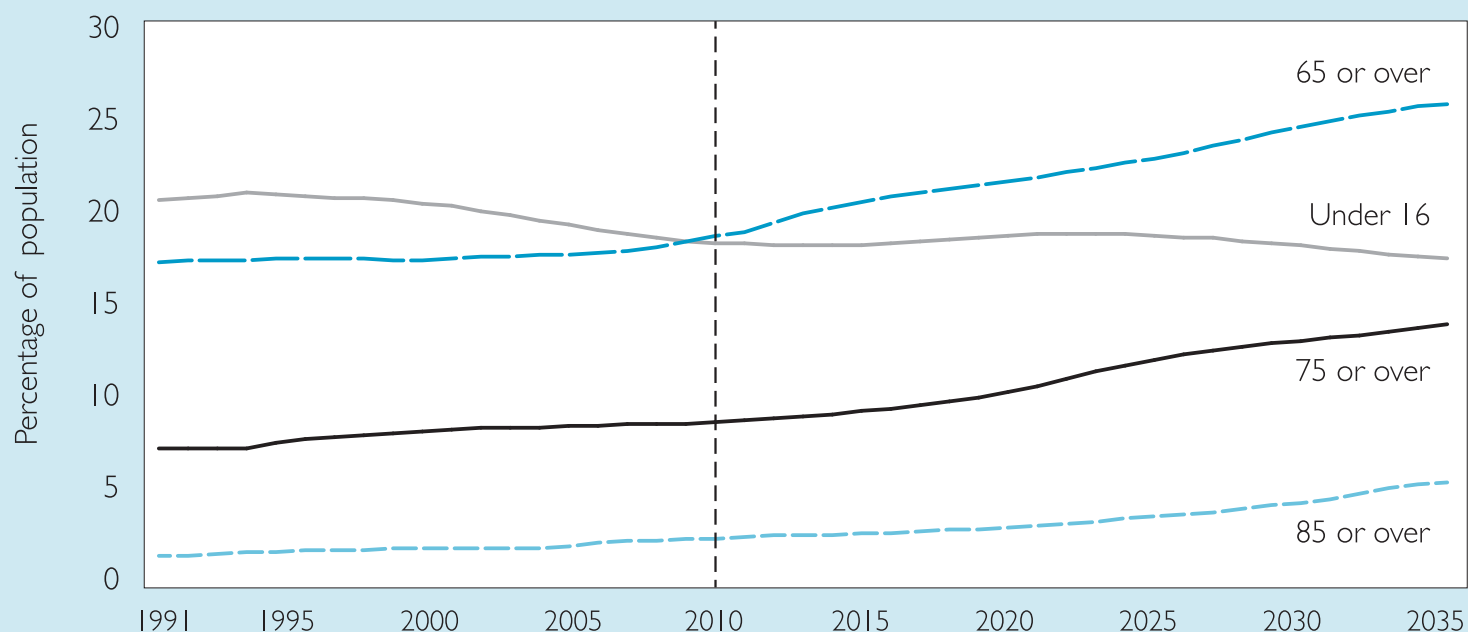
Chapter 1: The people of Wales – A growing population getting older and more diverse

I am pleased to report that the health of the population of Wales continues to improve. We have increased levels of life expectancy at birth and increased healthy life expectancy as well. In addition, Wales has historically low levels of infant mortality with a rate of four per 1000 live births recorded in 2010, the lowest on record.

Of the 31,000 people that died in Wales in 2010, the majority died from one of the two big killers of circulatory disease or cancer. There remain significant inequalities in the life expectancies and mortality rates across our country, which we investigate further in Chapter 4 of this report. We need to maintain our momentum in preventing the preventable as far as possible, and take advantage of interventions that will improve and protect health.

In this chapter I will look at the health of the population in Wales in 2011, and will discuss some of the areas of concern and good practice that have emerged over that time. There are three areas highlighted particularly; health in children and young people; lifestyle issues; and cancer incidence and survival. Further intelligence about the state of health of the population can be found in the Data Compendium at the end of this report.

Figure 1: Young and elderly populations, 1991-2035



Source: ONS (1991-2010 Mid-year estimates of population. 2011-2035: 2010-based national projections)

Demographic changes

The population of Wales continues to grow, having passed three million for the first time in 2010. There are now more people aged 65 years and over in Wales than children aged 0-15 (558,100 people aged 65 and over compared with 548,000 aged under 16). The population of Wales, like that of the UK generally, is ageing, with continuing longer survival outpacing the birth rate. Projections show considerable differences in the future composition of the population which will also affect the ratio of working age to retired people.

Apart from the change in age structure, there have also been changes in the ethnic mix of our country, levels of disability, and sexual expression. These changes in population composition and diversity must inform the future delivery of healthcare and services. We will need a clear focus on the needs of diverse populations and health outcomes we are aiming for. Our systems need to be flexible enough to deliver services in new ways in response to these population changes.

The increasing diversity of Wales

The majority of children born are registered jointly by both parents, 58 per cent of live births being outside marriage. The number of live births within marriage decreased steadily from 33,500 in 1980 to just under 16,000 in 2001. It has remained a similar level since 2001.

10.4 per cent of live births were to mothers born outside the UK, having increased from 4.7 per cent in 1998.

The declared ethnicity of the people of Wales reported was 3.6 per cent from a non-white background. The range by local authority area was 0.6 per cent in Ynys Môn to 13.8 per cent in Cardiff. 65.1 per cent of the population identified themselves as Welsh.

People of working age who identified themselves with a disability totalled 21.7 per cent, ranging from 16.4 per cent in Flintshire to 28.8 per cent in Neath Port Talbot.

94 per cent of the population identified themselves as straight or heterosexual; one per cent identified as lesbian or gay; and a further four per cent declined to respond or say.

Source: Office for National Statistics

Pregnancy, birth and early years

Health during pregnancy and childbirth

The latest figures from 2010 show the birth rate in Wales continuing to increase, with 35,952 live births, the largest number in a year since 2003.

Pregnancy is a vital time in establishing the best chance of a healthy future life. Healthy choices made by a woman during pregnancy translate into better outcomes for the baby, not just at birth but throughout life. For example, smoking in pregnancy harms babies in terms of lower birth weight, higher risk of stillbirth, premature birth and cot death. Supporting women to quit smoking, eat a healthy diet, and maintain good levels of physical activity is important. In addition, ensuring take up of all the recommended pre-conceptual and antenatal screening and care, promotes healthier pregnancy for mother and baby¹.

Despite steady decreases in stillbirths over a 40 year period, the past decade has seen no further improvement in the rate of babies stillborn, born early or at low birthweight. The Welsh Government's publication *A Strategic Vision for Maternity Services in Wales*² has set out to address risks using an approach addressing the full spectrum of lifestyle and healthcare factors. The strategy also incorporates quality and safety in maternity and neonatal services, working towards a sound infrastructure of practice standards, informatics, workforce planning and skills.



A premature baby Source: iStockphoto

Antenatal screening

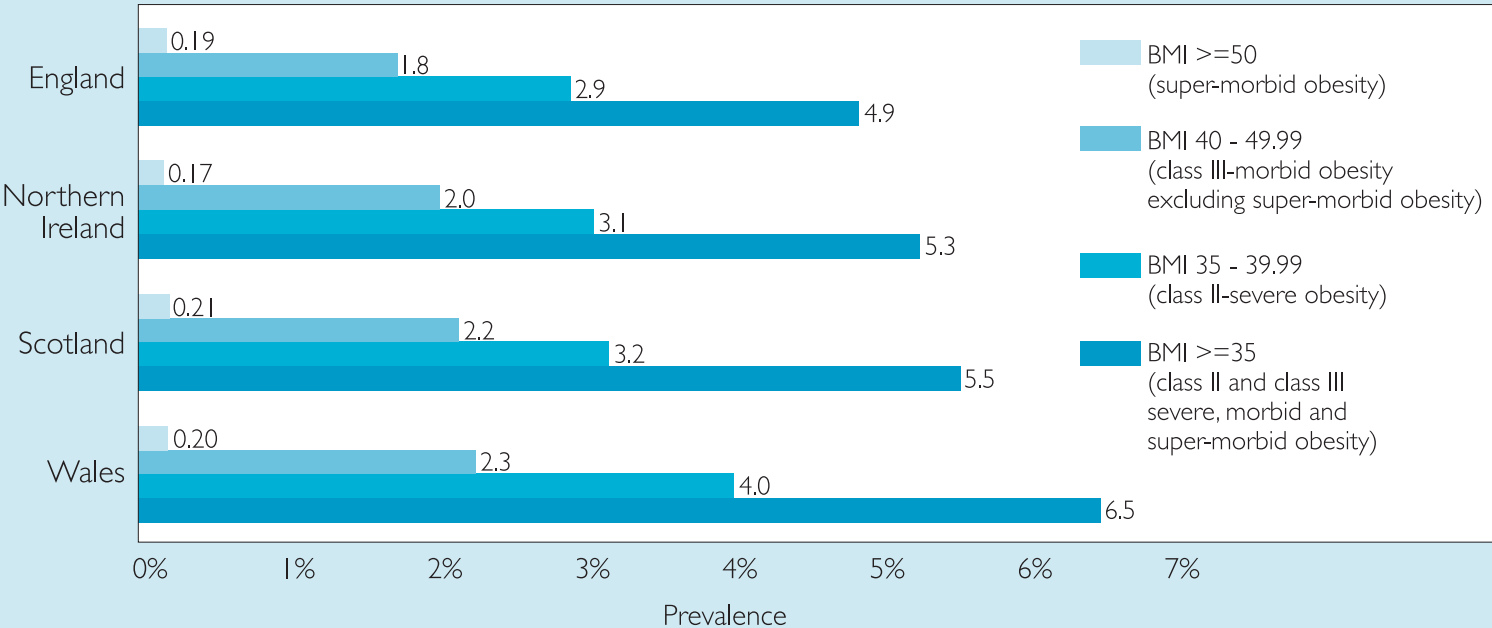
In accordance with the UK National Screening Committee's³ (NSC) recommendation (and alongside the wider range of antenatal screening covering infections, haemoglobinopathies, blood group and antibodies, and ultrasound), the current screening for Down's syndrome offered in mid-pregnancy (between 15 and 18 weeks) was improved in 2011 with the introduction of the 'quadruple test'. This is in line with the NSC's Model of Best Practice for Down's syndrome screening⁴, and replaces the 'triple test'.

Planning was also commenced to introduce the 'combined test' for Down's syndrome which will offer testing earlier in pregnancy. The new tests should improve the screening programme detection rate and reduce the screen positive rate, meaning less need for amniocentesis following screening. The quadruple test will still need to be available after combined screening is introduced to ensure there is a Down's syndrome test available for women who first attend antenatal care after 14 weeks of pregnancy.

Obesity in pregnancy

The 2010 report *Obesity in Pregnancy*⁵ from the Centre for Maternal and Child Enquiries (CMACE) shows that Wales has the highest prevalence of obesity in pregnancy in the UK. The most recent figures show 6.5 per cent of pregnant women in Wales with a body mass index (BMI) of 35 or higher, the level associated with poorer pregnancy outcome. Every year this equates to 2,100 babies in Wales exposed to the risks associated with maternal obesity. Compared to normal weight women, obese women who are pregnant are up to three times more likely to have pre-eclampsia, gestational diabetes and thromboembolism, and four times more likely to have severe bleeding after birth. For the baby there is twice the risk of a stillbirth, 20 per cent increase in risk of a preterm birth, 50 per cent increase in risk of admission to neonatal intensive care unit, and babies are twice as likely to be big, then predisposing them to obesity and metabolic disorders in childhood.

Figure 2: Maternal obesity in the UK



Source: *Maternal obesity in the UK: Findings from a national project. CEMACE 2010*

Smoking in pregnancy

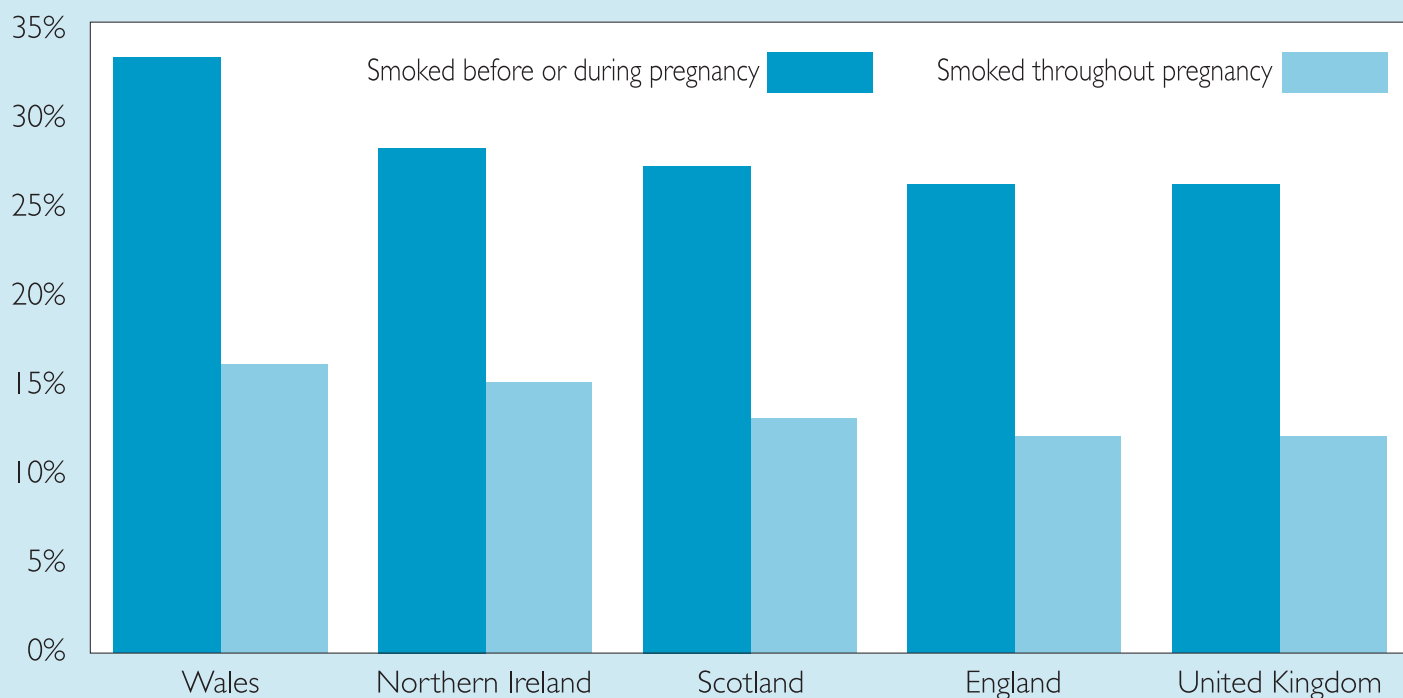
Smoking is a major risk factor for poor pregnancy outcome, accounting for four to seven per cent of stillbirths, 13 per cent of preterm births, 26 per cent of sudden infant deaths and ten to 27 per cent of low birth weight babies⁶.

In 2010, Wales showed an improvement in the number of pregnant mothers smoking at 33 per cent, down from 37 per cent in 2005. However, Wales had the highest proportion among UK countries of mothers who smoked before or during pregnancy. The number of mothers who continued to smoke throughout pregnancy improved to 16 per cent, down from 22 per cent in 2005. It was also good to see improvement in the number of younger mothers (aged under 20 years) smoking before or during pregnancy, down from 73 per cent in 2005 to 52 per cent, although there is still a great need to strengthen our efforts to encourage smoking cessation for this age group. Our aim is for a smoke-free pregnancy.



Smoking in pregnancy Source: iStockphoto

Figure 3: Smoking in pregnancy



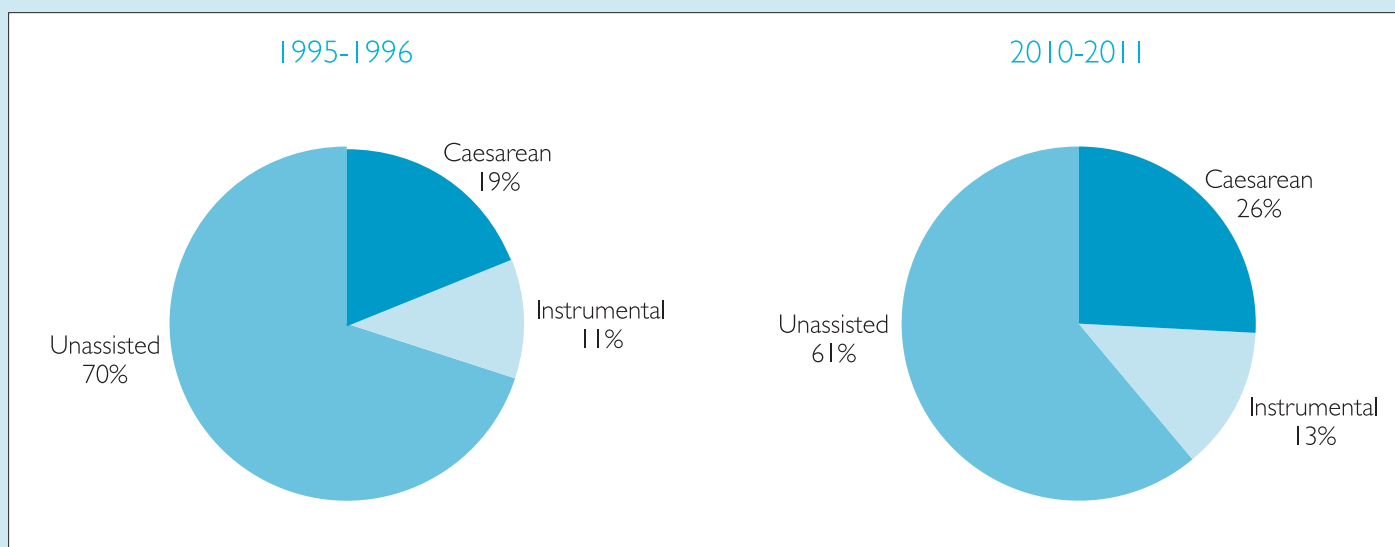
Source: Infant Feeding Survey 2010

Births

The most common maternal age is now the 25-29 age group (10,400) followed by the 30-34 age group (8,800). Two per cent of births were to mothers aged under 18, and a further three per cent were to women aged 40 or over.

Births to mothers aged 35 and over continue to increase, now nearly a sixth of all live births. Just over a quarter of babies are born by caesarean section, deliveries by this route showing a gradually increasing trend.

Figure 4: Changes in the way babies are born



- In 1995-96 19 per cent of Welsh mothers gave birth through caesarean section. In 2010-11 this had increased to 26 per cent of all births.
- Maternal obesity and smoking contribute to risk factors for requiring caesarean birth – challenging to maternity services as well as fetal outcome.
- We will be looking at this issue in the future as part of our publication *A Strategic Vision for Maternity Services in Wales*, and also through the Reproductive and Early Years Pathfinder Project led through Public Health Wales.

Source: Stats Wales

Stillbirth, perinatal and infant mortality

Perinatal mortality includes all stillbirths of 24 completed weeks gestation and all deaths of a live-born baby up to and including the sixth day of life. It is a valuable measure of the quality of antenatal, maternity and neonatal services, and continues to be monitored by the *All Wales Perinatal Survey Annual Report*⁷. It is affected by antenatal lifestyle choices in diet, alcohol consumption and smoking. The socio-economic gradient seen

in perinatal mortality is reflected in later school attainment, making the care given to babies around the time of birth critical in giving them the best chances later on. Good neonatal care provided by the All Wales Neonatal Network can help avoid complications and reduce the later adverse effects of premature birth such as cerebral palsy, visual and hearing deficits, or learning difficulties⁸.

There were 190 stillbirths in Wales in 2010, the rate since 2000 fluctuating between 4.6 and 5.7 per 1,000 total births. The rates reported over the past ten years showed that the trend of reduction seen in Wales, like the UK, over the past 40 years has stalled. This was noted in a major review of stillbirths in developed countries, with the conclusion that greater focus on potentially avoidable factors is required.

The Public Health Wales Reproductive and Early Years Pathfinder Project⁹ has explored the contribution made to stillbirth by lifestyle factors, and identified maternal obesity

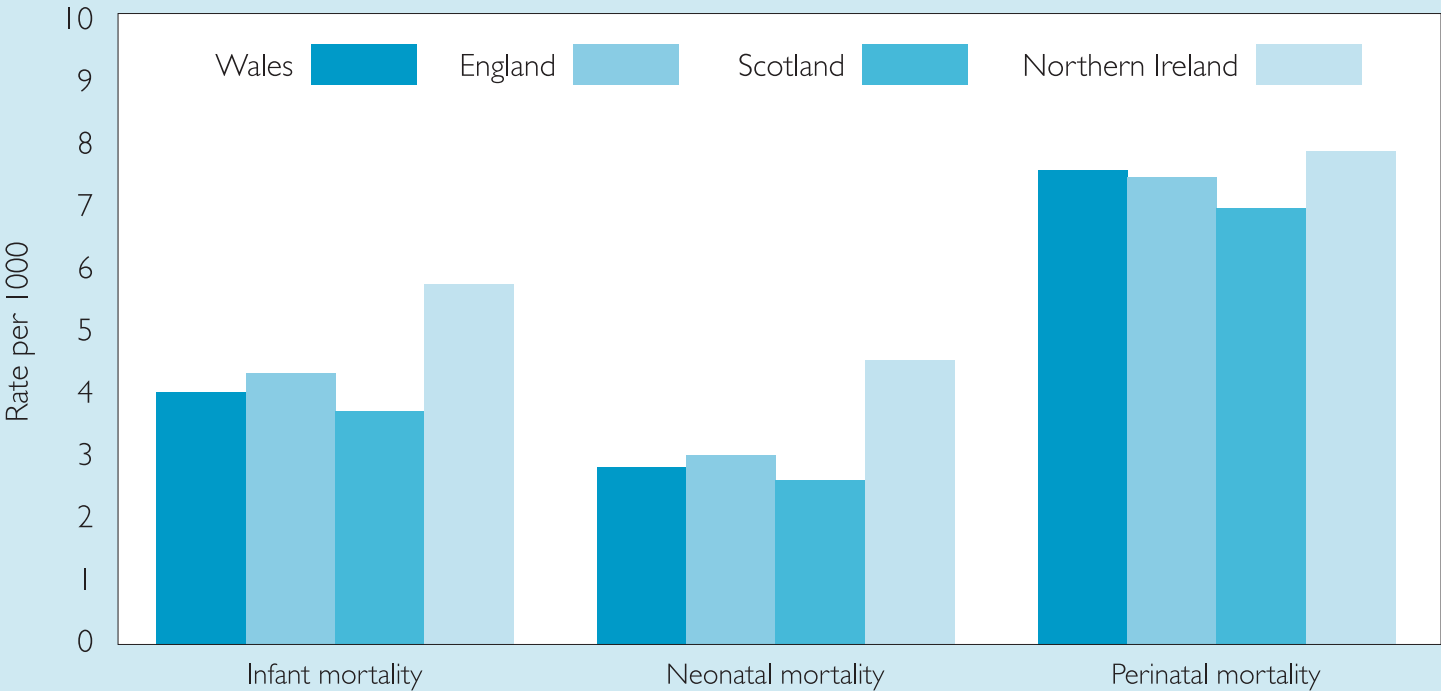
as doubling the risk of stillbirth compared with a mother of normal weight. Smoking during pregnancy is a major avoidable risk, estimated to contribute four to seven per cent to the risk of stillbirth. Interventions to help women quit smoking before, during or after pregnancy continue to be offered as an effective way to address this potentially preventable cause of stillbirth¹⁰. With 36,000 births annually in Wales, if we could halve the perinatal mortality rate by reducing stillbirths and early neonatal deaths, this would equate to over 100 extra babies surviving annually.

Figure 5: Stillbirths in Wales

Stillbirths in Wales	2005	2006	2007	2008	2009	2010
Number	175	172	171	165	180	190
Rate per 1,000 total births	5.3	5.1	4.9	4.6	5.1	5.3

Source: Stats Wales

Figure 6: UK infant mortality rates, 2010



Source: ONS Health Reference Tables

Over the past 60 years, all mortality rates for babies have decreased substantially, but have fallen more slowly since the late 1980s. Recent data from the Office for National Statistics (ONS) indicates that Wales recorded its lowest infant mortality rates (IMR) on record in 2010 with a national rate of four per 1000 births. IMR, defined as deaths in first year of life per 1000 live births, is a valuable indicator of overall health within the community and we need to continue to strive to ensure that this rate continues to be driven down as far as possible, as some comparable European countries have almost half the rate in Wales.

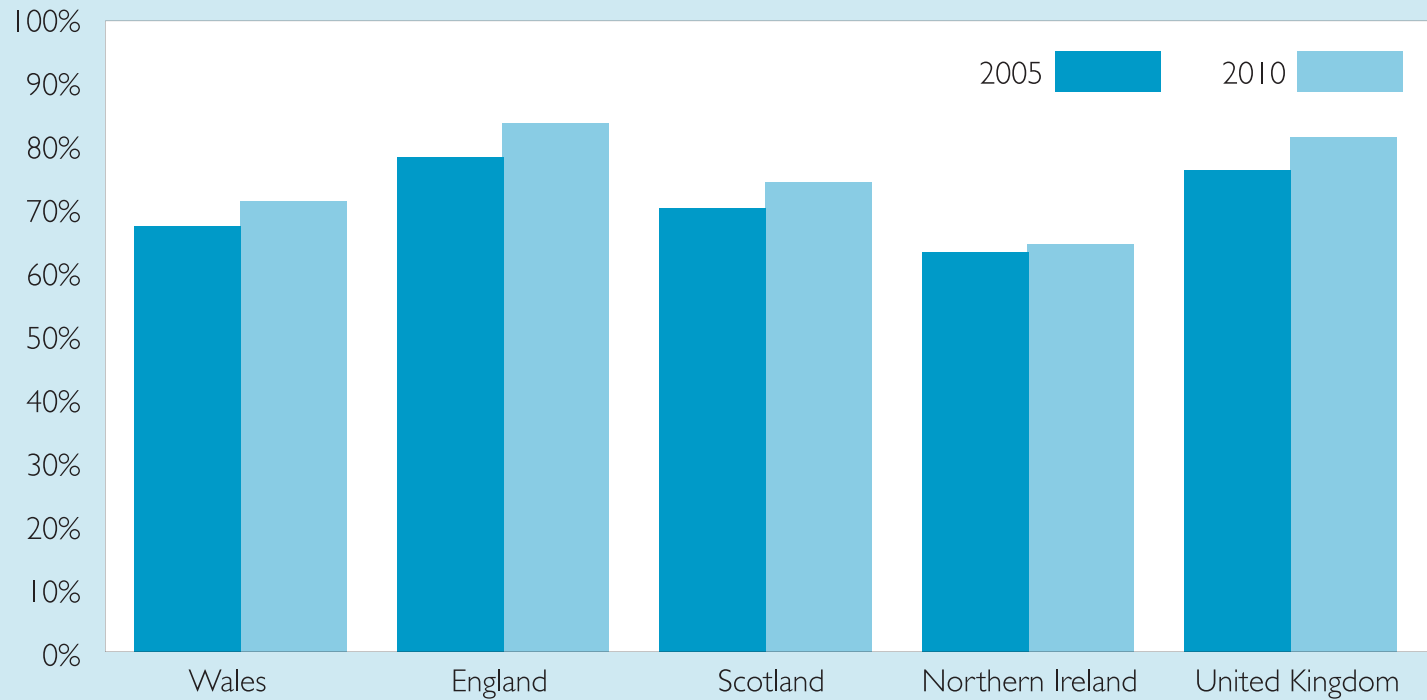
Breastfeeding

The World Health Organization (WHO) recommends exclusive breastfeeding for the first six months of life, based on a systematic review of research¹¹ on the health, growth and development benefits. This review reported that there was no

evidence of any benefits of introducing foods earlier than this age, and that there were no growth deficits in infants exclusively fed breastmilk for six months. Despite some conflicting views about the generalisability of the WHO recommendations, they are the basis for the current Wales infant feeding policy.

The challenge for healthcare providers to implement these recommendations as part of a positive experience of pregnancy and childbirth for mother and baby is considerable. The current rates of breastfeeding initiation have improved to around 70 per cent, but rates of continuation to six months are much lower, at around 20 per cent¹². An increase in breastfeeding rates is being promoted by evidence based interventions including midwife led support of breastfeeding, 'baby friendly' hospital units and community based support to help mothers maintain breastfeeding, especially through difficulties in the first days up to two weeks, when breast is most likely to be abandoned.

Figure 7: Breastfeeding initiation by country of UK, 2005 and 2010



Source: Infant Feeding Survey 2010

Maternal death

Maternal death is a rare but highly significant 'sentinel event' and especially catastrophic when it is due to potentially avoidable causes. All maternal deaths are reported to the England and Wales Maternal and Infant Clinical Outcomes Review Programme, a national confidential enquiry and audit system. The Centre for Maternal and Child Health Enquiries report from 2011¹³, *Saving Mothers' Lives*, reported on maternal deaths in England and Wales between 2006-08, identifying avoidable causes. These messages, especially relating to infection and bleeding as avoidable causes of maternal death, have been incorporated into the Wales 1000 Lives Plus maternity bundle¹⁴. The three maternal deaths in Wales in 2011 were also reported and reviewed via the Welsh Government quality and safety system to ensure effective learning from any practice-related or preventable factors.

Newborn blood spot screening

The universal newborn heelprick bloodspot screening programme was further developed to start screening for medium-chain acyl-coenzyme A dehydrogenase deficiency (MCADD) in 2011 and sickle cell disorder in 2012. These new screening programmes are in line with National Screening Committee recommendations.

During 2011, because of problems with supply and quality assurance of testing reagent, it became necessary to discontinue screening for Duchenne muscular dystrophy as part of the newborn programme. The potential value of newborn screening for Duchenne muscular dystrophy is under consideration by the UK National Screening Committee, due to report in 2012, but no other UK or European country currently has a national screening programme for it. Discontinuation of screening was followed up by reminding clinicians of the need to consider diagnostic testing in a child with developmental or language delay, to ensure timely clinical diagnosis.

Newborn hearing screening

The Newborn Hearing Screening Wales Programme offered screening to 99.9 per cent of eligible babies in Wales in 2010-11, and 99.7 per cent were screened, very few parents declining. Around 40-45 babies are born with significant, permanent hearing loss every year, and early diagnosis is essential to offer the most effective intervention. Most babies are screened in hospital, with community follow-up. 79.4 per cent of babies were screened in their first week of life in 2010-11, exceeding the target of 75 per cent.

Babies with problems identified at screening are referred to their nearest audiology department for assessment. During 2010-11, 96 per cent of referred babies attended assessment. Of those babies found to have a hearing loss, confirmation was achieved in 95 per cent of babies by the age of six months. This is a real success story.

Health, illness and wellbeing through the life course

Information from the Welsh Health Survey 2010

The Welsh Health Survey started in its current form in October 2003 and provides an important source of information and trends relating to the health of people, the way they use health services, and factors affecting health, including diet and physical activity, and use of tobacco and alcohol. The statistics are based on responses to self-completion questionnaires from around 15,000 adults and 3,000 children annually.

General health of children

95 per cent of children were reported to have 'good' or 'very good' general health. However, 20 per cent of children were also reported as having a long-standing illness, including six per cent who are limited by this. 36 per cent of children were reported to be overweight, including 19 per cent who were obese.

The Child Measurement Programme for Wales is being established and will collect information on the weight and height of children in reception year from across Wales.

This will, for the first time, allow an accurate picture of children's growth patterns across the different parts of Wales. This can be used to monitor trends in growth in Wales, including obesity, assess the effectiveness of population based interventions to reduce the prevalence of overweight in childhood and provide a basis for population based epidemiological research.



A healthy child eating fruit
Source: Welsh Government

Health Behaviour in School-aged Children (HBSC) survey data¹⁵

This survey gives us information about adolescent lifestyle choices and how Wales compares with other countries in the key areas of smoking, alcohol use, diet and exercise, sexual activity, use of cannabis, and perceived state of wellbeing. It is very encouraging to see that fewer teenagers in Wales smoke compared with the previous survey in 2005, when 12 per cent of 15-year-old boys, and 23 per cent of 15-year-old girls smoked.

The *Tobacco Control Action Plan for Wales*¹⁶ has made it a priority to discourage young people from taking up smoking, as a non-smoking habit established by the early twenties is likely to persist. The recent ban in Wales on cigarette sales from vending machines is aimed at providing greater protection for children, who are more likely to get cigarettes from an unattended machine. Education about healthy choices and a smoke-free

environment is communicated to children and young people through the Welsh Network of Healthy School Schemes. Continued focus on implementing the tobacco control strategy will be vital if we are to maintain this decline in smoking, as there is still room for improvement.

The Fresh Start Wales campaign to combat smoking in cars, and the ban on point of sale advertising, which will be introduced by December 2012, will all add to the drive for a 'smoke-free Wales'.

The HBSC survey shows that in 2009-10, two per cent of 11-year-old girls and five per cent of 11-year-old boys in Wales reported drinking alcohol on a weekly basis. Around 14 per cent of 13-year-olds (approximately one in seven girls and boys), and 32 per cent (one in three overall) of 15-year-old girls and boys reported drinking any alcoholic drink weekly, a decline of eight percentage points since the previous survey in 2005-06. However, Wales remains in a group of countries internationally with the highest rates of teenage alcohol use, including being drunk on more than two occasions.

The continuing use of alcohol poses a significant threat to health and wellbeing for children and young people. The particular problems of binge drinking, with the attendant associated risks of antisocial behaviour, interpersonal violence, accidental injury, acute poisoning and regretted sexual activity remain. In addition, there are the longer term effects on cardiovascular risk, cancer incidence and liver disease. Licensing laws, enforcement of age checks reducing the possibility of under 18-year-olds buying alcohol, and recent UK Governmental proposals suggesting minimum pricing policies announced in March 2012 are part of a raft of societal, economic and environmental actions needed to reduce the harm from alcohol. Many factors, including alcohol advertising, price, availability, and wider public acknowledgement of the need for a change in culture and attitude towards alcohol and drinking patterns will require a continued public health focus. The Change4Life initiative on alcohol which was launched in March 2012 is just part of our campaign for sensible drinking.



Source: Welsh Government

Figure 8: Smoking prevalence in teenagers
15-year-olds who smoke at least once a week

Boys			Girls		
Country	%	Rank	Country	%	Rank
Greenland	53%	Highest	Greenland	61%	Highest
Canada	8%	Lowest	Iceland	7%	Lowest
HBSC Average	19%		HBSC Average	17%	
England	9%	34	England	14%	26
Scotland	14%	28	Scotland	15%	25
Ireland	12%	30	Ireland	14%	27
Wales	11%	33	Wales	16%	19

Figure 10: Diet in teenagers
15-year-olds who eat fruit daily

Boys			Girls		
Country	%	Rank	Country	%	Rank
Armenia	49%	Highest	Denmark	56%	Highest
Greenland	9%	Lowest	Greenland	16%	Lowest
HBSC Average	27%		HBSC Average	35%	
England	33%	7	England	40%	12
Scotland	26%	20	Scotland	34%	23
Ireland	28%	17	Ireland	35%	22
Wales	25%	22	Wales	30%	26

High levels of overweight, poor diet and lack of exercise in children are real threats to their future wellbeing, especially in terms of their cardiovascular systems, bones, teeth and livers.

The design of Change4Life incorporates best evidence on how to engage individuals in making healthy choices, including small changes and healthy swaps.

Figure 9: Alcohol use in teenagers
15-year-olds who drink alcohol at least once a week

Boys			Girls		
Country	%	Rank	Country	%	Rank
Czech R	44%	Highest	Greece	34%	Highest
Greenland	6%	Lowest	Iceland	5%	Lowest
HBSC Average	25%		HBSC Average	17%	
England	31%	12	England	22%	10
Scotland	29%	13	Scotland	25%	8
Ireland	13%	30	Ireland	9%	33
Wales	35%	8	Wales	29%	4

Figure 11: Exercise in teenagers
15-year-olds who report at least one hour of moderate to vigorous activity daily

Boys			Girls		
Country	%	Rank	Country	%	Rank
USA	33%	Highest	Greenland	20%	Highest
Italy	12%	Lowest	Italy	5%	Lowest
HBSC Average	19%		HBSC Average	10%	
England	25%	8	England	12%	10
Scotland	13%	34	Scotland	8%	32
Ireland	28%	17	Ireland	12%	12
Wales	21%	17	Wales	9%	26

Source: WHO Health Behaviour in School-aged Children survey 2009/2010

However, external and environmental influences on healthy behaviour, such as availability of safe play areas, safe walking routes to school, distance to shops stocking inexpensive fruit and vegetables, are all important factors. Strategies to improve health must ensure that all areas of government policy maximise their contribution to health-promoting environments including towns, cities, roads and commerce. Guidelines for physical activity are discussed in Chapter 2.



Chief Medical Officer
launching Change4Life,
fresh fruit and veg
Source: Aneurin Bevan
Health Board

Mental wellbeing in teenagers

A positive sense of physical, social and emotional wellbeing is a key component of 'good health' as defined by the World Health Organization (WHO). Young people who report low levels of satisfaction with life are less 'healthy' and more likely to be excluded from social activities and education. This low reported level of life satisfaction is seen as significant in the United Nations Convention on the Rights of the Child (UNCRC) monitoring¹⁷ last undertaken in 2007-08, and recommendations were accordingly given to UK Government on addressing violence, abuse, social exclusion and access to mental health support. Wales now has in place a network of school-based counselling services throughout the country to promote mental wellbeing in schools¹⁸. A study published in 2011 of young people in Wales¹⁹ showed that they perceived relationships with others as one of the most important aspects of their wellbeing, and they prioritised relationships over material possessions.

Time to Change Wales is an all Wales, comprehensive campaign to challenge the stigma and discrimination faced by people of all ages with mental health problems and their families.

The campaign was launched in Wales in early 2012 with funding from the Welsh Government and charities, with the central aim to change negative attitudes and behaviour towards mental illness. The campaign supports people who have experienced mental health problems themselves, to take on leadership roles within the campaign, inspiring others to work together to challenge this stigma and discrimination. The aim is to build a lasting movement for change, both locally and nationally, using this combination of social marketing and community activism to challenge attitudes, stigma and discrimination.

Sexual health in teenagers – teenage pregnancy

Sexual and reproductive health is an essential aspect of a healthy life, a good start in life and in avoiding cycles of deprivation. Although some women make a positive choice to start a family early, most teenage pregnancies are unplanned and just under half end in an abortion. Pregnancy itself is riskier for both teenage mother and baby, and teenagers who become parents experience greater educational, health, social and economic difficulties than young people who are not parents and outcomes for the child are often poorer.

The *All Wales Sexual Health and Wellbeing for Wales Action Plan, 2010-2015*²⁰ uses National Institute for Health and Clinical Excellence (NICE) guidelines to promote community interventions focused on promoting active reproductive choice and sexual health for young people. There are a range of interventions offered; one to one consultation in a wide range of settings, education in schools and the promotion of condom use with oral contraception. NICE guidelines also discuss offering all methods of reversible contraception, including long acting removeable contraceptions (LARCs) and advising on the use of this method.

The Empower to Choose Project is an all Wales targeted intervention aimed at young women who conceive before their eighteenth birthday with the intention of reducing the incidence of repeat conceptions amongst teenagers. If successful this project will achieve a sustained 50 per cent reduction in repeat conceptions that would reduce the overall teenage conception rate by up to ten per cent. The project promotes use of LARCs, which are more reliable than other methods of contraception, and are more economical in the longer term despite the higher one-off cost. At present, public and clinical awareness of these potential advantages is not as widespread as with other methods of contraception, but they are being increasingly used as first line contraception.

Sexual health in teenagers – sexually transmitted chlamydia infection

I am pleased that there is now an ongoing and sustained reduction in sexually transmitted infections (STIs) but we still need to continue to focus on sexual health in young people. Overall levels of syphilis, gonorrhoea and chlamydia are now all decreasing, with rates for gonorrhoea and syphilis at the lowest they have been since 2005.

Chlamydia is the most commonly diagnosed STI in the UK, with the highest rates in the 15-24 year age group. Despite the recent reduction in rate, chlamydia infection in Wales has increased almost six-fold since 1994. This reflects the overall increasing trend in diagnosis rates between 1994 and 2009 as a result of increased awareness, testing and access to sexual health services, coupled with improved diagnostic techniques. The number of individuals in Wales who have a chlamydia test has increased three-fold in the last decade. Access to sexual health services has improved and now 99 per cent of those attending for STI testing are assessed within 48 hours.

Although hormonal contraceptives are more reliable in preventing pregnancy, condom use in addition is essential to reduce sexually transmitted infection. Easy access to education and provision of condoms for young men and women is an important aspect of safer sex.

It is important that we remain vigilant and continue to build on the progress made so far to ensure that the future effects of chlamydia and other STIs on reproductive health are minimised.

PREVENT PREGNANCY GET LARC
(Long Acting Reversible Contraception)

ATAL BEICHIOGI GYDA LARC
(Dull Atal Cenhedlu Gwrthdroadwy, Hirdymor)

IUS
(Intra Uterine System)
Sometimes called Mirena.
Works for five years.

IUS
(Y System Fewngroth)
Gelwir weithiau'n Mirena.
Mae'n gweithio am bum mlynedd.

IUCD
(Intra Uterine Copper Device)
Sometimes called the 'coil'
Works for five to ten years, dependent on which type you have.

IUCD
(Y Ddyfais Fewngroth Gopr)
Gelwir weithiau'n 'coil'
Mae'n gweithio am bump i ddeng mlynedd, yn dibynnu pa fath sydd gennych.

Injections
Sometimes called 'Depo'
Works for 12 weeks, then you need another one.

Chwistrelliadau
Gelwir weithiau'n 'Depo'
Mae'n gweithio am 12 wythnos, yna bydd angen un arall arnoch.

Implant
Sometimes called 'Rod'
Works for three years.

Mewnblaniad
Gelwir weithiau yn 'rod'
Mae'n gweithio am dair blynedd.

For more information visit **www.youchoose.wales.nhs.uk**
or visit your local sexual health clinic or your GP.

Am fwy o wybodaeth ewch i **www.youchoose.wales.nhs.uk**
neu ewch i'ch clinig iechyd rhywiol lleol neu eich meddyg teulu.

LARCs prevent pregnancy. Condom use is essential to prevent Sexually Transmitted Infections (STIs)

Mae LARC yn atal beichiogi. Mae defnyddio condomau yn hantodol i atal heintiau a drosglwyddir yn rhywiol.

Preventing pregnancy with LARC poster Source: Public Health Wales

Sexual health in teenagers – Human Papilloma Virus Immunisation Programme

Human papilloma virus (HPV) immunisation protects girls against cervical cancer associated with HPV types 16 and 18. The routine HPV vaccination schedule consists of three doses, usually given to girls in school year 8 at intervals of one to two months and then six months after the first dose.

Uptake of the first dose of HPV vaccine in girls in the 2010-11 school year 8 was 88 per cent and uptake of the complete three dose course was 84 per cent. This represents end of year figures for the 2010-11 routine HPV campaign, although coverage may increase as girls who have missed out on immunisation are given an opportunity to catch up.

This immunisation programme's aim is to reduce the rate of cervical cancer, most of which is attributable to these viruses. In the fullness of time, this will reduce the need for cervical cancer screening programmes in the immunisation protected age groups and make cervical cancer a rare occurrence.

Health behaviours in the adult population – the value of a healthy lifestyle

A healthy, balanced diet and regular physical activity are essential components of healthy living. Poor diet and lack of physical activity are amongst the leading causes of avoidable illness and premature death in Europe. Complex environmental factors have contributed to the rising prevalence of obesity internationally, which is a major public health concern. Diet, exercise and obesity are important determinants of cardiovascular disease, type 2 diabetes, some cancers, and physical and psychological wellbeing.

The proportion of adults reporting healthy lifestyle choices was low, with only 35 per cent of adults reporting that they ate five or more portions of fruit and vegetables the previous day.

Only 30 per cent of adults reported meeting the guidelines for physical activity in the past week. Over half (57 per cent) of adults were classified as overweight or obese, of which 22 per cent were obese. The obesity rate has increased from 18 per cent in 2003-04 but there are early signs that the obesity epidemic has levelled off.

A little over half of the population (56 per cent) are drinking within safe limits. Excessive alcohol intake is widespread; 44 per cent of adults reporting that they drank above the recommended guidelines on at least one day in the previous week, including 27 per cent reporting binge drinking (more than twice the daily guidelines).

Almost a quarter (23 per cent) of adults reported current smoking, and a fifth (21 per cent) of adult non-smokers reported being regularly exposed to other people's tobacco smoke indoors.

These combined problems of overweight and lack of exercise along with smoking and alcohol overuse represent significant long term health risks in terms of cardiovascular risk, cancers and liver disease. The Change4Life programme is aimed at helping people to recognise the importance of investing in their own future health and make lifestyle choices that will bring them long term benefits, reducing the need for medication and hospital admission. However, this will need to be supplemented by legislation, taxation and other measures.

General health of adults

In the most recent Welsh Health Survey from 2010, 80 per cent of adults reported their own health as 'good' or better, with 14 per cent reporting 'fair', and six per cent 'poor' health. Over a quarter (27 per cent) of adults reported having a limiting long-term illness. This figure has significant implications for life chances and employment and underlines the need for workplaces to comply with Equality Act 2010 requirements to make reasonable adjustments for disability.

Welsh Health Survey 2010 – adults treated for specified medical conditions

- One in five adults in Wales reported being treated for high blood pressure
- One in eight adults in Wales reported being treated for arthritis
- One in nine adults in Wales reported being treated for asthma
- One in ten adults in Wales reported being treated for a mental illness
- One in 12 adults in Wales reported being treated for a heart condition (excluding high blood pressure)
- One in 17 adults in Wales reported being treated for diabetes

Source: Welsh Health Survey 2010

Figure 12: Health service usage by adults in Wales

Proportion of adult population	Reported health service use	Used in past time period
17%	Talked to a GP about their own health	Two weeks
69%	Dentist	12 months
69%	Pharmacist	12 months
48%	Optician	12 months
32%	Hospital outpatient department	12 months
10%	Stayed in hospital as an inpatient (overnight or longer)	12 months

Source: Welsh Health Survey 2010

Figure 13 shows the different local authority and Local Health Board areas of Wales in relation to lifestyle risk factors in adults.

Note that the darker the shading, the greater the problem for that locality – but for the lighter shaded areas it does not mean that no action is required.

The cell numbers are the actual figures, and for example, the physical activity light shaded areas are ‘least worst’ areas rather than ‘best’, being merely ‘better than average’.

The real message is that the indicators for these health related lifestyle factors all need improvement in all localities of Wales.

Figure 13: Health-related lifestyle, by local authority/Local Health Board

	Per cent (age-standardised)				
	Smokes	Drinks above guidelines	Eats fruit & vegetables (5 a day)	Meets physical activity guidelines (5*30)	Overweight or obese
Local Authority					
Isle of Anglesey	24	43	38	32	54
Gwynedd	24	45	41	33	56
Conwy	22	43	35	32	51
Denbighshire	23	45	36	34	54
Flintshire	21	46	36	30	56
Wrexham	26	43	32	30	54
Powys	23	41	37	38	56
Ceredigion	23	41	41	37	53
Pembrokeshire	23	38	38	33	59
Carmarthenshire	23	39	40	31	59
Swansea	22	45	38	28	57
Neath Port Talbot	26	47	33	27	61
Bridgend	22	48	31	31	60
Vale of Glamorgan	21	47	34	31	55
Cardiff	23	46	38	24	55
Rhondda Cynon Taf	27	44	30	27	62
Merthyr Tydfil	26	46	33	27	63
Caerphilly	24	45	30	27	60
Blaenau Gwent	28	44	28	28	61
Torfaen	26	42	30	28	63
Monmouthshire	19	43	38	34	54
Newport	25	45	34	27	58
Local Health Board					
Betsi Cadwaladr	23	44	36	31	55
Hywel Dda	23	40	40	33	58
Powys Teaching	23	41	37	38	56
Abertawe Bro Morgannwg	23	46	35	28	58
Cwm Taf	27	44	30	27	62
Cardiff & Vale	22	47	37	26	54
Aneurin Bevan	24	44	32	28	59
Wales	24	44	35	30	57

Statistically significantly worse than Wales average
 Not statistically significantly different to the Wales average
 Statistically significantly better than Wales average

Source: Welsh Health Survey 2009 and 2010

Influence of health behaviours on the life course – the hard evidence of bones

In the same way that we develop our teeth for life in childhood, bone health is an example of a whole life course intervention, where actions in the young lead to long term benefits. The lifestyle factors associated with good health, especially diet and exercise, also lead to healthy bones, the advantages of which extend into later life.

Promoting bone health

Promoting healthy bones in young people and pregnant mothers through eating well, weight bearing exercise, calcium and vitamin D intake and adequate sunlight exposure, can protect individuals in later life from significant risks related to fractures and osteoporosis.

The major impact of poor bone health is seen in older age groups but problems can occur at all ages and the risk factors leading up to these events are spread through the life course. Excessive alcohol consumption, smoking, hormonal factors such as bone loss following the menopause and high dose steroids, and treatments such as therapeutic radiation for cancers are other factors.

In January 2012, the Feeding for Life Foundation published a research report *Mind the Gap: Are the current vitamin recommendations meeting the needs of the under-5s in the UK?*²¹ which focused on poor uptake of Healthy Start vitamins and lack of knowledge of health professionals and parents. In response, the UK Chief Medical Officers issued guidance reminding health professionals of the need to prescribe or recommend vitamin D supplements for at-risk groups.

Vitamin D deficiency and rickets

The National Diet and Nutrition Survey²² reported lower mean intakes of vitamin D across all age and sex groups, except older women, compared with previous surveys.

Although we do not have clear data on the uptake of current advice on the use of dietary supplements containing vitamin D by at-risk groups, information from the 2005 Infant Feeding Survey²³ suggests that the majority of women do not take vitamin D supplements during pregnancy.

Vitamin D deficiency impairs the absorption of dietary calcium and phosphorus, which can give rise to bone problems such as rickets in children, and bone pain and tenderness as a result of osteomalacia in adults.

The following groups of people are at risk of vitamin D deficiency:

- all pregnant and breastfeeding women, especially teenagers and young women;
- infants and young children under five years of age;
- people of any age with limited diets, eating disorders and anorexia;
- older people aged 65 years and over;
- people who have low or no exposure to the sun, for example, those who cover their skin for cultural reasons, who are housebound or confined indoors for long periods; and
- people with darker skin, for example, people of African, African-Caribbean and south Asian origin, because their bodies are not able to make as much vitamin D.



NHS supplied free vitamins to mums and young children in parts of Cardiff
Source: Cardiff and Vale University Health Board

UK Chief Medical Officers' recommendations

The Chief Medical Officers of the UK made the following recommendations in their letter issued to general practitioners, practice nurses, health visitors and community pharmacists, on 2 February 2012:

- All pregnant and breastfeeding women should take a daily supplement containing ten micrograms of vitamin D, to ensure the mother's requirements for vitamin D are met and to build adequate fetal stores for early infancy.
- All infants and young children aged six months to five years should take a daily supplement containing vitamin D in the form of vitamin drops, to help them meet the requirement set for this age group. However, those infants who are fed infant formula will not need vitamin drops until they are receiving less than 500ml of infant formula a day, as these products are fortified with vitamin D. Breastfed infants may need to receive drops containing vitamin D from one month of age if their mother has not taken vitamin D supplements throughout pregnancy.
- People aged 65 years and over and people who are not exposed to much sun should also take a daily supplement containing ten micrograms of vitamin D.

Everyday actions are also important to improve bone health and avoid fractures, including the following:

- taking regular daily weight bearing exercise;
- eating a balanced diet with enough calcium;
- getting enough vitamin D through sunlight or supplements;
- avoiding smoking tobacco;
- keeping alcoholic drinks under the recommended safe limits; and
- ensuring measures are in place to prevent accidental falls.

Cancer

Cancer incidence rates have continued to increase since the early 1970s, with age standardised rates increased by 0.7 per cent per year between 1974 and 2010. The increased incidence may be partly as an inevitable consequence of longer overall lifespan, as well as effective screening programmes and early diagnosis. In addition, death rates from cancer continue to reduce, and are more likely to be at older ages, meaning more long term survivors with less premature death. Cancer is thus becoming more of a 'chronic condition' that more of the population lives with for longer. This changed 'natural history' requires a changed response from health services as well as the public. As cancer rates and survival increase, evidence for effectiveness of any of the possible interventions becomes even more critical, as equity demands that the same standards must be available to those with similar needs. This means a critical appraisal of all aspects of prevention, screening, curative and palliative treatments, as well as end of life care, in light of future projected figures for cancer rates.

Screening services for early diagnosis

Our aim is to have a comprehensive programme of screening for diseases which have outcomes that benefit from early diagnosis and intervention. The Welsh screening programmes comply with the UK National Screening Committee recommendations, and are evaluated and quality assured by Public Health Wales. There have been some important developments in breast and bowel screening in 2011.

Screening for breast cancer has continued via Breast Test Wales, uptake showing an upward trend since 2002, currently at 74.3 per cent. Breast screening equipment and facilities underwent a modernisation programme in 2011, with Welsh Government funded upgrades to digital equipment at all four static screening centres and mobile units throughout Wales. Procurement of ten new mobile units now allows wheel-chair users to access mobile screening for the first time.

Bowel Screening Wales reported in 2011, highlighting a successful first two years of screening²⁴. The programme began screening in October 2008 and data to November 2010 shows a 55.2 per cent uptake rate. Since screening began, more than 400,000 people aged between 60 and 69 were invited to take part in the screening programme by completing a home testing kit sent to them in the post. Since then, the age range covered by the programme has been extended to 74 years of age, as with early diagnosis the treatment of bowel cancer is highly effective. We need to work on increasing uptake rates.

Cancer incidence and survival

The incidence of cancer diagnosis is consistently higher for men than for women. Men in Wales have a one in three chance of being diagnosed with cancer before their seventy-fifth birthday (the most common cancer being of the prostate), whereas the chance for women is three in ten (the most common being of the breast). Lung cancer, where smoking is the greatest risk factor, was the second most common cancer for both sexes.

The lung cancer rate for men has gone down and is now three fifths of what it was in the early 1970s, whereas for women it has gone up and is now more than double than it was in the 1970s, although still lower than for men.

The colorectal cancer rate increased slightly for men over the same period. The prostate cancer rate increased three-fold (which may be due to greater ascertainment with testing).

The breast cancer rate has increased by over half for the same period.

The increased incidence seen in both sexes between 2009 and 2010 cannot be attributed to one individual cancer site. In 2010, compared to previous years, the numbers for cervical cancer show a large decrease.

Prostate cancer diagnoses have increased greatly over the last 15 years, although survival rates are much improved, with 95 per cent of men still being alive one year after diagnosis in 2005-09, compared with a rate of 82 per cent in 1995-99. Also, one-year survival rates for breast cancer have improved, from 92 per cent in 1995-99, to 96 per cent in 2005-09.

There have been significant increases in the numbers of malignant melanomas of the skin during the last 15 years, although survival from this type of cancer has improved.

Figure 14 shows five-year relative survival for the most common cancers, a measure that takes into account overall mortality rates in the general population.

The five-year relative survival rate for all cancers has increased and now stands at 47 per cent for males and 53 per cent for females, for patients diagnosed between 2001-05. This increase in survival over the periods examined was smaller for females than for males. There was a large increase in the relative survival rate for prostate cancer, going from nearly 50 per cent to 82 per cent in 2001-05. There were increases in survival rate for colorectal and breast cancers, of eleven and ten per cent respectively.

The overall picture of cancer in Wales is of higher incidence, but also longer survival, with cancer being the most likely cause of premature death. For the future, the rising incidence is a reminder to address the continuing risk factors of tobacco, alcohol and obesity on a population basis.

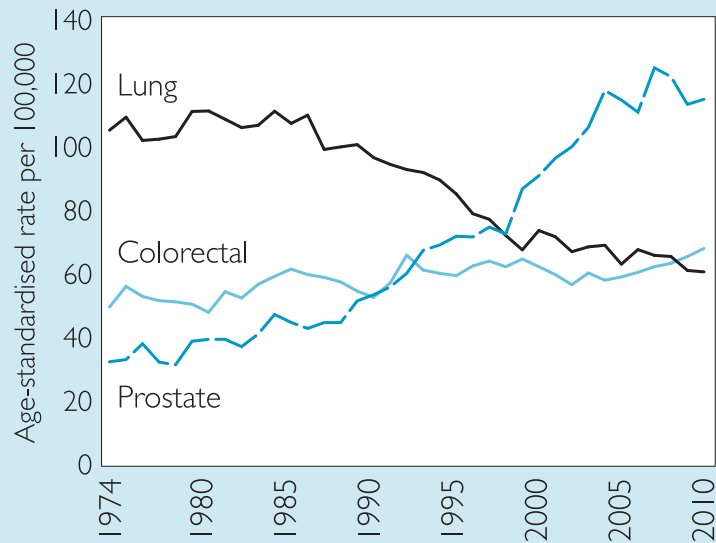
Deaths

Just over 31,000 people died in Wales in 2010, the leading causes of death for the whole population being circulatory disease. Cause of death varies with age, accidents being the single biggest cause in adolescents and young adults, cancer in working age adults and circulatory disease in older adults. Premature death in the working age population is most likely to be from cancer, much of which is potentially avoidable by controls on tobacco, alcohol and obesity, as discussed above.

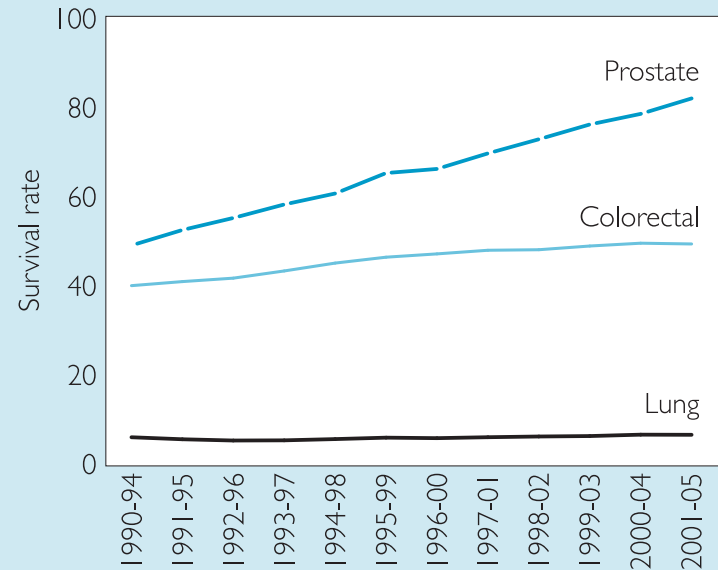
The age-standardised mortality rate (ASMR) in Wales continues to improve. The gender gap in mortality has continued to decrease and is now 192 per 100,000 population (male 684, female 492).

Figure 14: Cancer incidence and survival

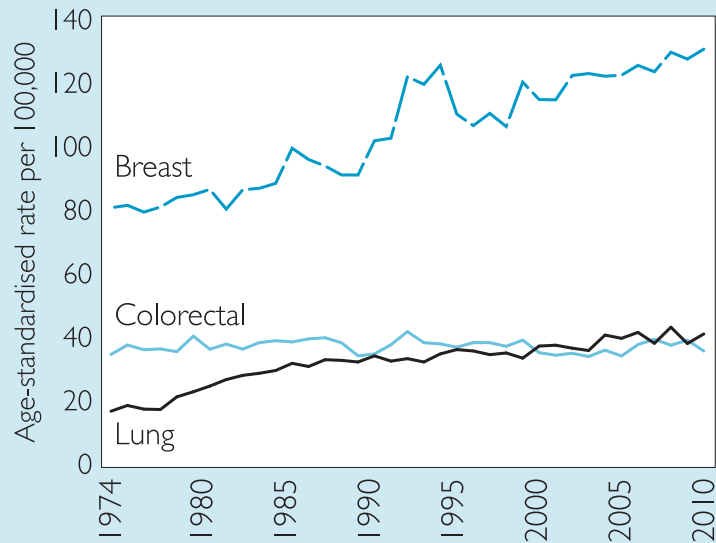
Cancer incidence rates: males, 1974-2010



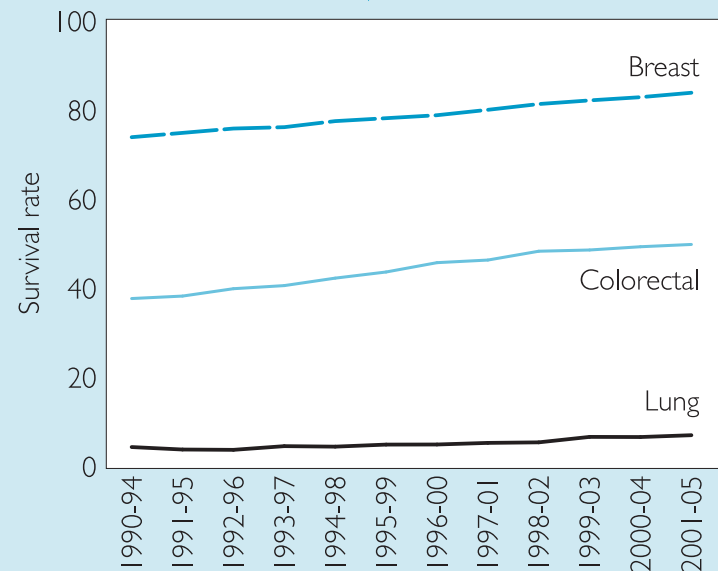
Cancer five-year relative survival rates: males, 1990-2005



Cancer incidence rates: females, 1974-2010



Cancer five-year relative survival rates: females, 1990-2005

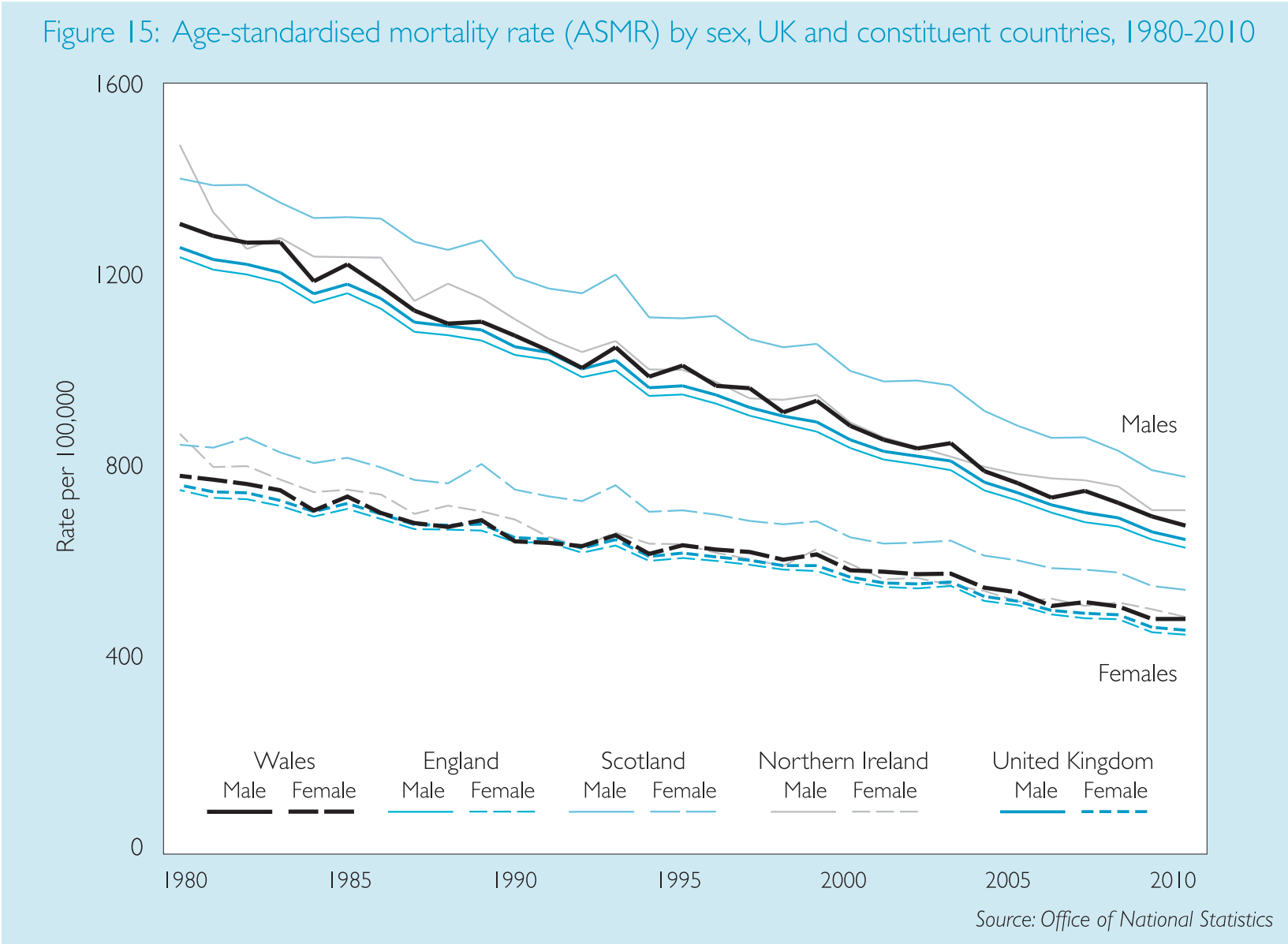


Source: Welsh Cancer Intelligence and Surveillance Unit, March 2012

ASMR for circulatory disease and for cancers both continue to decrease. The rate for suicide has remained at a similar level since 1979. The use of age-standardised rates allows comparison between populations, which may contain different proportions of people of different ages. UK comparison shows the same trend for Wales in relation to the other UK countries. ASMR in Wales for premature deaths (under 65) caused by a number of diseases has decreased since 1996; ASMR for cancers (affecting the greatest number of people) down by 21 per cent, for circulatory disease reduced by 43 per cent, and for respiratory disease down by 27 per cent (although this rate

may have been affected by coding changes). However, deaths from liver disease have almost doubled during this time; a concerning trend although numerically small in absolute terms at present.

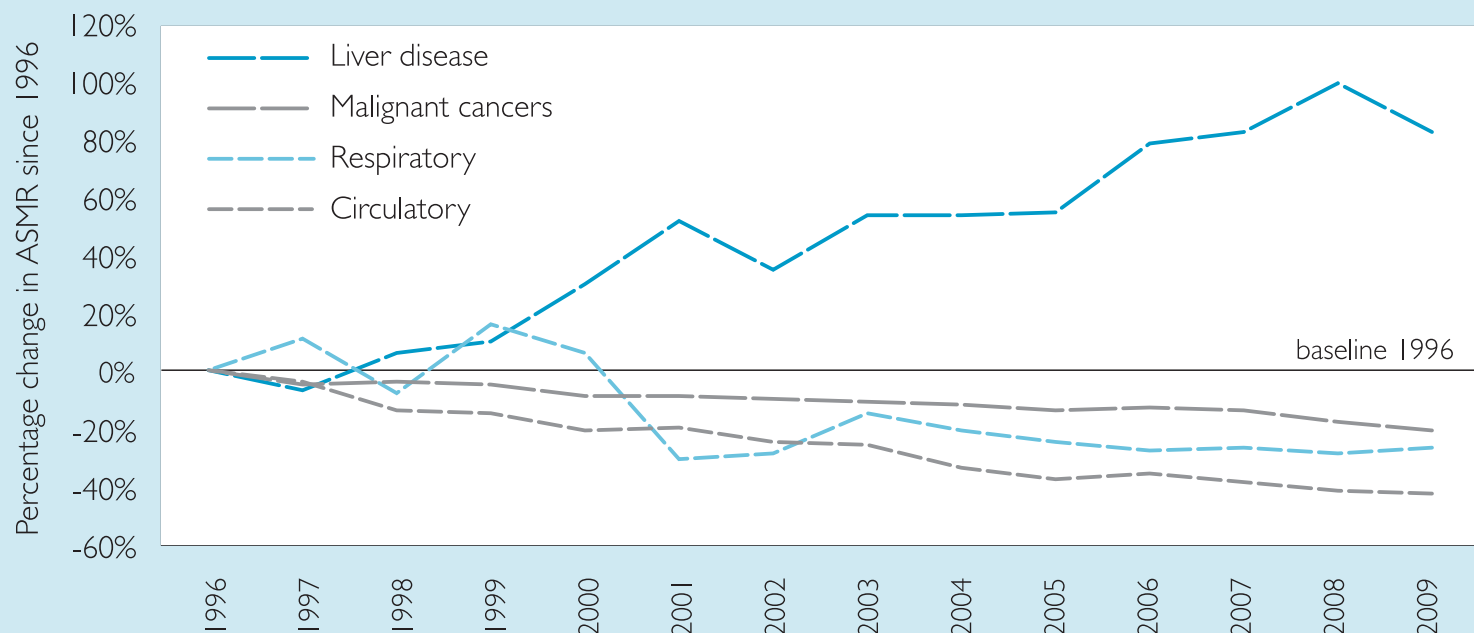
Liver disease has the potential to become a significant and worsening public health issue with rising rates of mortality in a younger age group than other key causes of premature mortality. This marked rise in rate is attributable to alcohol misuse, overweight and obesity, and blood borne viruses such as hepatitis B and C infection.



A high percentage of liver diseases remain undiagnosed in the population, making early intervention more difficult.

This 'early warning' of the potential for future problems should spur us on to take preventive action now.

Figure 16: Percentage change in age-standardised mortality rate (ASMR) in under 65's, selected causes, 1996-2009



Source: Public Health Wales Observatory, using ADDE/MYE (ONS)

How long can people in Wales expect to live?

Life expectancy at birth has been used as a measure of the health status of the population of England and Wales since the 1840s. It was employed in some of the earliest reports of the Registrar General to illustrate the great differences in mortality experienced by populations in different parts of the country. Life expectancy comparisons are a valuable indicator of geographic inequalities in health, enabling policy makers to target their resources most effectively. Life expectancy for people in Wales has shown a steadily increasing trend over the past two decades and continues to be higher for females than males, but the gap between them is closing. Life expectancy at birth in Wales (2008-10) was 77.6 years for males and 81.8 years for females.

The gap between male and female has decreased from 6.5 years in 1975-77 to 4.2 years in 2008-10, due to faster improvement in male life expectancy.

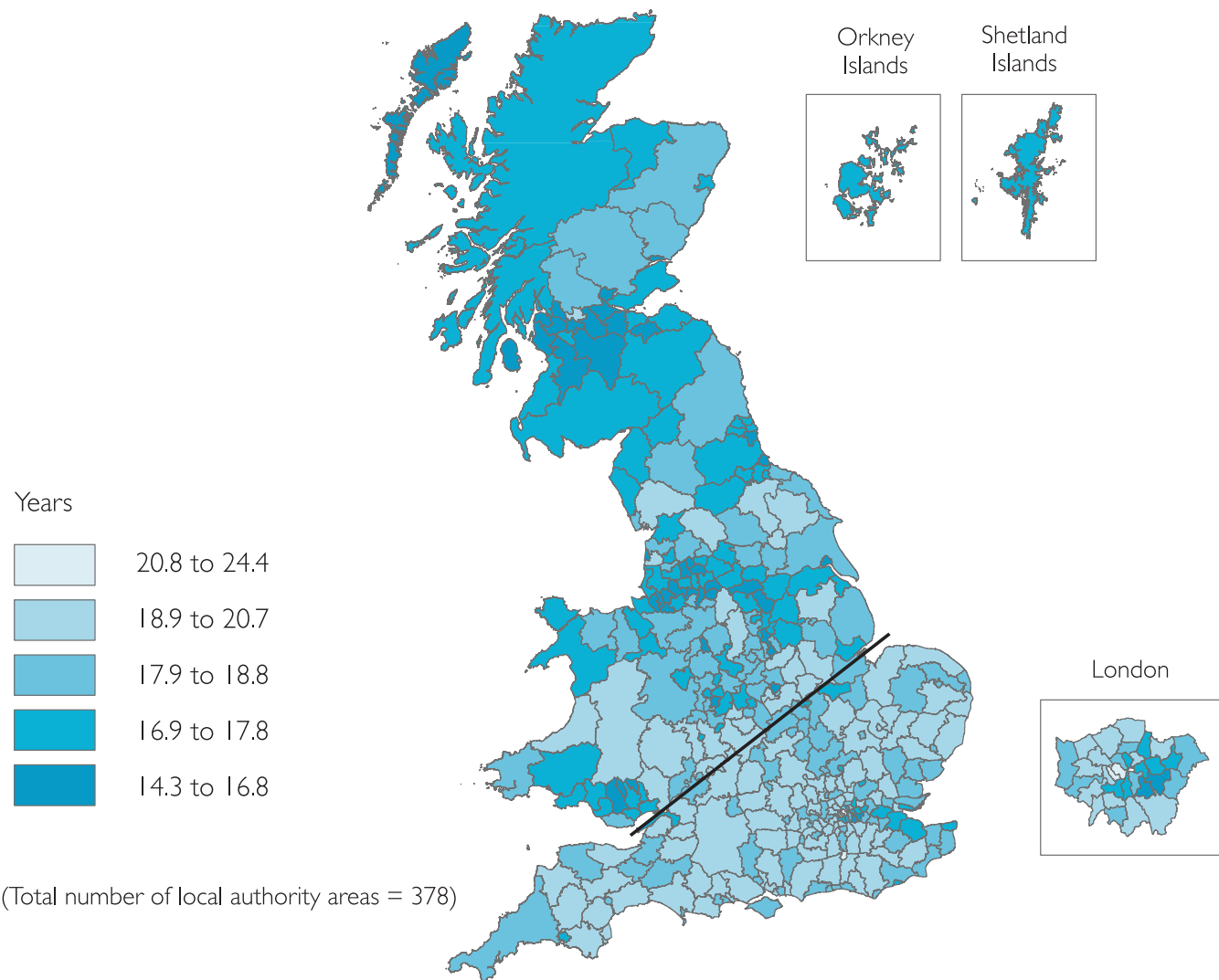
In Wales, Ceredigion has the highest life expectancy for both males and females; Merthyr Tydfil has the lowest life expectancy for males and Blaenau Gwent for females. Life expectancy at local authority level differed by 5.4 years for males and 4.2 years for females, and is lower in poorer areas. The gap between the poorest and richest areas has increased, as life expectancy has risen least quickly in the poorest areas, but recent figures suggest the gap may be starting to stabilise. This is explored further in Chapter 4.

UK comparisons in life expectancy

In the UK, life expectancy at birth is lower in Wales than England but higher than Scotland and Northern Ireland. Within the UK as a whole, equivalent figures are 82.3 years for females and 78.2 years for males.

Male life expectancy shows the greatest inequality across Great Britain, illustrated by Figure 17. This shows that overall the south of England has a longer life expectancy than Wales, northeast and northwest England, and Scotland. The map for female life expectancy does not demonstrate the same degree of variation.

Figure 17: Map of male life expectancy at age 65 years by local authority areas in Britain, 2008-10



The wide variations in life expectancy between local areas are due to various individual and area factors, including socio-economic status, health behaviours (for example, alcohol consumption and smoking), environmental conditions, the proportion of poor people, and the availability of local services and resources.

This chapter has identified steady overall improvements to our health. However, it also identifies underlying risk factors which place Wales in a comparatively poor position with major challenges to our health – today and tomorrow.

Our relatively poor lifestyles shown internationally for children and adults are damaging to future prospects. There are positive signs, however, that fewer children are smoking and drinking and that prevention programmes such as screening and improved treatment services are helping to improve survival, particularly for cancer. The following chapters explore the changes that are needed to maintain improvements, and address the inequity in our society, which is specifically explored in Chapter 4.

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'Quake prompts calls for rethink on Wylfa B plan

CAMPAIGN groups have urged the government to shelve plans to develop a new nuclear power station on Anglesey following the current disaster affecting a plant in Japan.

The recent Japanese earthquake and tsunami, and the resulting damage to the Fukushima Daiichi nuclear power plant, has caused the government to pause its plans for the proposed development of a new plant, known as Wylfa B, at the current Wylfa site near Gwynedd Bay, Anglesey.

In response to the Japanese earthquake, the Friends of the Earth Cymru, said "nuclear power generates huge risks for existing and future generations, yet makes a very small contribution to energy demand.

"Plans for new nuclear building at Wylfa should be scrapped.

"Nuclear has potential for delivering energy from renewable sources while slowing energy

By CHRIS HOGG
Daily Post



Wylfa Power Station, Anglesey Page 33
Source: NWN Media Wales Ltd

Parents urged to get children vaccinated as measles spreads

OUTBREAK OF POTENTIALLY FATAL DISEASE IN WALES

Health officials have urged parents to get their children vaccinated against measles as the disease spreads across Wales.

The Welsh Health Protection Unit (WHPU) has reported a significant increase in measles cases, with several children in hospital and one child in a critical condition.

The WHPU has issued a public health notice, urging parents to ensure their children are up to date with their measles vaccination.

"Measles is a highly contagious virus that can cause serious complications, including pneumonia, encephalitis and death," said a WHPU spokesman.

"The best way to prevent measles is by getting your child vaccinated. The vaccine is safe and effective, and it's free of charge.

"If you're unsure if your child is vaccinated, contact your GP or the local health authority for more information.

MMR uptake and measles outbreak, Ceredigion Page 38
Source: Media Wales Ltd

Toxic smoke brings chaos to city

RESIDENTS TOLD TO STAY INSIDE AFTER TYRE BLAZE

A major fire at a tyre recycling plant in Swansea has caused chaos in the city, with toxic smoke filling the air and residents being urged to stay indoors.

The fire, which broke out at the Swansea Tyre Recycling Plant, has caused significant disruption to the city's transport network, with several roads closed and buses diverted.

Swansea City Council has issued a public health notice, advising residents to stay indoors and close their windows and doors to avoid inhaling the toxic smoke.

"The smoke from the fire is highly toxic and can cause respiratory problems, particularly for people with asthma and other respiratory conditions," said a council spokesman.

"We are working to contain the fire and remove the smoke from the area as quickly as possible. We will update residents as more information becomes available.

Fforestfach warehouse fire, Swansea Page 31
Source: Media Wales Ltd

Cement firm cancer links refuted by health board

By Hayley Collins

FEARS that Hanson Cement factory is causing cancer in the surrounding communities have been refuted by health chiefs.

The report, published by the South Wales Health Board, states that there is no evidence of a link between the factory and cancer.

"The picture that's emerging is reassuring," said a health board spokesman.

The investigation, which was prompted by concerns raised by local residents, found that the factory's emissions do not contain any known carcinogens.

"We have carried out a thorough investigation and found no evidence of a link between the factory and cancer," said the spokesman.

"We will continue to monitor the situation and keep the community informed of any developments.

Hanson Cement Investigation, Mold Page 34
Source: NWN Media Wales Ltd

Public health in Wales: a nation comes of age

The battle over NHS reform and public health policy in England has been played out in innumerable newspapers, blogs, and television and radio programmes. Less attention has been paid to the quiet revolution across the border in Wales. Since devolution in 1999, Wales has gradually assumed an increased degree of self-government, culminating in the vote this year to give the Welsh Assembly full law-making powers in a wide range of areas.

As a result, the Welsh Government is now in a position to implement a range of policies that will improve the health of the Welsh people. This is a significant step forward for Wales, and it is one that should be celebrated.

The Welsh Government has a unique opportunity to create a public health system that is tailored to the needs of the Welsh people. This is a system that will be based on the principles of equity, justice, and solidarity.

The Welsh Government has a responsibility to ensure that every Welsh person has the opportunity to live a long and healthy life. This is a responsibility that should not be taken lightly.

'Public health in Wales' Page 107
Source: Lancet Editorial

'Scores on the doors' demand after E.coli outbreak

THE E.coli outbreak in South Wales is proof of the need for a new law to force businesses and organisations to take more responsibility for the health of their customers, the Welsh Government has said.

The Welsh Government has issued a public health notice, advising businesses and organisations to take steps to prevent the spread of E.coli.

"Businesses and organisations have a responsibility to ensure that their customers are safe and healthy," said a Welsh Government spokesman.

"We are working to ensure that businesses and organisations are aware of their responsibilities and are taking the necessary steps to prevent the spread of E.coli.

"We will be introducing a new law that will require businesses and organisations to display 'scores on the doors' to show their level of compliance with food safety regulations.

E.Coli Outbreaks 2011 Page 35
Source: Media Wales Ltd

Chapter 2: 2011– A year in public health

This chapter looks back over key events and developments in public health during 2011. It considers how we plan and respond to environmental risks and communicable diseases, and also seek to improve health through strategic and service developments, and legislative change.

Environmental risks

Fforestfach fire



Source: South Wales Police

On 16 June 2011, public health agencies in Wales were notified of a fire at a warehouse on the Fforestfach Industrial Estate in Swansea. The warehouse was illegally storing an estimated 5,000 tonnes of tyre 'flock', a tyre recycling by-product of nylon fibre and rubber crumb, which generated a dense, dark smoke plume over the three week period for which it burned. In addition, an adjacent warehouse contained flammable waste and recycling materials. The scale of the incident and associated public health concerns were significant and a major incident was declared immediately when the fire started with appropriate command and control structures established.

Fires and their consequences have the potential to impact adversely upon both the public's health and the environment. They can generate a plume which may contain gaseous pollutants, smoke and quite often fine particulate matter that can penetrate deep into the lungs. Determining the precise constituents of smoke plumes is difficult, particularly when the composition of the source material is unknown.

There is a developing evidence base^{1, 2} around emissions from waste material fires. With specific regard to tyre fires, large amounts of particulate matter may be generated, and in some cases, significant yields of sulphur dioxide³. Other emissions can include metals, carbon monoxide, polycyclic aromatic hydrocarbons, organic compounds including benzene, phenols and styrene^{4, 5} as well as inorganic irritants and possibly phosphorous pentoxide.

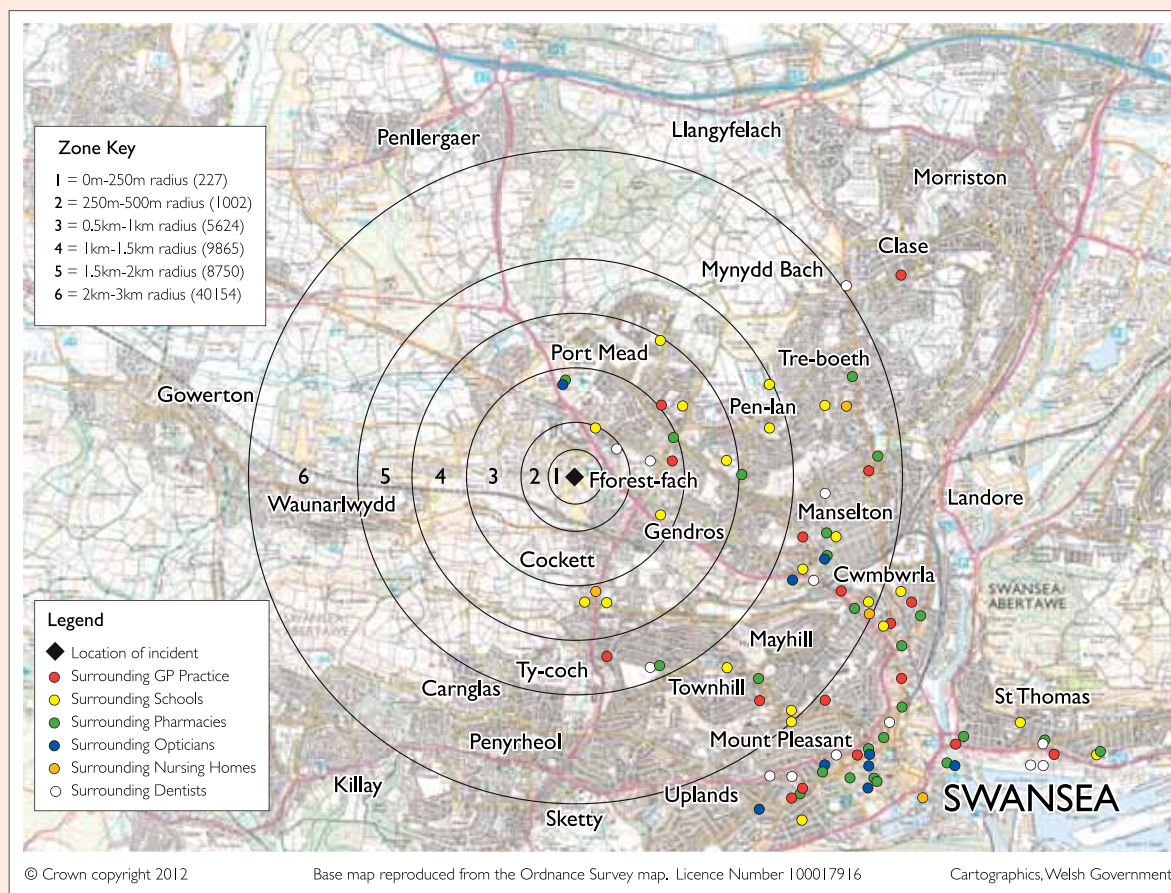
The Fire and Rescue Service worked extremely hard at both the operational level to tackle the fire and the strategic level through their significant contribution to inform the multi-agency response. Traditional fire-fighting techniques, however, were ineffective in tackling the Fforestfach fire due to the source material forming a ceramic crust when doused with water rendering it impenetrable. When this ceramic crust broke down periodically, more smoke was released into the atmosphere. The fire was extinguished using novel fire fighting techniques after three weeks, which was earlier than originally anticipated.

Air quality monitoring was an essential component of the emergency response and was established at the outset to inform risk assessment, decision making and the provision of public health advice to the public and partners. Fine particulates (PM_{10}) were identified as the pollutant of greatest public health concern.

The incident was the first in Wales requiring a Scientific and Technical Advice Cell (STAC) to provide coordinated multi-agency scientific and technical advice during the response.

Around 25,000 people within a 2km radius, over a three-week period, were potentially affected by the plume. Details relating to 98 separate incident-related health concerns were recorded, based on daily reporting from local GPs, NHS Direct Wales, Morriston Hospital Emergency Department, Public Health Wales, Fire and Rescue Service, Local Authority and the Environment Agency Wales. Most health concerns referred to breathing difficulties (tight chest, shortness of breath, wheeze, increased need to use asthma inhaler), coughs, sore throats, eye irritation, headaches and nausea. These reported health effects were consistent with exposure to elevated PM_{10} concentrations. There were no serious long term harms identified.

Figure 18: Map showing the number of residents surrounding the location of the incident



Source: Cartographics, Ordnance Survey

Public Health Wales supported the multi-agency response and situation reports were issued daily to ensure partner agencies were kept up to date with public health risk assessments based on available data. This informed the communication of risks and public health messages to help minimise population exposure and keep the wider NHS informed.

To determine the public health impacts of the incident on the local community, further work is underway. A survey has been undertaken to measure the community mental health impacts associated with the fire and also to assess the effectiveness of communicating the risks involved. In addition, a health study is taking place to determine the impact of the fire on acute health outcomes within the local community, using information collected during the incident and linking it with routinely collected NHS data.

Formal post-incident evaluation has recognised that Wales has a well-organised, committed and expert public health protection resource.

The debrief made a number of recommendations, including the need to review incident response air quality monitoring capabilities and develop arrangements to ensure operators are appropriately trained and equipment can be deployed quickly in an emergency. Welsh Government and local government are currently considering ways of sharing environmental health competencies.

A working group has been established through emergency planning structures in Wales to identify other legal or illegal waste tyre sites, undertake risk assessments and work with site owners to minimise associated risks. This work has already led to the identification of other high priority risk sites where preventative measures are currently being implemented.

Wylfa Power Station



Source: Geograph

The UK Government has identified a site near to the existing Wylfa nuclear power station on Anglesey as a potential location for a new nuclear power station. The purchase of this site was completed in October 2011. This has generated some concerns amongst a section of the local community regarding potential risks to health arising from radiation exposure. The company proposing to build the new power station commissioned a Health Impact Analysis. A steering group for this was established chaired by the Director of Public Health for Betsi Cadwaladr University Health Board (BCUHB) and included representatives from Public Health Wales, Welsh Government, Wales Health Impact Assessment Support Unit (within Cardiff University), Isle of Anglesey County Council and Horizon Nuclear Power. The health impact assessment process uses quantitative, qualitative and participatory techniques. It engages with local communities to identify the potential effects on health, wellbeing and health inequities – both positive and negative – of the proposed development and appropriate measures for mitigation of risks.

A key health protection measure in relation to control of radiological exposure of the public from nuclear power stations is through routine surveillance of radioactivity levels in the environment and local food.

The results of these programmes are available in Radioactivity in Food and the Environment (RIFE) reports⁶. They are used to calculate maximum radiation dose levels to members of the public, e.g. for those who eat the largest quantities of local food. This is the most direct method of ensuring the public are protected given that there could be lag times of many years between radiation exposure and health effects. The 2010 RIFE report indicates that the maximum dose in the vicinity of Wylfa was 0.007 mSv – which is less than one per cent of the dose limit and less than 0.5 per cent of the average natural background radiation dose to a member of the UK population.

The Welsh Government accesses independent advice on health effects of radiation from COMARE (the UK Committee of Medical Aspects of Radiation in the Environment) whose membership is appointed for their medical and scientific expertise.

Children are more susceptible to radiation induced cancer than adults and since its establishment in 1985, COMARE has investigated the incidence of childhood cancer near UK nuclear installations in great detail. COMARE's tenth report *The incidence of childhood cancer around nuclear installations in Great Britain*⁷ was published in 2005; it considered the incidence of childhood cancer in the vicinity of nuclear power plants between 1969 and 1993 and concluded that “there is no evidence from this very large study that living within 25km of a nuclear generating site in Britain is associated with an increased risk of childhood cancer”. Following publication of a German report on the same subject (the 2008 KiKK study^{8, 9}) COMARE reviewed more recent information and concluded in their fourteenth report *Further consideration of the incidence of childhood leukaemia around nuclear power plants in Great Britain*¹⁰ (published in 2011) that there was still “no evidence to support the view that there is an increased risk of childhood leukaemia and other cancers in the vicinity of NPPs [Nuclear Power Plants] in Great Britain”.

Further information is available on the COMARE website¹¹. This scientific evidence is reassuring and will contribute to the planning decision process. It is an important public health issue which touches on energy policy and climate change as well as notable international experiences, such as the Fukushima incident in Japan which occurred in 2011.

Hanson Cement Investigation

In April 2010, the Minister for Health and Social Services asked Public Health Wales to investigate the health concerns associated with the Hanson Cement works in Mold. I reported on progress last year, since then investigations by the response team have continued.

Following each meeting of the response team, chaired by the Director of Public Health for Betsi Cadwaladr University Health Board, web pages have been updated and a newsletter has been produced and distributed to more than 19,000 homes in the area to keep the public informed of progress. Prior to each meeting, the media has been briefed.

A programme of community engagement was used to better understand the concerns of the local community. Following this the Investigation Response Team worked to respond to the range of concerns that were raised¹².

A report from the Public Health Wales Observatory described the health of people in the area compared with other parts of Wales¹³. This highlighted that factors contributing to health are complex. The descriptive report concluded that routine information suggests that general health is good or better in the areas near the Hanson Cement works compared to that typical for Wales.

Building on work started in 2010; a review¹⁴ of fine particulate levels in local air was undertaken by the Centre for Radiation Chemical and Environmental Hazards (Wales), part of the Health Protection Agency.

The review analysed data collected over ten years from monitoring sites in the local area. It concluded that air quality relating to particulate matter is good, comparing favourably with other parts of the UK. It is comparable with air quality in a typical rural community or small town in the UK.

A report from the Welsh Cancer Intelligence and Surveillance Unit (WCISU) was presented in June 2011 to address the concerns raised by the local community associated with cancer and perceived clusters in the vicinity of the cement plant¹⁵.

The report concluded that there is no evidence of consistent clusters of cancer or cancer types over time in the local area. Covering a period of 18 years (1991 - 2008), the analysis found that the rates of new diagnoses of cancers in the seven areas around the Hanson Cement plant are similar to those of Wales and Flintshire.

An assessment of possible risk to locally produced food and local consumers from dioxins was conducted by the Food Standards Agency and presented in September 2011¹⁶. As part of the assessment, sample results from 2004-09 of milk, soil and vegetation were analysed. Based on the samples taken near to Hanson Cement, no cause for health concerns associated with dioxins in locally produced food was found.

Other reports on health effects have also been commissioned and received from the Environment Agency and Health and Safety Executive. At the December meeting, a draft version of the investigation's final report was presented¹⁷. The overall findings showed that emissions from the cement works are not harmful to health. The final investigation report will be submitted to the Minister after consideration of community comments on the draft report.

This investigation has demonstrated effective public health leadership, investigation and communication; and it has illustrated how various agencies and the community can work together using validated scientific evidence to investigate local health concerns.



Padeswood cement plant, Mold Source: Dylan Moore

Communicable disease

E. coli outbreaks in 2011

Throughout my time as Chief Medical Officer, E. coli associated with contaminated food and drink has been a constant concern and focus of attention, especially the more dangerous VTEC strain. Cases of VTEC O157 remain rare; 62 were reported to the Communicable Disease Surveillance Centre of Public Health Wales in 2011 which is consistent with the last 20 years.

There were three outbreaks in Wales last year. Two of them took place in children's nurseries and gave rise to eight and three cases respectively either in children attending the nursery or in their contacts at home. On both occasions all the children and staff were tested and only allowed back into the nursery when they were no longer carrying VTEC O157. In the third outbreak suspicion fell on a take-away restaurant that nine cases gave a history of eating at. No further cases occurred after the premises was closed under food safety laws.

In addition, there were 14 cases recorded in Wales linked to a Great Britain wide outbreak of 250 cases between December 2010 and July 2011. There were several other unusual features of this outbreak besides its size and duration. No cases were identified in Ireland or the European mainland.

Although no definite connection was made with a food item, a Health Protection Agency study suggested an association between illness and handling certain loose raw vegetables in the home. People who were ill were more likely to have lived in a household where leeks sold loose (i.e. not pre-packed) and potatoes sold from sacks had been handled, than those who had not. 60 per cent of cases were female. This led to a Food Standards Agency press release emphasising:

- the importance of washing all fruits and vegetables (including salad) before eating, unless they are labelled 'ready to eat' to ensure that they are clean;
- the importance of washing hands thoroughly; and
- the importance of cleaning chopping boards, knives and other utensils after preparing vegetables to prevent cross contamination¹⁸.



Source: Welsh Government

2011 also saw a dramatic outbreak of Verotoxin E. coli O104. H4 centred around Germany which caused 3,842 cases and 53 deaths. The cause was identified to be a contaminated shipment of fenugreek sprouts that had been imported from Egypt. This organism would not normally be detected by the techniques used in local laboratories in Wales (or most of the UK) which are specific for E. coli O157. This outbreak highlights the issue of diagnostic modernisation and also reminds us all of the huge economic costs in addition to the harm to people.

Learning from outbreaks and incidents

Last year I reported on how services in Wales responded to the 2010 'Heads of the Valleys' Legionnaires disease outbreak. In September members of the Welsh Health Protection Committee were commissioned to review the outbreak in order to identify learning points.

As a result, an Outbreak and Incident Subgroup was established. The key recommendations which are currently being taken forward are:

- the development of a protocol to be put in place to enable the necessary collaboration of the relevant organisations to safely and swiftly take urgent samples from plausible sources;
- the *Communicable Disease Outbreak Plan for Wales* to be amended:
 - to ensure Outbreak Control Team meeting minutes are published as appropriate, with copies available upon request;
 - to include further advice or guidance on when the public should be informed of an outbreak or incident; and
 - to include Welsh guidance based on the World Health Organization Outbreak Control Team evaluation template.
- the Welsh Government to raise awareness of the advice from the Microbiology Standing Specialist Advisory Group to clinical colleagues.

The subgroup will continue to consider learning points from outbreaks and incidents of public health significance.

HIV infection in Wales

Whilst the prevalence of HIV infection in Wales is comparatively low, with about 0.05 per cent of the population having been diagnosed with infection; over the last decade there has been a steady increase in the number of people living with HIV. This reflects both an increase in survival due to more effective treatment, and an increase in new diagnoses.

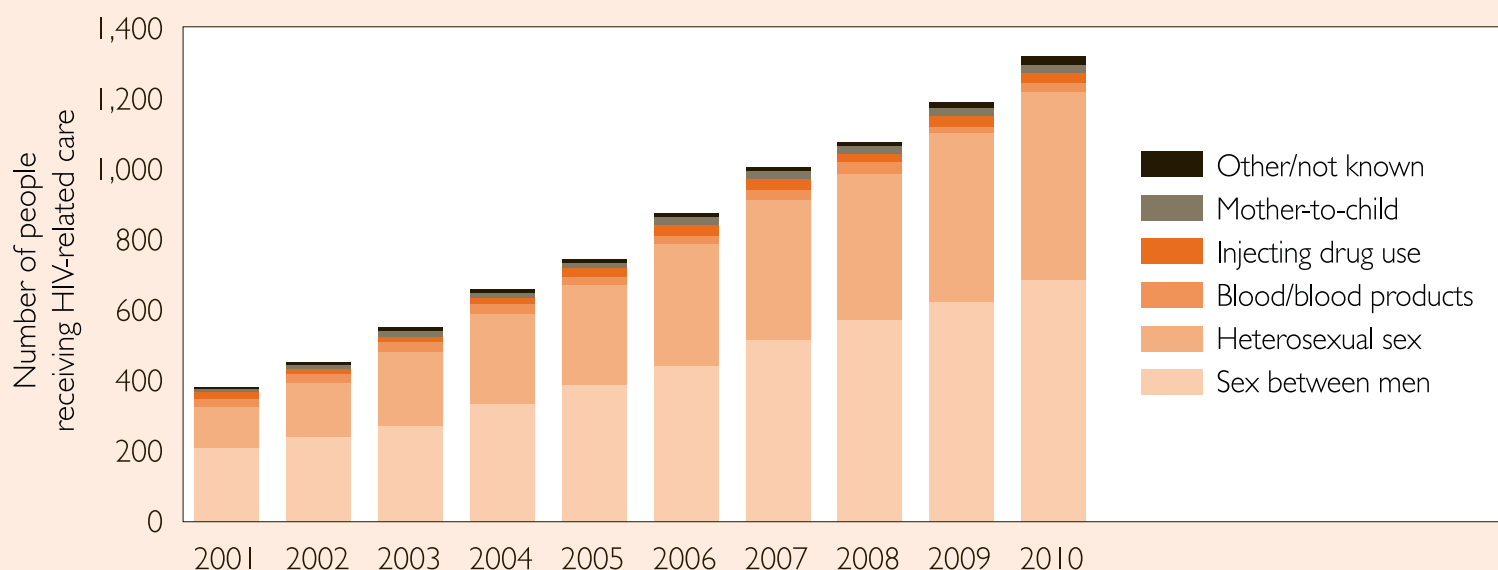
Data available in 2011 indicated that of the 152 new HIV diagnoses in Wales in 2010, sex between men accounted for 60 cases, heterosexual sex for 69 cases, and in 20 cases the route of transmission was not reported. Infections arise in all age groups with very few infections in those under 20 years of age.

In 2010 there were 1,321 Welsh residents receiving treatment for HIV/AIDS which represents an 11 per cent increase from 2009. The number of HIV antibody tests carried out by laboratories in Wales continued to increase with 65,815 tests carried out in 2010 – an increase of 12 per cent¹⁹.

During 2011, Public Health Wales worked with the University of Glamorgan on a project using focus groups to determine how

health messages about sexual health could be communicated more effectively. Early findings of this work indicated that young people are largely unaware of their personal risk of HIV infection. We also know that sexually transmitted chlamydia infections have steadily increased in young people in recent years. The findings of this research will be used to inform an awareness raising campaign due for launch in 2012-13.

Figure 19: HIV related cases in Wales by exposure group, 2001-2010



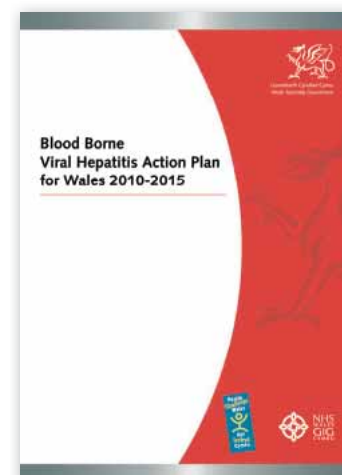
Source: The Survey of Prevalent HIV Infections Diagnosed (SOPHID)

Tackling hepatitis B and C infection in Wales

Hepatitis B and C infection, along with alcohol and obesity, contribute to the increasing number of liver disease deaths that we have seen in the last ten years in Wales; a disease burden that is largely preventable.

Approximately 0.4 per cent of the Welsh population are estimated to be chronically infected with hepatitis C virus (HCV) and hepatitis B virus (HBV) has a comparable population prevalence (UK estimate of 0.3 per cent of the population). Both viruses increase the risk of an infected individual developing liver disease, including hepatocellular carcinoma.

In 2010 the Welsh Government launched its *Blood Borne Viral Hepatitis Action Plan for Wales 2010-2015*²⁰. This plan set out to reduce the transmission of blood borne viral hepatitis infection in Wales, reduce the pool of undiagnosed infection and improve treatment provision. In the first year of implementation of the action plan a number of key actions have already been achieved and the building blocks for many more have been put in place.



Source: Welsh Government

These include:

1. A harm reduction database

A harm reduction database was developed to provide a national data collection system for needle syringe programmes (NSP) and supervised consumption of opiate substitution treatment. The system was rolled out in all statutory and voluntary NSP services in Wales from September 2010 and is now well established.

2. Training across Wales on blood borne viruses

Training for those working with individuals at risk of blood borne virus infection has been developed and a 'training the trainer' programme was completed across Wales in May 2011.

3. Prisons

A Blood Borne Virus (BBV) Hepatitis Prison Nurse has been appointed to strengthen and support the links between the prison nurses and the clinical nurse specialists serving their prison. Two nurses in each prison have now been trained and are offering BBV testing and referral pathways are in place for each prison to facilitate access to treatment. Also a BBV e-learning module has been developed for all prison employed staff across Wales and is due for rollout across Welsh prisons in 2012.

4. Use of dried blood spot testing for blood borne viruses

In October 2010 Public Health Wales introduced dried blood spot (DBS) testing for HCV, HBV and HIV primarily in NHS substance misuse services. In the first year over 1,400 DBS samples were submitted and approximately 300 individuals with evidence of infection were identified.

5. Neonatal hepatitis B database

A database to assist the All Wales Health Protection Team in the management of data supporting neonatal hepatitis B immunisation has been developed. This was completed in 2011 and provides a working tool to support the completion of the vaccination course, linking with child health records. Preliminary data from this system indicates that during 2011, Public Health Wales was notified of

65 babies born to hepatitis B positive mothers. Of these, 98 per cent had completed their first dose, 97 per cent had completed their first two doses and 85 per cent had completed their first three doses of hepatitis B vaccination during 2011. Appropriate follow-up and vaccination of these infants of infected mothers are key interventions in reducing chronic HBV infection.

6. Progressing specialist treatment services

All the Local Health Boards with treatment centres have designated a clinical lead to provide local clinical leadership. Several new appointments have been made to take this work forward at the frontline.

The aim of this action plan is to reduce the transmission of BBVs, and increase the numbers of those diagnosed and treated. In the first full year of implementation the infrastructure to achieve these outcomes has greatly increased, with developments in training, diagnostic capabilities and treatment and support services. In future years we hope to see a reduction in the burden of diseases related to these chronic infections, and systems are being developed in order that information is available to monitor and evaluate the programme.

MMR uptake and measles outbreaks

On 6 June 2011 the Health Protection Team became aware of four linked cases of probable measles in Aberaeron, Ceredigion. By the end of the month another six cases had been notified bringing the total to ten.

None of the cases had received MMR vaccine.

Another measles outbreak occurred in early 2012 in Porthmadog affecting over 50 confirmed cases. Again, the majority of cases either had no MMR vaccination or only one dose.

These outbreaks are the result of a relatively low uptake of MMR vaccine over the past ten years.

Strategic and service developments in 2011

Physical activity guidance

People lead busy lives and in these days of social media and home entertainment we also spend more time on computers or in front of the television rather than doing something active in our leisure time.



Source: Crown Copyright

In July 2011, the UK Chief Medical Officers launched the first UK-wide physical activity guidelines, standardising the guidelines across the UK and including some more accessible, everyday activities that can contribute to a healthy lifestyle²¹.

The guidance is based on global evidence of the health benefits people can achieve by taking regular physical activity throughout their lives. Physical activity can reduce the risk of many conditions including coronary heart disease, stroke, type 2 diabetes, cancer, obesity, mental health problems and musculoskeletal conditions. Even relatively small increases in physical activity are associated with some protection against chronic diseases and an improved quality of life. The benefits of physical activity extend further to improved productivity in the workplace, reduced traffic congestion and pollution through active travel, and healthy development of children and young people. Subsequent benefits can include cost savings for health and social care services.

Our understanding of the relationship between physical activity and health has grown, so we have developed the guidelines to reflect the current evidence. These new guidelines are broadly consistent with previous ones, while also introducing new elements. It emphasises the importance of physical activity for people of all ages as well as updated guidelines for children, young people and adults, and new guidelines for early years and older adults.

The risks of sedentary behaviour are highlighted and cover any activity, other than sleep, which involves very little movement or moving around: time spent 'sitting' not 'doing'. Experts have highlighted the link between sedentary behaviour and poor health. With people's lives based more and more around computer screens this is something that needs to be addressed. Emerging evidence shows an association between sedentary behaviour and overweight and obesity, with some research also suggesting that it is independently associated with all-cause mortality, type 2 diabetes, some types of cancer and metabolic dysfunction. These relationships are independent of the level of overall physical activity. For example, spending large amounts of time being inactive may increase the risk of some health outcomes, even among people who are active at the recommended levels. In 2010 the Welsh Health Survey found that about a third of adults (34 per cent) did not achieve at least 30 minutes of moderate activity on any day in the past week.

There were previously no recommendations for physical activity for babies, toddlers and pre-school children, so it was important to assess the evidence and develop advice for this age group as part of our 'health through the life course' approach to public health. The new physical activity guidelines for under-fives will help health professionals and provide parents with information on the sort of physical activity that can benefit their children. It is important to start young. Evidence suggests that if physical activity is promoted and sedentary behaviour is minimised for young children, these behaviours continue into school years. Children of all ages benefit from being physically active, as much as possible and as often as possible.

Table of recommendations for physical activity across the life course

Life stage	Recommendation
Under-fives, babies and infants not yet walking	Floor based play and water activities in safe environments. Minimise time spent restrained or sitting for extended periods (except sleep).
Under-fives, infants capable of walking	Should be physically active 180 minutes spread throughout the day.
Children and young people (5-18 years)	Should engage in moderate to vigorous physical activity for a minimum of 60 minutes and up to several hours every day (on three days a week this should include vigorous activities that strengthen muscles and bone).
Adults (19 – 64) and older adults (65+)	1. Aim to be active daily. Weekly activity should add up to at least 150 minutes (2½ hours) of moderate intensity activity in bouts of ten minutes or more (5x30). 2. Comparable benefits can be achieved through 75 minutes of vigorous intensity activity spread across the week. 3. Undertake physical activity to improve muscle strength on at least two days a week. 4. Minimise the amount of time spent being sedentary (sitting) for extended periods. And additionally for older adults: 5. Older adults who participate in any amount of physical activity gain some health benefits, including better physical and cognitive function. Some physical activity is better than none, and more physical activity provides greater health benefits. 6. Older adults at risk of falls should incorporate physical activity to improve balance and coordination on at least two days a week.

Source: Crown Copyright

The adult guidelines also include the latest observations about muscle strengthening activity in addition to the benefits of aerobic activity. Resistance or weight training is a familiar example of muscle strengthening activity as is digging in the garden or cycling. This makes muscles do more work than they are accustomed to doing and encourages muscle development. It also stimulates bone formation and maintenance of functional ability.

All older adults should be given opportunities to take part in a range of activities which are appropriate for them and their needs. Engaging in different activities will help to minimise the amount of time they spend sitting down for extended periods. At all ages, replacing sedentary time with physical activity (even low intensity activity) will increase energy expenditure. If sedentary time is swapped for moderate or vigorous intensity activity then this will also contribute to achieving the weekly physical activity targets.

We have included everyday activities in the recommendations – things like gardening, ironing, housework, walking or cycling to work – that previously may have been taken for granted despite their potential to contribute to the overall amount of exercise and activity people do. This shows that you do not have to go the gym or run for hours to improve your fitness. There are many ways to get active and I hope these new guidelines help people find things that they enjoy that can also contribute to a healthier life, whatever their age. I have always enjoyed an active lifestyle and am delighted to have completed my first Cardiff Half Marathon in 2011 and my second Kidney Wales Foundation Cardiff 10k.



Chief Medical Officer finishing the 10k charity run in 2011
Source: Welsh Government

The key features of the Chief Medical Officers' guidance include:

- a greater flexibility for achieving the recommended levels of physical activity;
- a life course approach;
- a stronger recognition of the role of vigorous intensity activity;
- the flexibility to combine moderate and vigorous intensity activity;
- an emphasis upon daily activity; and
- new recommendations on sedentary behaviour.

Tobacco Control Action Plan

Action to tackle the harm caused by smoking has to remain a priority for the Welsh Government. It is important that we protect our children from the harmful effects of tobacco and to reduce inequalities in health, as people living in our most disadvantaged communities continue to be far more likely to smoke which significantly lowers life expectancy.

I was delighted when the Welsh Government presented the *Tobacco Control Action Plan for Wales* to the National Assembly for Wales in December 2011²². It was very encouraging to see that the National Assembly fully supported the vision of the plan to reduce smoking prevalence levels to 16 per cent by 2020 with an ultimate vision of a smoke-free society for Wales, in which the harm from tobacco is completely eradicated. This is a very ambitious target but we have seen Australia and California achieve similar reductions in smoking prevalence already.

The action plan highlights the importance of helping smokers to quit, remembering that 70 per cent of smokers say they would like to quit. Next year the Welsh Government will commission an independent review of all smoking cessation activity in Wales which will identify the improvements which need to be made to existing cessation services and the further support necessary to assist attempts to quit, including brief interventions by all NHS staff.

Easy access to effective, appropriate resources will be vital if the plan's 16 per cent smoking prevalence target is going to be achieved.

In my last two Annual Reports I talked about my concerns about the harm smoking in cars causes to children. While smokers have the freedom to decide whether to light a cigarette, children have no choice in whether they are exposed to the dangerous toxins in tobacco.

Exposure to second-hand smoke increases the risk of ear infections, asthma and other respiratory diseases in babies and children. It has also been linked to meningitis and increases the risk of cot death. We know from the Health Behaviour in School-Aged Children Survey that around 20 per cent of 11 to 16-year-olds report being exposed to smoke the last time they travelled in a car. This is far too many so it is time to take action to address this major public health issue²³.

I am delighted by the Welsh Government decision to take action to protect children from being exposed to second-hand smoke in cars. The three-year media campaign Fresh Start Wales, which I launched in February 2011, is designed to educate people about the significant risks of children's exposure to second-hand smoke. Wales took the lead with the smoking ban in public places and work places in 2007. Now, we are making a similar stand to protect our children's health.

Evaluations of mass media campaigns have indicated that these campaigns can build knowledge, change key beliefs and attitudes, increase calls to quit lines, and contribute to overall decreases in tobacco consumption and increases in accessing smoking cessation.

We know that some countries have already placed a ban on smoking in cars with children; including South Africa and in a number of jurisdictions in Canada, the United States and Australia. In Wales, the campaign aims to raise awareness of the risks of exposure to second-hand smoke and is a real opportunity for people to choose to keep their cars smoke-free and protect their children.



Source: Welsh Government

The Welsh Government wants to assess the impact of the Fresh Start Wales campaign before considering legislation. In the meantime, we are considering its powers in respect of introducing a ban on smoking in cars carrying children. Children's rights to breathe clean air apply at home too, so attention to this risk should also be included in our future campaigns.



A family who have made their car smoke free Source: Welsh Government

Preventing excess winter deaths

Every year in late autumn, we await the publication of the latest excess winter death figures from the Office of National Statistics (ONS), and every year they show that our excess winter death rates (EWD) are unacceptably high compared to some of our European neighbours. Research has demonstrated the variation in EWDs in European countries showing that Finland has significantly fewer EWDs than we do in the UK²⁴. It shows that EWDs do not necessarily correlate with climatic conditions. Some countries that experience milder winters such as the UK, Portugal and Greece have higher EWDs than some colder countries. The conclusion to be drawn from this is that whilst cold weather is clearly a factor there are other factors that contribute EWDs, these include:

- the thermal efficiency of homes;
- fuel prices and fuel poverty; and
- levels of disease such as flu.

Provisional figures show that 1,900 additional people died in Wales during the winter of 2010-11. This was slightly higher than the previous winter (1,700) but lower than 2008-09 (2,500)²⁵. Many of these deaths are avoidable; it is unacceptable that people are dying and becoming seriously ill when there are key things we know that can be done about it.

- We know that being cold and living in a cold home impacts on health. Very few deaths are as a result of hypothermia; most are due to the effect that the cold has on the circulatory and respiratory systems causing heart attacks and strokes, which account for around 40 per cent of deaths, and respiratory illness, which account for another 30 per cent²⁶.
- We know that much of this is predictable and preventable. Winter comes around every year and we know who in the population is at the greatest risk; older people, the young and those with pre-existing and underlying medical conditions.

- We know that not everyone is affected equally and this is unfair. Older people are disproportionately affected and there is a social gradient in fuel poverty with those on the lowest income being more likely to be fuel poor and at greater risk of ill health or death. In winter 2010-11, 68 per cent of excess winter deaths involved people aged 75 or over.
- We know that there are other factors and wider determinants that have a role to play; poorly insulated and poor quality housing, old housing that is difficult to improve, levels of circulatory illness and the fluctuating pattern and variation in our weather with wide fluctuations in temperature season to season and within seasons.

We have opportunities to plan and intervene, to mitigate against the risks the winter season brings, and to support people to keep well, keep warm and keep safe both indoors and out by:

- Developing strong local partnerships utilising the coordinating resource that is available through Age Cymru and the Keep Well This Winter campaign.
- Planning early – do not wait for the statistics to be published because we know with a degree of certainty what they will say. Planning for winter needs to start in early spring.
- Putting in place measures to increase seasonal flu immunisation uptake to target levels for those in at-risk groups.
- Supporting people, particularly those who are older, to claim the benefits they are entitled to. Maximising income can lift people out of fuel poverty.
- Supporting householders to improve the fuel efficiency of their home. This will spread 'affordable warmth', bring health gains, reduce the health burden, reduce fuel poverty and the inequity that result from this and poor housing, and would bring environmental gains by mitigating against climate change.

The *Fuel Poverty Strategy* and our fuel poverty scheme, Nest, demonstrate our determination to focus our investment on the most inefficient housing stock and in the homes of the people who find it most difficult to pay their energy bills. Since the establishment of the Home Energy Efficiency Scheme (HEES) in 2001, more than £134 million has been invested to help make more than 124,000 Welsh homes more energy efficient. This approach is strengthened by the strategic energy efficiency scheme, Arbed, which is taking an area-based approach to driving up the energy performance of homes in some of the most deprived areas in Wales and has seen an investment of £60 million in Welsh homes. I will look at the importance of houses as setting for health in more detail in Chapter 3.

We are reviewing our winter preparedness plans to try and reduce excess winter deaths.



Prolonged winter in Tredegar Source: Visit Wales

Choose Well campaign

Dewis doeth Choose well

Meddylwch yn ofalus cyn mynd yn syth i'r Adran Achosion Brys (A&E)
Think carefully before going straight to the Emergency Department (A&E)

Adran Achosion Brys (A&E) neu 999 Tagu Pain yn y frest, Liwysgo, Cobi Gwarant, Anaf Ddifrif	Emergency Department (A&E) or 999 Choking, Chest Pain, Bleeding Out, Blood Loss, Serious Injury
Used Mân Anafadaw Blew, Bwriad, Ysgafn	Minor Injuries Unit Cobi, Bwriad, Ysgafn
Mwyddeg Tueddi, Gwasanaeth Td Allan (Drolio neu Gwasanaeth Ddeistydol) Chwilio, Ysgafn, Cobi, Anaf Ddifrif, Ysgafn	GP, Out of Hours Services or Dental Service Bwriad, Cobi, Pain, Ffawdr Cwilio, Anafadaw
Heryddol Dolur Bwriad, Ysgafn yn Bwriad, Pain yn y Bwl, Cobi, Pain	Pharmacist Dolur Bwriad, Ysgafn Bwriad, Ysgafn Bwriad, Ysgafn
Galw Iechyd Cymru Symptomau Iechyd i Ffôn? Dolur yn eiddo? Anaf? Aros yn Nig?	NHS Direct Wales Ffôn Ffôn Symptomau? Dolur? Dolur? Dolur?
Humanaf Ffôn Mewn Bwriad yn y Bwriad, Dolur Gwilio, Dolur	Self Care Ffôn Mewn Bwriad Bwriad, Dolur Dolur, Dolur

Os nad ydych yn gwybod pa un i'w ddewis, cysylltwch â:
If you don't know which option to choose, please contact:

Galw Iechyd Cymru / NHS Direct Wales 0845 46 47
www.nhsdirect.wales.nhs.uk

Source: Welsh Government

The Welsh Government and NHS Wales' national communication strategy, Choose Well, was launched in March 2011. The campaign's objectives are to facilitate the use of more informed and effective decision making by the public when accessing NHS services, and to allow healthcare resources to be appropriately used based on clinical need.

This is in line with the underpinning principles of unscheduled care: to ensure that the sickest patients are treated first, in the right place at the right time, by a person with the right skills.

The Welsh Government has worked in partnership with NHS Wales in delivering:

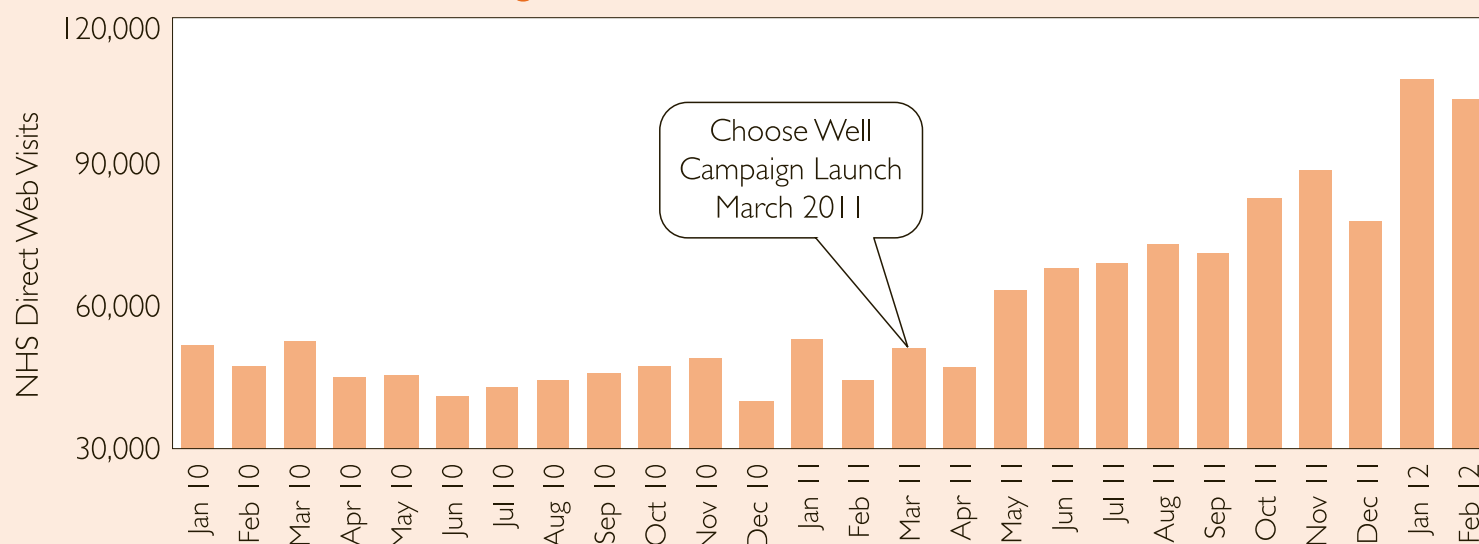
- a range of Choose Well leaflets and posters;
- a national bespoke website (www.choosewellwales.org);
- a radio advertisement campaign;

- a video that incorporated Choose Well messages featuring Wales Rugby Union player Jamie Roberts;
- the distribution of 25,000 cards with a working room temperature thermometer and the Choose Well message, in conjunction with Age Cymru; and
- 20,000+ Choose Well NHS Staff Guides.

The campaign has made a significant impact on the use of NHS Direct Wales' website which is an indication that patients are beginning to use alternatives before phoning 999 or attending the Accident and Emergency Department.

The NHS Direct Wales website has received an increasing number of visits since the launch of the campaign in March 2011 culminating in a 103 per cent increase in the number of visits in January 2012 when compared with the same period in 2011.

Figure 20: Rise in NHS Direct Wales visits



Source: NHS Direct

Legislative change

Food Hygiene Rating Scheme

The Food Standards Agency (FSA) introduced the Food Hygiene Rating Scheme on a voluntary basis in October 2010. Whilst the scheme has achieved good results, it is not compulsory for food businesses to display the food hygiene rating given to them by their local authority. This means not all food businesses display their food hygiene rating at their business. Although all food hygiene ratings awarded in Wales are published on the FSA's website²⁷, some people in Wales do not have access to the internet. It can be difficult to find out what a food business' food hygiene rating is if it is not voluntarily displayed at the premises.

In December 2011, the Welsh Government consulted on the Food Hygiene Rating (Wales) Bill. If implemented, food businesses such as restaurants, takeaways and supermarkets will be required by law to display food hygiene ratings at their premises under new plans. The proposals are in a draft Bill for consultation, designed to:

- provide consumers with more information about where they eat or buy food;
- raise food hygiene practices among businesses; and
- improve public health by reducing the incidence of food-borne illness.

Introduction of a mandatory food hygiene rating scheme is a commitment in the Welsh Government's *Programme for Government* and would be the UK's first compulsory scheme.

Under the scheme, businesses will be rated with a score between zero and five – with zero meaning urgent improvement is necessary and five meaning hygiene standards are very good.

The rating will be based on criteria including food handling standards – such as how the food is prepared, cooked, cooled and stored – and the condition of the premises.

Businesses will be required to display their score in a prominent position such as at the entrance to their premises where it can clearly be seen by the customer.



Source: Welsh Government

Cosmetic piercing of young people

Although a cosmetic piercing can generally be reversed, problems such as swelling, infection, bleeding, allergies, tear or injury are common. Research has shown that over a quarter of people who have cosmetic piercing (other than the earlobes) experience problems and around half of those consider it serious enough to seek further help²⁸.

Sometimes having a cosmetic piercing can also cause nerve damage and scarring and there is a very small risk of transmission of blood borne viruses such as hepatitis.

Currently local authorities in Wales can require cosmetic piercers to register their businesses and to follow rules relating to cleanliness and hygiene. There is however no age restriction

for cosmetic piercing and a young person can have a cosmetic piercing without their parent or guardian's permission as long as they understand what they are having done and the risks involved.

A consultation seeking views on how to make cosmetic piercing safer for young people in Wales was issued in October 2011. The consultation included proposals around a possible new law which could cover the following key areas:

- the need for a parent or guardian to give their permission (both in writing and through attendance at the piercing appointment) before a young person below 16 can have a cosmetic piercing;
- a clear age restriction for intimate cosmetic piercings; and
- a standard set of questions which must be asked by the piercer before any cosmetic piercing can be done.

The consultation ended on 31 January 2012 and a total of 228 responses were received. The majority of respondents were clearly in favour of the proposals. A summary of the responses received is available on the Welsh Government website²⁰. The Minister for Health and Social Services will announce the way forward.



Source: Welsh Government

Organ donation

Another issue where we can also do more to change behaviour and where we could reap huge benefits is organ donation and transplantation.

Organ transplants are proven to transform the lives of those who receive them. They are also clinically and cost effective, freeing people from years of ill health and hospital stays and the NHS from the long term costs of treatment. However, there is a shortage of organs.

In 2010-11, on average one person a week died in Wales whilst waiting for an organ transplant. At any one time, around 300 people are on the waiting list. We have made great progress, with a 47 per cent increase between 2007-08 and 2010-11 in the number of deceased organ donors, the largest percentage increase in Great Britain. Even that is not enough and Welsh Ministers think it is unacceptable to allow this to carry on. I agree.

To help address this, in 2011 the Welsh Government made a commitment in their *Programme for Government*, to bring forward an Assembly Bill to introduce a soft opt-out system for organ donation. This will mean organs and tissues will be available for donation unless the deceased objected during their lifetime. Families will be involved in the decision making around donation.

I support the Welsh Government's belief that a move to a soft opt-out system will help make donation the normal choice and encourage discussion among families about the issue, and ultimately enable more organs and tissues to be made available when they are needed most.

The proposed system will mean everyone in Wales will have a choice either to:

- formally record their wish to be an organ donor; or
- formally record an objection to their organs being considered for donation; or
- choose to take no action.

If a person takes no action they will be deemed to have no objection to their organs being considered for donation after their death. The family of the deceased will remain involved in the decision around donation, but this system will provide more clarity on the wishes of their loved one. A national debate, followed by a formal consultation on this in 2008-09 demonstrated strong public support for this change. International evidence suggests that this system will change people's view of organ donation and lead to an increase in the number of donors.

The White Paper, *Proposals for Legislation on Organ and Tissue Donation* was published in November 2011. This consultation received an excellent response, with 1,234 replies received, demonstrating the public interest in this issue. 52 per cent (646) of respondents that expressed a view supported the proposals and 39 per cent (478) opposed them. The next stage is for the Welsh Government to publish a draft Bill in June 2012, with the aim of introducing the legislation into the National Assembly for Wales by the end of 2012.

There will be an implementation period of around two years, with the new opt-out system in place fully during 2015. In that two-year period a comprehensive communication campaign will be run across Wales to ensure that everyone is aware of the new system, how to register their wishes and encouraging people to talk to their families about what they want.



Source: Media Wales Ltd

Public Health (Wales) Bill

The Welsh Government's *Programme for Government*²⁹ includes a commitment to “consult on the need for a public health bill to place statutory duties on bodies to consider public health issues.” This commitment is consistent with the overall policy intent signalled in publications such as the *Our Healthy Future* public health strategic framework and the *Fairer Health Outcomes for All* strategic action plan for reducing inequities in health.

Important work to take this forward is scheduled during 2012. A process of engagement and consultation will take place, which will aim to canvass views about this opportunity. As part of this process, views will be sought on whether there is a need for a Public Health Bill in Wales, as well as views about what a potential Bill could cover and seek to achieve. There are a number of issues to consider, including the legislative approaches adopted by other countries, such as Norway and Sweden, and the legislation which is currently operational in Wales. The links to sustainable futures and the goal of increasing wellbeing need to be considered.

Following completion of the consultation exercise, Ministers will decide on what will be the most effective legislative approach for facilitating improved health for the people of Wales. If it is concluded that a Bill is the best way forward, legislation could be introduced during the second half of the current legislative programme. The outcome of the consultation process and the eventual implementation of Ministers' decisions could therefore be an extremely significant development for public health in Wales. I hope Wales will take this opportunity to be at the forefront of using legislation to improve the health of the people.

A potential approach to public health legislation

One of the most recent international examples of public health legislation can be found in Norway's Public Health Act (2011). This Act adopts a broad definition of public health, with its overall purpose being to contribute to societal development which promotes public health and reduces social inequalities in health. It is based on a number of fundamental principles which underpin policies and action to improve the health of the population (health equity; health in all policies; sustainable development; the precautionary principle; and participation).

There are a number of approaches which could be adopted as possible ways forward for public health legislation. International examples range from consolidating existing health protection legislation, through to legislation which encompasses wider health improvement issues. Whilst Norway's Act provides one example, other countries have taken different approaches and a range of options will be considered as the Welsh position is developed.

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Chapter 3: Homes – an important setting for health

A home is not just bricks and mortar. Having a roof over our head is one of the most basic of human needs, but a home is more than this. Homes should provide warmth and shelter and a place to feel safe. Homes should be a place where you can grow and be yourself. A home should be an anchor in the community. Unfortunately this ideal is not always matched by reality.

For some people a home is a place where health and wellbeing is threatened, both by the conditions that people live in, and in some cases, the behaviours of others within and outside the home. Also in Wales there is the growing issue that some people do not have a place to call a home.

This chapter looks at the idea of homes as a space to improve and protect the health of the people. I will look at some of the challenges in Wales to homes being a healthy space and some of the initiatives to improve them. Finally I make some recommendations about the way that we can use homes to reduce inequalities, reduce the threats to health, and build communities.

Changing environments to improve health

The origins of the public health profession go back to the 1850s when recommendations were made by government to take steps to reduce the numbers of people that were dying from communicable disease. There was great progress made in the second half of the 19th century and early part of the 20th century to promote the means necessary for good health; clean air, light and water. Changes to the environment included making laws and regulation about housing and sanitation in towns and cities across the UK, creating a public health workforce to manage this and educating the public of the steps needed to reduce the impact of diseases like cholera, scarlet fever and tuberculosis within communities up and down the country.

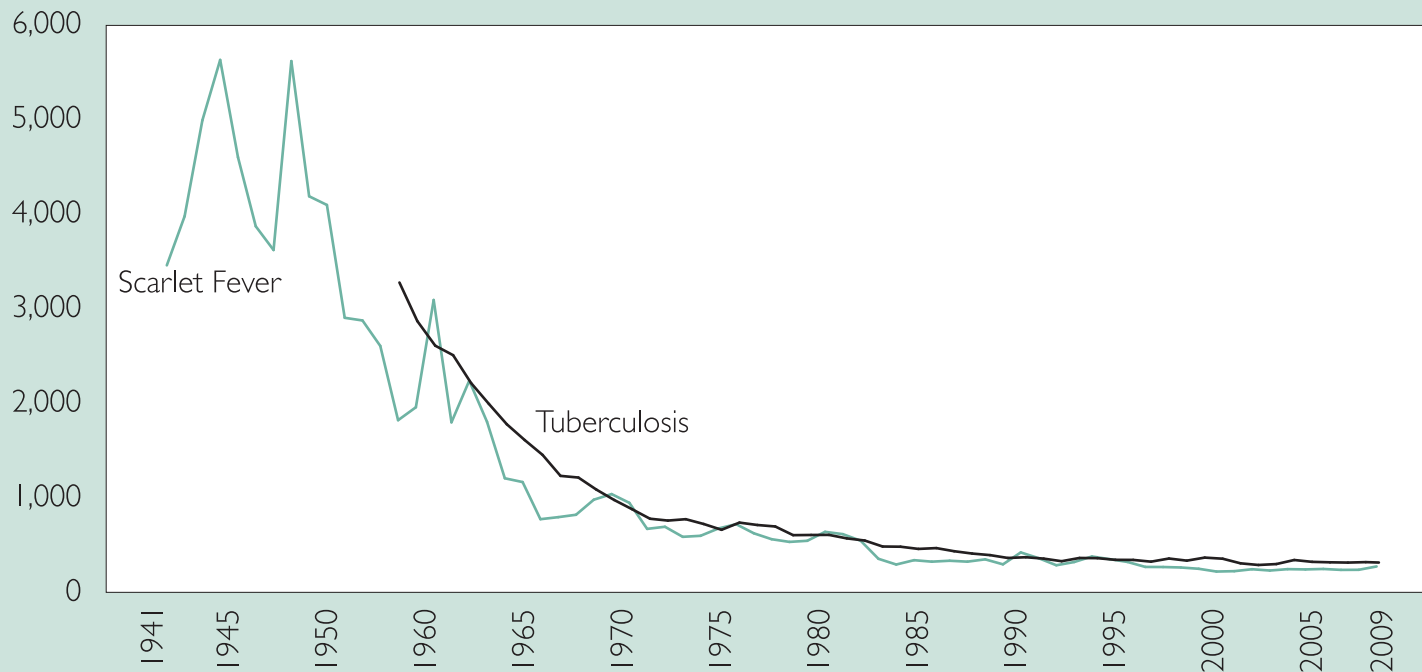
In the second half of the 20th century many of these infectious diseases were no longer rampant within Welsh communities. As attention moved away from these diseases, other issues became prominent such as the air quality in towns and villages focused around industries such as coal, steel-making and other manufacturing, and the use of smoke-free fuel for homes. New environmental health legislation was created to mitigate the impact of pollutants within these communities and today there is an effective system of air quality monitoring across the country to meet UK and European standards.



Landore Court, Cardiff, 1901 Source: Cardiff Council Library Service

Over the past 30 years there has been an emergent idea in public health that health can be improved and protected by focusing on the place and environment. This has become known as the settings approach to health. It was first enshrined in public health policy as a result of a conference in Ottawa in 1986 and a subsequent document the *Ottawa Charter*¹. The Welsh health system has adopted this settings approach in a number of ways including healthy schools, healthy workplaces and more recently the Healthy Cities Programmes in Cardiff and Swansea.

Figure 2 I: Notifications of infectious disease



Source: Health Protection Agency

The World Health Organization (WHO) Healthy Cities movement started in 1988 and is a network of cities and municipalities across the WHO European region that have committed to improving and protecting the health of their population. The network is based on sharing knowledge of good practice on how cities can use assets and levers to make sustainable change. There is a particular focus on introducing 'health in all policies' approaches across this level of government.

Cardiff and Swansea became the first Welsh Healthy Cities in 2010. Both cities have since used this approach to work with partners in a range of sectors including developing the Cardiff Food Charter² and, in Swansea, using Health Impact Assessments to influence local development plans. It is useful to take the learning and experience from these two Healthy Cities and apply it to other communities across Wales.

It is estimated by the Office of National Statistics (ONS) that we spend up to 70 per cent of our daily time at home³. That proportion of time increases for younger and particularly older people with one estimate suggesting people aged over 70 spend 95 per cent of their time at home⁴. Because we spend so much time at home, we need to examine the home as a setting to improve and protect health.

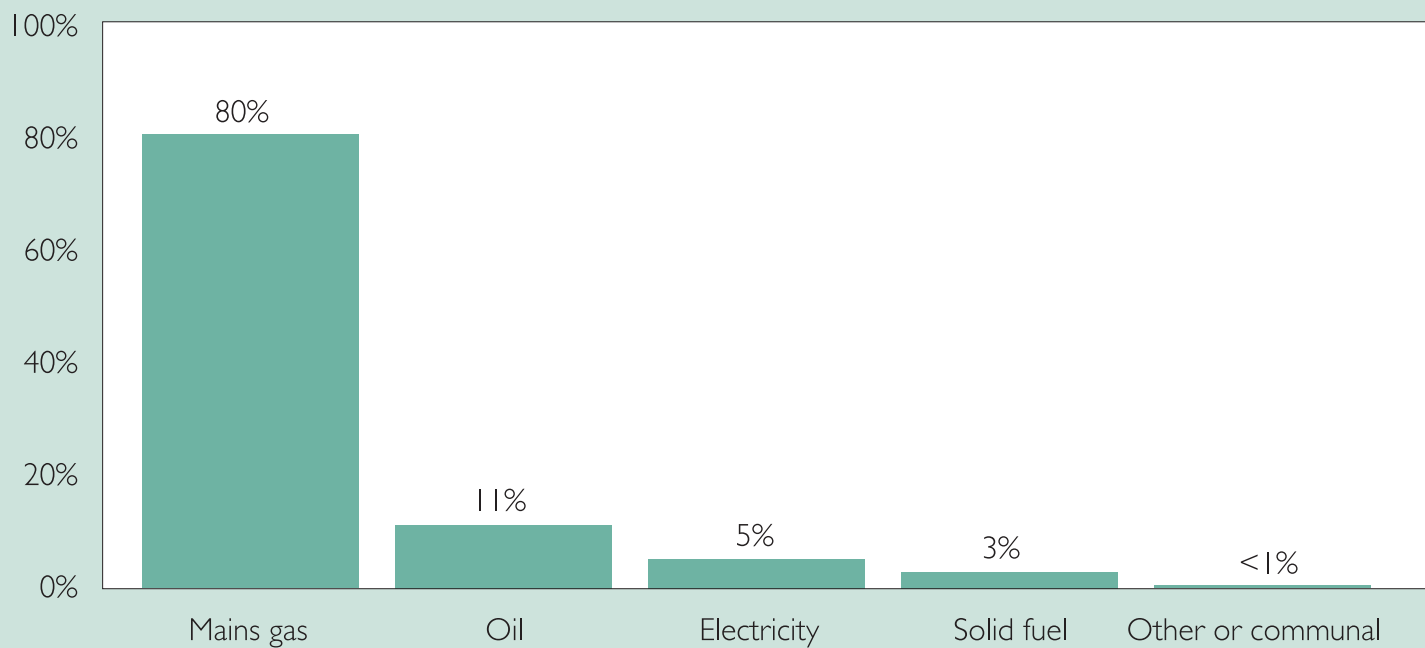
The home can become a health enhancing setting through the efforts of individuals, families, communities, local authorities, the third sector and the health service. All have a distinct role to play and need to work together to maximise the potential health gain.

Risk and health enhancing factors in Welsh homes

In considering the home as a setting for health we need to look at the risk factors in homes that inhibit good health and the elements of a home environment that can be used to promote health. This can include physical factors such as the

age of the house, the environmental threat presented by building materials used like asbestos, energy efficiency, and the layout of houses that may lead to increased likelihood of life-threatening falls. Other factors that impact on health in houses are the relationships of people living together, levels of poverty and the impact of domestic abuse.

Figure 22: Main heating fuel used in Welsh homes



Source: Living in Wales Survey 2008

The population of Wales is now around three million people. There are about 1.3 million individual households, of which almost a third have just one person. Of the 1.3 million homes, nearly three-quarters are occupied by their owners. All other homes are rented either from local authorities, housing associations, or private landlords. About 30 per cent of Welsh houses were built before 1919. This is significantly greater than in England where only 21 per cent of houses are of that vintage. 31 per cent of the housing stock in Wales is terrace houses⁵.

Fuel poverty

Due to the nature and age of Welsh houses they can be difficult to heat and keep warm during bad weather. Consequently people that live in Wales can find themselves spending a significant proportion of their income on fuel. About 20 per cent of Welsh households are not connected to the mains gas grid so may be vulnerable to price and supply changes, for example, of wholesale oil.

A household is described as being in fuel poverty if it spends more than ten per cent of its income on energy to heat the house adequately. There are three main factors that contribute towards fuel poverty.

These are income, energy prices and the energy efficiency of the home. Those who find it difficult to keep their homes warm are more likely to have low incomes and live in the most energy inefficient properties (Energy Performance Certificate rated F or G) and are often the most vulnerable people in our communities. There are also cases in medium to high income families where a large family dwelling is occupied by one or more elderly people. Energy efficiency measures can make a huge difference and help people keep their heating costs down. This is an issue that has featured in this Annual Report, and previous Annual Reports, especially in the context of keeping warm during winter and avoiding excess winter deaths. The Welsh Government's *Fuel Poverty Strategy 2010*⁶ explicitly highlights the health impacts of fuel poverty such as increased blood pressure and risk of heart attack and stroke.

The *Fuel Poverty Strategy* confirmed that the Welsh Government's key area for intervention to reduce the number of people living in fuel poverty in Wales was in improving the energy performance of homes in Wales. Nest, the Welsh Government's demand-led fuel poverty scheme and Arbed, its area-based energy performance programme, both help improve the energy performance of homes in Wales and are focused on improving homes with the worst energy performance. The Wales Housing Quality Standard (WHQS) is also helping to drive improvement in the social housing stock.

Significantly greater amounts of funding for home energy improvements are available via energy companies through the supplier obligations that the UK Government places upon the suppliers. At present these are the Carbon Emission Reduction Target (CERT) and the Community Energy Saving Programme (CESP); these will be replaced by the new Energy Company Obligation in 2013. The Welsh Government is committed to ensuring that fuel poor households in Wales benefit from home energy improvements funded through supplier obligations.

Dampness

Dampness found in houses can lead to the development of moulds and fungi that can have a negative impact on health, exacerbating conditions like asthma and other respiratory diseases. In addition to mould and fungal spores, dampness in houses can also lead to mites. A randomised control trial carried out by Cardiff University found that symptoms of asthma and rhinitis improved and medication use declined following removal of indoor moulds⁷. The findings of the Cardiff study are further supported by work in Wrexham which looked at the way that health can be improved by modifying the conditions people live in.



Steps to avoid damp and mould Source: Cardiff Council

As well as the physical threats to health from mould and mites, dampness can have social and mental health effects. Occupiers can become ashamed of the conditions and reluctant to invite friends and relatives into the dwelling, thus becoming socially isolated. In Wales we need to consider the emerging evidence gained from researchers and take a managed approach to rolling out good practice across Wales.

The Children's Health in Asthma: Research to Improve Status through Modifying Accommodation (CHARISMA) trial was a collaboration between local government, the NHS and academic colleagues. As well as forming a research project to inform the health and housing evidence base and improve the health and wellbeing of schoolchildren with asthma, CHARISMA also looks at more effective and different ways of delivering local authority services to improve health and wellbeing, and complements existing health care service delivery in primary and secondary care.

The CHARISMA trial commenced in 2004 when eligible families were identified and recruited. The trial looked at the effect of enhancing ventilation and in some cases central heating, in the homes of children with moderate or severe asthma. It involved nearly 200 children identified through GP surgeries within the Wrexham County Borough area. The homes of participants were surveyed by the local authority before being allocated randomly into groups that would have improved ventilation and central heating installed immediately (intervention group) or would have to wait for 12 months for improvements to be made (control group). The aim of the trial was to see if improvements in the ventilation and heating of the homes of children with asthma had an effect on the child's asthma and also on their overall quality of life and wellbeing.

The study concluded that the installation of ventilation and central heating in school children with moderate or severe asthma significantly improved their asthma specific quality of life. The child's physical problems and psychosocial health also improved. The intervention may also reduce school absence and improve the health of siblings and other household members.

Following the positive results of the trial, during 2010-11 a further 50 homes were modified by linking with every GP surgery in Wrexham and during 2011-12 an additional 15 homes will be modified^{8,9}.

Crowding and space

Having enough space to live healthily is an important issue in Welsh homes. Houses should provide sufficient space to allow for social interaction between members of the household and with friends, but also to have some privacy away from other household members. Children also need space for recreation but also simple things like doing homework.

'Crowding' should not be confused with 'density'. 'Crowding' cannot be measured objectively, whereas 'density' can and is one objective measure of the number of persons in a given space. Culture, society and custom will influence what is considered to be 'overcrowding'. A lack of space has been linked to a number of health outcomes, including psychological and mental disorders. Such conditions are also linked to increased hygiene risks, an increased risk of accidents and spread of contagious disease. Those likely to be more affected are the elderly, the very young and their carers and those with impaired mobility.



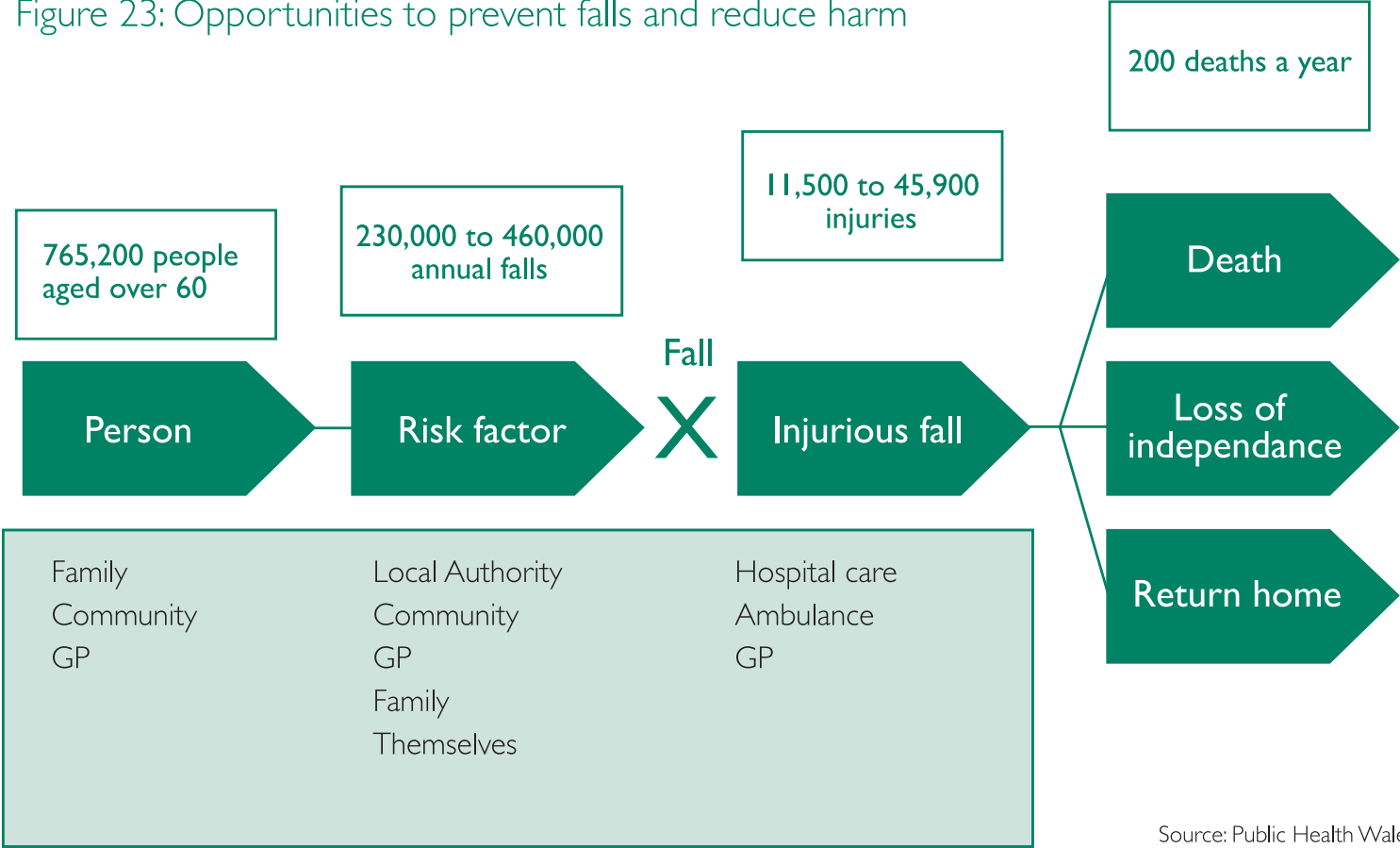
Source: istockphoto

Ageing at home – safe from falls

Falling can be a life threatening issue. Based on the incidence of falls at home in older people, it is estimated that the annual number of falls in older people in Wales is between 230,000 and 460,000. Across Wales, between 115,000 and 230,000 fall more than once and 11,500 to 45,900 suffer a fracture, head injury or serious laceration; this equates to between 32 and 126 injury falls per day in Wales¹⁰.

There are also around 200 fall-related deaths in Wales each year and the proportion of these deaths increases substantially with increasing age. Seven per cent of older people that have a hip fracture die within a month of the incident. There is evidence to suggest that official mortality data greatly underestimate the true mortality associated with falls.

Figure 23: Opportunities to prevent falls and reduce harm



Source: Public Health Wales

The nature of falls prevention in Wales at the moment is that it tends to focus on those suffering only major injuries, however, there are efforts being made to tackle more minor injuries. The services that do exist and the part of the pathway that they target need to be clearly identified and

evaluated. These services need to be evidence based and having a demonstrable effect on outcomes. Where there are no services or services that tackle only a very small part of the patient pathway, consideration is needed as to where and what intervention is most appropriate.

Falls are already a significant burden upon health and health services in Wales and will become a greater burden in the future as the size of the older population increases. A coherent, high quality approach to falls prevention is now needed in Wales. This is part of the 1000 Lives Plus work which provides guidance on how to reduce falls in the community and facilitates the use of the effective interventions that exist, and need to be implemented across the falls pathway. The weight of the current guidance is behind the implementation of fall risk screening for older people.

One challenge is, as with many conditions suffered by older people, to reduce very long lengths of stay in hospital for older fallers who require admission and often need major operations such as for a fractured neck of femur. Falls prevention will require new integrated partnership working such as is being undertaken within the Gwent Frailty Programme¹¹ and Cardiff East Locality Team.

Gwent Frailty Programme

The Gwent Frailty Programme is a multi-sector approach to promote independent living for older people in homes in the Gwent area of South Wales. The programme arose from the need to reshape services to support people in their own homes from being in single organisation silos. It provides the infrastructure to deliver integrated services by:

- ensuring people have access to the right person at the right time;
- focusing on preventative care, e.g. falls assessment, and wherever possible avoiding hospital admissions;
- reducing the length of a hospital stay when admission is necessary;
- reducing the need for complex care packages;
- averting crises by providing the right amount of care when needed; and
- coordinating communication by providing a named person for all contact.

Domestic abuse

One issue that makes homes feel unsafe is when they become the space for violence and abuse. Domestic abuse is often labelled as a 'hidden epidemic' as it can touch the most personal of relationships and discussion can be seen as taboo. Homes and houses can become prisons where health is threatened and damaged.

In 2007-08, the British Crime Survey reported 429 incidents of violence per 10,000 adults in Wales. Of these, 69 per 10,000 adults were domestic violence. These are large numbers but there was a decrease from 520 incidents of violence per 10,000 adults in 2006-07 and a decrease in domestic violence from 158 incidents per 10,000 adults.

In 2007-08, an estimated 81,000 adults aged 16 to 59 were the victim of domestic abuse. This includes 46,000 women and 35,000 men.

An estimated 66,000 adults aged 16 to 59, including 40,000 women and 26,000 men, were the victim of non-sexual abuse carried out by a current or former partner in 2007-08.

An estimated 29,000 adults aged 16 to 59, including 17,000 women and 12,000 men, were the victim of non-sexual abuse carried out by a family member other than a partner.

Source: Statistics Division, Welsh Government.

The domestic abuse strategy *Tackling Domestic Abuse; a Partnership Approach*¹² was launched in 2005. In March 2010 the Welsh Government published *The Right to be Safe*¹³ – a six year integrated strategy for tackling all forms of violence against women. The two strategies sit alongside each other and actions to implement both are set out in our integrated implementation plan.

The Right to be Safe sets out four key priorities including improving the response of health services. It aims to ensure that the health service continues to minimise the risk to victims by supporting early identification of problems and by supporting early intervention.

We know that for many victims contact with health service professionals is often their first and sometimes only opportunity to seek help. Public service professionals must be alert to the signs of violence and abuse and be ready to take action to ensure that once a victim has disclosed abuse, they will receive the right support to help end the cycle of abuse and ensure their safety.

The Domestic Abuse: 10,000 Safer Lives Project was set up to apply the learning from the three Kafka-led projects in South Wales – and the 1,000 Lives Project in the

NHS¹⁴. The project is seeking to improve the multi-agency service provided to victims of domestic abuse. The Welsh Government has held a series of regional workshops across Wales involving a range of partners including those from local government, the health service, the police and criminal justice system and the third sector. Emerging issues include the issue of information sharing in the context of domestic abuse.

Workshops revealed a lack of confidence that personal information of this nature could be shared and a need for guidance on this issue. Proposals for implementing change in this area are currently being considered. Across Wales we have developed 'routine enquiry' (asking everyone about domestic abuse) for use in antenatal and accident and emergency settings.



**Ennill neu golli - does
dim esgus i ti golli
dy dymer**

**Cam-drin domestig -
dyw hynny ddim yn gêm**

**Win or lose - there's no
excuse for you to lose it**

Domestic abuse - it's not a game

Angen help?
Need help?

0808 80 10 800 livefearfree.org.uk


Uywodraeth Cymru
Welsh Government

Source: Welsh Government

Crime and fear of crime

The health effects of crime and the fear of crime are primarily related to mental health, and include stress resulting from a burglary or mugging, and the fear of being mugged or burgled in the future.

The immediate housing environment should be laid out so that possible areas of concealment for burglars and intruders are minimal. There should be both public and private space that residents can relate to as part of their housing environment. Pedestrian routes should be well-lit and defined. Where possible, dwellings should be sited so as to provide a natural view of neighbouring properties. The design and layout of the immediate housing environment and the level of crime in the area will affect the level of security appropriate to a dwelling.

Dwellings should be capable of being secured against unauthorised entry. Adequate and appropriate security will both delay and deter intruders and make occupiers feel safer.

Window locks or deadlocks, burglar doors, security lights and window grilles reduce the likelihood of a burglary or an attempt. However, there needs to be a balance between security features and the need for a safe means of escape in case of fire. In multi-occupied buildings, security provided by entry-phone or concierge systems can help reduce crime and fear of crime.

Domestic hygiene and food safety

The design, construction and maintenance of a dwelling should be such that it is relatively easy to keep clean and hygienic. Surfaces should be cleanable, particularly floors, worktops, and the walls of kitchens and bathrooms. The layout and space in kitchens and bathrooms should allow for the activities to be carried out safely.

Dwellings should be constructed and maintained to limit entry by pests and vermin and to minimise the harbouring of them within the building or structures. There should be a safe means for the storage of household refuse awaiting collection or disposal. Rats and mice are known to be infected with pathogenic organisms and biting pests.

Where a dwelling is difficult to keep clean and hygienic, there is an increased likelihood of the spread of gastro-intestinal diseases, asthma and allergic rhinitis.

Insect pests can cause allergic reactions. Dwellings with obvious infestations can result in children showing a high level of sensitivity to allergens. Insects can also cause food spoilage by making it unpalatable, if not inedible. Insects are also known vectors of disease, picking up disease-causing organisms on their bodies from one source and transferring it to food intended for human consumption. Emotional stress is also associated with pest infestations, and where a dwelling is difficult to keep clean, it may cause depression and anxiety.



Source: Welsh Government

Estimating the cost of poor housing to Wales

There is little evidence about the health cost of poor housing to Wales. The Building Research Establishment (BRE) in association with Shelter Cymru have developed an economic model of how much the present housing stock is likely to cost the NHS every year.

The model is based upon taking into account the cost of removing hazards such as potential falls on stairs, excess cold and dampness from houses. As is to be expected, most of these hazards occur in houses built before 1919 with an estimate that these apply in 49 per cent of all houses built in this era. The study also estimates that more than half of homes in hamlets and isolated areas have 'Category 1 hazards' based on the Housing, Health and Safety Rating System (HHSRS).

The BRE and Shelter Cymru report¹⁵ suggests that the cost of renovating existing Welsh housing to remove potential hazards and health threatening issues is around £1.5 billion. The same group estimate that the failure to invest in housing costs the Welsh NHS £67 million per year.

Healthy homes and healthy communities

In addition to making homes as health improving and protecting as possible, it is important to foster strong and healthy communities. We know from experience that people are more likely to thrive in places with a good infrastructure, a strong sense of social cohesion and a sustainable environment. It is a key building block for health that people can feel safe and supported in their local neighbourhoods. Over the past ten years the Welsh Government has recognised this as a central need for Wales, and developing and sustaining communities has been a cross-sectoral objective. This has included developing shared public services and the development of Local Service Boards with the task of developing communities in all policies.

In addition, the need for strong and healthy communities has been articulated in *One Wales, One Planet*; the sustainable development plan for Wales¹⁶.

A particular driver for healthy communities is in acknowledging the role and impact of the wider socio-economic determinants of health. In Wales there are a large number of communities that have multiple issues of deprivation. These can include being remote from other towns and cities meaning that people within a community can have poor access to services and support. Numerous communities have had to refocus after industries and other sources of employment have been closed down. Many settlements in Wales were developed around a mine or a steel mill which once bound the community together.

The Communities First programme was launched in 2001 and there are now over 150 Communities First partnerships across Wales. Each one brings together members of the local community with representatives of the public, private and voluntary sectors to develop local action plans. Small staff teams support each partnership. They are normally based in the heart of the community, familiar and accessible to local people and helping to connect them to service providers and support agencies. Communities First partnerships support a very wide range of work with people of all ages and tackle very many aspects of deprivation, improving health, creating jobs, and bringing additional funding into these communities. Through Communities First, environmental and economic regeneration go hand in hand with community engagement and action for social justice.

Work to develop a Sustainable Communities Pathfinder Initiative is currently being undertaken by the Public Health Wales Institute. It is building on the approach developed in the Reproductive and Early Years Pathfinder Project (see Chapter 1) which is founded on translating research-based evidence to practical intervention within the Welsh context.

Taking an assets-based approach, the Sustainable Communities Pathfinder provides an opportunity for Public Health Wales to work with academic researchers, local authorities and Local Health Boards in order to foster greater local confidence and self-esteem for people and communities. The pathfinder will serve as the catalyst for putting into practice different ways of engaging local communities, to find local solutions and tackling health inequities.

Healthy homes

Having a safe and secure place that can be called a home is a vital element to protect and improve health. Homes are places where health can thrive; mental wellbeing can be improved and are a place where people can feel stable and secure. In looking at homes through a health lens it is important that the wider Welsh health community acts in partnership with organisations, communities and individuals to focus on this issue. Everyone has a part to play, which can be developed through greater coordination of resources, community engagement and the recognition that this requires a multi-disciplinary, multi-agency approach.

A potential mechanism to achieve this is through the creation of a cross-cutting healthy homes approach. Wales has been able to use settings of health to make substantial changes to people's lives. Developing a healthy homes plan would not only support the aspiration of *Our Healthy Future* to look at health across the life course, but also contribute to wider aspirations described in *the Programme for Government*.

Such a development would align existing elements of work undertaken by the Welsh Government and Local Health Boards, and could be used to further encourage and sustain partnership in local areas across Wales. At the time of writing this Annual Report, the Welsh Government is developing a Housing Bill to draw together concerted action across a number of ministerial portfolios. The public health community will support this development and play a part in its implementation.

Researching the impact of housing on health in Carmarthenshire

This study on housing quality standards is being led by Professor Ronan Lyons, Co-Director of the Health Information Research Unit at Swansea University in collaboration with colleagues from Carmarthenshire CBC, Hywel Da Health Board, Public Health Wales NHS Trust and Cardiff University. It aims to measure the immediate and longer term health benefits resulting from a major housing regeneration programme currently underway in Carmarthenshire in which social housing is brought up to a national quality standard. The study will evaluate the impact of a variety of housing improvements to social housing over five years, in 2009-14, on the health of the residents of 9,256 properties. Improvements will be provided in four packages:

- **The internal works package.** This will include kitchen and bathroom upgrades, installation of downstairs toilets, full gas or oil central heating with energy-efficient condensing boilers and rewiring to provide sufficient sockets in all rooms.
- **The windows and doors package.** This includes the provision of secure UPVC double-glazed doors and windows with secure locks.
- **The thermal insulation package.** This includes cavity/external wall insulation as well as loft insulation.
- **The gardens and estate package.** This includes the provision of boundary fencing, security lights and paths that are in good condition.

By using anonymised routine data, including hospital admissions for certain conditions, GP consultations and prescriptions, the study will compare the health of the residents before and after the interventions. They will also be compared with social housing residents in other parts of Wales, whose properties will receive minimal improvements during the study period. The Carmarthenshire intervention households and the comparator properties have been linked to health data using the Secure Anonymised Information Linkage (SAIL) databank. The results of the study will be valuable in demonstrating how each set of housing improvements or a combination of improvements affects the health of residents.

Source: NIHR Public Health Research Programme

Liverpool's Healthy Homes Programme was launched to prevent premature death and ill-health due to poor housing conditions and accidents in the home. It is mainly aimed at the rented sector and is helping many of the most vulnerable residents in Liverpool. Liverpool City Council has been commissioned by Liverpool Primary Care Trust to assist in the reduction of health inequalities to improve morbidity and mortality statistics. The programme pro-actively targets and surveys a large number of the worst properties, housing the most vulnerable occupants. Approximately 15,000 properties in Liverpool have been identified, with 2,750 prioritised for a full health and safety inspection to develop a personalised home improvement plan. Following the inspections of the properties, the necessary improvements are secured by the team's Environmental Health Officers. Clinical support is also provided by increasing awareness of the programme in neighbourhood practices and creating referral systems for clinicians. This enables health professionals to address the causes of some respiratory complaints and other chronic diseases caused by exposure to hazards within the home. Through the removal of hazard exposure and other interventions the programme is designed to:

- prevent up to 100 premature deaths when fully implemented;
- reduce GP consultations and hospital admissions by an estimated 1000 cases;
- improve clinical understanding of poor housing on local health via communication with GPs and other clinical services;
- reduce reliance on secondary and tertiary treatment; and
- increase community capacity to support housing improvements.

Evaluation of the impact of healthy homes is currently being undertaken and it will be useful to see if evidence-based lessons can be applied in Wales.

Source: Liverpool Healthy Homes



Preparing for the future

The population of Wales is getting older. Projections from the Office of National Statistics suggest that the population aged 85 and over will more than double from 77,000 in 2010 to 186,000 in 2035¹⁷. We also know from this increased elderly population that the prevalence of dementia is likely to increase as people do not die prematurely from circulatory disease or cancer. These demographic changes will have an impact on the NHS in the way that people are treated and the need to care for people with disabilities in the community. It is the policy of government that we wish to support independent living as much as possible and try to ensure that people can live their lives in their own homes.

However, we also need to make sure that homes are settings that can act as a springboard to good health across the life course. One issue that prevents good health is continued exposure to tobacco in confined spaces. In Wales we have been proactive in promoting a ban on tobacco in the commercial environment to protect the health of workers who have no choice in what they breathe. In my 2009 Annual Report I called for the issue of smoking in cars when children are present to be discussed; a recommendation that has been endorsed by the Welsh Government as a means to protect the health of children. Following the same principle, if we want to make homes a setting where health is improved and protected then we need to encourage parents not to have an environment which will damage their children's health. Children breathing in other people's cigarette smoke resulted in 300,000 GP visits and 9,500 hospital admissions last year in the UK and up to five million children are thought to be regularly exposed to second-hand smoke in the home¹⁸. Homes with children need to be smoke-free.

Recommendations

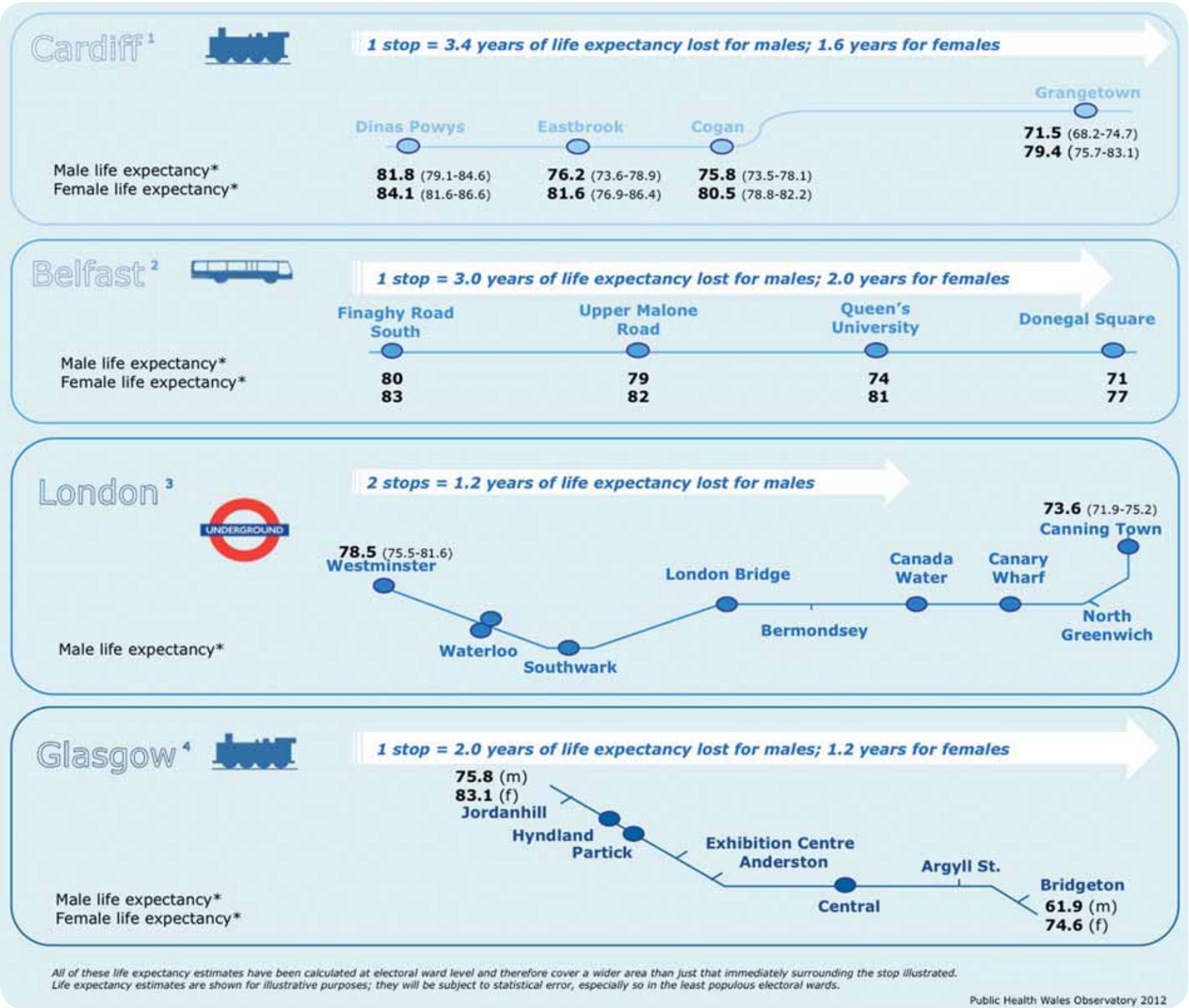
- Emphasise the importance of healthy homes, and the evidence base underpinning it, taking lessons from other successful settings approaches in Wales.
- Homes with children should be smoke-free.
- Strengthen partnerships at all levels in Wales to focus on houses and homes as places to protect and improve health.
- Recognise the additional benefits accrued through engagement with civil society and communities.
- Review Welsh-generated evidence about ways to strengthen and empower communities through the Public Health Wales Institute Stronger Communities Pathfinder.
- Work with colleagues across the Welsh Government to ensure that health is part of the proposed Housing Bill.



Smoke-free Homes Source: Welsh Government.

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Figure 24: A short trip, a big difference



*Life expectancy in years (confidence intervals)

¹ **Cardiff:** Data source: Public Health Wales Observatory, using ADDE & MYE (ONS) (2001-10)

² **Belfast:** Data source: Project Support Analysis Branch, DHSSPS (2006-08), reproduced with permission

³ **London:** Data source: London Health Observatory (2004-08), reproduced with permission

⁴ **Glasgow:** Data source: Glasgow Centre for Population Health (2001-05), reproduced with permission

Underground logo reproduced with permission of Transport for London

Chapter 4: Getting fairer health outcomes for all

In December 2011 the Public Health Wales Observatory published *Measuring inequalities: Trends in mortality and life expectancy in Wales*¹. The report confirmed that health is improving for all, but we are leaving some people behind. Among the stark figures shown was the average gap in healthy life expectancy between the most and least deprived sectors of our community, at 19 years for men and 18 years for women.

In some of our local authority areas this gap is wider still; it reaches 23 years for men in Swansea and 21 years for women in Cardiff. This disparity in our country has been rightly labelled as unfair, unjust and unacceptable². The effect of social inequality on health inequity across the UK can be seen at a glance in Figure 24 showing the variation in life expectancy within UK cities between communities just a short public transport ride apart.

We also know that this is a particularly complex 'wicked' issue where there are no simple solutions, and closing this gap requires concerted action from the NHS, academic communities, government at every level, and the whole of society. It is only through the combined efforts of all that we will make progress in reducing the disparity.

In this chapter I wish to explore the nature of inequalities and inequity in Wales, highlight some of the progress being made to reduce this and set down recommendations for concerted action in building and sustaining a movement for change.

Reality check

"Poverty costs us as a nation, not only in terms of losses to individuals and the economy but also through increased – yet potentially preventable – demands on public services."

Tackling Poverty, Welsh Government, 2012

"Inequalities in health arise because of inequalities in society – in the conditions in which people are born, grow, live, work, and age. So close is the link between particular social and economic features of society and the distribution of health among the population, that the magnitude of health inequalities is a good marker of progress towards creating a fairer society. Taking action to reduce inequalities in health does not require a separate health agenda, but action across the whole of society."

Professor Sir Michael Marmot,
Fair Society Healthy Lives, 2010

Source: *The Marmot Review*



Inequalities in health are more than a technical or academic issue. They are differences that greatly affect a person's life – how long a person lives for or the age that someone contracts a condition that impacts on their quality of life. Inequalities are the result of many factors: poverty; geographic location; culture; and lifestyles. Although some of these are things we cannot change, such as the genetic material we inherit and our age and sex, much of the difference in health we see between different parts of our society is avoidable.

They are down to the circumstances into which we are born and live our lives. It is these unfair, avoidable differences that are termed inequities in health.

We cannot make everyone's health equally good, but we can create the conditions where everyone has opportunities for their health to be as good as it can be. The government and the NHS have a responsibility to make these opportunities as fairly distributed as possible.

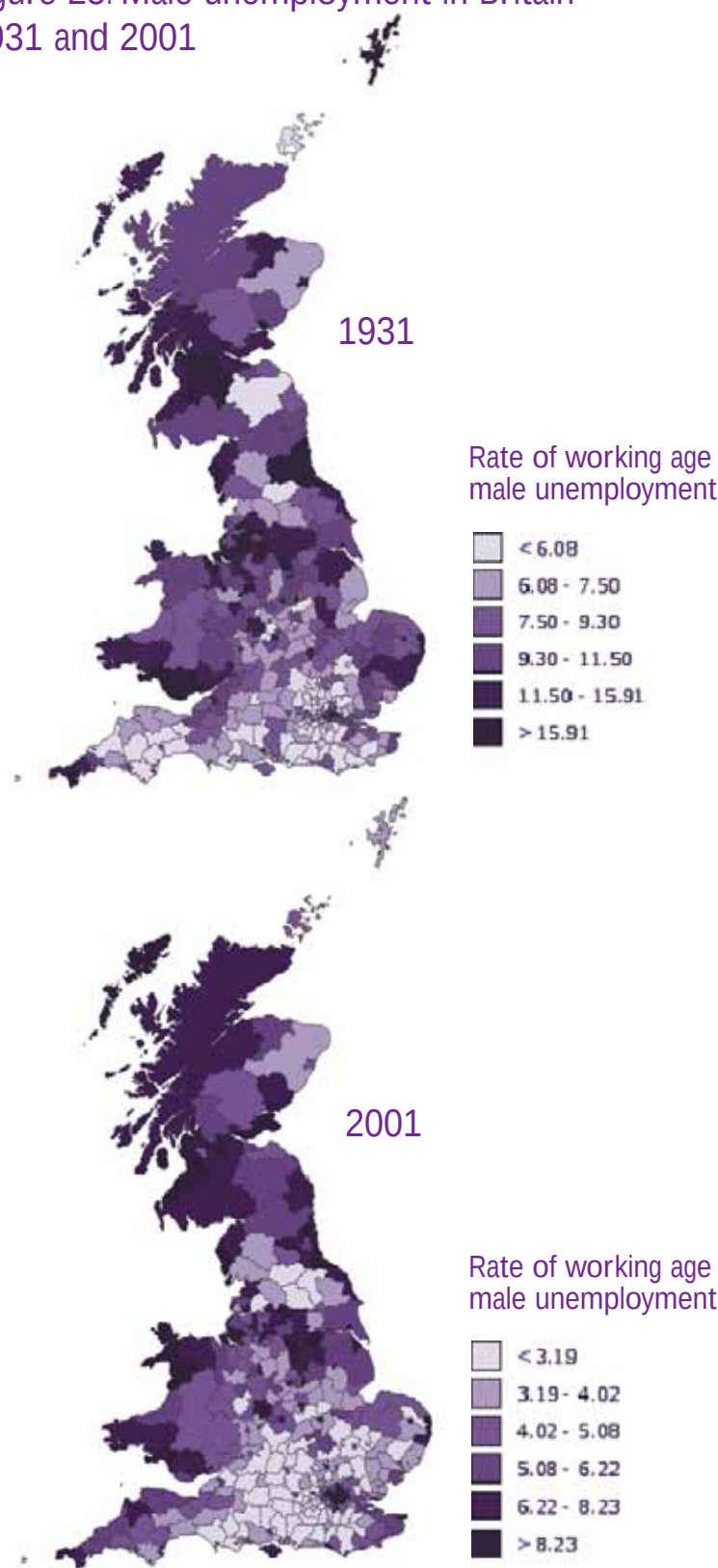
This inequity in health is the result of actions taken at the local, Welsh, UK and EU levels across all sectors, including health, education, economy and welfare. We should judge the effectiveness of our government and our health system on how we tackle inequity.

Male unemployment in Great Britain, 1931 and 2001

The challenge of health inequalities is not new and is not unique to Wales. Britain has become more prosperous, and over the last century in particular there have been major social, economic, political and technological changes. The spread of deprivation and poverty has also changed but Wales now faces many of the same challenges of poverty and disadvantage as it did at the time of the Great Depression 80 years ago. The maps in Figure 25 highlight male unemployment across Britain at the start of the 21st century, with particularly high levels seen in parts of Wales, including parts of the Welsh valleys, Swansea and north east Wales. The overall comparative picture is not dissimilar to 1931, the period following the Great Depression when the coal industry was hit hard, and there were high levels of male unemployment in the South Wales Valleys areas. These regional inequalities are structural and persistent.

Source: Vision of Britain

Figure 25: Male unemployment in Britain 1931 and 2001



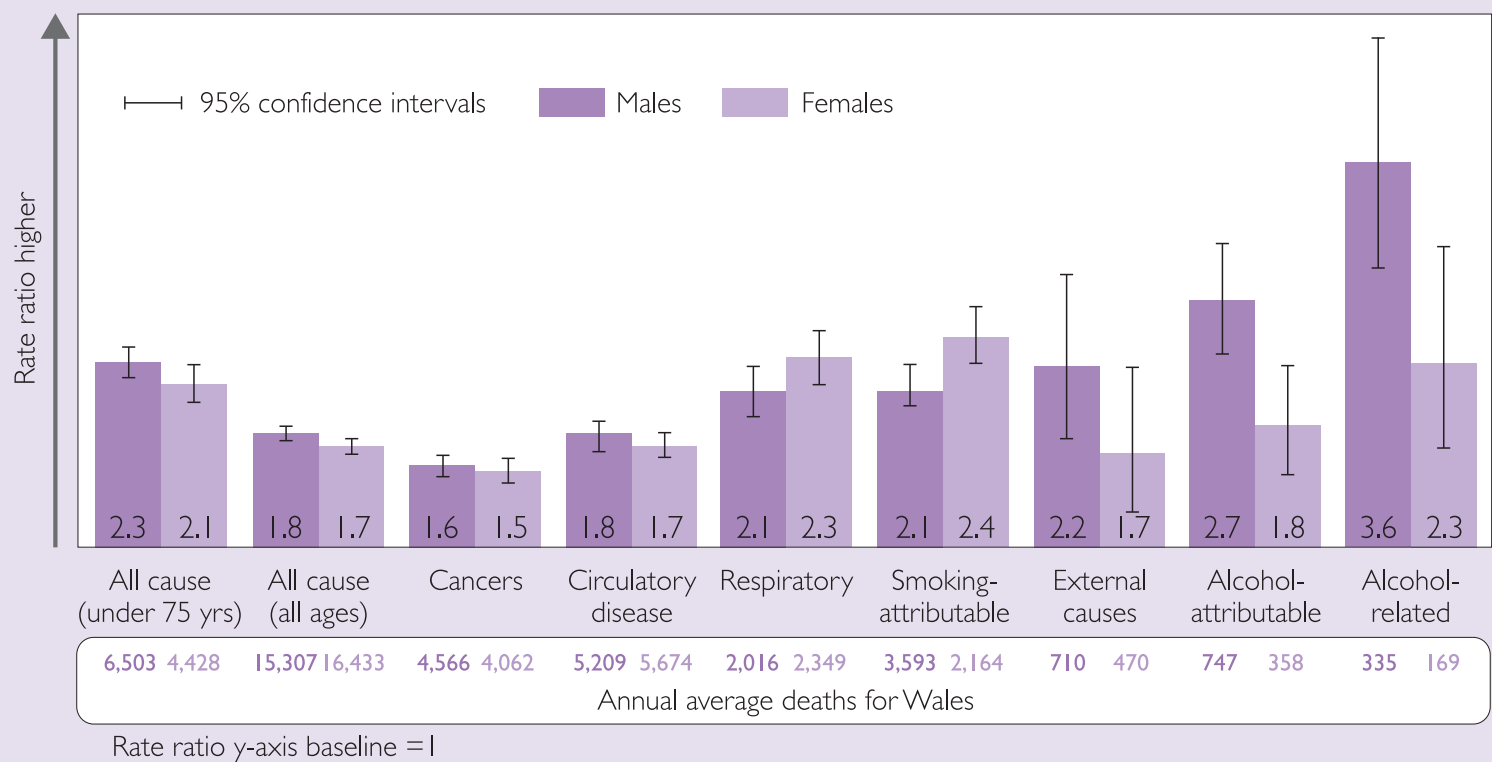
Source: Vision of Britain

Getting to the cause of inequity

Inequality in cause of death paints a stark picture of an association between lower socio-economic status and higher death rates (Figure 26). Throughout all major causes of death there is a social gradient, which is higher for deaths among younger people (under 75s) and particularly high for deaths from smoking (of which there are over 5,700 per year)

and deaths due to alcohol (at just over 1,100 deaths per year). Action is thus vital on income, tobacco and alcohol, as important mediators of health inequalities to reduce inequity within our society³.

Figure 26: Mortality by cause of death, rate ratios for the most deprived fifth compared to the least deprived fifth, Wales, 2007-2009



Source: Public Health Wales Observatory, using ADDE/MYE (ONS), WHS/WIMD (Welsh Government)

Important as this evidence is, it masks the underlying causes of inequity. Sometimes called the ‘causes of the causes’, social determinants underlie these health gradients. An individual’s experiences in early years, education, opportunities for employment, social support, transport and access to healthy food, all contribute to a population pattern of earlier death in poorer communities that is all too evident in Wales.

These factors may also contribute to social and psychological stress, creating anxiety, and reducing the ability to make positive lifestyle choices that increase long term survival. This cycle in turn adversely affects mental and physical health.

The scale of the health divide in Wales

The Public Health Wales Observatory report highlighted that in our most deprived communities, life expectancy from birth for men has increased by 0.6 years over the last decade.

In the same period, the gain in our least deprived communities has been 1.3 years, meaning that despite better life expectancy for all, our inequalities have widened (Figure 27).

Figure 27: Life expectancy and healthy life expectancy at birth among males in the most and least deprived areas (lower super output area fifths) in Wales

		2001- 05	2005-09	Change
Life expectancy	Least deprived	79.2	80.5	+ 1.3 years
	Most deprived	72.2	72.8	+ 0.6 years
Healthy life expectancy	Least deprived	69.4	70.2	+ 0.8 years
	Most deprived	54.5	54.8	+ 0.3 years

Source: Public Health Wales Observatory, *Measuring inequalities: trends in mortality and life expectancy in Wales, 2011*

Key messages from *Measuring Inequalities: trends in mortality and life expectancy in Wales 2011*

Nationally the inequality gap in life expectancy has slightly widened. Life expectancy has increased more slowly in the most deprived areas compared to the least deprived in Wales.

There are substantial geographical variations in all types of life expectancy. For example, healthy life expectancy in males ranges from 57.1 in Blaenau Gwent to 68.2 years in Monmouthshire, a difference of around 11 years. For females the greatest difference is around ten years.

National inequalities are particularly wide in healthy life expectancy. The gap between the most and least deprived areas is 18.9 years for males and 17.8 years for females. This contrasts with the national inequality gap in life expectancy overall of 9.2 years for males and 7.1 years for females.

There are inequalities in quality of life. People in the least deprived areas experience a substantially higher proportion of their life expectancy in good health (87 per cent of males) than those in the most deprived areas (75 per cent of males).

Females can expect to live 4.4 years longer than males. Females are, however, estimated to spend only around two years longer than males in good health or free from limiting long-term illness or disability.

Mortality rates in Wales for the main causes of death have fallen, but the inequality gap has widened over time.

The largest inequality gaps are in alcohol-related mortality. Rates are three and a half times as high in the most deprived areas as in the least deprived areas for males, and more than twice as high for females.

Inequality gaps are particularly wide for mortality from all causes aged under 75, and mortality from respiratory disease and smoking. For these causes, rates in the most deprived areas are more than twice those in least deprived areas.

Smoking attributable mortality rates in Wales have fallen, although the inequality gap has widened slightly.

The inverse care law

Dr Julian Tudor Hart, coined the 'inverse care law' in 1971 while working as a GP in South Wales, writing in the Lancet:

"The availability of good medical care tends to vary inversely with the need for the population served. This inverse care law operates more completely where medical care is most exposed to market forces, and less so where such exposure is reduced. The market distribution of medical care is a primitive and historically outdated social form, and any return to it would further exaggerate the maldistribution of medical resources"¹⁴.

In 2009, the Welsh Government removed the market for healthcare within the NHS and this gives us the advantage of a system that can overturn the inverse care law, and focus on preventative treatment and care, in a planned needs-based integrated system. This is our challenge to the NHS and its partners in Wales – reverse the inverse care law.

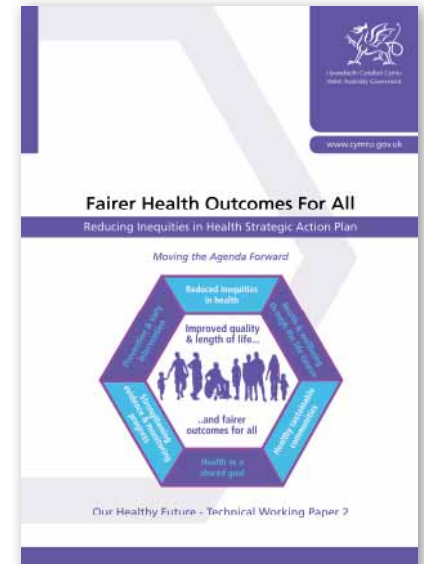
What we're doing about it

Inequalities are deep rooted in society and making an impact means committed, long term action across the whole of society. The strategic action plan for reducing inequalities in health, *Fairer Health Outcomes for All*, outlines our approach to addressing health inequity in Wales. This approach focuses on differences that could be avoided, differences that are unfair and immoral and that we should not tolerate. The plan builds on what is known internationally, from the work of the World Health Organization's Commission on the Social Determinants of Health, *Closing the Gap in a Generation*⁵, and work in Scotland and England. It remains true to the principles of Aneurin Bevan when establishing the NHS; need, not ability to pay, at the forefront of public services.

Fairer Health Outcomes for All

Fairer Health Outcomes for All was developed to complement the public health strategic framework, *Our Healthy Future*, and sets out mid to long term actions to reducing health inequalities in Wales. *Fairer Health Outcomes for All* has a series of actions based around seven themes:

- building health into all policies and all policies into health;
- giving every child a healthy start;
- developing health assets in communities;
- improving health literacy;
- making health and social services more equitable;
- developing a healthy working Wales; and
- strengthening the evidence base.



Source: Welsh Government

Action to reduce health inequalities and health inequity is focused at three levels:

- the work of the NHS;
- cross-sectoral working in alignment with the objectives of *Programme for Government*; and
- engagement with the people of Wales to promote better health for all.

To support this approach we are working closely with the Welsh academic sector and some of the world-wide expertise that exists in Welsh universities.

Reducing inequity through the work of the NHS

As the main provider of services to improve and protect health and treat illness in Wales, an equitable NHS is key to reducing health inequalities. *Together for Health: A 5-year vision for the NHS in Wales*⁶ highlights actions for the NHS to reduce health inequalities and expects Local Health Boards to set clear targets to reduce gaps. There are some major challenges and in this section I look at some of the ways the Welsh NHS is addressing inequalities.

Inequalities central to the NHS of the present and future

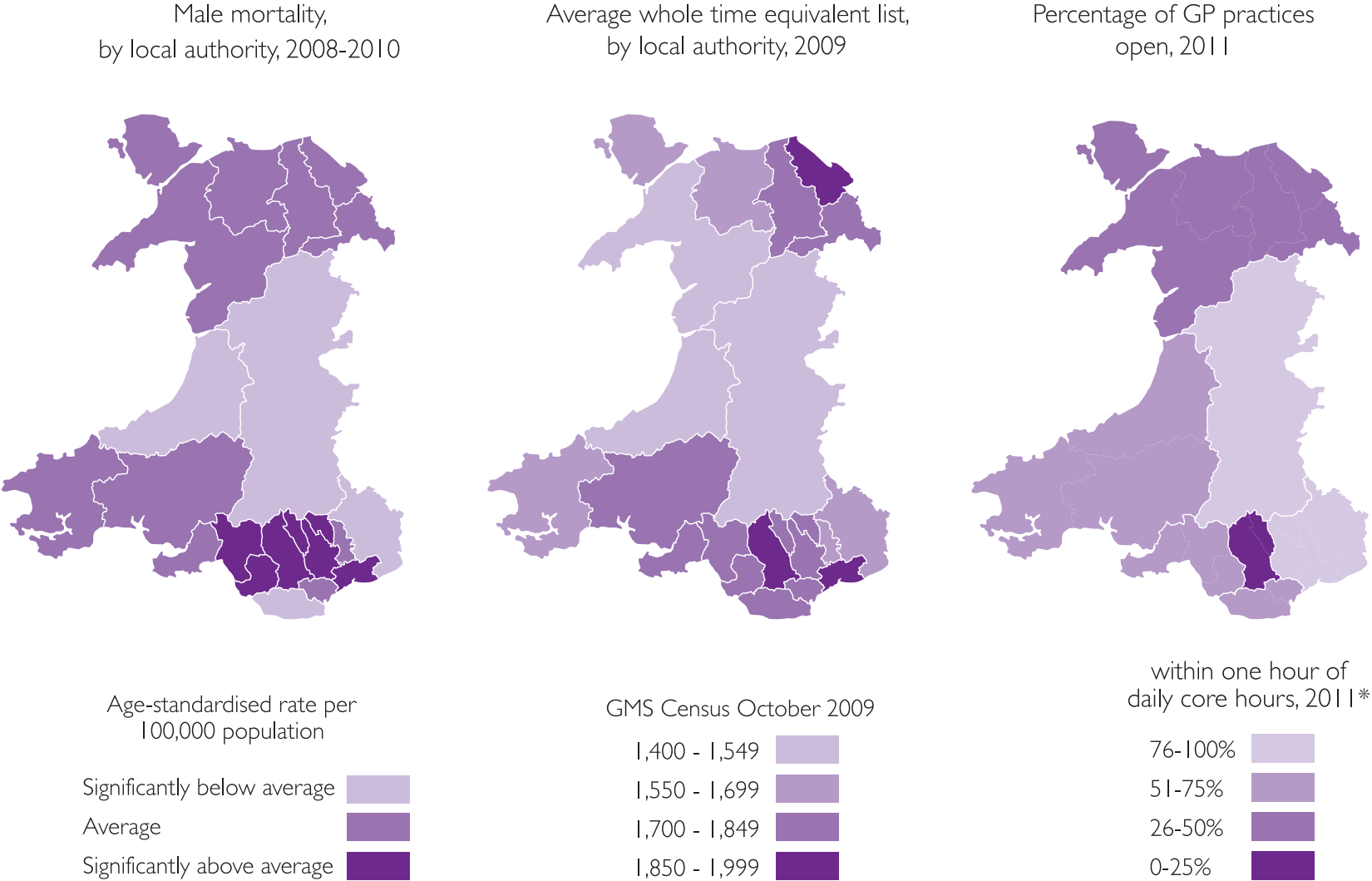
Critical appraisal of our healthcare system questions whether we should offer a purely demand-driven service or whether services should be designed in a more sophisticated way to address need by prioritising support to disadvantaged groups. To address the primary care needs of the more disadvantaged communities, we must provide services and support our professionals so that they can identify opportunities to redress health inequity, and develop the knowledge and skills in health and behavioural psychology to use their technical professional skills to intervene for the better. We must ensure that patients, as citizens, have the tools to play a positive role in their health, in particular ensuring that information is matched to health literacy ability as well as health needs. The Tudor Hart Glyncorrwg experience⁷ of anticipating the needs of the registered practice population is still relevant to today's challenge. Being interested and engaging with the 'do not attends' as much as the frequent attendees.

Rethinking access in primary care to reduce inequalities

Primary care services provide a gateway to the NHS, through evidence based interventions to prevent and treat disease and promote wellbeing. We need primary care located in the right place to ensure that health conditions can be prevented or managed early. Delivering services with a scale and intensity proportionate to the level of disadvantage has numerous challenges. Not only is there greater morbidity in economically deprived areas, there is greater co-morbidity at a younger age, making the use of evidence based guidelines more challenging⁸. The quality and outcomes framework in primary care focuses on delivery of evidence based healthcare, to ensure that services are effective and offer prevention. Many of these measures illustrate poorer primary care performance in the poorer areas.

However, more structural and service change is needed to contribute to a reduction in inequalities⁹, especially in matching resource to population need. Three of the most deprived areas in Wales, (Rhondda Cynon Taf, Newport and Flintshire have the highest levels of cardiovascular morbidity, but also the highest patient list size per whole time equivalent general practitioner. An analysis of surgery opening times also shows that the Local Health Boards with the highest proportion of deprived areas also have the lowest proportion of GP surgeries open for the full core hours (Figure 28). Although not a robust analysis of delivery of service by deprivation, it does not paint a picture of services set up to work with a scale and an intensity proportionate to the level of disadvantage.

Figure 28: Primary care access in Wales



* Core hours are Monday to Friday from 08:00 to 18:30 each day, with no lunch time closure

Source: Office for National Statistics, calculations by NHS Wales Informatics Service (eHealthshow), Welsh Government

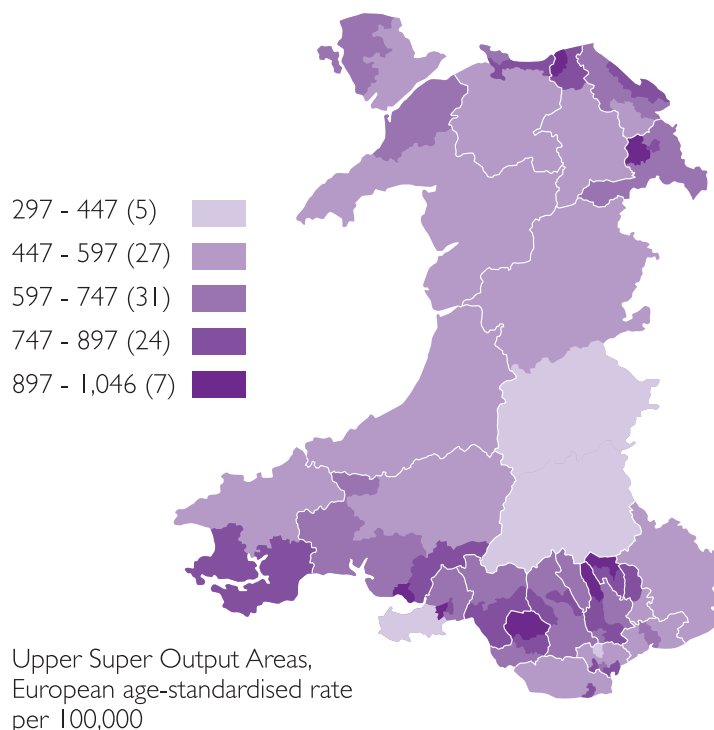
The inverse care law is clearly alive and well in Wales. It is time to revisit the enhanced recruitment of high quality GPs to areas of deprivation to undertake a primary care and public health role on behalf of Local Health Boards. This can build on the *Setting the Direction: Primary & Community Services Strategic Delivery Programme*¹⁰ with a focus on training

in the South Wales Valleys and in a determination to raise the quality and quantity of primary care services in areas of greatest need. Wales is where the 'inverse care law' was first addressed in the Afan Valley. Let it be the place where it is systematically addressed.

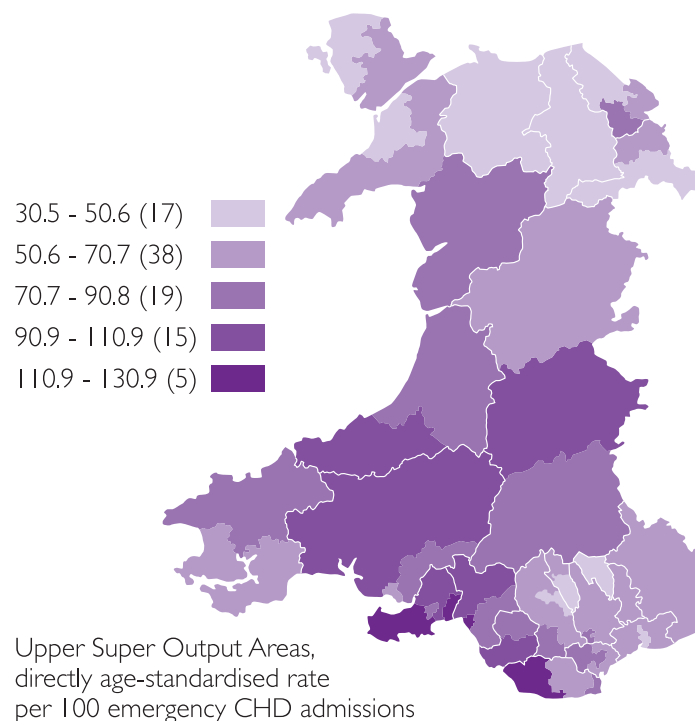
Rethinking access in secondary care to reduce inequalities

Figure 29: An illustration of need and supply in Wales

Emergency CHD admissions, 2002-06, males aged 35-74



Angiography, 2002-06, males aged 35-74



Source: Public Health Wales Observatory 2009

Improving access to services must focus not only on primary prevention (e.g. reducing smoking) but also on early identification (screening services and blood pressure control) and access to more specialist care. We know that within Wales, areas of high health need do not have correspondingly easy access to healthcare and curative services (Figure 29). This illustrates that many areas with the greatest need for coronary heart disease treatment, as measured by emergency admissions for coronary heart disease, have among the lowest provision of angiography (investigation for treatment). The reasons as to why this happens are complex, including whether individuals recognise and seek treatment early, the general health status of those who present, and how the service responds to those who present.

To ensure inequalities do not widen we cannot treat all communities as though they are the same. To do so may be treating people equally, but is not treating people equitably. Universal services delivering only in proportion to demand may improve outcomes generally but worsen inequality. A different approach, which can be described as 'proportionate universalism', is needed to promote delivery of effective healthcare focused on communities in relation to need¹¹. This approach means acting across the social gradient but with a scale and intensity that is proportionate to the level of disadvantage.

Reducing inequity through cross-sectoral working

The lessons of the World Health Organization Commission for Social Determinants of Health and the English Marmot Review¹² confirm that the biggest gains for health are achieved when the whole of government is focused on joint action across all public sectors. The international work is an affirmation of the way the Welsh Government has been operating since devolution, with cross-sectoral approaches to tackle issues such as economic regeneration, improved social justice and child poverty. The *Programme for Government 2011-2016* highlights the need to reduce inequalities in Wales across all sectors, including in health outcomes. Furthermore, it recognises this as a key responsibility for the whole of government with this approach being echoed in local authority areas across Wales. In this section I shall look at the way health inequalities are being tackled by the combined efforts of partners across different sectors.

Flying Start as an example of cross-sectoral working

We recognise that we must invest in our children, particularly those with the greatest disadvantage, as the foundations for life experience and lifelong health are set in pregnancy and the early years. 200,000 children live in poverty in Wales, half of these in working families¹³. *The Child Poverty Strategy*¹⁴ remains an essential element of tackling health inequalities in Wales, a national government approach strengthened by local collaboration between local authorities, NHS, police and criminal justice systems.

Flying Start is a *Programme for Government* manifesto commitment focused on early years intervention to reduce inequalities¹⁵. The programme aspires to give every child a healthy start and works to develop community health assets, by increasing support for parenting and developing sustained skills for parents to promote child language and development.

It is an example of the 'building health into all policies and all policies into health' approach outlined in *Fairer Health Outcomes for All*.

The programme was launched in 2006-07 and is the Welsh Government's flagship early years programme, using the evidence base of the benefits of home based support services and parenting programmes to improve the life chances of children in Wales' most disadvantaged communities.

The Flying Start programme

- It is designed for families with children aged 0-47 months, targeted geographically in the most deprived areas, delivered by local authorities.
- The programme currently reaches approximately 18,000 children, with governmental commitment to double numbers to 36,000 by 2016.
- It provides 'universal' entitlements for all children and their families within designated deprived areas with no associated means testing or stigma.
- The programme has an integrated approach to produce improved outcomes for children through investment of approximately £2,100 per child.
- The delivery of the programme is high fidelity and prescriptive with four key core components, namely:
 - free, high quality part time childcare (12.5 hours per week for 42 weeks of the year) for all eligible two to three year olds;
 - an intensive health visiting service (Health Visitor caseload capped at 110 children);
 - access to evidence-based intensive parenting programmes; and
 - access to language and play activities that develop basic skills for parents and children.



Source: Welsh Government

The interim evaluation report published in 2010 concluded that Flying Start is on track to improve the life chances of the children in the areas in which it runs. The emerging evidence also suggests that Flying Start is demonstrating many of the critical success factors associated with the delivery of effective interventions in the early years. Qualitative evidence from professionals and parents suggests improvements in

outcomes relating to emotional and social development, parental confidence and engagement, language and cognitive development, and health outcomes including increased rates of breastfeeding, better engagement with immunisation and reduced referral to Accident and Emergency Departments. Further systematic evaluation will be important and is built into the project.

Figure 30: Monitoring of the Flying Start Project in Cardiff

Population

Children aged 0-3years and 11 months old with an eligible postcode, resident in one of the eight Cardiff Flying Start catchment areas.

Outcome

Flying Start children are healthy and thriving.

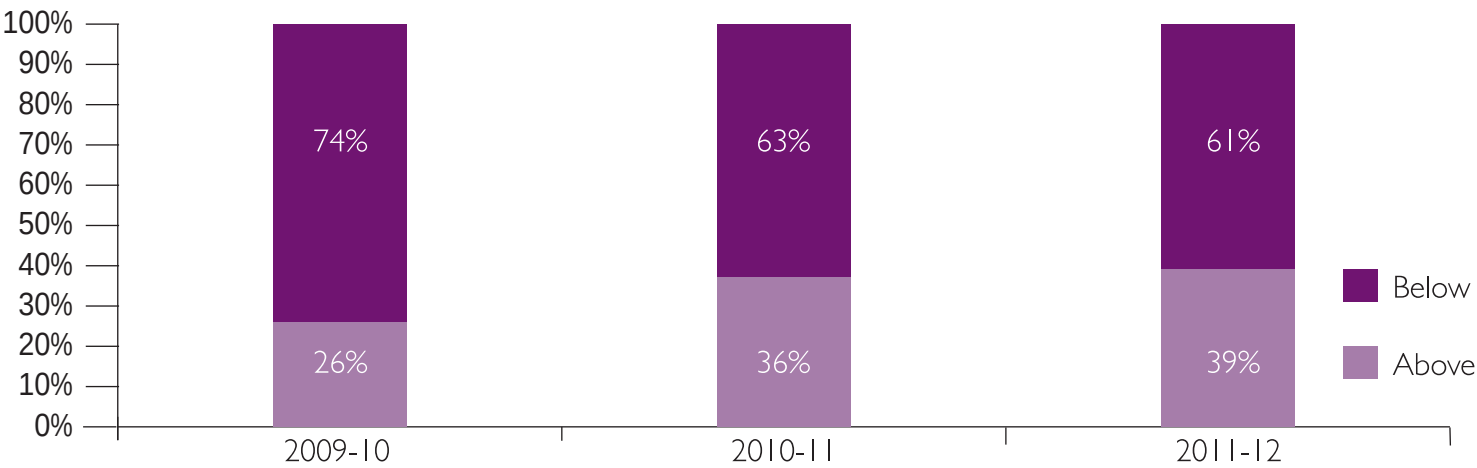
Headline indicators (Bellwethers)

- % Flying Start children assessed, reaching or exceeding their developmental milestones on the “Schedule of Growing Skills Assessment” at two years old (21-29 months) and at three years old (33-41 months).
- % Flying Start children fully immunised to schedule at 47 months.
- % Flying Start families who respond to questionnaire, reporting that Flying Start has helped their child ‘a lot or more’.

Data development agenda

- % Flying Start children breastfed at six months.
- % Flying Start children with a BMI below the 91st percentile and above the 2nd percentile at 36 months.

How are we doing? Development milestones overall



Source: Cardiff and Vale University Health Board

Early monitoring from the Cardiff Flying Start Project (see Figure 30) has shown some improvements in developmental milestones and in uptake of immunisation. However, monitoring has also shown the challenges of ensuring that the programme is taken up by the most deprived and hard to reach groups. This requires ongoing work to engage and increase uptake across diverse communities.



Vale families were brought together by the Flying Start team on 17 August at a fun day held at Barry Island. Source: Welsh Government and Vale of Glamorgan

Reducing inequity through engaging with the people of Wales to promote better health for all

Reducing inequalities through population approaches to prevention

There are some effective interventions which we should aim to achieve universal or near universal coverage, which would reduce health inequities. Vaccination is an example of such an intervention, as seen in Chapters 1 and 2. Uptake of routine immunisations scheduled in the first year of life each exceeded 95 per cent for children reaching their first birthday during 2011.

Uptake was high throughout all deprivation quintiles, although in the most deprived areas of Wales less than 95 per cent of children had completed all of their recommended immunisations by one year of age¹⁶.

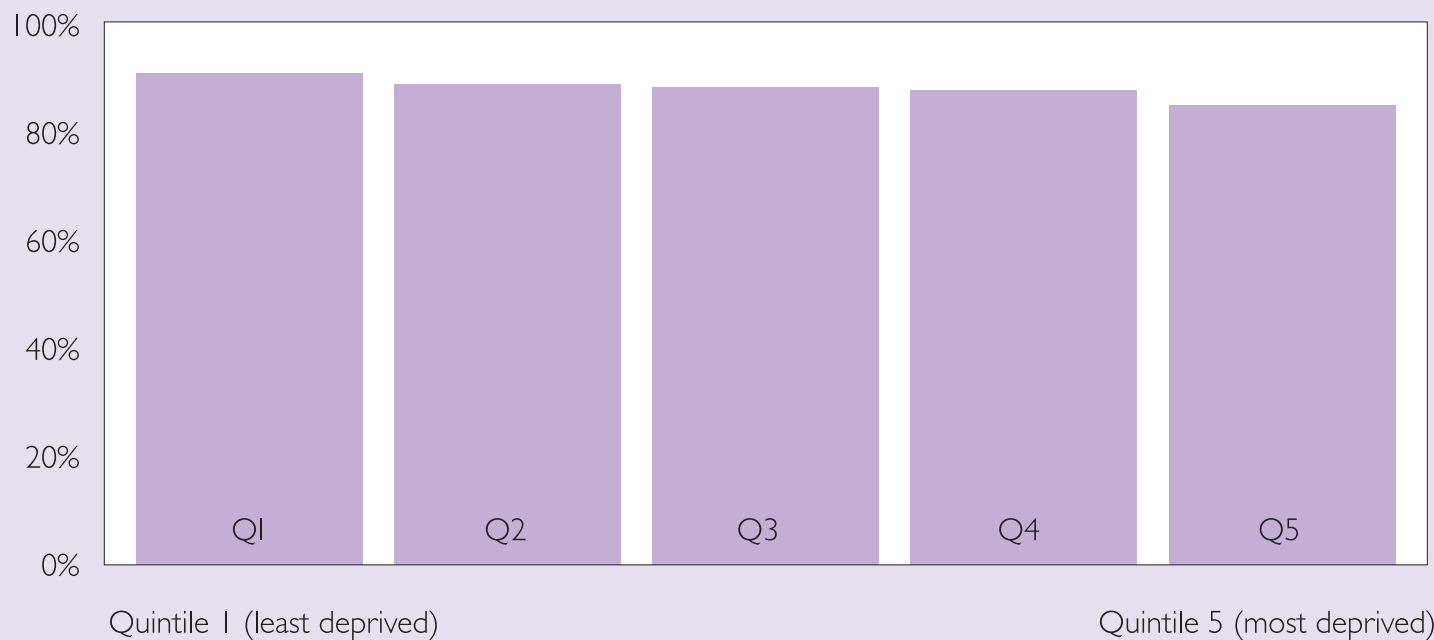
The pattern becomes a little different as children get older. Uptake of all routine immunisations scheduled at 12-13 months of age were each lower than 95 per cent with uptake of the first dose of MMR vaccine lowest (92 per cent). In contrast to the younger children, only 88 per cent of children reaching their second birthday during 2011 had received every one of their recommended routine immunisations by their second birthday¹⁷.

The well intended work of healthcare and public health may contribute, inadvertently, to widening inequalities. Despite universal provision, immunisation in the most deprived groups was consistently lower than in the least deprived in this age group, showing the familiar 'social gradient' pattern, widening as the children become older.

To help respond to health inequity in this area, the Public Health Wales Vaccine Preventable Disease Programme and Communicable Disease Surveillance Centre will be expanding their reporting of childhood immunisation uptake during 2012 to routinely include indicators of deprivation and feeding this back to primary care teams.

However, this initial finding does present cause for concern. Immunisation offers an effective way to ensure that lives are not adversely impacted by needless disease. If children in the most deprived communities are not receiving this protection at the same rate as those in the least deprived areas, then they are disadvantaged. I would like all Local Health Boards, in collaboration with Public Health Wales, to examine this gradient in their own local areas and determine what action is needed to level up uptake across all areas within their 'population of interest', and so reverse the inverse care law.

Figure 31: Uptake of routine immunisations by deprivation group by age two, 2011



Source: Public Health Wales Vaccine Preventable Disease Programme

Reducing smoking prevalence

Smoking tobacco remains a threat to good health for the 23 per cent of adults in Wales who smoke, and makes a major contribution to health inequity¹⁸. It is of particular concern that smoking rates amongst young people, although reducing, are still higher for 15-year-old girls than in other countries of the UK¹⁹. Findings from the Welsh Health Survey show that more than twice as many people smoke in the most deprived parts of Wales compared with the least deprived parts.

Local Health Boards are implementing their own initiatives, especially to champion healthy behaviour, for all patients, visitors and staff. The recent introduction of smoke-free hospital buildings and grounds by Cardiff and Vale University Health Board shows how a planned approach can make a contribution and demonstrate how the NHS can lead and set an example.

The imperative need to protect young people from the harmful effects of smoking is the rationale for many aspects of the Welsh Government's *Tobacco Control Action Plan*. In 2011 the Welsh Government passed legislation banning cigarette vending machines. This will give greater protection for younger children as studies have shown that they are more likely to acquire cigarettes from a machine than illegally from a shop. Point of sale cigarette advertising will be prevented from 2012 in larger shops and the use of plain cigarette packaging is being explored.

These cumulative tobacco control policies have evolved over more than 50 years since the harms of tobacco were first evidenced. It continues to be a hard fought battle, and of course tobacco companies maintain their profits, as shown by their consistently high position in the FTSE 100 index.

Reducing dental inequality –
Designed to Smile



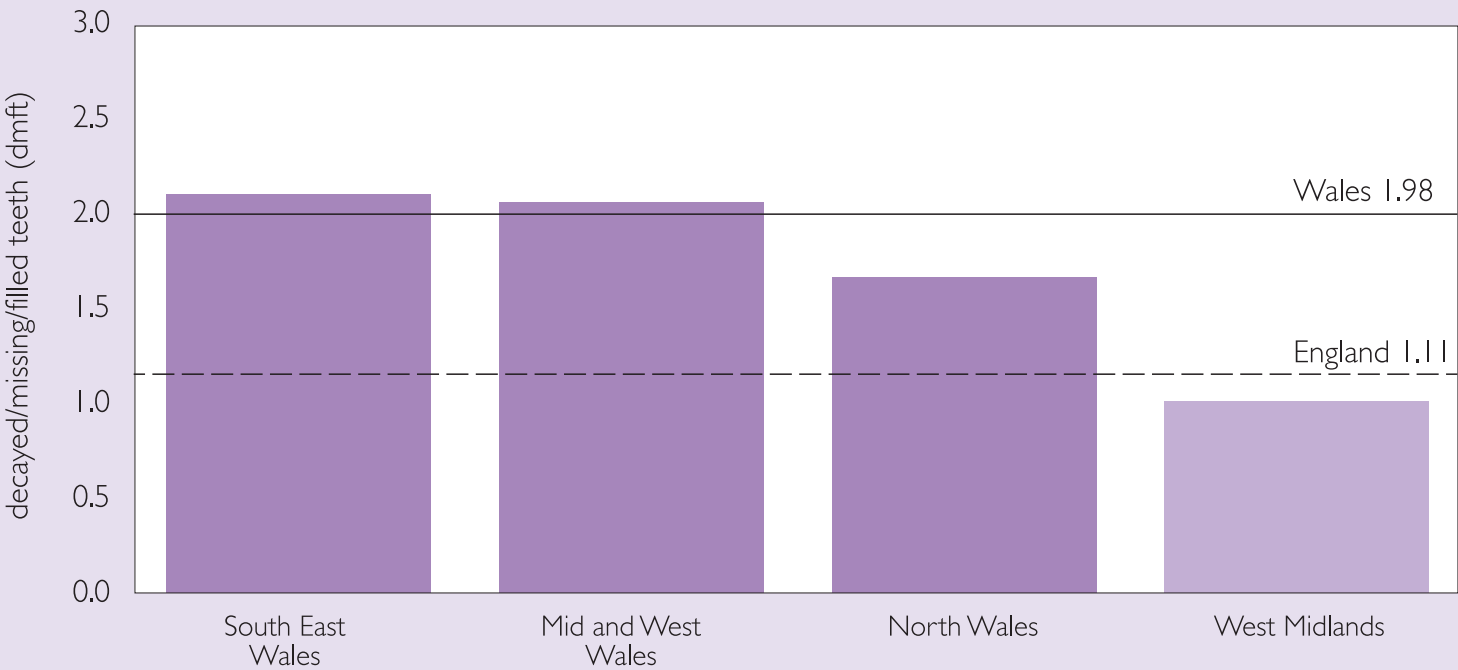
Picture: Children brushing teeth in Herbert Thompson Primary School, Cardiff
Source: Welsh Government

Designed to Smile is an NHS dental programme funded by the Welsh Government, aimed at reducing the inequality in dental health throughout Wales through systematic programmes of oral health promotion.

A total of 954 schools and nurseries were involved in the supervised tooth brushing programme by the end of March 2011, with 61,725 children taking part in the scheme. Averages of two home packs per family were distributed across Wales as part of the supervised tooth brushing work, 155,077 packs in all. In addition, 28 per cent of the children involved in the study had their parents involved in oral health education. The eventual oral health outcomes will be evaluated in terms of dental and oral health and decayed/missing/filled teeth (dmft) scores seen in future surveys²⁰.

Despite the interventions used successfully in Designed to Smile, the rate of dental caries in Wales' children is still considerably higher than other parts of the UK where there is fluoride in the water supply.

Figure 32: Mean dmft five-year-olds, Wales compared with West Midlands, 2007-08



Source: Welsh Oral Health Information Unit and NHS Dental Epidemiology Programme for England

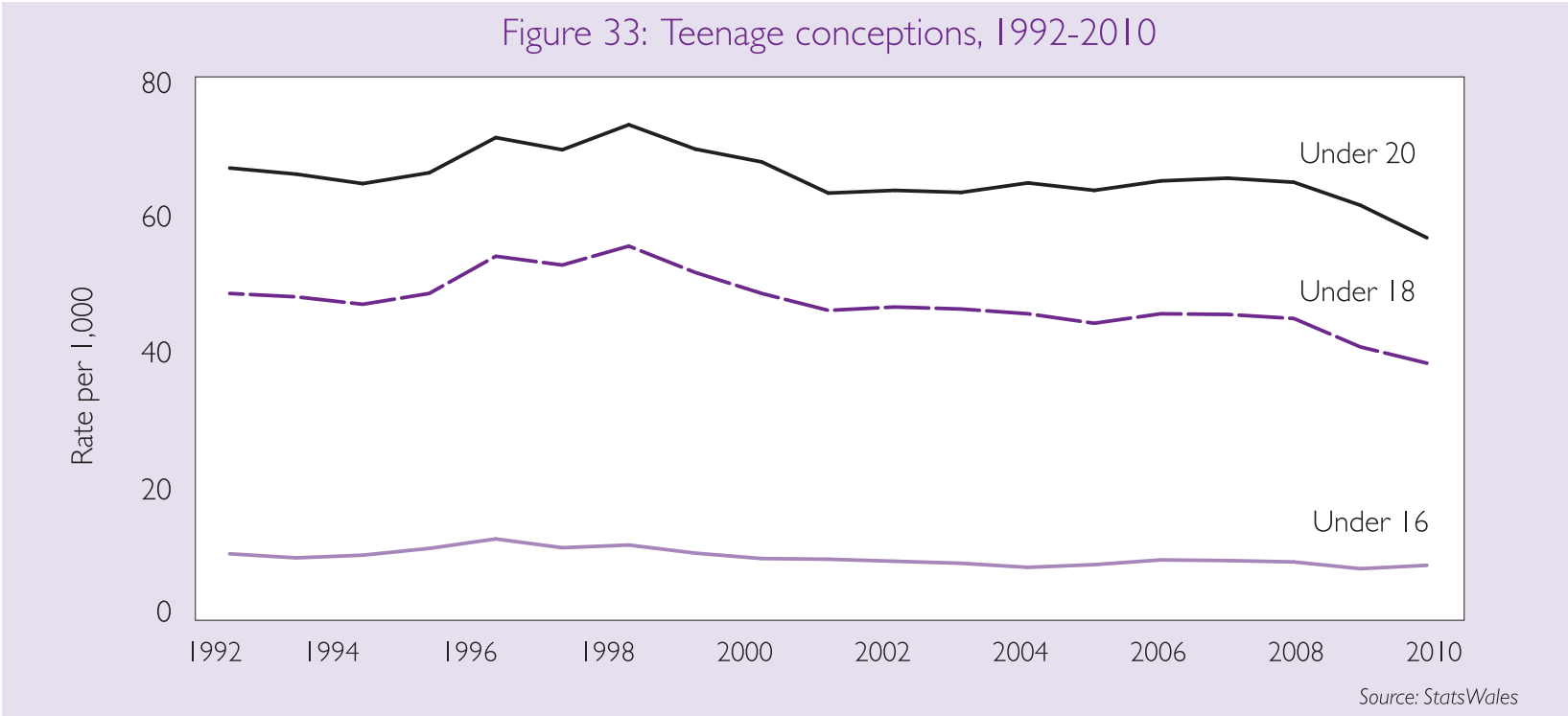
This is illustrated by Figure 32 showing the difference between Wales, which is unfluoridated, and West Midlands, where the water supply is fluoridated. The potential benefits of the naturally occurring mineral fluoride should be maximised. This may be administered in a number of ways – via water, foodstuffs, or direct application as supplementation or varnish, as in the Designed to Smile programme. I recommend that the Welsh Government reviews the evidence base for fluoridating water supplies in Wales, the legislative options available and the relative cost-benefit of all options. The positive progress being made in England where other regions are planning fluoridation needs to be considered. It is important to remember that teeth develop in childhood for an individual's lifetime.

Reducing inequalities through reducing teenage pregnancy

Teenage pregnancy is an important intergenerational mediator of poverty and is associated with poor childhood outcomes. Interventions to reduce very early teenage pregnancy, especially repeat pregnancy in teenage years, are an important contributor to improved population wellbeing.

Wales, and much of the UK, have recently had higher levels of teenage conceptions than much of western Europe; a finding confirmed by the recent I2SARE European regional analysis²¹. Reducing the number of teenage conceptions is one of the priorities of *Our Healthy Future* and Local Health Boards have accepted the need to take action.

Latest figures show the excellent news that teenage conception rates have continued on a downward trend, rates for girls aged under 18 falling from 40.1 per thousand girls aged 15-17 in 2009 to 37.7 in 2010, the lowest rate recorded since 1992. Conception rates for girls aged under 16 fell slowly from around 11 per thousand girls aged 13-15 in the late 1990s but increased slightly from 7.3 in 2009 to 7.8 in 2010. Rates for women aged under 20 fell from 61.0 per thousand females aged 15-19 in 2009 to 56.2 in 2010. Within Wales, conception rates for girls aged under 18 varied considerably from 59.8 per thousand girls aged 15-17 in Merthyr Tydfil to 23.8 in Monmouthshire (2008-10 average). Almost half (45 per cent) of conceptions for the under 18s were terminated by abortion compared with 20 per cent at all ages²².



Tackling teenage pregnancy in Merthyr Tydfil – Empower to Choose

Early teenage pregnancy is associated with a greater likelihood of adverse outcomes for both mother and baby. Community interventions have focused on promoting sexual health to young women including health promotion campaigns, education in schools and promotion of condom use and long acting removable contraceptive (LARC) usage.

Using this project approach, teenage pregnancy rates have dropped significantly in Merthyr Tydfil from a rate for under 18s of 60.7 per 1000 (69 cases) in 2009 to 44.5 (49 cases) in 2010. This promising reduction is testament to the excellent local partnership work around this agenda, combining the efforts of Cwm Taf Local Health Board, Merthyr Tydfil Local Authority and Children and Young People's Partnership and Cwm Taf Local Public Health Team.

Young people have been recognised as a specific population group that need to be targeted to ensure they access sexual health provision, and local services have been developed to meet this need. A twice weekly, specialist young people's community clinic serves young people up to 20 years of age. In addition, the Sexual Health Advisory Project allows Integrated Sexual Health Practitioners to work with young people in a variety of community and youth settings, together with a drop-in provision at Merthyr College. Their role includes education, provision of emergency hormonal contraception (EHC), and pregnancy and chlamydia testing. Within secondary school settings the school nursing team provide a weekly drop-in service to provide support, advice and signposting to other services.

Source: StatsWales



Teenage pregnancy Source: Welsh Government

Complementing this provision, a Condom Card Scheme service is available to all young people aged 14-25 within Merthyr Tydfil via the Play it Safe Scheme which is available at 15 community venues on a borough-wide basis. The scheme is led by Condom Card accredited youth and community workers, who also deliver a range of health workshops for young people. A peer led Condom Card Scheme is also available at Merthyr Tydfil College.

In addition to this universal provision, a number of initiatives have been undertaken by services working with young people who are involved with the youth justice and social care systems in an attempt to effectively target our most vulnerable young people.

Addressing the issue of teenage pregnancies is an issue for all sectors including the NHS, education and local authorities. It is good to see that concerted work by collaborating agencies in Merthyr Tydfil can produce changed outcomes for the community. We hope that the initial promising results seen in the latest data are improved and sustained. However, we also need to make sure that teenage mothers can find ways back into education to continue to improve their life chances for them and their children.

Providing protection from ill health through dietary supplementation and fortification

Another example of a simple population based intervention that is undertaken in many countries of the world is the mandatory fortification of flour with folic acid as recommended by the Scientific Advisory Committee on Nutrition²³.

This intervention is effective in preventing spina bifida and anencephaly in babies. Many cereals are currently fortified. Mandating white flour fortification allows not only an element of consumer choice (as brown flour would not be fortified), but also targets the fortification on those who consume higher proportions of white flour; often those with less naturally folate rich diets. UK Chief Medical Officers have been advocating that fortification is brought in at a UK level. Having considered this evidence I hope that progress will be made soon.

Addressing social determinants of health through tackling poverty

At the root of much of the health inequality in Wales is poverty. As I have mentioned in previous Chief Medical Officer for Wales Annual Reports the onset of the financial crisis and recession of the past few years inevitably has an impact on health. We know that unemployment rates have risen, and more people face the stress of losing a home, or not being able to afford training for a change of career. We know, based on previous recessions, that this is likely to have short, mid and long term effects on health.

“I have known a couple of people that have through their ill health [. . .] stopped working and have been given large loans while they’ve been poorly and as a result couldn’t pay them back [. . .] but they couldn’t take anything away because they had nothing²⁴.”

The Welsh Government’s *Tackling Poverty Action Plan* addresses the economic challenges that we face in Wales, through changes to the wider economy, limited budgets for public services, the impacts of welfare reform and the rising cost of living with higher energy and food prices. The future wellbeing and prosperity of our children depends in part on raising families out of poverty, relying on economic strategies to increase employment. Structural support for families comes from a network of other initiatives, including Communities First, Flying Start, Families First, and Integrated Family Support Services. Direct support for young people is planned through skills improvement, enhanced qualifications, new employment programmes and apprenticeships, overseen and coordinated by a Ministerial Programme Board. These programmes need to be supported and sustained.



Source: Welsh Government

Innovation and research

Addressing many of the causes of inequality cannot be done by Wales alone. The European Region of the World Health Organization (WHO) has commissioned Professor Sir Michael Marmot to lead an investigation on the social determinants of health and the health divide in Europe²⁵. The first two interim reports of this work have both recognised that the same gradient of health in Wales also exists in every other studied country of the European WHO Region²⁶. Through Wales' membership of the WHO Regions for Health Network²⁷, we are already participating in international work looking at what works to reduce health inequalities and promote equity in other systems. Emerging findings confirm the use of 'health assets' approaches to strengthen resilience in communities, as already identified in Wales and used in Scotland and Slovenia, and to promote greater levels of social integration and cohesion as a protective factor to improve health.

As I reported last year the Institute of Public Health in Wales is being developed through Public Health Wales, and the early promise of work from the Reproduction and Early Years Pathfinder Project led by Professor Stephen Palmer (the first Cochrane Chair) shows the benefit of working with academic and service colleagues; including the affiliation being established between Public Health Wales and the Institute of Health Equity. This seeks to increase health equity through action on the social determinants of health nationally and internationally. The initial focus of this work is on ensuring that every child has a healthy start in life and that our communities are healthy in a way that is sustainable for the future. The collaboration will help us to learn from best practice, share innovation, build a firm evidence base and develop ways of monitoring progress into the future. The other pathfinder project on environment and health will work well alongside the Sustainable Places Research Institute at Cardiff University. The Public Health Wales Institute is to join the International Association of Public Health Institutes (IAPHI).

It is vitally important to look to the experience of other countries and benchmark ourselves appropriately. Wales particularly needs to work with the UK Government on policies to achieve a minimum income for healthy living and support for other legislative measures.

Making sure we're on track

Fairer Health Outcomes for All has the aspiration that “By 2020, to improve healthy life expectancy for everyone and to close the gap between each quintile of deprivation by an average of 2.5%.” Monitoring progress requires the systematic use of a measure such as slope index of inequality, which shows changes of inequality despite overall improvement in actual outcome. Focus on reducing the inequity gap is essential, rather than being content with all round better outcomes.

At present the inequality in healthy life expectancy is not improving and a set of indicators is being developed to monitor progress. This aim needs support from a strengthened evidence base, ensuring that interventions such as Flying Start are evaluated not only for effectiveness, but particularly for the effect on inequity. The Secure Anonymised Information Linkage (SAIL) Project in Swansea has established the Wales Electronic Cohort for Children (WECC) which will be able to track and maintain the health actions of 800,000 children in Wales. This will provide a platform for health research and tease out key factors in the work to reduce inequity. It is the Welsh Government's duty to continue to develop, implement and evaluate these policies to reduce inequalities, through short and long term challenges, which will be economic, social and technical as well as political.

Conclusions

Health inequities are deeply ingrained within Wales, and across the globe. In spite of policies to tackle these, our health inequalities continue to widen. We have a greater understanding of the patterns in Wales at a national and local level. They show the impact of inequality on the people of Wales and the challenge that lies ahead. Gaps of over two decades in healthy life expectancy at birth between the most and least deprived communities in some local authority areas cannot be tolerated. The 'inverse care law' is still apparent in our NHS, despite its universal availability and the abolition of the NHS internal market.

There are no quick fixes to health inequities, which are complex issues requiring concerted action on multiple fronts. We have made progress. Smoking in young people has fallen. We are seeing some improvement in smoking in pregnancy across the social gradient and teenage pregnancy has been falling. We have evidence that our Flying Start interventions are starting to make a difference and child pedestrian injuries have fallen. We have had important regulatory advances over the last decade, in particular in relation to tobacco in both second-hand exposure and sales. At UK level the proposed introduction of a minimum price for alcohol is an important step in the right direction, as are the greater levels of tobacco control.

However, there is no place for complacency. There is still much we know we can do.

We must take positive action in favour of both deprived places and deprived people to meet their needs, working with a scale and intensity proportionate to the level of disadvantage. We must work with communities, and particularly through our Communities First areas, to develop health assets, ensure interventions are suitable for their context, and are properly evaluated. We must address inequity throughout the life course, prioritising early years interventions.

We must continue to explore ways to change the environment, such as road safety, introduce regulatory controls on tobacco and alcohol, and deliver water or foodstuff fluoridation, along with other government interventions such as ensuring a minimum income for healthy living.

We are in this for the long haul and it may be some time before we see the inequality gap start closing. It means we need to look at the range of ways inequality impacts on our society and how we are progressing in tackling it. We need to not only consider the ultimate outcomes, but also the pathway to the inequalities. Some interventions will work in some settings and not in others, so we need to continue to monitor, evaluate and adapt our work, but above all keep the vision of a fairer Wales prominent in our entire policy making.

Recommendations to reduce inequality

- Continue to implement *Fairer Health Outcomes for All* at all levels in Wales.
- Effectively implement the Flying Start programme, including the Integrated Family Support Service.
- Support cross-government working through the actions of the *Tackling Poverty Action Plan* and Ministerial Programme Board on Tackling Poverty.
- Develop mechanisms to ensure equity is considered in all policies and actions of the NHS; and across the Welsh Government to reverse the inverse care law.
- Support the development of academic leadership on translational research to reduce health inequalities through the Public Health Wales Institute function.
- Develop wider engagement with the whole of society on changes needed to reduce health inequalities and promote equity.

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A family enjoying the Center of Alternative Technology, Machynlleth Source: Dr. A. A. Green

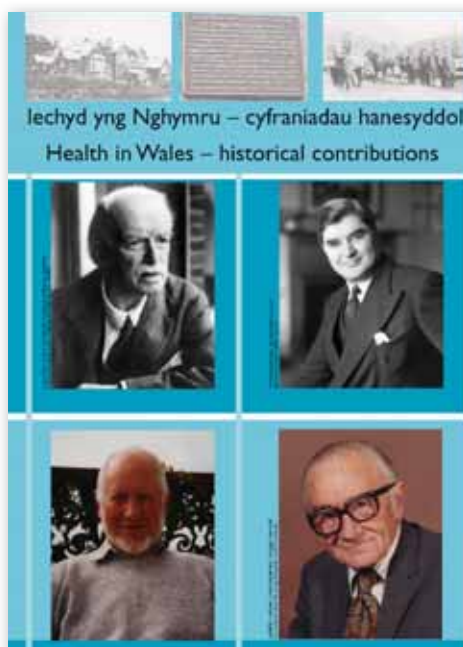
Chapter 5: A fairer, healthier future

My final Annual Report is an opportunity to reflect on the changes in the health of the population during the years I have been Chief Medical Officer for Wales. Most of note is the significant decline in the rate of deaths from heart disease and stroke in that time.

Since 2005 there has been a recorded decline of 30 per cent in the rate of deaths from circulatory disease for men under the age of 75¹. As stated elsewhere in this report we have been able to monitor improvements in life expectancy at birth for all in Wales, partly due to this decline in cardiovascular diseases. Smoking rates in children and adults have declined and we have slowed the growth in overweight and obesity; our 21st century problem. There is unequivocal evidence that people in Wales are living longer and healthier lives.

There is much to be celebrated in the role of the government, the NHS, wider society and population in achieving this position. However, for Wales to continue to achieve a sustainable health gain, we cannot relax our approach in wanting to get the best health possible.

Since 2006 I have advocated a number of approaches that will contribute to a healthier Wales through adopting a prevention-based approach, working together across government to reduce inequity and making the best of the health assets that we have. I would argue that over the course of the past six years we have established a strategic approach to public health action in the short, mid and long term.



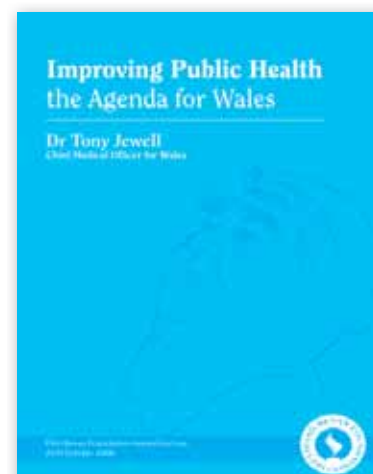
Health in Wales – historical contributors
Source: Welsh Government

In this final chapter I argue that the final ingredient for sustainable health gain is about developing a new relationship with the people of Wales where health and wellbeing are valued and owned by the community.

From vision to reality

The Chief Medical Officer advises the government on the strategic direction for public health in Wales, and acts as an advocate for health on behalf of the general public, including the most vulnerable in society².

Within six months of being in post as Chief Medical Officer for Wales I was honoured to be asked to deliver the annual lecture for the Bevan Foundation on the development of public health in Wales. During the lecture I paid tribute to the architects of the health system in Wales who had done much to shape the way that we work now. From that time I have had them on the wall above my desk looking down at me, as a reminder of the importance of the Welfare State (Lloyd George and the National Insurance Act 1911), creating the NHS across the UK (Bevan in 1948), promoting evidence-based health policy (Cochrane and effectiveness and efficiency) and showing how public health delivered through primary care can improve outcomes (Tudor-Hart and the inverse care law).



Source: The Bevan Foundation

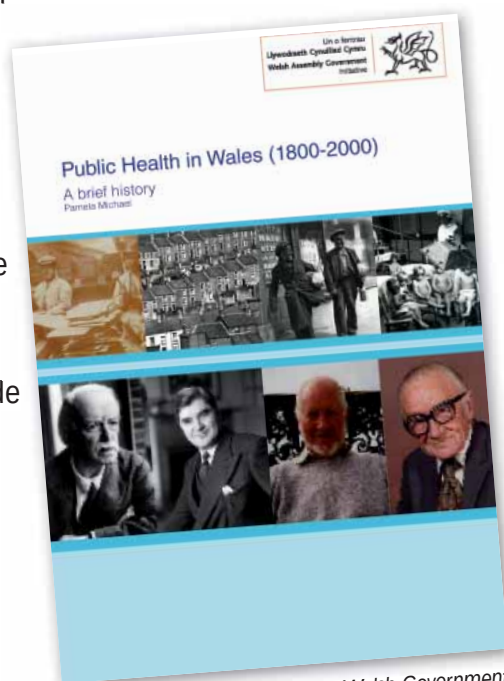
All of these so called 'architects' made their contribution from a Welsh base and perspective but have had an impact across the UK and globally. At the top of the picture on the previous page (titled 'Health in Wales – historical contributors') there is reference to the Tredegar Medical Aid Society which was borne out of the coal and steel industry in the Ebbw Vale. This influenced Bevan in the great debate about the NHS but is an apt reminder that Wales led the industrial revolution and was the crucible for progressive social policies too built on the harsh industrial experience.

Social history is an important ingredient in public policy and recognition of specific and distinctive traditions in Wales need documenting. I was pleased to provide encouragement and support to Pamela Michael who produced a booklet on public health in Wales 1800-2000³.

This identifies a unique Welsh historical experience over the past 200 years that still shapes our work today.

I also took the opportunity in the Bevan lecture to outline my priorities to carry forward the good work of those who had gone before me. These priorities were:

- improving health and reducing health inequalities, including inequalities in access to services, and quantifying and demonstrating progress;
- “preventing the preventable” – protecting the health of the population through screening, immunisation and wide-ranging (and cross-cutting) action to counter threats to health such as smoking and obesity;



Source: Welsh Government

- working with the NHS and social care to ensure high standards of care to assure patient safety and quality;
- fostering a stronger research and academic sector in public health, health service research and biomedicine; and
- developing modern information systems that support clinical decision making, analysis and performance benchmarking.

Working towards achieving these priorities has been a key element of my time as Chief Medical Officer and I am pleased to note the progress we have made.

On the basis of the findings in this report, and limiting myself to identifying a handful of areas, I recommend that the five top priorities to improve the health of Wales are:

- 1 To strategically address the wider determinants of health:** The strategic and longer term commitment to social justice in Wales should be maintained using structural funding, economic regeneration, housing, education and targeted investment to build a sustainable future for a nation which is fairer socially and economically. In particular the commitment to abolish child poverty by 2020 will be crucial to achieving equity in education and health for the future.
- 2 Tobacco policy:** The downward pressure on tobacco needs to be maintained with an emphasis on developing smoke free homes for children, stopping young people from becoming hooked on nicotine and continuing to provide help to smokers to quit.
- 3 Food and Fitness:** The rising epidemic of obesity in children and adults needs to be strategically addressed by working on all the factors which contribute to our obesogenic society which encourages a sedentary lifestyle, and over-consumption of convenience foods and sugary drinks.



4 Risk taking behaviours: Wales needs to develop a programme that uses best evidence to raise self esteem in young people and reduce the culture of binge drinking and other substance misuse extending into adulthood.

5 Investment in public health: The investment in public health programmes such as vaccination and immunisation, screening and effective health promotion should increase. The public health delivery system must be adequately resourced to prevent the preventable, to survey the population's health and respond to public health emergencies.

This report provides more evidence for these top five priorities. It recommends that the planned public health strategic framework will ensure that these health priorities can align with other government initiatives such as the *Beyond Boundaries* policy and our commitment to sustainability and equality of opportunity.

Yours sincerely/Y'n gywir

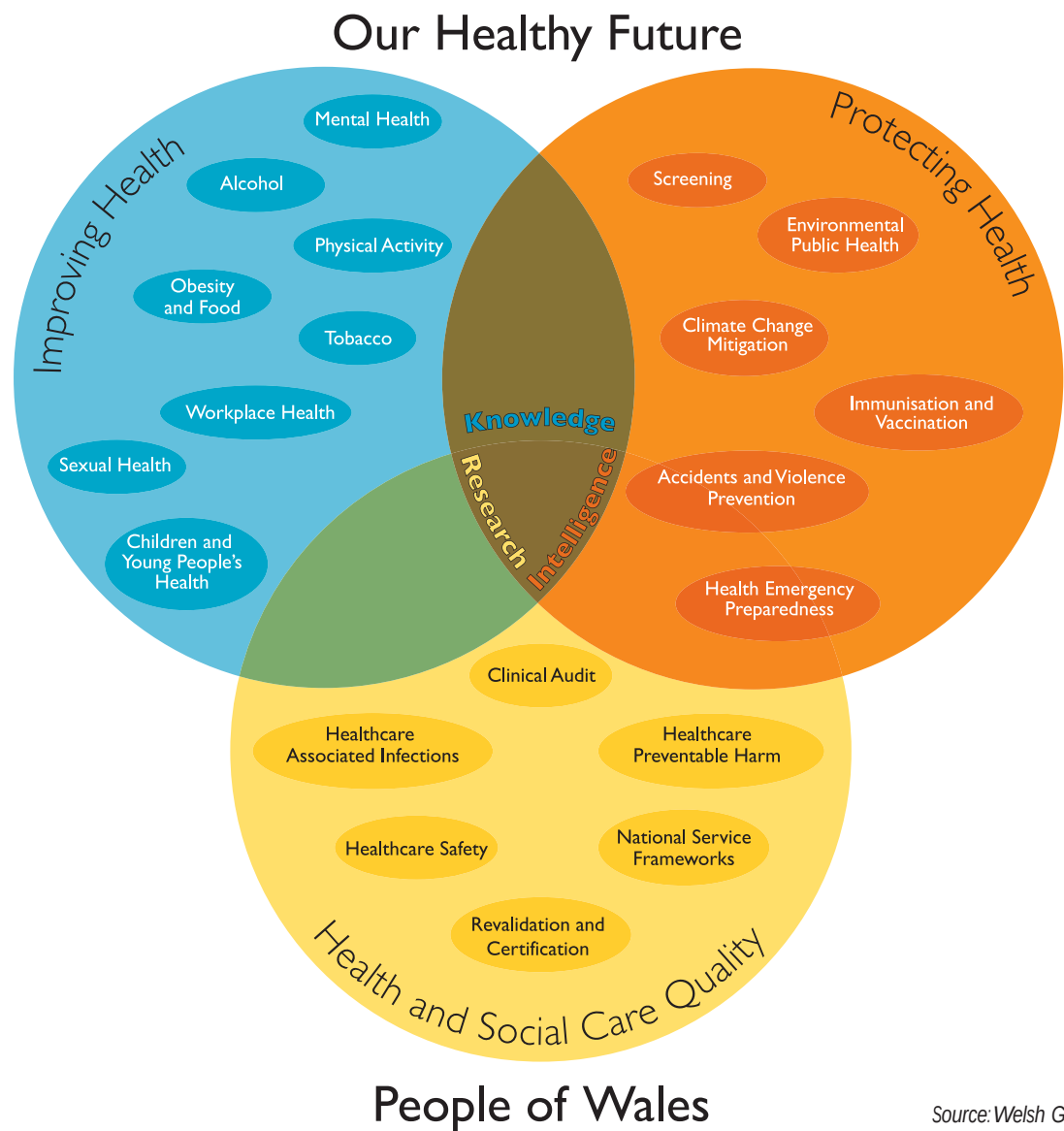


Dr Tony Jewell
Chief Medical Officer

3 Chief Medical Officer for Wales Annual Report 2006

Chief Medical Officer's Recommendations (Chief Medical Officer for Wales Annual Report 2006)
Source: Welsh Government

Figure 34: A model of public health in Wales



Source: Welsh Government

Planning for good health for all

The challenges that we face in this decade are to promote good health for all in effective, efficient and evidence-based ways that reflect our overarching commitment to sustainable development. There has been good innovation in health policy and planning in Wales with important milestones such as *Strategic Intent and Direction for the NHS in Wales*⁴, *Better Health, Better Wales*⁵ and *Designed for Life*⁶. Recognising this need for a public health strategy we developed *Our Healthy Future* and *Fairer Health Outcomes for All*, which build on the previous approaches and

focus direction for the mid to long term. After significant consultation with a number of professional and community groups, *Our Healthy Future* was developed as the modern response to improving and protecting the health of the population of Wales. I am delighted that this is now embedded in the NHS Wales planning framework delivering local agreements with local government partners and endorsed in the *Programme for Government* and *Together for Health*.

Our Healthy Future ten priorities

- Increasing immunisation rates
- Reducing the number of teenage pregnancies
- Improving health in the workplace
- Improving people's mental wellbeing
- Reducing the number of accidents and injuries
- Reducing inequities in health
- Reducing the level of smoking
- Increasing physical activity
- Reducing unhealthy eating
- Stopping the growing harm from alcohol and drugs



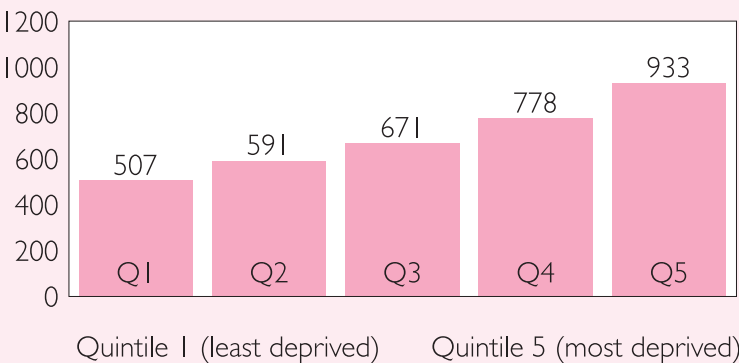
Source: Welsh Government

One of the actions specified in *Our Healthy Future* was the creation and delivery of local public health strategic frameworks, which provide local plans agreed between the local authority, the NHS and community. They are an example of a national strategic framework used by partners to deliver services to meet local needs.

Fairer Health Outcomes for All was published in 2010 as a complementary plan to *Our Healthy Future* to provide a strategic approach to reducing health inequities. This focused on the actions that we need to take to ensure that people in our country do not get left behind and there are equitable improvements in health for all. As described in Chapter 4, inequalities are a significant and major threat to the health and wellbeing of the whole population. While we have had some successes, such as with childhood pedestrian accidents and reducing the gender gap, this is a long-term project that needs sustainability and ongoing political commitment. The *Programme for Government* outlines the Welsh Government ambition for a fairer future and is also clear that we need to look to the longer-term in the decisions that we make now, to the lives of our children's children as well as current generations. All our policies and programmes will reflect this commitment to sustainability and fairness and I am confident that Wales can show a sustainable commitment to social justice through mechanisms such as abolishing childhood poverty, supporting families and giving every child a flying start.

In my first Annual Report I noted that our aspiration was to improve everyone's health and reduce the gap between the most and least deprived parts of Wales. As shown in Chapter 4, we have largely been successful in improving the health of the whole population, but the social gradient remains an issue and in many measures shows an increasing gap with the risk of the most disadvantaged 20 per cent getting left behind.

Figure 35: Male mortality, by quintile of deprivation, 2010
Age-standardised rate per 100,000 population



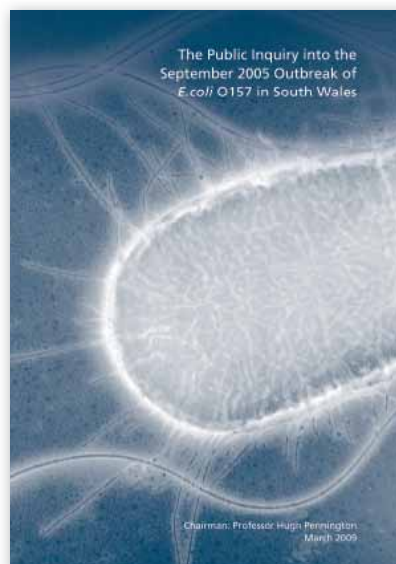
Source: NHS Wales Informatics Service (eHealthshow)

Preventing the preventable

Over the past six years I have advocated the reorientation of health service resources towards prevention-based approaches. This has two dimensions, action to protect health and action to improve health.

One of the main events that has occurred in my time as Chief Medical Officer was the Pennington Inquiry into the outbreak of *E. coli* in schools in the South Wales Valleys in 2005⁷. The inquiry complemented the public health outbreak response. The learning from that inquiry demonstrated the need for health protection services, in whatever organisation, to work professionally, act on their findings on the best available evidence and communicate across institutional boundaries. The lessons that we have learned have helped us improve systems for food safety in collaboration with local government partners and the Food Standards Agency. Raising the standards in food safety across Wales has been important. The support for Wales taking the lead across the UK on moving towards displaying the food hygiene ratings' scores on the doors' of food businesses is a visible symbol of this commitment. The families involved have been an important part of the process as was the advocacy of the organisation Consumer Focus.

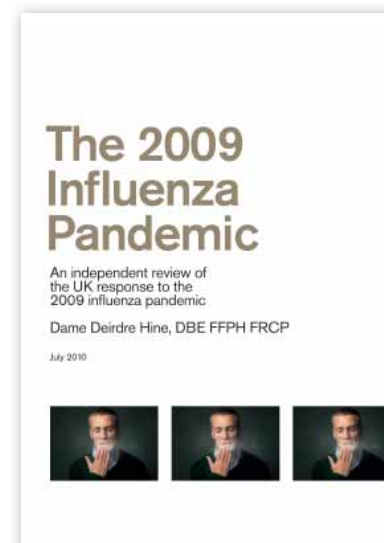
There has also been substantial work on environmental sustainability preparing Wales for climate change with the NHS making major contributions to the quality of buildings and mitigation preparations such as the *Heatwave Plan for Wales*⁸, alongside preparedness for flooding and cold weather too. Climate change is one of the greatest global challenges and Wales with its commitment to sustainability and carbon reduction is leading the way.



Source: Crown Copyright

Perhaps the most obvious area where we have taken a prevention approach is through immunisation and vaccination campaigns. This has led to higher uptake of all routine childhood immunisations since 2006. There has also been good work with improving immunisation rates for measles, mumps and rubella (MMR). New immunisation programmes have been introduced successfully too, such as the successful introduction of the Human Papilloma Virus (HPV) Programme in 2008. This vaccination will help protect against cervical cancer later in life and the uptake has been good reaching 92 per cent of girls having the first dose and 83 per cent completing the full course⁹. As discussed in Chapter 4, we need to ensure that we achieve the 95 per cent uptake target across all social groups to reap the twin benefit of individual and community immunity.

The H1N1 pandemic in 2009 was a major challenge to our health protection system and lasted nine months. In this event the virus was not as severe as it could have been but we estimated that about 300,000 people in Wales contracted the virus, an estimated 30,000 were seen by the health services and sadly 27 people died¹⁰. UK Chief Medical Officers and the four Health Ministers were in regular communication over this time and worked effectively together. Wales performed well during this period and the Hine Report was complimentary on the performance of our emergency response and NHS service¹¹.

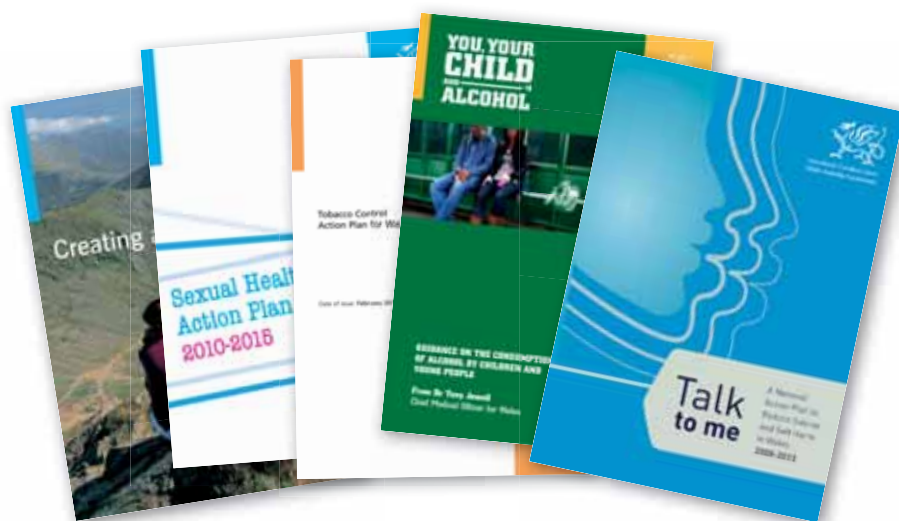


Source: Welsh Government

I was proud to see that emergency preparedness worked, that partnership across sectors survived the pressure and the NHS responded effectively – particularly the primary care system and hospital intensive care services. One key part of health protection is the need to ensure emergency preparedness whether it's for pandemic flu or the Fforestfach fire.

As demonstrated in Chapter 2, a key component of health protection is our national screening programmes. In Wales we have very effective and high quality screening programmes for breast, cervical, and bowel cancer and neonatal hearing screening for example. These have a good uptake and are monitored against quality criteria to improve outcome. New screening programmes such as for abdominal aortic aneurism are planned.

In addition to our work in prevention through protecting health, we have also made good progress in reorienting our services to a prevention approach. Later in this chapter I talk about the threat of non-communicable diseases which are linked to our lifestyles and the challenges that we face in Wales in the mid to long term. Over the past few years we have taken strong action to improve people's health through campaigns and programmes on health-related behaviours such as smoking, alcohol, food and physical activity, mental health and sexual health.



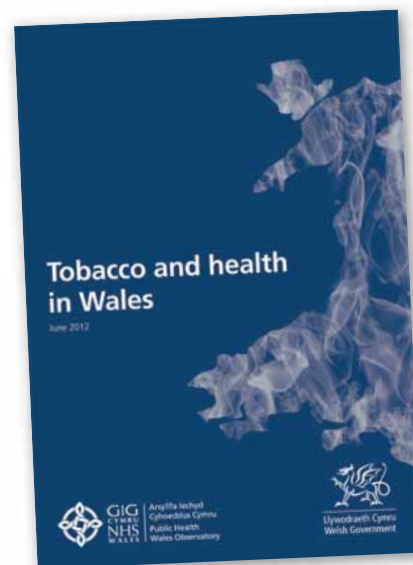
Source: Welsh Government

I view the introduction of the smoking ban in public places in 2007 as one of the leading achievements in recent years. This ban, which was voted in by the National Assembly for Wales back in 2003 and enacted in 2007, not only reduces the risk of people contracting cancers and heart disease through passive smoking but will encourage people to quit and protect their own health. The ban was aimed at enclosed work and public places and we have shown how successful the process was in Wales and how we

have benefited workers and customers by protecting them from environmental tobacco smoke. The present campaign, highlighting the risks of smoking in cars when children are present, is being conducted with the explicit backing of the First Minister, Minister for Health and Social Services and government. It is based on the same approach used in the smoking ban in public places

– taking action to prevent the right to health being infringed. Within the NHS huge steps are being taken with an expectation that NHS workers do not smoke at work, that hospital grounds are smoke-free and that patients and their relatives and friends respect this. Achieving such change is not easy and I commend the Local Health Boards that have taken this on. Smoking kills and it is right that the NHS, which is there to promote health and save lives, should not tolerate smoking in their hospital grounds.

One increasing threat to the health of the population is the damage being done by misuse of alcohol. As I have previously noted, Wales is experiencing a rise in admissions to hospital for alcohol-related conditions including cirrhosis. We have developed a series of positive actions to reverse these trends. I have collaborated with the other UK Chief Medical Officers in producing guidance on children and young people's alcohol consumption, including guidance for parents¹². The UK Chief Medical Officers have lobbied the UK Treasury on the evidence in favour of pricing and taxing the alcohol content of drinks. We have also supported the development and implementation of a brief interventions programme, which sees clinical staff using opportunistic moments to offer advice and support for alcohol-related issues. In 2011 we began the development of the adult Change4Life alcohol campaign, initially aimed at men aged 45-55, which includes a message to 'drink swap' to encourage people to not always take an alcoholic drink.



Source: Welsh Government

We know that we still have a long way to go to prevent entrenched patterns of alcohol misuse that affect the health of individuals and the people around them.

We are aware of the huge sums spent on alcohol advertising, including sports sponsorship by the industry. This requires greater regulation. Just as smoking affects the health of those around the smoker we know that alcohol can affect the health and wellbeing of people around someone who excessively misuses alcohol. This is an issue for the whole country to be taken forward in the years to come.



Source: Welsh Government

The Welsh Government has continued to take strong action on reducing the threat of obesity by encouraging healthy eating. The Change4Life social marketing campaign has been very welcome in encouraging people to change behaviours around maintaining a healthy body weight¹³. Over 35,000 families have responded to the campaign so far. A complementary strand of action is the work of MEND (Mind, Exercise, Nutrition, Do it!), a community, family based programme for overweight and obese children aged between 7-13 and their families.

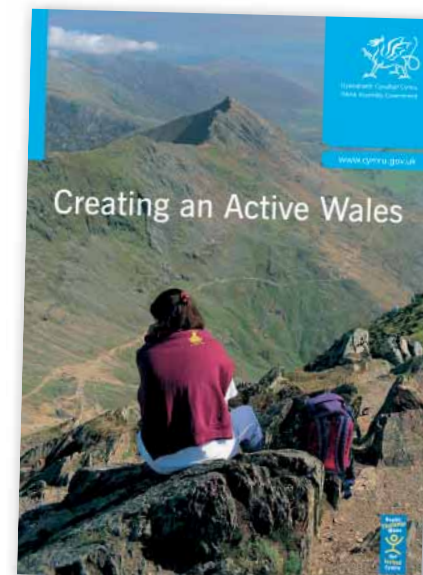


Children partaking in physical activity. Source: MEND

We have also developed a national programme of over 300 community food cooperatives, supplying, from locally produced sources as far as possible, quality affordable fruit and vegetables in local communities across Wales.

We have also introduced changes within different settings for health which promote healthy food. In Welsh schools, the *Appetite for Life Action Plan*¹⁴ seeks to ensure that school meals meet standards and children have the skills to think about healthy food throughout life. In addition we have taken action to ensure that hospitals have the best food for patients and visitors. Through the *Supporting Healthy Food & Drink Choices for Staff and Visitors in Hospitals* initiative¹⁵ we ensure that patients get food that supports good health and as far as possible, we have removed sugar based snacks and drinks from hospital vending machines and canteens. We are aware that modern diets are too high in sugar, salt and fat. Fizzy, sugary and energy drinks are a big issue for us and need to be challenged at a UK and European level.

In addition to the work on healthy and sustainable diets, we have worked across government in developing *Creating an Active Wales: 5 year strategic plan*¹⁶ which focuses on ensuring that we all build physical activity into our daily routines. Physical activity is a good thing in its own right and sedentary lifestyles damage health. We are working across sectors to implement *Creating an Active Wales* by developing an environment to support activity in different age groups to reduce the 30 per cent of the population who are sedentary. New data that has emerged in the past few years shows school-aged boys are doing more and the obesity epidemic is levelling off. However, we need to keep up the pressure to ensure that we have a population that is fit for the future, undertaking more physical activity. As the 2011 report on physical activity from the four home countries' Chief Medical Officers says, "*Start Active, Stay Active*"¹⁷.



Source: Welsh Government

Supporting quality

Health and social care quality is the third domain of public health practice.

Improving clinical quality is exemplified by the development and continuation of the 1000 Lives Plus campaigns¹⁸. I believe that this has shown the best of Wales where evidence-based ideas were brought to the country in partnership with world leaders, such as Professor Don Berwick of the Institute of Healthcare Improvement in Boston, Massachusetts, and communicated to and adopted by clinicians in our NHS. I have been pleased to have supported this initiative from the beginning and participated in a number of events conducted by the 1000 Lives team. We have seen the benefits of immediate improvements in quality and safety through the development of bundles of care across a range of healthcare interventions. However, I think perhaps the most long-lasting benefit of this approach is the way that quality and safety is becoming a visible part of the culture within our NHS. Achieving this cultural change, so that the current generation of clinicians become leaders in patient safety and quality to shape the practice of those that follow, is a significant change.



1000 Lives Conference, Cardiff 2008 – Professor Don Berwick, Maureen Bisognano, Professor Sir Mansel Aylward, Dr Tony Jewell, Professor Jonathan Gray Source: Welsh Government



'Count me in!' 1000 Lives Plus Source: Public Health Wales

1000 Lives Plus is the national improvement programme supporting organisations and individuals to deliver the highest quality and safest healthcare for the people of Wales.

Over the last year, the programme has reported:

- Nurses spending more time at the bedside, improved ward environments, reduced wastage and valuable cost-savings, improved nutrition among elderly patients, better dementia care and faster discharge processes. These are just some of the benefits patients have received thanks to the transforming care work.
- Enhanced recovery after surgery has improved recovery times and for many patients the length of time in hospital has been halved. This approach is now being applied in orthopaedic and colorectal surgery.
- The introduction of the SKIN (surface, keep moving, incontinence, nutrition) bundle in all organisations has led to a reduction in the number of patients developing pressure ulcers.
- Infection rates for seriously ill patients in intensive care units across Wales have fallen significantly and remained that way for three years.

Figure 36: Stroke bundles in Wales

Content	Drivers	Interventions
Improve the outcomes for people following a stroke	First hours bundle – Rapid recognition of symptoms and diagnosis within three hours	• Rapid diagnosis using a recognised tool e.g. ROSIER • Confirmation of diagnosis by experienced clinician • Start aspirin
	First day bundle – Emergency treatment for people with stroke within 24 hours	• CT scan • Admission to co-located beds (ASU) • Swallow screen • Prescription of regular aspirin (if non-haemorrhagic stroke)
	First three days bundle – Early mobilisation following stroke within three days	• 36 hours continuous physiological monitoring • Manual handling assessment • Nutritional screening • Physiotherapy assessment commenced • Getting patients out of bed
	First seven days bundle – Patient-centred and goal-orientated specialist care following stroke within seven days	• OT Assessment commenced • MDT goal setting meetings • Information sharing with patients/carers • Estimating discharge dates
	Reduce the number of episodes of avoidable harm	Interventions identified by the Global Trigger Tool analysis

Source: 1000 Lives Plus

Work to introduce a National Early Warning Score (NEWS) will provide a simple, standardised system that hospital staff will use to assess whether patients are developing potentially life-threatening illnesses and respond accordingly. Improved outcomes for stroke patients through the management of reliable care in a timely way is another example.

An increasing number of falls patients who complete a basic falls risk assessment are part of the good progress to reduce falls among older people. The approach is seeing involvement from the community and voluntary sectors, including housing providers and charities. We have highlighted this approach in the Gwent Frailty Programme discussed in Chapter 3.

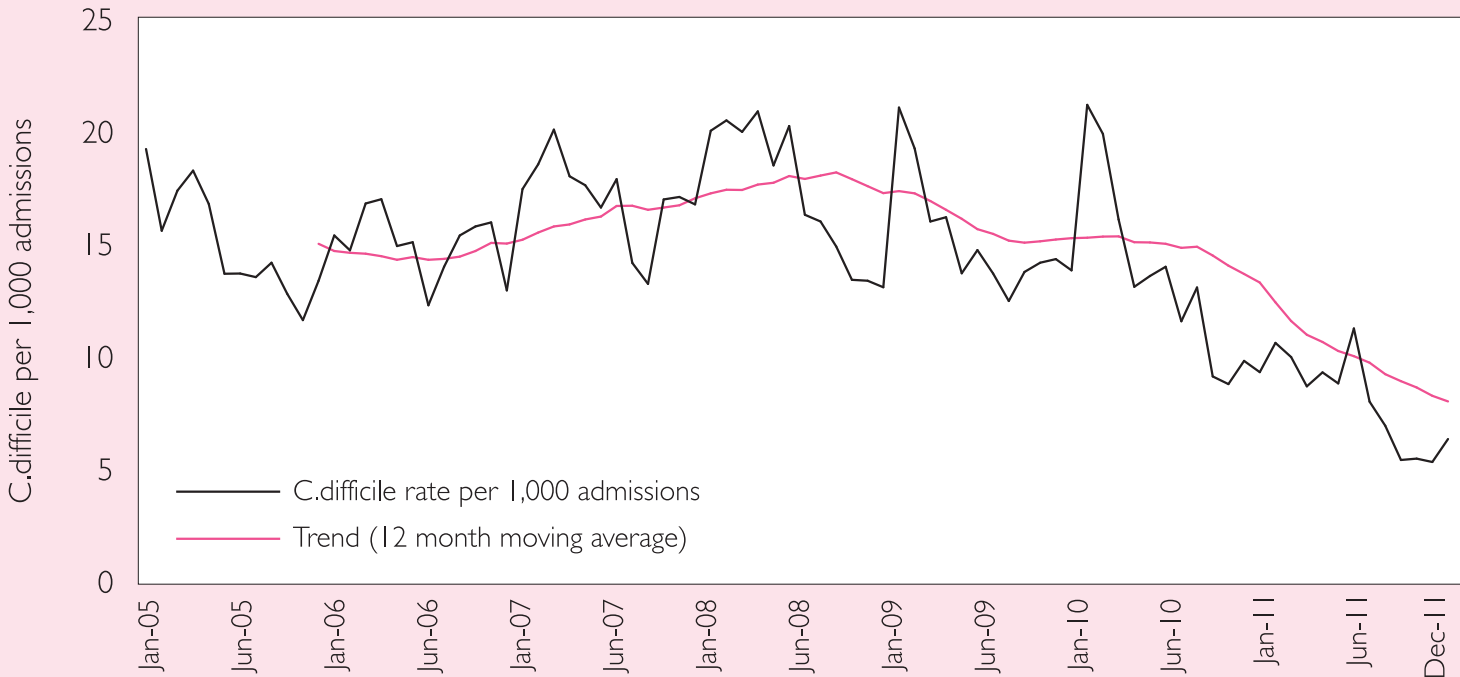
The programme's ongoing work is being developed around three key areas:

- A common and consistent approach to improvement – this will encourage the continuous quality improvement methodology used by 1000 Lives Plus as the model taught and used throughout Wales.
- A patient driven NHS Wales – ensuring that new models and methods place people at the centre of their own health and healthcare. Work has already begun with stroke survivors, their families and carers to capture their unique perspectives and insights to help shape work to improve the support provided to those who have suffered a stroke following discharge from hospital.
- Developing capacity and capability – now and in the future. This involves supporting the current and future NHS Wales' workforce by providing improvement skills.

1000 Lives Plus is already working with universities to incorporate the principles of quality improvement within the curricula. The Student Chapter is also engaging students to promote quality improvement and patient safety and now has over 1,500 members.

Healthcare associated infections (HCAs) are preventable and a quality indicator. They remain a challenge for the Welsh NHS. However, with the joint working between the Welsh Government, Public Health Wales, the Local Health Boards and community services, we have seen changes to testing, management and prevention through the mechanism of the Healthcare Associated Infections Framework of Action. The 56 per cent reduction in C.difficile rates since 2005 is an example of this¹⁹.

Figure 37: Rate of C.difficile per 1,000 admissions in inpatients aged older than 65 in Wales, January 2005-December 2011



Source: Pubic Health Wales

Revalidation and lifelong learning

Evidence from the past few years has shown that qualifying as a healthcare worker is not enough, that we need continual focus on quality and safety throughout a career. We need appraisal tools and systems such as revalidation to ensure that clinicians and practitioners are fit to practice and maintain the trust and positive evaluation of their patients. Wales has led the way across the UK in respect of GP appraisal systems with a very high uptake of trained appraisers and a computer assisted process. We are rolling out a similar system within the hospital and community sector in Wales. The self assessments show that there are still gaps in our system of appraisal and job planning which we need to address urgently, so we are prepared for the General Medical Council timetable and requirements of other professional regulators.

I am pleased to have worked with colleagues across a number of professional staff groups, with the Royal Colleges and Academy of Medical Royal Colleges Wales, the British Medical Association and professional associations in a joint approach to ensure we have the best, well trained colleagues working within the health sector. We have had the common aim of wanting to attract the best students and doctors in training to Wales to deliver quality services for the people of Wales. I look forward to seeing an Academy of Royal Colleges developing in Wales which brings in the best evidence and advice from UK colleges but sets it in the context of Wales in support of our system. In addition the creation of an academic board for medical and dental education in Wales provides us with an opportunity to develop a national approach to ensuring fair access to medical schools, working cooperatively across Wales with undergraduate and postgraduate training.



Source: Welsh Government

Developing research and the academic sector

The need for research and learning is vital if we are to continue to develop the way we work and contribute to the improvement and protection of health and raise the quality of health and social services. The legacy of Archie Cochrane is visible, and through the Cochrane Collaboration is a global symbol that exceptional research can come from Wales and that research can have a direct and long-lasting benefit for the people of Wales. I am pleased that in my time we have seen a proper recognition of Cochrane's contribution by hosting an excellent Day of Reflections in 2008; appointing the first Cochrane Professor in Wales; and naming the new medical school building in Cardiff after him with information about his work influencing the next generation of medical students and doctors. The building was opened by Professor Sir Iain Chalmers, who collaborated with Cochrane in his early days in obstetrics and perinatal medicine while in Cardiff, and provided the leadership for the international Cochrane Collaboration. Professor Peter Elwood who succeeded Cochrane as Head of the Medical Research Council (MRC) Epidemiology Unit has continued to contribute to epidemiological research in Wales in respect of the Caerphilly cohort and the benefits of aspirin in the prevention of cardiovascular disease, cancer and possibly dementia too. He will deliver the annual Cochrane Lecture in 2012 at the UK Faculty of Public Health Conference to be held in Wales.

In my time in Wales I have been fortunate to collaborate with a vibrant and innovative research and academic community supported by a Government that values the importance of the sector for the country. I am pleased to have worked with colleagues to reshape the way that we work with the research and academic community through increasing government investment in health and social care research and development (nearly doubled between 2007-10) and the creation of the National Institute for Social Care and Health Research (NISCHR) in 2009 from the Wales Office of Research and Development (WORD).

The life sciences are one of the priority areas of the Welsh Science Strategy, and this sector is seen as a key strength in Wales.



Source: Welsh Government

NISCHR has a starting point that research and innovation are central to good patient and social care. This work involves a wide range of partners including patients, service users, the NHS, Social Services, universities, research contacts, industry, government and charities. NISCHR's three aims are to streamline research, support excellence and innovation and invest in the future. It is very important that we make the best use of the assets that exist in the country. In addition, through the creation of the Academic Health Science Collaboration we have stronger links than ever between NHS organisations, Welsh universities and private sector partners which will speed the time between the lab bench and the bedside. The creation of a Biomedical Research Centre and three Biomedical Research Units across Wales is a visible sign that NISCHR will support excellence and provide vitally important infrastructure support to these teams.

As well as the work looking at the way the Welsh Government funds health and social care research within Wales, colleagues have been ensuring that Welsh institutions and researchers are facilitated to secure funding from outside sources such as the UK Government and the European Commission Framework Programme 7 (FP7).

I participated on behalf of Wales in the UK based Office for Strategic Coordination of Health Research (OSCHR), which is a UK strategic partnership enabling researchers in Wales to access UK research and development resources through competitive processes. An example of success for Wales is the MRC Centre for Neuropsychiatric Genetics and Genomics at Cardiff University which opened in 2009²⁰. This is the first UK facility dedicated to harnessing the genetics revolution for research into mental disorders. Wales has a strong world class research group looking at important conditions, such as schizophrenia and dementia and their genetic components. This designation as a MRC Centre was the first such centre in Wales since Cochrane's unit back in the 1980s.

Another example of a UK centre of excellence is the Centre for the Development and Evaluation of Complex Interventions for Public Health Improvement (DECIPHer). DECIPHer is one of five UK Clinical Research Collaboration (UKCRC) Public Health Research Centres of Excellence designated in 2009. It operates as a collaboration between Cardiff, Swansea and Bristol Universities, researching the effectiveness of interventions to change behaviours. Other areas of world class research include immunology and infection, primary care, public health informatics, genetics, imaging, cancer research (including stem cells) and arthritis research.

Developing modern information systems that support clinical decision making, analysis and performance benchmarking

Information and intelligence is central to every decision in health in the 21st century and in the centre of the three domains of public health practice. Knowing what resources we have, how we can best apply them and whether our actions make a difference are fundamental questions. I am pleased to see the progress that has been made in this vital area since 2006.

As discussed elsewhere in this document, the Public Health Wales Observatory is providing much needed analytical capacity to colleagues across the country. They need to continue to develop their leadership on the analysis of routine data from all sources, linking it to the Secure Anonymised Information Linkage (SAIL) Centre in Swansea and ensuring effective collaboration with the NHS Wales Information Service (NWIS) and government statisticians.

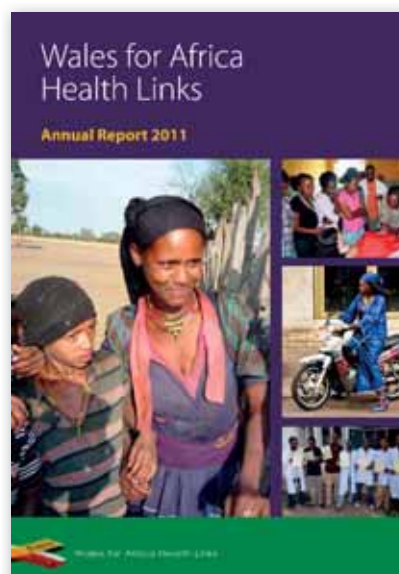
I am more concerned that Wales needs to move quickly to harness our interest, expertise and resources in the information and intelligence field. One of my recommendations in the Chief Medical Officer's Annual Report for 2010 was to call for the development of a health intelligence strategy to galvanise activity in this domain. I am pleased that NISCHR has an Informatics Strategy Group at work. It is also encouraging that the SAIL centre at Swansea University, which NISCHR has supported over the years, has applied for a UK Centre of Excellence bid through the MRC. We need to ensure that the current organic growth in intelligence is coordinated and strengthened so Wales can be the leader across the UK with a joined up IT/information system enabling more effective service delivery as well as enabling researchers access to the information available. This can engage the citizen too as managing 'My Health' online²¹ can support individuals who can also consent to being part of a wider research endeavour – a vision for a Welsh information centre and biobank platform.

There is more evidence and knowledge generated relating to the health of individuals and communities than at any previous time in our history. Part of the skills we have developed is to take evidence and systematically apply the learning, challenging traditional practices, political positions and public beliefs. For this to continue it is important that professionals within the wider Welsh health community feel enabled to advocate the need for change and be restless for improvement.

International health engagement

One developing area in the past six years has been our work in engaging with others beyond Welsh borders. In my time as Chief Medical Officer for Wales I have travelled with health volunteer colleagues to projects in sub-Saharan Africa. In places such as Lesotho, Mbale in Uganda and in Southern Ethiopia, the wider Welsh health community is making a difference. The work of the Wales for Africa Health Links group shows what can be done in linking together, sharing intelligence and expertise, and bringing the lessons home to Wales. The Welsh Government has been pleased to support them through providing infrastructure support with Public Health Wales and the Wales4Africa Health Links Grant Scheme.

To capitalise on the good work that is being done internationally we have developed an International Health Framework to provide a coordinated and coherent approach to Wales' international and global work. The framework calls for the development of an International Health Coordination Centre with a renewed strategic focus within the Welsh Government.



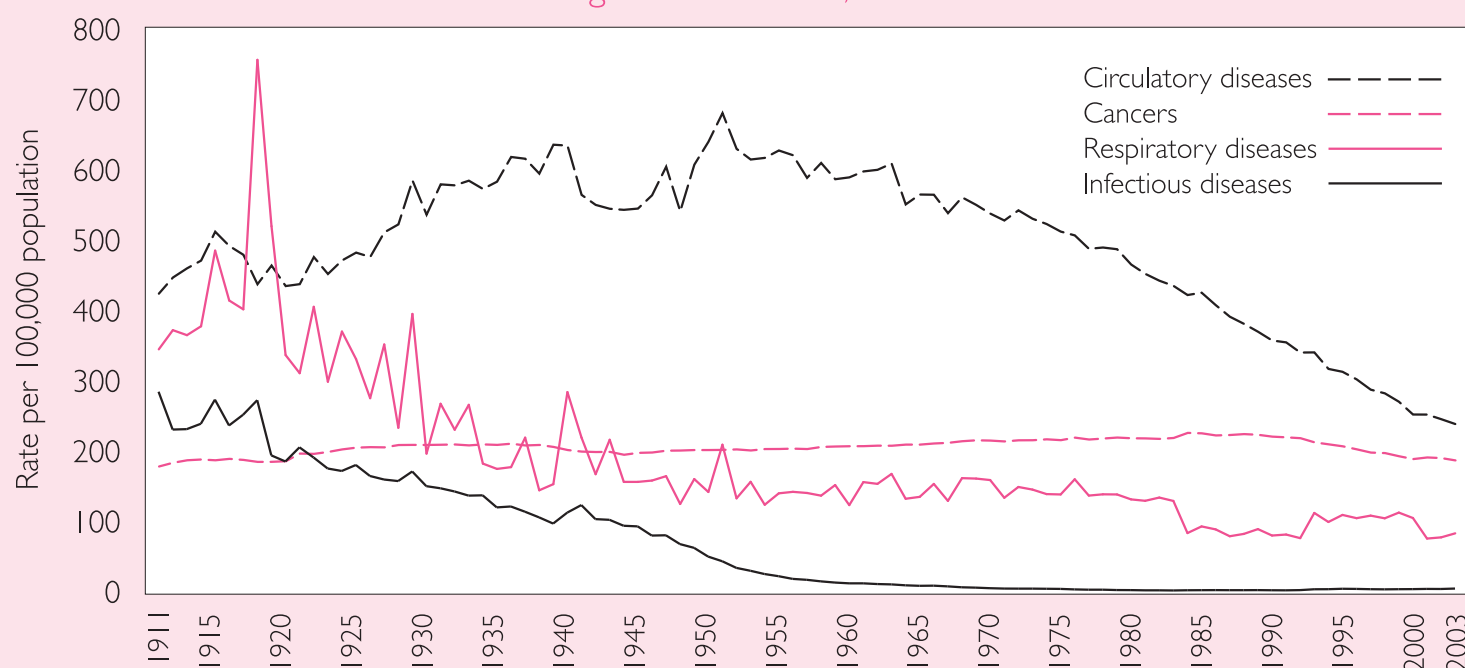
Source: Welsh Government

From the past to the future

Ten years into the 21st century and we face a reorientation in the key threats to the health of the population. The story of the past 150 years is the story of changing disease cycles and the health response to those challenges. In the middle of the 19th century the principle cause of death was related to infections and communicable diseases such as tuberculosis, pneumonia and epidemics such as cholera.

Many of these diseases were allowed to flourish due to the lack of sanitation and living conditions of the majority of the population. The origins of professional public health are in this era. The pursuit of clean air, light and water. Moving into the 20th century changes to the places and ways of living meant that many of these deaths were being curtailed but there remained pandemic threats such as the global Spanish flu epidemic in 1919 and HIV/AIDS in the 1980s²².

Figure 38: Age-standardised mortality rates for selected broad disease groups, England and Wales, 1911-2003



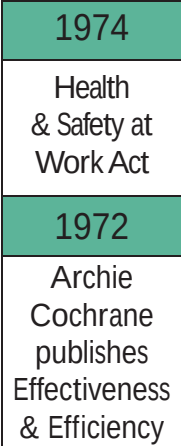
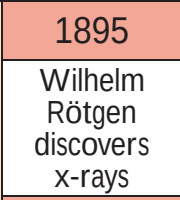
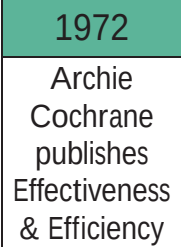
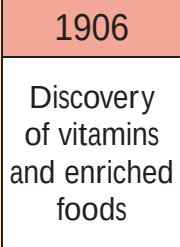
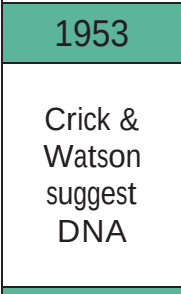
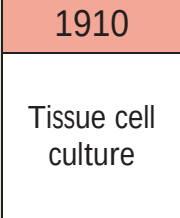
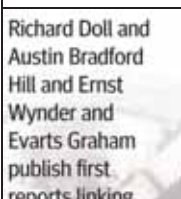
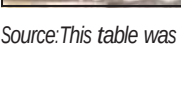
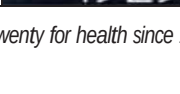
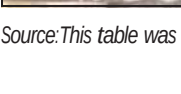
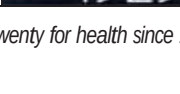
Source: ONS

For most of the 20th century the leading cause of death in Wales was from circulatory diseases (heart disease and stroke). The increase in the numbers of these deaths was the result of a decline in deaths from infectious disease meaning people were living longer, combined with increased rates of smoking and changing diets and lifestyles. However, this increase is being reversed to the point that heart disease is no longer the leading cause of premature death for some population groups.

The reverse in outcomes for this group is due to a number of reasons. These include the marked reduction of smoking and changing medical technologies such as the prescription of effective drugs (including statins and interventions such as coronary artery stenting/revascularisation), as well as concerted efforts across government and society to change the way we live.

A few years ago in the UK and USA there were surveys done to assess the most important medical innovations over the past 150 years. Figure 39 provides a summary of the British Medical Journal (BMJ) and Centres of Disease Control (CDC) findings²³.

Figure 39: Top twenty milestones for health since 1840

 1842	1842	1854	1862-1870	1885	 1890
 1842	Edwin Chadwick Report on health of labouring population	John Snow and the Broad St Pump (linking water and cholera)	Robert Koch articulates germ theory	Louis Pasteur develops a rabies vaccine	 1895
 1974	Sanitation Germ theory Workplace health Road safety Nutrition & food safety		Evidence based medicine Risks of smoking Heart disease prevention Oral hygiene Oral rehydration therapy		 1906
 1972					 1906
 1953					 1908
 1953	Computers Imaging Tissue culture Immunology Discovery of DNA structure		Vaccines Antibiotics Anaesthesia The Pill Chlorpromazine		 1910
 1951					 1910
 1950	1950	1949	1945	1930	 1929
 1950	Chlorpromazine first synthesised	Oral and intravenous rehydration to treat Infant diarrhoea	First Edition of the Highway Code Published	Availability of nylon toothbrushes to improve oral hygiene	 1929

Source: This table was adapted from the BMJ supplement on the top 15 medical milestones and a similar CDC Atlanta review to create a combined top twenty for health since 1840.

What is of interest in this list is the combination of milestones that relate to knowledge (germ theory) and action on the wider determinants of health (sanitation) with legislative measures such as health and safety at work, road safety and food safety. These social determinants then join the developing technologies (computers/imaging/tissue culture) with fundamental scientific developments such as the structure of DNA/immunology and the need for evidence based medicine. Health promotion and public health's role in smoking prevention and heart disease prevention, oral hygiene and vaccines get onto the list. Finally, the therapeutic contributions such as the contraceptive pill, oral rehydration, anaesthesia, antibiotics, and chlorpromazine for the management of serious mental illness are captured. The Chief Medical Officer role in government is very broad and needs to have this wide overview to span the social determinants all the way through to specific advances in medical treatments in order to advise the Welsh Government on relative priorities and support policy for development across government.

Entering the second decade of the 21st century we are faced with new challenges to sustainable health. More than half of our population are overweight or obese and a third are sedentary. Lifestyle factors are our current challenge. The changes to demography show that people are living longer and that more people are going to have to be supported to live longer. We want this to be an increase in *healthy* life expectancy.

The rise of non-communicable disease

In my series of Chief Medical Officer Annual Reports, I have highlighted the issue of non-communicable disease (NCD). This is without doubt the largest challenge facing the health system in Wales and the ongoing sustainability and affordability of the Welsh NHS. Taking action to reduce the impact of NCDs has been a fundamental driver of all public health action for the past six years and, in my view, must remain central to the Welsh approach.

The Director-General of the World Health Organization has called the NCD epidemic a “slow-motion disaster”²⁴. This is an issue for all people across the world in the developed and, increasingly, the developing world. NCDs are estimated to account for 63 per cent of all premature deaths globally²⁵.

Figure 40: The four principle risk behaviours

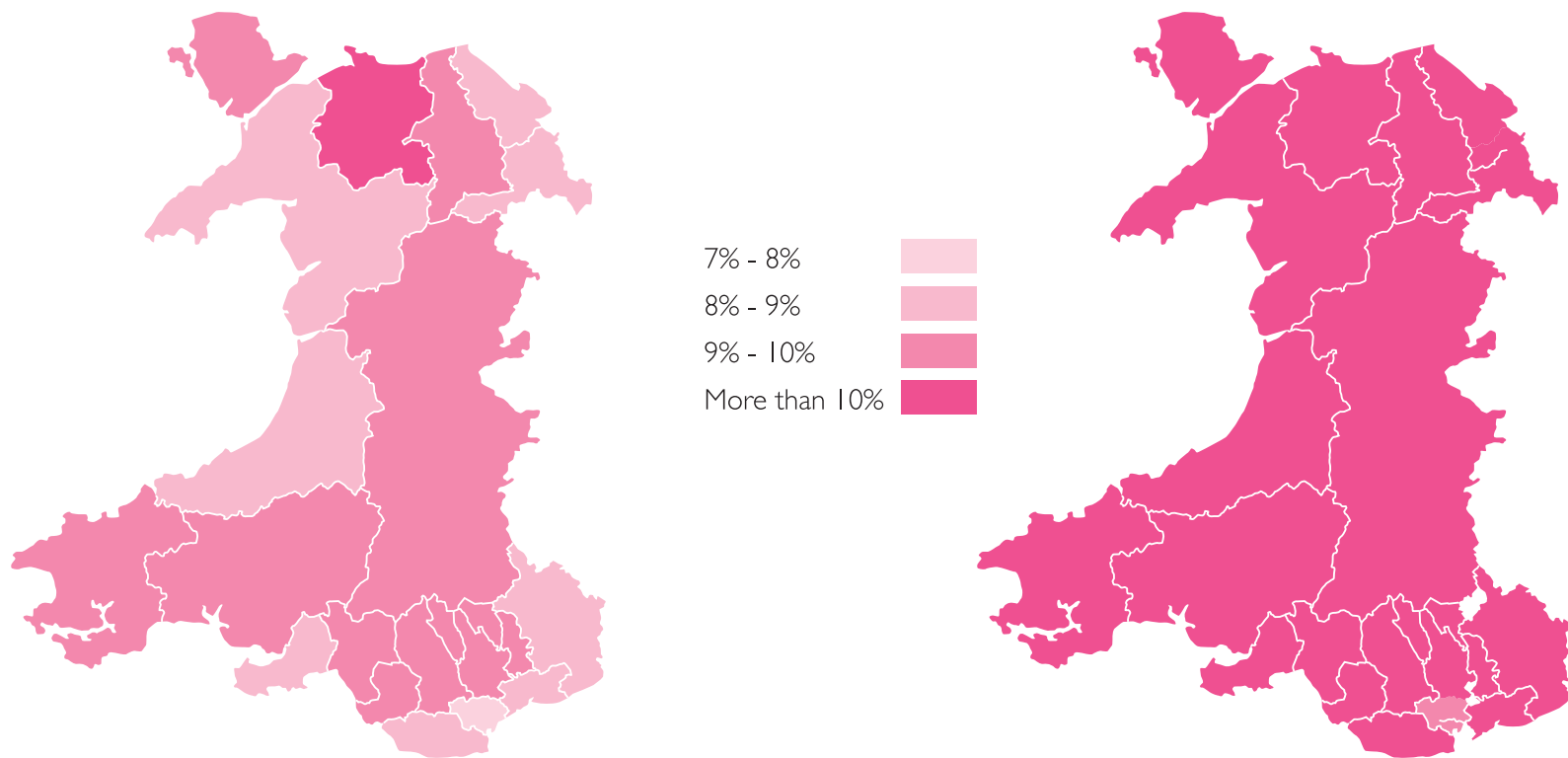


Source: Welsh Government

The paradox is that as more people contract lifestyle related conditions such as heart disease, hypertension and type 2 diabetes; the medical profession has got better at treating the conditions and ensuring longer survival rates. However, treating the problem is not enough; these are largely preventable conditions and we need to make sure we stop as many people as possible from developing them in the first place.

The situation in Wales largely mirrors what happens outside of the country. An example of this is type 2 diabetes. It is estimated that the number of people with diabetes in Wales will increase by around 100,000 between 2010-30²⁶. There are similar models that predict the rise in people living with NCDs in Wales that will potentially lead to unsustainable demand on our health system.

Figure 41: Estimated diabetes prevalence in Wales, 2010 and 2030



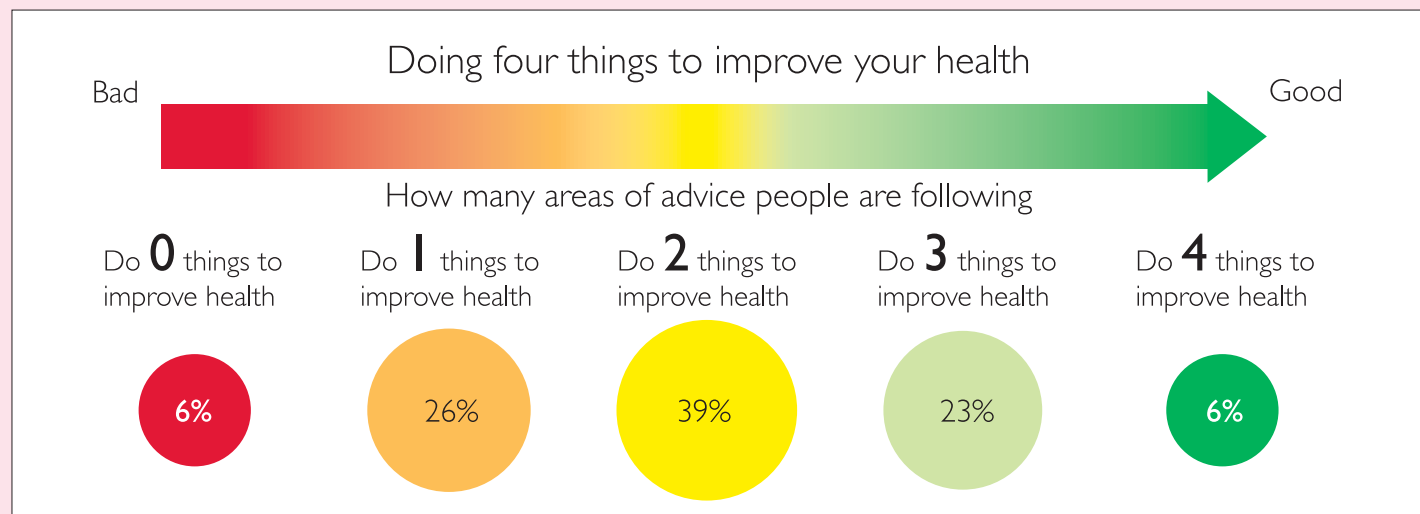
Source: Association of Public Health Observatories

Identifying risk factors

In September 2011 the United Nations (UN) conducted a 'high-level' summit on the challenge of NCDs across the world. As a mark of the seriousness this subject is viewed at the global level, this was only the second UN led health summit in the history of the organisation following one on HIV/AIDs. The principle message for all participants in last year's conference was that action is required to reduce the impact of the four risk behaviours most responsible for driving premature mortality, cancer, cardiovascular diseases, chronic obstructive pulmonary disease and diabetes.

The four principle risk behaviours are the harmful use of alcohol, tobacco, unhealthy diets and physical inactivity. Tackling these issues has been a cornerstone of Welsh health policy and forms a major component of the work of *Our Healthy Future*. I have also collaborated with the other Chief Medical Officers of the UK in producing joint advice in a number of areas such as alcohol, physical activity and tobacco control. At present we have achieved some success in working with the population to promote the adoption of practices based on the best evidence but as these data show we have a long way to go.

Figure 42: Proportion of adults that follow advice on risk behaviours, 2010



Source: StatsWales

Figure 42 shows the scale of the challenge and we need to 'shift the curve' so a higher proportion of the population adopt healthier lifestyles. Small changes in the population as a whole can have a major impact on health.

Supporting the public's health



Source: Welsh Government

One of the important images from my career is a sign over what used to be the Medical Officer for Health Office: Southwark Council. The sign over the door is a translation of a phrase from the Roman Senator Cicero, "*Salus populi suprema lex esto*", the health of the

people is the highest law²⁷. What this plaque represents is the idea that the actions of government and health service should be for the wellbeing of the population.

As Chief Medical Officer for Wales, my job is to advise the Welsh Government on evidence-based actions relating to risks to the health of the people of Wales. This means translating the best knowledge we have to support the Welsh Governments' ambition to have better health and wellbeing for all with reduced inequalities. This sometimes means putting forward views that may inhibit personal actions or restrict choice. We have an opportunity in Wales to take Cicero's advice and use the Public Health (Wales) Bill to codify the commitment to the "Health of the People of Wales". The 'Health of the People Bill' will complement the Sustainable Development Bill, to aim to promote economic, social and environmental health and wellbeing of the people. This is an important role for government but is not sufficient to achieve the changes we want to see.

Shared responsibility for health



Aneurin Bevan, Cardiff
Source: Welsh Government

Why do we need a new relationship with the public?

Involving communities in assessing and designing services improves those services. Involving individuals in treatment decisions and self management improves outcomes. Over the next five years, there will be a sea-change in the relationship between the Welsh Government, the NHS and the people of Wales, based around a 'compact'. The NHS will work closely with the whole of the public sector to achieve this. The Welsh Government and the NHS will provide better information on health and health care services. More will be done to help people understand health issues and manage their own care, including those who may need special support. The Welsh Government will continue to strengthen support for carers, who are so important in so many lives. The NHS will undertake full and continuous engagement with local communities around service redesign, working with Community Health Councils in Wales, local media and elected representatives. It will also demonstrate how in practical ways engagement is strengthening its accountability to patients and the public.

It will enthusiastically implement the new Welsh Language Strategy for the NHS. In return, the Welsh Government and the NHS will look to the people of Wales to use that information and those services well and appropriately, and to take more responsibility for themselves and those around them.

Health literacy

*The evolving concept of health literacy*²⁸ identifies two broad approaches to health literacy, firstly as a risk factor for poor health that requires strategies to mitigate or reduce the impact on health and wellbeing. Secondly, is a more expansive approach that considers health literacy to be an asset that can be developed within individuals and potentially communities to enable them to reach their potential.

A review of the literature confirms that health literacy is still an evolving concept, subject to considerable international debate and discussion. In some countries including Wales and Canada, definitions and models of health literacy have evolved to an extent that they are like models of behaviour change. There is little, if any confirmatory research evidence, however, that has tested these more expansive models of health literacy at a population or individual level. It has been argued that until a clear understanding of health literacy has been achieved, work to develop measures at a population level is unlikely to be successful²⁹.

It is clear however, that health literacy has the potential to impact on all of the domains of public health practice in relation to how individuals use and benefit from healthcare interventions and services, how they act to promote and protect their own health and wellbeing, and how they respond to public health emergencies and threats. More broadly, educational attainment (literacy/numeracy) has always been a key public health objective, which is a building block to enable people to understand risk and make changes. Educational attainment usually is at the heart of good health at low cost³⁰.

We know this is a challenge in Wales with 12 per cent of the population found to have literacy levels at entry level or below in 2010. This is a considerable improvement on previously reported data (25 per cent in 2004) but continues to represent a potential threat to the health and wellbeing of around one in ten of our population³¹.

Advocacy

The World Health Organization Bangkok Charter (2005)³² states that progress towards a healthier world requires strong political action, broad participation and sustained advocacy. That advocacy needs to come from several parts of the community.

Having strong and empowered Directors of Public Health is an important aspect to connect, communicate and drive change for a local population. A key tool of the Director of Public Health is their annual report which is an independent report on the health of their local population and advocacy for change. Over the course of the past two years it has been pleasing to see the way the local Directors of Public Health reports have been received by Local Health Boards as a catalyst for change. This Chief Medical Officer Annual Report is at a national government level similar to the local annual reports on the health of the population. The population is different, and for me, the Welsh Government is the statutory organisation while for local Directors of Public Health it is their Local Health Board and local authorities.

Local Directors of Public Health have a position that spans action within Local Health Boards, working nationally with Public Health Wales and working with local authorities in the development of local services and approaches to health. As Chief Medical Officer I have visited all the Local Health Boards of Wales and seen how the Directors of Public Health operate locally. They can, and are, making a difference in providing a focus on the health of the population. As Executive Directors, the Directors of Public Health work with others as equals to promote

the role of public health locally. The Director of Public Health role needs to be supported and strengthened to become the fulcrum for action on health within local communities, with specialist knowledge and information support provided from Public Health Wales. This will be the 'unified public health system' in practice.



Source: Welsh Local Health Boards

Make good health and wellbeing the by-product of everything we do

For real change to be sustained it is imperative that health is considered in all the actions of government. Governments, both at the local and national levels, have unparalleled ability to improve and protect health by using the strength of strategic approaches in a range of policy areas. We have seen this in Cardiff where the local council have taken a lead with South Wales Police and the NHS in working to reduce the occurrence of violence and harm and its impact on the night time economy. Similarly we have seen local authorities develop healthy spaces that encourage physical activity by promoting cycling and walking in sustainable towns. However, we can do more than this.

In previous Chief Medical Officer's Annual Reports I have advocated a greater use of Health Impact Assessments (HIA) to plan for health. This is supported by the work of the World Health Organization draft European Health Strategy, *Health 2020*³³. One change from existing positions is the need to apply anticipatory approaches to health-related policies in

addition to the existing reactive use of HIA in applications such as the Wylfa nuclear power station on Anglesey or the Hanson Cement assessment. There are evolving ways of modelling the impact of changes on the health of the population that will help understanding of the nature of decisions. The expert work in this area of the internationally recognised Welsh Health Impact Assessment Support Unit (WHIASU) needs to be supported and developed. In addition, we need to engage other Welsh and international resources to strengthen our approach in this area, including in some cases, using citizen juries.

Leadership

Changing our approach to health requires leadership from a number of sectors: from government, the NHS and from communities across Wales. There especially needs to be leadership in translating evidence to practice in the face of popular opinion. Wales is very fortunate to have leadership at a number of different levels and in different sectors. One aspect of the 1000 Lives campaign is about the development of a faculty of clinical leaders who can set an example and share good practice across clinical environments. Another different type of leadership can be found in communities across the country where people that are concerned about the health of their populations have stepped up to encourage change.

Participation

As well as encouraging the development of leadership within the wider health community of Wales, for health to move onto a fully engaged scenario we need to support participation in health decision-making. Emerging approaches from Scandinavia, Germany and the Netherlands include the development of local health conferences which are aimed to get the advice and consent of communities in planning health services and distributing resources. We have had successful citizen juries held in Wales which allowed a 'jury' to grapple with complex information and come to a view on a range of issues such as aspirin and prevention and the health benefits of milk³⁴.

Part of the challenge to the wider health community to stimulate public participation in making decisions about health is the need to use new communication techniques that encourage engagement. Examples from organisations such as the World Health Organization and NHS institutions show how social media can be used to promote access to ideas and material on health. The use of texting to answer sexual health questions has been successful. An example that we have in Wales is the Change4Life branding which is using different approaches for different circumstances such as alcohol, food and physical activity. Part of the social media approach is to make contact with individuals and families, develop an ongoing relationship and link with them. However, we need to ensure that electronic means do not become the sole avenue of communication as there is evidence that there is a growing digital divide between those people that are comfortable with using social media and those who are not.

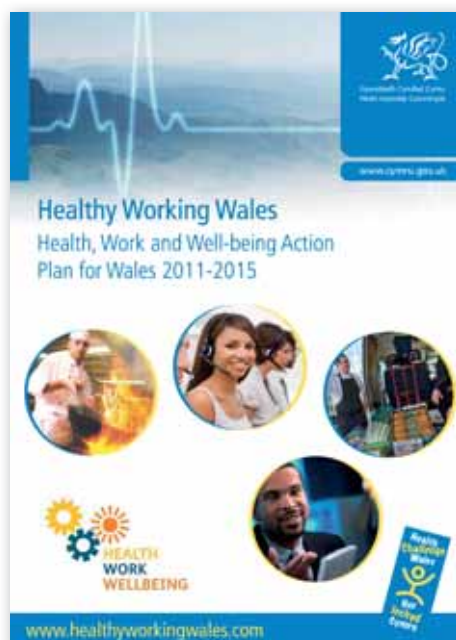
Concluding thoughts

Improving and protecting the health of the people of Wales is a marathon and not a sprint. When I took the position as Chief Medical Officer I was aware of the scale of the challenges we face in Wales. However, I was also aware of the positive legacy I was inheriting from the previous Chief Medical Officers and others who had made a difference to the health of the population. Without this support it would have been impossible to make the gains we have. If we are to be a country that exemplifies a commitment to solidarity, equity, sustainability and wellbeing then this support needs to be fostered and strengthened. I am sure my successor, Dr Ruth Hussey, will be able to take this agenda forward.

In my period as Chief Medical Officer for Wales we have had some significant successes. The concerted action on tobacco will mean that fewer babies and children will be harmed by smoking and less people will die from the effects of smoking.

Our work in supporting schools as a setting to enhance health will mean that they will have the ability to access a range of tools and knowledge to build their own health and there are signs of improvement such as increasing physical activity in boys and reducing alcohol consumption and smoking in both boys and girls.

I am pleased that our high teenage pregnancy rates have reduced. The refocusing of the public health system will mean that clinicians and the population will have access to world-leading advice and evidence to make decisions to support health gain through the 1000 Lives Plus campaign and much improved clinical audit and information systems. Clinical leadership through Medical and Nursing Directors has been important within the NHS. I am particularly pleased to see the development of the role of Directors of Public Health in Local Health Boards across Wales which are galvanising activity on health within integrated health systems and with partners in local authorities and the third sector. Public Health Wales is also a major strength in Wales which supports our resilience and is a source of specialist public health experience. Our work on healthy workplaces means that people are supported in being fit for work and enhancing wellbeing and our *Healthy Working Wales*



Source: Welsh Government

Scheme is pacesetting. I am also pleased with the development and implementation of *Our Healthy Future* and *Fairer Health Outcomes for All* which provide strategic direction to systematically address health inequalities and promote health. It is vital that effort is continued to support these programmes of action and delivery to 2020 and beyond.

Going forward I think it is important to continue to commit to preventing the preventable, in the short, mid and long term. For example, the introduction of vaccination programmes usually deliver the 'cliff-edge' change and stopping smoking shows what can be done to improve and protect health.

Equally the shift to a more preventive approach for hypertension shows the changes that can occur in the mid term of three to five years in reducing stroke and heart attacks. The work of Sir Michael Marmot and the Commission for Social Determinants of Health shows what can be achieved through sustained long term change to the way that we organise society focusing on the early years.

We need to maintain a focus on systematically turning evidence to practice in areas that affect individuals and communities. The work of Archie Cochrane, Julian Tudor-Hart, Peter Elwood and the new generation of exceptional health researchers in Wales needs to be translated into reality and local action. We have world class researchers in Wales who span the breadth of research from the genetic/genomic/stem cell research, through to clinical trials and to the analysis of complex policy impacts done by DECIPHER. For public health research and teaching in Wales and beyond our borders, the development of the Institute of Public Health in Wales remains essential in making sure that we have an effective and efficient national approach to public health teaching and research across the country.

Looking forward, the commitments in *Programme for Government* and *Together for Health* are sound and the focus on delivery is right. Wales, with its integrated devolved government can show the way, especially if Ministers in all portfolios remember that the people's health is the highest priority.

In Wales we:

- know where need exists by having good information and intelligence;
- have a strategic framework: *Our Healthy Future*;
- practice in the three domains of public health;
- work in a unified system supported by Public Health Wales; and
- are led by a government committed to deliver a healthy future.

Gorau cyfoeth, iechyd! The best wealth, health!

Source: Welsh Proverb

Public health in Wales: a nation comes of age

Since devolution in 1999, Wales has gradually accrued an increased degree of self government, culminating in the vote this year to give the Welsh Assembly full law-making powers in a wide range of areas: a result First Minister Carwyn Jones hailed as the day “an old nation came of age”. Jones’ statement that his government is considering using these powers to ban smoking in cars containing children is a welcome move....

....“It can be done, and it does make a difference”, Chief Medical Officer Tony Jewell told *The Lancet*. Yet this is only one of the ways in which Wales is providing a lead in public health. Jewell pointed out that the Welsh Government was the first in western Europe to make sustainability one of its operating principles; similarly, the reduction of child poverty is an integral part of new policies.....

....A proposed public health bill promises interesting future developments. If the Welsh Government can deliver, it will be instructive for medical professionals worldwide as an example of a public health approach that other countries can consider introducing.

Source: Editorial, *The Lancet* 30 July 2011

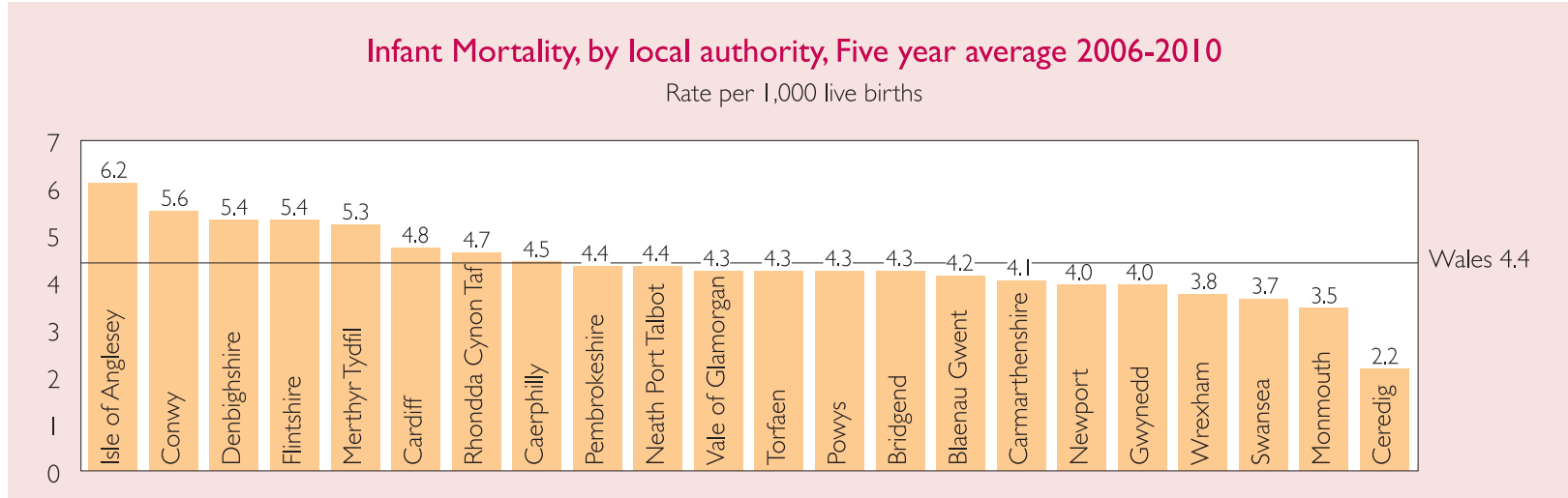
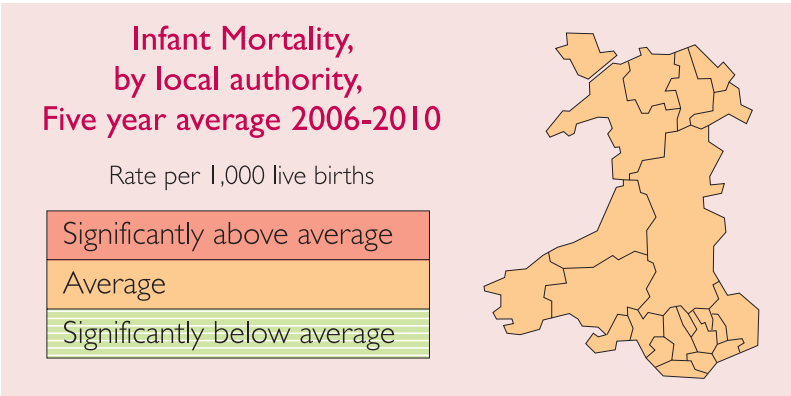
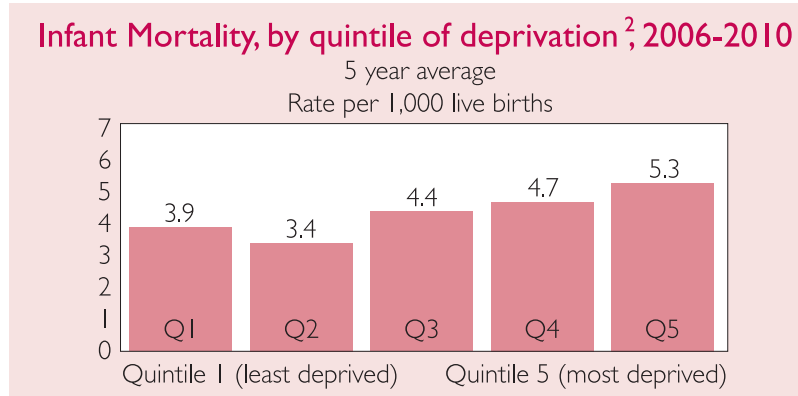
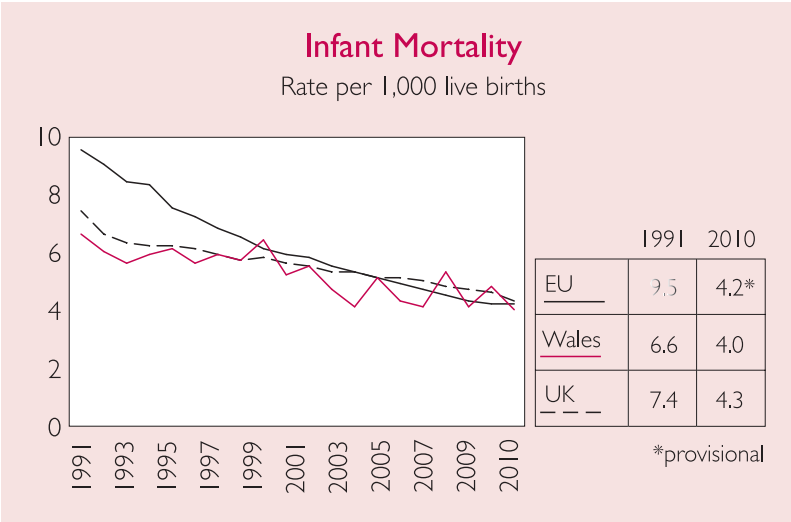
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Data Compendium

Infant mortality	109
Mortality from all causes, all ages	110
Life expectancy at birth	112
Accidental deaths	114
Suicide	115
Circulatory disease mortality, aged under 65	116
Cancer mortality, aged under 65	118
Alcohol consumption among adults	120
Physical activity and consumption of fruit and vegetables among adults	122
Overweight and obese adults	124
Adult physical and mental wellbeing	126
Adult smoking	128

Infant mortality¹

Infant mortality has decreased over the last 20 years from 6.6 per 1000 to 4.0 per 1000. Numbers are small and so fluctuate year on year; however, the rate in 2010 is the lowest Wales has experienced within the last decade. Infant mortality rates at local authority level do not differ significantly from the overall Wales rate but the small numbers involved make interpretation difficult.



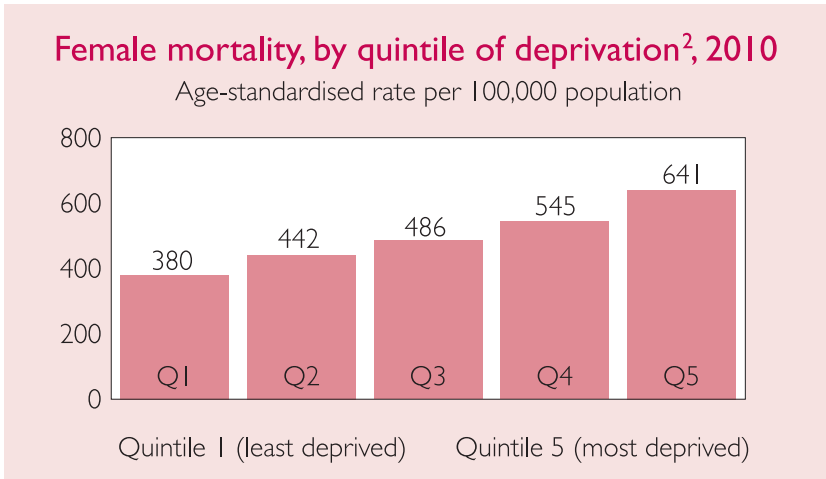
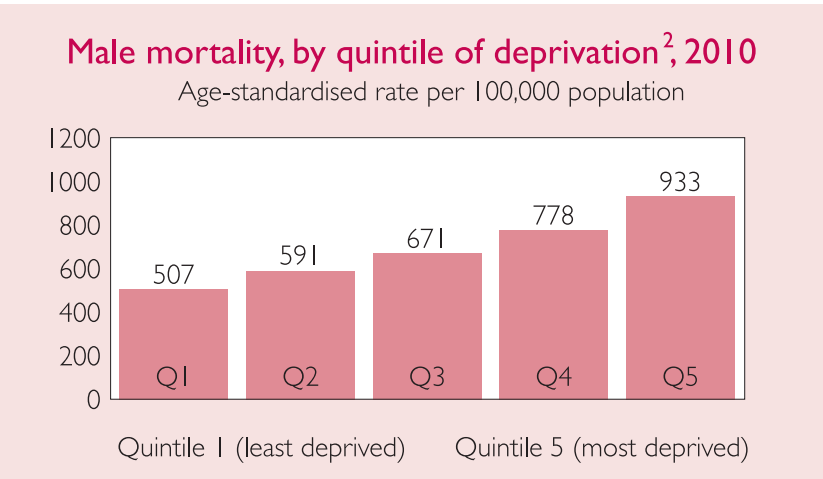
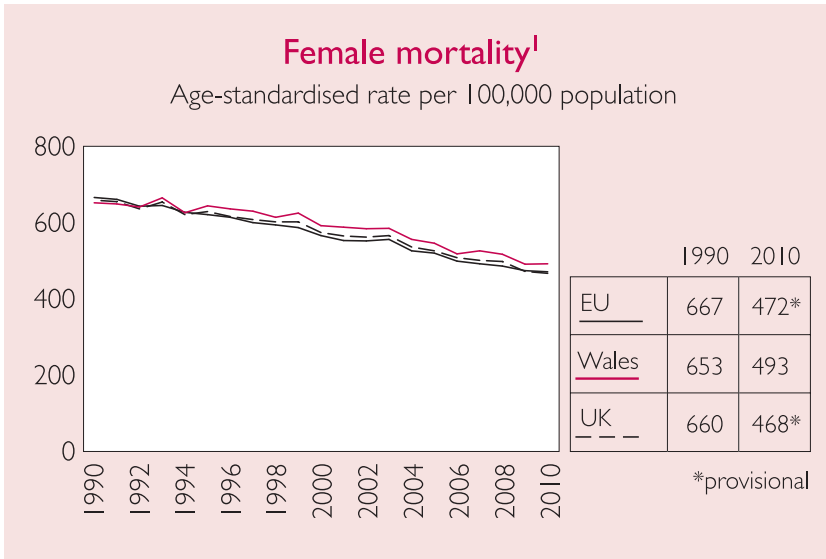
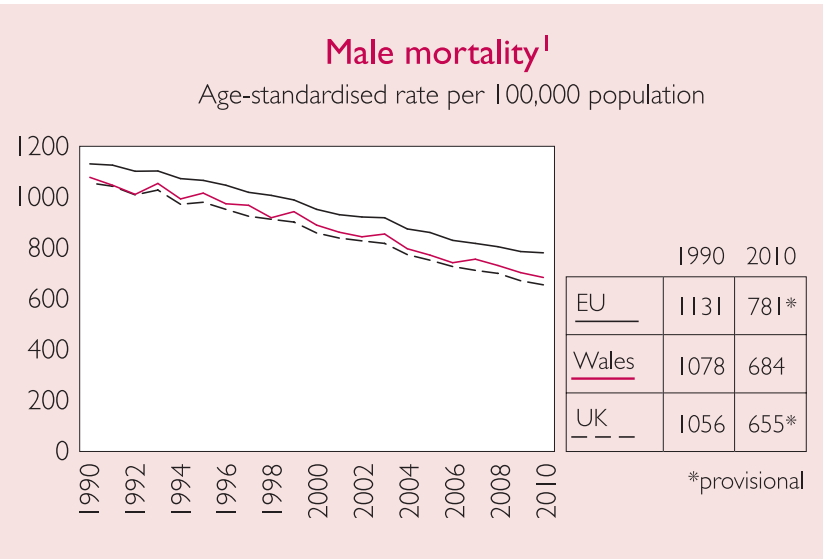
Notes. 1. Deaths under 1 year of age per 1,000 live births.
2. Using Welsh Index of Multiple Deprivation 2011 to assign small areas in Wales to one of five groups, ranging from quintile 1 (the least deprived fifth of areas) to 5 (the most deprived fifth of areas).

Source: Office for National Statistics (for Wales and UK figures): European health for all database, WHO Regional Office for Europe, Copenhagen, Denmark (for EU figures).

Mortality from all causes, all ages

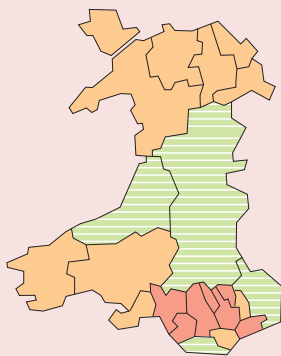
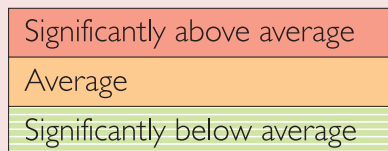
The reduction in mortality rates for men is maintained this year. No reduction is apparent for female mortality, which remains higher in Wales than in the UK or the European Union. Mortality rates in the most deprived quintiles are 84

per cent higher for males and 69 per cent higher for females than in the least deprived quintiles, with a clear inequality gradient. The geographical pattern of mortality rates is closely related to deprivation.



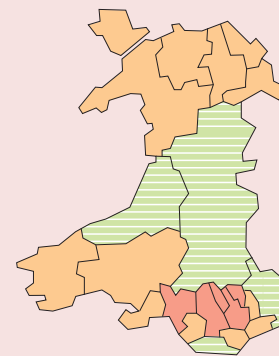
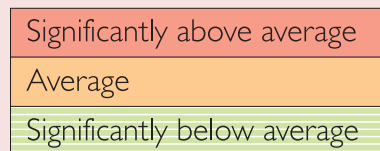
Male mortality,
by local authority, 2008-2010

Age-standardised rate per
100,000 population



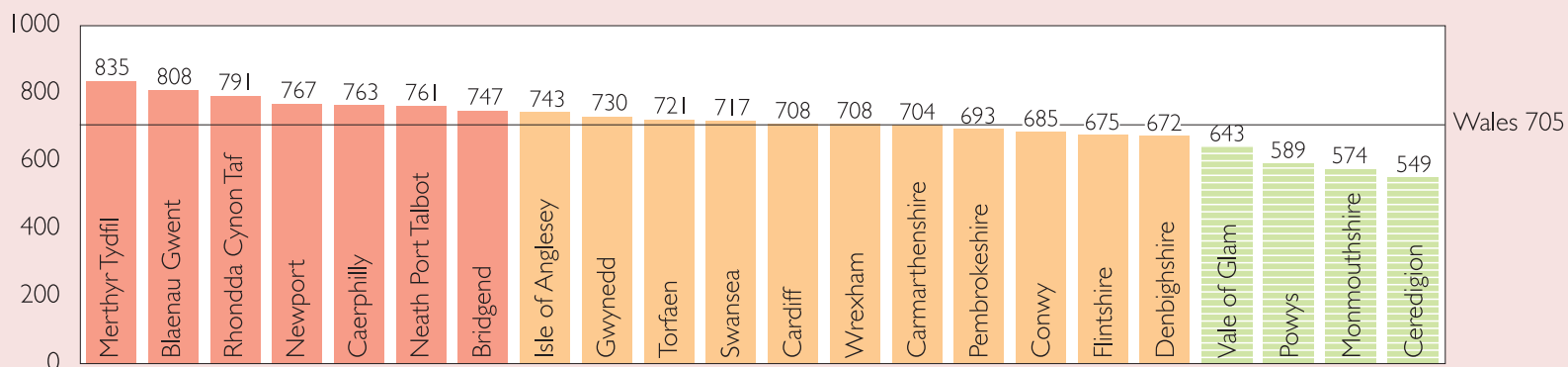
Female mortality,
by local authority, 2008-2010

Age-standardised rate per
100,000 population



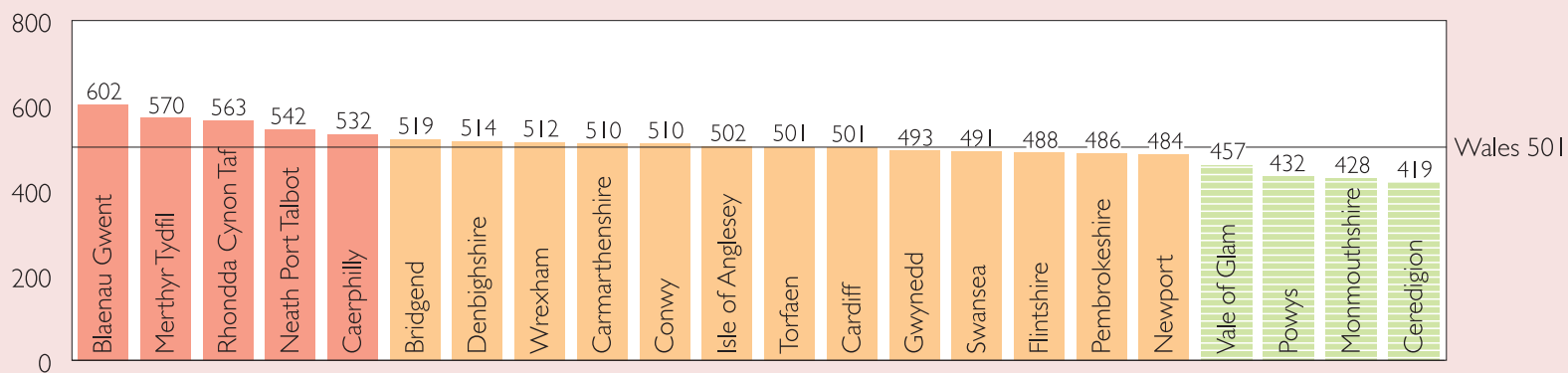
Male mortality, by local authority, 2008-2010

Age-standardised rate per 100,000 population



Female mortality, by local authority, 2008-2010

Age-standardised rate per 100,000 population



Notes. 1. EU data is for the 27 current members. Data recording systems and practices may vary between countries and so comparisons should be made with caution.

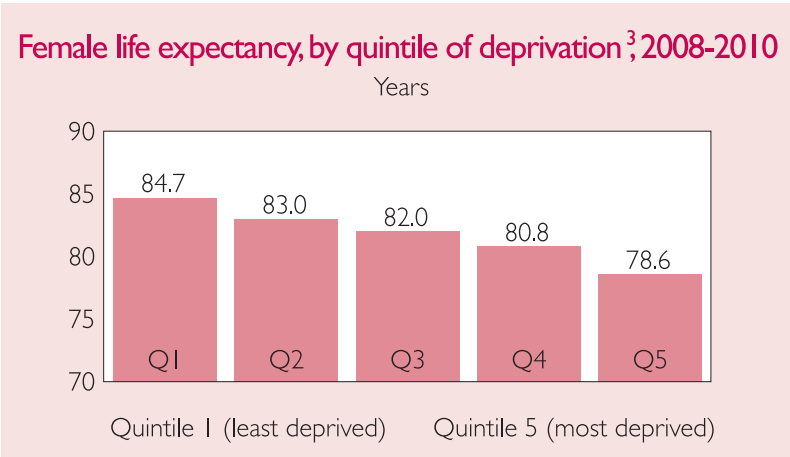
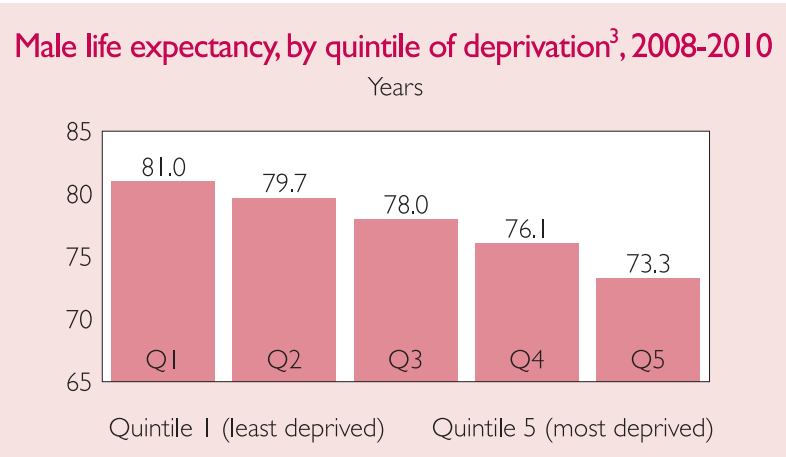
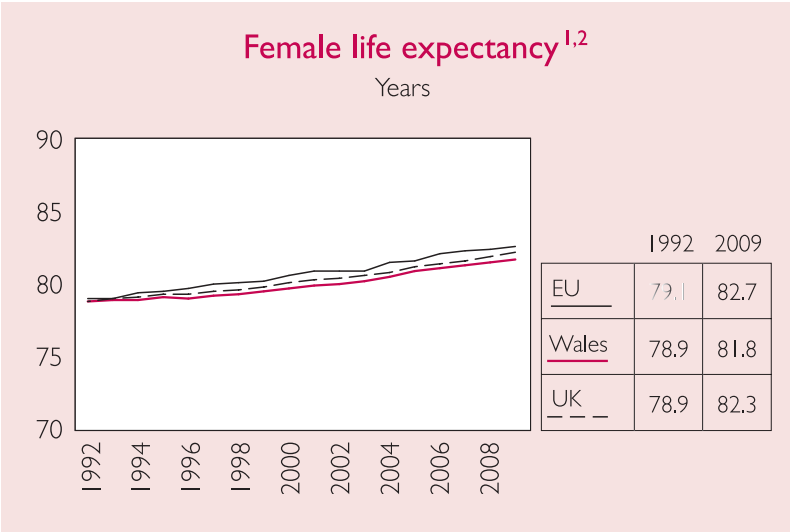
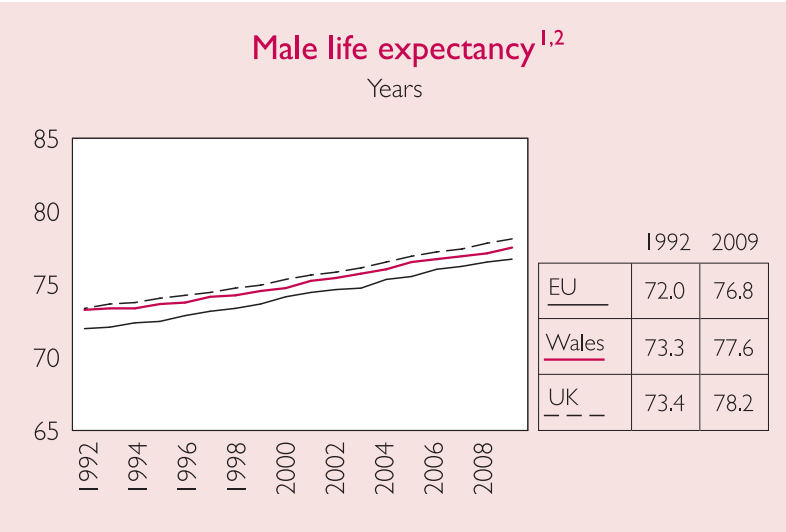
2. Using Welsh Index of Multiple Deprivation 2011 to assign small areas in Wales to one of five groups, ranging from quintile 1 (the least deprived fifth of areas) to 5 (the most deprived fifth of areas).

Source: Office for National Statistics, calculations by NHS Wales Informatics Service (eHealthshow) (for Wales figures); European health for all database, WHO Regional Office for Europe, Copenhagen, Denmark (for UK and EU figures).

Life expectancy at birth

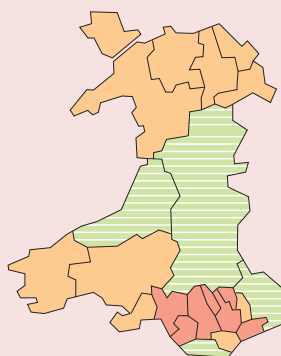
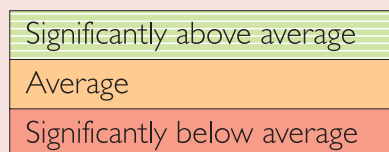
Life expectancy in Wales is increasing but not at the same rate as in the European Union or the UK as a whole. The gap in life expectancy at birth between Wales and the UK is now about six months greater than it was in 1992.

Patterns in life expectancy at birth mirror those seen in mortality with the highest rates in the rural and relatively less deprived areas of Ceredigion, Monmouthshire, Powys and the Vale of Glamorgan. Life expectancy at birth is lowest within the South Wales Valleys.



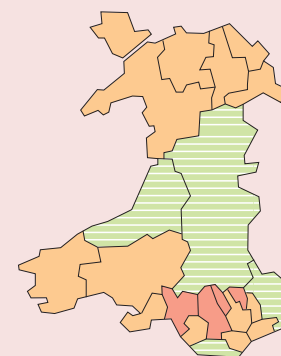
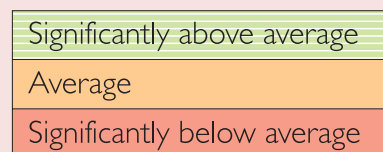
Male life expectancy, by local authority, 2008-2010

Years



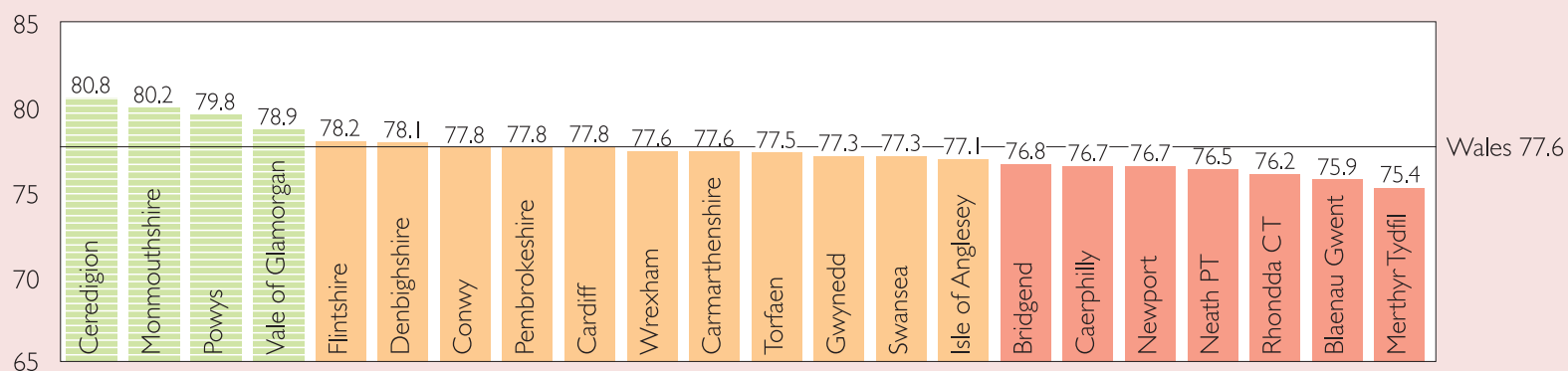
Female life expectancy, by local authority, 2008-2010

Years



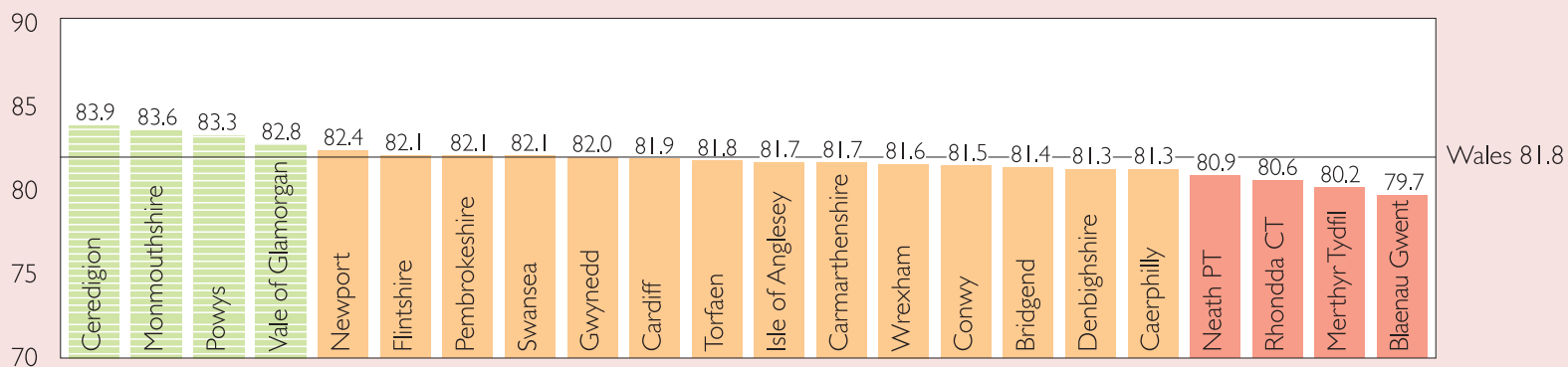
Male life expectancy, by local authority, 2008-2010

Years



Female life expectancy, by local authority, 2008-2010

Years



Notes. 1. For Wales and UK, life expectancy is based on 3-year average centered on each year shown.

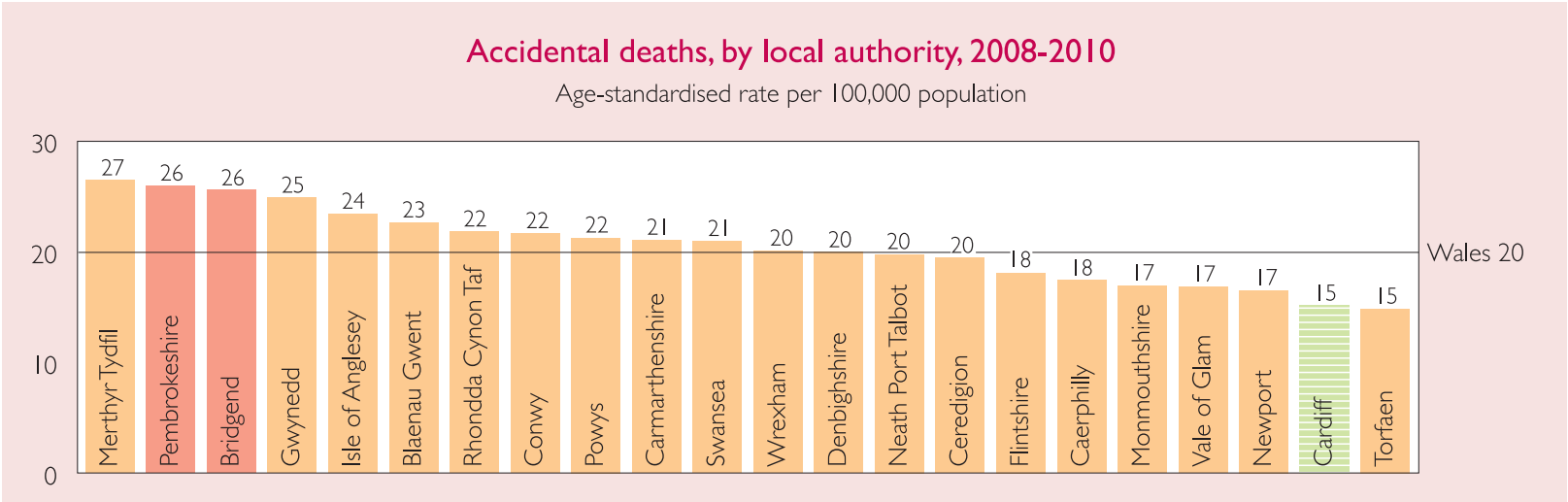
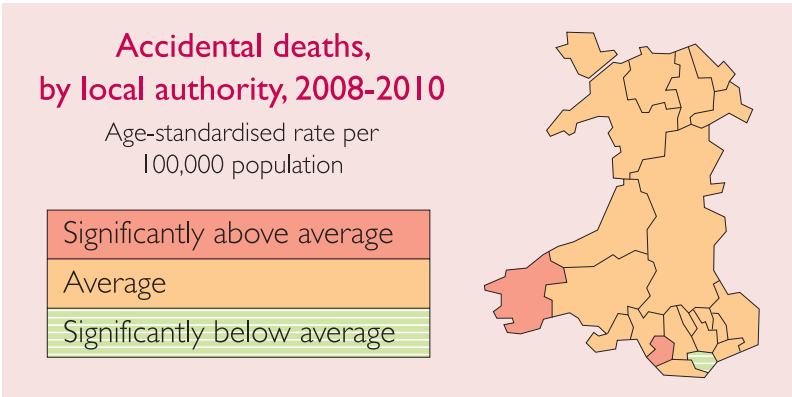
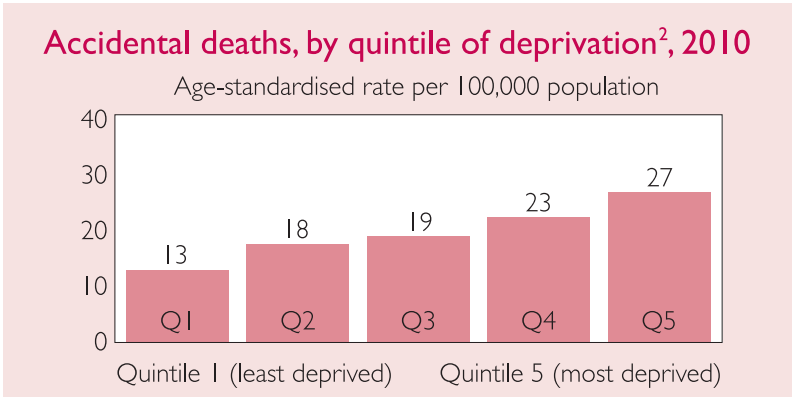
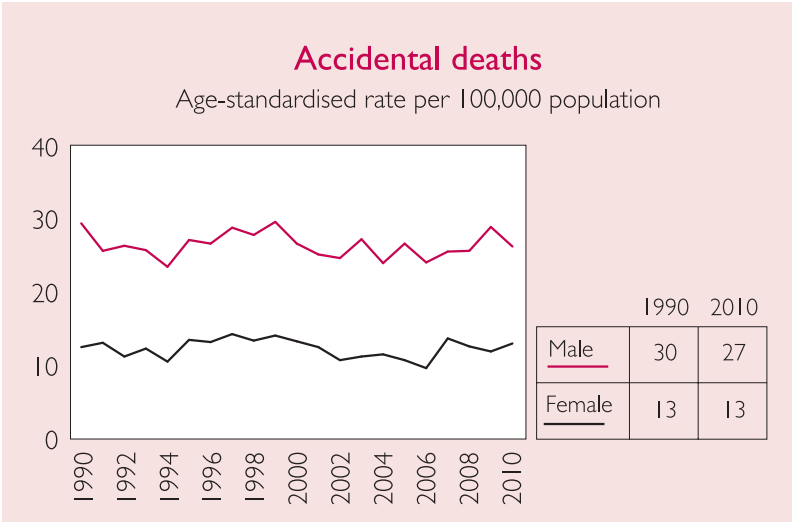
2. EU data is for the 27 current members. Data recording systems and practices may vary between countries and so comparisons should be made with caution.

3. Using Welsh Index of Multiple Deprivation 2011 to assign small areas in Wales to one of five groups, ranging from quintile 1 (the least deprived fifth of areas) to 5 (the most deprived fifth of areas).

Source: Office for National Statistics (for Wales and UK figures); European health for all database, WHO Regional Office for Europe, Copenhagen, Denmark (for EU figures).

Accidental deaths¹

Men in Wales are approximately twice as likely to die due to accidents as women. Similarly, the death rate from accidents is twice as high in the most deprived quintile compared to the least deprived. Whereas fluctuation is seen year on year, there has been little overall change during the last decade. Statistically significantly higher levels are found in Pembrokeshire and Bridgend and lower levels in Cardiff, however these are based on relatively small numbers. Difference in practice by coroners when classifying deaths may contribute to some of the variation seen.

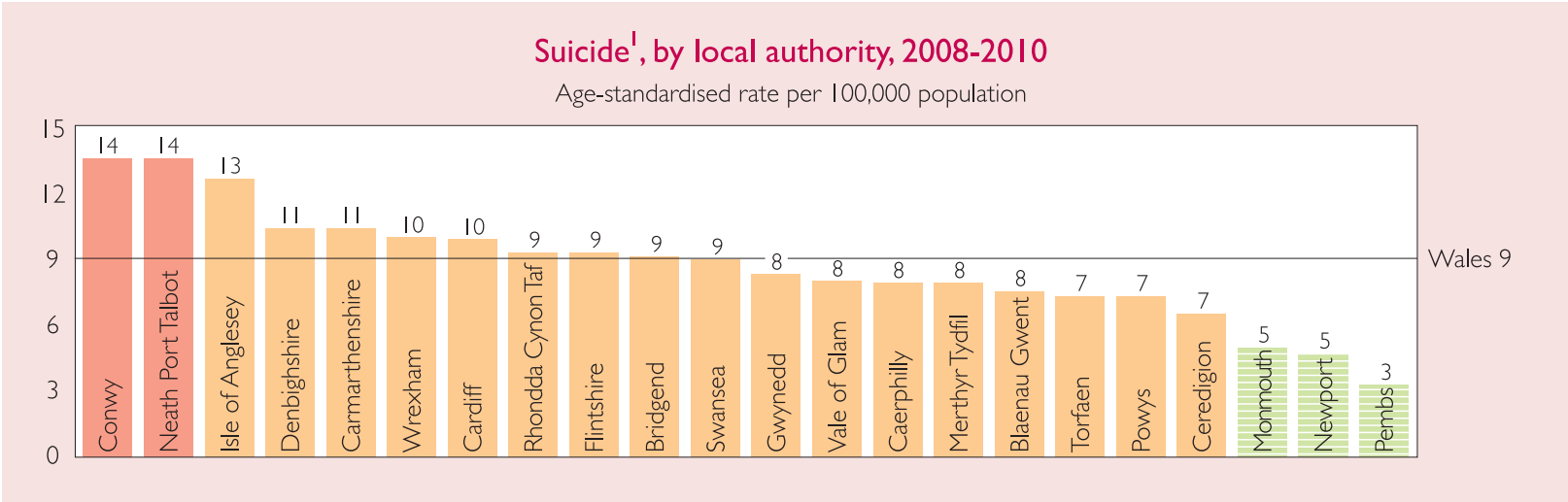
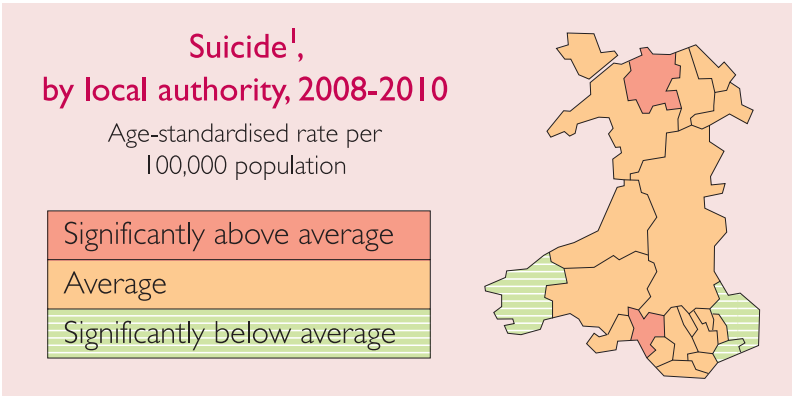
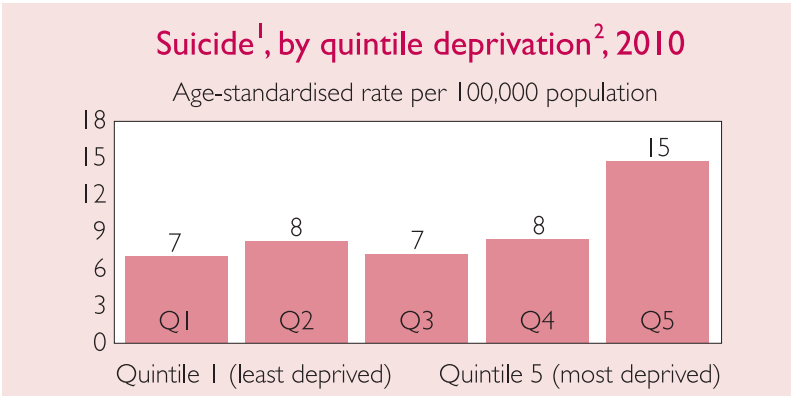
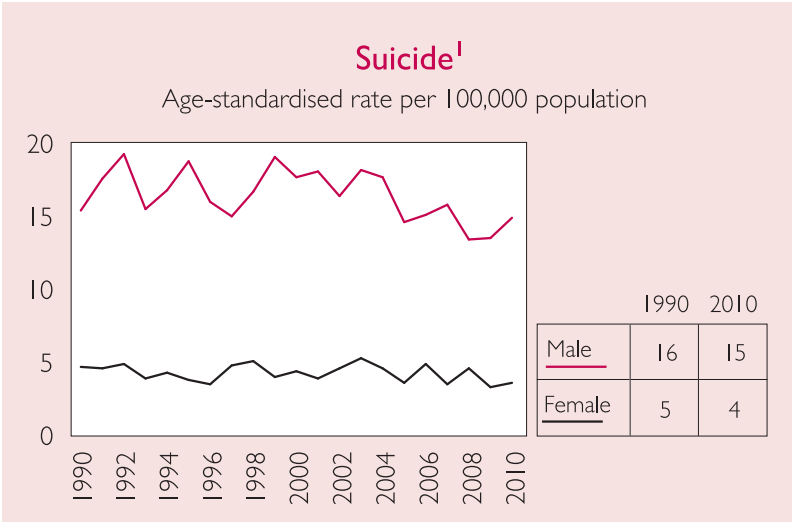


Notes. 1. Deaths from accidents and adverse events.
2. Using Welsh Index of Multiple Deprivation 2011 to assign small areas in Wales to one of five groups, ranging from quintile 1 (the least deprived fifth of areas) to 5 (the most deprived fifth of areas).

Source: Office for National Statistics, calculations by NHS Wales Informatics Service (eHealthshow).

Suicide¹

Overall there has been little change in suicide rates for both males and females. Numbers are small and so fluctuations in registrations occur year on year making interpretation problematic, although there does appear to be a downward trend in men. The suicide rate in quintile five is approximately double that found in the other four quintiles. The highest suicide rates are found in Conwy and Neath Port Talbot and the lowest in Pembrokeshire.



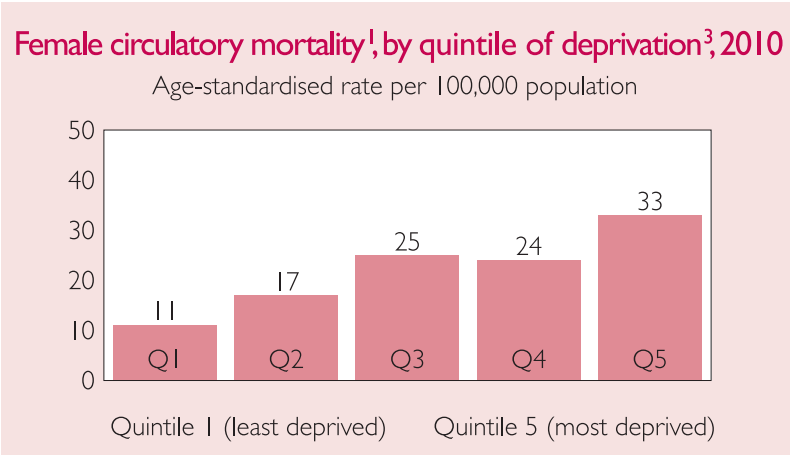
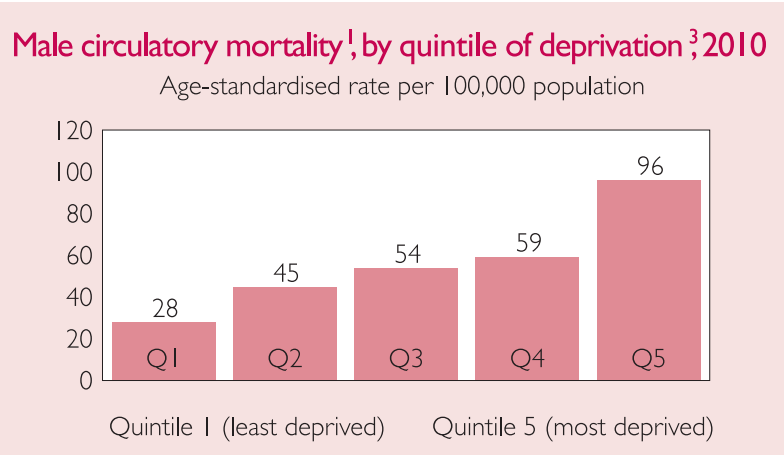
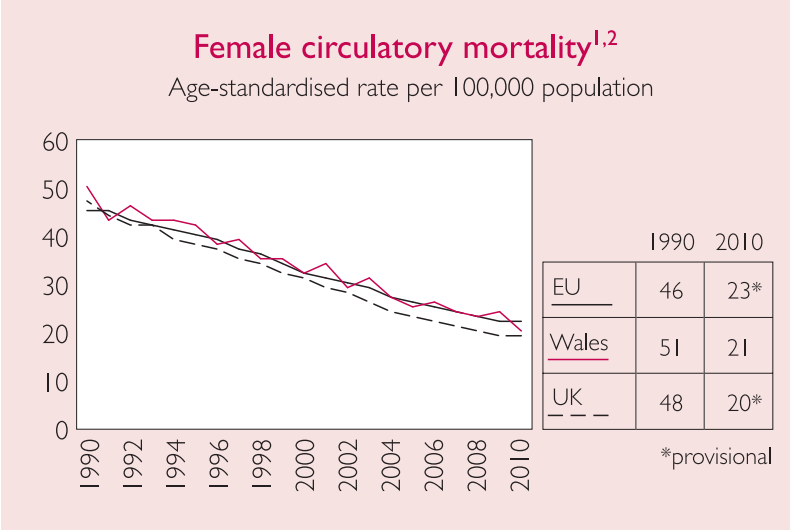
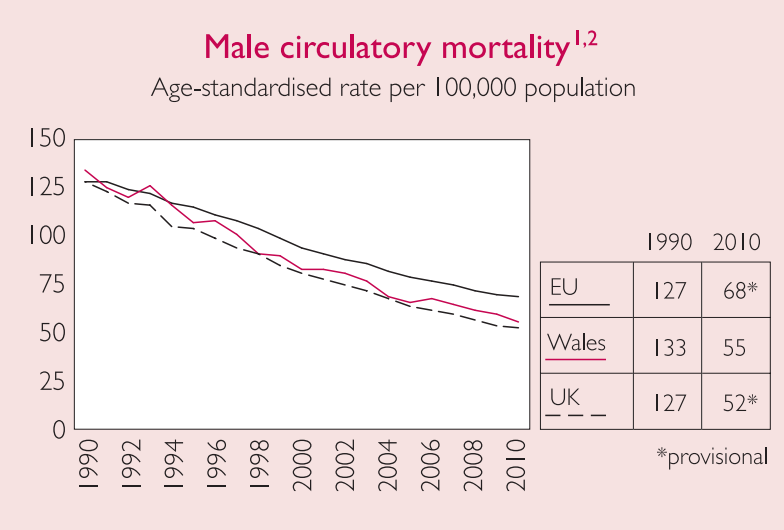
Notes. 1. Deaths from intentional self-harm and events of undetermined intent.
2. Using Welsh Index of Multiple Deprivation 2011 to assign small areas in Wales to one of five groups, ranging from quintile 1 (the least deprived fifth of areas) to 5 (the most deprived fifth of areas).

Source: Office for National Statistics, calculations by NHS Wales Informatics Service (eHealthshow).

Circulatory disease mortality, aged under 65

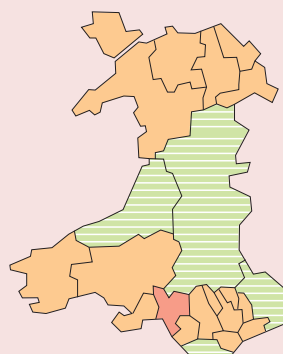
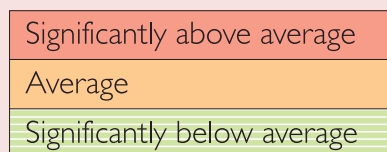
Mortality from circulatory disease continues on a downward trend with death rates in 2010 38 per cent lower for men and 40 per cent lower for women than in 1999. In part this may be attributable to primary prevention, including lifestyle changes, and secondary prevention such as primary care management of hypertension and cholesterol. Access to effective treatment continues to improve too. Whilst Merthyr Tydfil appears to have the highest rate of circulatory disease

mortality in males, due to its smaller population size, the rate is not significantly different from the all Wales rate. The rate in Neath Port Talbot is significantly higher for males. Rates of mortality due to circulatory disease increase dramatically with increasing deprivation and men have approximately double the rate of women. The lowest rate of circulatory disease mortality is found in women in Flintshire but does not differ statistically from the all Wales average.



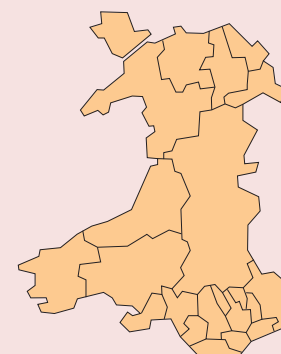
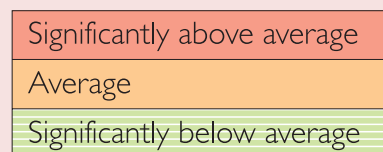
Male circulatory mortality¹, by local authority, 2008-2010

Age-standardised rate per
100,000 population



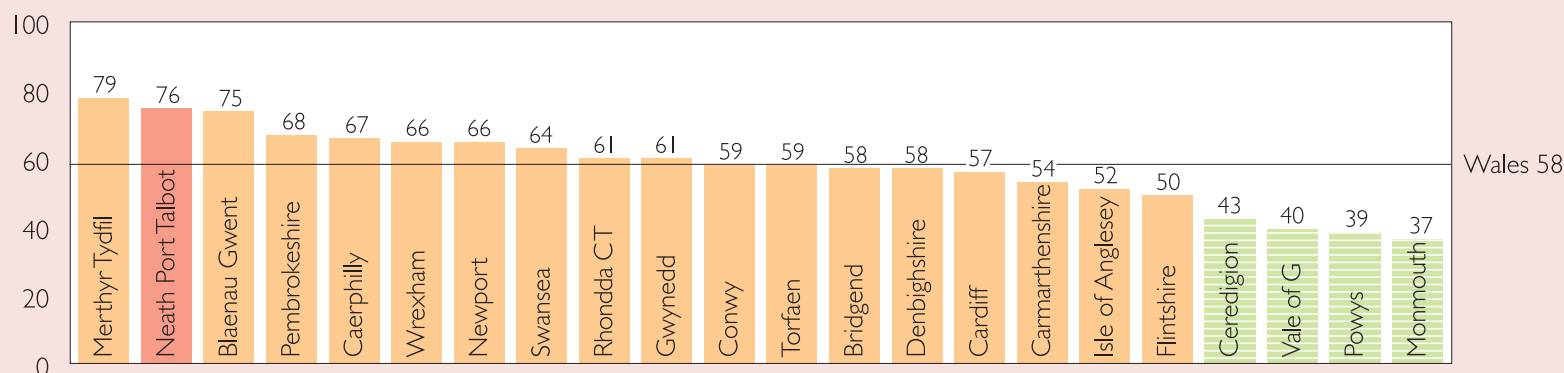
Female circulatory mortality¹, by local authority, 2008-2010

Age-standardised rate per
100,000 population



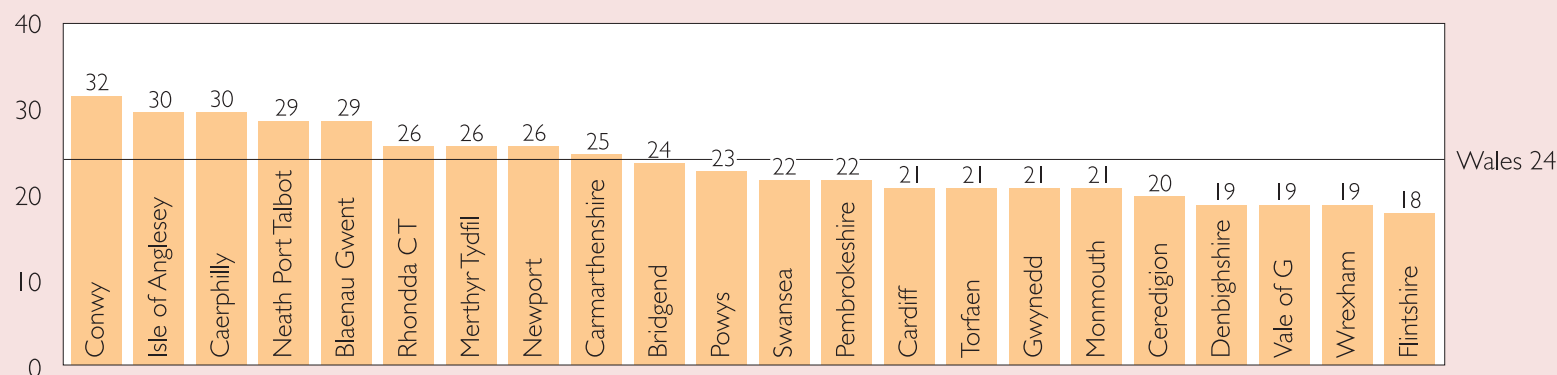
Male circulatory mortality¹, by local authority, 2008-2010

Age-standardised rate per 100,000 population



Female circulatory mortality¹, by local authority, 2008-2010

Age-standardised rate per 100,000 population



Notes. 1. Aged under 65.

2. EU data is for the 27 current members. Data recording systems and practices may vary between countries and so comparisons should be made with caution.

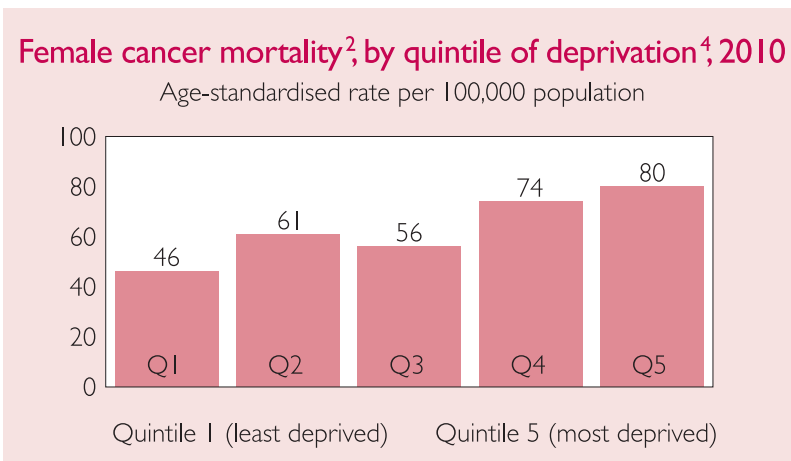
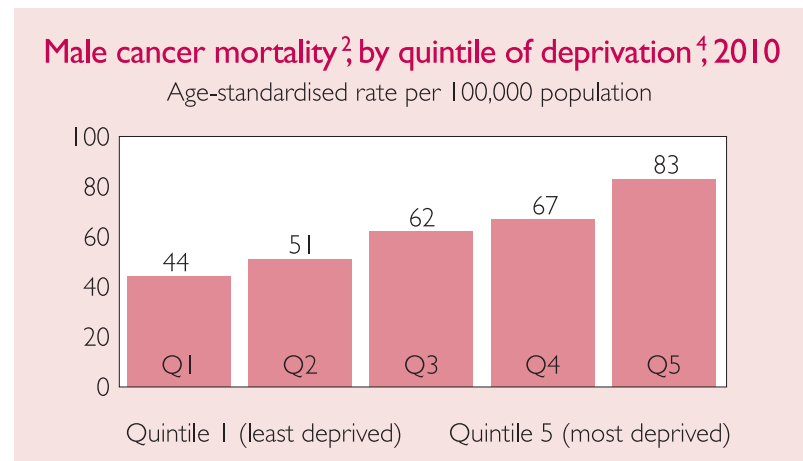
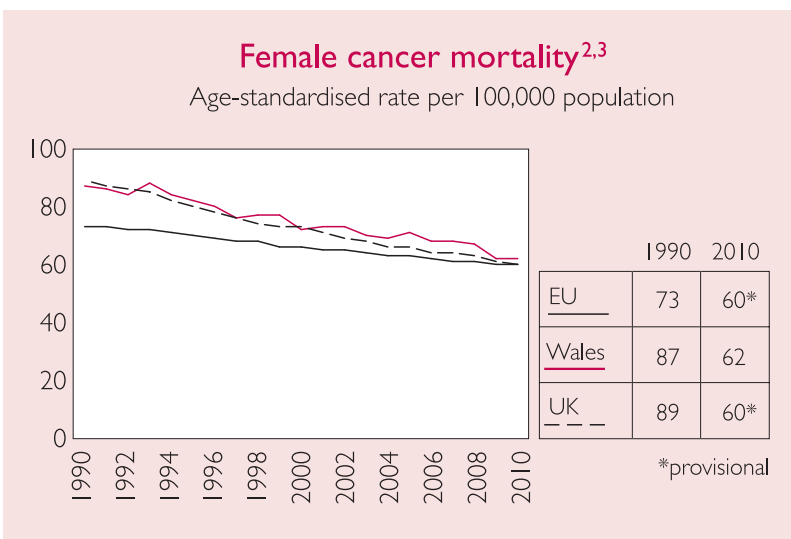
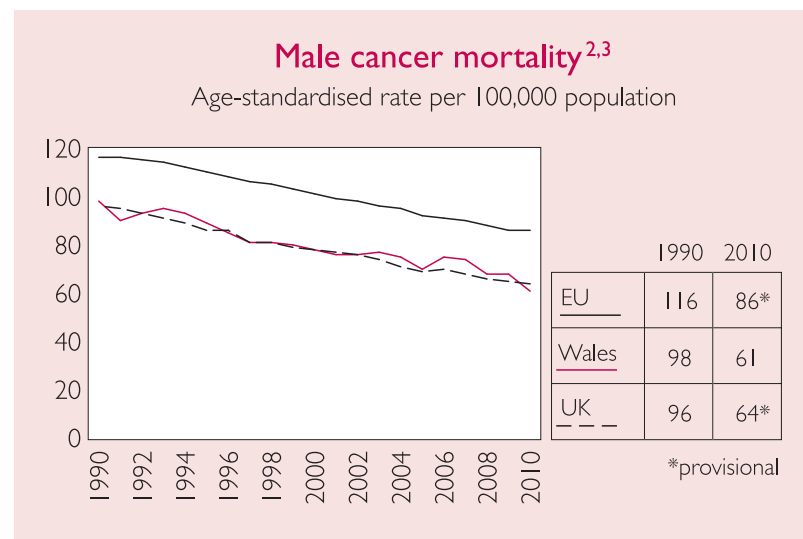
3. Using Welsh Index of Multiple Deprivation 2011 to assign small areas in Wales to one of five groups, ranging from quintile 1 (the least deprived fifth of areas) to 5 (the most deprived fifth of areas).

Source: Office for National Statistics, calculations by NHS Wales Informatics Service (eHealthshow) (for Wales figures); European health for all database, WHO Regional Office for Europe, Copenhagen, Denmark (for UK and EU figures).

Cancer mortality¹, aged under 65

The trend for cancer mortality in males continues to decrease; however, for women there has been no change since 2009. Whilst rates of cancer appear to rise with increasing deprivation, the association is more varied, with some cancers having a mixed pattern of causation not influenced by deprivation alone such as breast cancer.

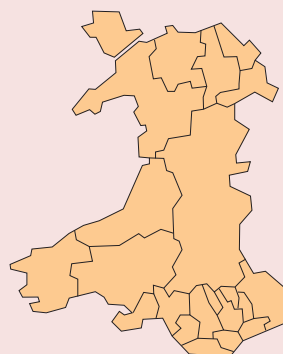
Powys has a rate of female cancer mortality significantly below the all Wales average. In this year's analysis, the rate of cancer mortality in women in Merthyr Tydfil is not statistically significantly different from the all Wales average.



Male cancer mortality², by local authority, 2008-2010

Age-standardised rate per
100,000 population

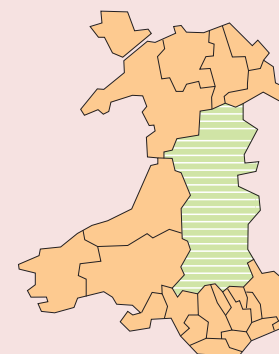
Significantly above average
Average
Significantly below average



Female cancer mortality², by local authority, 2008-2010

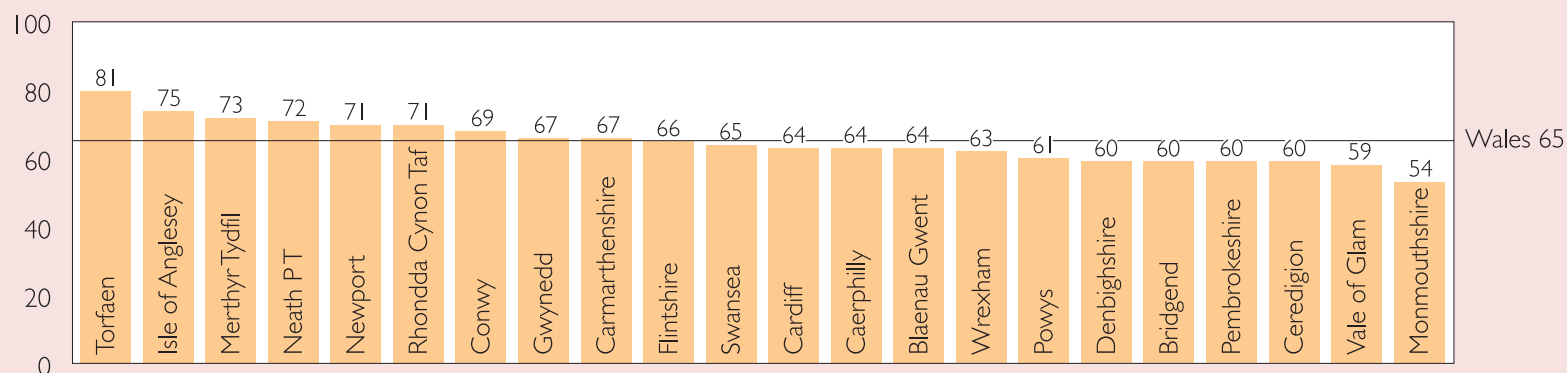
Age-standardised rate per
100,000 population

Significantly above average
Average
Significantly below average



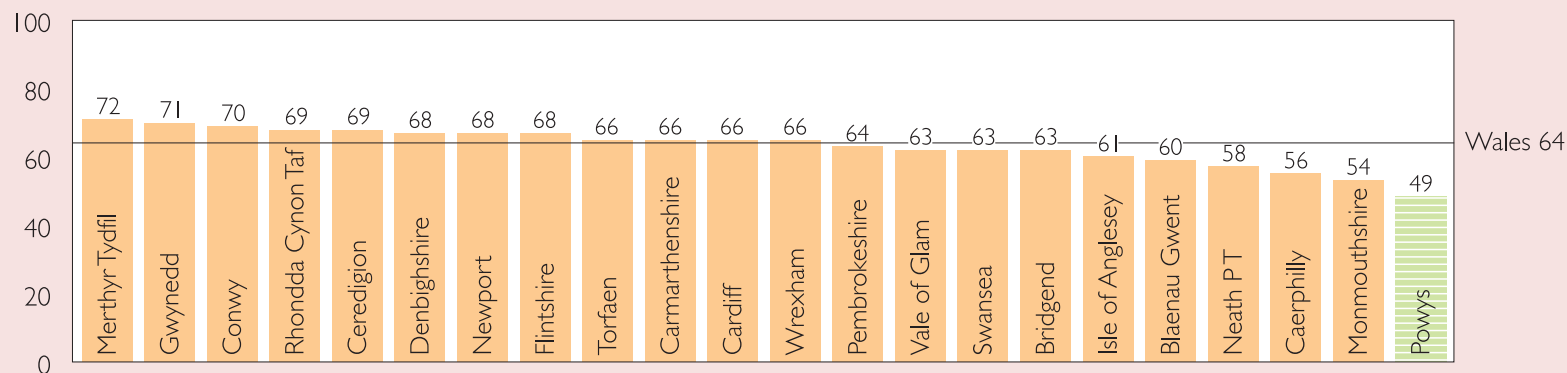
Male cancer mortality², by local authority, 2008-2010

Age-standardised rate per 100,000 population



Female cancer mortality², by local authority, 2008-2010

Age-standardised rate per 100,000 population



Notes. 1. Malignant neoplasms.

2. Aged under 65.

3. EU data is for the 27 current members. Data recording systems and practices may vary between countries and so comparisons should be made with caution.

4. Using Welsh Index of Multiple Deprivation 2011 to assign small areas in Wales to one of five groups, ranging from quintile 1 (the least deprived fifth of areas) to 5 (the most deprived fifth of areas).

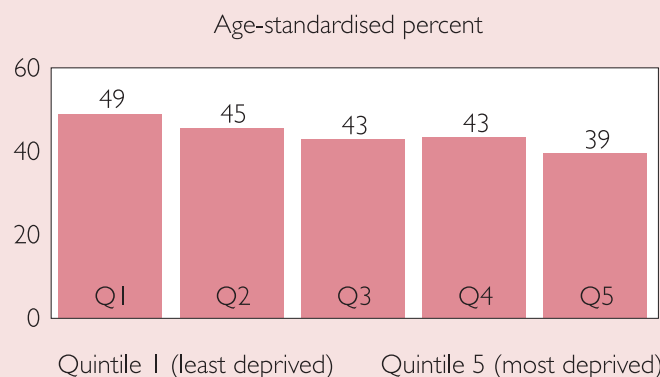
Source: Office for National Statistics, calculations by NHS Wales Informatics Service (eHealthshow) (for Wales figures); European health for all database, WHO Regional Office for Europe, Copenhagen, Denmark (for UK and EU figures).

Alcohol consumption among adults¹

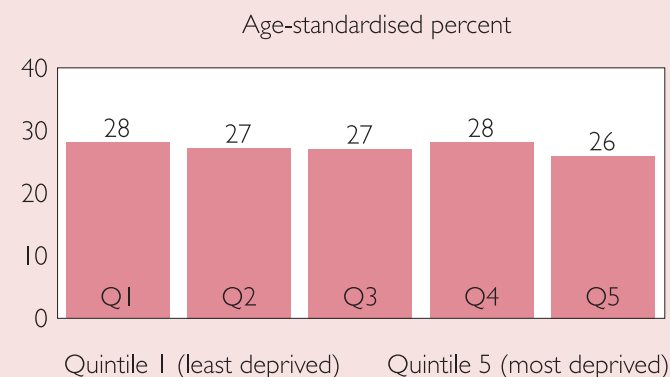
Rates of drinking above daily guidelines appear to be inversely related to deprivation and there is no clear pattern for binge drinking. However this does not reflect the pattern seen of more severe health effects of alcohol as measured by hospital admissions and mortality due to alcohol. Admissions and mortality from alcohol show a social gradient with rates being higher among lower socio-economic groups.

The percentage drinking above daily guidelines and binge drinking is significantly below average in Carmarthenshire and Pembrokeshire. Drinking above daily guidelines is highest in Bridgend but not significantly different from the all Wales average, whilst binge drinking is significantly above average in Merthyr Tydfil and Neath Port Talbot.

Drinking above daily guidelines²,
by quintile of deprivation³, 2010

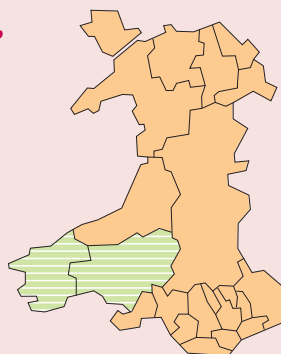
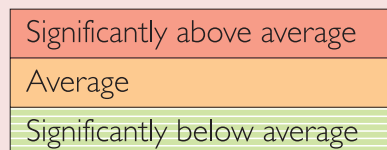


Binge drinking², by quintile of deprivation³, 2010



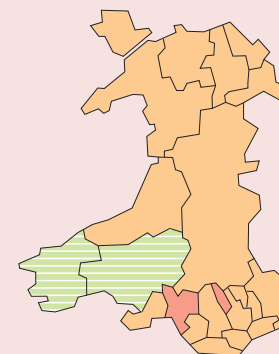
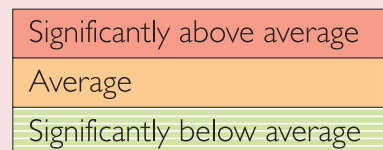
Drinking above daily guidelines², by local authority, 2009-2010

Age-standardised percent



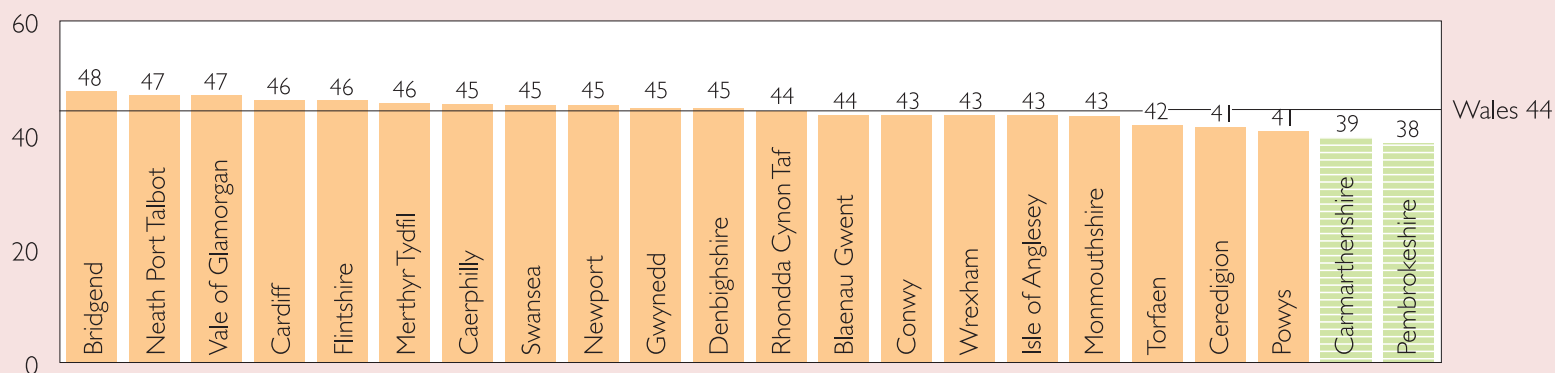
Binge drinking², by local authority, 2009-2010

Age-standardised percent



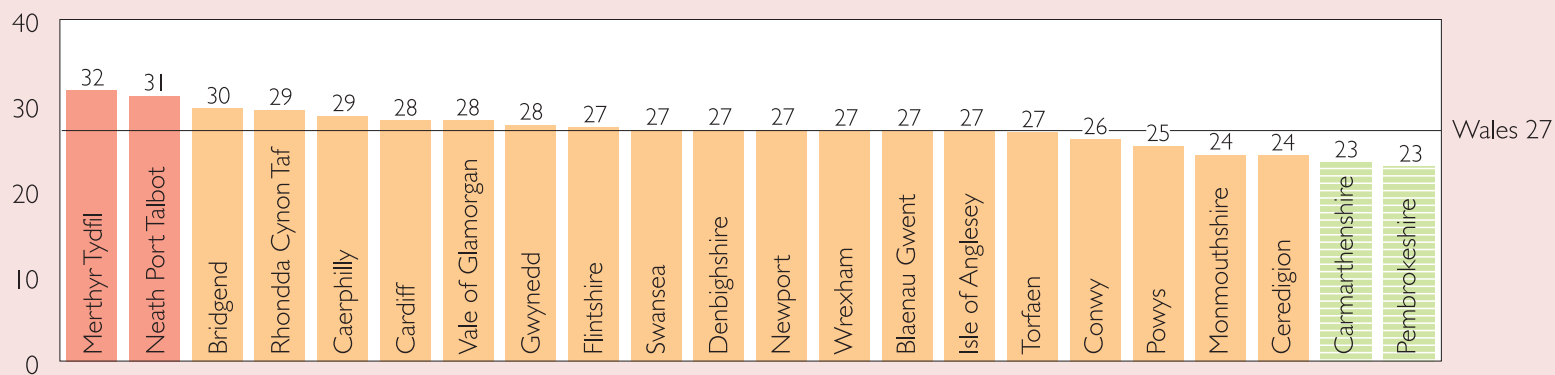
Drinking above daily guidelines², by local authority, 2009-2010

Age-standardised percent



Binge drinking², by local authority, 2009-2010

Age-standardised percent



Notes. 1. Adults (age 16 and over) reported alcohol consumption on heaviest drinking day in past week.

2. Drinking above daily guidelines means drinking more than 4 units (men) or 3 units (women); binge drinking means drinking more than double the daily guidelines (i.e. more than 8 units (men) or 6 units (women)).

3. Using Welsh Index of Multiple Deprivation 2008 to assign small areas in Wales to one of five groups, ranging from quintile 1 (the least deprived fifth of areas) to 5 (the most deprived fifth of areas).

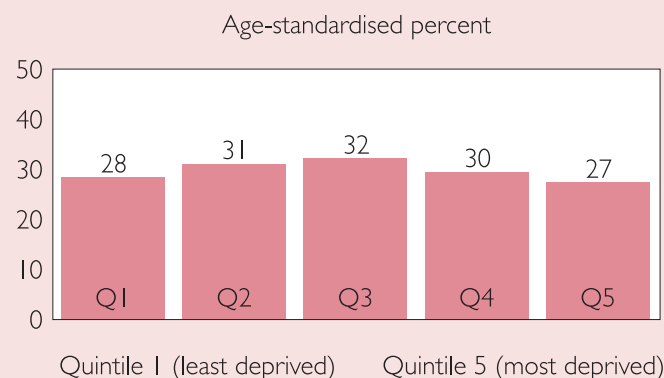
Source: Welsh Health Survey, Welsh Government.

Physical activity and consumption of fruit and vegetables among adults

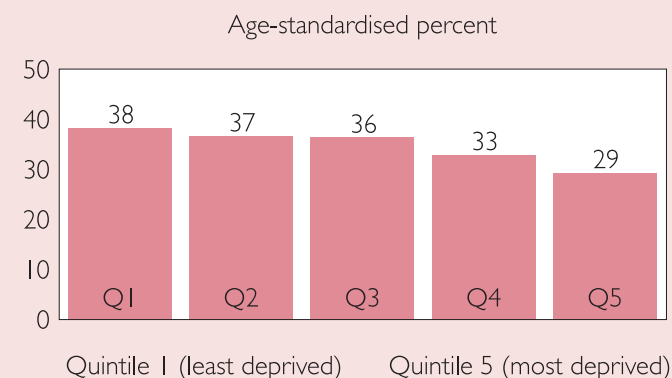
Whilst fruit and vegetable consumption decreases with increased deprivation, the relationship is less dramatic than in other measures. The highest percentage of physical activity is in Powys and the lowest in Cardiff. In general rural areas seem to have higher proportions of physical activity. The highest percentages of fruit and vegetable consumption are in Ceredigion and Gwynedd, and the lowest in Blaenau Gwent.

The South Wales Valleys generally have lower consumption of fruit and vegetables. Several innovative schemes are being tried in the area to improve access to fruit and vegetables. These include food cooperatives, the Green Valley's Centre, a community garden scheme, and working with local shops to improve the range of fruit and vegetables on offer.

Physical activity¹, by quintile of deprivation³, 2010



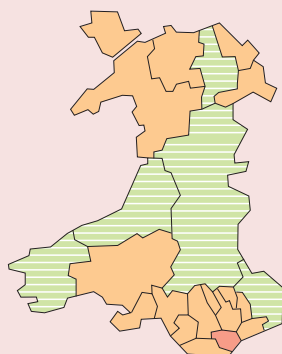
Fruit and vegetables², by quintile of deprivation³, 2010



Physical activity¹, by local authority, 2009-2010

Age-standardised percent

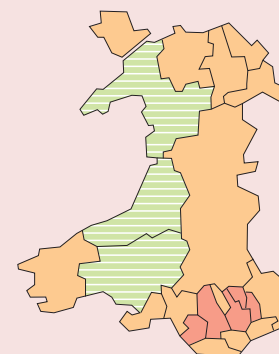
Significantly above average
Average
Significantly below average



Fruit and vegetables², by local authority, 2009-2010

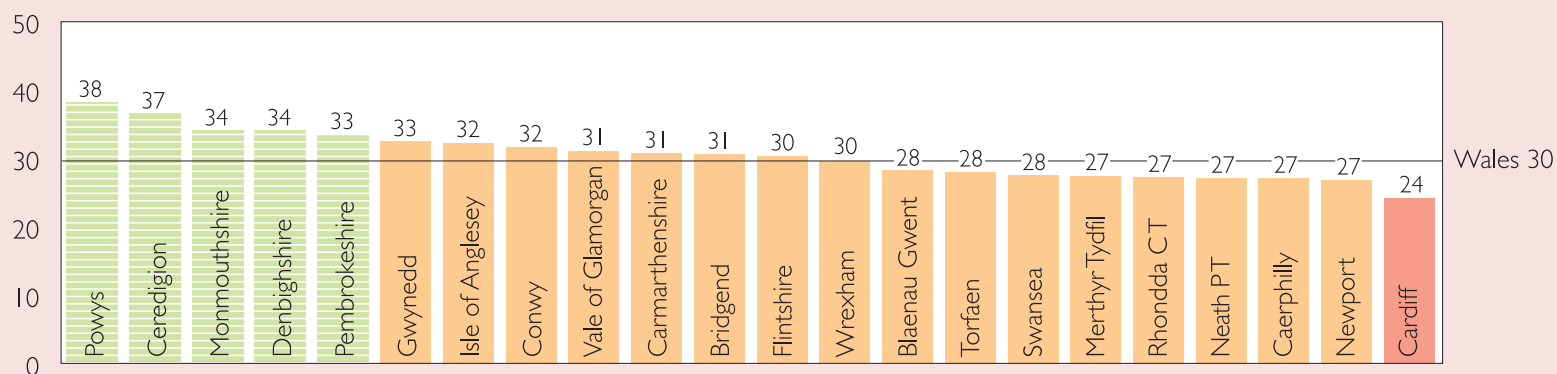
Age-standardised percent

Significantly above average
Average
Significantly below average



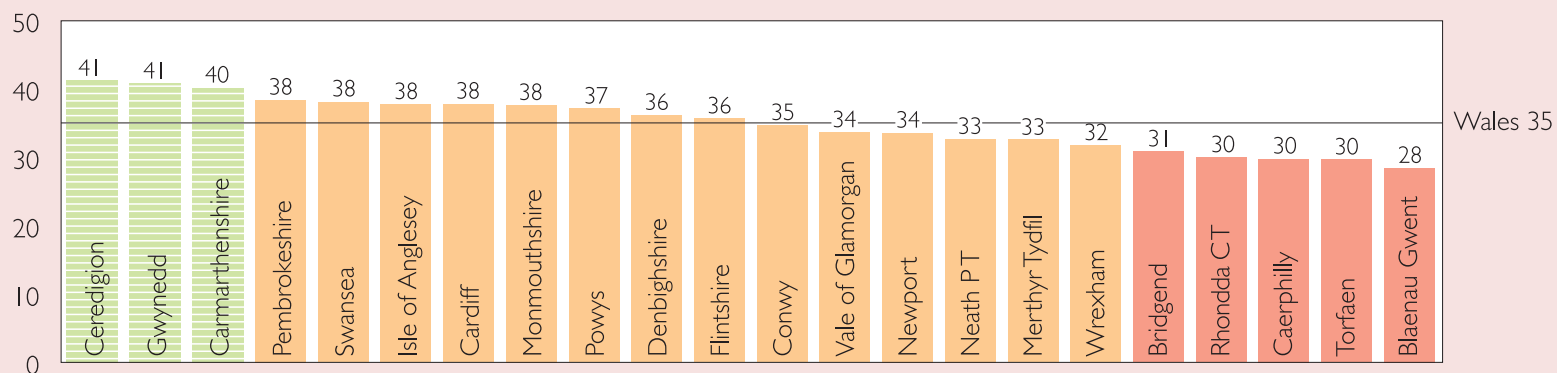
Physical activity¹, by local authority, 2009-2010

Age-standardised percent



Fruit and vegetables², by local authority, 2009-2010

Age-standardised percent



Notes. 1. Adults (age 16 and over) who reported meeting physical activity guidelines in the past week i.e. doing at least 30 minutes of at least moderate intensity physical activity on five or more days. Includes physical activity done as part of job.

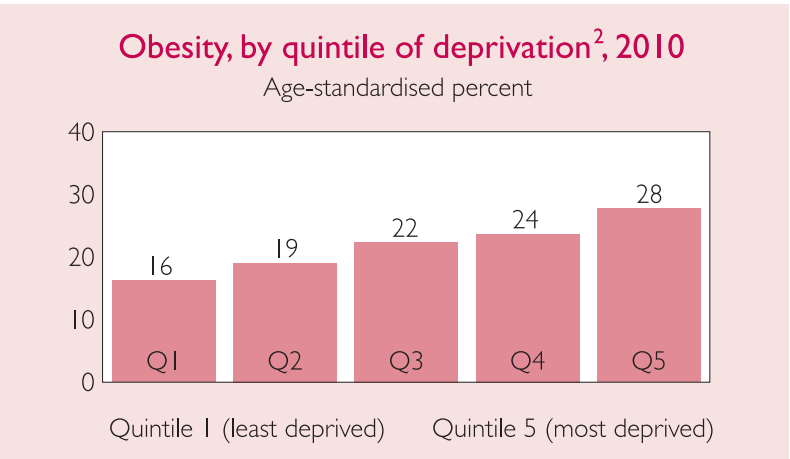
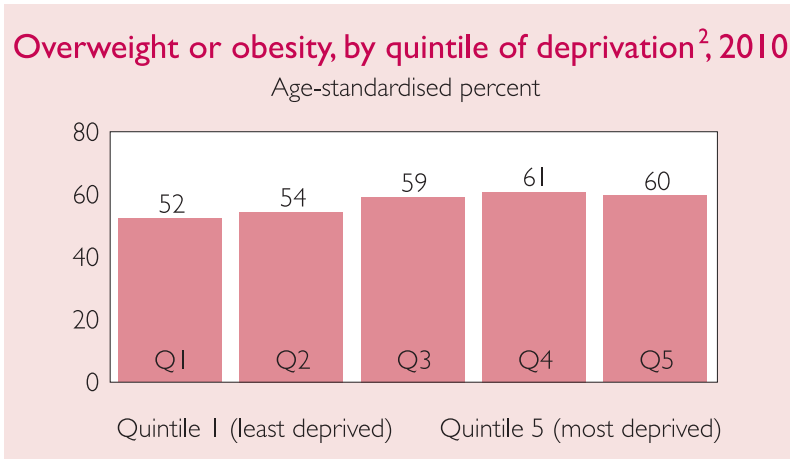
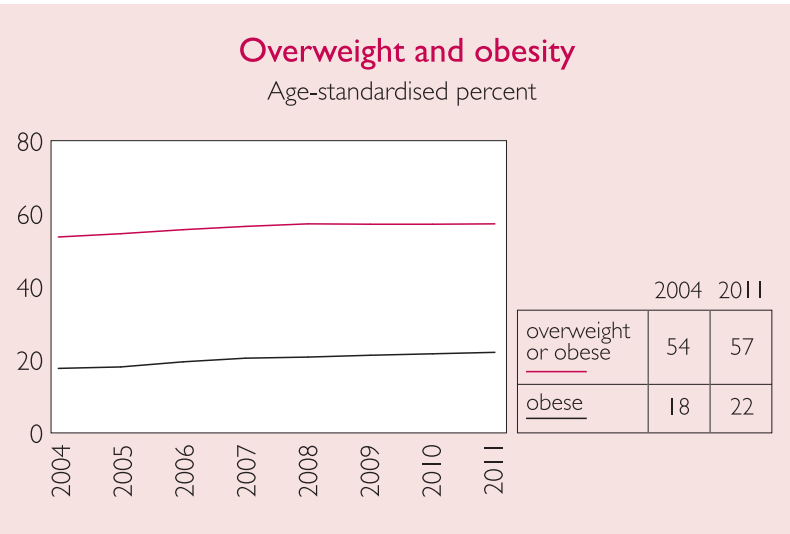
2. Adults (age 16 and over) who reported eating at least 5 portions of fruit and vegetables the previous day.

3. Using Welsh Index of Multiple Deprivation 2008 to assign small areas in Wales to one of five groups, ranging from quintile 1 (the least deprived fifth of areas) to 5 (the most deprived fifth of areas).

Source: Welsh Health Survey, Welsh Government.

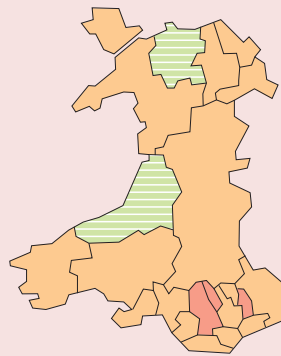
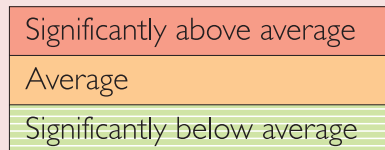
Overweight and obese adults¹

Overweight and obesity show an association with increasing deprivation with the relationship more marked for obesity. The proportion obese in the most deprived quintile is 70 per cent higher than in the least deprived. The highest percentages of overweight and obese are found in Merthyr Tydfil and Torfaen with the lowest in Conwy. The highest percentage of obesity is found in Caerphilly and the lowest in Denbighshire, Monmouthshire and Powys. Low fruit and vegetable consumption appears more common in areas with increased proportions of obesity.



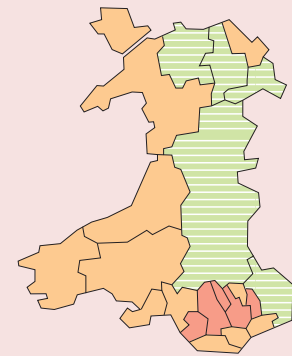
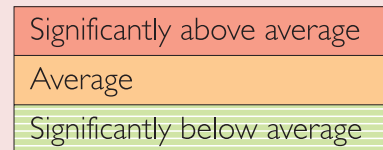
Overweight or obesity, by local authority, 2009-2010

Age-standardised percent



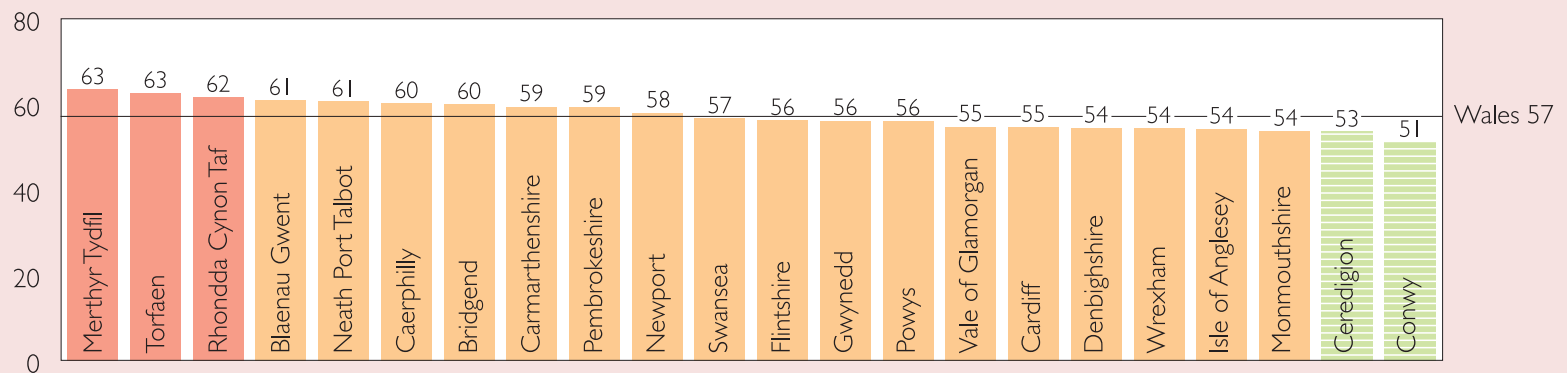
Obesity, by local authority, 2009-2010

Age-standardised percent



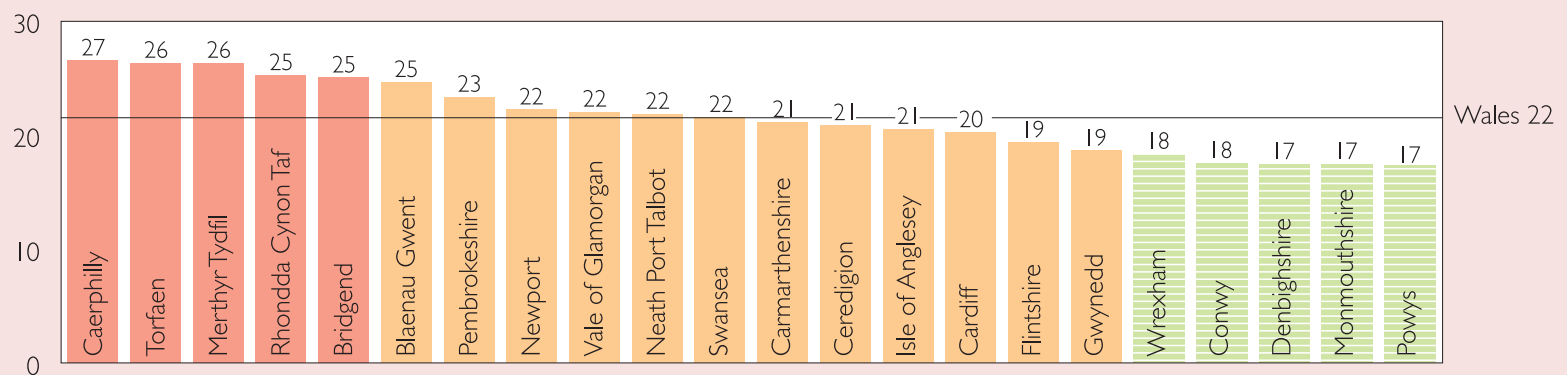
Overweight or obesity, by local authority, 2009-2010

Age-standardised percent



Obesity, by local authority, 2009-2010

Age-standardised percent



Notes. 1. Adults (age 16 and over) who were overweight or obese, based on Body Mass Index (weight in kilograms, divided by squared height in metres) calculated from self-reported height and weight. (overweight or obese is BMI 25 and over - obese is BMI 30 and over).

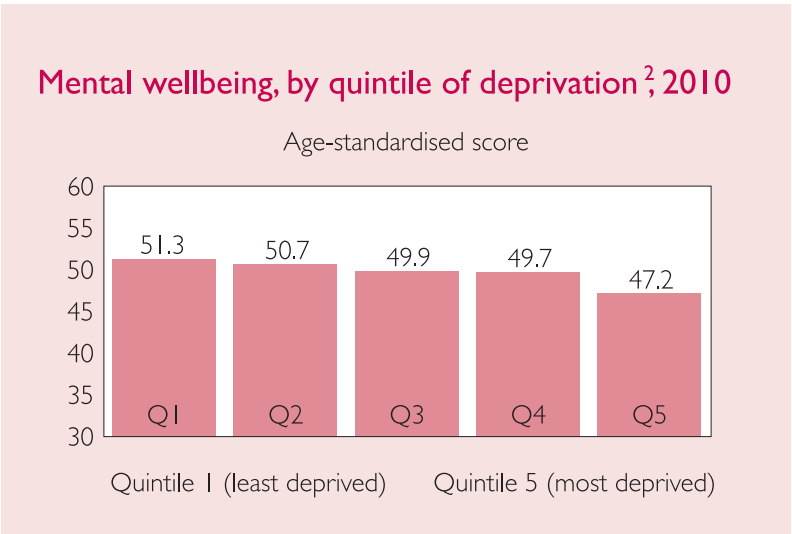
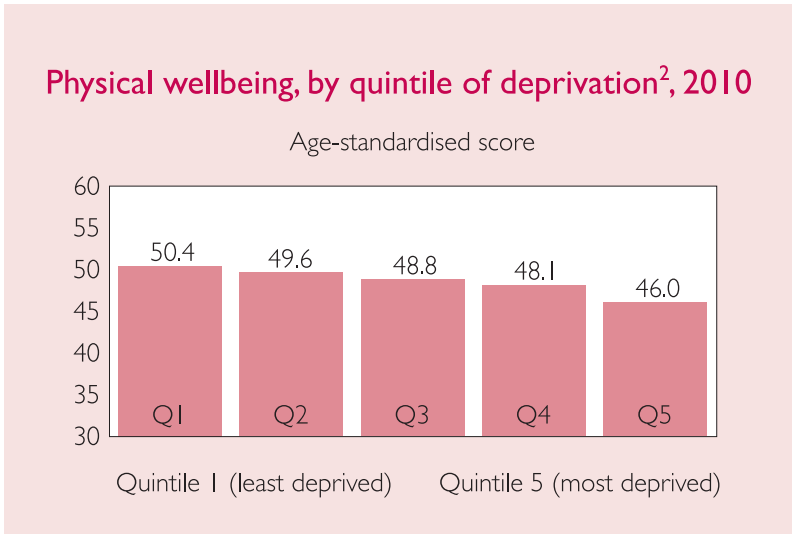
2. Using Welsh Index of Multiple Deprivation 2008 to assign small areas in Wales to one of five groups, ranging from quintile 1 (the least deprived fifth of areas) to 5 (the most deprived fifth of areas).

Source: Welsh Health Survey, Welsh Government.

Adults physical and mental wellbeing¹

Measures of both physical and mental wellbeing are worse in more deprived areas. Physical health status is highest in Flintshire and lowest in Neath Port Talbot. Monmouthshire and Flintshire have the highest mental wellbeing score and Merthyr Tydfil has the lowest.

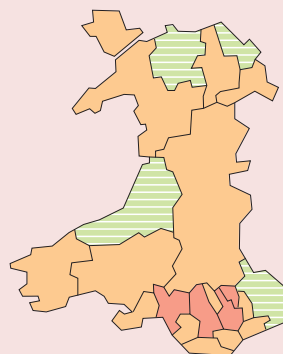
Local authorities with above average physical health status tend to have better mental wellbeing scores. Mental wellbeing scores are statistically below average for local authorities in the South Wales Valleys.



Physical health status, by local authority, 2009-2010

Age-standardised score

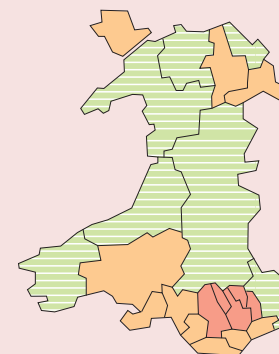
Significantly above average
Average
Significantly below average



Mental wellbeing, by local authority, 2009-2010

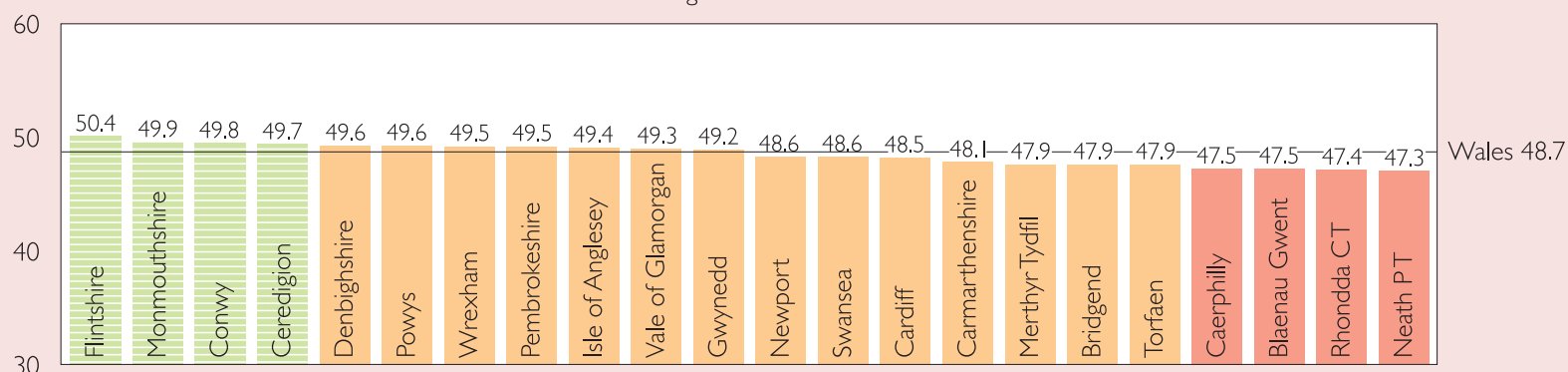
Age-standardised score

Significantly above average
Average
Significantly below average



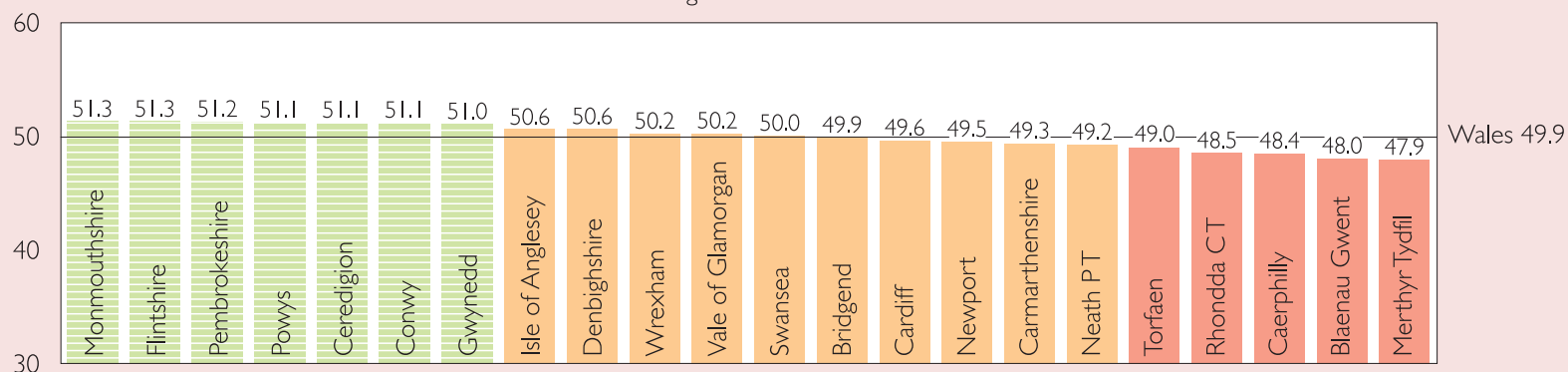
Physical health status, by local authority, 2009-2010

Age-standardised score



Mental wellbeing, by local authority, 2009-2010

Age-standardised score



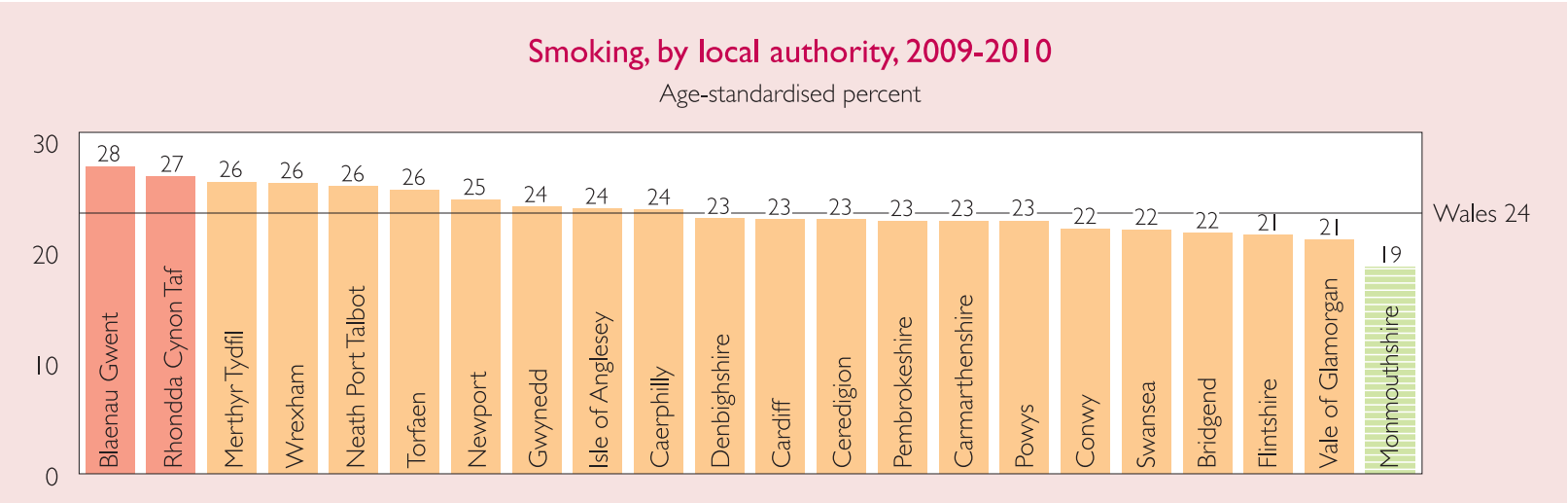
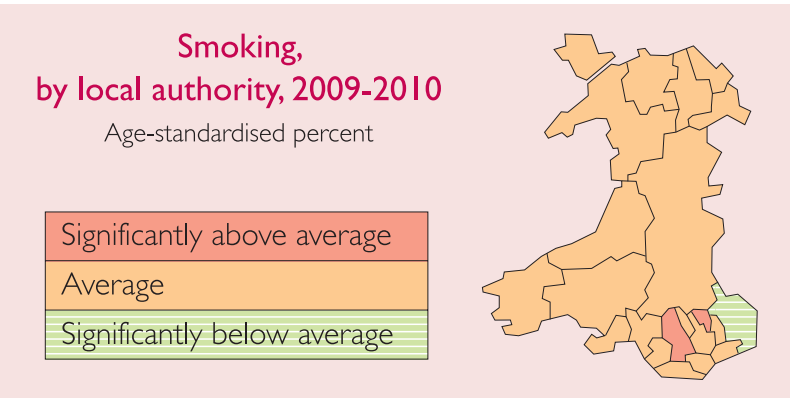
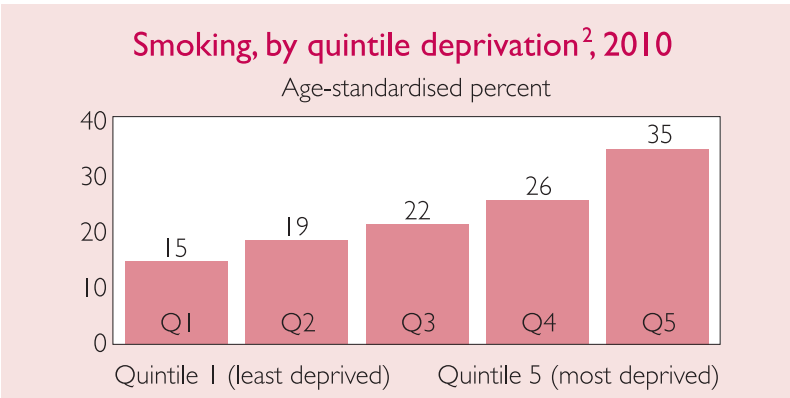
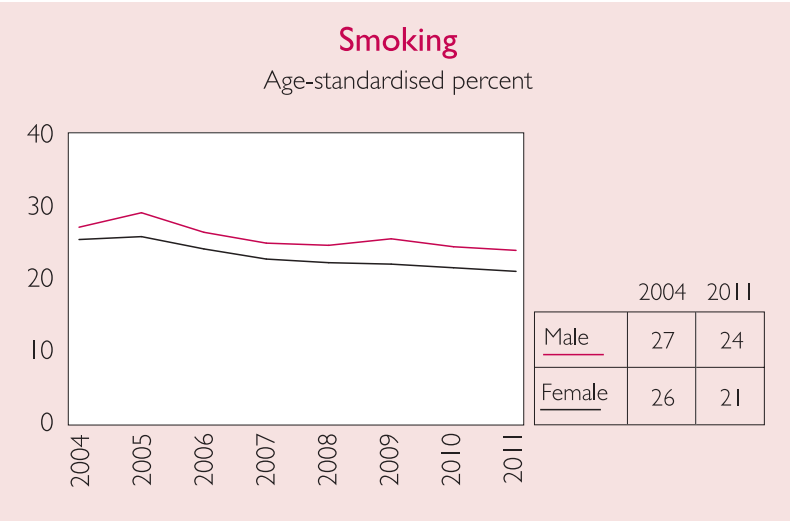
Notes. 1. Health status scores for adults (age 16 and over), based on a standard set of 36 questions (SF-36) asking about people's own perception of their physical and mental health and the impact on their daily lives. Responses can be combined to produce summary measures of physical and mental health. Higher scores indicate better health and wellbeing.

2. Using Welsh Index of Multiple Deprivation 2008 to assign small areas in Wales to one of five groups, ranging from quintile 1 (the least deprived fifth of areas) to 5 (the most deprived fifth of areas).

Source: Welsh Health Survey, Welsh Government.

Adult smoking¹

The percentage of adults smoking has decreased for both males and females. Smoking shows a clear association with deprivation, with highest smoking percentages in the most deprived areas. The proportion of smokers in the most deprived quintile is more than double that in the least deprived. The highest smoking percentages are found in Blaenau Gwent and Rhondda Cynon Taf and the lowest in Monmouthshire.



Notes. 1. Adults (age 16 and over) who reported smoking daily or occasionally.
2. Using Welsh Index of Multiple Deprivation 2008 to assign small areas in Wales to one of five groups, ranging from quintile 1 (the least deprived fifth of areas) to 5 (the most deprived fifth of areas).
Source: Welsh Health Survey, Welsh Government.

Health Gain Targets

Outcome target for Coronary Heart Disease (CHD)

Outcome target for Cancer

Outcome target for people (Stroke)

Outcome target for Mental Health (Suicide)

Outcome target for Older people (Hip Fractures)

Outcome target for Mental Health (Mental Health Status)

Outcome target for Children (Pedestrian Injuries from Motor Vehicle Accidents)

Health Inequality Trends

Coronary Heart Diseases (CHD) Mortality 2001-2010

Cancer Mortality 2001-2010

Child Pedestrian Injuries from Motor Vehicle Accidents 2002-2010

Health Gain Targets

Coronary Heart Disease: Deaths from coronary heart disease for people aged 65-74 continue to decline and at 274 per 100,000 in 2010 are well below the target level. Coronary heart disease mortality has declined in all quintiles over the past decade. However, while rates have fallen by 50 per cent in the least deprived quintile they have fallen by only 37 per cent in the most deprived quintile.

Cancer: Deaths from cancer continue to decline in the under 75 age group, with a rate of 113 per 100,000. Extrapolating past trends show a mixed picture in terms of whether or not the target will be reached by 2012. Cancer mortality has declined in all quintiles over the past decade. However, while rates have fallen by 17 per cent in the least deprived quintile they have fallen by only six per cent in the most deprived quintile.

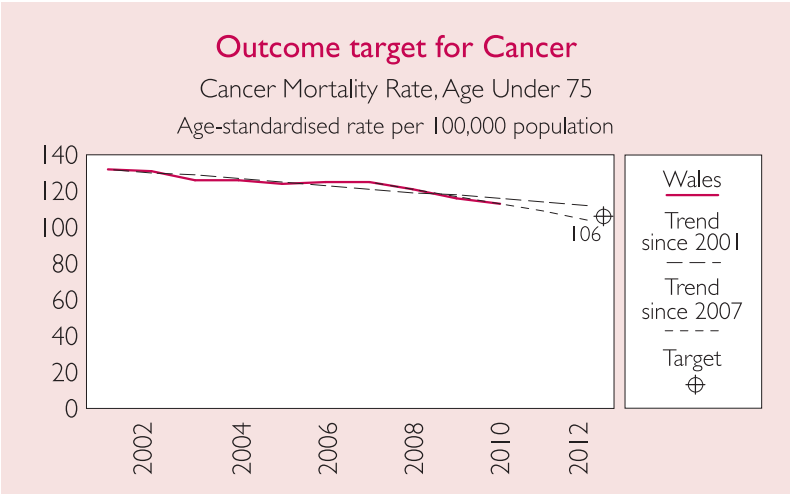
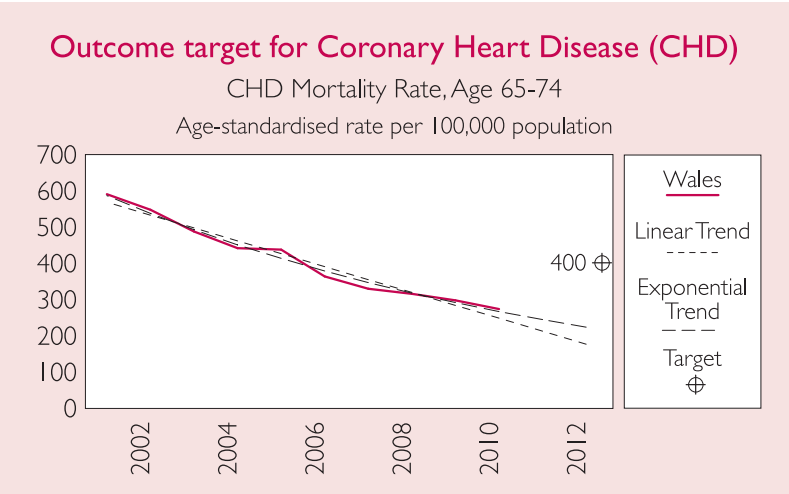
Stroke: There has been little change in the figures for deaths from stroke in people aged 65-74 since 2009 at 96 per 100,000. The figures remain below the target level of 35 per 100,000.

Suicide: Figures for 2010 show a small rise since 2009 at 9.2 per 100,000 but this is based on relatively small numbers. This figure is below the 2012 target.

Older People: The hip fracture rate in those aged 75 and over has fallen in the most recent year to 1,120 per 100,000. However, overall the rate has changed little since 2001 and unlikely to achieve the 2012 target.

Mental Health: The indicator for mental health in Wales, the SF36 Mental Component Score (MCS) continues to show little variation compared to previous years.

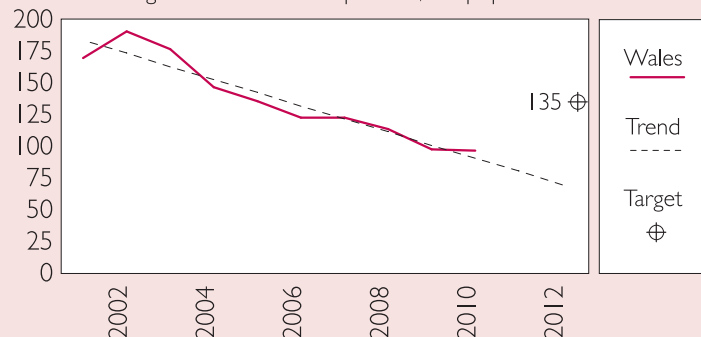
Child Pedestrian Injuries: Latest figures show a rise in pedestrian injuries to 367 in 2011 from motor vehicle accidents in children aged 0-14 years. This figure is still below the target but may indicate a change from the previous downward trend. Over time the trend is downwards and the gap between most and least deprived quintiles has narrowed.



Outcome target for Older people (Stroke)

Stroke Mortality Rate, Age 65-74

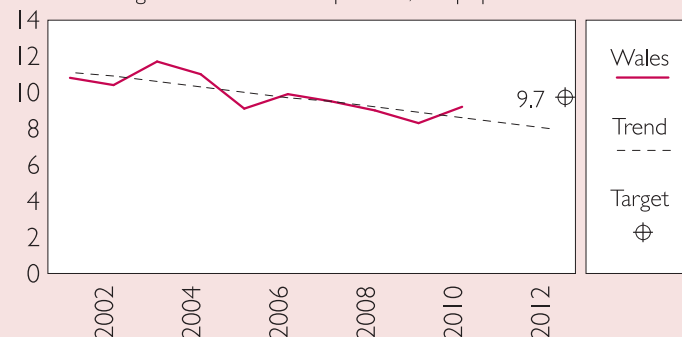
Age-standardised rate per 100,000 population



Outcome target for Mental Health (Suicide)

Suicide Rate (including undetermined deaths)

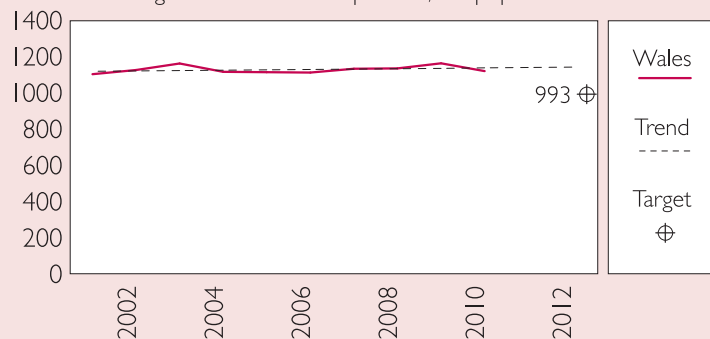
Age-standardised rate per 100,000 population



Outcome target for Older people (Hip Fractures)

Hip Fracture Rate, Age 75 and Over

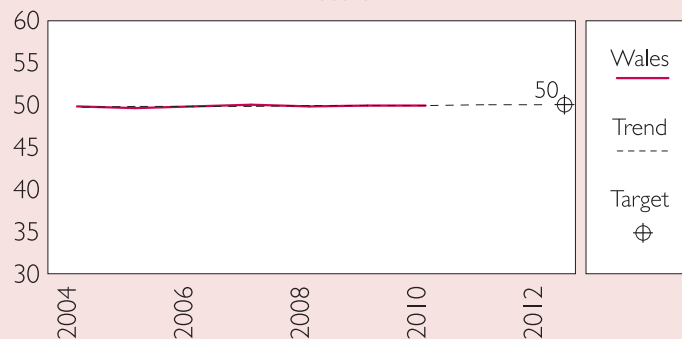
Age-standardised rate per 100,000 population



Outcome target for Mental Health (Mental Health Status)

SF-36 Mental Component Summary Score (MCS)

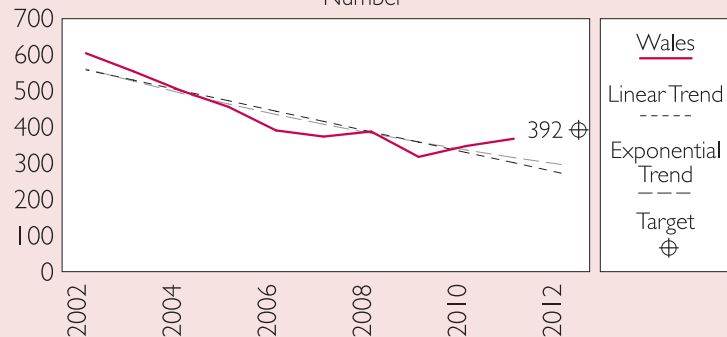
Score



Outcome target for Children (Pedestrian Injuries from Motor Vehicle Accidents)

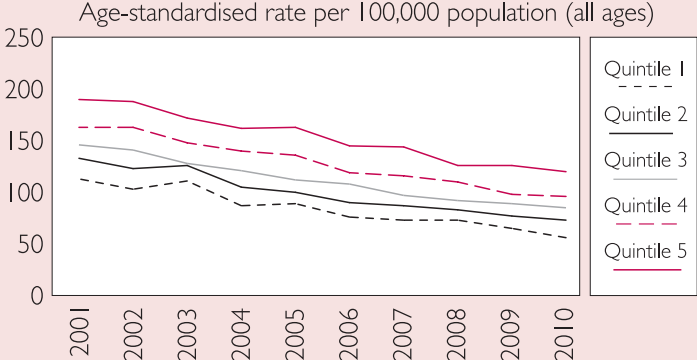
Child Pedestrian Injuries from Motor Vehicle Accidents, age 0-14

Number

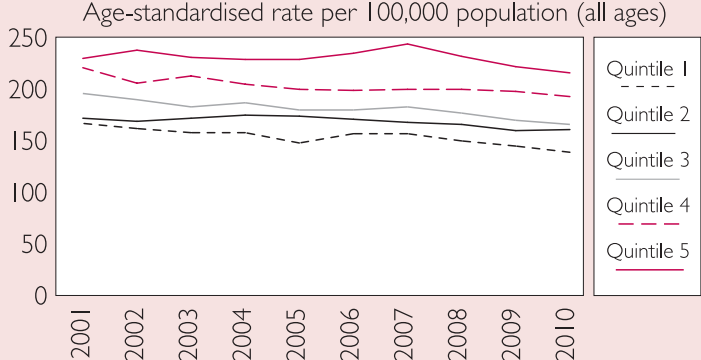


Health Inequality Trends

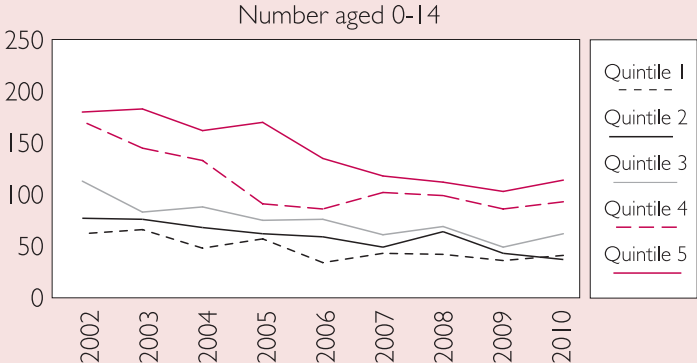
Coronary Heart Disease (CHD) Mortality 2001-2010 by deprivation quintile



Cancer Mortality, 2001-2010 by deprivation quintile



Child Pedestrian Injuries from Motor Vehicle Accidents, 2002-2010, by deprivation quintile



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