

# Deaths in children and young people

**7.1** Stillbirths and perinatal mortality

**7.2** Neonatal mortality and infant deaths

**7.3** Causes of death

**7.4** Mortality trends

**7.5** Road traffic crashes

**7.6** Suicide



## Key messages

- The loss of a child is a tragedy resulting in life-changing effects on families, carers and friends.
- In 2011 there were 345 deaths of children and young people aged 0-24 years and resident in Wales.
- Children aged 0-17 years living in the most deprived parts of Wales are almost twice as likely to die in a given year as those in the least deprived parts of Wales.
- Latest figures (2011) show that each year in Wales there are around:
  - o 170 stillbirths
  - o 240 perinatal deaths (stillbirths and deaths under 7 days)
  - o 100 neonatal deaths (under 28 days, live births only)
  - o 130 infant deaths (under 1 year, live births only)
- In 2011 the main causes of death for children and young people in Wales were (by ICD10 chapter):

<1 year	1-17 year olds	18-24 year olds
1. Perinatal conditions	Injury / poisoning	Injury / poisoning
2. Congenital malformations	Nervous system	Nervous system
3. Abnormal findings and ill-defined conditions	Congenital malformations & neoplasms	Neoplasms

- Smoking and/or obesity during pregnancy and having a baby at an older age are major risk factors for stillbirth.
- The infant mortality rate for Wales is slowly decreasing but there are still improvements to be made. Infant mortality rates are higher in the most deprived geographical areas.
- Transport crashes are the biggest cause of death in the injury/poisoning category for children and young people. The highest transport crashes death rates are seen in Pembrokeshire and Carmarthenshire.
- An average of 34 young people (aged 15-24 years) committed suicide in Wales in each year from 2002-2011. Bridgend, Neath Port Talbot and Conwy had the highest suicide rates for this age group over the same period. The Welsh Government has produced *Talk to me: A national action plan to reduce suicide and self harm in Wales 2009-2014* to help address this issue.

The death of a child or young adult is a tragedy, with the impact of the loss often having a heavy burden and life-changing effects on families, carers and friends.<sup>1</sup> Data on perinatal mortality provides an indication of the quality of healthcare both during pregnancy and following birth.<sup>2</sup> In 2011 there were 345 deaths of children and young people aged 0-24 years who were resident in Wales. The *Child Death Review Programme* reported a strong relationship between child deaths and deprivation with children aged 0-17 years living in the most deprived parts of Wales being almost twice as likely to die in a given year as those in the least deprived parts of Wales.<sup>1</sup>

This chapter presents information and indicators on stillbirth, perinatal, neonatal and infant mortality. It also provides deaths by age and cause, as well as trends for the main causes of death. Comparisons by area of residence are also included for deaths from suicide and road traffic crashes.

## 7.1 Stillbirths and perinatal mortality

Stillbirths are defined as late fetal deaths i.e. from 24 weeks of gestation, while perinatal mortality is defined as stillbirths plus deaths in the first week of life. Perinatal mortality can be used as a proxy for the quality of antenatal and perinatal care given to the mother and fetus/baby.<sup>3</sup> Perinatal, stillbirth, neonatal and infant mortality rates in Wales have remained largely unchanged in recent years.<sup>3</sup> The stillbirth and perinatal mortality data presented in this section include late terminations ( $\geq 24$  weeks).

Approximately 1 in every 200 births in Wales results in a stillbirth. In 2011 there were around 170 stillbirths and 240 perinatal deaths in Wales. The stillbirth rate for Wales in 2011 was 4.7 per 1,000 births, which was lower than that for England (5.2 per 1,000 births). Similarly, the 2011 perinatal mortality rate for Wales in 2011 was 6.6 per 1,000 births, which was lower than the perinatal mortality rate for England in the same period (7.5 per 1,000 births).

Figure 7.1 shows that in 2007-2011, at the health board level, stillbirth rates vary from 4.3 per 1,000 births in Cwm Taf to 5.7 in Powys. There is considerable variation at the local authority level with stillbirth rates per 1,000 births ranging from 3.2 in Flintshire to 6.8 in the Vale of Glamorgan (with both rates also being statistically significantly different to Wales).

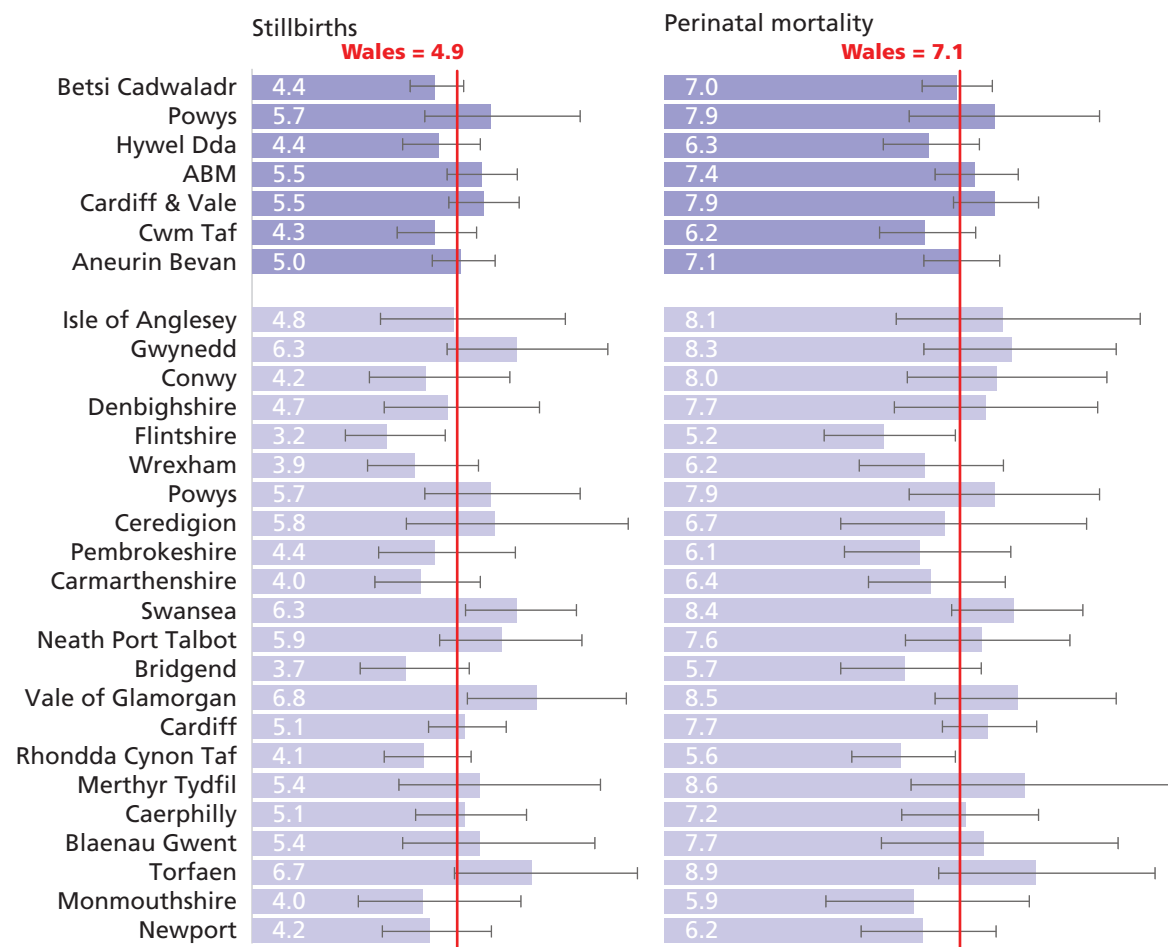
Similarly, there is variation at both the health board and local authority level for perinatal mortality rates. As with stillbirths, Flintshire is again the local authority area with the lowest rate (5.2 per 1,000 births and statistically significantly lower than Wales).

It is important to note the wide CIs and that for the majority of local authority areas their stillbirth and perinatal mortality rates are not statistically different to Wales.

**Governments  
'...shall take  
appropriate  
measures to  
diminish infant  
and child  
mortality'.**

*The United Nations  
Convention on the  
Rights of the Child,  
Article 24.2*

**Figure 7.1 Stillbirth and perinatal mortality rates per 1,000 births, 2007-2011**



Data source: ADBE, PHMF & ADDE (ONS)

Smoking and/or obesity during pregnancy and having a baby at an older age are major risk factors for stillbirth.<sup>2,3</sup> Information on interventions for tackling smoking in pregnancy is included in section 8.3 of this report. The *Welsh Initiative for Stillbirth Reduction (WISR)* is working with *1000 Lives Plus* to address issues relating to and raise maternal awareness of growth restriction and reduced fetal movements, with a view to reducing the numbers of stillbirths.<sup>4</sup>

## 7.2 Neonatal mortality and infant deaths

Neonatal deaths are defined as deaths in the first month of life (<28 days) and infant deaths are defined as occurring within the first year of life. The majority of childhood deaths occur in the first year of life, with the main causes being prematurity and congenital anomalies.<sup>3</sup>

In 2011, there were around 100 neonatal deaths and 130 infant deaths in Wales. The neonatal mortality rate for Wales in 2011 was 2.8 per 1,000 live births, which was comparable to that for England (2.9 per 1,000 births). However, the 2011 infant mortality rate for Wales (3.7 per 1,000 births) was below the England rate of 4.2 per 1,000 births.

**Figure 7.2 Neonatal and infant mortality rates per 1,000 live births, 2002-2011**

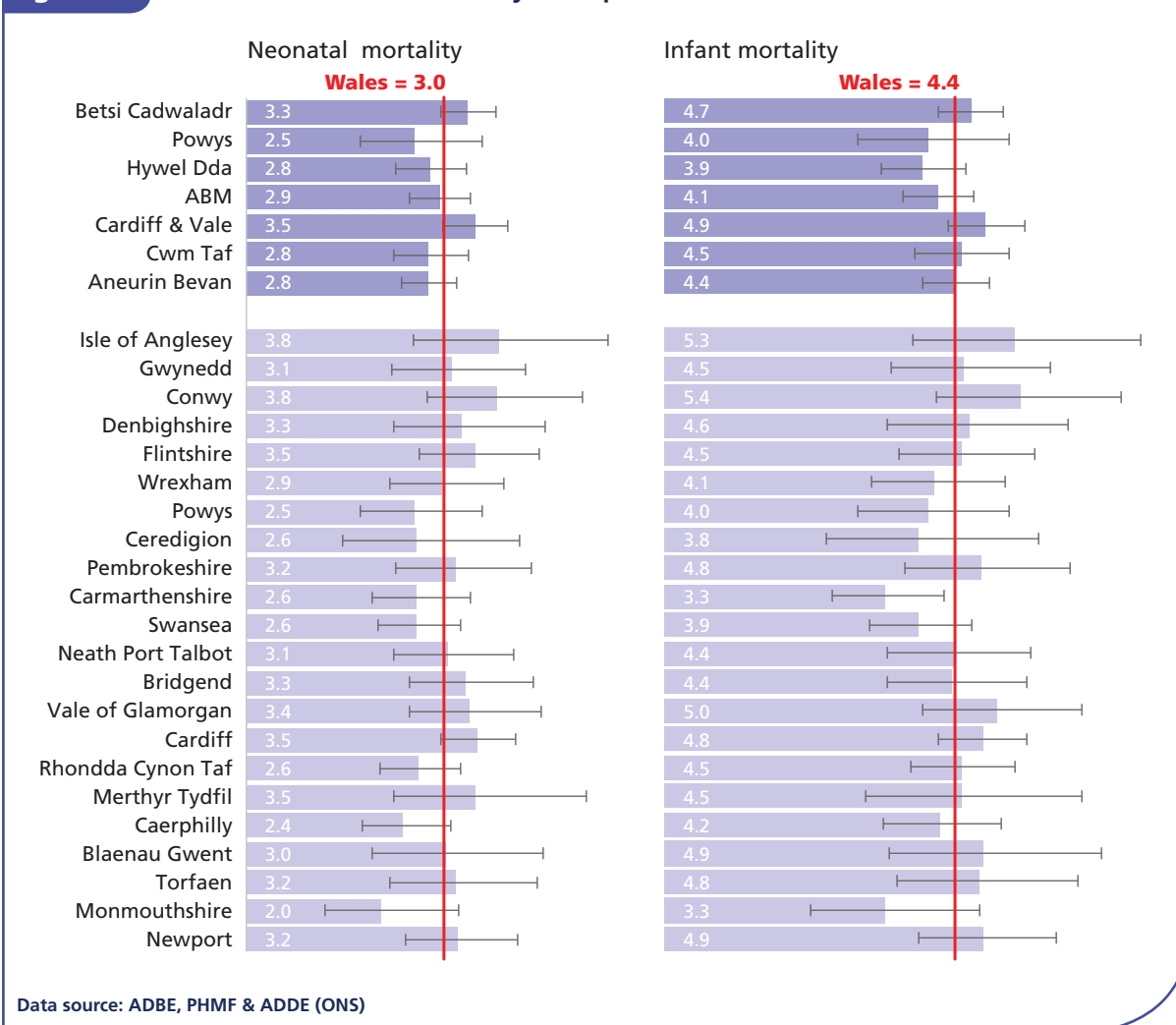


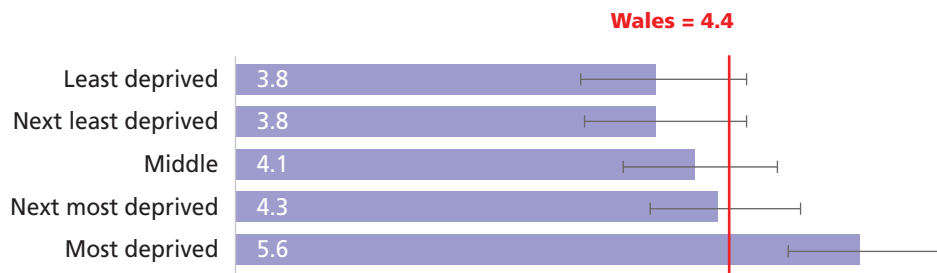
Figure 7.2 shows that in 2002-2011 neonatal mortality rates, at the health board level, are seen to vary from 2.5 per 1,000 live births in Powys to 3.5 in Cardiff and Vale. There appears to be considerable variation at the local authority level. However, it is important to note that despite the fact that 10 years' data has been aggregated to produce these figures, the CIs are wide and none of the rates are statistically significantly different to the Wales rate of 3.0 per 1,000 live births.

Variation at both the health board and local authority level is also evident for infant mortality rates. However, Carmarthenshire (3.3 per 1,000 live births) is the only area with an infant mortality rate that is statistically significantly different to that for Wales (4.4 per 1,000 live births).

There has been an overall decrease in the infant mortality rate for Wales over the last 10 years which has been attributed to various factors including improved living conditions, diet, sanitation, birth control, advances in medicine and healthcare.<sup>5,6</sup> Compared with other European countries, Wales ranked 21 out of 38, with a 2011 infant mortality rate of 3.7 per 1,000 live births. For the other countries the infant mortality rates ranged from 0.9 per 1,000 live births in Iceland (ranked 1) to 13.1 in Kosovo (ranked 38).<sup>7</sup>

Neonatal and infant mortality rates are higher in the most deprived areas.<sup>2,3</sup> The latest figures show the infant mortality rate per 1,000 births for the most deprived fifth to be almost 50% higher than the least deprived fifth (Figure 7.3).

**Figure 7.3** Infant mortality by fifth of deprivation, Wales, rate per 1,000 births, 2006-2010



Data source: ADBE & ADDE (ONS), WIMD 2011 (WG)

### 7.3 Causes of death

The most common cause of death in children and young people is injury/poisoning, which accounts for around one third of all deaths in the 0-24 year age group. However, there are noticeable differences by age (Figure 7.4).

**Figure 7.4** Main causes of death by ICD10 chapter for children and young people, Wales, annual average, 2007-2011



Data source: ADDE (ONS)

In the under 5s the most common cause of death (by ICD10 chapter) was perinatal conditions, which accounted for just over half (51%) of the deaths in this age group in 2011. Examples of perinatal conditions include prematurity, birth trauma, infections, cardiovascular disorders, respiratory disorders and digestive disorders. The next most common cause was congenital malformations, which accounted for 1 in 6 deaths (16%). More than 85% of deaths in this age group were infants i.e. aged under 1 year.<sup>1</sup> *The Child Death Review Programme* reported that unknown cause of death (includes sudden infant death syndrome (SIDS)) accounts for around 9% of deaths in the under 1 age group.<sup>1</sup>

Deaths in the 5-11 age group are rare with 19 deaths registered in 2011, accounting for 5.5% of all deaths in the 0-24 year age group. Diseases of the nervous system and injuries/poisonings were the main underlying causes of death for this age group.

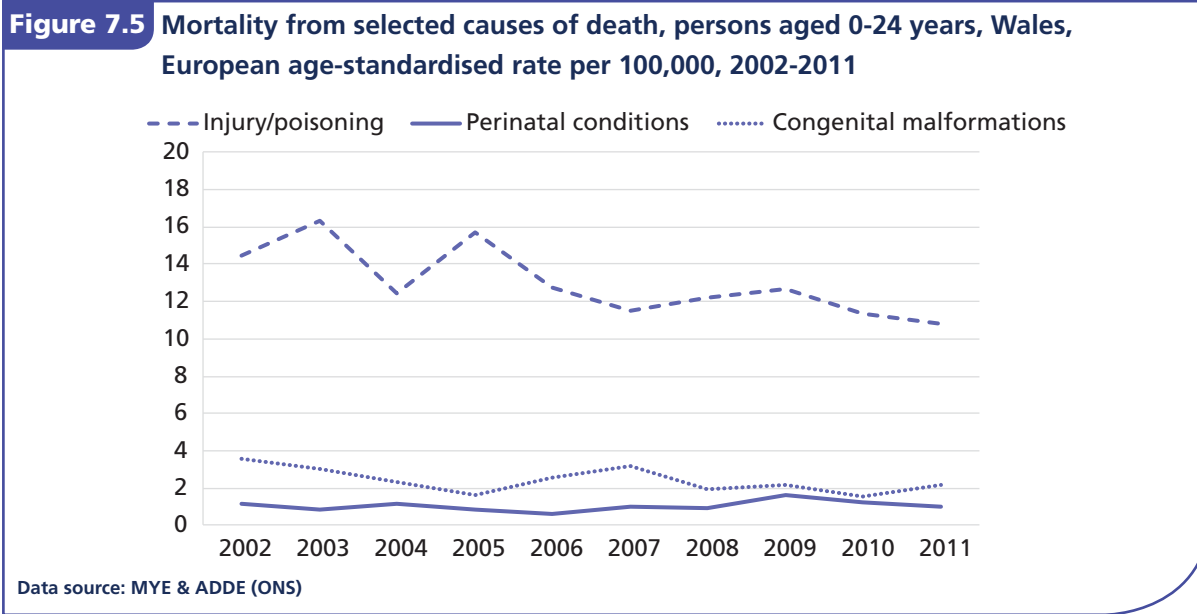
Deaths associated with risk taking behaviours among children and young people increase with age. In the 12-17 age group injury/poisoning is the main cause of death, accounting for half (114/229) of all deaths in 2007-2011. However, in the 18-24 year age group injury/poisoning accounts for 6 out of every 10 deaths (60%).

Male deaths are higher than females across all age groups, with more than 6 out of every 10 deaths (65%) in the 0-24 year age group being among males. This is particularly the case among injury/poisoning deaths. Males are also known to be more likely to engage in risk-taking behaviour than females.

Information on interventions for preventing injuries is included in section 8.8 of this report. Further evidence on interventions is outlined in the *Burden of injury report*<sup>8</sup> and in the evidence review to support the *Thematic review of deaths of teenagers in motor vehicles*.<sup>9</sup>

### 7.4 Mortality trends

There has been a downward trend for injury/poisoning deaths in the last decade (Figure 7.5). The rate of deaths from congenital malformations has also declined since 2002 but has seen little variation in the last 4 years. There has been little change in the death rate for perinatal conditions across the period.



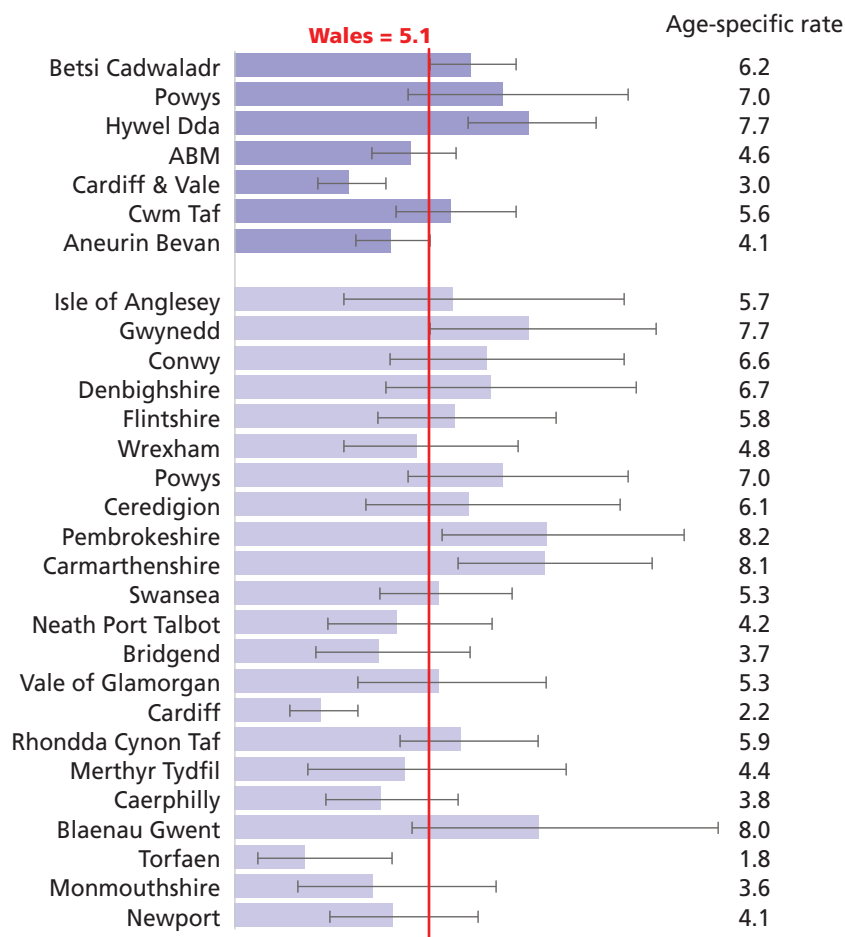
## 7.5 Road traffic crashes

The main cause of injury/poisoning deaths for persons of all ages is falls.<sup>8</sup> However, the main cause of injury/poisoning death for children and young people aged 0-24 years is road traffic crashes, accounting for 37% (approx 50 per year) of these deaths. Road traffic crashes include pedestrian injuries. A report looking at the burden of injuries in Wales found that road traffic crash deaths are most common in the 15-29 year age group. This is likely to be linked to driver and passenger casualties in crashes involving new drivers.<sup>8</sup> (Figure 7.6).

There is considerable variation at the health board level in road traffic crash death rates. The lowest rate per 100,000 population is seen in the Cardiff and Vale area (3.0) and the highest in the area of Hywel Dda (7.7) with both rates being statistically significantly different to the Wales average. Much of this is due to the different geographies of the health boards; Cardiff and the Vale being a more urban area with a wider variety of transport options and Hywel Dda being a much more rural area with few transport options. Surveys have shown that drivers, especially younger and inexperienced ones, on rural roads drive with less care than they do on urban roads. They think it is safer to break the speed limit on rural roads and they believe these roads are safer because they are quieter. Unfortunately, they often do not realise that rural roads present many unforeseen hazards, such as blind bends, hidden dips, animals and mud on the road.<sup>10</sup>

Greater variation is evident at the local authority level with Torfaen (1.8) and Cardiff (2.2) having the lowest rates per 100,000 population and Pembrokeshire (8.2) and Carmarthenshire (8.1)

**Figure 7.6** Transport accident mortality by area of residence, persons aged 0-24, rate per 100,000 population, 2002-2011



Data source: MYE & ADDE (ONS)

having the highest rates. Again, the two highest and lowest rates are seen to be statistically significantly different to the Wales average.

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>9</sup>

Information on interventions for preventing road traffic crashes is included in section 8.8 of this report. Further evidence is outlined in the *Burden of injury report*.<sup>8</sup>

### 7.6 Suicide

Suicide is a rare event but each suicide is a tragedy; a life and a family member lost.<sup>1</sup> It accounts for 31% of deaths due to injury and poisoning among those aged 15-24 years. In Wales, between 2002 and 2011 an average of 34 young adults (15-24) committed suicide each year (Figure 7.7).

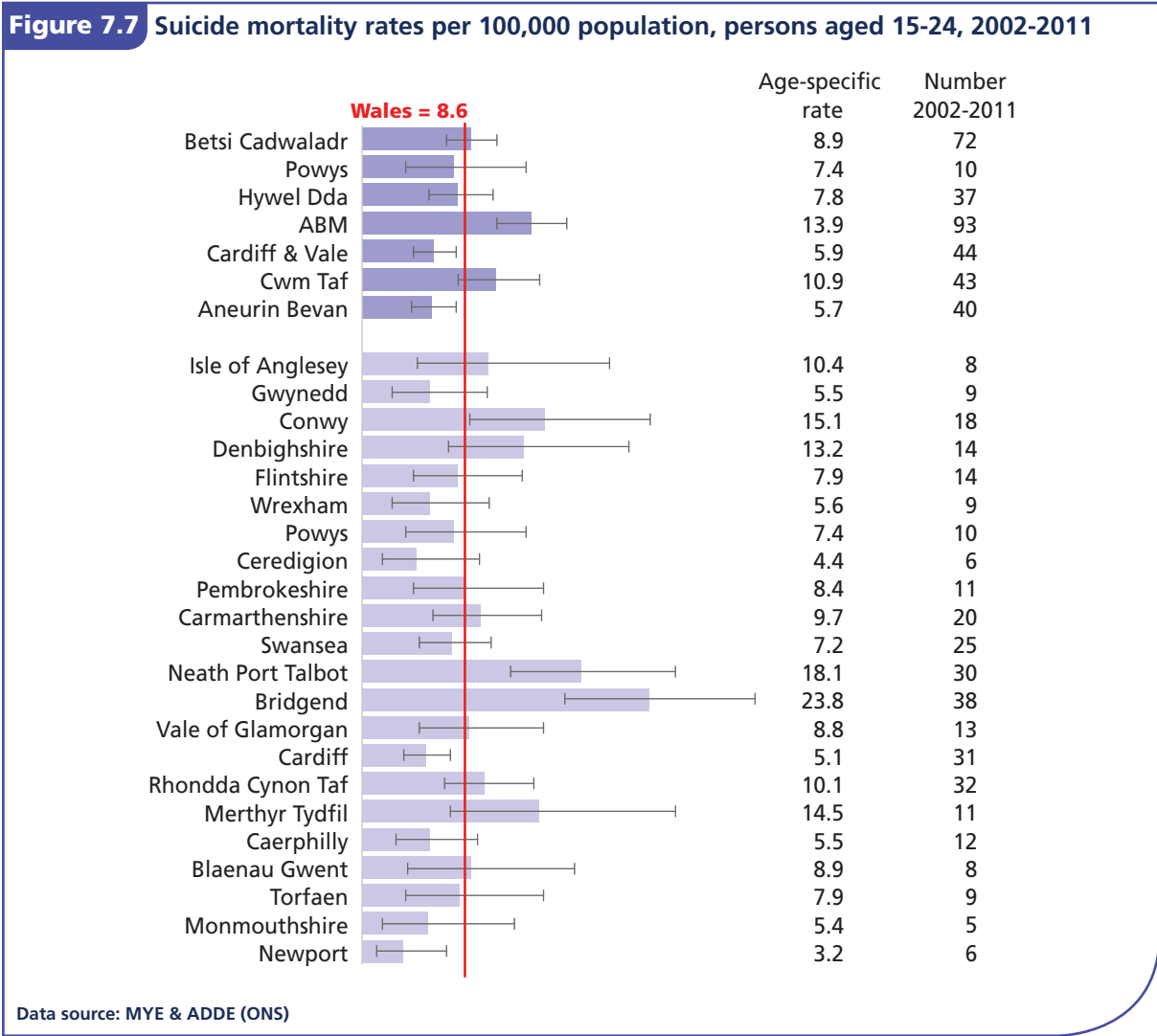


Figure 7.7 shows that, at the health board level, suicide rates per 100,000 population for the 15-24 year age group are seen to be lowest in the Aneurin Bevan area (5.7) and Cardiff and Vale area (5.9). The highest rate is seen in the Abertawe Bro Morgannwg area (13.9). These 3 rates are all statistically significantly different to the Wales average.

Within the health board areas there is considerable variation at the local authority level with rates per 100,000 population ranging from 3.2 in Newport to 23.8 in Bridgend. The rates in Neath Port Talbot (18.1) and Conwy (15.1) are also high (again all 4 areas being statistically significantly different to Wales). However, it is important to note that the pattern seen in Bridgend, Neath Port Talbot and Conwy is also present for all ages (the 3 areas being statistically significantly different to Wales) i.e. this is not only an issue for children and young people in these areas. Also, the numbers of suicides in each year are small and this can make a difference to the rate. Figures ranged from 1 to 6 suicides occurring in each year in Neath Port Talbot and 2 to 7 suicides occurring in each year in Bridgend.

The *Child Death Review Programme* have undertaken a pilot review on deaths of young people taking their own life and plan to revisit this theme as the next child death thematic review.<sup>1</sup> The Welsh Government have produced a national action plan to reduce suicide and self harm in Wales.<sup>11</sup> A regional suicide prevention group is being set up in mid and west Wales. The group is being led by Abertawe Bro Morgannwg University Health Board and will feed into the national group for suicide prevention. Information on interventions for improving mental well-being is included in section 8.7 of this report.

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