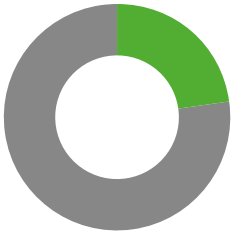
CHAPTER 5:
Physical health, longterm conditions, disability and mortality

31,500 children and young people under the age of 19 have **diabetes** in the UK

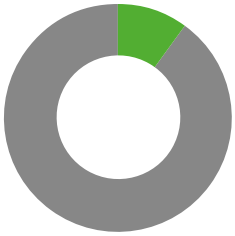
Peak age for diagnosis of **Type 1 diabetes** is between 10 and 14

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

23%
of 11-15 year olds report that they have a **longterm illness** or **disability**



10%
of young people 10-24 have a **disability** that affects their ability to do normal daily activities



46%
of 15 year olds have **decay** in their permanent teeth

Those aged **16-20** are the group most likely to be diagnosed with **asthma**

2,400 young people age 15-24 are diagnosed with **cancer** every year in the UK

External causes of mortality (injuries and intentional self-harm) are the **most common cause of death** in those aged 10-24

2,477 young people aged 10-24 died in 2015

Physical health, longterm conditions, disability and mortality

Although the years 10-24 tend to be a time of good physical health, many young people will experience a range of short term physical health problems. A significant minority will have longterm chronic conditions or some kind of disability.

Headaches, abdominal pain, muscular skeletal disorders, allergies, skin disorders and acne, coughs and respiratory infections are some of the common physical health problems for which young people seek medical advice. Young people are more frequent users of primary care services than is often thought (see **Chapter 7**). However there are no up to date robust prevalence data on the regular short term health problems of this age group. The topic has not been covered in the Health Survey for England since 2002, and there have been no large scale studies of why young people in particular present at general practice since Churchill et al (2000).

In young people aged 16-24, **24% young women** and **14% young men** took at least one prescribed medicine in the previous week

Source: HSCIC (2014) Health Survey for England 2013

Research on individual topics such as headaches (Abu-Arafeh et al, 2010) and skin conditions (Scholfield et al, 2009; Scholfield et al, 2011) suggest these may be very common in this age group. For example, it has been estimated that over half of children and adolescents have suffered headaches (Abu-Arafeh et al, 2010). Prevalence of acne, which usually starts in puberty, has been estimated at between 50% of 14-16 year olds (Smithard et al, 2001) to 80% of all those aged 12-24 (Lynn et al, 2016). The Global Burden of Disease Study 2010 suggested that lifetime prevalence of eczema in children and young people is between 15-30% in industrialised countries, a rate that has increased three fold in the last 30 years (Pawankar et al, 2013). More UK data on young people's routine health concerns (other than longterm conditions such as diabetes) are urgently required for planning services and training GPs and other primary care professionals.

The 2013 Health Survey for England (HSE) did cover the use of prescribed medicines and revealed that in the 16-24 age group, 14% of young men and 25% of young women had taken at least one prescribed medicine in the last week. These were largely medicines for respiratory conditions, or antidepressants, antibacterials, analgesics or non-steroidal anti-inflammatory drugs (HSCIC, 2013).

Longer term conditions – where more data are available – include asthma, diabetes, epilepsy, arthritis, cancer and physical and mental health conditions. Overall, results for England from the Health Behaviour in School-aged Children study (HBSC) in 2014 found that 23% of young people aged 11-15 reported that they had a longterm medical illness or disability. Asthma accounted for over half the cases. Of those with a disability, 59% said they were taking medication (Brooks et al, 2015).

23%
of 11-15 year olds report that they have a longterm illness or disability

Source: Brooks et al, 2015

Dental health

A national Children's Dental Health Survey has been undertaken every ten years since 1973, with the latest taking place in 2013 (HSCIC, 2015). It provides estimates on the dental health of 12 and 15 year olds in England, Wales and Northern Ireland, using data collected during examinations undertaken in schools on a random sample of the population of this age.

Trend data between 2003 and 2013 showed an overall reduction in the extent and severity of tooth decay for this age group. However, a third of 12 year olds (34%) and nearly half of 15 year olds (46%) had decay in their permanent teeth. More than a quarter of 15 year olds reported being embarrassed to smile or laugh due to the condition of their teeth. Young people who were eligible for free school meals were twice as likely to have severe or extensive tooth decay (see **Chapter 8** for more on health inequalities).

46%
of 15 year olds have **decay** in their permanent teeth

Source: HSCIC (2015) Children's Dental Health Survey 2013

Asthma, diabetes, epilepsy and arthritis

Asthma is a chronic inflammatory disorder of the airways affecting many young people. It is a complex and episodic disorder. Drawing together data from a number of different national datasets, the British Lung Foundation's 'Respiratory Health of the UK' project estimated that 8 million people – over 12% of the population – have been diagnosed with asthma at some point (Mukiherjee et al, 2016; Snell et al, 2016). Since 2008, young people aged 16-20 have been the group most likely to be diagnosed. Overall, Asthma UK (2017) has estimated that 1 in 11 children and young people have asthma. Taken together, these statistics suggest that something in the region of a million young people between the ages of 10 and 24 are likely to have asthma.

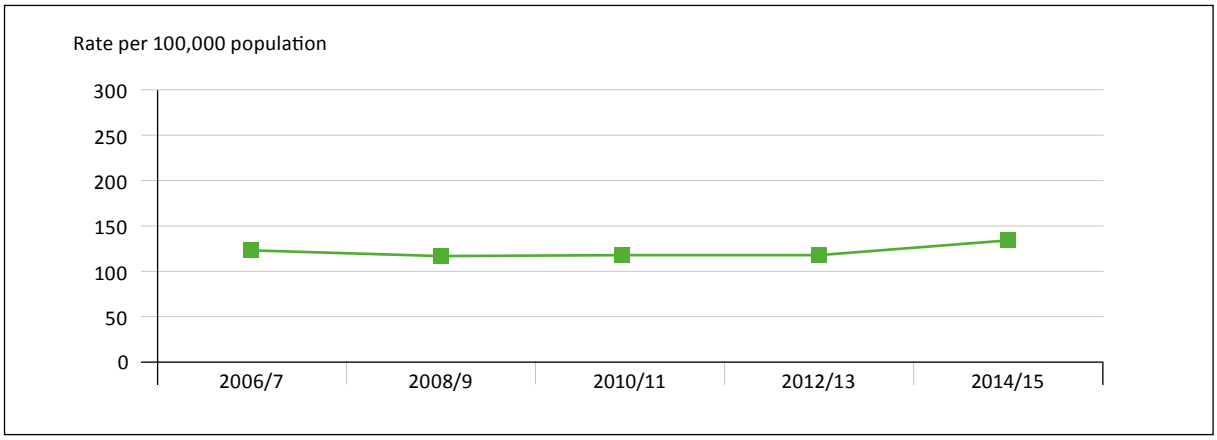
Young people **aged 16-20** are the group most likely to be diagnosed with **asthma**

Source: British Lung Foundation (2016) Respiratory Health of the Nation

There has been much debate about whether rates of asthma have increased in recent years, but time trend data from the Respiratory Health of the UK project, from 2004 to 2012 suggested that lifetime prevalence of asthma had declined in children and increased in adults over that period. The trend for children is clearly to be welcomed. It is worth noting that a smoking ban in public places was introduced in Scotland in 2006 and in England and Wales in 2007. In addition, as we saw in Chapter 3, smoking by young people had fallen over recent decades before the ban, which may have played a role.

However, research has shown that there are a number of barriers to successful management of asthma in this age group which need addressing in order to improve young people's outcomes still further, including concerns related to side effects (weight gain for example), social stigma and feelings of embarrassment and exclusion (Simoni et al, 2017). In addition, although the overall trend in lifetime prevalence for young people is looking positive at the moment, absolute levels of asthma are still very high, and hospital admissions for 10-18 year olds rose in England from 2006/07 to 2014/15 as shown in **Chart 5.1**.

Chart 5.1: Hospital admission of 10-18 year olds for asthma, England, 2006/7 to 2014/15



Source: NHS Digital: Hospital Episode Statistics (HES) DOWNLOAD DATA

31,500 children and young people under the age of 19 in the UK have **diabetes**

Source: Diabetes UK (2016)

Diabetes also represents a key concern for this age group. Diabetes is a serious life-long health condition, where the amount of glucose in the blood is too high because the body cannot use it properly. It may cause longterm complications and needs to be well managed. Reducing recorded diabetes is an outcome indicator in the Public Health Outcomes Framework (Public Health England, 2016). Drawing on surveys from England, Wales and Scotland, the charity Diabetes UK has estimated that there are approximately 31,500 children and young people under the age of 19 who have diabetes. Of these, the great majority have Type 1 diabetes (95%), with approximately 533 (2%) known to have Type 2. The remainder have other rare forms (Diabetes UK, 2016). On this basis, Diabetes UK estimates that local authorities can expect between 100-150 young people under 18 to be living with diabetes in their area.

Similar estimates of prevalence are provided in an annual national paediatric audit undertaken by the Royal College of Paediatrics and Child Health. The audit aims to monitor the incidence and prevalence of all types of diabetes among children and young people receiving care from a paediatric diabetic unit in England and Wales. The 2015/16 audit included all 173 paediatric diabetic units in England and Wales and collected data on 28,439 children and young people up to the age of 24 years under the care of a paediatric consultant (all young people with diabetes should be under the care of a consultant but some may not be). The audit recorded 2,834 new diagnoses of diabetes in 2015 in young people aged 0-15. The overall incidence of Type 1 diabetes in England and Wales was estimated to be 25.9 per 100,000 population, representing an increase since the previous audit in 2014/15 (RCPCH, 2017).

The peak age for diagnosis of Type 1 diabetes is between 10 and 14 years of age. Type 2 diabetes is nine times more common in children of South Asian origin than white children, and six times more likely in African Caribbean children. Slightly more diagnoses are made in boys (52%) than girls (48%) (Diabetes UK, 2016). Type 1 diabetes is not related to obesity, but a rise in obesity among young people may result in more Type 2 diagnoses in the longterm.

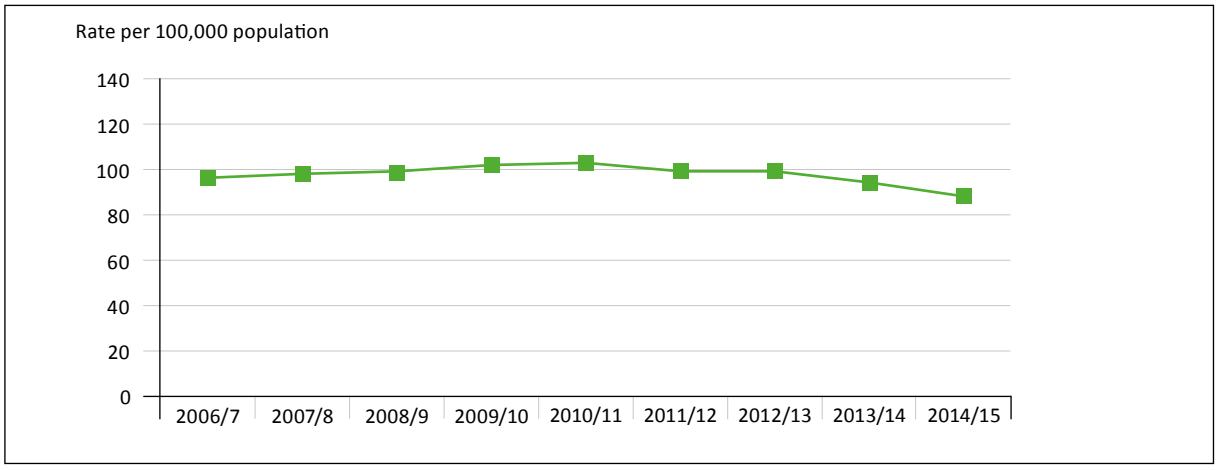
Management of diabetes in young people can present challenges. All those over 12 years should have certain checks that are required to screen for various complications arising from the disease. In the 2015/16 audit, only two thirds of young people aged 12 and above had the required foot check (65.8%), a retinopathy screen (66.2%) or urinary albumin recorded. It was noted that children with Type 1 diabetes had worse diabetic control if they lived in a deprived area, were of a non-white ethnicity, or were female (RCPCH, 2017). Indicators of complications were found in significant proportions. Older young people with Type 1 diabetes were at increased risk of eye disease, with 20.5% of 17 year olds screened having an abnormal result. Macrovascular complications and high cholesterol levels were also recorded in significant proportions. These findings suggest that age-appropriate education and interventions are required to target better diabetes control in young people.

Peak age for diagnosis of **Type 1 diabetes** is between **10 and 14** years

Source: Diabetes UK (2016)

Looking at the rate of hospital admissions for diabetes per 100,000 population for 10-18 year olds from 2006/7 to 2014/15, **Chart 5.2** suggests that the trend has been for admissions to remain reasonably level across this period.

Chart 5.2: Hospital admissions of 10-18 year olds for diabetes, England 2006/7 to 2014/15



Source: NHS Digital: Hospital Episode Statistics (HES) DOWNLOAD DATA

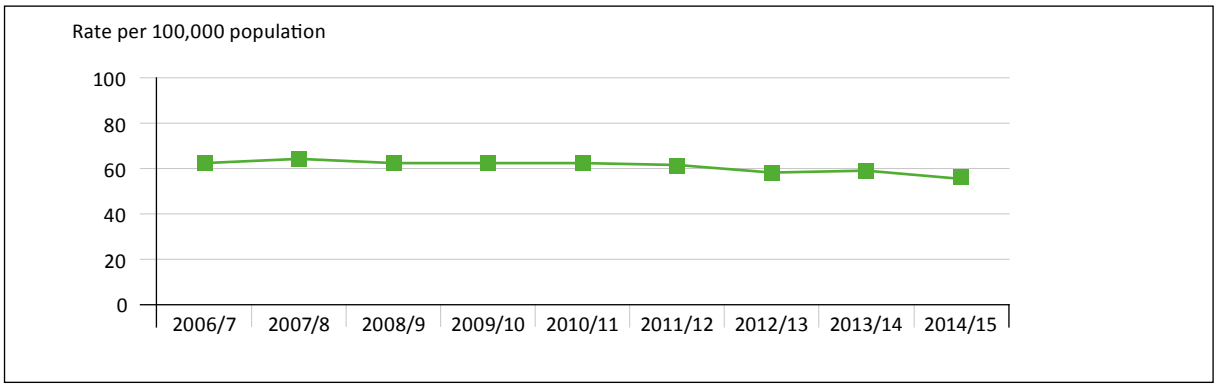
Epilepsy is another important longterm condition affecting teenagers. Epilepsy is a neurological condition resulting in a tendency to have recurrent seizures and the term represents a group of over 40 types of the condition. One in 50 people will have epilepsy at some time in their lives, with around 500,000 (1 in 100) with the condition at any given time (Epilepsy Society, 2017). The National Institute for Clinical Excellence (NICE) has estimated that there were approximately 34,000 young people under 18 with a diagnosis of epilepsy and taking antiepileptic drugs in England (NICE, 2013). For 12-17 year olds, the incidence of new diagnoses was 0.3% for the age group as a whole, approximately similar to other age groups.

There are approximately **34,000** young people under 18 with a diagnosis of epilepsy and taking antiepileptic drugs in England

Source: NICE (2013)

Chart 5.3 shows that the rate of hospital admissions for epilepsy per 100,000 of the population aged 10-19 in England has remained fairly level since 2006/7.

Chart 5.3: Hospital admissions of 10-18 year olds for epilepsy, England, 2006/7 to 2014/15



Source: NHS Digital: Hospital Episode Statistics (HES) DOWNLOAD DATA

There is evidence that epilepsy levels are higher in urban areas, areas of social deprivation and areas without specialist services (Thomas et al, 2012), suggesting that social determinants of health play a part in its development. See **Chapter 8** for more on health inequalities.

Arthritis, an inflammatory joint disease, is rare in young people. It covers several related conditions occurring before the age of 16, including juvenile rheumatoid arthritis and juvenile idiopathic arthritis (definitions of which overlap). Despite being rare, it is estimated that juvenile idiopathic arthritis affects 15,000 children in the UK with more than 2,500 developing the condition every year (Arthritis Research UK, 2014). There are no UK prevalence data and this is an obvious gap.

Cancer

On average, **2,400** young people aged 15-24 are diagnosed with cancer every year

Source: Cancer Research UK (2017) Cancer Statistics for the UK

Cancer is also relatively rare in young people, but is one of the leading causes of death for those in their teens and early 20s. Drawing on data from the cancer registries, Cancer Research UK estimates that around 2,400 young people aged 15-24 years are diagnosed with cancer every year in the UK and approximately 280 of this age group die from cancer each year (Cancer Research UK, 2017).

Chart 5.4 shows the incidence of cancer diagnoses in young people aged 15-24 is similar in the four countries of the UK. The rate for females appears higher in Wales but the absolute numbers are very small. Rates do not differ significantly among the other countries for either gender (Cancer Research UK, 2017).

Chart 5.4: Average annual cancer incidence for 15-24 year olds by gender, UK, 2012-2014

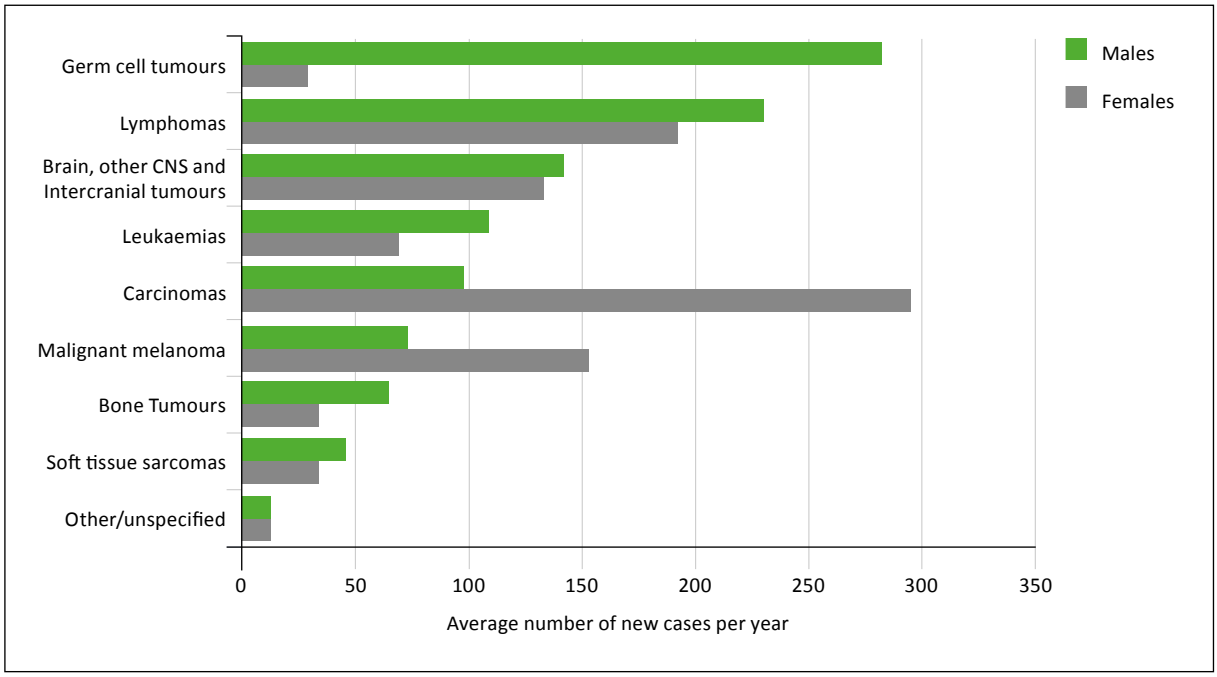
	England	Wales	Scotland	Northern Ireland	UK
Males					
Number of new cases per year	983	64	91	34	1172
Average age-standardised rate per million	280.3	304.9	264.2	270.9	279.9
Females					
Number of new cases per year	1030	72	94	36	1233
Average age-standardised rate per million	305.2	361.7	275.1	302.5	305.4

Source: Cancer Research UK (2017) Teenagers' and young adults' cancer incidence statistics DOWNLOAD DATA

Chart 5.5 shows the most common cancers for this age group are lymphomas, including cancer of the lymph system, Hodgkin Disease and non-Hodgkin Lymphoma, followed by carcinomas (malignant tumours on the surface or lining of a body organ). Cancers show different distributions by gender; there are more lymphomas, germ cell tumours (in cells producing sperm and eggs) and leukaemias (cancer of the white blood cells) among young men and more carcinomas and malignant melanoma among young women (Cancer Research UK, 2017). The rates balance out, however, and overall it is estimated that the male:female ratio for cancer in this age group is equal.

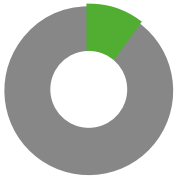
The cancer registry data compiled by Cancer Research UK suggests an increase of one fifth in cancer diagnoses among 15-24 year olds in the UK since the 1990s. Mortality, however, has fallen, almost halving since the 1970s (Cancer Research UK, 2017). Overall, over 84% of those diagnosed survive five years or longer.

Chart 5.5: Average number of teenage and young people's cancers by diagnostic group, age 15-24, UK, 2012-2014



Source: Cancer Research UK (2017) Teenagers' and young adults' cancer incidence statistics DOWNLOAD DATA

Disability



10%
of young people 10-24 have a disability that affects their ability to do normal daily activities

Source: Department for Work and Pensions (2017) Family Resources Survey

The UK Equality Act 2010 defines disability as a physical or mental impairment that has substantial and longterm (usually one year) negative effects on a person's ability to do normal daily activities. This is, therefore, a functional definition rather than one based on the type of problem faced. Disability might include some of the conditions covered above such as arthritis and cancer, or other conditions including HIV, chromosomal and gene problems (for example, Downs Syndrome, cystic fibrosis, haemophilia and spina bifida), or loss of physiological and psychological functions such as mobility, sight, hearing and learning capacity. Disability can result in social, economic or environmental barriers restricting full and equal participation in society.

Chart 5.6 shows the rates of disability by this definition, by five year age bands up to age 24, drawing on data from the most recent national Family Resources Survey. Between the ages of 10 and 24, 10% of young people meet the definition, with very similar rates for young men and women. For children, the most common types of impairment reported were social/behavioural, learning, and stamina/breathing/fatigue (Department for Work and Pensions, 2017). The rate of disability for the population as a whole is 20%, which is mainly accounted for by the rise in the rate above age 50.

Chart 5.6: Average disability prevalence by age and gender, UK, 2013/14 to 2015/16

Age Group	All disabled people	% Male disabled	% Female disabled
All people	**20**	**19**	**22**
0-4	3	3	3
5-9	7	9	5
10-14	9	11	7
15-19	10	10	11
20-24	10	9	11

Data are presented as an average over three years as there are small sample sizes for some age groups.
Source: Department for Work and Pensions (2017) Family Resources Survey: financial year 2015/16 DOWNLOAD DATA

Estimates vary in different surveys depending on the definition of disability used and the age bandings employed in the study. The 2015 English HBSC survey (of 11-15 year olds) arrived at a slightly higher estimate (1 in 8), although this was a broader construct including longterm illness and disability (Brooks et al, 2015).

A learning disability is defined by the Department of Health as "a significant reduced ability to understand new or complex information, to learn new skills (impaired intelligence), with a reduced ability to cope independently (impaired social functioning), which started before adulthood" (Department of Health, 2001). There is an overlap between learning disability and autism spectrum disorder, but not all young people with autism will have learning disabilities or vice versa. Incidence of learning disabilities is more common in boys than girls, and it has been estimated that there are

286,000 children and young people aged 0-17 in the UK with a learning disability (Mental Health Foundation, 2017).

Leading causes of disability in young people in the UK:

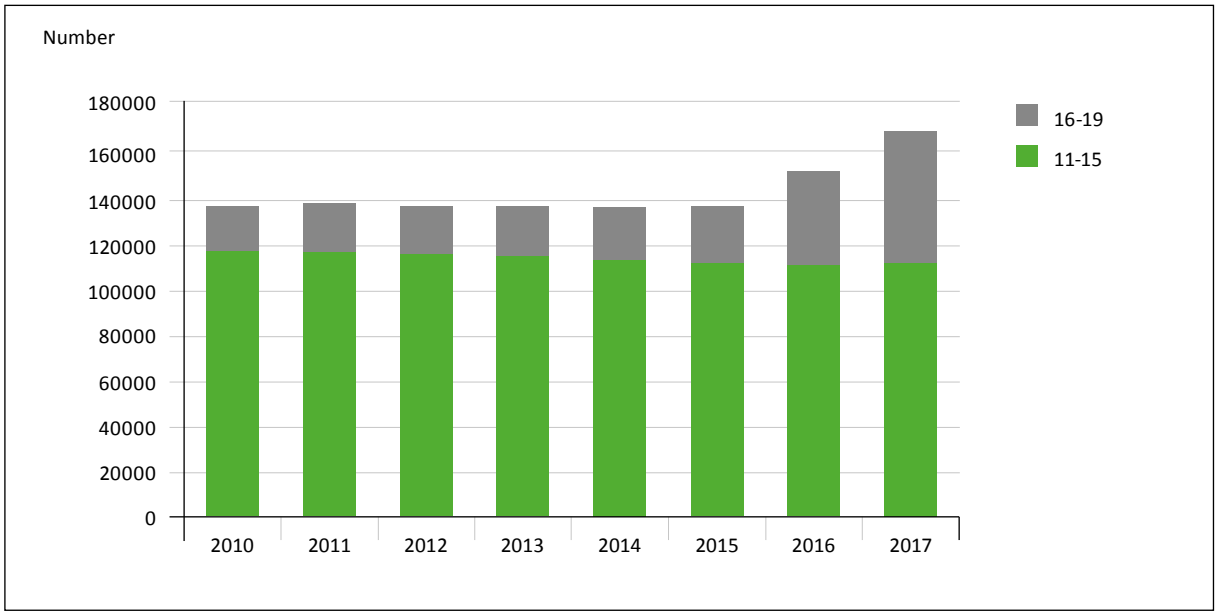
1. Social/behavioural
2. Learning difficulties
3. Stamina/breathing/fatigue
4. Mobility

Source: DWP (2017) Family Resources Survey

The definition of special educational needs is broader than that for learning disability, and in 2016 the Department for Education estimated that 1,228,785 school pupils (primary and secondary) had special educational needs (SEN) in England. Nearly a million children (11.6% of the total pupil population) received SEN support at school. Fewer (236,805) had a formal statement of special educational needs or – as it is now known – an Education, Health and Care (EHC) plan. Autistic spectrum disorder is the most common primary type of need for pupils with a statement or EHC plan, accounting for more than a quarter of those with a statement or plan (Department for Education, 2017). The number of children and young people with statements and EHC plans has increased each year since 2010. **Chart 5.7** presents the trends for 11-15 year olds and 16-19 year olds. Of all those 11-19 year olds with a statement or EHC plan, those aged 11-15 account for the largest proportion (Department for Education, 2017).

Professor Sir Ian Kennedy (2010) reported that disabled young people faced major barriers in the NHS in accessing quality health services. He noted they are given lower priority, face a lack of co-ordination between services and have to navigate the sheer complexity of the services they need. This remains a concern.

Chart 5.7: Number of children and young people with statements or EHC plans by age group, England, 2010-2017

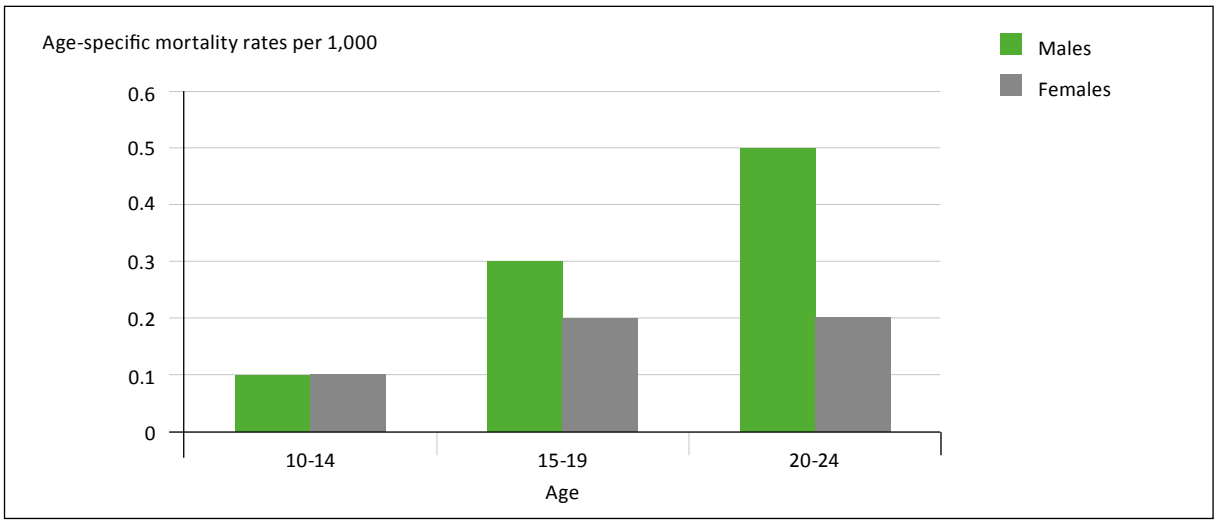


Source: Department for Education (2017) Statements of Special Educational Need (SEN) and Education, Health and Care plans EHC plans: England, 2017 DOWNLOAD DATA

Mortality

Over the last 50 years, age specific mortality rates have fallen for all age groups from 0-24 years (Office for National Statistics, 2017). While adolescence is a generally healthy life stage those aged 10-24 do die, often from preventable causes. **Chart 5.8** shows the age specific mortality rate for young people aged 10-14, 15-19 and 20-24. The older group has higher rates of mortality than the younger age groups. Males have higher rates than females. However, mortality rates for all young people never exceed 0.5 per 1000 population.

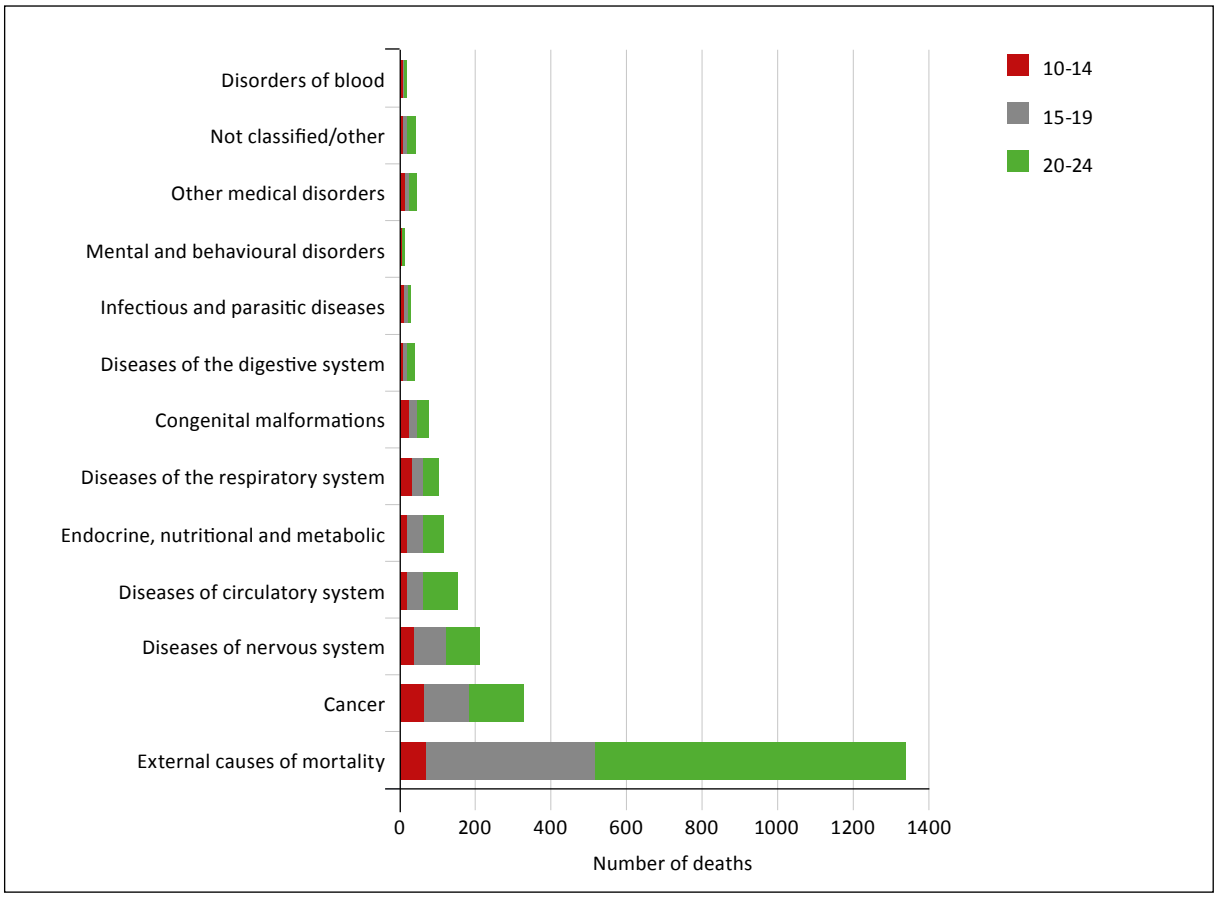
Chart 5.8: Age specific mortality per 1000 population age 10-24, England and Wales, 2015



Source: Office for National Statistics, Death Registration Summary Tables, England and Wales 2015 DOWNLOAD DATA

Chart 5.9 presents the main causes of death for young people in these three age brackets (10-14, 15-19 and 20-24). The most common causes of death for all young people 10-24 are those described as external (accidents, and self-harm) and cancer. As young people get older, the number of deaths from external causes increases. Altogether, 54% of the deaths to 10-24 year olds in 2015 were due to external causes, a significant proportion of which could be considered preventable through good quality health care and wider public health interventions.

Chart 5.9: Number of deaths by underlying cause and age, England and Wales, 2015



Source: Office for National Statistics (2016) Underlying cause of death by age group England and Wales 2015 Death Registrations
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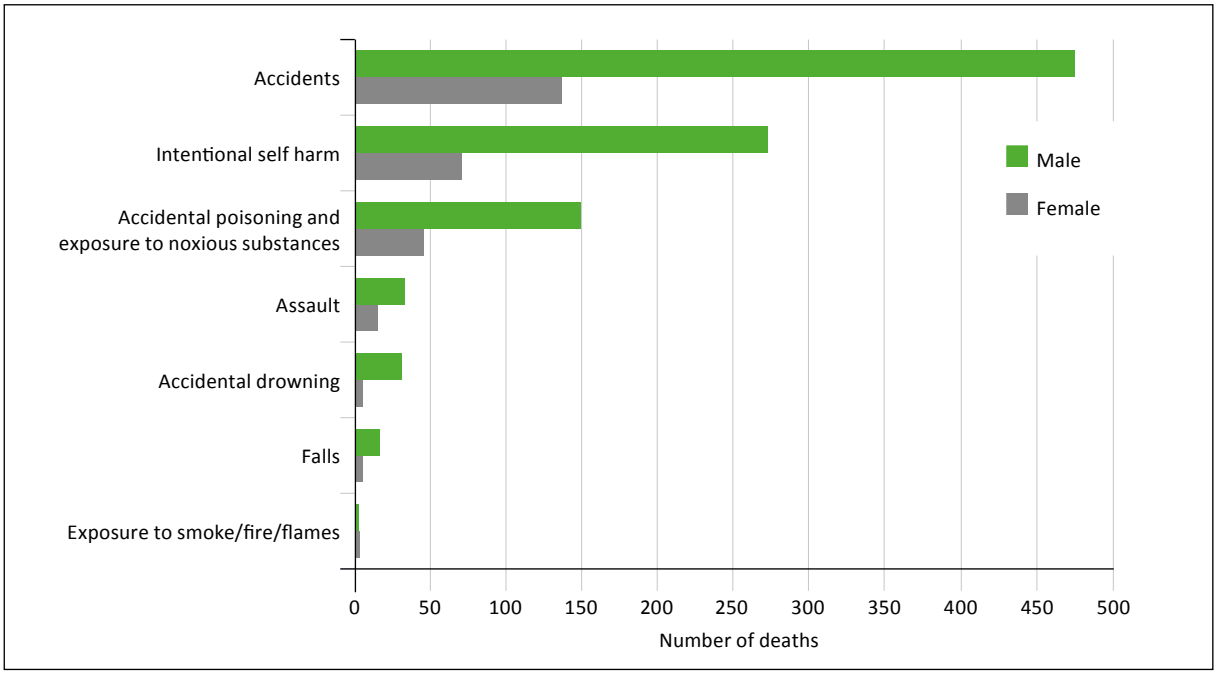
Breaking down these external causes of mortality for young people aged 15-24, **Chart 5.10** makes it clear that accidents are the most common category (which will include both accidental injury and traffic accidents), followed by self-harm. Other external causes include accidental poisoning, exposure to noxious substances, assault, drowning and falls. The pattern is similar for males and females although males are much more likely to die. Young men aged 15-24 are three times more likely to die of accidents and almost four times more likely to die of intentional self-harm than young women. It is also important to note that 31 young men died of accidental drowning in England and Wales in 2015, compared with five young women in the same age group. ONS has reported that suicide and self-inflicted injuries was the only cause to see an increase since 2014 in children and young people (NHS Digital, 2017). Legislation and effective implementation may help to reduce deaths caused by accidents in young people (Wolfe et al, 2014; Patton et al, 2016). Consideration of how to reduce preventable deaths caused by self-harm is also important in the face of emerging evidence of possible rises in mental health problems in the 16-24 age group (McManus et al, 2016; see **Chapter 6**).

Chart 5.10: External causes of mortality, age 15-24, England and Wales, 2015



Source: Office for National Statistics (2015) Deaths by age, sex and underlying cause registrations 2015 for England and Wales
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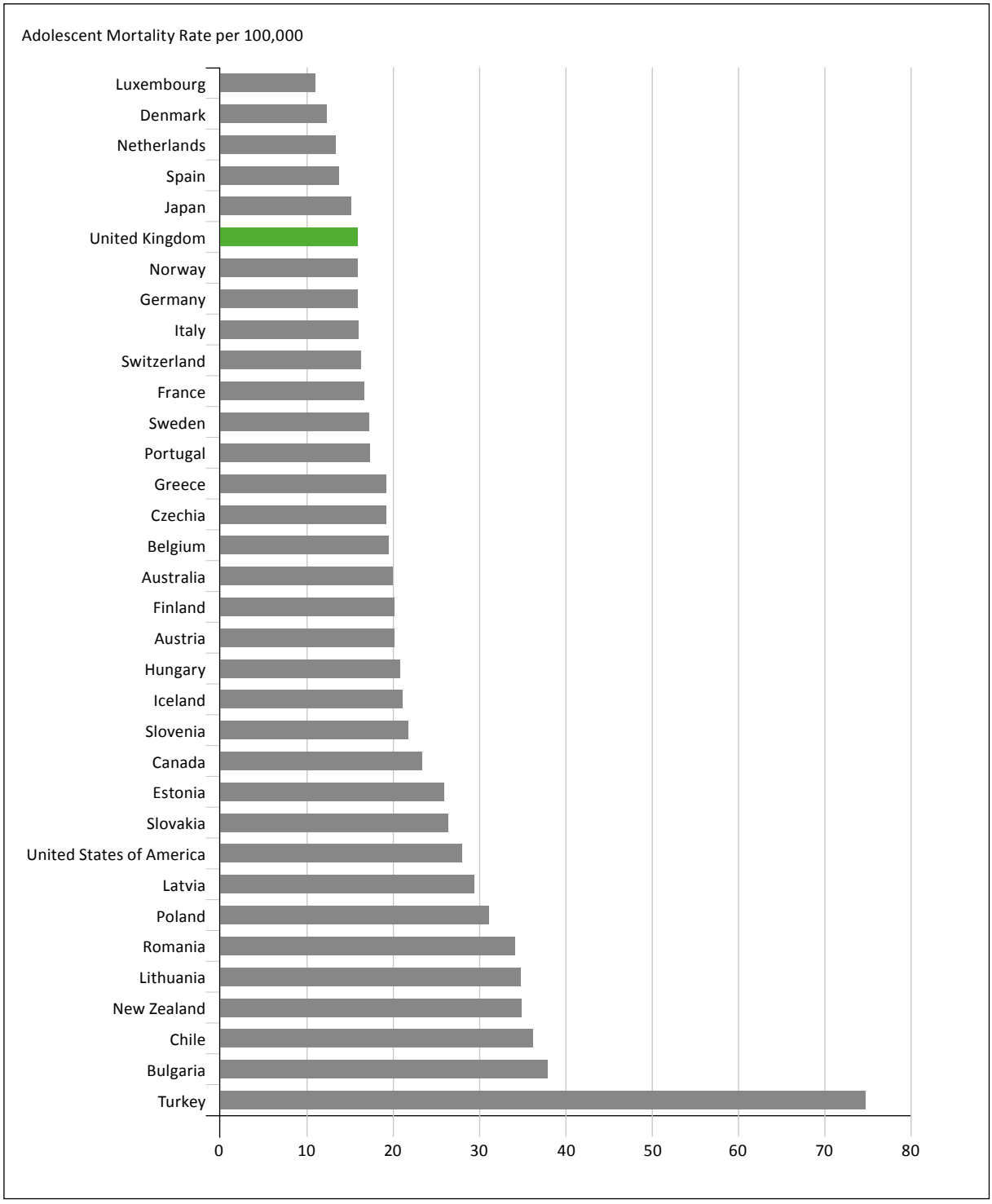
C**hart 5.11** shows the adolescent mortality rate per 100,000 population in rich countries in 2015, as collated by the World Health Organisation in their Global Health Observatory Data. For comparison we have selected results for just the rich countries presented in Unicef's report on child wellbeing (Unicef, 2017). The overall UK childhood mortality rate is higher than in some other high income countries, but lower than others. However, concern has been expressed that the UK has relatively high rates of death among certain subgroups including, for example, young people with chronic conditions (Wolfe et al, 2014).

Chart 5.11: Adolescent mortality rate per 100,000 population, rich countries, 2015



Source: WHO Global Health Observatory Data Repository DOWNLOAD DATA

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