

# Health and use of health services

6.1 Health and well-being

6.2 Disease/chronic condition prevalence

6.3 Dental health

6.4 Emergency department attendances

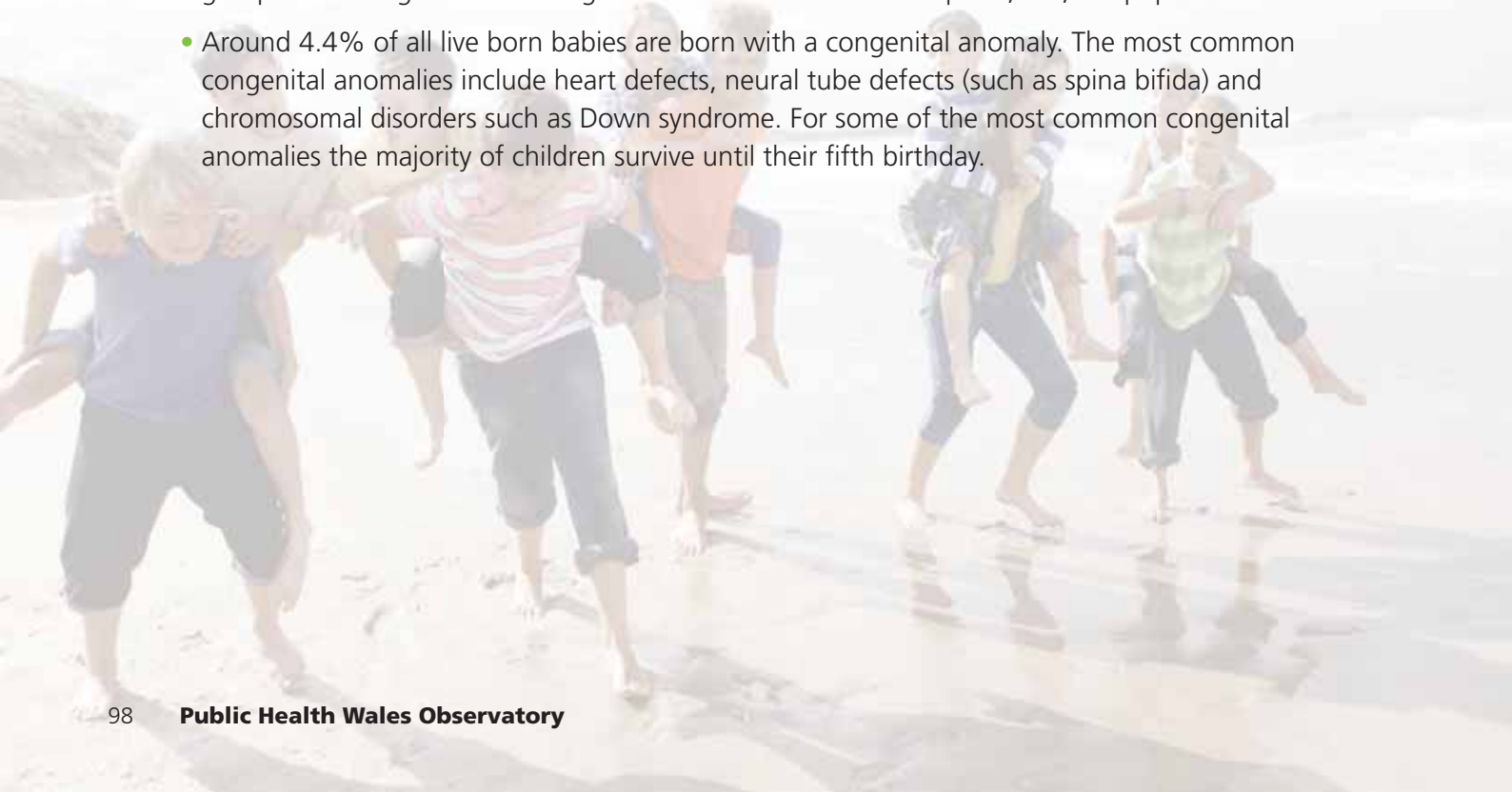
6.5 Hospital admissions

6.6 Injuries



## Key messages

- In Wales, over three quarters of children aged 11-16 rate their health as excellent or good; however, among both boys (81%) and girls (74%) this is lower than the percentage in England, Scotland and Ireland. Those from more affluent families report higher levels of good health.
- When asked to rate their quality of life on a scale of 0 to 10 (0=worst possible life and 10=best possible life) 80% of males and 86% of females aged 11-16 in Wales scored themselves 6 or higher. When compared with England, Scotland and Ireland, Wales exhibited the lowest percentage scoring 6 or higher in both males and females.
- In 2011, over 25,000 males and almost 20,000 females aged 0-24 reported a long-term health problem or disability in Wales which equates to 4.3% of females and 5.7% of males. This is higher than the percentage for England and any English region. The highest percentages in Wales are seen in Neath Port Talbot and across the south Wales valleys.
- Mental health and well-being is high on the Government's agenda due to the significant impact it has on individuals, society and the economy overall. The Welsh Government's mental health strategy, *Together for mental health*, intends to promote mental wellbeing and where possible prevent mental health problems developing. In 2011, over 40,000 children and young people aged 5-16 were estimated to have a mental health disorder in Wales.
- In 2009/10, the percentage of 11-16 year olds reporting being bullied in the last couple of months in Wales was 30% for males and 27% for females.
- Eating disorders include conditions which affect people socially, physically and psychologically and can in extreme cases result in death. In Wales, 37% of girls and 25% of boys aged 11-16 years old perceive their bodies as too fat. However, 15% of girls and 21% of boys of the same age are overweight or obese which suggests that girls have an inaccurate perception of their weight.
- The most common cancers for children and young people are leukaemia, lymphomas (both Hodgkin's and non-Hodgkin's) and brain and central nervous system (CNS). The 18-24 age group has the highest annual registration rates of around 300 per 1,000,000 population.
- Around 4.4% of all live born babies are born with a congenital anomaly. The most common congenital anomalies include heart defects, neural tube defects (such as spina bifida) and chromosomal disorders such as Down syndrome. For some of the most common congenital anomalies the majority of children survive until their fifth birthday.



- The evidence supporting fluoride in reducing dental decay is well established; local priorities for action at a community level are the use of fluoride toothpaste and fluoride varnish. The highest average number of decayed, missing and filled teeth per child is in Blaenau Gwent (3.1).
- Almost 280,000 children and young people aged 0-24 (3 in 10) attended an emergency department in 2011, with males accounting for 55% of the attendances by children and young people aged 0-24. Over a third (37%) of those aged 0-24 attending emergency departments made more than one attendance. The highest rates are seen in the 18-24 year age group and are likely to be attributable to alcohol related attendances, vehicle accidents and sport injuries.
- Around 1 in 10 children and young people aged 0-24 were admitted to hospital as an emergency in 2011. Major causes of admission for 0-4 year olds are respiratory disease and infections whereas for 5-24 year olds the most common cause of admission is injury/poisoning. Rates of emergency admission to hospital are highest for 0-24 year olds in the Merthyr Tydfil and Bridgend local authority areas and across the south Wales valleys. Emergency admission rates may depend on a large number of factors, including underlying population need, provision of services including elective, emergency, community and primary care services as well as patient/parental behaviour in seeking health care.
- Injuries are a major public health issue across the globe. In 2011 there were over 15,000 admissions to hospital of 0-24 year olds due to injuries. Children from more deprived areas are more likely to be admitted to hospital as an emergency as the result of a pedestrian injury than those from the less deprived areas.

**Governments ‘... recognize the right of the child to the enjoyment of the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation of health.’**

*The United Nations Convention on the Rights of the Child, Article 24.1*

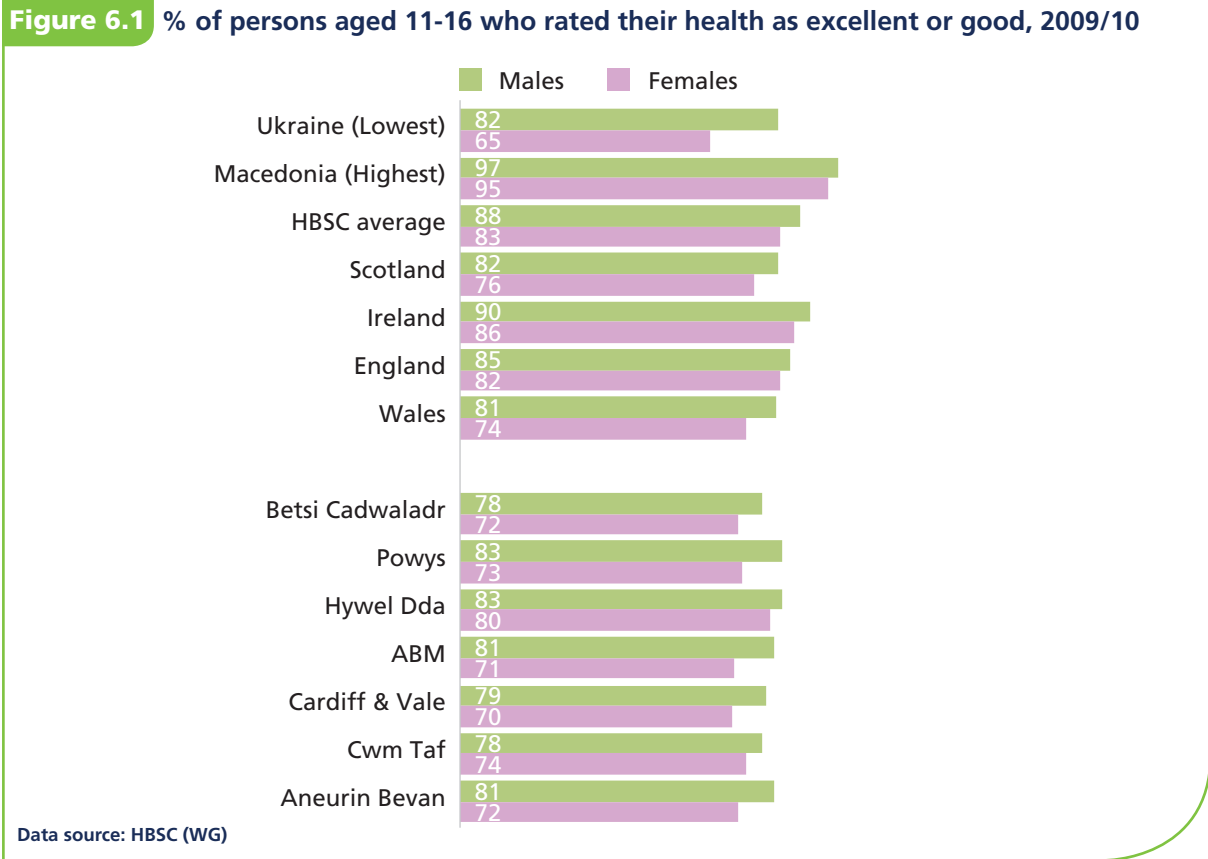
The health of children is an important consideration. Influences on health at a young age will continue throughout childhood and into adulthood; resulting in improved well-being in adults.<sup>1</sup> Giving every child a healthy start in life is one of the seven principles identified by the Welsh Government in the strategic action plan to reduce health inequities.<sup>2</sup>

This chapter comprises a large number of measures from a variety of sources which reflect young people’s health and well-being. Also included are a number of health service measures related to health outcomes for children and young people.

### 6.1 Health and well-being

In order to improve the health of children and young people it is essential to understand the social determinants. This will inform policy and practice and ensure that the appropriate interventions can be determined and put in place. The Children Act 2004 places a duty on local agencies to co-operate to improve the well-being of children, including their mental health and emotional health.<sup>3</sup>

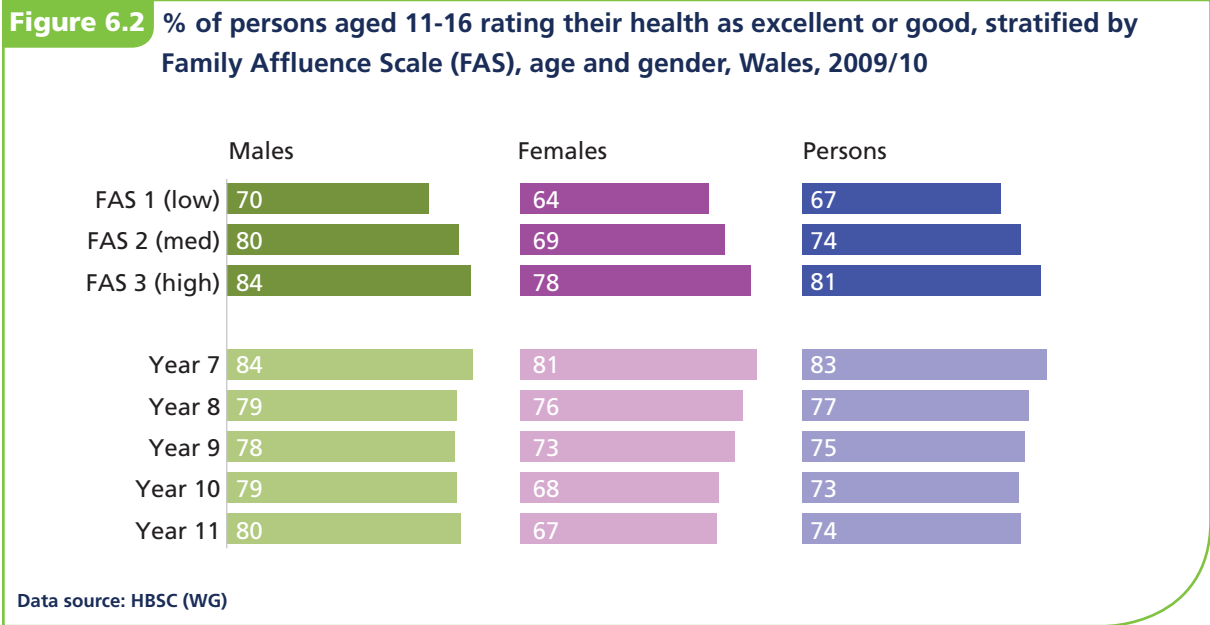
The Health Behaviour in School-aged Children (HBSC) survey is a cross-national research study conducted in collaboration with the World Health Organization (WHO) Regional Office for Europe<sup>4</sup> as described in chapter 4 of this report. Figure 6.1 shows the percentage of 11-16 year olds rating their health as excellent or good. It can be seen that the percentage of children for Wales is lower than the HBSC average for both males and females. Wales is seen to have lower (worse) percentages for males and females when compared to England, Scotland and Ireland. The percentage rating their health as excellent or good is higher for males than females for all areas.



Hywel Dda Health Board has the highest percentage of 11-16 year old males and females rating their health as excellent or good, 83% and 80% respectively. The lowest percentages can be seen in Cardiff and Vale for females (70%) and Betsi Cadwaladr and Cwm Taf for males (78%).

The HBSC Family Affluence Scale (FAS) measure is described in section 4.10 and in the technical guide which can all be accessed on the Public Health Wales Observatory website at: [www.publichealthwalesobservatory.wales.nhs.uk/childprofile](http://www.publichealthwalesobservatory.wales.nhs.uk/childprofile)

Figure 6.2 shows the percentage of 11-16 year olds rating their health as excellent or good stratified by FAS and also for school years 7 to 11 which correspond to 11-16 year olds.

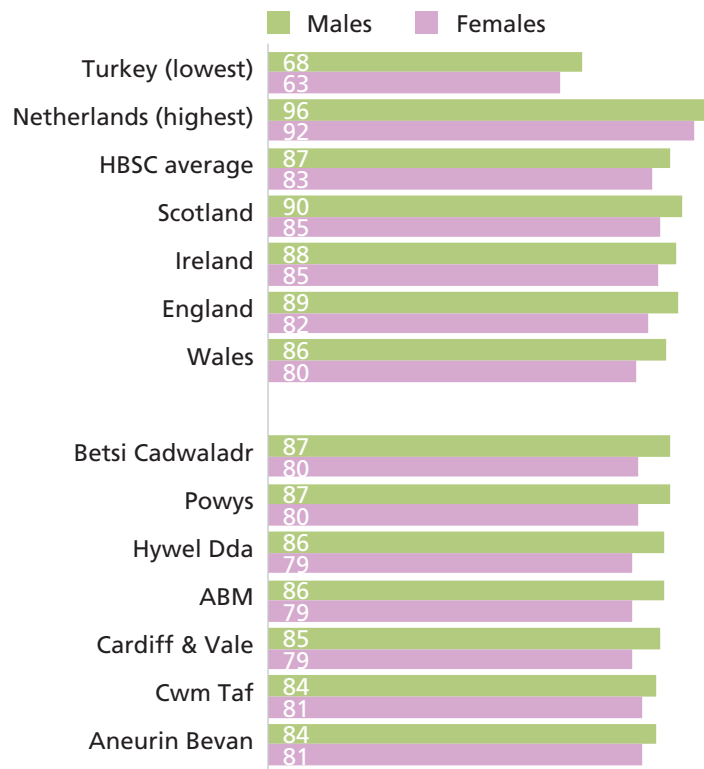


A higher FAS is associated with a higher percentage of 11-16 year olds rating their health as excellent or good; this is true for both males and females. In the low FAS, 67% of 11-16 year olds rate their health as excellent or good compared to 81% in the high FAS i.e. those from the most deprived households were more likely to rate their health lower than those from the most affluent households.

Looking at the data by age and sex, the percentage of females aged 11-16 rating their health as excellent or good is considerably lower in year 11 (67%) compared to year 7 (81%). This pattern is not replicated in males.

When asked to rate their quality of life on a scale of 0 to 10 (0=worst possible life and 10=best possible life) 80% of males and 86% of females aged 11-16 in Wales scored themselves 6 or higher (Figure 6.3). When compared with England, Scotland and Ireland, Wales exhibited the lowest percentage scoring 6 or higher in both males and females. Similar patterns are observed across all 7 health board areas in Wales with over 3 quarters of 11-16 year old males and females scoring 6 or higher on the quality of life scale.

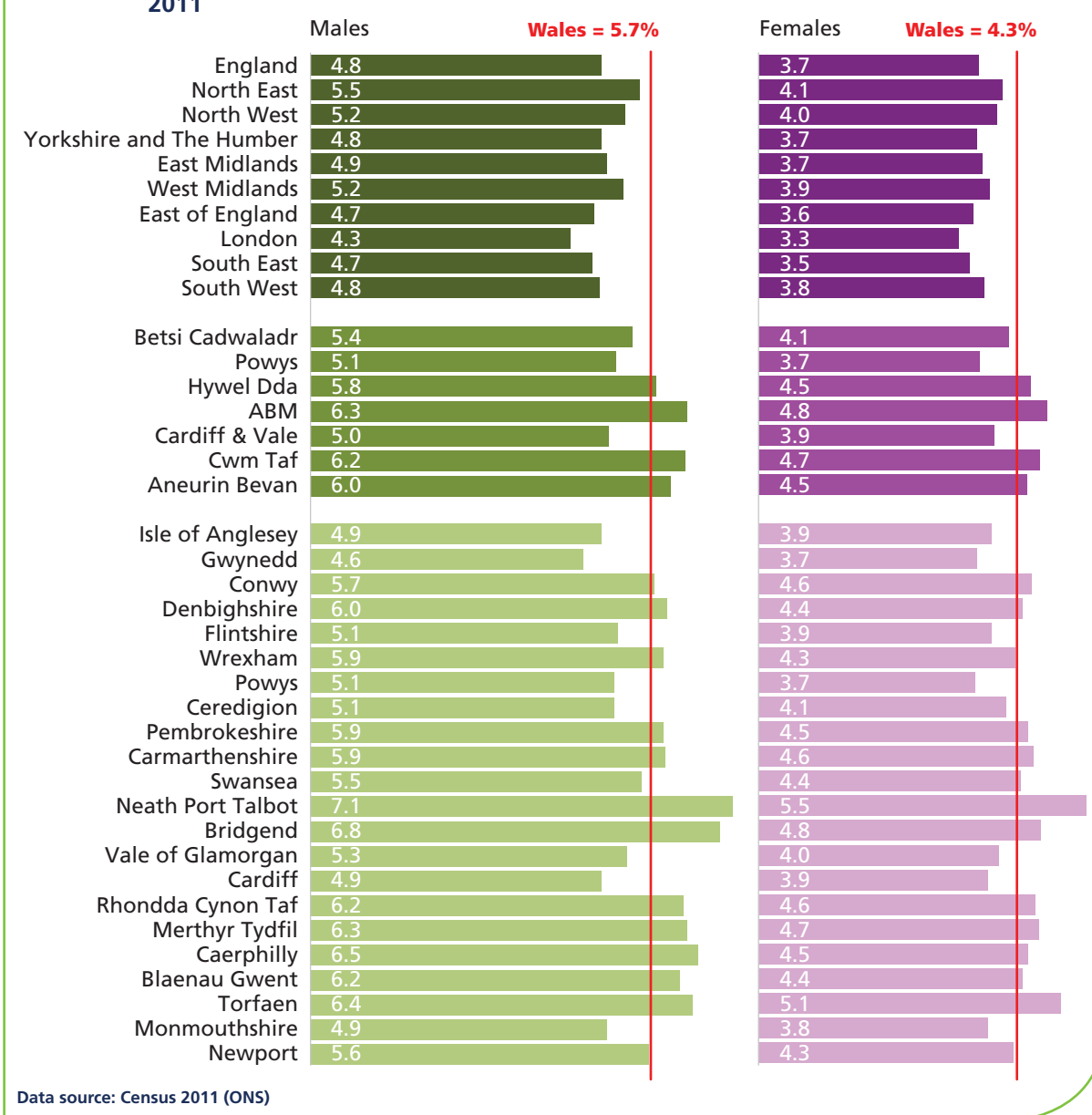
**Figure 6.3** % of persons aged 11-16 scoring six or higher on self rated quality of life, 2009/10



Data source: HBSC (WG)

A long-term health problem or disability is one that limits a person's day-to-day activities and has lasted, or is expected to last, at least 12 months.<sup>5</sup> From the 2011 Census, over 25,000 males and almost 20,000 females aged 0-24 reported a long-term health problem or disability in Wales which equates to 4.3% of females and 5.7% of males (Figure 6.4). Wales had the highest percentage when compared to England and its regions for both males and females.

**Figure 6.4** % of males and females aged 0-24 with a long-term health problem or disability, 2011



At the health board level, the percentage of 0-24 year olds who reported a long-term health problem or disability is highest in Abertawe Bro Morgannwg for both males (6.3%) and females (4.8%). The lowest percentages are seen in Cardiff and Vale for males (5.0%) and Powys for females (3.7%).

Further variation can be seen across local authority areas for both males and females. The highest percentage reporting a long-term health problem or disability occurs in Neath Port Talbot for both females and males (5.5% and 7.1% respectively) whilst the lowest percentages occur in Gwynedd and Powys for females (3.7%) and in Gwynedd for males (4.6%). The percentages of 0-24 year olds reporting a long-term health problem or disability is higher in males than females across all areas.

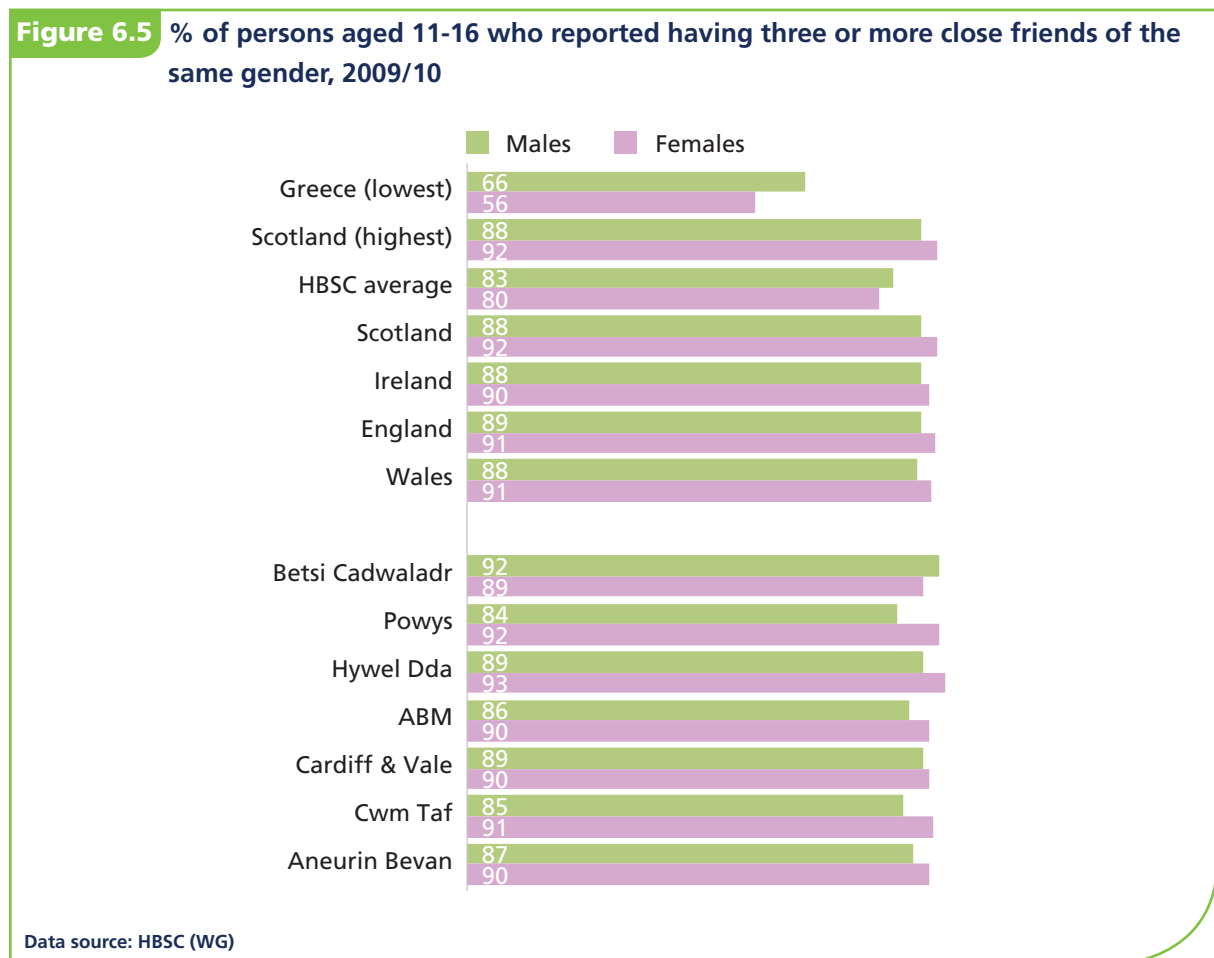
The Welsh Government's strategic equality plan contains equality objectives to ensure that public services and employment are fair, accessible and responsive to people's need.<sup>6</sup>

Information on interventions for improving mental well-being is included in section 8.7 of this report.

## Bullying and friendship

Individuals develop social skills, enhance their self esteem and gain social support when establishing friendships, all of which contribute to a person's health and well-being.<sup>7</sup> Exposure to bullying increases the risk of health problems and unhappiness in children and young people.<sup>8-11</sup> It has been shown that these health problems extend into adulthood.<sup>12</sup> The impact of bullying on young children has been highlighted by the Child Death Review Pilot, as part of the thematic review into young people taking their own life.<sup>13</sup>

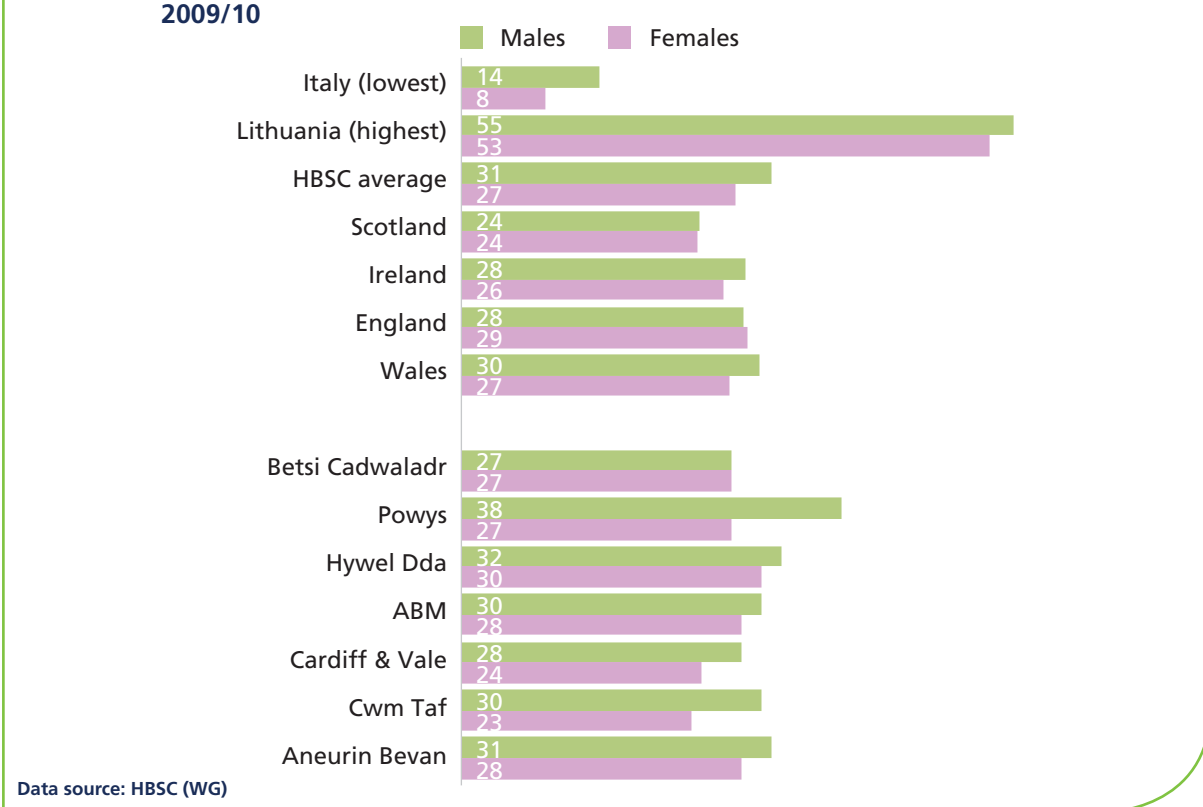
This section of the report examines friendship and bullying in 11-16 year olds using data from the HBSC survey.



In Wales, 88% of boys and 91% of girls aged 11-16 years old in Wales reported having 3 or more close friends of the same gender (Figure 6.5). Similar percentages were reported across England, Scotland and Ireland.

Across health boards, for males the percentages range from 84% in Powys to 92% in Betsi Cadwaladr and for females the percentages range from 89% in Betsi Cadwaladr to 93% in Hywel Dda. The percentage of 11-16 year olds who reported having 3 or more close friends of the same gender is higher in females than males across all Welsh health boards apart from Betsi Cadwaladr where this pattern is reversed.

**Figure 6.6** % of persons aged 11-16 reporting being bullied in the last couple of months, 2009/10



In 2009/10, the percentage of 11-16 year olds reporting being bullied in the last couple of months in Wales was 30% for males and 27% for females (Figure 6.6). Scotland had the lowest percentage reported for both males (24%) and females (24%) when compared with other regions of Great Britain and Ireland. Compared to the other countries taking part in the survey the percentages reporting being bullied in Wales were comparable to the survey averages and almost half that of the country reporting the highest percentages (Lithuania).

At the health board level, Powys had the highest percentage of males aged 11-16 years old reporting being bullied in the last couple of months (38%) and Betsi Cadwaladr had the lowest (27%). The percentage of females was similar across all health board areas, ranging from 23% in Cwm Taf to 30% in Hywel Dda.

### Eating disorders

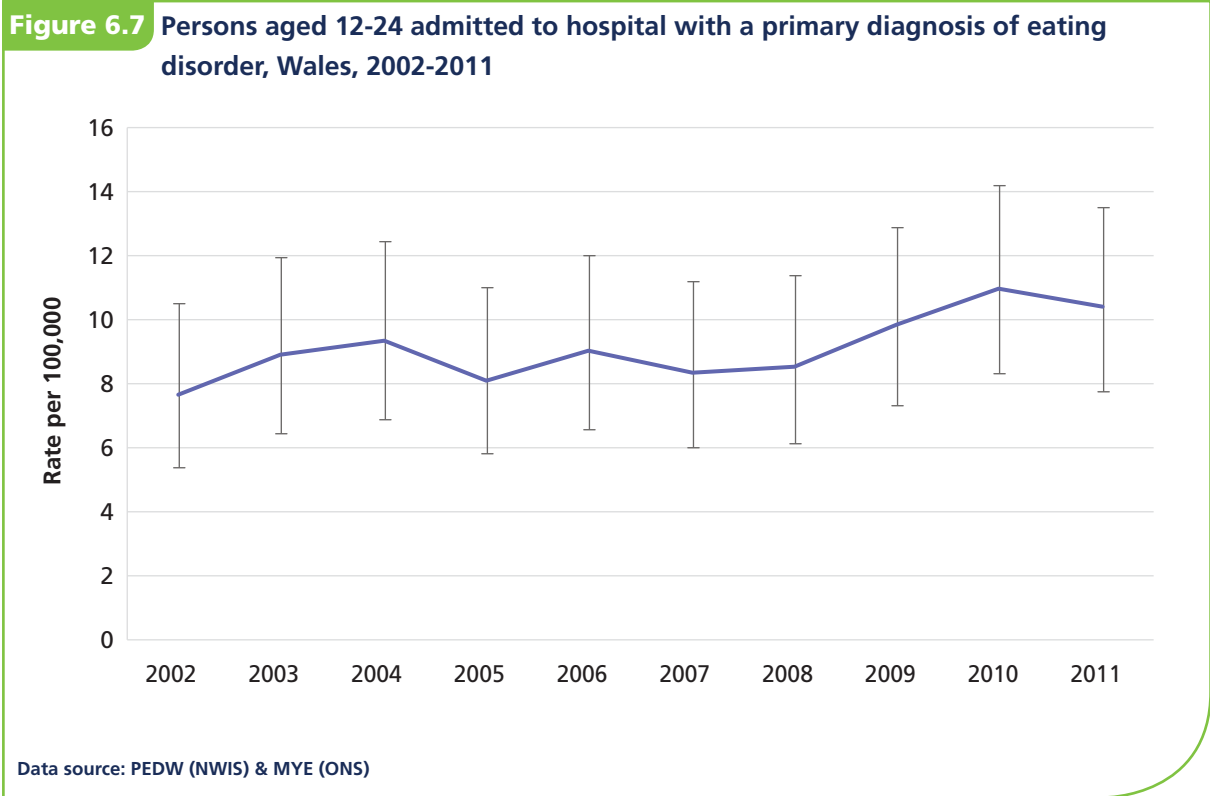
Eating disorders include conditions which affect people socially, physically and psychologically. These conditions are very serious and can affect both males and females. The Third National Survey of Morbidity in General Practice reported that 100 per 100,000 females and 60 per 100,000 males (all ages) consulted their general practitioner for anorexia nervosa.<sup>14</sup>

Early identification and appropriate interventions are essential in order to improve a person's outcome. One of the risk factors associated with eating disorders is low self esteem which is influenced by the way a person perceives their own body.<sup>14</sup>

In Wales, 37% of girls and 25% of boys aged 11-16 years old perceive their bodies as too fat. However, comparisons with the figures for the percentage of 11-16 year olds who were overweight or obese (Figure 5.7) suggests that girls have an inaccurate perception of their weight since 15% of girls were overweight or obese compared to 21% of boys. However, these findings may be affected by the fact that height and weight is self reported and by the threshold used to classify overweight in children.

Figure 6.7 shows the age-specific rates per 100,000 population of hospital admissions with a primary diagnosis of eating disorder in persons aged 12-24 in Wales. A person may have been admitted more than once in a given year but has only been counted once per year in this analysis. The rate increased from 7.7 per 100,000 population in 2002 to 10.4 in 2011, however, further analysis showed that this is not a statistically significantly increasing trend ( $\chi^2$  trend = 2.97,  $p > 0.05$ ).

Between 2002 and 2011, the average number of people aged 0-24 admitted per year for an eating disorder was 46. Nine in 10 admissions for eating disorders in persons aged 12-24 in the period 2002 to 2011 were female. In 2002-2011, 64% of all admissions for eating disorders in persons aged 12-24 were aged 12-17 and 36% were aged 18-24.



Patients in Tier 3 and Tier 4 eating disorder care are the high risk patients who would benefit from intensive interventions and therefore represent the ‘tip of the iceberg’ with the majority of patients being cared for in primary care (Tier 1). In July 2013, more than 70 persons aged 18-24 in Wales were receiving Tier 3 or Tier 4 care for eating disorders (figures provided by the Community Adult Eating Disorders Services (CAEDS)).

In responding to the emerging problem of childhood obesity, policy makers will need to be mindful of the risk that an unwanted side effect of any intervention intended to reduce obesity levels may increase the percentage of adolescents engaged in inappropriate weight control.<sup>15</sup>

**Mental Health**

It is estimated that mental health problems affect a quarter of adults and 1 in 10 children.<sup>16</sup> Mental health and well-being is high on the government’s agenda due to the significant impact it has on individuals, society and the economy overall. The Welsh Government’s mental health strategy, *Together for mental health*<sup>17</sup>, intends to promote mental wellbeing and where possible prevent mental health problems developing. This strategy identifies the need to develop better links with services such as the Child and Adolescent Mental Health Services (CAMHS).

Mental ill health impacts on the ability to provide positive parenting and this is particularly important in the first two years of life when attachments are forming and brain development is most rapid.<sup>18</sup> Good parental mental health is an essential component of secure attachment. This has an important role to play in children's physical health; brain development; self esteem; social skills; and emotional competence.

Due to a lack of data available on mental health, the estimated number of 5-16 year olds with any mental disorder were produced by applying prevalence estimates (9.6%) published by Green et al (2004)<sup>19</sup> to the 5-16 year old population of Wales. Figure 6.8 shows that in 2011, over 40,000 children and young people aged 5-16 were estimated to have a mental health disorder in Wales. The numbers ranged from 1,700 in Powys to almost 9,000 in Betsi Cadwaladr, reflecting the different children's population sizes in these areas.

**Figure 6.8** Estimated number of children and young people aged 5-16 with any mental health disorder, 2011

	Population	Estimated number (95% confidence interval)	
Betsi Cadwaladr	91,670	8,830	(8,656 to 9,006)
Powys	17,860	1,700	(1,624 to 1,778)
Hywel Dda	50,170	4,900	(4,772 to 5,032)
ABM	68,830	6,701	(6,550 to 6,855)
Cardiff and Vale	62,520	6,197	(6,053 to 6,345)
Cwm Taf	40,750	3,942	(3,826 to 4,060)
Aneurin Bevan	82,940	7,973	(7,808 to 8,140)
Isle of Anglesey	8,810	843	(790 to 898)
Gwynedd	15,540	1,538	(1,467 to 1,613)
Conwy	14,660	1,397	(1,329 to 1,468)
Denbighshire	12,780	1,233	(1,169 to 1,300)
Flintshire	21,300	2,035	(1,953 to 2,121)
Wrexham	18,580	1,783	(1,706 to 1,864)
Powys	17,860	1,700	(1,624 to 1,778)
Ceredigion	8,520	902	(848 to 959)
Pembrokeshire	16,750	1,611	(1,538 to 1,687)
Carmarthenshire	24,900	2,388	(2,298 to 2,480)
Swansea	30,860	3,053	(2,952 to 3,158)
Neath Port Talbot	18,750	1,797	(1,720 to 1,878)
Bridgend	19,230	1,851	(1,772 to 1,932)
Vale of Glamorgan	18,040	1,735	(1,659 to 1,814)
Cardiff	44,480	4,463	(4,340 to 4,589)
Rhondda Cynon Taf	32,650	3,159	(3,056 to 3,266)
Merthyr Tydfil	8,090	783	(732 to 836)
Caerphilly	25,940	2,489	(2,398 to 2,584)
Blaenau Gwent	9,380	909	(854 to 966)
Torfaen	13,090	1,256	(1,191 to 1,323)
Monmouthshire	12,840	1,223	(1,159 to 1,290)
Newport	21,690	2,096	(2,012 to 2,183)
<b>Wales</b>	<b>414,740</b>	<b>40,243</b>	<b>(39,871 to 40,618)</b>

Data source: Green et al (2004)<sup>19</sup> & MYE (ONS)

## 6.2 Disease / chronic condition prevalence

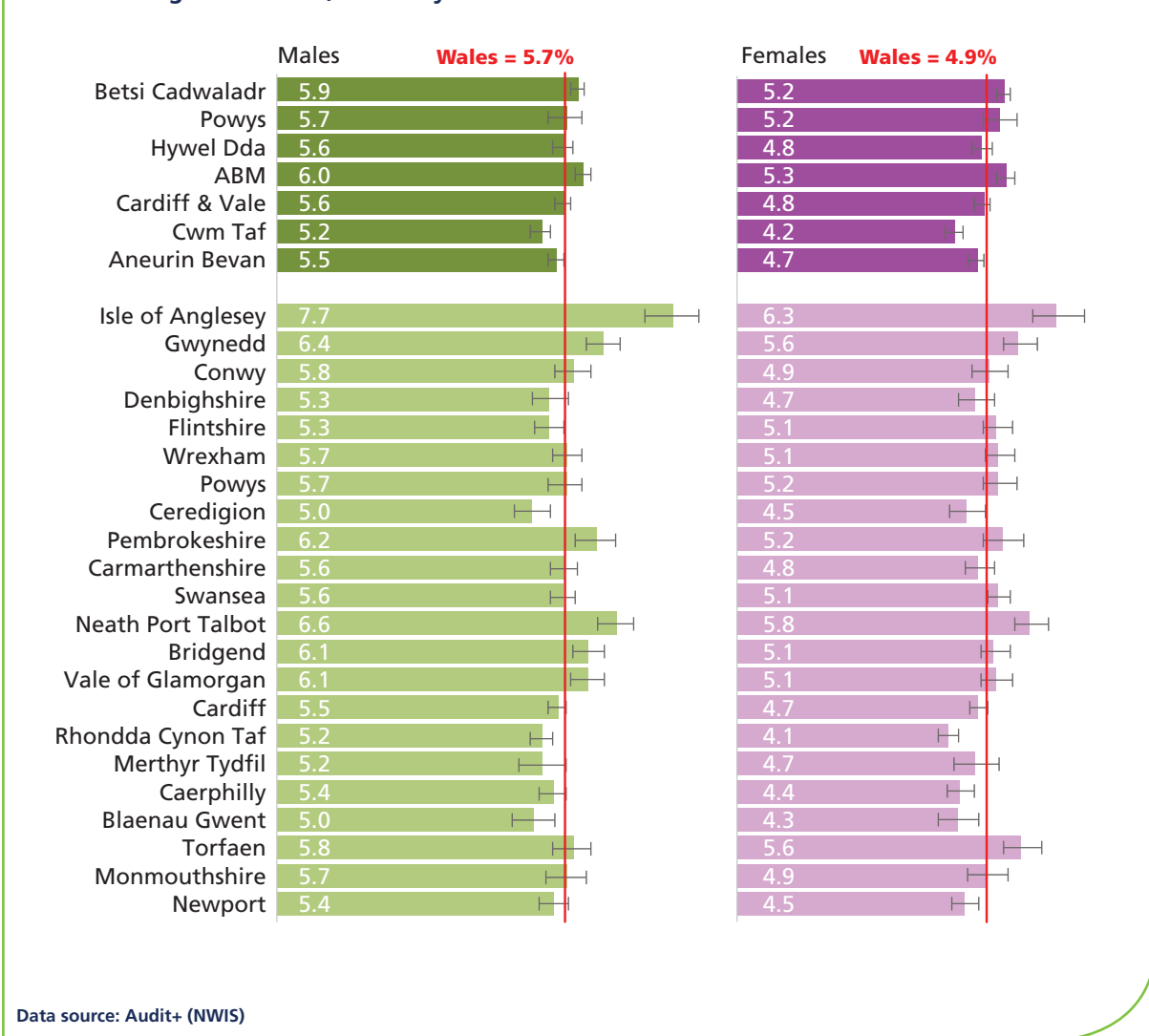
Childhood diseases and chronic conditions can have a life-limiting effect and may increase the use of health services over the lifespan of the individual affected.

### Asthma

Asthma prevalence in Wales is one of the highest in the world with over a quarter of a million people living with the condition.<sup>20</sup> The UK also has considerably higher rates of asthma than other European countries such as France, Germany, Finland and Norway.<sup>21</sup> Asthma is the most common chronic condition in children worldwide, and 1 in 10 children in Wales are currently being treated for asthma.<sup>20,22</sup> Although asthma is a condition that can be managed with medication, a report by Asthma UK Cymru found that 1 in 8 patients expects to have to make lifestyle compromises, such as avoiding getting exercise or playing sport, on a daily basis.<sup>20</sup>

The Child Death Review pilot highlighted that asthma can be a lethal condition and stressed the importance of specialist support for children who have had admissions to intensive care or high dependency care with asthma.<sup>13</sup>

**Figure 6.9** % of patients on primary care chronic conditions register with asthma, persons aged under 25, February 2012



In Wales, the percentage of males aged 0-24 years on a GP chronic conditions register with asthma (5.7%) is higher than the percentage of females of the same age (4.9%) (Figure 6.9). At the health board level Cwm Taf has the lowest percentage of male and female patients on an asthma register, and Abertawe Bro Morgannwg has the highest percentages for both males and females. Across local authorities generally males have higher percentages of asthma than females. The Isle of Anglesey has the highest percentage of asthma for both females and males at 6.3% and 7.7% respectively. Rhondda Cynon Taf has the lowest percentages of female patients on the chronic conditions register with asthma at 4.1% and Blaenau Gwent has the lowest percentage of males at 5.0%. Quality and outcomes framework (QOF) data is primarily used to monitor GP practice performance against their contract; secondary use of data should be interpreted with caution e.g. the high and low rates could be attributable to differences in identification, data collection and reporting for the GP practices in those areas.

It is unclear what causes asthma but a family history of the disease increases risk. Common triggers for asthma include house dust mites, animal fur, pollen, tobacco smoke, exercise, cold air and chest infections.<sup>23</sup> Changes in housing and diet and a more hygienic environment may have contributed to the rise in asthma.<sup>24</sup> Environmental pollution can make asthma symptoms worse, but it has not been proven to cause asthma.<sup>24</sup>

**Cancer**

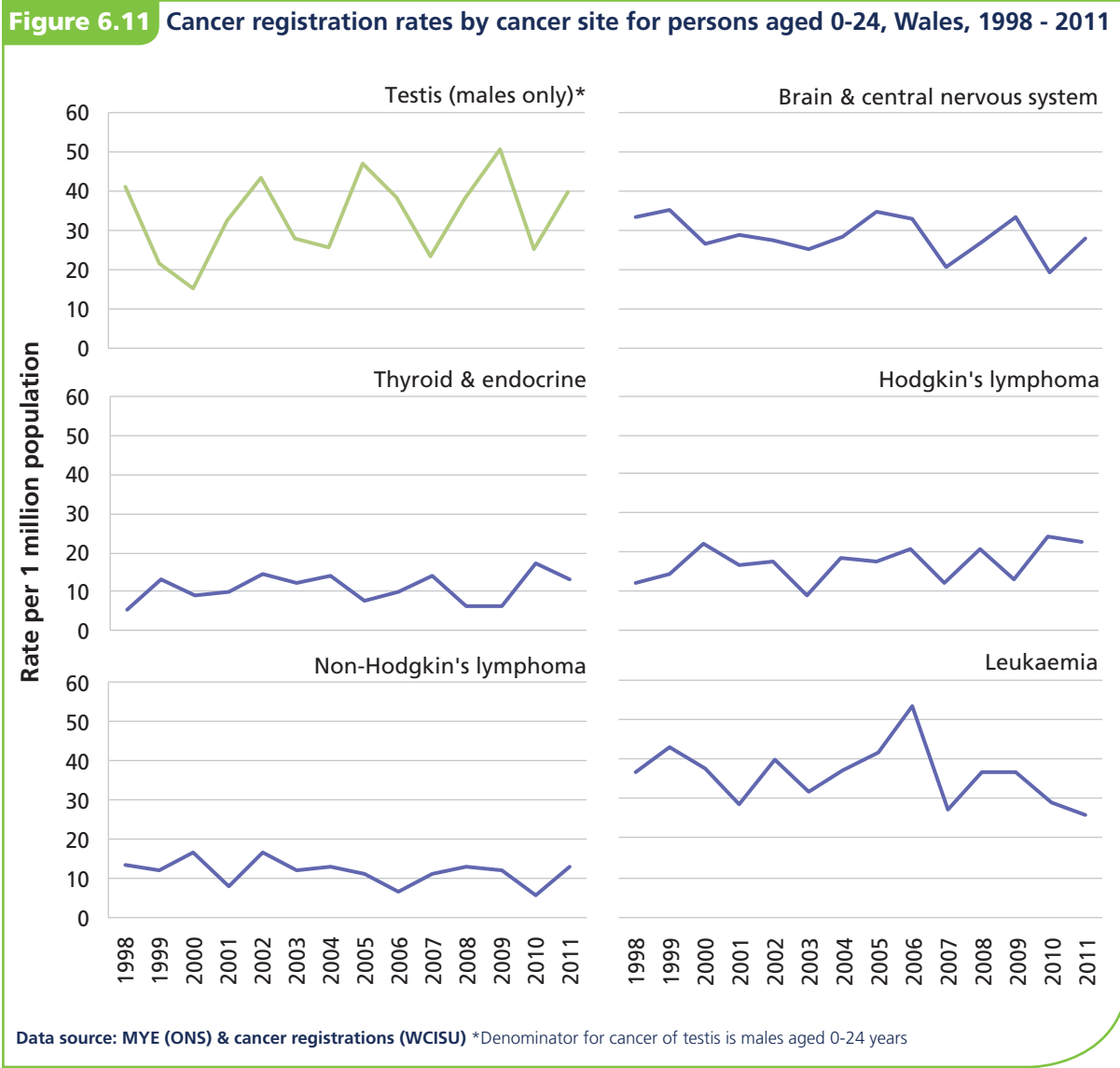
Cancer in children and young people is relatively rare. In Wales, the incidence of cancer in persons aged 0-24 years was 18 new cases per 100,000 population in 2007-11. The most common cancers for children and young people are leukaemia, lymphomas (both Hodgkin’s and non-Hodgkin’s) and brain and central nervous system (CNS).<sup>25</sup> Unlike adult cancer, cancer in children (aged 0- 14) is not strongly linked to lifestyle risk factors such as smoking and alcohol consumption, or environmental risk factors such as urban air pollution.<sup>26,27</sup> In Great Britain the 5 year survival rate for cancers in children (aged 0-14) is 78% and the 10 year survival rate is 73%.<sup>25</sup> A 2011 study found that child cancer survivors have increased use of health services in adulthood and are more likely to require hospitalisation than the general population.<sup>28</sup>

**Figure 6.10** Incidence of cancer\*, persons aged 0-24, EASR per 100,000 population, 2007-2011

Health Board	Annual average no of new cases	Crude rate	EASR (95% confidence interval)	
Betsi Cadwaladr	38	19.0	19.0	(16.4 to 22.1)
Powys	5	15.2	15.1	(10.1 to 22.8)
Hywel Dda	18	16.5	16.0	(12.9 to 19.9)
ABM	28	18.4	17.9	(15.1 to 21.3)
Cardiff & Vale	29	18.2	17.2	(14.4 to 20.5)
Cwm Taf	14	15.1	14.6	(11.4 to 18.8)
Aneurin Bevan	35	20.0	20.0	(17.1 to 23.3)
<b>Wales</b>	<b>168</b>	<b>18.1</b>	<b>17.7</b>	<b>(16.5 to 19.0)</b>

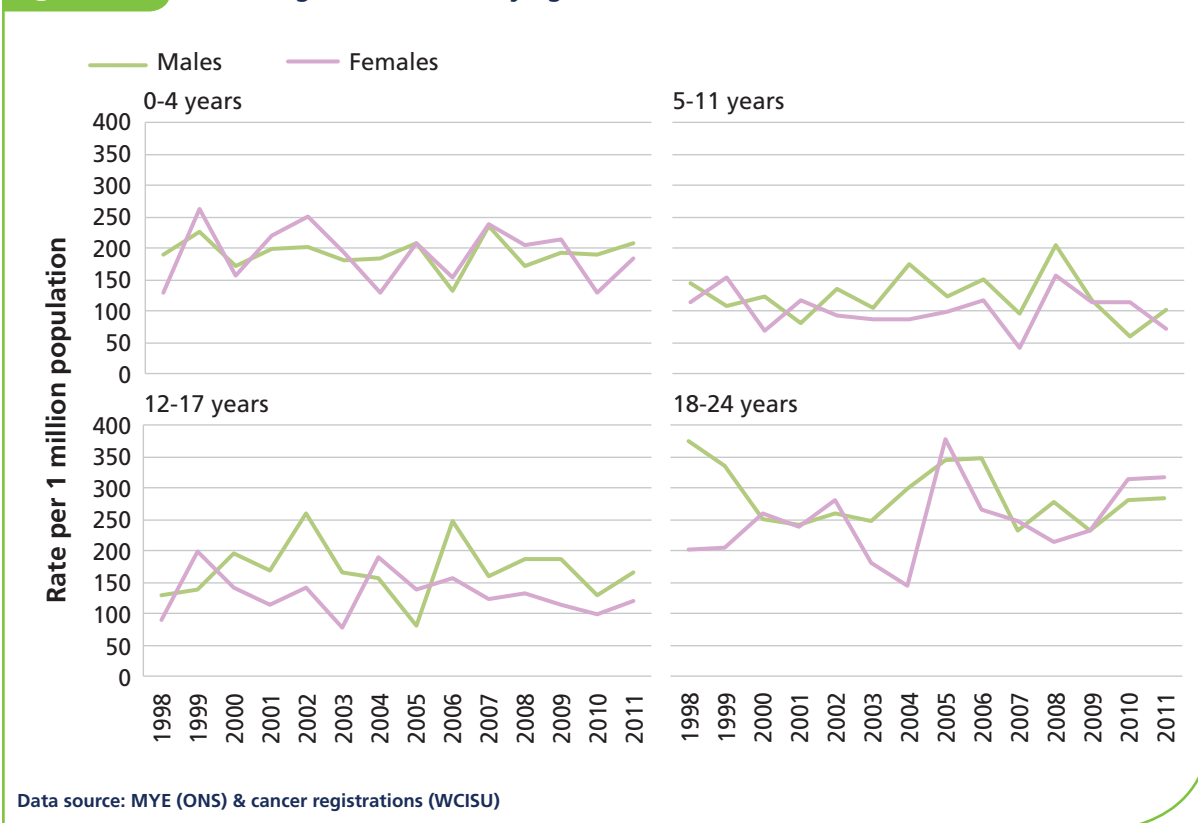
Data source: MYE (ONS) & cancer registrations (WCISU) \*All malignancies excluding non melanoma skin cancer (ICD 10 codes C00 – C96 excluding C44).

In Wales, the incidence rate for cancers in children and young people in the 5 year period 2007-11 is 18 per 100,000 (Figure 6.10). Across health boards it ranges from 15 per 100,000 in Cwm Taf to 20 per 100,000 in Aneurin Bevan. The annual average number of new cases ranges from 5 new cases of cancer among persons aged 0-24 per year in Powys to 38 new cases per year in Betsi Cadwaladr.



In Wales the cancer registration rates for the different cancer sites in persons ages 0-24 have remained reasonably static over time (Figure 6.11). The annual fluctuations visible in the above charts are a result of the very small numbers of young people developing cancer. Non-Hodgkin's lymphoma and thyroid and endocrine cancers are the least common with annual registration rates not rising above 20 per million over the 14 year period which equates to an average of 11 cases per year. Hodgkin's lymphoma is similar with annual registration rates around 20 per million over the period, equating to an average of 16 cases per year. Cancer of the testis and of the brain and central nervous system is slightly more common with annual registrations between 20 and 40 per million (average of 16 and 26 cases per year respectively). Leukaemia is the most common cancer occurring among children in Wales and accounts for on average 33 cases per year.

**Figure 6.12** Cancer registration rates by age and sex, Wales, 1998-2011

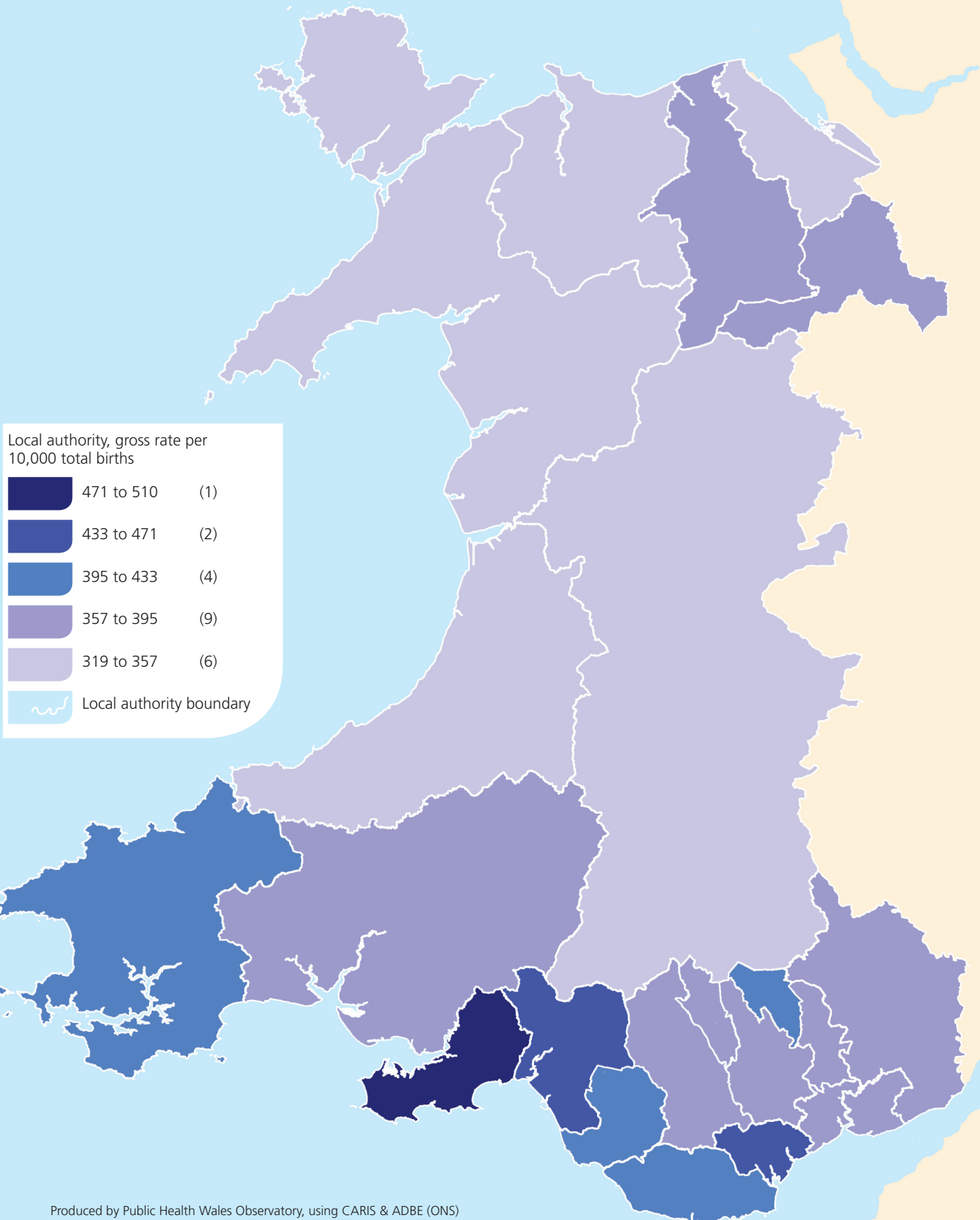


Over the 14 year period from 1998 to 2011, cancer registration rates have experienced annual fluctuations but have overall remained fairly constant. Rates for males and females are similar in the 0-4 and 18-24 age groups. Rates for males have been slightly higher than rates for females over some of the 14 year period in the 5-11 and 12-17 age groups. The 5-11 age group has the lowest cancer registration rates, not tending to go above 200 per million. The 0-4 and 12-17 age groups have the next highest registration rates. The 0-4 age group tends to have more consistent annual registration rates, whereas there is greater fluctuation in the 12-17 age group. The 18-24 age group has the highest annual registration rates, though there is considerable fluctuation over the period measured.

### Congenital anomalies

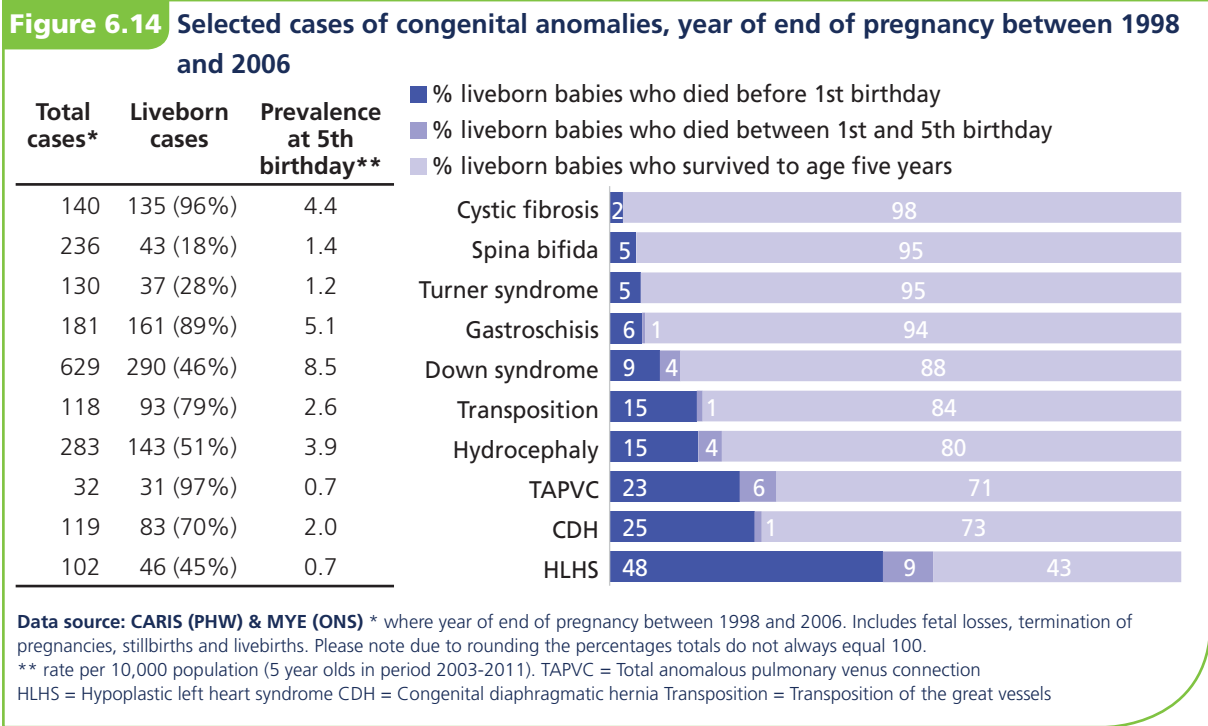
Congenital anomalies (also referred to as birth defects) are structural or functional anomalies, including metabolic disorders, which are present at the time of birth.<sup>29</sup> The most common congenital anomalies are heart defects, neural tube defects (such as spina bifida) and chromosomal disorders such as Down syndrome. Congenital anomalies are a major cause of infant mortality, childhood morbidity and long-term disability, but some are potentially preventable.<sup>30</sup> Most congenital anomalies are probably caused by an interaction of environmental and genetic factors. Prevention is aimed at modifying the environmental factors such as encouraging good diet and uptake of folic acid supplements, and discouraging smoking and substance abuse amongst women who are pregnant or wishing to get pregnant.<sup>31</sup> For the years 1998 to 2011 there were around 23,700 cases of congenital anomalies reported to Congenital Anomaly Register and Information Service (CARIS) (20,400 live born) against a background of 466,500 total (live and still) births in Wales.<sup>32</sup> This equates to a gross rate of congenital anomalies of 4.4% in Wales for the years 1998-2011, which includes fetal losses, terminations of pregnancy, live and still born births.

**Figure 6.13** Cases of congenital anomalies, EUROCAT definition, 1998-2011



Produced by Public Health Wales Observatory, using CARIS & ADBE (ONS)  
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The gross rate of congenital anomalies (EUROCAT definition) in the local authorities areas between 1998 and 2011 ranged from 320 per 10,000 births in Flintshire to 510 in Swansea. Generally mid and north Wales experienced a lower rate of congenital anomalies than west and south Wales. None of the local authorities in south Wales are in the lowest band. It is suspected that the rates are affected by variations in reporting; which, in some areas, are believed to be excellent. This makes it more difficult to distinguish between high rates due to variations in reporting and genuinely higher rates of congenital anomalies.



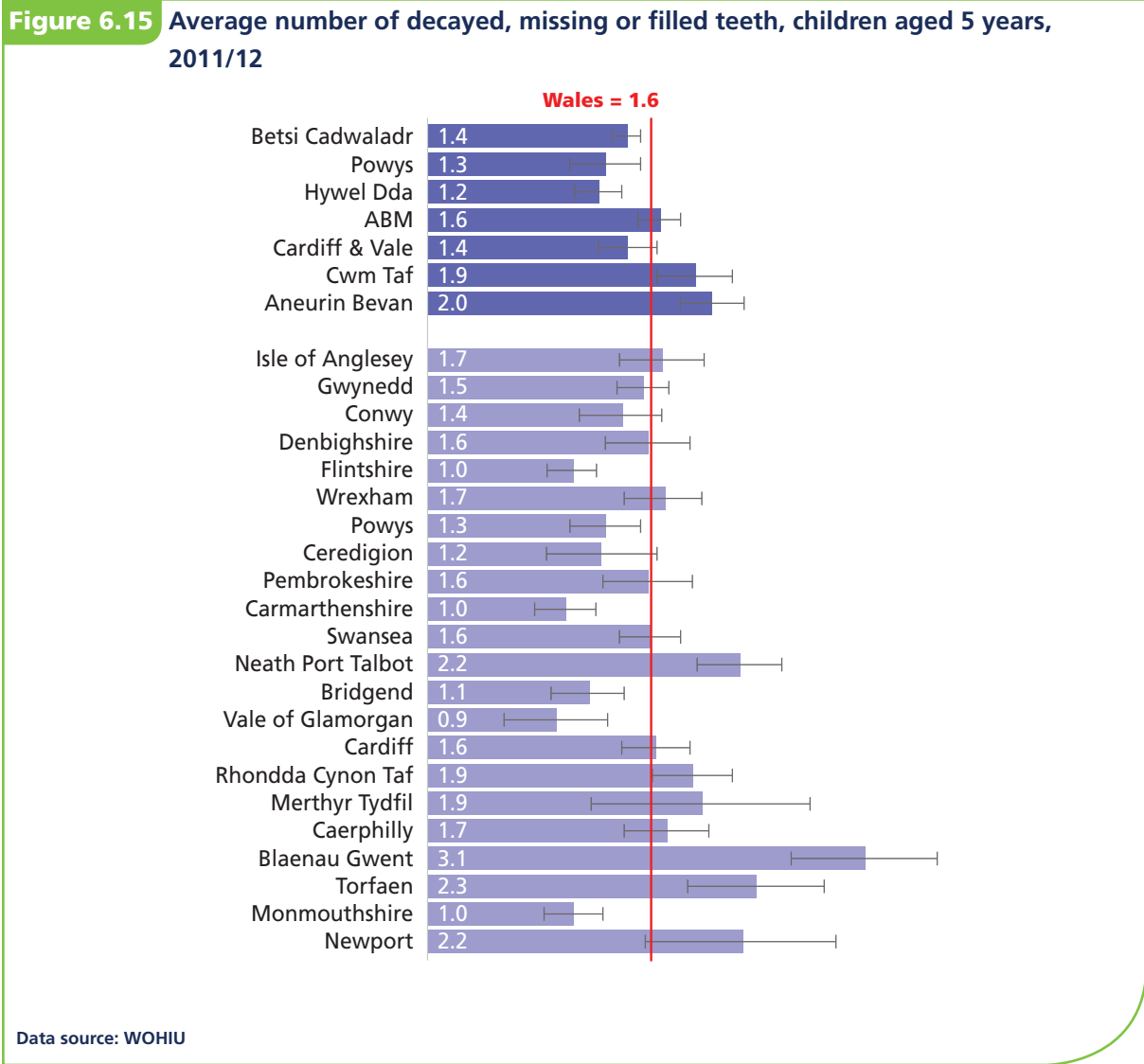
For some of the most common congenital anomalies the majority of children survive their early years. Over 90% of children born with gastroschisis, Turner syndrome, spina bifida and cystic fibrosis in Wales in the period 1998-2006 survived past their fifth birthday. Children born with Down syndrome, transposition, hydrocephaly, total anomalous pulmonary venus connection and congenital diaphragmatic hernia had a five year survival rate between 88% and 73%. Hypoplastic left heart syndrome has the lowest survival rate. Until the 1990s, most babies with hypoplastic left heart syndrome did not survive beyond the first few weeks of life but with the development of new surgical procedures 43% of babies are now seen to be surviving past their fifth birthday.

### 6.3 Dental health

Theoretically almost all oral disease is preventable. The Welsh Government has introduced programmes which are targeted at improving the dental health of the people of Wales such as the National Oral Health Improvement Programme, Designed to smile<sup>33</sup> and the recently announced *Together for health: a national oral health plan for Wales*.<sup>34</sup>

Fluoride occurs naturally in some water (but at very low levels across Wales) and is known to protect teeth from tooth decay if present in sufficient amounts. In order to maximise oral health improvement, a partnership approach addressing poor diet and excessive sugar consumption is the key to preventing tooth decay complemented by optimising fluoride delivery in community settings. The evidence supporting fluoride in reducing dental decay is well established. Local priorities for action at a community level are the use of fluoride toothpaste and fluoride varnish.<sup>34</sup>

The average number of decayed, missing and filled teeth (dmft) is a measure of the burden of disease which theoretically could have been prevented. This is considered to be key data for evaluation of efforts to prevent decay.<sup>35</sup> Figure 6.15 shows the average number of dmft in 5 year old children across health boards and local authorities in Wales.

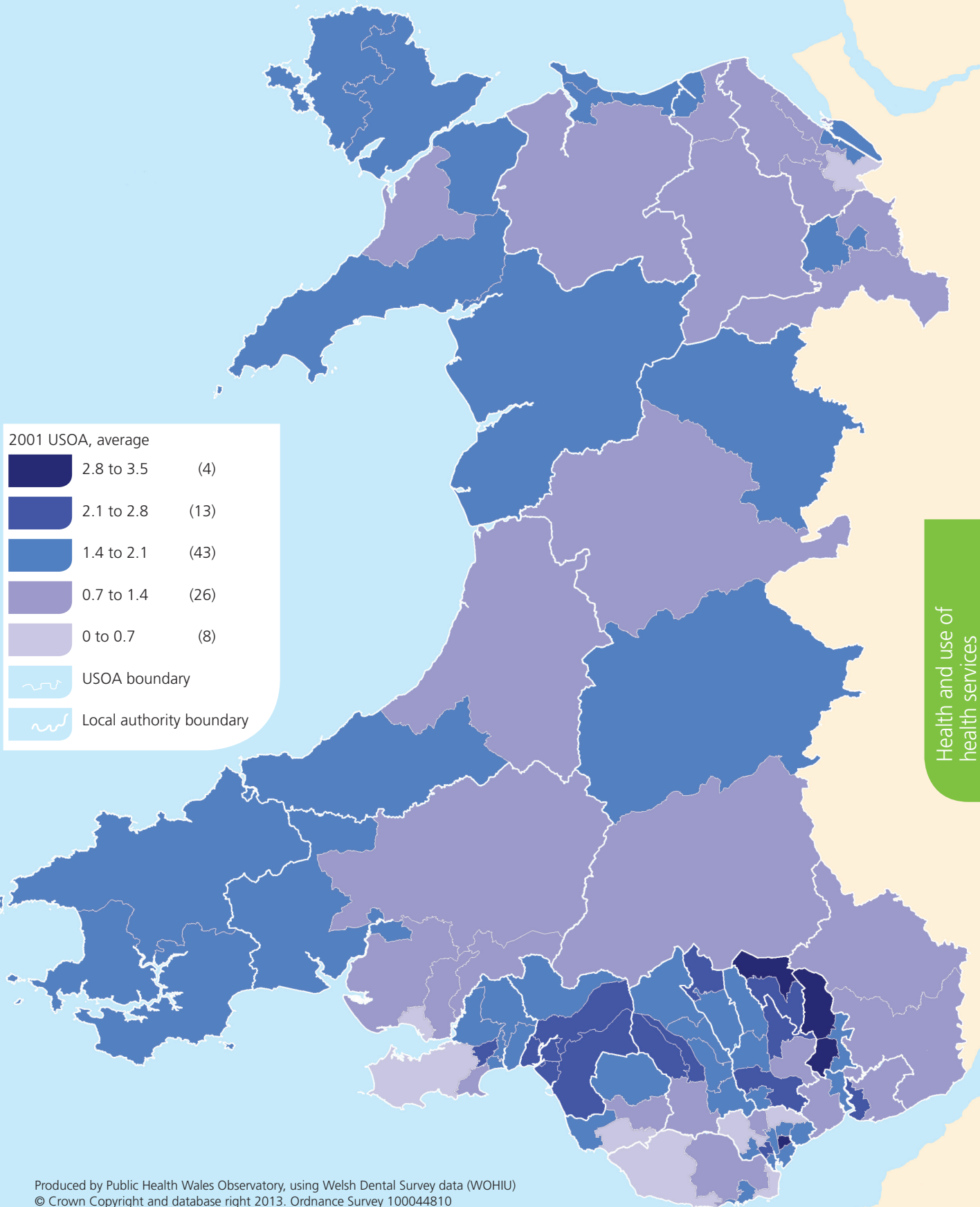


In Wales, children aged 5 years have on average 1.6 decayed, missing or filled teeth and across health board areas. This ranges from 1.2 in Hywel Dda to 2.0 in Aneurin Bevan (Figure 6.15).

There is considerable variation across local authority areas. The Vale of Glamorgan has the lowest average number of decayed, missing or filled teeth in 5 year olds (0.9) and Blaenau Gwent has the highest (3.1). Three of the 22 local authority areas had a statistically significantly higher average than Wales as a whole (Neath Port Talbot, Blaenau Gwent and Torfaen).

Variation across areas is also evident at the USOA level with the average number of decayed, missing or filled teeth in 5 year olds ranging from 0.06 to 3.5 (Figure 6.16).

**Figure 6.16** Average number of decayed, missing or filled teeth, children aged 5 years, 2011/12



Produced by Public Health Wales Observatory, using Welsh Dental Survey data (WOHIU)  
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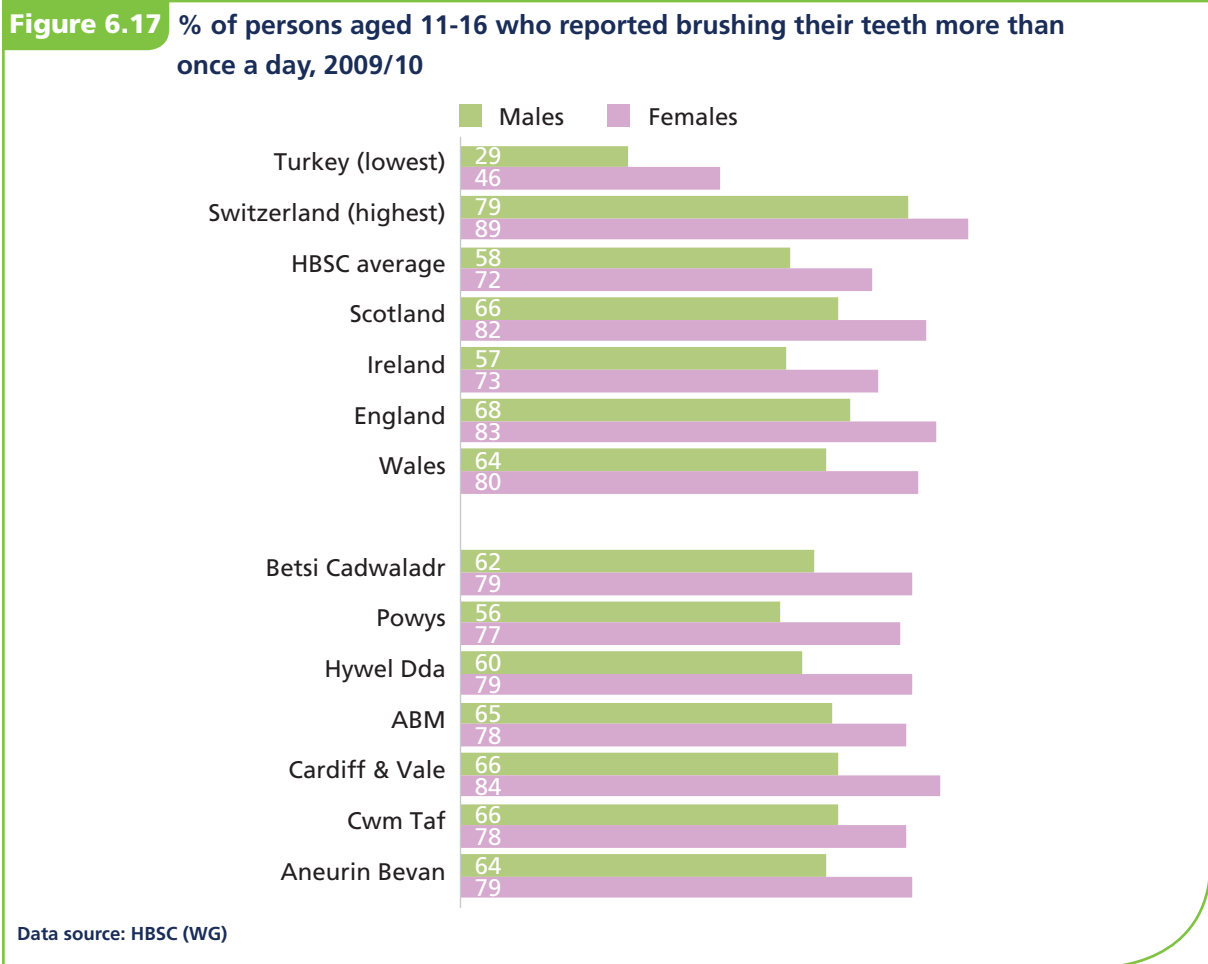
The average number of decayed, missing or filled teeth in 5 year old children is greater than 2.1 in 17 of the 94 USOAs in Wales (18%) which are primarily across the south Wales valleys. Understanding the variation at the small area level can help when delivering services and targeting interventions. However, it is important to note that the USOA data is not weighted to take account of the variations in the survey participation rates and differences in the 5 year old population size.

**Toothbrushing**

Toothbrushing with fluoride toothpaste helps keep teeth clean and strong and it is recommended that children brush their teeth twice a day for 2 minutes.<sup>36</sup> It is important to establish good habits from an early age which could in turn have a positive impact on adult dental health.

In Wales, 80% of girls and 64% of boys aged 11-16 years old report brushing their teeth more than once a day (Figure 6.17). Similar percentages were reported across Great Britain and comparisons with other countries show that the highest percentages were reported in Switzerland, 89% of girls and 79% of boys and the lowest percentages were reported in Turkey, 29% boys and 46% girls.

The percentage of 11-16 year old girls who reported brushing their teeth more than once a day was higher than the percentages reported by boys of the same age across all areas. At the health board level, Powys had the lowest percentage of 11-16 year old boys (56%) and girls (77%) reporting that they brush their teeth more than once a day. Whilst Cardiff and Vale had the highest percentage of 11-16 year old boys (66%) and girls (84%) reporting that they brush their teeth more than once a day.



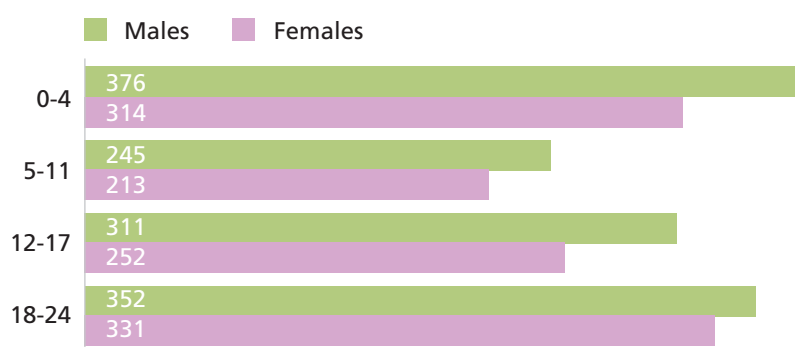
## 6.4 Emergency department attendances

Service utilisation is an important consideration for planning the allocation and use of resources. During 2011/12 there were nearly 800,000 new attendances across all ages at major emergency departments in Wales, putting substantial pressure on secondary care systems.<sup>37</sup> There are many factors that can affect service utilisation including underlying population need, provision of services (including elective, emergency, community and primary care services) as well as patient and parental behaviour in seeking health care.

Numbers of attendances at emergency departments have increased recently. Widely publicised pressure on emergency departments in early 2013 has demonstrated the challenges facing the service as the population grows older and the pressure on NHS budgets continue. The Welsh Government's Choose Well campaign has developed an application (app) for smart phone technology which provides advice on which service to use when ill or injured and details of how to find them.<sup>38</sup> The aim of Choose Well is to reduce inappropriate pressure on emergency and primary care services.

This section of the report details the attendances at major emergency departments in Wales for Welsh resident but excludes Welsh residents attending emergency departments in hospitals in England since this information is not captured by the data source (Emergency Department Dataset).

**Figure 6.18** Rate per 1,000 of all attendances\* to emergency departments in Wales by Welsh residents, 2011



Data source: EDDS (NWIS) \*Individuals are counted more than once if they had multiple attendances to emergency departments

Almost 280,000 children and young people aged 0-24 (3 in 10) attended an emergency department in 2011. The rate of attendance to emergency departments in Wales by Welsh residents aged 0-24 was higher for males than females across all age groups (Figure 6.18). Higher rates of attendance were seen in the 0-4 and 18-24 age groups for both males and females. Rates were highest in the 0-4 age group for males (376 per 1,000) and 18-24 age group for females (331 per 1,000).

### Repeat attendances

In 2011, around 3 out of every 5 persons aged 0-24 attending emergency departments in Wales attended only once (Figure 6.19), approximately 1 in 5 attended twice and 1 in 100 more than 5 times in a year. Repeat attendances were counted up to 1 year after attendance to an emergency department in Wales in 2011. Over 30,000 records (11% of all admissions) had an invalid person key and therefore repeat attendances for these individuals could not be counted.

For this reason, all figures in this section must be considered with caution (see Technical guide for further details which is available at: [www.publichealthwalesobservatory.wales.nhs.uk/childprofile](http://www.publichealthwalesobservatory.wales.nhs.uk/childprofile)).

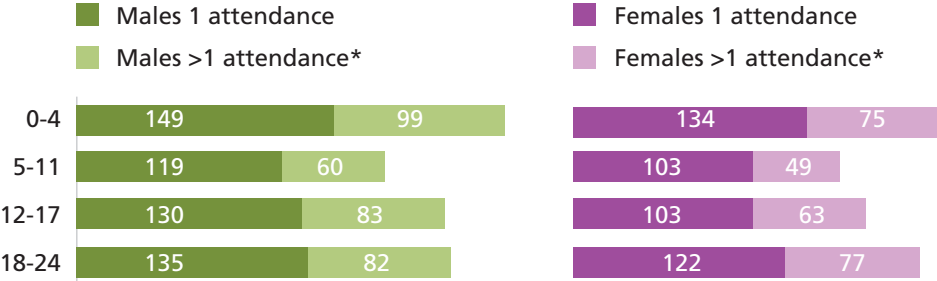
**Figure 6.19 Repeat attendances\* to emergency departments, persons aged 0-24, Wales, 2011**

Frequency of attendance							
	1	2	3	4	5	>5	Total
<b>Number of people</b>	115,160	44,074	14,892	5,239	2,010	1,748	183,123
<b>%</b>	62.9	24.1	8.1	2.9	1.1	1.0	100.0

Data source: EDDS (NWIS) \*Repeat attendances within a year following an attendance to emergency departments in 2011

Figure 6.20 shows that the largest number of emergency department attendances for Welsh residents aged 0-24 are in the lowest and highest age groups (0-4 and 18-24) for both males and females. For each age group and sex, around a third of all attendances to emergency departments in 2011 had a repeat attendance within a year. Over 12,000 males aged 18-24 attended emergency departments in Wales more than once in a year compared to around 11,000 females of the same age. Repeat attendances may be for a number of reasons, and in some cases may raise concerns about child protection.

**Figure 6.20 Emergency department attendees, rate per 1,000, Wales, 2011**



Data source: EDDS (NWIS) \*Attendees with repeat attendances within a year following an attendance to emergency departments in 2011

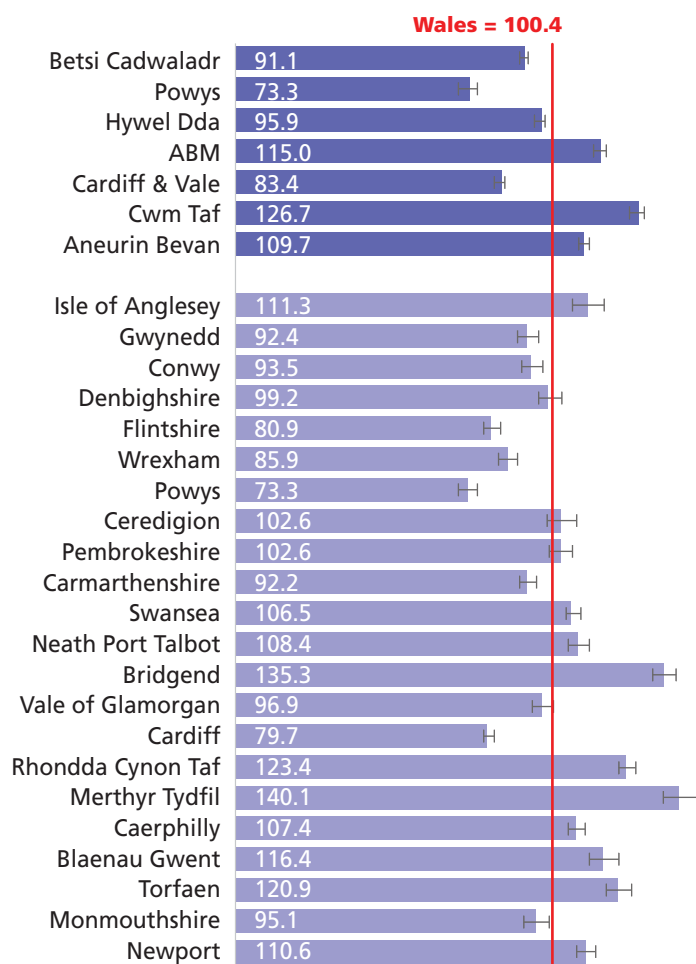
## 6.5 Hospital admissions

The interplay between healthcare supply, need and demand is complex. Emergency admission to hospital is dependent on a variety of factors which include population need for emergency care, distance from home, provision of services (including elective, emergency, community and primary care services) as well as patient or parent behaviour in seeking health care. This section of the report focuses on emergency hospital admissions by area of residence, level of deprivation and cause.

In 2011, the European age-standardised rate (EASR) of emergency hospital admissions in Wales was 100 per 1,000 population aged 0-24 (Figure 6.21). Rates varied across health board areas and ranged from 83 in Cardiff and Vale to 127 in Cwm Taf per 1,000 persons aged 0-24.

At the local authority level the lowest rate was found in Powys (73 per 1,000) and the highest rate (almost double that in Powys) was in Merthyr Tydfil (140 per 1,000). High rates were also found for many of the local authorities in the south Wales valleys.

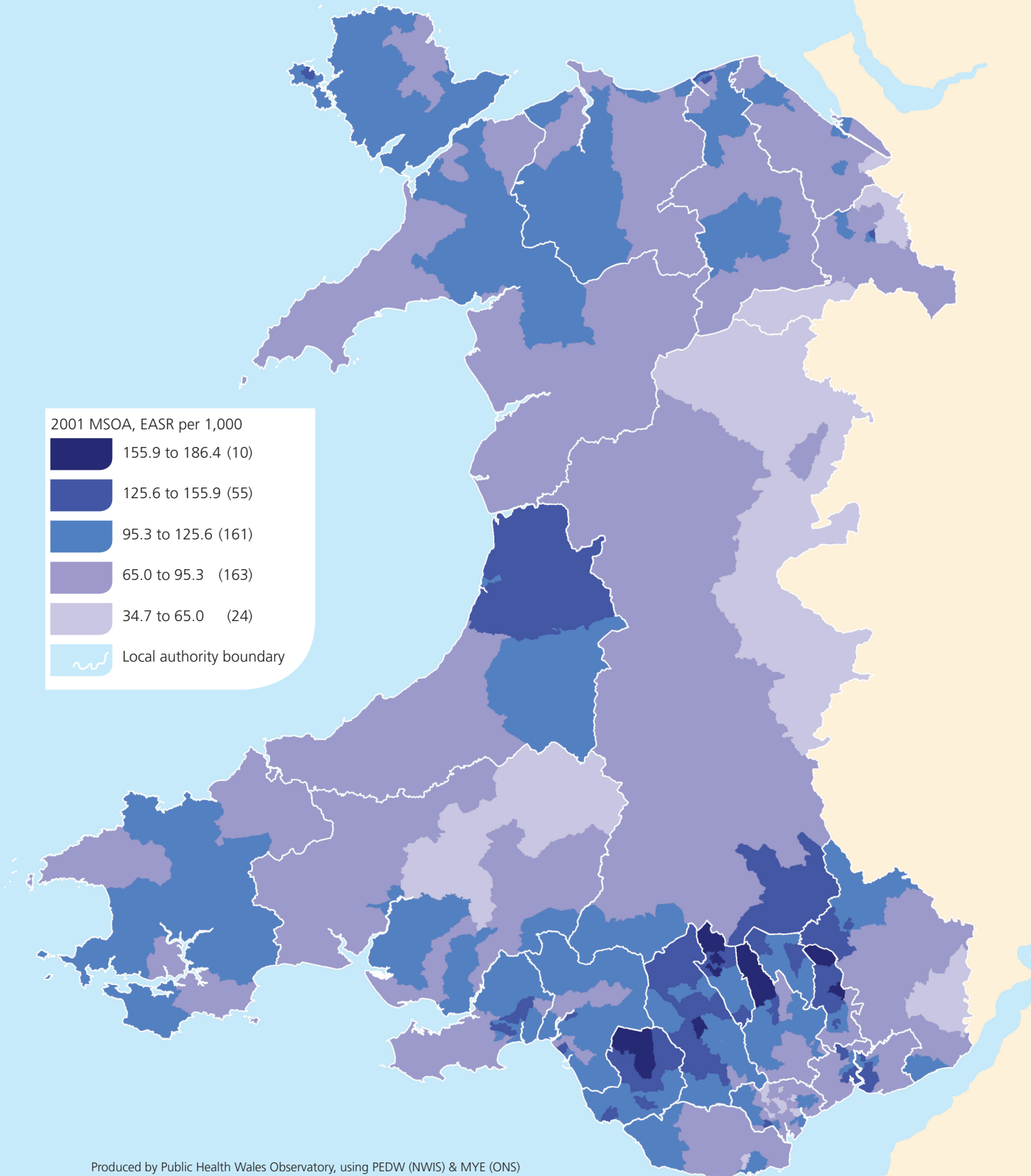
**Figure 6.21** Emergency admissions\*, persons aged 0-24, EASR per 1,000, 2011



Data source: PEDW (NWIS) & MYE (ONS) \*Patients are counted more than once if they had multiple admissions during 2011

Further variation across areas is also evident at the MSOA level with the rate of emergency admissions ranging from 35 to 186 per 1,000 persons aged 0-24 (Figure 6.22). It can be seen that even within local authority areas with a lower rate of emergency hospital admissions than Wales, such as Powys, there are areas with a higher rate than Wales. Again, the higher rates are seen across the south Wales valleys.

**Figure 6.22** Emergency admissions for persons aged 0-24, 2011



Produced by Public Health Wales Observatory, using PEDW (NWIS) & MYE (ONS)  
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Children aged 0-24 living in the most deprived areas of Wales had the highest rate of emergency hospital admissions (127 per 1,000 persons) (Figure 6.23) whilst children aged 0-24 living in the least deprived area of Wales had the lowest rate (78 per 1,000 persons). The rates were significantly higher than Wales in the most deprived area and next most deprived areas.

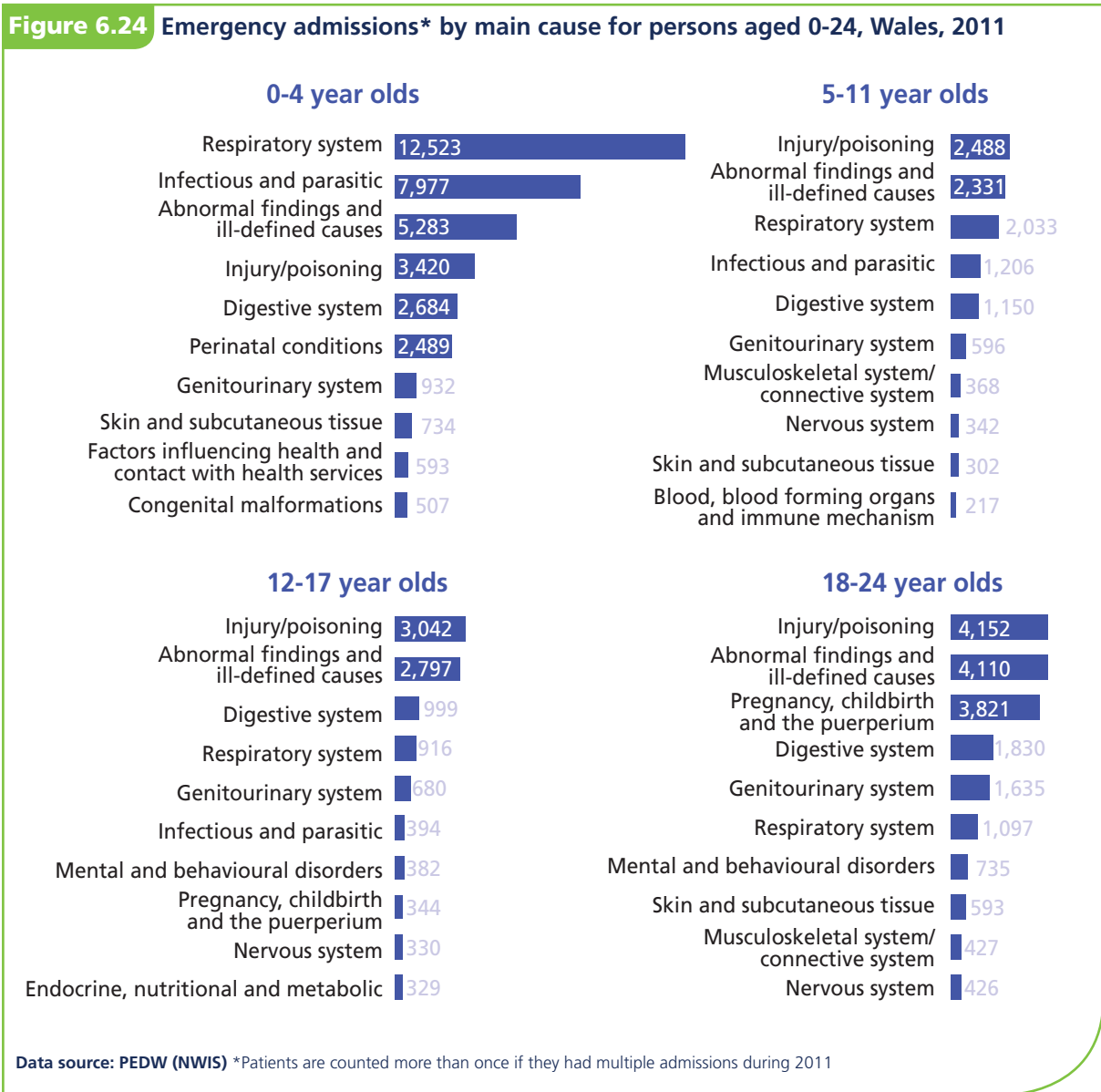
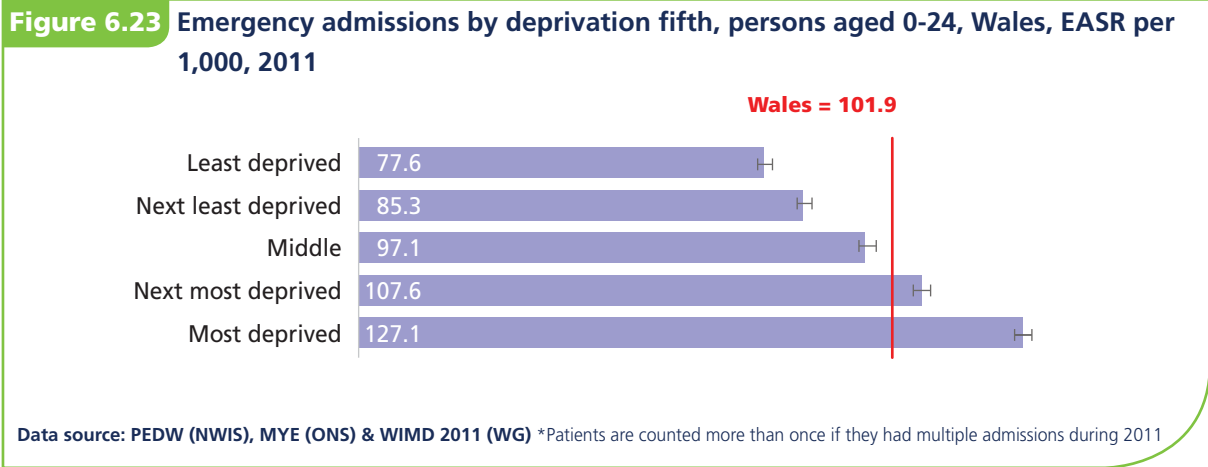


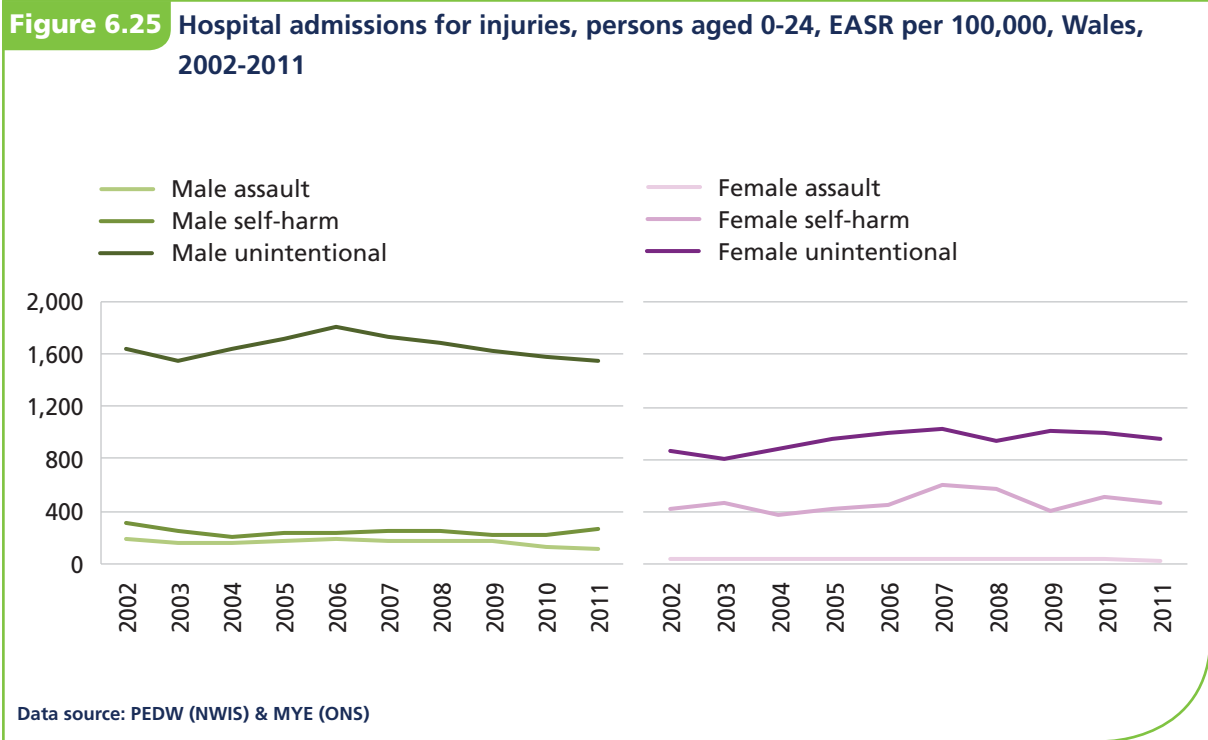
Figure 6.24 shows the top ten causes of emergency hospital admissions by age. In 2011, the leading causes of emergency hospital admissions in 0-4 year olds were the respiratory system (12,523 admissions) and infections (7,977 admissions). For the 5-11, 12-17 and 18-25 age groups injuries and poisoning was the main cause of emergency admissions (2,488, 3,042 and 4,152 admissions respectively).

### 6.6 Injuries

Injuries are a major public health issue across the globe. They are a leading cause of death amongst 0 to 24 year olds and therefore contribute substantially to the burden of premature death and healthy years of life. This places a significant burden upon health and health services.<sup>39</sup>

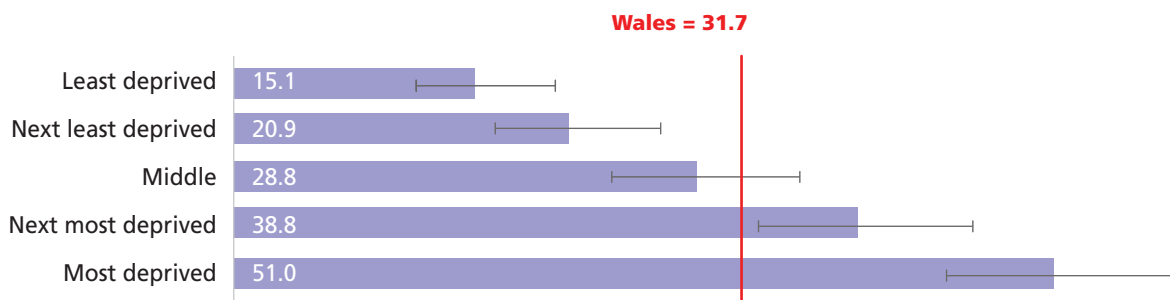
#### Hospital admissions

Analysis of hospital emergency admissions data for 2002 to 2011 showed the rate of admission for unintentional injury and assault to be higher in males than females across the whole period. However, for emergency hospital admissions due to self harm the female rates were higher than the male rates. Between 2002 and 2011 the rates of emergency admissions have decreased across all three categories of intent for males but only decreased slightly in the assault category for females. Generally, there is a trend of decreasing injury admissions for males, increasing admissions for females.



Based on data for 2006-11, and as described previously in other studies, child pedestrian injury admissions increase with increasing deprivation (Figure 6.26).<sup>41</sup> Injuries in the most deprived areas of Wales were three times higher than the least deprived, with rates of 51 per 100,000 population compared with 15 per 100,000 population.

**Figure 6.26** Admissions for pedestrian injuries by fifth of deprivation, children aged 5-14, Wales, rate per 100,000, 2006-2010



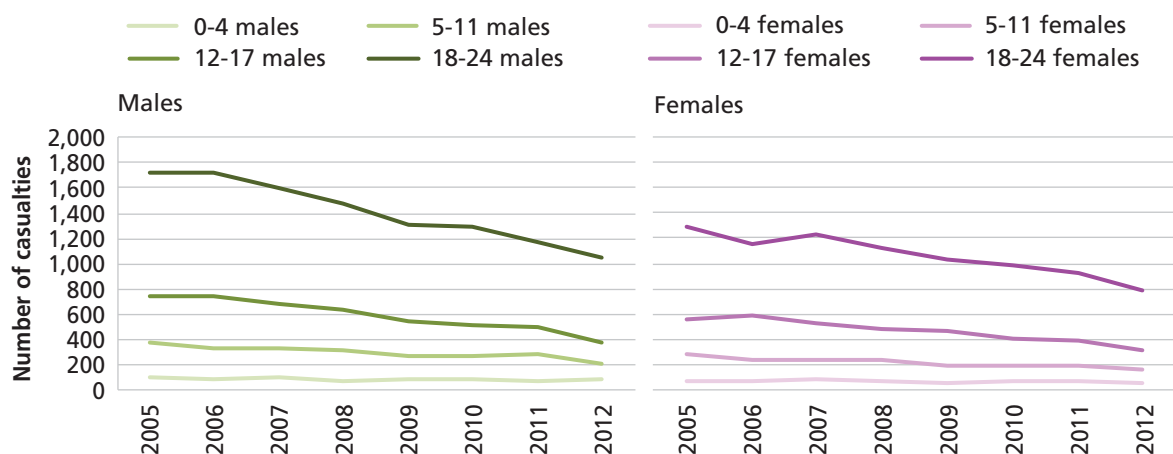
Data source: PEDW (NWIS), MYE (ONS) & WIMD 2011 (WG)

### Road traffic crashes

Road traffic crashes are a major cause of unnecessary injury and death. Making roads safer is a key priority for the Welsh Government and road safety targets have recently been set in the *Road safety framework for Wales*.<sup>42</sup> This emphasises the dangers to children as vulnerable road users and also the high risks to young drivers and their passengers.

This section of the report examines road traffic casualties in persons aged 0-24 in more detail. These statistics only include accidents that occur on public roads that are reported to the police. Crashes on private roads, in car parks or where there were no human casualties are not included in this data.<sup>43</sup>

**Figure 6.27** Number of road traffic casualties, persons aged 0-24, Wales, 2005-2012

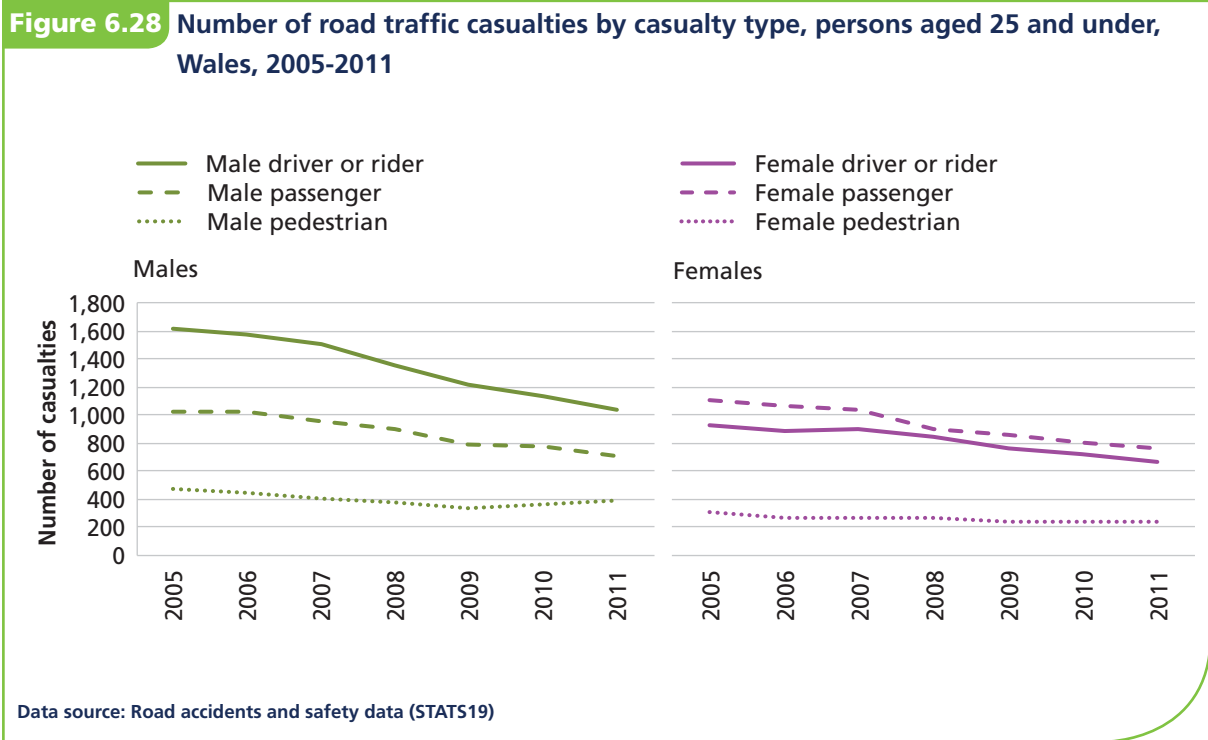


Data source: Road accidents and safety data (STATS19)

Male and female casualties in all age groups have continued to fall across the study period (Figure 6.27). This is a true reflection of change and is not a result of changes in the size of the population which has remained static over this period (Figure 1.4). For both males and females the highest number of road traffic casualties is in the 18-24 age group. In 2012, there were around 1,100 male and 800 female road traffic casualties aged 18-24 in Wales.

This is due mainly to the large numbers of driver and passenger casualties in this age group. Teenagers driving other teenagers are a high risk because of the young age and inexperience of the driver.<sup>42</sup> Although the number of road traffic casualties is decreasing there is still significant potential for further reductions using effective interventions.

Analysis by road user type confirms the overall downward trends (Figure 6.28) which is likely to be due to traffic calming, improved car design and decreased walking. For males, driver/riders casualties decreased from around 1,610 in 2005 to just over 1,000 in 2011. For females, most casualties were passengers but these decreased from around 1,100 in 2005 to 760 in 2011.



A thematic review of the deaths of teenagers in motor vehicles was recently conducted in Wales. The review focused on those aged 13-17 and can be accessed at: [www.publichealthwales.org/childdeathreview](http://www.publichealthwales.org/childdeathreview). The *Thematic review of deaths of teenagers in motor vehicles* made specific recommendations for partnerships and government.<sup>44</sup>

Further information on transport accident mortality is included in section 7.5 of this report. Information on interventions for preventing accidents and injuries is included in sections 8.8 of this report.

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