

children

in the South West



Children in the South West Series: Bulletin 5



**A Fair Start?
Child mortality and morbidity
in the South West**

About the South West Public Health Observatory

The South West Public Health Observatory (SWPHO) is part of a network of regional public health observatories in the UK and Ireland. These were established in 2000 as outlined in the Government White Paper *Saving lives: our healthier nation*. Key tasks include: monitoring health and disease trends; identifying gaps in health information; advising on methods for health and health impact assessment; drawing together information from different sources; and carrying out projects on particular health issues.

The SWPHO incorporates the National Drug Treatment Monitoring System South West (NDTMS-SW), and in April 2005 merged with the South West Cancer Intelligence Service (SWCIS). The SWPHO works in partnership with a wide range of agencies, networks and organisations regionally and nationally to provide 'a seamless public health intelligence service' for the South West.

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Observatories.

**Children in the South West Series:
Bulletin 5**

A Fair Start?

Child mortality and morbidity
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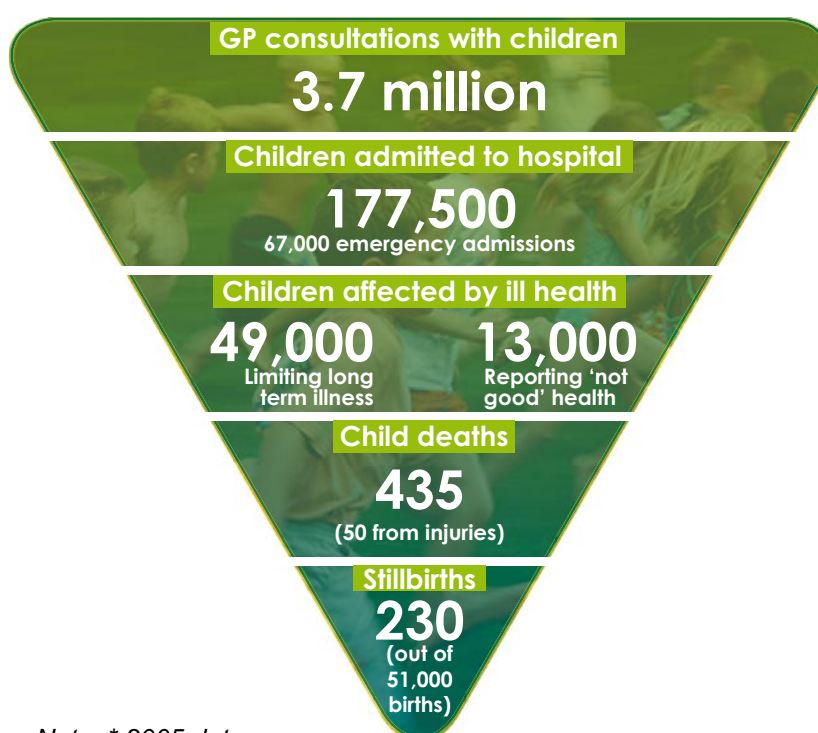
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Key facts about child health in the South West

There are approximately 1.9 million children aged 0–19 in the South West.* Each year, on average, there are:



Note: * 2005 data

Executive summary

Introduction

The purpose of this bulletin is to provide an overview of the leading causes of death (mortality) and ill health (morbidity) in children and young people in the South West. It is the fifth in a series of bulletins providing an overview of the health status of children and young people aged 0–19 years in the region. A list of other titles in the series is given on the inside back cover.

The series is aimed at those with responsibility for and an interest in child health and wellbeing in Primary Care Trusts, Care Trusts, NHS Hospital Trusts, the Strategic Health Authority, Local Authorities, Local Strategic Partnerships, Children's Trusts, other regional bodies, academic institutes and the voluntary sector. Its aim is to highlight inequalities between population groups and geographical areas, wherever possible, to assist in the planning, delivery and monitoring of services to improve the health and wellbeing of children and young people in the South West.

Key findings

Children in the South West region are, overall, healthier than their counterparts in other regions. However, many of the child deaths and much of the morbidity are potentially avoidable, suggesting that there is still considerable room for improvement.

In order to understand how best these improvements can be made, and which areas, causes and population groups should be prioritised, it is essential to understand variations by age group, sex, deprivation and geography. This report has used readily available sources of information to highlight some of these variations. Findings of particular importance are:

- Infant mortality rates are generally low in the region compared to England. Latest estimates suggest that the inequalities target for the South West is tough but achievable by 2010. In addition, the region does not compare favourably to some of its European counterparts on child health indicators, highlighting the fact that there is more to be done. If infant mortality

in the South West as a whole was at the level of the quintile with the lowest mortality, about 50 infant lives could be saved each year.

- Mortality rates in children aged 1–19 are generally lower than in the first year of life, but these still exhibit a steep socioeconomic gradient and a large proportion are potentially avoidable. The main causes of death vary by age and sex, but injuries, suicides and cancers are the biggest contributors, making up over 50% of all causes. Almost two-thirds of male deaths and half of female deaths are classified as potentially avoidable.
- There is also strong evidence of a steep socioeconomic gradient for child morbidity in the region.
- Hospital admission rates in the South West are higher than for England, and the causes of these admissions vary by age, sex and deprivation. In younger children (aged 0–4) acute respiratory infections predominate, while the most common causes in children aged 5–14 are injuries, especially in boys. The most common reason for admissions in the 15–19 age group is neoplasms and accidents for boys, and abdominal pain, nausea and vomiting, and abortive pregnancy for girls. Deliberate self-harm features among the reasons for emergency admission of girls of 15–19.
- Generally, injuries, self-harm, abortive pregnancy and ear, nose and throat (ENT) conditions contribute most to childhood morbidity in the South West.

These results show that, despite the fact that children in the South West are, on average, healthier than their counterparts elsewhere in England, there are still large numbers suffering from potentially avoidable conditions, which in some cases result in death. The majority of these cases appear to be concentrated in the most deprived communities. It is therefore paramount that decisions and interventions focused on the health of children in the South West are targeted at the populations most at risk and at potentially avoidable causes.

Policy and prevention

The Government has recognised the importance of promoting the health and wellbeing of all children. The Children Act 2004 and The Childcare Act 2006 place a duty on all partners to cooperate in the delivery of joint arrangements for children's services. The *Every Child Matters* programme aims to ensure that every child has the chance to fulfil their potential by improving levels of educational attainment, reducing ill health, substance misuse, teenage pregnancy, abuse and neglect, as well as crime and anti-social behaviour. It requires local agencies and their communities to develop integrated services to improve outcomes for all children, identifying five key aims: physical and mental health; protection from harm and neglect; getting the most out of life; making a positive contribution and achieving economic wellbeing. *The National Service Framework for Children, Young People and Maternity Services*, published in 2004, sets out national standards for children across health and social care to improve the quality of services, promoting general health improvement and addressing health inequalities. Implementation of this ten-year strategy is well under way, with a current particular focus on maternity services (*Maternity Matters*, May 2007) and services for disabled children (*Aiming High for Disabled Children*, May 2007).

Vaccination is one of the most effective public health interventions for preventing ill health and saving lives. This is dealt with in detail in an earlier report in the series, *First in line for infection: A report by Health Protection Agency South West* (see inside back cover of this bulletin for a link to this report).

A wide range of other interventions have also been shown to be effective in improving child health and preventing death. Key among these are:

- maintaining maternal health;
- breastfeeding;
- avoiding obesity;
- increasing emotional health and wellbeing;
- supporting parents;
- injury and self-harm prevention strategies;

- protecting sexual health, particularly around reducing teenage conceptions and preventing sexually transmitted diseases;
- school-based interventions, such as Healthy School Status, to address substance misuse and other child health issues.

Monitoring and information sharing

Ongoing monitoring and sharing of information about mortality and morbidity is critical to efforts to improve child health and reduce deaths among the young. The South West Public Health Observatory (SWPHO) has a key role to play as the organisation responsible for regional public health intelligence. The data sources used in this bulletin will be updated and made available via the SWPHO website (<http://www.swpho.nhs.uk>), as will new developments such as regional analysis of child height and weight measurements.

In addition, there is a diverse range of monitoring activity of health service standards. This includes NHS-wide mechanisms, such as requirements of the current National Operating Framework and associated Vital Signs reporting, performance management arrangements of Primary Care Trusts by Strategic Health Authorities, monitoring by Primary Care Trusts of services commissioned by providers and Healthcare Commission reviews. Together with multi-agency activity at regional/local level, such as the development and review of children and young people's plans, Local Area Agreements and Joint Needs Assessments, these mechanisms provide an impetus to identify local priorities and design services to meet the needs of the population most affected by health inequalities.

Recommendations

This report makes a number of recommendations to prevent ill health and mortality in children. A number of these relate to boosting protective factors in maternity and the early years, while others relate to influencing change in behaviour or lifestyle later on. There are also recommendations relating to targeting interventions at those most at risk, particularly in deprived populations.

Interventions around **maintaining maternal health** include:

- ensuring early booking for and good antenatal care;
- promoting smoking cessation during pregnancy;
- avoidance of passive smoking in children;
- promoting an optimal intake of folate and vitamin D both prior to conception and during pregnancy;
- reducing drug and alcohol misuse during pregnancy;
- providing accessible support services to women who are overweight or obese during pregnancy;
- promoting breastfeeding and UNICEF's 'Baby Friendly Initiative' in hospital and community settings.

Interventions around **maintaining child health** include:

- increasing vaccination coverage;
- ensuring adequate vitamin D intake, especially for vulnerable groups;
- reducing childhood overweight and obesity through local initiatives including the Healthy Schools programme;
- improving emotional health and wellbeing using a wide range of approaches from anti-bullying strategies in schools to targeted mental health in schools projects and application of forthcoming NICE guidance on depression and mental wellbeing in children;
- supporting parents through programmes such as the Child Health Promotion Programme, providing non-stigmatising services to vulnerable families and the appropriate use of specific interventions;

- improving access to services aimed specifically at young people who are at risk of self-harm or suicide;
- application of NICE guidance on preventing sexually transmitted infections and reducing under-18 conceptions;
- school-based interventions, contributing to achievement of Healthy School Status, to tackle smoking, alcohol and drug misuse in children;
- clear links between Children's Trusts and Young People's Commissioning Groups to maximise the impact of delivering interventions;
- whole-community approaches to child injury prevention and application of recommendations in the Audit Commission/Healthcare Commission report, *Better Safe than Sorry* (2007).

1 Introduction

1.1 Background and purpose

The purpose of this bulletin is to provide an overview of the leading causes of death (mortality) and ill health (morbidity) in children and young people in the South West. It is the fifth in a series of bulletins providing an overview of the health status of children and young people aged 0–19 years in the region. A list of other titles in the series is given on the inside back cover.

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The series has been produced jointly by the South West Public Health Observatory (SWPHO) and the Department of Health in the South West, in consultation with key partners across the region.

1.2 Policy context

The Government has recognised the importance of promoting the health and wellbeing of all children. The Children Act 2004 and The Childcare Act 2006 place a duty on all partners to cooperate in the delivery of joint arrangements for children's services. The *Every Child Matters*¹ programme aims to ensure that every child has the chance to fulfil their potential by improving levels of educational attainment, reducing ill health, substance misuse, teenage pregnancy, abuse and neglect, as well as crime and anti-social behaviour. It requires local agencies and their communities to develop integrated services to improve outcomes for all children, identifying five key aims: physical and mental health; protection from harm and neglect; getting the most out of life; making a positive contribution and achieving economic wellbeing.

The *Spending Review 2003–06: A settlement for children and young people*² saw a significant investment in

services for children, such as Sure Start, the Children's Fund and Connexions, targeted at disadvantaged communities with the aim of improving the wider determinants of health, such as child nutrition, physical activity, housing conditions and education.

The National Service Framework for Children, Young People and Maternity Services,³ published in 2004, sets out national standards for children across health and social care to improve the quality of services, promoting general health improvement and addressing health inequalities. Implementation of this ten-year strategy is well under way, with a current particular focus on maternity services (*Maternity Matters*, 2007)⁴ and services for disabled children (*Aiming High for Disabled Children*, 2007).⁵

The vision of joint working between health and social care services as envisaged in *Our Health, Our Care, Our Say*,⁶ and an emphasis on outcomes and individual choice, should particularly help those children and families whose needs span both services to receive seamless care. This takes the practical form of Joint Strategic Needs Assessment. Since April 2008 Local Authorities and Primary Care Trusts have been expected to produce such an assessment of their communities as currently laid down in the *Local Government and Public Involvement in Health Act*.⁷ This will inform the Local Area Agreements to empower local partners to plan at least three to five years ahead to achieve a truly integrated approach to delivering local government and NHS priorities. Priorities identified in the *NHS in England: The operating framework for 2007/08*⁸ include:

- reducing health inequalities and promoting health and wellbeing;
- continuing to innovate and explore how partners might better understand and respond to the needs of their communities to create a greater focus on joint commissioning and better integration between healthcare, social care and other local government services;
- undertaking preparatory work with providers to implement the *Our Health, Our Care, Our Say* commitment that by 2009 all women will have access, choice and continuity of maternity care, both antenatal and postnatal, and through labour and delivery.

These priorities are reflected in the many targets set locally and nationally to improve the health and wellbeing of children, which include:

Public Service Agreement (PSA) targets:⁹ priority outcomes identified as part of the regular Government reviews of spending.

National Indicators for Local Authorities and Local Authority Partnerships:¹⁰ a single set of national indicators that flow from the priorities identified for central and local government in the 2007 *Comprehensive Spending Review*.

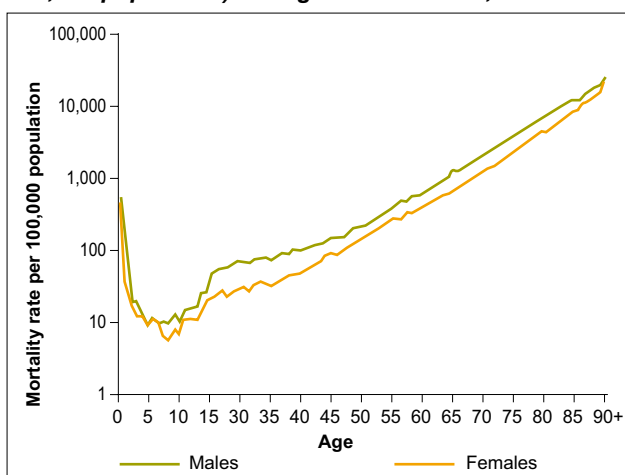
Every Child Matters Outcomes Framework:¹¹ draws on relevant PSA targets and a wide range of indicator sets, including the National Indicator set.

1.3 About child mortality and morbidity

Child mortality rates and causes vary by age. Mortality is highest in infancy (children under the age of one), dropping off during early childhood and picking up again during the teenage years. Figure 1 shows how death rates vary throughout life for males and females in England and Wales. It uses a logarithmic scale to illustrate the rapidly changing (non-linear) mortality profile during childhood. The graph also shows that males have a consistently higher death rate than females across the lifespan.

Child morbidity also varies with sex and age, with different illnesses predominating for boys and girls at different points throughout childhood and adolescence. These variations are considered in detail in this bulletin.

Figure 1: Age-specific mortality rates (deaths per 100,000 population) in England and Wales, 2004



Source data: Department of Health

1.4 Child population and socioeconomic inequalities in the South West

There are an estimated 1.9 million children and young people (under the age of 20) living in the South West¹² – almost a quarter (23.4%) of the South West population. This is the lowest proportion for all the English regions (the England average is 24.5%). As the healthiest region in the country, the South West also has relatively low rates of infant and child mortality. However, there are within-region inequalities, masked by regional rates, that need to be addressed. Figure 2 shows the distribution of childhood deprivation across the South West (by deprivation quintile). Deprivation in children is measured using a sub-domain of the Index of Deprivation 2004, Income Deprivation Affecting Children Index (IDACI). There are pockets of acute deprivation, particularly in urban areas (Figure 3), compared with generally low levels elsewhere. Overall, there is greater childhood deprivation in Devon and Cornwall but the inequalities are greatest in the relatively affluent counties of Somerset, Dorset, Gloucestershire and the former Avon, where acute deprivation is concentrated in specific urban areas.

1.5 About this bulletin

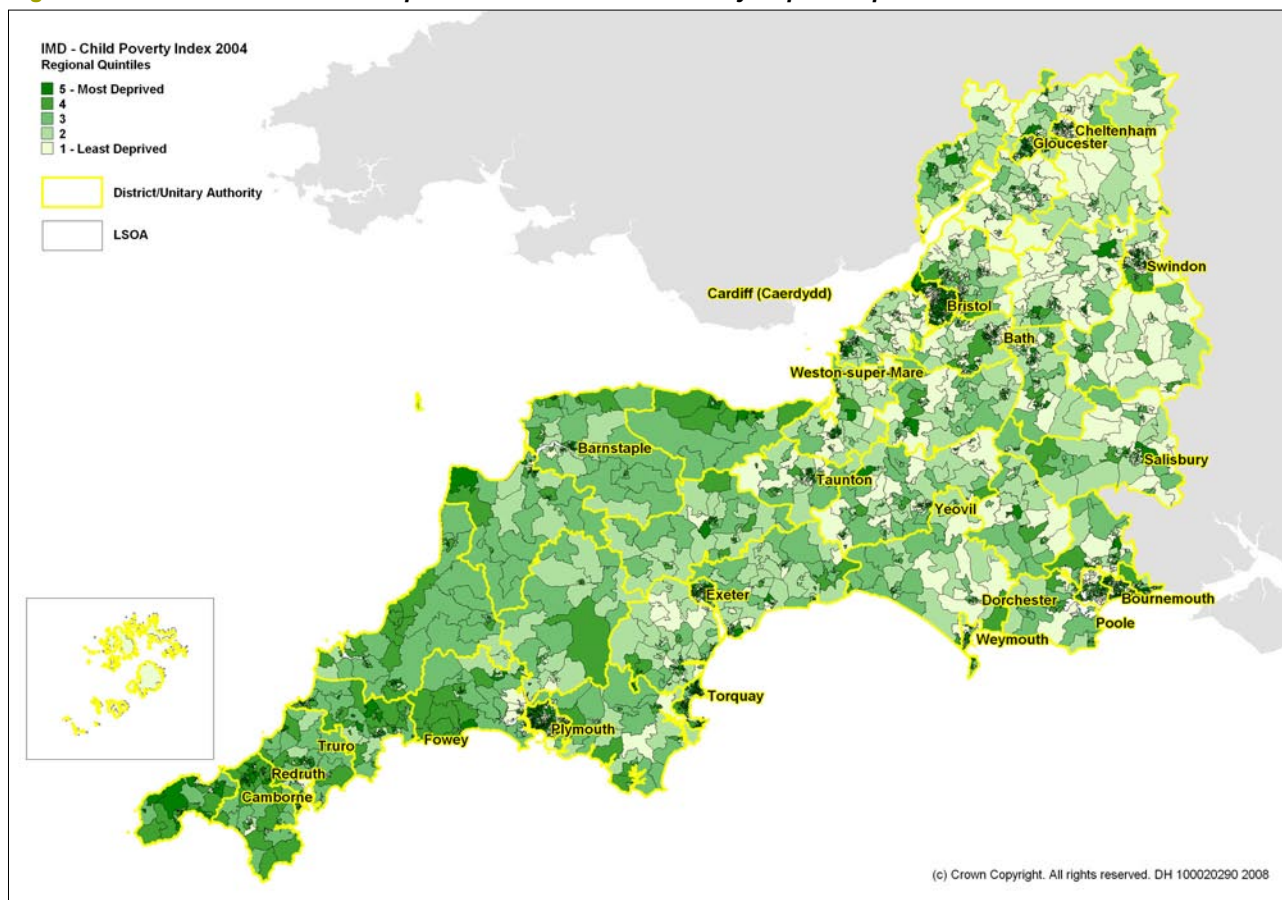
1.5.1 Outline

This bulletin uses a range of different data sources to describe the levels of child mortality and morbidity in the South West region. Throughout, the focus has been on highlighting variations in cause by age, sex, geography and deprivation, as it is through these measures that we can understand where best to target interventions. The analyses using these data are presented in chapters 2–4. Stillbirths and infant mortality are dealt with separately from child (age 1–19) mortality and morbidity because of the great differences between them. Key findings and interventions for reducing child mortality and morbidity in the South West are discussed in the final chapter.

1.5.2 Indicators and measures used

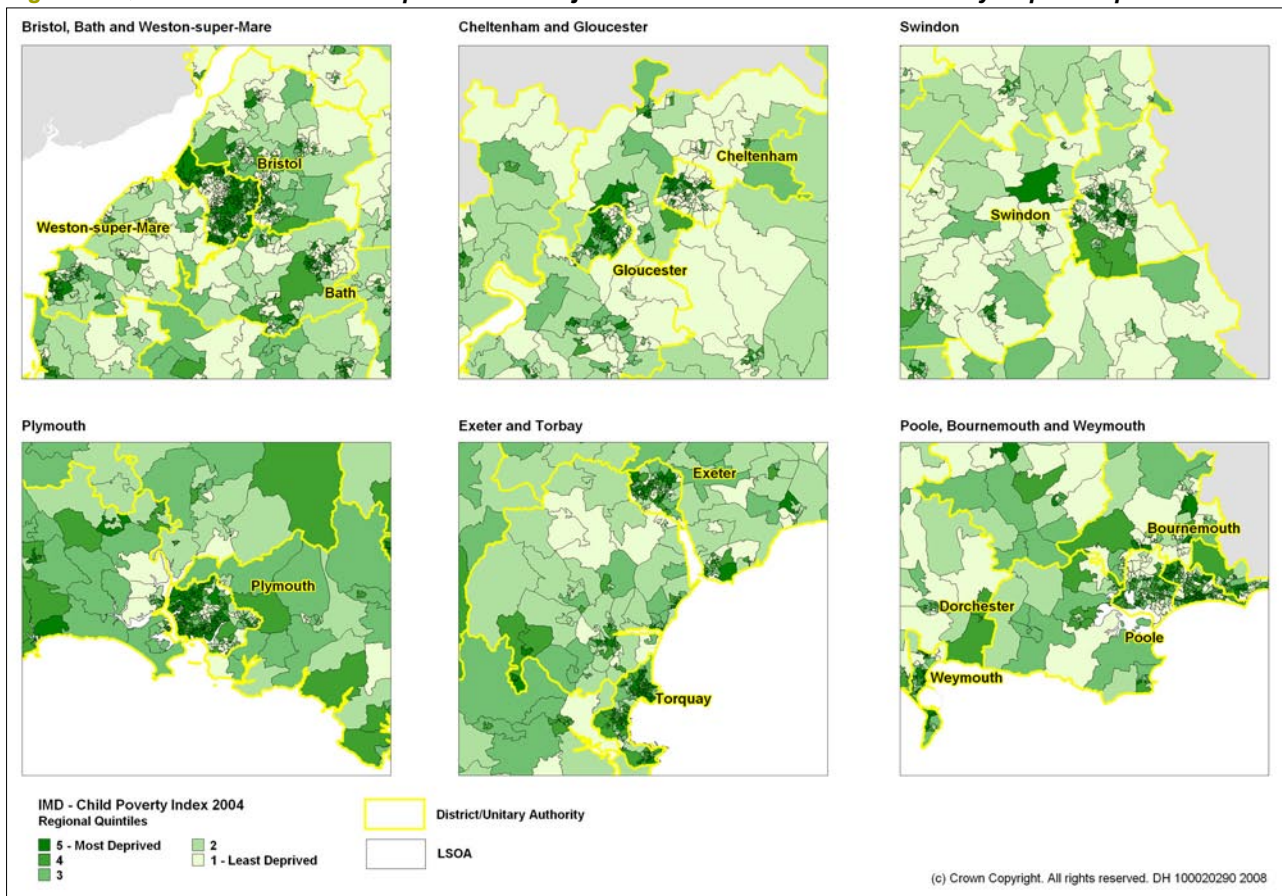
In response to consultation with key partners on the most useful indicators of child health, this bulletin presents data on the major causes of death and hospital admission to give as clear a picture of child mortality and morbidity in the region as possible, including local differences by Local Authority or Primary Care Trust.

Figure 2: Quintiles of childhood deprivation in the South West by Super Output Area



Source data: South West Public Health Observatory based on Ordnance Survey material

Figure 3: Quintiles of childhood deprivation in major urban areas of the South West by Super Output Area



Source data: South West Public Health Observatory based on Ordnance Survey material

Mortality rates are a valuable indicator of health in that the outcome (death) is unlikely to be subject to misreporting. Infant mortality rates are a useful measure of the health of a population in general, and targets for reducing inequalities in infant mortality have been set by Government.^{13,14,15} However, there are drawbacks in using mortality data to assess progress towards health targets: the numbers of deaths in small geographical areas is low and subject to random variation from year to year, and death is an extreme measure of ill health – the ‘tip of the iceberg’. Indicators of childhood morbidity (or ill health) are therefore also important in monitoring the overall health of children in the South West.

1.5.3 Data sources

Primary care data are important when describing the health of a population because the majority of contacts with health services occur in primary rather than secondary health care settings. Primary care services are particularly important for infants and young children. Although electronic patient records and new GP contracts will generate improved data on primary health care use in the future, currently available information is limited. Available data such as Quality Outcomes Framework (QOF) data are not available by age. In this bulletin we draw on a range of primary care data sources, including national literature on GP attendances and NHS Direct.

Hospital Episode Statistics (HES) relate to patients admitted to NHS hospitals in England, either as day cases or inpatients. Rates of all hospital admissions, emergency admissions and emergency admissions via GP or through Accident and Emergency (A&E) departments are presented in this bulletin. Although private hospitals are not included in the HES dataset, they did not, in any case, provide emergency services during the period of data collection. Note that the HES database does not include minor accidents treated at home, by a GP, health visitor or paramedic.

Another source used to assess the health of children is data on attendances at A&E. There are national plans to provide England-wide A&E data. In the meantime, archived South West data are available and, though far from complete and rather dated, they provide a useful snapshot of causes of A&E attendance.

Patterns of outpatient visits by 0–19 year-olds are briefly described, based on data for the former Avon area of Bath and North East Somerset, Bristol, North Somerset and South Gloucestershire. Some details of outpatient visits are becoming available at HES online,¹⁶ produced by the NHS Information Centre. Doubtless this will become more detailed, but currently only national data for limited age groups are available.

Providing comparable data sets can be a problem owing to different criteria used by different organisations, and different aggregations of UK countries. This bulletin includes young people up to the age of 19, but the Department of Health traditionally classifies children as under 16. Some classifications include the first year of life (which has different risks from later years) and some exclude it. Regional and international comparators have been shown where possible.

Data on ‘limiting long-term illness’ and ‘not good health’ from the 2001 Census¹⁷ give subjective measures of population health. Self-reported health status is important in its own right and as a predictor of other more objective health outcomes.¹⁸

Note: We have used 2005 as a cut-off point for most of the data in this report. This has been done to achieve consistency and for ease of making comparisons. While we do not anticipate that recent updates will significantly change the conclusions we have drawn or the recommendations made, we expect that readers will wish to refer to the latest available data. We have therefore compiled a list of data sources in the Appendix, together with links to where they can be found online. This information is also available on our website at <http://www.swpho.nhs.uk>

Box 1: A note on confidentiality

Fortunately, many of the conditions discussed in this bulletin occur in small numbers of children. This does, however, pose significant problems regarding the potential disclosure of confidential information, as the smaller the numbers involved, the greater the risk of identification. This bulletin, therefore, follows Office for National Statistics (ONS) disclosure guidelines for small numbers (i.e. less than five).¹⁹

Box 2: A note on language

The term 'mental retardation' is used in the International Classification of Diseases (ICD-10), developed by the World Health Organisation, to describe what is more commonly known today as 'learning disabilities'. We have chosen to use the latter term throughout this bulletin in the context of discussions about hospital admissions, but the ICD-10 classification terminology is used in the main source of hospital admissions data, Hospital Episode Statistics.

We have attempted to provide explanations for other less well known medical and technical terms in the Glossary.

2 Stillbirths and infant mortality

2.1 Key points

- Rates of stillbirths and infant deaths are low in the South West compared with England but high compared with some other European countries.
- There are more deaths in deprived areas.
- About half of stillbirths are unexplained but known causes include congenital anomalies or conditions related to immaturity.
- In infancy, death rates are highest in the first month of life.
- In the first month of life, immaturity and congenital anomalies are the most common causes of death.
- Between one month and one year death rates are much lower. Congenital anomalies are still the most common cause of death in this age group, followed by Sudden Infant Death Syndrome (SIDS), although this is much less common than it was. External causes (e.g. injury and poisoning) account for 7% of deaths in this age group.
- The South West is currently not on track to meet the Government inequalities target of reducing the

gap in infant mortality between the most deprived areas and the region as a whole.

- It is not easy to tell from routine data how many deaths were avoidable, but if infant mortality in the South West as a whole was at the level of the quintile with the lowest mortality, about 50 infant lives could be saved each year.
- Smoking during pregnancy and by family members contributes to infant mortality risk.

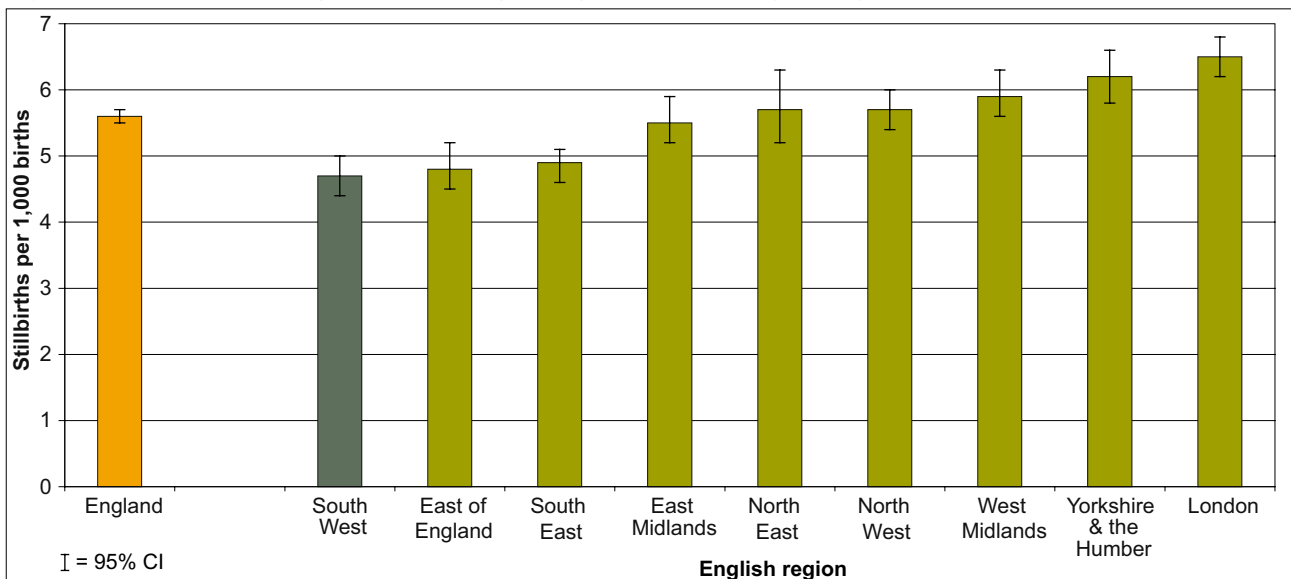
2.2 Rates

2.2.1 Stillbirths

Data on stillbirths have been collected in England and Wales since 1937.²⁰ Rates have fallen since then from around 40 per 1,000 births in 1937 to around 5 per 1,000 births in 2004. Up until 1993 births were considered 'viable' from 28 weeks gestation. In 1993 this was changed to 24 weeks. There followed a rise of about 1,000 stillbirths per year in England and Wales related to this definitional change.

The South West has stillbirth rates that are significantly lower (statistically) than the England average (see Figure 4) and the lowest of all the regions.

Figure 4: Rate of stillbirths (per 1,000 births) in England and the English regions, 2002–05



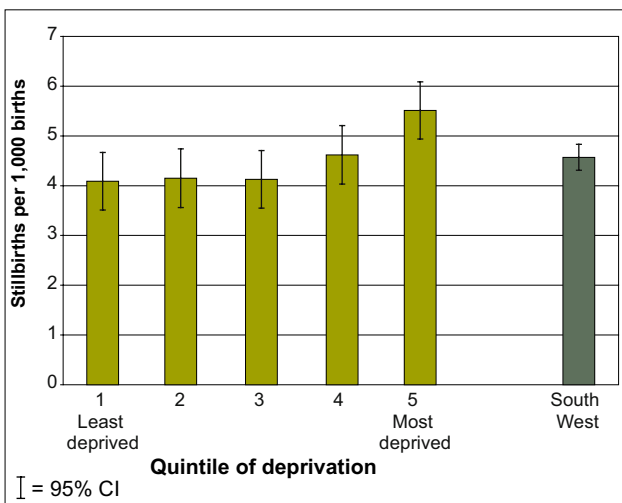
Note: See Table A1 in Appendix 2 for underlying data.

Source data: Clinical and Health Outcomes Knowledge Base, National Centre for Health Outcomes Development (NCHOD)

Local level data are not presented here, as the numbers involved are small (see the note on confidentiality in Box 1 in the Introduction).

Like many other health indicators, stillbirths have significantly higher rates (statistically) in the most deprived population groups and areas. Figure 5 shows that the stillbirth rate in the most deprived quintile is significantly higher than in the South West as a whole.

Figure 5: Stillbirths (per 1,000 births) by deprivation quintile in the South West, 2001–05



Note: See Table A2 in Appendix 2 for underlying data.
Source data: Public Health Births Extract, Office for National Statistics

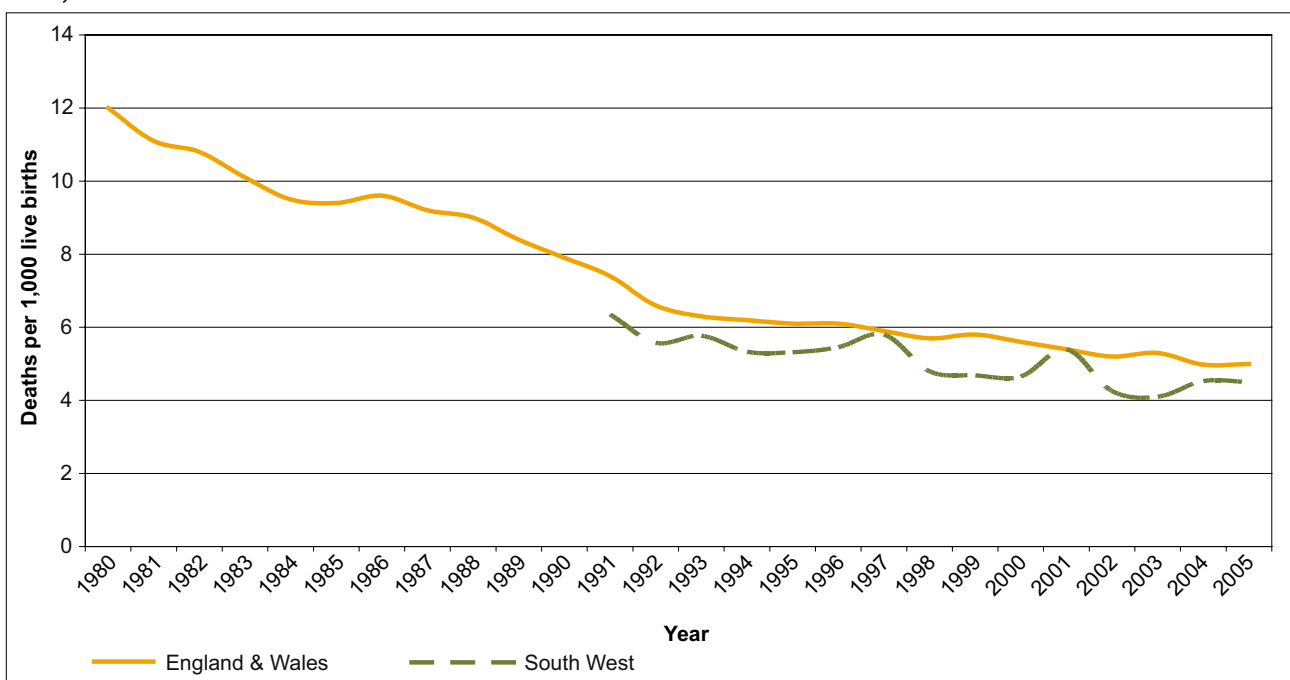
2.2.2 Infant mortality

The infant mortality rate is defined as the number of deaths of live-born infants under one year of age per 1,000 live births. Infant mortality is considered the best general indicator of child health and is therefore the most widely collected. Even though infant mortality rates have fallen considerably, the chances of dying within the first year of life are comparatively high at around 5 per 1,000 live births. After the age of one, death rates fall until they rise in the risk-taking years of the teens and twenties.

Figure 6 shows the reduction in infant mortality in England and Wales since 1980 and in the South West since 1991. Allowing for fluctuations associated with small numbers, rates in the South West are generally lower than in England and Wales and are statistically significantly lower than in England. Despite this progress, it is disappointing that neither England nor the South West has infant mortality rates as low as those of other Western European countries (see Figure 7).

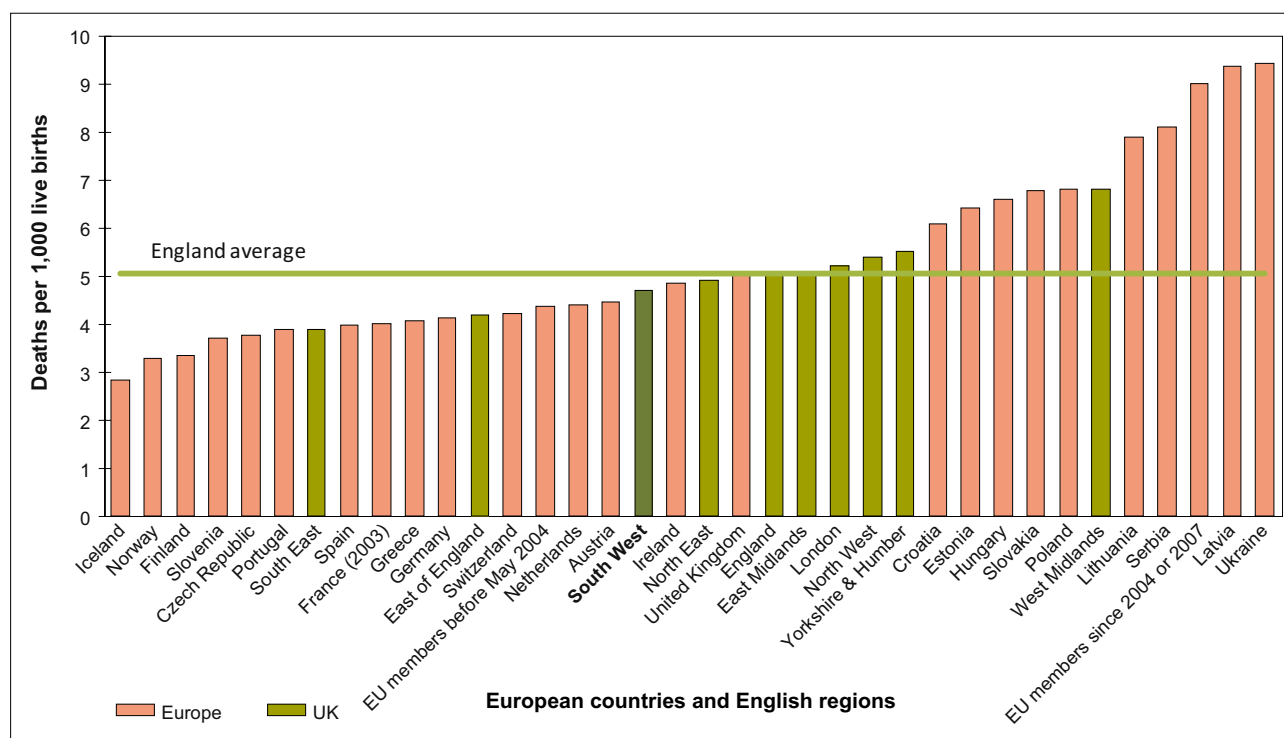
Figures 8 and 9 show infant mortality rates for Primary Care Trusts and District and Unitary Authorities in the South West for the period 2003–05. The small numbers of infant deaths in each Local Authority area during this period are reflected in the wide 95% confidence intervals (shown by the \pm bars). The ranking of areas is likely to fluctuate over time and comparisons between Local Authority areas should therefore be treated with caution.

Figure 6: Trends in infant mortality rates (deaths per 1,000 live births) for England and Wales, and the South West, 1980–2005



Source data: Office for National Statistics

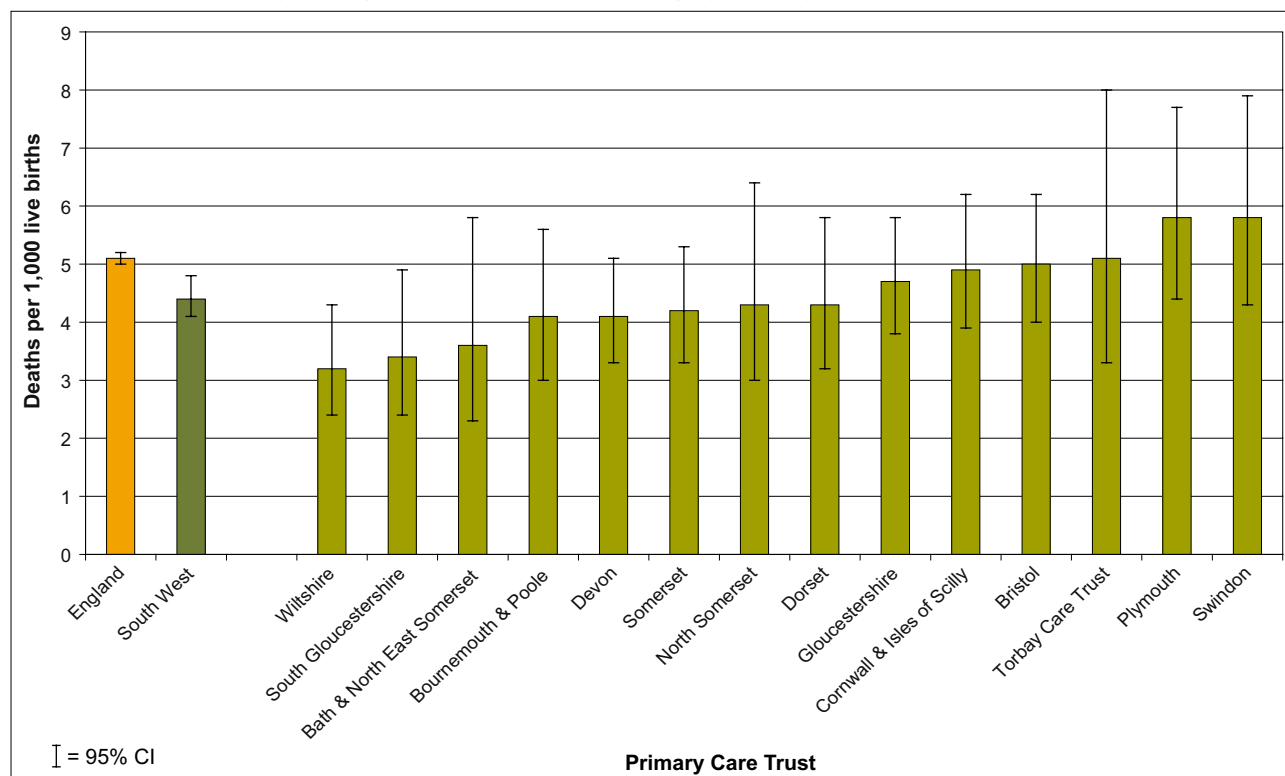
Figure 7: Infant mortality rates (deaths per 1,000 live births) in European and UK countries and the English regions, 2004



Notes: Accession countries of European Union 2004: Poland, Czech Republic, Slovakia, Hungary, Latvia, Lithuania, Estonia, Malta, Slovenia and Cyprus; 2007: Bulgaria, Romania. See Table A3 in Appendix 2 for underlying data.

Source data: Organisation for Economic Cooperation and Development (OECD)²¹ and Clinical and Health Outcomes Knowledge Base, National Centre for Health Outcomes Development (NCHOD)

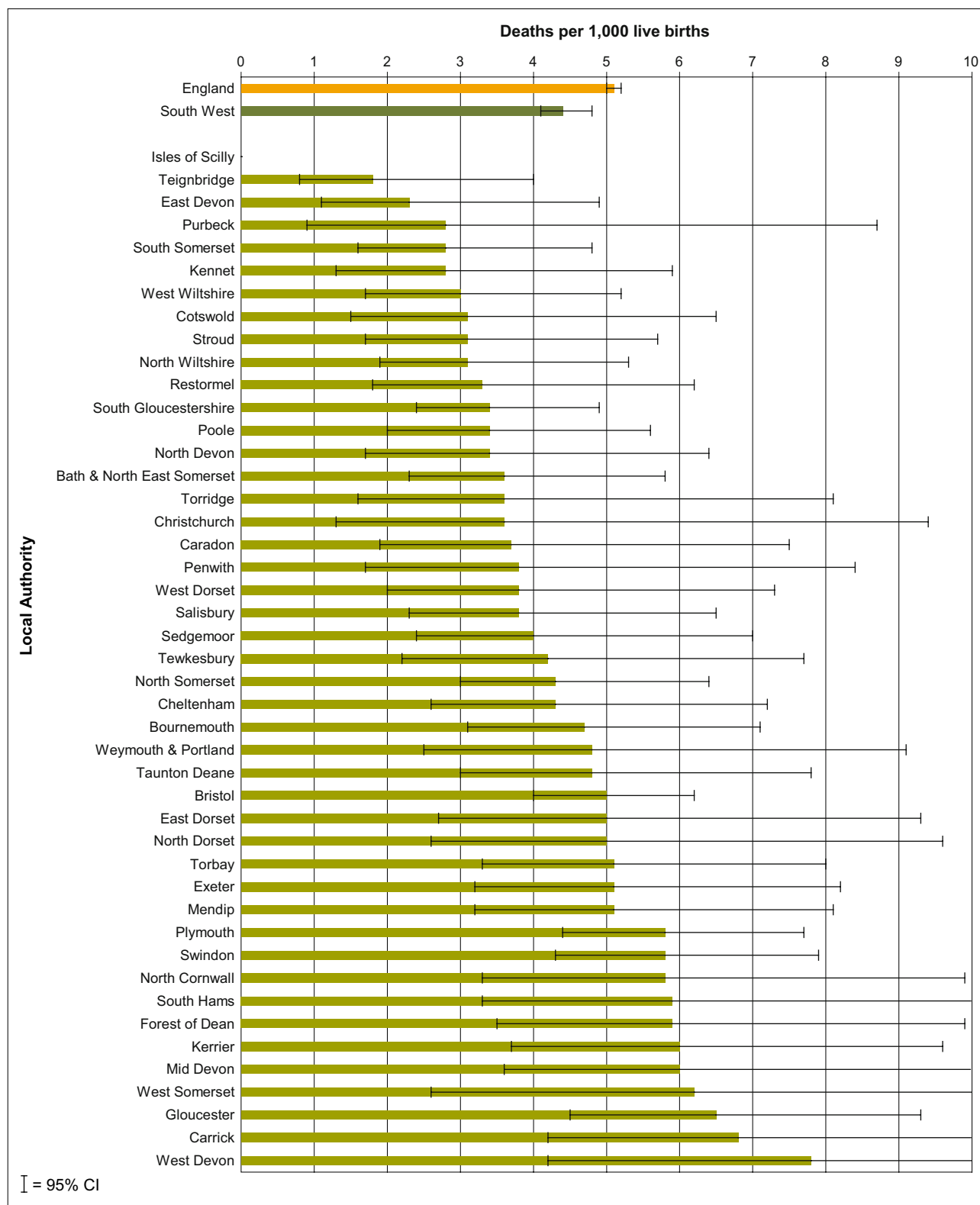
Figure 8: Infant mortality rates (deaths per 1,000 live births) by Primary Care Trust in the South West, 2003–05



Note: See Table A4 in Appendix 2 for underlying data.

Source data: Clinical and Health Outcomes Knowledge Base, National Centre for Health Outcomes Development (NCHOD)

Figure 9: Infant mortality rates (deaths per 1,000 live births) by Local Authority in the South West, 2003–05



Note: See Table A5 in Appendix 2 for underlying data.

Source data: Clinical and Health Outcomes Knowledge Base, National Centre for Health Outcomes Development (NCHOD)

Although the Teignbridge rates are statistically significantly lower than in England and the South West, and East Devon rates are significantly lower than for England, there are no statistically significant differences between South West Authorities.

For a more reliable assessment of infant mortality rates at smaller levels of geography – one that accounts for the impact of annual fluctuations due to small numbers – it is necessary to look at trends over a longer period of time. These analyses are most appropriately conducted at a local level (e.g. by Primary Care Trust), where information about the local context can be used in the interpretation.

See Section 2.4 for a discussion of inequalities in infant mortality.

2.3 Causes

In order to improve health outcomes for children in the South West and reduce infant and child mortality, it is important to identify the main causes of illness and death. A good understanding of these causes and the populations they most affect will help those working in public health practice to target interventions at groups and areas of highest need.

2.3.1 Low birth weight

Low birth weight (under 2500g) is a predictor of poor health:²² 2% of low birth weight babies are stillborn and about 16% of those with a very low birth weight (under 1500g) are stillborn, accounting for nearly half of all stillbirths. These proportions also vary with deprivation. There are a number of possible reasons for low and very low birth weight, including problems with the placenta, congenital anomalies, immaturity, multiple pregnancy or poor nutrition. Maternal smoking and, to a lesser extent, environmental tobacco exposure can also reduce birth weight.²³ Those who do survive have an increased risk of developing intellectual or neurological problems. The proportion of births of very low birth weight varies with deprivation. Those with a birth weight within the normal range have very good survival prospects. Only about 0.2% of infants with a normal birth weight are stillborn.

2.3.2 Causes of stillbirths and deaths up to one year

The Office for National Statistics, in collaboration with leading paediatricians, has devised a system which classifies stillbirths and deaths in the first month of life (neonatal: under 28 days) by cause.²⁴ This system was not designed to be used for infant deaths beyond the first 28 days; however, for the purposes of this bulletin, it is convenient to do so for infants between 28 days and one year (postneonatal), mainly because many of the causes of death are similar. Table 1 therefore shows the number

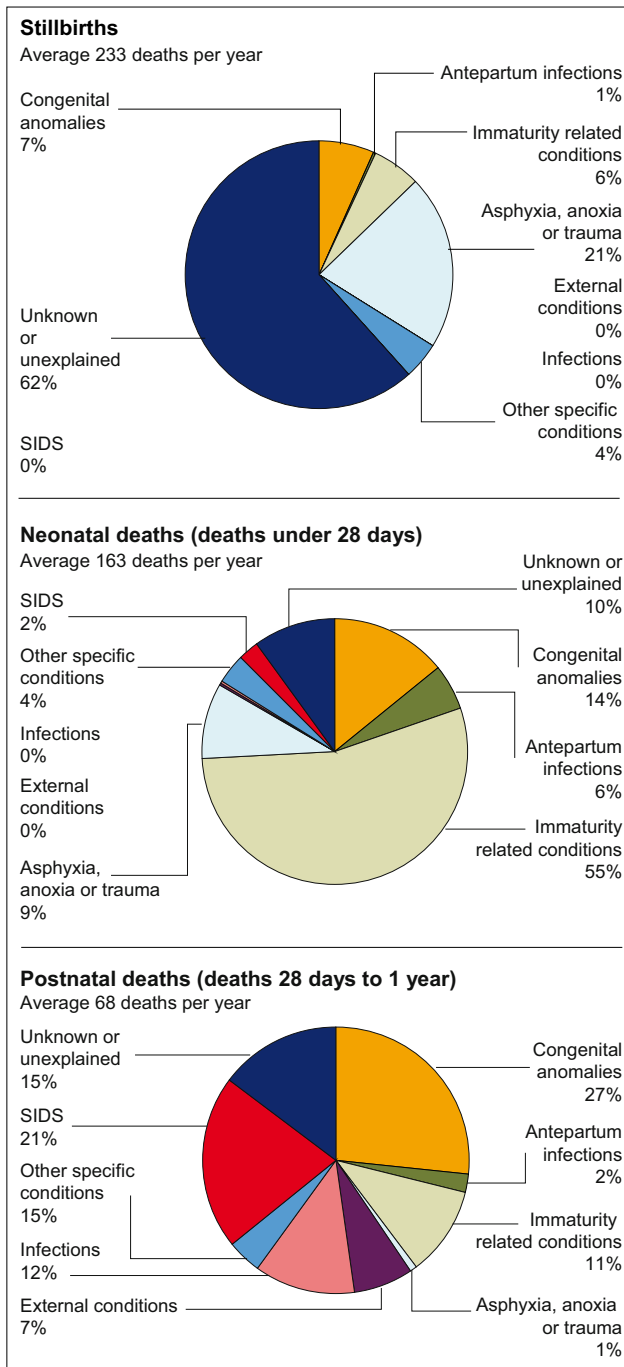
Table 1: Stillbirths and deaths under one year of age in the South West by cause, 2001–05

Cause	Stillbirths	% deaths in this age group	Deaths under 28 days	% deaths in this age group	Deaths between 28 days and 1 year	% deaths in this age group
Congenital anomalies	76	6.5	115	14.1	91	26.6
Antepartum infections	*	*	46	5.6	*	*
Immaturity-related conditions	68	5.8	445	54.5	37	10.8
Asphyxia, anoxia or trauma	244	21.0	75	9.2	*	*
External conditions	*	*	*	*	24	7.0
Infections	0	0.0	*	*	42	12.3
Other specific conditions	50	4.3	31	3.8	14	4.1
Sudden Infant Death Syndrome	0	0.0	19	2.3	73	21.3
Other conditions	719	61.8	82	10.0	50	14.6
South West	1,164	100.0	816	100.0	342	100.0
Average number of deaths per year in this age group in the South West	233		163		68	

Note: *Small numbers suppressed in line with Office for National Statistics guidelines.

Source data: Public Health Births Extract and Public Health Mortality Extract, Office for National Statistics

Figure 10: Proportion of stillbirths and deaths under one year in the South West by cause, 2001–05



Source data: Public Health Births Extract and Public Health Mortality Extract, Office for National Statistics

and percentage of deaths in the South West from these causes. Figure 10 represents these data in chart form.

Seventy per cent of all deaths in the first year of life in the South West occur during the first 27 days. The number of deaths between birth and one year (1,158) is almost exactly the same as the number of stillbirths (1,164). Thus

the greatest risks arise in early life. Immaturity accounts for 42% of deaths in this period overall, while deaths from external causes (non-medical, possibly injury or poisoning) account for only 2%.

The majority of stillbirths (62%) are unknown or unexplained, and 21% are due to asphyxia, anoxia or trauma during birth. Only 7% are classified as due to congenital anomalies, but it is likely that many unknown or unexplained stillbirths are of similar origin. Some of those classified as due to immaturity are actually late abortions for congenital anomalies. The majority of unknown or unexplained stillbirths are of normal birth weight, whereas the majority of those caused by asphyxia, anoxia or trauma are of very low birth weight (under 1500g).

Over half of neonatal deaths are due to immaturity-related conditions.²⁵ Two-thirds are infants born prematurely at under 28 weeks gestation. Birth weights are not available for those born alive, but it is likely that they were very low. Other causes include: congenital anomalies (14%); asphyxia, anoxia or trauma (9%), of which about two-thirds are due to birth asphyxia; and 'other' (10%) where the origin is not entirely clear, but includes respiratory or cardiac failure, antepartum haemorrhage, external injury and postnatal asphyxia.

The main causes of postneonatal death are: congenital anomalies (27%); Sudden Infant Death Syndrome (SIDS) and other unexplained deaths (21%); infections (12%); and 'external conditions' (7%) – including choking, drowning, suffocation and other events that are of 'undetermined intent'. 'Other specific conditions' (15%) includes cancers and 'other conditions' (15%) includes cardiovascular and 'ill-defined' conditions.

2.3.3 Unexplained deaths

These are variously classified as Sudden Infant Death Syndrome (ICD-10 R95), or 'unknown or unexplained' (ICD-10 R99). Research has shown that the characteristics of babies dying from the two causes are very similar.

Deaths from SIDS has fallen considerably. There has been some speculation that this is due to an increased tendency to classify deaths as unexplained. If this is true, the practice would not be enough to offset the large fall in SIDS in the South West. Numbers of SIDS deaths fell from 25 in 2001 to 9 in 2005, while unexplained deaths rose from 3 to 6 in the same period.

The fall in deaths from SIDS nationally has been attributed to adoption of preventive advice related to sleeping position and conditions for babies. It is estimated that

second-hand smoke may still be a significant factor in the SIDS that occur and therefore there is scope for further reduction.

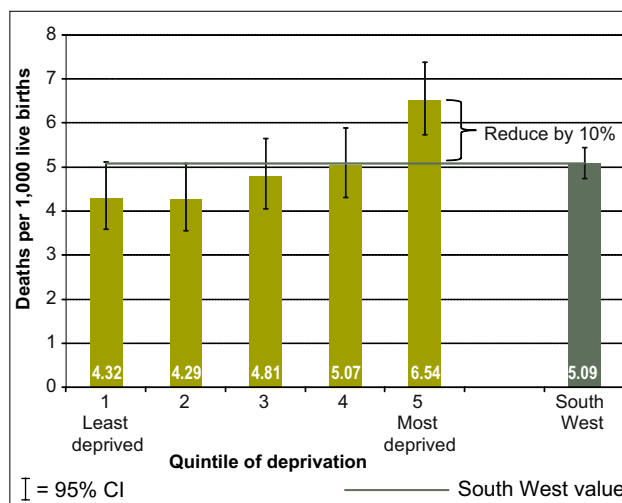
2.4 Inequalities

The inequalities target for infant mortality, announced in February 2001 (since slightly reformulated), is:

“Starting with children under one year, by 2010 to reduce by at least 10% the gap in mortality between routine and manual groups and the population as a whole.”¹⁴

Unfortunately, data on occupational classification are not available at regional level. In order to enable regional monitoring of the target, the SWPHO has devised a proxy indicator using data on births and deaths under one year and the Income Deprivation Affecting Children Index (IDACI) sub-domain of the Index of Multiple Deprivation 2004.²⁶ Figure 11 shows the position at the baseline (1997–99). There are statistically significant differences between Quintile 5 and Quintiles 1, 2 and 3, and between the most deprived Quintile (5) and the South West as a whole. Reducing the gap between the most deprived quintile and the South West by 10% by 2010 (or from 1.44

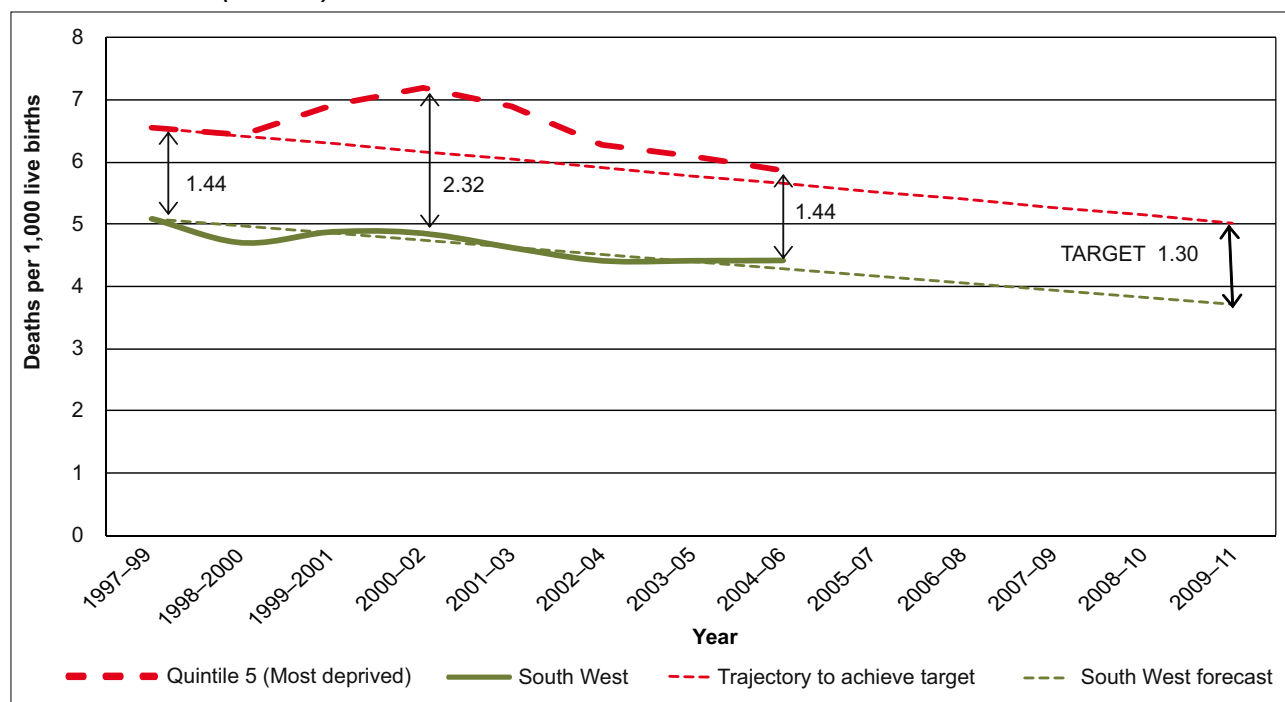
Figure 11: 1997–99 baseline proxy indicator for achieving the national target to reduce infant mortality in the South West



Source: Calculations: South West Public Health Observatory; Data: Office for National Statistics

to 1.3 deaths per 1,000 live births) would result in the South West achieving the national target (Figure 12). Also, if infant mortality was at the lowest rate across all quintiles (at the baseline this was Quintile 2, 4.29 deaths per 1,000 live births), the lives of about 50 infants could be saved each year.

Figure 12: Progress towards the health inequalities target for infant mortality in the South West from the proxy indicator baseline (1997–99)



Source: Calculations: South West Public Health Observatory; Data: Office for National Statistics

3 Child mortality

3.1 Key points

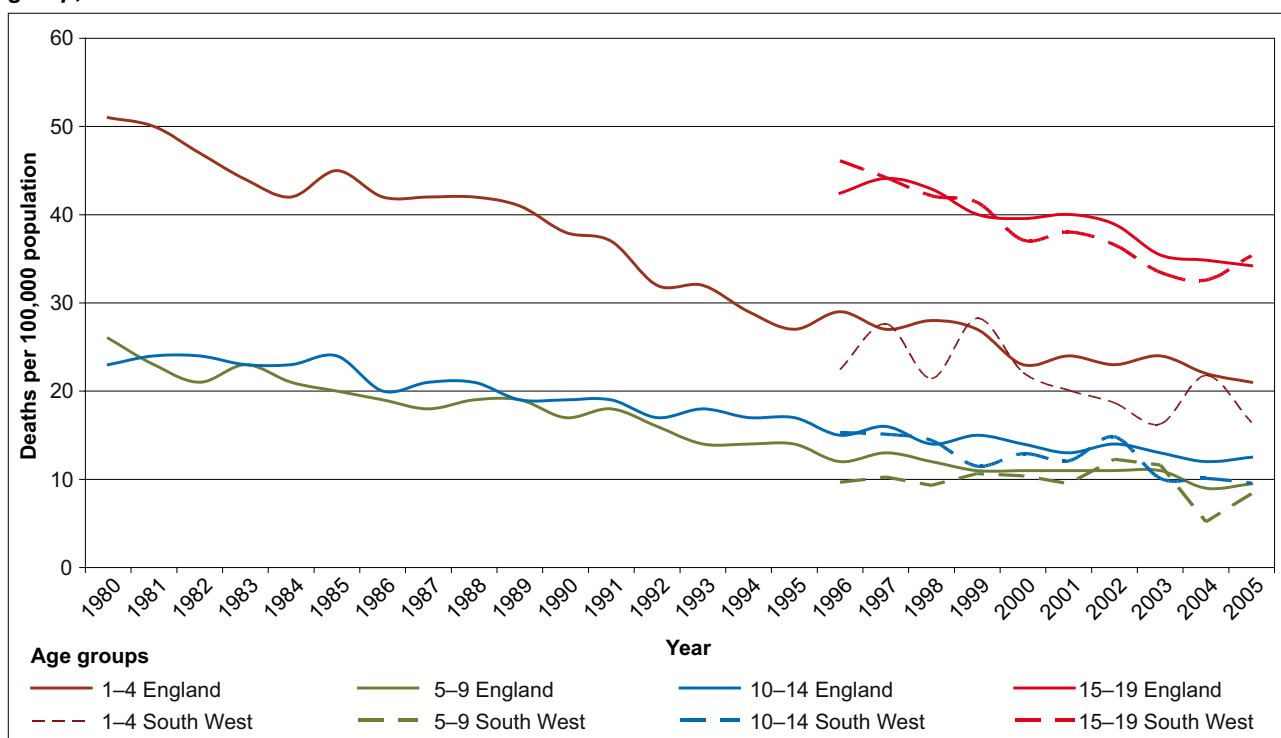
- Child mortality rates (age 1–19) are much lower than infant mortality rates (up to age 1).
- There are, on average, 200 deaths per year in this age group in the South West.
- Causes vary with age. Overall, the major causes are: injuries (26%), cancers (18%) and deaths from suicide and ‘undetermined intent’ (11%).
- Nearly half of all deaths and two-thirds of male deaths in this age range are preventable.
- Rates are higher in more deprived groups but the differences are decreasing. This is partly because deaths from injury, which show the steepest socioeconomic gradient, are decreasing.

3.2 Rates

For decades, there has been a downward trend in child deaths in England in all age groups, and particularly among children aged 1–4 years (see Figure 13). Regional mortality extracts (available from 1997) show that, allowing for variability due to small numbers, rates in the South West are generally lower than in England. Figure 14 shows that children aged 1–4 in the South West also have low mortality rates compared with the rest of Europe.

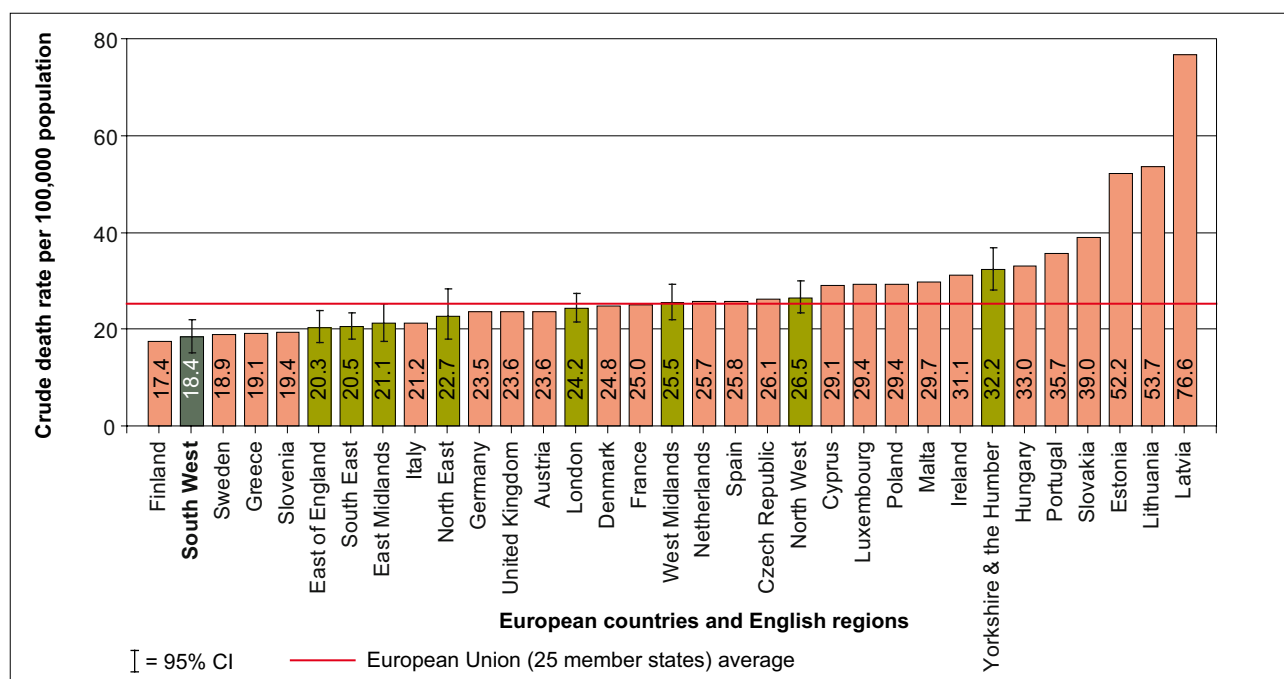
Figures 15 and 16 show child mortality rates (age 0–15) for Primary Care Trusts and District and Unitary Authorities in the South West for the period 2003–05. Since the numbers of deaths in each Local Authority in this age group are small, these rates, and therefore their relative ranking, are likely to fluctuate from year to year, and these fluctuations are likely to be due to chance. As for the infant mortality rates presented earlier, this is reflected in the wide confidence intervals on the chart.

Figure 13: Trends in child mortality for England and the South West (deaths per 100,000 population) by age group, 1980–2005



Source: National Data: Department of Health; Regional data: Public Health Mortality Extract, Office for National Statistics

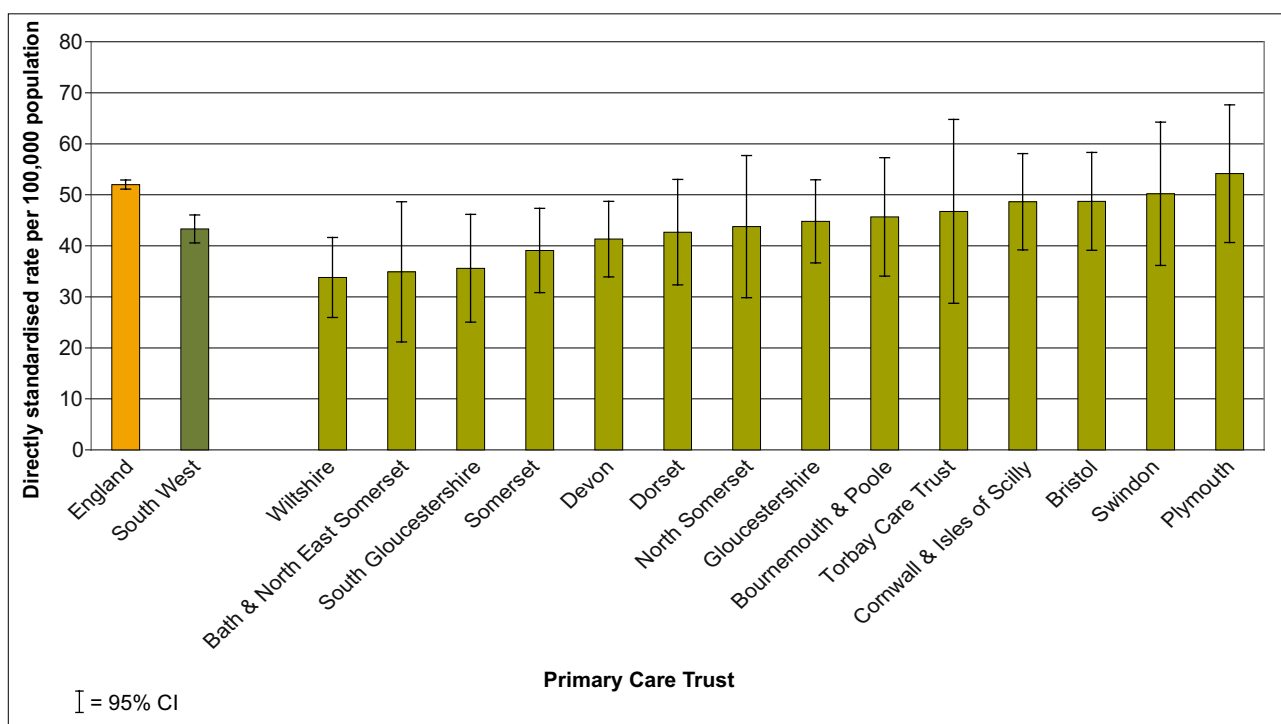
Figure 14: All cause crude mortality rate (per 100,000 population) for children aged 1–4 in European countries and the English regions, 2001–03



Note: Accession countries of European Union 2004: Poland, Czech Republic, Slovakia, Hungary, Latvia, Lithuania, Estonia, Malta, Slovenia and Cyprus; 2007: Bulgaria, Romania. For underlying data, see Appendix 2.

Source: Indications of Public Health in the English Regions: 5: Child Health (Association of Public Health Observatories, 2006);²⁴ Data: European Health for All database; World Health Organisation; and Clinical and Health Outcomes Knowledge Base, National Centre for Health Outcomes Development (NCHOD)

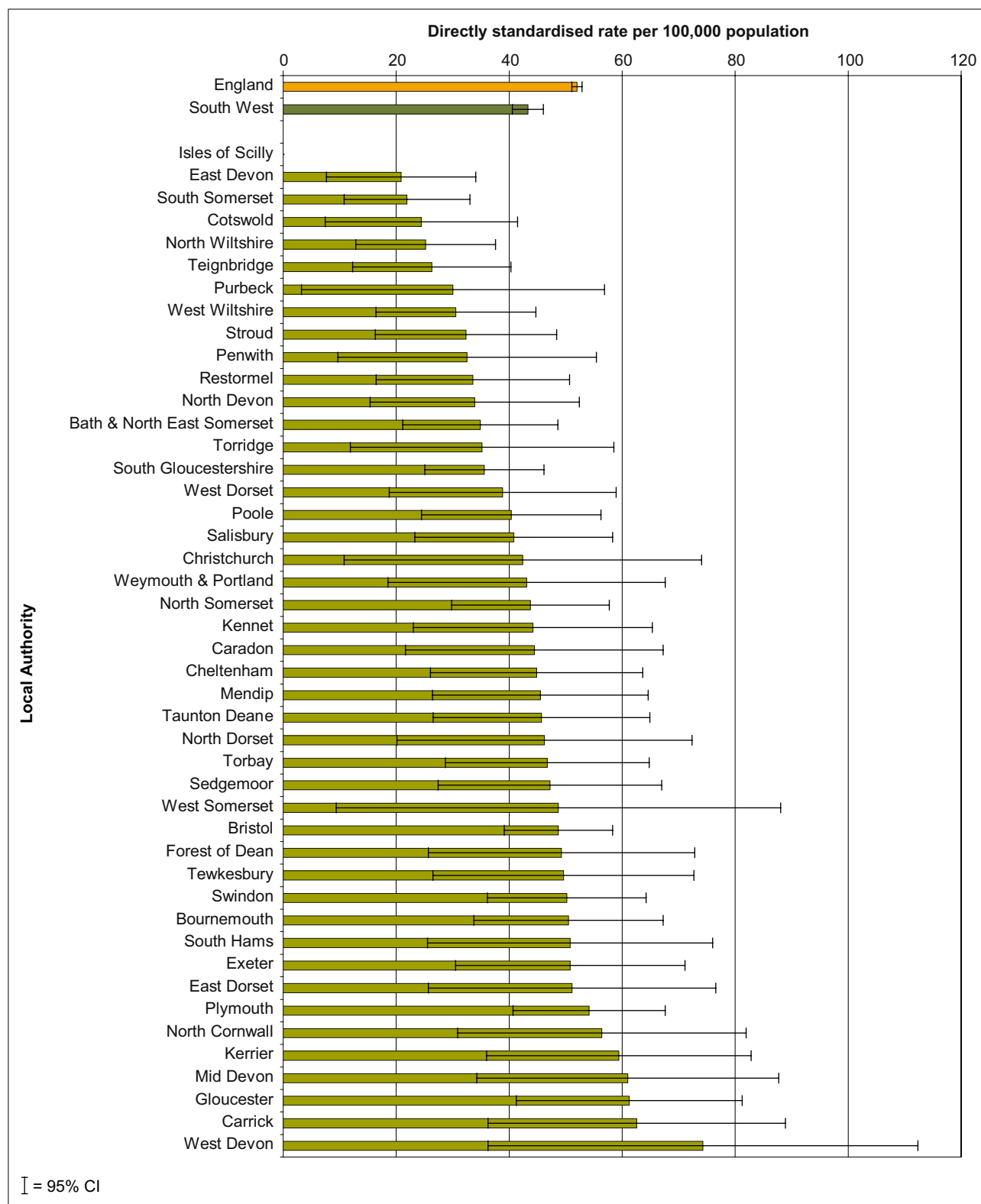
Figure 15: Directly standardised child mortality rates (per 100,000 population) for children aged 0–15 by Primary Care Trust in the South West, 2003–05



Note: See Table A6 in Appendix 2 for underlying data.

Source data: Clinical and Health Outcomes Knowledge Base, National Centre for Health Outcomes Development (NCHOD)

Figure 16: Directly standardised child mortality rates (per 100,000 population) for children aged 0–15 by Local Authority in the South West, 2003–05



Notes: There were no deaths in this age group on the Isles of Scilly during this time period. See Table A7 in Appendix 2 for underlying data. Source data: Clinical and Health Outcomes Knowledge Base, National Centre for Health Outcomes Development (NCHOD)

3.3 Causes

Causes of death are more varied in children than in infants and different causes predominate in different age groups. In this section, the most common causes of death for each age group are presented, separately for males and females where different patterns exist. For a summary, see Table 2, which also categorises each cause into 'possibly avoidable' and 'probably unavoidable'.

In children aged 1–4 congenital anomalies cause the greatest number of deaths (22%), followed by cancer (18%), diseases of the nervous system (15%) and injuries (12%). In children aged 5–9 cancers take the biggest toll (27%) followed by diseases of the nervous system (16%) and injuries (14%). The same causes predominate in the 10–14 age group, with injuries causing 20% and cancers 25% of deaths. Patterns in the 15–19 age group, however, diverge. In this age group, injuries account for 40% of deaths in boys and 26% in girls, while suicide or 'undetermined' injuries account for 21% of deaths in boys and 13% in girls. Deaths from mental and behavioural disorders due to drug use account for 4% of deaths in boys and 3% in girls. Cancers cause 20% of deaths in girls and 10% in boys.

Please note that cystic fibrosis is not usually included as an avoidable cause of mortality in the literature as it is not a preventable condition (see www.ons.gov.uk/about/consultations/closed-consultations/measuring-premature-and-avoidable-mortality/index.html). However, improved healthcare has extended the lives of many who suffer from cystic fibrosis, so we have included it here as a 'possibly avoidable' cause of death in childhood.

Taking all age groups together (1–19 years), the most common causes of death are injuries (26%), cancers (18%), diseases of the nervous system (12%), suicide and undetermined (11%). Figure 17 shows the age–sex breakdown for each of these causes in the South West. These graphs illustrate the general pattern of higher mortality in boys that persists across age groups and causes. There is a notable increase with age in deaths caused by injuries and suicide and undetermined causes.

There is also evidence of an increasing proportion of avoidable deaths with age (Figure 18). While approximately one-quarter of deaths in younger age groups might be avoided, two-thirds of the deaths of boys aged 15–19 fall into the avoidable category. Overall, nearly half of deaths in children 1–19 might be avoided. This is despite the substantial reduction in deaths from road traffic injuries over recent years.

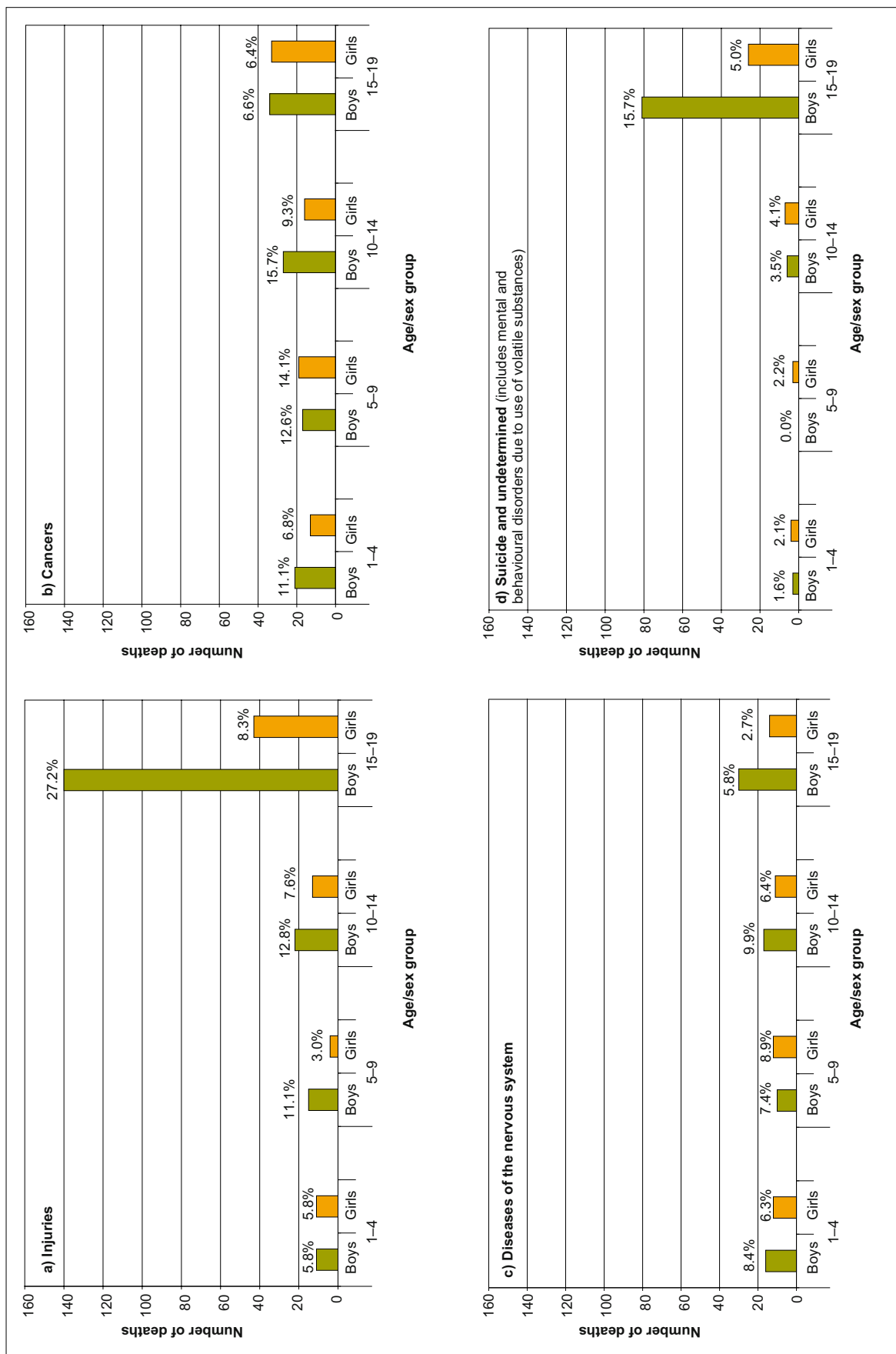
Table 2: Number and percentage of all deaths in children aged 1–19 (categorised as ‘possibly avoidable’ and ‘probably unavoidable’) by age group in the South West, 2001–05

	1–4			5–9			10–14			15–19			1–19											
	Boys	Girls	Total	% of all deaths in age group	Boys	Girls	Total	% of all deaths in age group	Boys	Girls	Total	% of all deaths in age group	Boys	Girls	Total	% of all deaths in age group								
Possibly avoidable																								
Infection	11	6	17	8.9	*	*	*	*	*	*	*	2.5	24	14	3.5	38	3.8							
Cystic fibrosis	*	*	*	*	*	*	*	2.9	5	*	*	2.7	6	1.0	3.3	19	1.9							
Other (SIDS and diabetes)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*							
External causes																								
Mental and behavioural disorders due to drug use	*	*	*	*	*	*	*	*	*	*	*	3.3	13	2.1	6	1.5	19	1.9						
Suicide & undetermined	*	*	7	3.7	*	*	*	6.4	11	6.4	12	17.9	79	12.8	34	8.6	113	11.2						
Injuries	11	11	22	11.6	15	4	19	14.1	22	13	35	20.3	140	40.3	43	25.6	188	35.5						
Assault	*	*	*	*	*	*	5	3.7	*	*	*	*	*	*	*	*	*	*	*					
Total possibly avoidable	28	22	50	26.3	21	10	31	23.0	33	24	57	33.1	235	67.7	87	51.8	322	62.5	317	51.5	143	36.0	460	45.5
Probably unavoidable																								
Other	7	5	12	6.3	*	*	5	3.7	*	*	5	2.9	*	*	*	*	7	1.4	17	2.8	12	3.0	29	2.9
Respiratory	6	6	12	6.3	*	9	14	10.4	8	*	13	7.6	*	*	*	*	16	3.1	28	4.6	27	6.8	55	5.4
Congenital anomalies	15	26	41	21.6	7	10	17	12.6	8	7	15	8.7	12	3.5	15	8.9	27	5.2	42	6.8	58	14.6	100	9.9
Cardiovascular	7	6	13	6.8	5	*	10	7.4	*	5	11	6.4	21	6.1	10	6.0	31	6.0	39	6.3	26	6.5	65	6.4
Diseases of the nervous system	16	12	28	14.7	10	12	22	16.3	17	11	28	16.3	30	8.6	14	8.3	44	8.5	73	11.9	49	12.3	122	12.1
Cancers	21	13	34	17.9	17	19	36	26.7	27	16	43	25.0	34	9.8	34	20.2	68	13.2	99	16.1	82	20.7	181	17.9
Total probably unavoidable	72	68	140	73.7	47	57	104	77.0	67	48	115	66.9	112	32.3	81	48.2	193	37.5	298	48.5	254	64.0	552	54.5
Total deaths	100	90	190		68	67	135		100	72	172		347		168		515		615		397		1,012	

Notes: *Small numbers have been suppressed in line with Office for National Statistics guidelines. Therefore the numbers in the columns, when added, may not equal the totals shown. The ‘% of all deaths in age group’ is not split by sex in younger age groups, as there are few differences between boys and girls in these age groups.

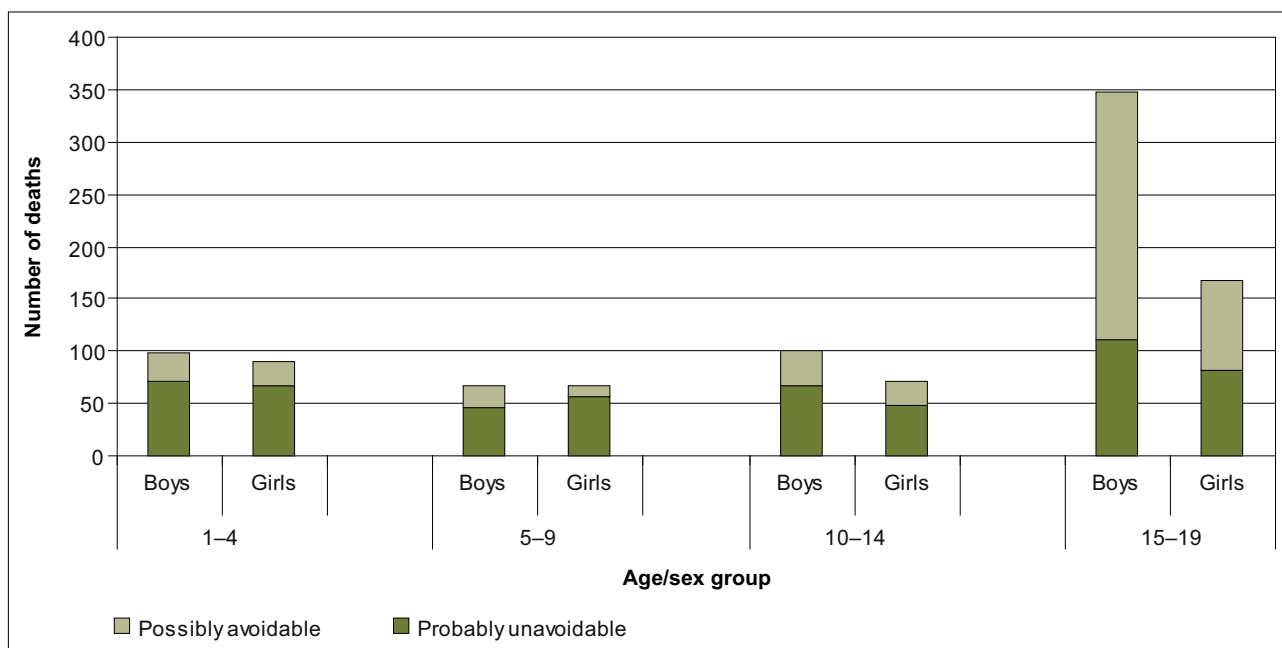
Source data: *Public Health Mortality Extract, Office for National Statistics*

Figure 17: Main causes of death (numbers and percentage of all deaths) for children aged 0–19 in the South West, by age group and sex, 2001–05



Source data: Public Health Mortality Extract, Office for National Statistics

Figure 18: Possibly avoidable and probably unavoidable deaths in children aged 1–19 in the South West, by age group and sex, 2001–05



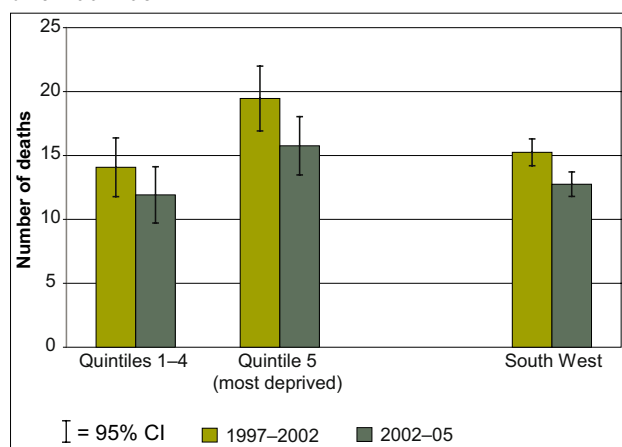
Source data: Public Health Mortality Extract, Office for National Statistics

3.4 Inequalities

There is no national target to reduce inequalities in the mortality of children over the age of one. However, as for infant mortality, we can examine inequalities in child mortality (age 1–15) by linking deaths to area-level deprivation. As before, these deaths can then be divided into quintiles of deprivation on a scale of 1 (least deprived) to 5 (most deprived). This time, however, because there are far fewer deaths in this age group, the four least deprived quintiles have been combined. Figure 19 illustrates that in 1997–2002 there was a statistically significant difference in child mortality between the most deprived quintile and the South West overall, and between quintile 5 (most deprived) and quintiles 1–4. This suggests that there were specific risks experienced by children in the most deprived areas in the region. By 2000–05 rates had fallen in all groups, and there were no statistically significant differences between them.

This is an encouraging development, one that is likely to be due to a decrease in child road traffic deaths.²⁷ However, it should be viewed with caution. Due to

Figure 19: All cause mortality in children aged 1–15 in the South West by quintile of deprivation, 1997–2002 and 2002–05



Source data: Public Health Mortality Extract, Office for National Statistics; Index of Multiple Deprivation (2004)

the small numbers involved, even when this is taken into account by using rolling averages (as here), only continued monitoring over a longer period will enable us to have greater confidence in the accuracy of these data.

4 Child morbidity

4.1 Key points

- The vast majority of health contacts take place in a wide variety of primary care settings, but few data are currently available on these.
- The average rate of GP consultation is five per year for children under the age of 5, two for children aged 5–15, and four for young people aged 16–19, resulting in an estimated 3.7 million GP consultations per year in the South West.
- Deprivation is associated with greater use of GP services.
- Rates of hospital admission for children in the South West are higher than for England.
- Reasons for admission vary with age and gender. In 0–4 year-olds, unknown causes and acute respiratory infections are among the most common; neoplasms (benign or malignant tumours) and ear, nose and throat (ENT) conditions dominate in the middle and older age groups, while abortive pregnancy and abdominal pain are the most common among 15–19 year-old females.
- Emergency admissions account for 38% of all hospital admissions in the South West. This rate is lower than for England.
- The rate of emergency admissions via GP in the South West is higher than for England. This is possibly because GPs are easier to access than other services in an emergency in rural areas, or because minor injury units are staffed by GPs.
- The rate of emergency admissions via A&E is lower in the South West than for England. The most common cause in the 5–14 age group is falls, with nearly twice as many cases among boys as girls. In 15–19 year-olds, the most common cause is self-harm, with nearly three times as many cases among girls as boys.

- There are a greater number of hospital admissions of children from deprived areas in the South West, particularly for emergency admissions.
- Injuries are a major reason for attendance at A&E. Of these, sports injuries and injuries resulting from road traffic collisions are most common.
- The most common non-accidental injuries resulting in A&E attendance among 0–19 year-olds are assault (1%) and deliberate self-harm (1%).
- Injuries occurring in the home decrease with age, but those occurring in public places increase.
- There is evidence to suggest that A&E attendances due to sports injuries decrease with deprivation, but that those due to assault increase.
- 17% of all outpatient visits are made by 0–19 year-olds.
- The most common specialties attended by 0–15 year-olds are paediatric medicine (29%) and non-consultant (19%).
- Rates of limiting long-term illness and 'not good' health in 0–15 year-olds, as reported in the 2001 Census, are slightly lower in the South West than in England as a whole.

4.2 Primary care attendance

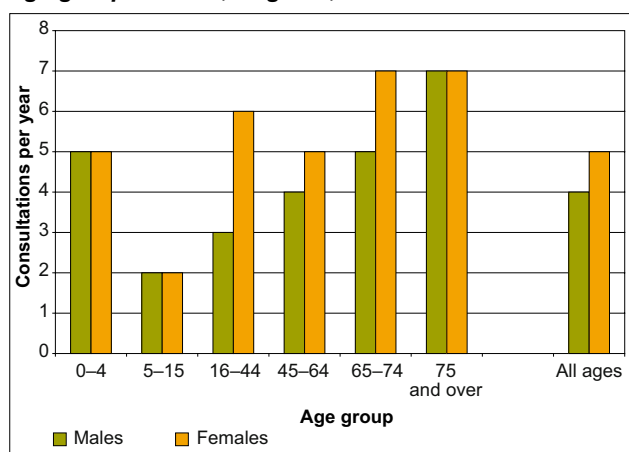
Data on the use of primary care services provide important information on morbidity (ill health), since many more children have contact with primary than secondary care health services. Primary care services for children are wide-ranging and include GPs, health visitors, school nurses, dentists, opticians and pharmacists. Unfortunately, data on use of these services are less easily available than secondary care data. Here we present some limited information on the frequency of GP visits, and the main reasons for seeking primary care.

4.2.1 GP consultations

National data show that infants and small children have more frequent contact with primary care services than older children (Figure 20). The average number of visits per year to a GP is five for children under the age of 5, two for children aged 5–15 years and an average of four for young people aged 16–19. These figures compare with an average across all age groups of four visits per year, although females have more consultations during their fertile years. Nearly 90% of consultations take place in the GP surgery, and nearly 10% by telephone. Only 1% or 2% of consultations now take place at home.

Applying these numbers to the child population (aged 0–19) in the South West, we can estimate that there are 3.7 million GP consultations per year for children in the region.

Figure 20: Average number of GP visits per year by age group and sex, England, 2000–01



Source data: General Household Survey (2005), Office for National Statistics

4.2.2 Use of NHS Direct

NHS Direct is a 24-hour nurse advice and health information service, launched in 1999, which complements other traditional primary care services. Forty per cent of calls to NHS Direct are about children. Aggregated data for England regarding reasons for consultations, published by NHS Direct, provide useful information about common health problems. The ten most common symptoms among children for which NHS Direct was consulted in 1999 (in descending order) were:

- fever
- rash
- vomiting
- diarrhoea
- cough
- abdominal pain
- cold/influenza
- headache
- head injury
- ingestion/overdose/poisoning.

4.2.3 Inequalities

Deprivation is associated with greater use of GP services. A study of general practices in England and Wales found that rates of childhood consultation (ages 0–15) for illnesses, including infection, asthma, injuries and poisonings, increased linearly from Registrar General's social classes I–II (least deprived) to classes IV–V (most deprived).²⁸ Conversely, consultation rates for preventive care were slightly lower in children from social classes IV–V than in children from classes I–II.²⁹ This system of classification has since been replaced by the National Statistics Socioeconomic Classification (NS-SEC). See Box 3 for the definitions of class used in each system.

There appears to be a similar association between disadvantaged socioeconomic status and increased consultations for infants. This may be due to two factors associated with deprivation – lower maternal age and higher rates of formula feeding. It has been estimated that consultation rates for babies breastfed at time of discharge from hospital are 15% lower than for babies fed formula milk. Breastfeeding is known to be protective of health in all socioeconomic groups.³⁰

Box 3: Definitions of social class

The Registrar General's Social Class

Class description		Examples of occupations
Non-manual	I Professional	Doctors, chartered accountants, professionally qualified engineers.
	II Managerial and managers	Journalists, school teachers, technical/intermediate.
	IIIN Skilled non-manual	Clerks, cashiers, retail staff.
Manual	IIIM Skilled manual	Supervisors of manual workers, plumbers, electricians, goods vehicle drivers.
	IV Partly skilled	Warehousemen, security guards, machine tool operators, care assistants, waiters and waitresses.
	V Unskilled labourers	Cleaners and messengers.

National Statistics Socioeconomic Classification (NS-SEC)

Condensed analytic class	Analytic class	Examples of occupations
1 Managerial and professional occupations	1 Higher managerial and professional occupations 1.1 Large employers, higher managers 1.2 Higher professionals	Senior officials in national and local government, directors and chief executives of major organisations, officers in the armed forces. Civil engineers, medical practitioners, physicists, geologists, IT strategy and planning professionals, legal professionals, architects.
	2 Lower managerial, professional	Teachers in primary and secondary schools, quantity surveyors, public service administrative professionals, social workers, nurses, IT technicians.
2 Intermediate occupations	3 Intermediate	NCOs and other ranks in the Armed Forces, graphic designers, medical and dental technicians, Civil Service administrative officers and local government clerical officers, counter clerks, school and company secretaries.
	4 Small employers and own account workers	Hairdressing and beauty salon proprietors, shopkeepers, dispensing opticians in private practice, farmers, self-employed taxi drivers.
3 Routine and manual	5 Lower supervisory and technical occupations	Bakers and flour confectioners, screen-printers, plumbers, electricians and motor mechanics employed by others, gardeners, rail transport operatives, supervisors of van, bus and coach drivers, labourers, scaffolders.
	6 Semi-routine occupations	Pest control officers, clothing cutters, traffic wardens, scaffolders, assemblers of vehicles, farm workers, veterinary nurses and assistants, shelf fillers.
	7 Routine occupations	Hairdressing employees, floral arrangers, roundsmen and women, sewing machinists, van, bus and coach drivers, labourers, hotel porters, bar staff, cleaners and domestics, road sweepers, car park attendants.

4.3 Hospital admissions: rates and causes

4.3.1 Hospital Episode Statistics

Secondary care data are another source of information about children's health. The main source of secondary care data is Hospital Episode Statistics (HES) (see Box 4). While HES provide detailed information about people attending hospitals as inpatients and day cases, they do not currently include attendances at A&E departments or minor injury units. It is, however, possible to distinguish between emergency admissions made via GPs and A&E departments.

Details of hospital admissions for children aged 0–19 presented in this bulletin were extracted from HES and

are based on data from April 2000 to March 2005. All admissions of residents in the South West region are included, except maternity admissions and those where the patient's sex or age were not recorded.

Table 3 gives the number, rate and proportion of hospital admissions for children in the South West by age group and sex between 2000/01 and 2004/05. A total of 887,363 0–19 year-olds were admitted to hospital during this period (an average of around 177,500 admissions per year). Admissions of children aged 0–4 account for nearly half (48%). In general, admissions decrease with age, but the rate rises in girls aged 15–19. This is mainly due to admissions for abdominal pain and abortive pregnancies (see Table 5).

Box 4: About Hospital Episode Statistics (HES)

The Hospital Episode Statistics (HES) database holds information on patients who are admitted to NHS hospitals in England, either as day cases or for longer periods. Each record in the database relates to one 'finished consultant episode'. This is the period of time an individual spends under the care of one NHS consultant. The cause of admission is recorded using either International Classification of Diseases version 9 (ICD-9) (April 1991–March 1995) or version 10 (ICD-10) (April 1995–March 2003). HES data are presented for financial years rather than calendar years in this report (expressed as, for example, 2005/06 rather than 2005–06).

HES are comprehensive and form a powerful epidemiological dataset that can be used to investigate

a range of issues. HES do not, however, include data from the private sector. This is a major deficit when considering elective admissions that are more likely to take place in the private sector (e.g. hip replacements). Admissions for children, however, are less likely to be affected by this omission (except for girls, in the case of abortions, which are often performed in non-NHS institutions) and A&E admissions will not be affected at all, as private hospitals in the South West region do not have A&E departments. There are some concerns about the consistency, completeness and accuracy of coding in the HES dataset, particularly in data fields such as ethnicity. Despite these cautions, and in the absence of other sources, HES remains an important and informative source of information on admissions to hospital.

Table 3: Numbers, rates and percentages of hospital admissions for children aged 0–19 in the South West (rates per 100 population), by age group and sex, 2000/01–2004/05

Age group (years)	Boys			Girls			All		
	Number	Rate	%	Number	Rate	%	Number	Rate	%
0–4	233,083	34.4	51.7	194,553	30.1	44.6	427,636	32.3	48.2
5–9	80,210	10.7	17.8	59,815	8.4	13.7	140,025	9.5	15.8
10–14	69,939	8.6	15.5	58,276	7.6	13.3	128,215	8.1	14.4
15–19	67,477	8.6	15.0	124,010	17.0	28.4	191,487	12.6	21.6
Total	450,709	15.1	100.0	436,654	15.4	100.0	887,363	15.2	100.0

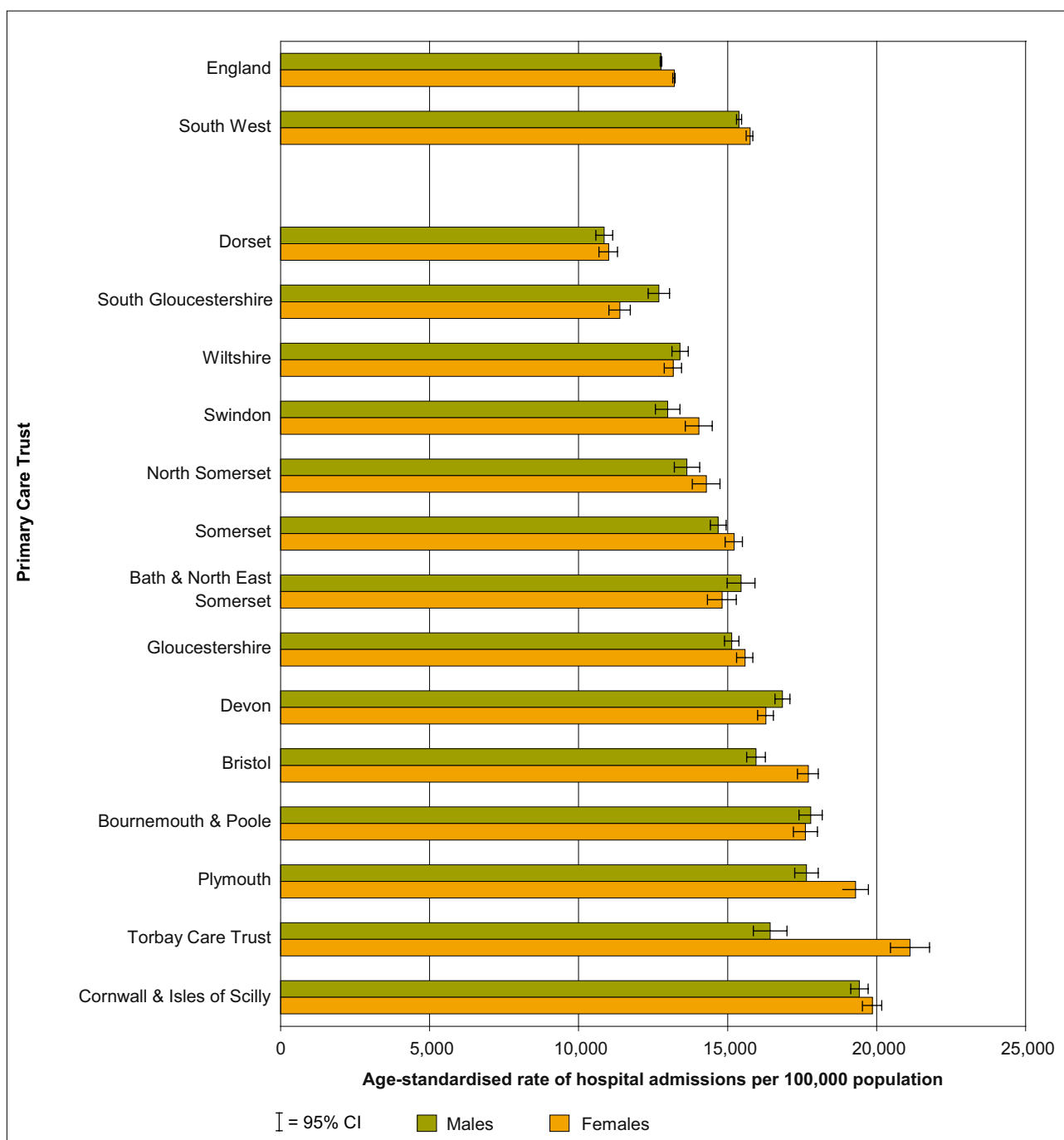
Note: Percentages have been rounded and may not add up to exactly 100.

Source data: Hospital Episode Statistics, The Information Centre

Figure 21 shows the rates of admission for children aged 0–19 in the South West compared with the England average and by each Primary Care Trust in the region. It shows that the South West has statistically significantly more hospital admissions in this age range than the England average.

Tables 4a and 4b show the top five reasons for hospital admissions for boys and girls aged 0–19 respectively. Among 0–4 year-olds, the most common reasons for admission were: general symptoms/unknown; infections; and neoplasms. In older age groups, planned admissions for ear, nose and throat problems were high in all groups.

Figure 21: Age-standardised rate of hospital admissions for children aged 0–19 (per 100,000 population) in the South West, by Primary Care Trust, 2004/05



Notes: Rates are age standardised to the England mid-year population of 2002. See Table A8 in Appendix 2 for underlying data. Source data: Hospital Episode Statistics, The Information Centre

Table 4a: The five most common reasons for admission to hospital for boys aged 0–19 in the South West, by age group, 2000/01–2004/05

Reason	Males	% in age group
Age 0–4		
General symptoms ¹ and unknown	15,685	6.7
Acute upper respiratory infections	12,750	5.5
Acute lower respiratory infections	7,345	3.2
Circulatory and respiratory symptoms	5,571	2.4
Neoplasms other than leukaemia	5,400	2.3
<i>Other reasons</i>	186,332	79.9
0–4 Total	233,083	100.0
Age 5–9		
Diseases of oral cavity, salivary glands and jaws	10,913	13.6
Neoplasms other than leukaemia	5,462	6.8
Falls	4,328	5.4
Otitis media	4,006	5.0
General symptoms ¹ and unknown	2,719	3.4
<i>Other reasons</i>	52,782	65.8
5–9 Total	80,210	100.0
Age 10–14		
Diseases of oral cavity, salivary glands and jaws	5,713	8.2
Falls	5,402	7.7
Neoplasms other than leukaemia	4,638	6.6
Learning disability	4,138	5.9
Abdominal pain, nausea and vomiting	2,919	4.2
<i>Other reasons</i>	47,129	67.4
10–14 Total	69,939	100.0
Age 15–19		
Neoplasms other than leukaemia	4,707	7.0
Transport accidents	3,213	4.8
Falls	3,116	4.6
Learning disability	2,964	4.4
General symptoms ¹ and unknown	2,722	4.0
<i>Other reasons</i>	50,755	75.2
15–19 Total	67,477	100.0
All ages total	450,709	

Notes: ¹including headache, pain, fever, syncope, convulsions; ²including spontaneous and medical abortions. HES does not capture private or agency terminations, which account for almost half the terminations performed. Comprehensive data may be obtained from the official abortion statistics published by the Department of Health.

Percentages have been rounded and may not add up to exactly 100.

Source data: *Hospital Episode Statistics, The Information Centre*

Table 4b: The five most common reasons for admission to hospital for girls aged 0–19 in the South West, by age group, 2000/01–2004/05

Reason	Females	% in age group
Age 0–4		
General symptoms ⁱ and unknown	13,816	7.1
Acute upper respiratory infections	8,072	4.1
Acute lower respiratory infections	5,195	2.7
Neoplasms other than leukaemia	4,291	2.2
Intestinal infectious diseases	3,946	2.0
<i>Other reasons</i>	159,233	81.8
0–4 Total	194,553	100.0
Age 5–9		
Diseases of oral cavity, salivary glands and jaws	10,020	16.8
Neoplasms other than leukaemia	3,919	6.6
Otitis media	3,288	5.5
Falls	2,950	4.9
General symptoms ⁱ and unknown	2,142	3.6
<i>Other reasons</i>	37,496	62.7
5–9 Total	59,815	100.0
Age 10–14		
Diseases of oral cavity, salivary glands and jaws	7,098	12.2
Abdominal pain, nausea and vomiting	4,045	6.9
Neoplasms other than leukaemia	3,260	5.6
Learning disability	2,640	4.5
General symptoms ⁱ and unknown	2,230	3.9
<i>Other reasons</i>	39,003	66.9
10–14 Total	58,276	100.0
Age 15–19		
Abdominal pain, nausea and vomiting	8,747	7.1
Abortive pregnancy ⁱⁱ	8,467	6.8
Neoplasms other than leukaemia	4,939	4.0
General symptoms ⁱ and unknown	4,640	3.7
Diseases of oral cavity, salivary glands and jaws	4,063	3.3
<i>Other reasons</i>	93,154	75.1
15–19 Total	124,010	100.0
All ages total	436,654	

Notes: ⁱincluding headache, pain, fever, syncope, convulsions; ⁱⁱincluding spontaneous and medical abortions. HES does not capture private or agency terminations, which account for almost half the terminations performed. Comprehensive data may be obtained from the official abortion statistics published by the Department of Health.

Percentages have been rounded and may not add up to exactly 100.

Source data: Hospital Episode Statistics, The Information Centre

Among 5–9 year-olds the most common reasons for admission were: diseases of the oral cavity, salivary glands and jaws; neoplasms; and otitis media (inflammation of the middle ear). In the next age group (10–14 years) the top reason for both boys and girls was: diseases of the oral cavity, salivary glands and jaws. Falls were the second most common reason for boys, followed by neoplasms and 'learning disabilities'. It is likely that many of the latter admissions are for respite care. This is supported by examination of a subset of the data, which showed that almost all admissions are elective (not emergency) and about two-thirds of patients were admitted under the code F798 denoting unspecified learning disabilities with 'other impairments of behaviour'.

In the 15–19 age group, girls form 65% of admissions and outnumber boys for the first time. For boys the most common reasons were neoplasms, followed by transport accidents, falls, learning disability, and general symptoms. In girls the most common reasons were abdominal pain, closely followed by abortive pregnancy. Neoplasms, general symptoms and diseases of the oral cavity had lower numbers. There will be differences between the numbers of admissions for abortive pregnancy reported here and those reported by the Teenage Pregnancy Unit as this report provides data for girls up to and including the age of 19, whereas the Teenage Pregnancy Unit reports on abortions in girls up to and including the age of 18. Nor do the numbers here reflect the total number of abortions in girls as many are carried out in non-NHS settings.

Note that in all age groups, the five most common causes of admission constitute 20–40% of all admissions.

4.3.2 Emergency hospital admissions

Emergency admissions make up 38% of all admissions in children aged 0–19. This subset of hospital admissions is therefore worth looking at in more depth.

Table 5 gives the number and rate of emergency hospital admissions by age group and sex in the South West between 2000/01 and 2004/05. During this period there were 334,402 emergency admissions for children and young people aged 0–19 years (equating to approximately 67,000 per year): 55% of which were boys and 48% of which were children under five years.

Tables 6a and 6b show the top five reasons for emergency hospital admissions for boys and girls aged 0–19 respectively. Among 0–4 year-olds, the top five are very similar to those for all hospital admissions in this age group (with the exception of neoplasms), i.e. mostly general/unknown or infections. Between the ages of 5 and 14, falls, followed by abdominal pain, nausea and vomiting, were the most common causes of emergency admission together with asthma or appendicitis. In the oldest age group (15–19 years), transport injuries and falls were common for boys, while abdominal pain, nausea and vomiting and deliberate self-harm were the most common reasons for emergency admission for girls. Admissions in this age group are again higher for girls.

Table 5: Numbers, rates and percentages of emergency hospital admissions for children aged 0–19 in the South West (rates per 100 population), by age group and sex, 2000/01–2004/05

Age group (years)	Boys			Girls			All		
	Number	Rate	%	Number	Rate	%	Number	Rate	%
0–4	90,793	13.4	49.7	68,295	10.6	45	159,088	12	47.6
5–9	28,771	3.8	15.7	20,574	2.9	13.6	49,345	3.4	14.8
10–14	31,140	3.8	17	24,018	3.1	15.8	55,158	3.5	16.5
15–19	32,054	4.1	17.5	38,757	5.3	25.6	70,811	4.7	21.2
Total	182,758	6.1	100.0	151,644	5.4	100.0	334,402	5.7	100.0

Note: Percentages have been rounded and may not add up to exactly 100.

Source data: Hospital Episode Statistics, The Information Centre

Table 6a: The five most common reasons for emergency admission to hospital for boys aged 0–19 in the South West, by age group, 2000/01–2004/05

Reason	Males	% in age group
Age 0–4		
Acute upper respiratory infections	12,533	13.8
General symptoms ¹ and unknown	9,389	10.3
Acute lower respiratory infections	7,157	7.9
Circulatory and respiratory symptoms	5,005	5.5
Unspecified viral infections	4,829	5.3
<i>Other reasons</i>	51,880	57.1
0–4 Total	90,793	100.0
Age 5–9		
Falls	4,149	14.4
Abdominal pain, nausea and vomiting	1,998	6.9
Asthma and status asthmaticus	1,929	6.7
General symptoms ¹ and unknown	1,895	6.6
Acute upper respiratory infections	1,775	6.2
<i>Other reasons</i>	17,025	59.2
5–9 Total	28,771	100.0
Age 10–14		
Falls	5,147	16.5
Abdominal pain, nausea and vomiting	2,688	8.6
Transport accidents	2,227	7.2
Appendicitis	1,863	6.0
General symptoms ¹ and unknown	1,648	5.3
<i>Other reasons</i>	17,567	56.4
10–14 Total	31,140	100.0
Age 15–19		
Transport accidents	3,061	9.5
Falls	2,797	8.8
General symptoms ¹ and unknown	1,856	5.8
Appendicitis	1,638	5.1
Abdominal pain, nausea and vomiting	1,631	5.1
<i>Other reasons</i>	21,071	65.7
15–19 Total	32,054	100.0
All ages total	182,758	

Notes: ¹including headache, pain, fever, syncope, convulsions; ²including spontaneous and medical abortions. HES does not capture private or agency terminations, which account for almost half the terminations performed. Comprehensive data may be obtained from the official abortion statistics published by the Department of Health.

Percentages have been rounded and may not add up to exactly 100.

Source data: Hospital Episode Statistics, The Information Centre

Table 6b: The five most common reasons for emergency admission to hospital for girls aged 0–19 in the South West, by age group, 2000/01–2004/05

Reason	Females	% in age group
Age 0–4		
General symptoms ⁱ and unknown	8,456	12.4
Acute upper respiratory infections	7,939	11.6
Acute lower respiratory infections	5,059	7.4
Intestinal infectious diseases	3,901	5.7
Unspecified viral infections	3,699	5.4
<i>Other reasons</i>	39,241	57.5
0–4 Total	68,295	100.0
Age 5–9		
Falls	2,838	13.8
Abdominal pain, nausea and vomiting	1,804	8.8
General symptoms ⁱ and unknown	1,352	6.6
Acute upper respiratory infections	1,139	5.5
Asthma and status asthmaticus	985	4.8
<i>Other reasons</i>	12,456	60.5
5–9 Total	20,574	100.0
Age 10–14		
Abdominal pain, nausea and vomiting	3,792	15.8
Falls	1,905	7.9
General symptoms ⁱ and unknown	1,571	6.5
Deliberate self-harm	1,531	6.4
Appendicitis	1,282	5.3
<i>Other reasons</i>	13,937	58.0
10–14 Total	24,018	100.0
Age 15–19		
Abdominal pain, nausea and vomiting	6,195	16.0
Deliberate self-harm	3,919	10.1
General symptoms ⁱ and unknown	2,473	6.4
Abortive pregnancy ⁱⁱ	2,195	5.7
Appendicitis	1,300	3.4
<i>Other reasons</i>	22,675	58.5
15–19 Total	38,757	100.0
All ages total	151,644	

Notes: ⁱincluding headache, pain, fever, syncope, convulsions; ⁱⁱincluding spontaneous and medical abortions. HES does not capture private or agency terminations, which account for almost half the terminations performed. Comprehensive data may be obtained from the official abortion statistics published by the Department of Health.

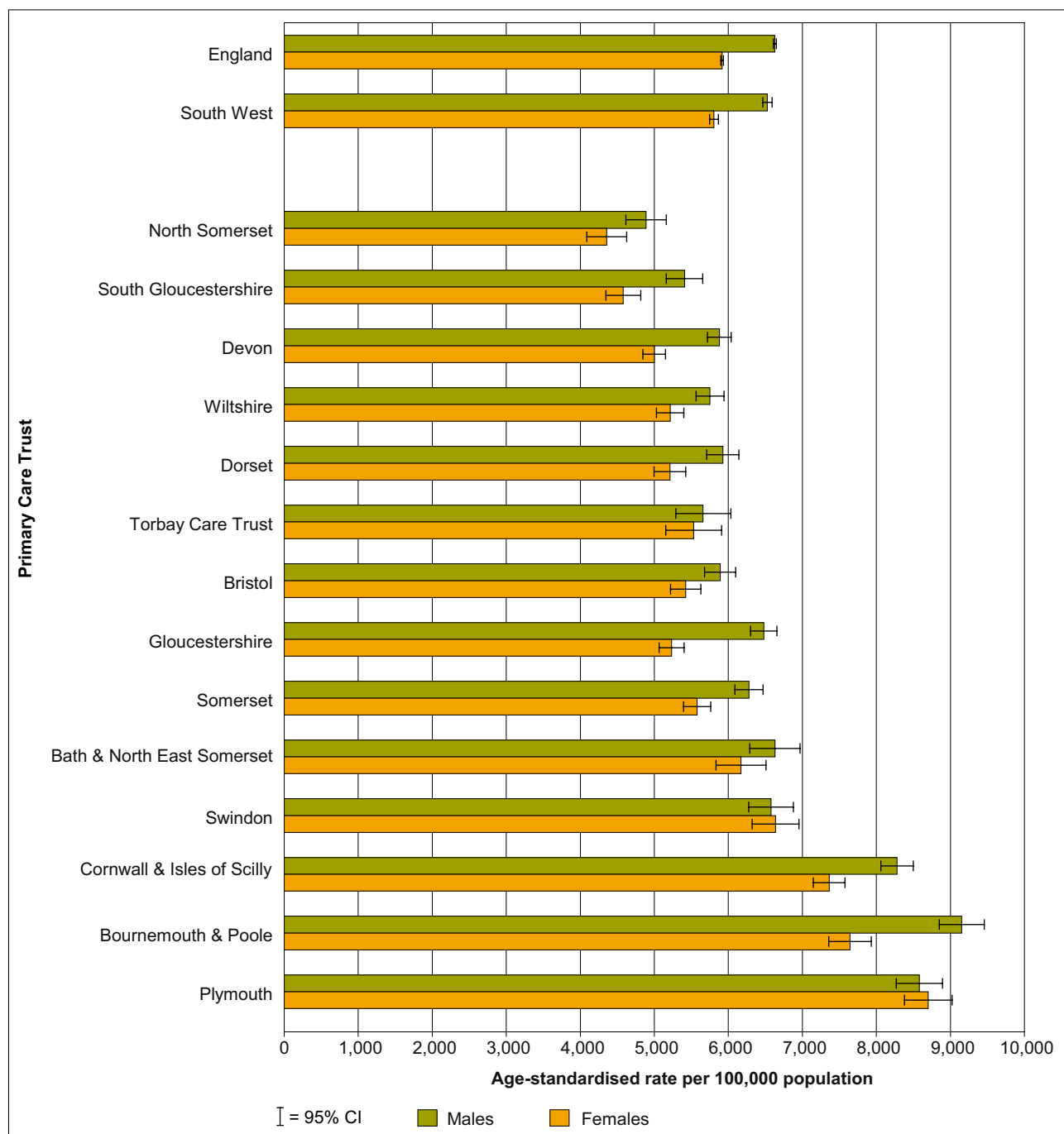
Percentages have been rounded and may not add up to exactly 100.

Source data: Hospital Episode Statistics, The Information Centre

Figure 22 shows the rate of emergency hospital admissions for males and females aged 0–19 in the South West compared with England and by each Primary Care Trust

Trust in the region. It shows that the South West has a slightly lower rate than England.

Figure 22: Age-standardised rate of emergency hospital admissions for children aged 0–19 (per 100,000 population) in the South West, by Primary Care Trust, 2004/05



Notes: Rates are age standardised to the England mid-year population of 2002. See Table A8 in Appendix 2 for underlying data. Source data: Hospital Episode Statistics, The Information Centre

4.3.3 Emergency admissions via GP referral

The majority (85%) of emergency admissions to hospital among 0–19 year-olds result from GP referrals or attendance at A&E (although a child might first be seen by a paediatrician in A&E following referral by a GP). About 50% of child emergency admissions in the South West were via GP in 2000/01–2004/05.

Tables 7 gives the numbers and rates of emergency admissions via GP by age group and sex in the South West between 2000/01 and 2004/05. During this period 147,915 0–19 year-olds in the South West (nearly 30,000 per year) were admitted to hospital following emergency GP referrals. Just over half (52%) of these were boys and just over half (54%) were under the age of five.

Tables 8a and 8b show the top five reasons for emergency admissions via GP for boys and girls aged 0–19 respectively. Among 0–4 year-olds respiratory problems and infections are among the most common causes. Abdominal pain, nausea and vomiting are the

most common causes of GP referral among 5–19 year-olds and are particularly common among girls aged 10–19 years. Appendicitis is an important cause of GP referral among boys aged 10–19, while the second most common cause among girls aged 15–19 is abortive pregnancy (which includes spontaneous and medical abortions).

Figure 23 shows the rates of emergency admissions via GP for children aged 0–19 in the South West compared with England, and by each Primary Care Trust in the region. Rates in the South West are significantly higher than in England as a whole, and are significantly higher for boys than girls. Admissions via GP referral are highest in Cornwall, Plymouth and Bournemouth and Poole. They are lowest in North Somerset, Bristol and Dorset. While local and regional differences may reflect the relative accessibility of GP surgeries and inaccessibility of A&E departments in rural areas, there are urban areas with high rates of GP referral (e.g. Plymouth, Swindon) and predominantly rural areas with low rates of GP referral (e.g. North Somerset). Many other factors, such as car ownership and local arrangements for out-of-hours GP services, will affect these rates.

Table 7: Numbers, rates and percentages of emergency hospital admissions via GP for children aged 0–19 in the South West (rates per 100 population), by age group and sex, 2000/01–2004/05

Age group (years)	Boys			Girls			All		
	Number	Rate	%	Number	Rate	%	Number	Rate	%
0–4	46,377	6.8	59.7	34,490	5.3	49.1	80,867	6.1	54.7
5–9	11,830	1.6	15.2	8,958	1.3	12.7	20,788	1.4	14.1
10–14	11,162	1.4	14.4	10,163	1.3	14.5	21,325	1.4	14.4
15–19	8,252	1.1	10.6	16,683	2.3	23.7	24,935	1.6	16.9
Total	77,621	2.6	100	70,294	2.5	100	147,915	2.5	100

Note: Percentages have been rounded and may not add up to exactly 100.

Source data: Hospital Episode Statistics, The Information Centre

Table 8a: The five most common reasons for emergency hospital admissions via GP for boys aged 0–19 in the South West, by age group, 2000/01–2004/05

Reason	Males	% in age group
Age 0–4		
Acute upper respiratory infections	7,315	15.8
Acute lower respiratory infections	4,706	10.1
Unspecified viral infections	3,009	6.5
Intestinal infectious diseases	2,930	6.3
Asthma and status asthmaticus	2,102	4.5
<i>Other reasons</i>	26,315	56.7
0–4 Total	46,377	100.0
Age 5–9		
Acute upper respiratory infections	992	8.4
Asthma and status asthmaticus	928	7.8
Unspecified viral infections	676	5.7
Appendicitis	485	4.1
Intestinal infectious diseases	394	3.3
<i>Other reasons</i>	8,355	70.6
5–9 Total	11,830	100.0
Age 10–14		
Appendicitis	1,298	11.6
Asthma and status asthmaticus	489	4.4
Unspecified viral infections	452	4.0
Acute upper respiratory infections	417	3.7
Diabetes mellitus	335	3.0
<i>Other reasons</i>	8,171	73.2
10–14 Total	11,162	100.0
Age 15–19		
Appendicitis	964	11.7
Acute upper respiratory infections	376	4.6
Diabetes mellitus	265	3.2
Unspecified viral infections	188	2.3
Asthma and status asthmaticus	177	2.1
<i>Other reasons</i>	6,282	76.1
15–19 Total	8,252	100.0
All ages total	77,621	

Notes: ¹including headache, pain, fever, syncope, convulsions; ²including spontaneous and medical abortions. HES does not capture private or agency terminations, which account for almost half of the terminations performed. Comprehensive data may be obtained from the official abortion statistics published by the Department of Health.

Percentages have been rounded and may not add up to exactly 100.

Source data: Hospital Episode Statistics, The Information Centre

Table 8b: The five most common reasons for emergency hospital admissions via GP for girls aged 0–19 in the South West, by age group, 2000/01–2004/05

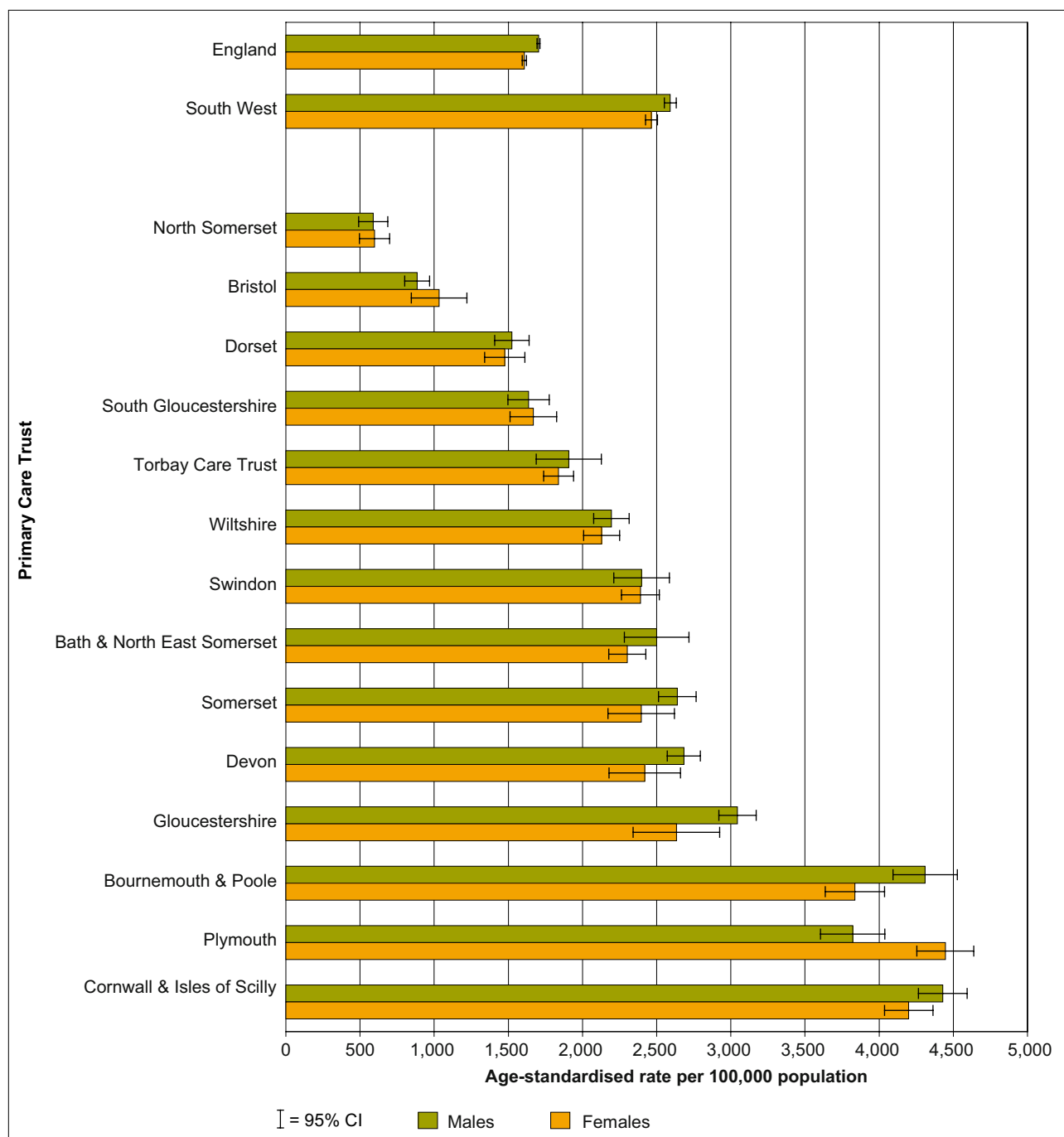
Reason	Females	% in age group
Age 0–4		
Acute upper respiratory infections	4,631	13.4
General symptoms ⁱ and unknown	4,064	11.8
Acute lower respiratory infections	3,327	9.6
Intestinal infectious diseases	2,458	7.1
Unspecified viral infections	2,259	6.5
<i>Other reasons</i>	17,751	51.5
0–4 Total	34,490	100.0
Age 5–9		
Abdominal pain, nausea and vomiting	1,224	13.7
Acute upper respiratory infections	659	7.4
General symptoms ⁱ and unknown	627	7.0
Asthma and status asthmaticus	523	5.8
Unspecified viral infections	480	5.4
<i>Other reasons</i>	5,445	60.8
5–9 Total	8,958	100.0
Age 10–14		
Abdominal pain, nausea and vomiting	2,607	25.7
Appendicitis	852	8.4
General symptoms ⁱ and unknown	733	7.2
Acute upper respiratory infections	410	4.0
Asthma and status asthmaticus	336	3.3
<i>Other reasons</i>	5,225	51.4
10–14 Total	10,163	100.0
Age 15–19		
Abdominal pain, nausea and vomiting	3,685	22.1
Abortive pregnancy ⁱⁱ	1,137	6.8
General symptoms ⁱ and unknown	998	6.0
Appendicitis	790	4.7
Circulatory and respiratory symptoms	500	3.0
<i>Other reasons</i>	9,573	57.4
15–19 Total	16,683	100.0
All ages total	70,294	

Notes: ⁱincluding headache, pain, fever, syncope, convulsions; ⁱⁱincluding spontaneous and medical abortions. HES does not capture private or agency terminations, which account for almost half of the terminations performed. Comprehensive data may be obtained from the official abortion statistics published by the Department of Health.

Percentages have been rounded and may not add up to exactly 100.

Source data: *Hospital Episode Statistics, The Information Centre*

Figure 23: Age-standardised rate (per 100,000 population) of emergency hospital admissions via GP for children aged 0–19 in the South West, by Primary Care Trust, 2004/05



Note: Rates are age standardised to the England mid-year population of 2002. See Table A10 in Appendix 2 for underlying data.

Source data: Hospital Episode Statistics, The Information Centre

4.3.4 Emergency admissions via Accident and Emergency departments

Approximately 40% of emergency hospital admissions of 0-19 year olds in the South West (2000/01-2004/05) were through A&E departments. This subset of

hospital admissions is particularly important in terms of preventable morbidity.

Table 9 gives the numbers and rates of admissions via A&E by age group and sex in the South West in 2000/01–2004/05. During this period 133,235 children and young people aged 0–19 were admitted to hospital through A&E departments (equating to roughly 27,000 per year). Of these, 58% were boys. Rates were highest in the youngest (0–4 years) and oldest (15–19 years) age groups.

Tables 10a and 10b show the top five reasons for admissions via A&E departments for boys and girls aged 0–19 respectively. Falls are in the top five across all age groups, while transport accidents appear in age groups 5–19. Deliberate self-harm appears in girls aged 10–14 and is the most common reason for girls aged 15–19 being admitted through A&E. Self-harm is also a significant reason for admission for boys in this older age group.

Figure 24 shows the rates of admission via A&E for children aged 0–19 in the South West compared to England, and by each each Primary Care Trust in the region. The overall rates for both boys and girls are significantly lower than the England average, but this is offset by the greater number of admissions via GPs.

4.3.5 Review of hospital admissions data

Figure 25 gives the age/sex breakdown of hospital admissions for 0–19 year-olds in the South West by admission type. Overall, admissions in the 0–4 age group outnumber admissions for any other age group. Also worthy of note are:

- boys outnumber girls in each age group, except the 15–19 group;
- the relatively high numbers of admissions among females aged 15–19, which can largely be explained by admissions for abdominal pain and abortive pregnancy;

Table 9: Numbers, rates and percentages of emergency hospital admissions via Accident and Emergency departments for children aged 0–19 in the South West (rates per 100 population), by age group and sex, 2000/01–2004/05

Age group (years)	Boys			Girls			All		
	Number	Rate	%	Number	Rate	%	Number	Rate	%
0–4	28,573	4.2	37.8	21,877	3.4	37.9	50,450	3.8	37.9
5–9	12,597	1.7	16.7	8,420	1.2	14.6	21,017	1.4	15.8
10–14	15,344	1.9	20.3	10,114	1.3	17.5	25,458	1.6	19.1
15–19	19,067	2.4	25.2	17,243	2.4	29.9	36,310	2.4	27.3
Total	75,581	2.5	100.0	57,654	2.0	100.0	133,235	2.3	100.0

Note: Percentages have been rounded and may not add up to exactly 100.

Source data: *Hospital Episode Statistics, The Information Centre*

Table 10a: The five most common reasons for emergency hospital admissions via Accident and Emergency departments for boys aged 0–19 in the South West, by age group, 2000/01–2004/05

Reason	Males	% in age group
Age 0–4		
Acute upper respiratory infections	4,159	14.6
General symptoms ¹ and unknown	3,641	12.7
Falls	3,012	10.5
Acute lower respiratory infections	1,549	5.4
Unspecified viral infections	1,360	4.8
<i>Other reasons</i>	14,852	52.0
0–4 Total	28,573	100.0
Age 5–9		
Falls	3,572	28.4
Transport accidents	1,006	8.0
Asthma and status asthmaticus	828	6.6
General symptoms ¹ and unknown	718	5.7
Acute upper respiratory infections	598	4.7
<i>Other reasons</i>	5,875	46.6
5–9 Total	12,597	100.0
Age 10–14		
Falls	4,497	29.3
Transport accidents	1,956	12.7
Broken arm or wrist	752	4.9
General symptoms ¹ and unknown	678	4.4
Head injuries	605	3.9
<i>Other reasons</i>	6,856	44.7
10–14 Total	15,344	100.0
Age 15–19		
Transport accidents	2,767	14.5
Falls	2,389	12.5
Assault	1,346	7.1
Deliberate self-harm	1,214	6.4
General symptoms ¹ and unknown	1,025	5.4
<i>Other reasons</i>	10,326	54.2
15–19 Total	19,067	100.0
All ages total		

Notes: ¹including headache, pain, fever, syncope, convulsions.

Percentages have been rounded and may not add up to exactly 100.

Source data: Hospital Episode Statistics, The Information Centre

Table 10b: The five most common reasons for emergency hospital admissions via Accident and Emergency departments for girls aged 0–19 in the South West, by age group, 2000/01–2004/05

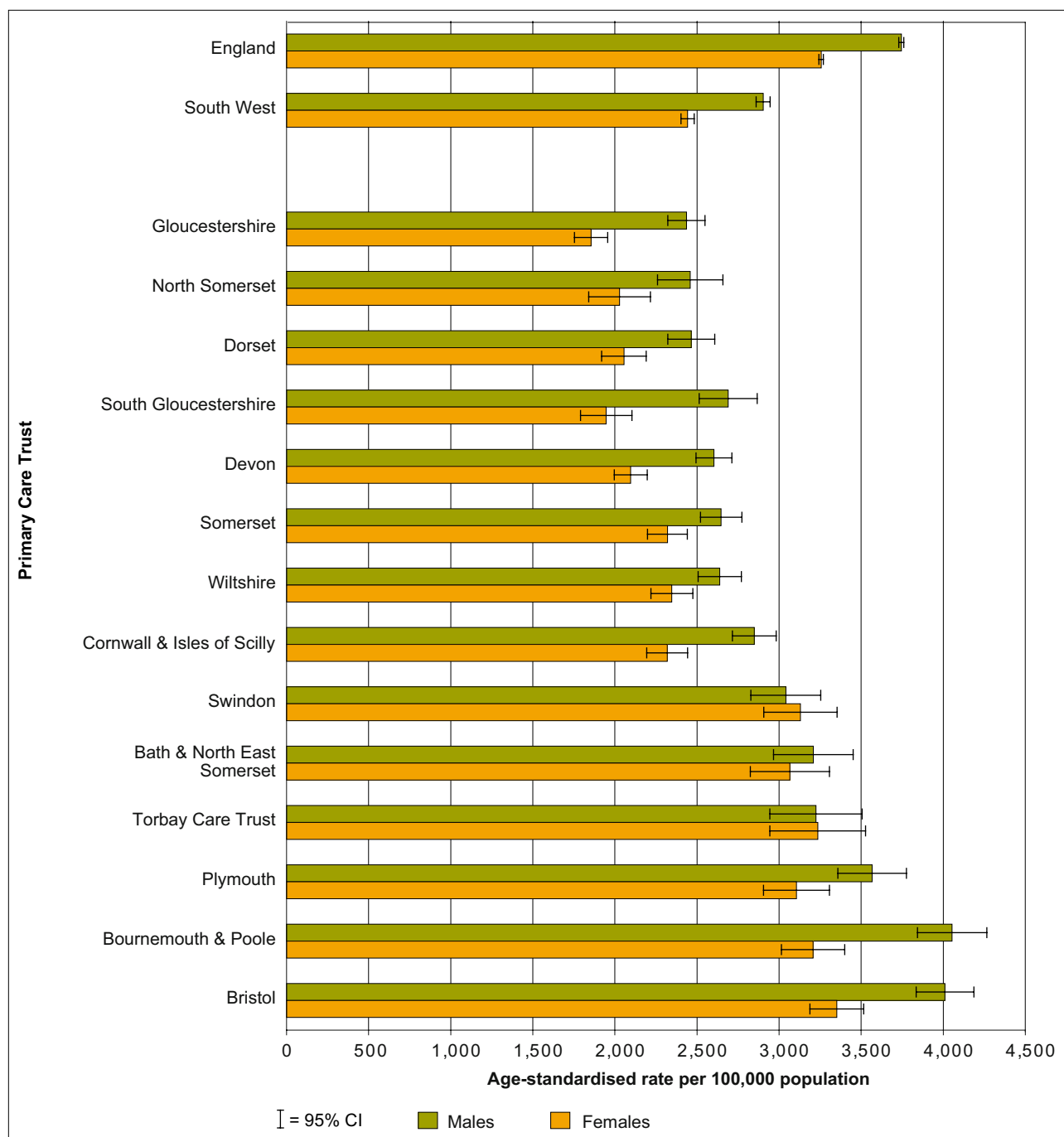
Reason	Females	% in age group
Age 0–4		
General symptoms ¹ and unknown	3,223	14.7
Acute upper respiratory infections	2,602	11.9
Falls	2,424	11.1
Unspecified viral infections	1,093	5.0
Acute lower respiratory infections	1,079	4.9
<i>Other reasons</i>	11,456	52.4
0–4 Total	21,877	100.0
Age 5–9		
Falls	2,472	29.4
Transport accidents	614	7.3
General symptoms ¹ and unknown	503	6.0
Abdominal pain, nausea and vomiting	398	4.7
Asthma and status asthmaticus	387	4.6
<i>Other reasons</i>	4,046	48.1
5–9 Total	8,420	100.0
Age 10–14		
Falls	1,618	16.0
Deliberate self-harm	1,323	13.1
Abdominal pain, nausea and vomiting	890	8.8
Transport accidents	826	8.2
General symptoms ¹ and unknown	545	5.4
<i>Other reasons</i>	4,912	48.6
10–14 Total	10,114	100.0
Age 15–19		
Deliberate self-harm	3,496	20.3
Abdominal pain, nausea and vomiting	2,090	12.1
General symptoms ¹ and unknown	1,104	6.4
Transport accidents	911	5.3
Falls	616	3.6
<i>Other reasons</i>	9,026	52.3
15–19 Total	17,243	100.0
All ages total		

Notes: ¹including headache, pain, fever, syncope, convulsions.

Percentages have been rounded and may not add up to exactly 100.

Source data: Hospital Episode Statistics, The Information Centre

Figure 24: Age-standardised rate (per 100,000 population) of emergency hospital admissions via Accident and Emergency departments for children aged 0–19 in the South West, by Primary Care Trust, 2004/05



Notes: Rates are age standardised to the England mid-year population of 2002. See Table A11 in Appendix 2 for underlying data.

Source data: Hospital Episode Statistics, The Information Centre

- the increasing numbers admitted as emergencies from age groups 5–9 through to 15–19.

Despite the fact that absolute numbers of hospital admissions via GP and A&E are relatively similar (147,915 and 133,235 respectively in 2000/01–2004/05 – see Tables 7 and 9) in the South West compared with the rates for England, children in the South West are more likely to be admitted via GP than A&E. There are many potential reasons for this, including the rural nature of the region (children in rural areas are likely to have greater access to GPs than to A&E departments), and variations in local agreements and on-call patterns.

In general, Primary Care Trusts with low admissions overall also have low emergency admissions, and those with high admissions overall have high emergency admissions. North Somerset, Dorset and South Gloucestershire have low rates for all admissions, while Bournemouth and Poole, Torbay and Swindon have high rates (see Figures 21 and 24). However, Cornwall and Isles of Scilly have high rates of admission except via A&E, and Bristol has high rates of admission except via GP. PCTs with high rates of admission via A&E are urban,

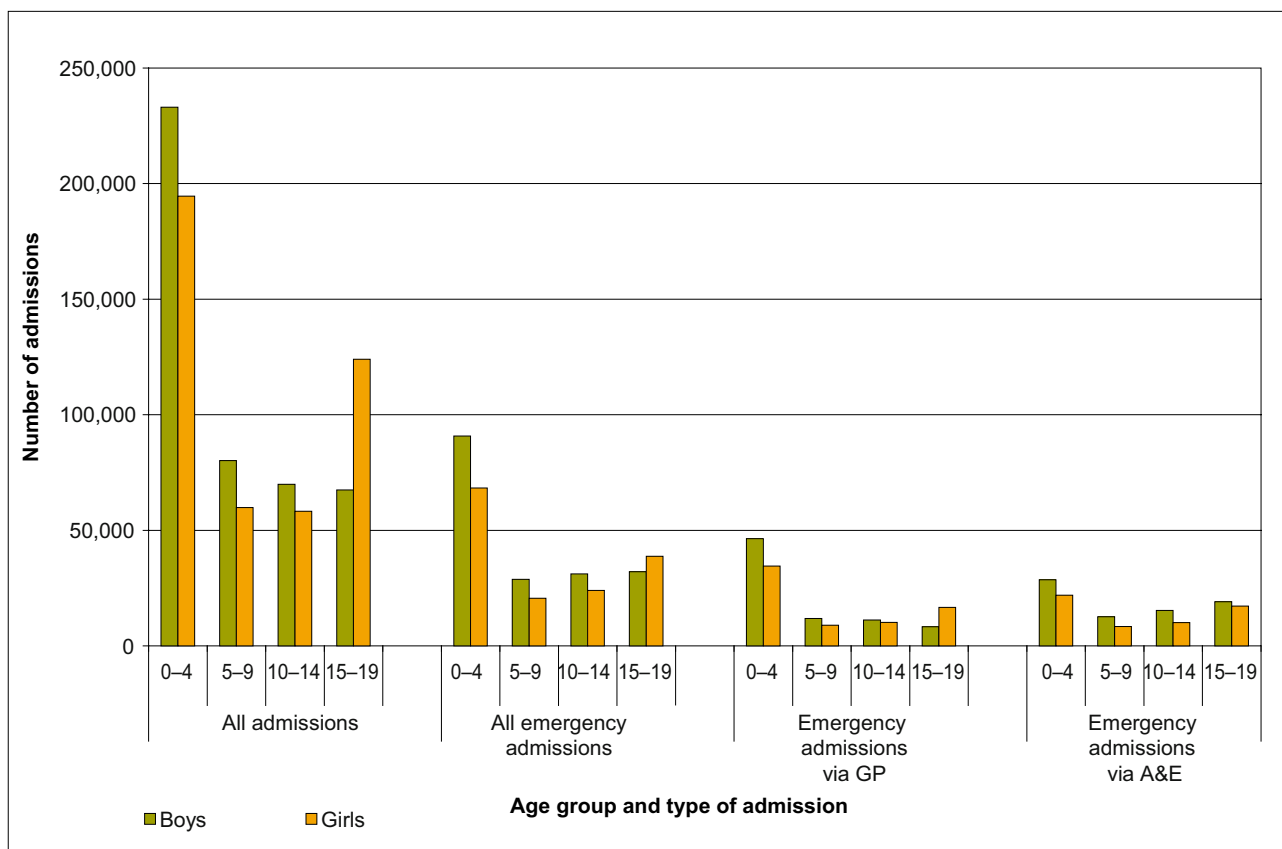
while areas with high rates of GP-referred admissions are generally more rural (with the exception of Plymouth).

4.3.6 Inequalities

There is a clear link between deprivation and rates of hospital admission across all admissions, emergency admissions and A&E admissions, with more children being admitted from the most deprived areas. The gradient in hospital admission rates across deprivation quintiles is most marked for emergency admissions (using quintiles based on the Index of Multiple Deprivation (IMD 2004)). Rates of admission by deprivation quintile are illustrated in Figure 26 (a–c).

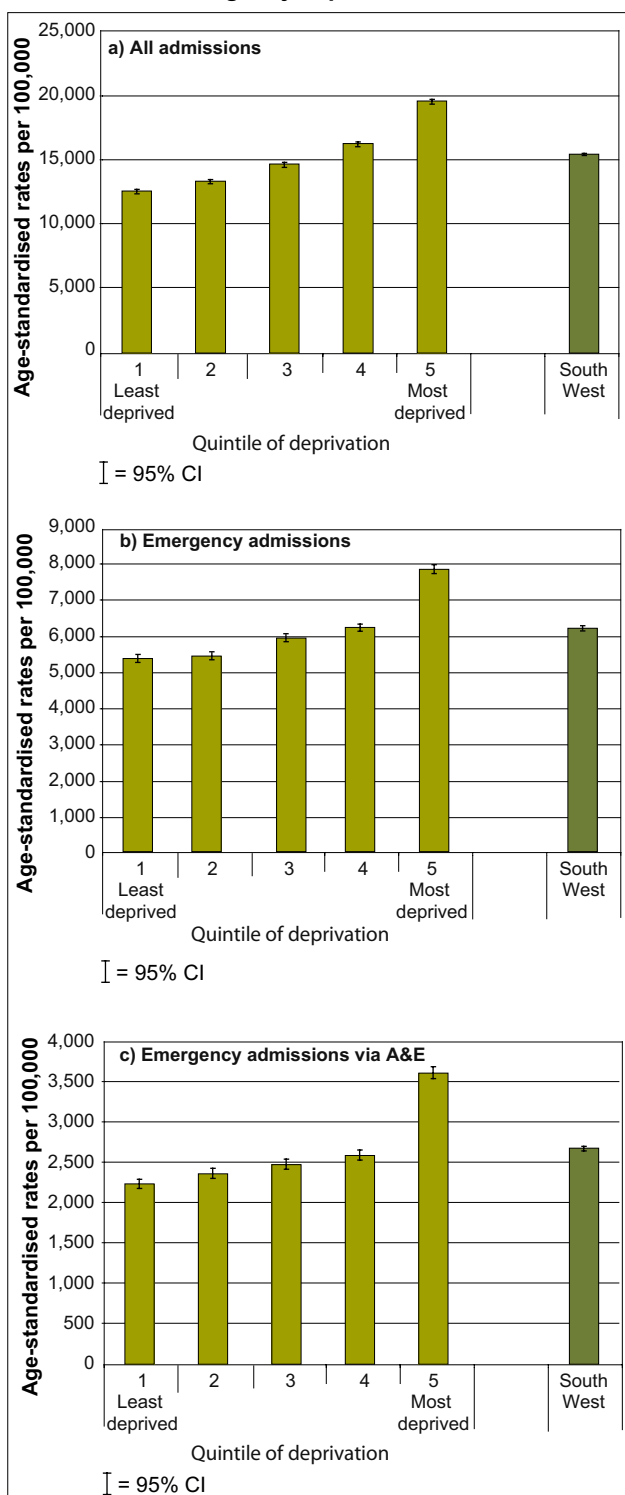
In each case, the admission rates for children in the three least deprived quintiles are significantly lower than for the South West region as a whole. For all admissions (Figure 26a) and emergency admissions (Figure 26b), the rates in the most deprived two quintiles are similar, and significantly higher than for the region overall. For admissions via A&E (Figure 26c) there is a slightly different pattern, with rates in the fourth most deprived quintile being only marginally higher than the those for the whole region, while there is a much greater difference

Figure 25: Numbers of hospital admissions of 0–19 year-olds in the South West by age group, sex and admission type, 2000/01–2004/05



Source data: Hospital Episode Statistics, The Information Centre

Figure 26: Rates of hospital admission for children aged 0–19 (per 100,000 population) in the South West, by quintile of deprivation for a) all admissions, b) all emergency admissions, c) emergency admissions via Accident and Emergency departments, 2004/05



Source data: Hospital Episode Statistics, The Information Centre; Index of Multiple Deprivation (2004)

between this and the most deprived quintile. Figure 26c shows that there is a significant difference in emergency admissions through A&E between the most deprived quintile and the average in the South West. This is possibly because many of the areas in the most deprived quintile are urban (it has already been noted that A&E departments are more likely to be used than GPs in emergencies in urban areas).

4.4 Attendances at Accident and Emergency departments

National A&E data were released for the first time as ‘experimental statistics’ in 2009. The coverage is incomplete and the data quality is poor in places. As a result, the data will need to be validated before it can be used. In the meantime, the South West Public Health Observatory has access to an archive of 2003/04 data collected from some hospitals in the South West and this has been subjected to a number of validation checks and corrections following discussion with Trusts. The quality of the data is variable for each item (e.g. diagnosis, underlying reason for attending). Particularly poorly completed data items are excluded from analyses. Although the national data source is expected to evolve and improve in the future, the following summaries using existing A&E and minor injury unit (MIU) attendance data are a useful addition to our current knowledge of childhood morbidity in the South West.

The size of the population attending an A&E department is not fixed but depends on the nature of the illness, and the provision and accessibility of local services, such as minor injury units, among other factors. Therefore, attendance rates and comparisons between Trusts are not presented here.

4.4.1 Diagnoses

From the available A&E and MIU data (11 departments in the South West), we can show what the primary diagnoses were for children aged 0–19 attending over one year (2003/04) (see Table 11). Over 100,000 attendances in this age group were recorded. Note that even in the nine hospital sites with the most complete information, primary diagnosis was not recorded for 15% of attendances.

Figure 27 shows the number of diagnoses (and per cent attendances in each age/sex group) for the four most commonly recorded diagnoses overall (0–19 years): laceration; contusion/abrasion; dislocation/fracture/joint injury/amputation; and sprain/ligament injury. These

account for approximately 50% of all diagnoses. However, for boys and girls aged 0–4, respiratory conditions are the second most common diagnosis, and 25% of diagnoses for girls aged 15–19 were 'not recorded'. Figure 27 shows that there were more diagnoses of these four conditions in boys than girls in the older age groups (5–19 years). This difference is most pronounced for lacerations and contusion/abrasion and less pronounced for sprain/ligament injury.

4.4.2 Underlying reasons for attendance

The underlying reasons for attendance were recorded at 13 A&E departments during 2003/04, based on a total of 128,000 attendances (see Table 12).

Accidents account for 58% of all attendances in 0–19 year-olds and approximately 44% of attendances among 0–4 year-olds, 68% among 5–14 year-olds and 55% in 15–19 year-olds. The coding in the 'underlying reason' field is not very explicit, so 50% of all reasons have been recorded as 'other accident' and 32% as 'other'. Two types of accident are, however, specifically identified:

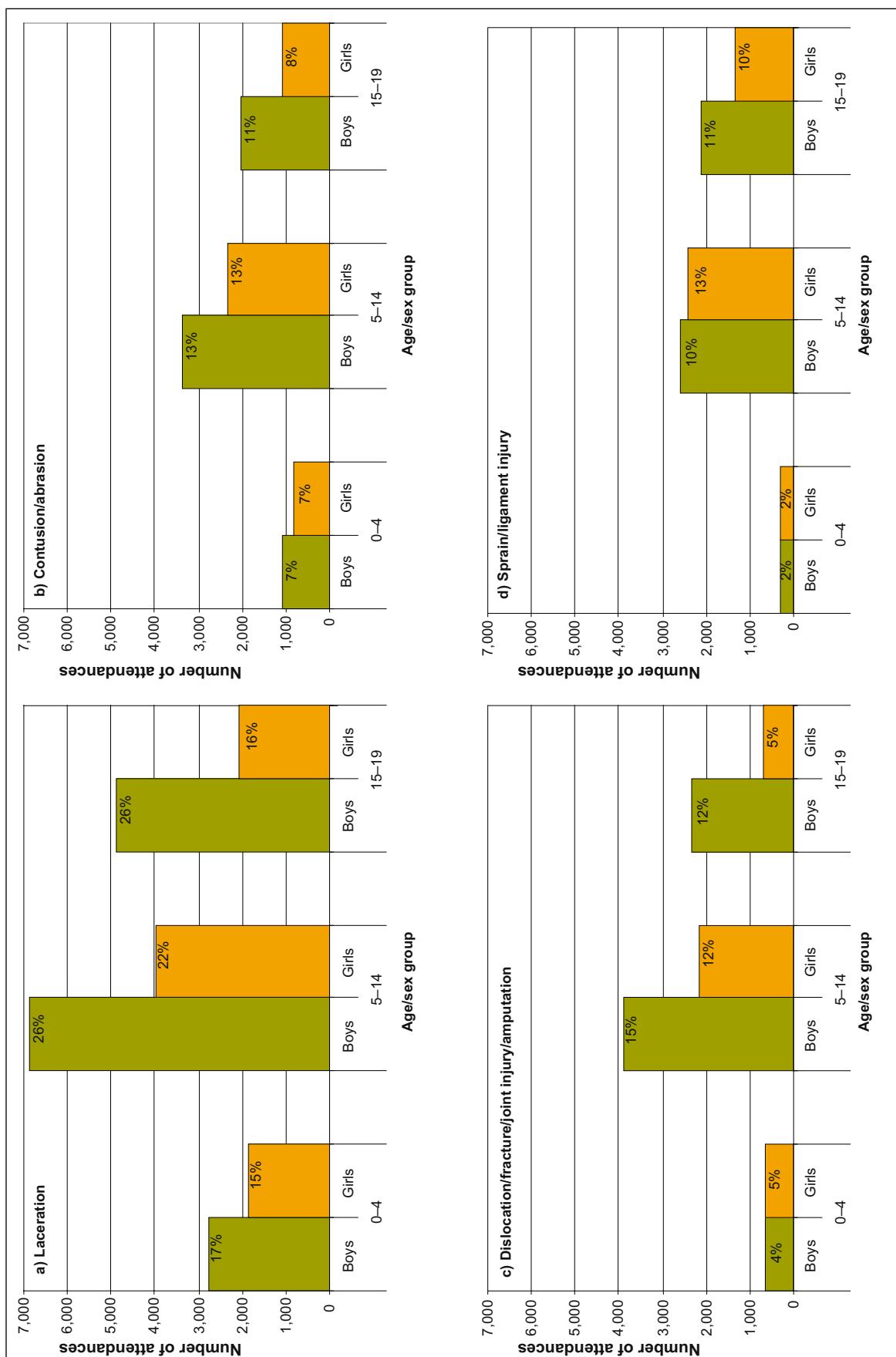
Table 11: Primary diagnosis (top 20) for 0–19 year-olds attending 11 Accident and Emergency and minor injury unit departments¹ in the South West, 2003/04

Primary diagnosis	0–4		5–14		15–19		Total	
	Number	%	Number	%	Number	%	Number	%
Laceration	4,626	16.1	10,862	24.2	6,963	22.0	22,451	21.3
Contusion/abrasion	1,902	6.6	5,732	12.8	3,125	9.9	10,759	10.2
Dislocation/fracture/joint injury/amputation	1,308	4.5	6,076	13.5	3,043	9.6	10,427	9.9
Sprain/ligament injury	597	2.1	5,019	11.2	3,440	10.9	9,056	8.6
Nothing abnormal detected	2,968	10.3	2,587	5.8	2,458	7.8	8,013	7.6
Respiratory conditions	3,825	13.3	1,057	2.4	366	1.2	5,248	5.0
Soft tissue inflammation	1,191	4.1	1,517	3.4	1,007	3.2	3,715	3.5
Diagnosis not classifiable	1,204	4.2	1,181	2.6	932	2.9	3,317	3.1
Gastrointestinal conditions	1,254	4.4	849	1.9	404	1.3	2,507	2.4
Head injury	1,081	3.8	885	2.0	379	1.2	2,345	2.2
Foreign body	827	2.9	871	1.9	372	1.2	2,070	2.0
Ophthalmological conditions	369	1.3	827	1.8	617	1.9	1,813	1.7
Burns and scalds	752	2.6	505	1.1	496	1.6	1,753	1.7
CNS conditions, excluding strokes	485	1.7	360	0.8	263	0.8	1,108	1.1
Poisoning, including overdose	265	0.9	221	0.5	539	1.7	1,025	1.0
Local infection	343	1.2	376	0.8	297	0.9	1,016	1.0
Urological conditions, including cystitis	173	0.6	193	0.4	238	0.8	604	0.6
Dermatological conditions	222	0.8	207	0.5	116	0.4	545	0.5
Bites/stings	128	0.4	211	0.5	120	0.4	459	0.4
Allergy, including anaphylaxis	163	0.6	144	0.3	57	0.2	364	0.3
Other	272	0.9	522	1.2	578	1.8	1,372	1.3
Not recorded	4,849	16.8	4,714	10.5	5,870	18.5	15,433	14.6
Total	28,804	100.0	44,916	100.0	31,680	100.0	105,400	100.0

Note: ¹ Bristol Children's Hospital; Bristol Eye Hospital; Bristol Royal Infirmary; Cheltenham General Hospital; Cirencester Hospital; Dilke Memorial Hospital, Cinderford; Frenchay Hospital, Bristol; Gloucestershire Royal Hospital; Southmead Hospital, Bristol; Stroud General Hospital; Weston General Hospital, Weston-super-Mare.

Source data: South West Injury Surveillance System, South West Public Health Observatory

Figure 27: Most common diagnoses from Accident and Emergency and minor injury unit attendances for children aged 0–19 in the South West, by age group and sex, 2003/04 (number of attendances and percentage of all attendances for each age/sex group)



Note: For example, 17% of boys aged 0–4 years attending A&E presented with a laceration: Bristol Children's Hospital; Bristol Eye Hospital; Bristol Royal Infirmary; Cheltenham General Hospital; Cirencester Hospital; Cirencester Hospital; Dilke Memorial Hospital, Cinderford; Frenchay Hospital, Bristol; Gloucestershire Royal Hospital; Southmead Hospital, Bristol; Stroud General Hospital; Weston General Hospital, Weston-super-Mare.
Source data: South West Injury Surveillance System, South West Public Health Observatory

Table 12: Underlying reasons for 0–19 year-olds attending 13 Accident and Emergency and minor injury unit departments' in the South West, 2003/04

Underlying reason for attendance	0–4		5–14		15–19		Total	
	Number	%	Number	%	Number	%	Number	%
Road traffic accident	155	0.5	511	0.9	1,629	4.1	2,295	1.8
Assault	36	0.1	324	0.6	1,252	3.1	1,612	1.3
Deliberate self-harm	*	*	210	0.4	819	2.1	1,054	0.8
Sports injury	33	0.1	4,082	7.5	3,436	8.6	7,551	5.9
Other accident	14,533	43.3	32,509	59.8	16,753	42.0	63,795	49.9
Brought in dead	*	*	10	0.0	*	*	18	0.0
Other	16,250	48.5	13,266	24.4	11,900	29.8	41,416	32.4
Not recorded	2,496	7.4	3,475	6.4	4,136	10.4	10,107	7.9
Total	33,531	100.0	54,387	100.0	39,930	100.0	127,848	100.0

Notes: Bristol Children's Hospital; Bristol Eye Hospital; Bristol Royal Infirmary; Cheltenham General Hospital; Cirencester Hospital; Dilke Memorial Hospital, Cinderford; Frenchay Hospital, Bristol; Gloucestershire Royal Hospital; Southmead Hospital, Bristol; Royal Bournemouth Hospital; Royal Cornwall Hospital, Truro; Stroud General Hospital, Weston General Hospital, Weston-super-Mare.

* Small numbers have been suppressed in line with Office for National Statistics guidelines. Therefore the numbers in the columns, when added, may not equal the totals shown.

Source data: South West Injury Surveillance System, South West Public Health Observatory

sports injury (6% of attendances in 0–19 year-olds) and road traffic accidents (2%). The most common non-accidental injuries resulting in A&E attendance are assault (1%) and deliberate self-harm (1%). Note that, even in the 11 hospital sites with the most complete information on underlying reason for A&E attendance, the reason was not recorded in 8% of cases.

Figure 28 shows the four specifically identified underlying reasons for A&E attendance (number and per cent attendances in each age/sex group) – sports injuries, road traffic accidents, assault and deliberate self-harm. Together, these four causes account for 1% of attendances among 0–4 year-olds, 9% of attendances among 5–14 year-olds and 18% of attendances among 15–19 year-olds. Each of these causes, except deliberate self-harm, is more common in boys than girls, and the chart shows the relative importance of sports injuries among 5–19 year-olds. Among 5–14 year-olds sports injuries account for 9% of attendances in boys and 5% in girls. In the older age group (15–19), sports injuries account for 13% of attendances in boys and 3% in girls, road traffic accidents for 4% of attendances in boys and girls, assault for 4% in boys and 2% in girls, and deliberate self-harm for 1% in boys and 3% in girls.

4.4.3 Where incidents occur

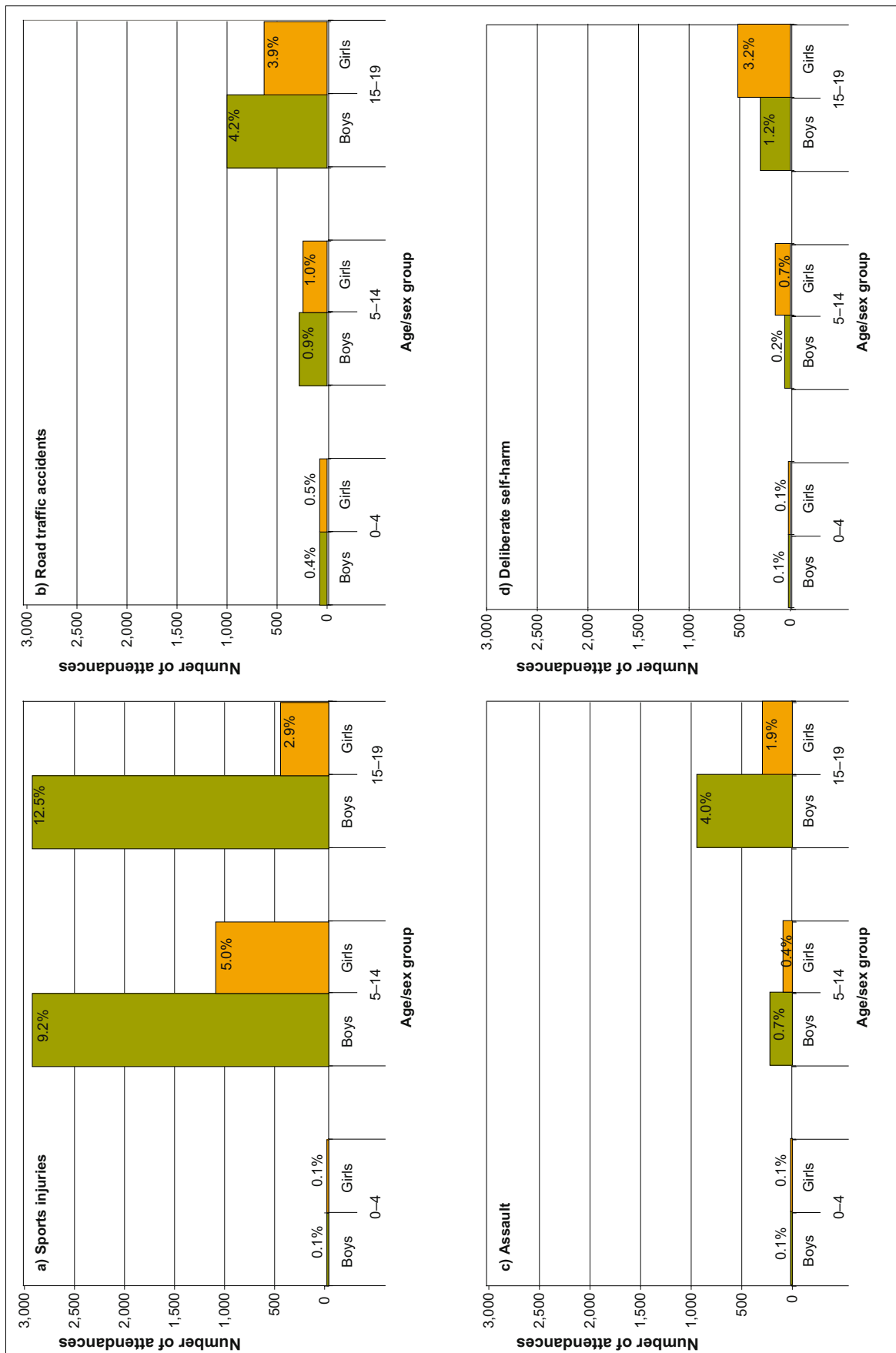
The most common place for incidents that result in A&E attendance to occur is in the home. Data on 145,000 A&E attendances at 13 hospital sites in the South West (Gloucestershire, Bristol, Weston-super-Mare, Barnstaple,

Dorchester and Truro) during the year 2003/04 showed that incidents occurred in the home in 73% of cases for 0–4 year-olds, 35% for 5–14 year-olds and 31% for 15–19 year-olds. Incidents occurred in public places in 9% of cases for 0–4 year-olds, 29% for 5–14 year-olds and 37% for 15–19 year-olds. While there is no gender difference for 0–4 year-olds, for 5–19 year-olds incidents were more likely to have occurred in the home for girls and in public places for boys. Overall, 12% of incidents occurred in educational establishments.

4.4.4 Inequalities

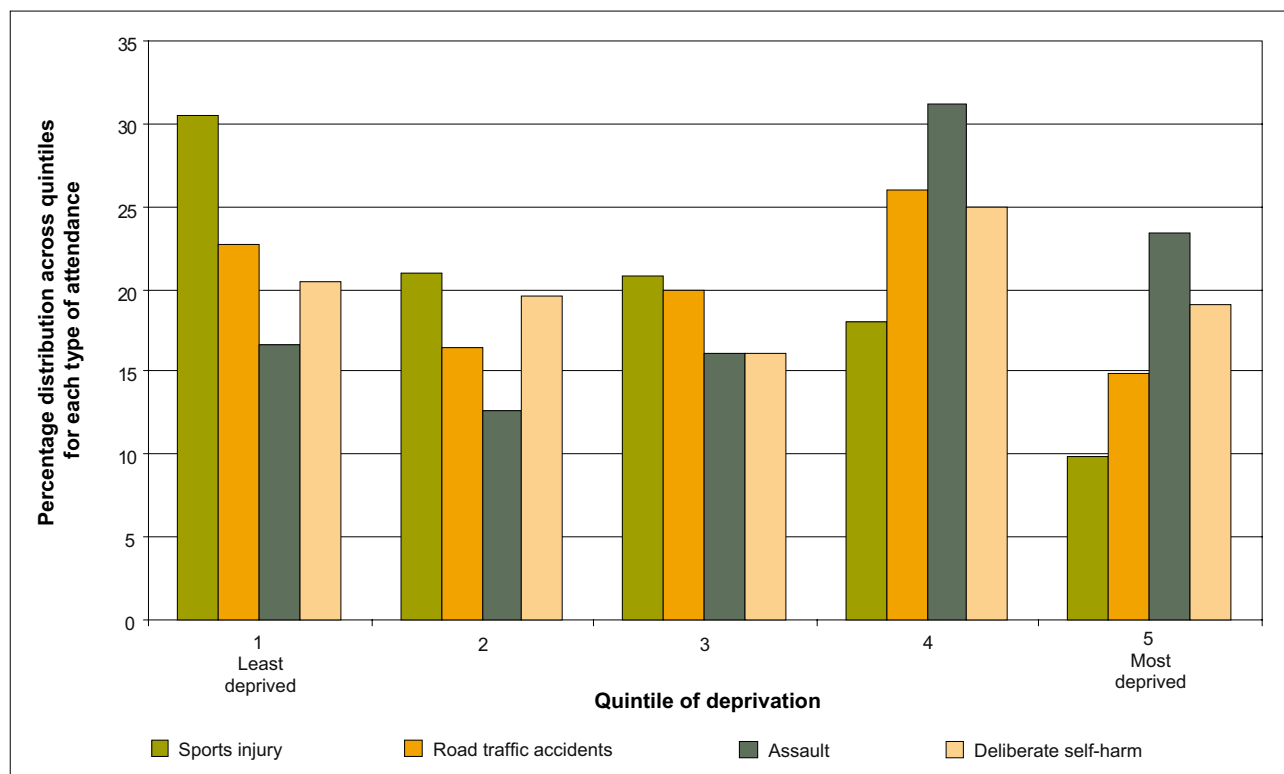
Figure 29 shows the percentage of all A&E attendances (aged 0–19 years) due to sports injuries, road traffic accidents, assault and deliberate self-harm by deprivation quintile. These figures are based on 100,000 A&E attendances at nine hospital sites during the year 2003/04. The chart shows that attendance due to sports injuries decreases with increasing deprivation. This difference is most striking between the least and most deprived quintiles and is likely to reflect varying levels of participation in organised sports in different socioeconomic groups. Conversely, the proportion of attendances due to assault appears to be higher in more deprived areas. There is no clear pattern across deprivation quintiles for either road traffic accidents or deliberate self-harm, though both contribute to higher levels of A&E attendances in the fourth quintile. Different patterns might be seen with more complete coding. Most attendances are simply coded 'other accidents'. It

Figure 28: Specifically identified underlying reasons for attendance for children aged 0–19 attending 13 Accident and Emergency and minor injury unit departments in the South West, by age group and sex, 2003/04 (number of attendances and percentage of all attendances for each age/sex group)



Note: For example, 9.2% of boys aged 5–14 years attending A&E/MIU were injured due to participating in sport. Bristol Children's Hospital; Bristol Eye Hospital; Bristol Royal Infirmary; Cheltenham General Hospital; Cirencester Hospital; Dilke Memorial Hospital; Cinderford; Frenchay Hospital, Bristol; Gloucestershire Royal Hospital; Southmead Hospital, Bristol; Royal Bournemouth Hospital; Royal Cornwall Hospital, Truro; Stroud General Hospital; Weston General Hospital, Weston-super-Mare

Figure 29: Underlying reasons for attendance at Accident and Emergency and minor injury unitⁱ departments for children aged 0–19 at eleven hospital sites in Gloucestershire, Bristol and Weston-super-Mare, by quintile of deprivation, 2003/04



Note: ⁱBristol Children’s Hospital; Bristol Eye Hospital; Bristol Royal Infirmary; Cheltenham General Hospital; Cirencester Hospital; Dilke Memorial Hospital, Cinderford; Frenchay Hospital, Bristol; Gloucestershire Royal Hospital; Southmead Hospital, Bristol; Stroud General Hospital; Weston General Hospital, Weston-super-Mare.

Source data: South West Injury Surveillance System, South West Public Health Observatory; Index of Multiple Deprivation 2004

is important to consider that these data are based on a sample of hospitals in the South West and therefore may not be representative of the region as a whole.

4.5 Outpatient data

Outpatient data from the HES dataset are currently being examined for robustness and validity, and are not presented here. However, data from Avon Trusts were made available to the SWPHO and provide an example of how this information can be used to describe the pattern of outpatient visits among 0–19 year-olds. During the period 2000/01 to 2003/04, 17% of outpatient visits were made by 0–19 year-olds. Of the 585,494 visits by 0–19 year-olds, 22% were aged 0–4, 22% 5–9, 28% 10–14 and 28% 15–19. Within each of these age groups, about three-quarters of the appointments were follow-up visits, a similar proportion to that of adults (aged 20 and over). Of the remaining appointments, half were referrals from GPs and half were referrals from elsewhere. This is in contrast to adults, who were two times more likely to be referred by a GP as through another source.

Table 13 presents data from North Bristol NHS Trust, illustrating the outpatient specialties most commonly attended by children. There were 32,432 outpatient visits by 0–15 year-olds during the year 2003/04. Unsurprisingly, 29% of outpatient visits in this age group were to paediatric specialists. 19% were for non-consultant visits, which included physiotherapy.

4.6 ‘Self-reported’ health data

The 2001 Census included two questions on health, one on whether it was believed to be ‘good’, ‘fairly good’ or ‘not good’ over the previous year and one on whether individuals had any ‘long-term illness, health problem or disability which limited their daily activities or work that they could do’. Results for children aged 0–15 are presented here. These questions would most likely have been answered by an adult for a child, so are not strictly self-reported. From these results we have estimated that among 0–19 year-olds in the South West, 49,000 have a limiting long-term illness and around 13,000 have ‘not good’ health.

Table 13: Numbers of 0–15 year-olds attending outpatient clinics in North Bristol NHS Trust for the five most commonly attended specialties, 2003/04

Specialty	Number	% of all outpatients aged 0–15
Paediatric medicine	9,339	28.8
Non-consultant	6,011	18.5
Trauma & orthopaedics	5,583	17.2
Plastic surgery	2,918	9.0
Orthodontics	2,863	8.8
Total	26,714	82.3

Source: North Bristol NHS Trust

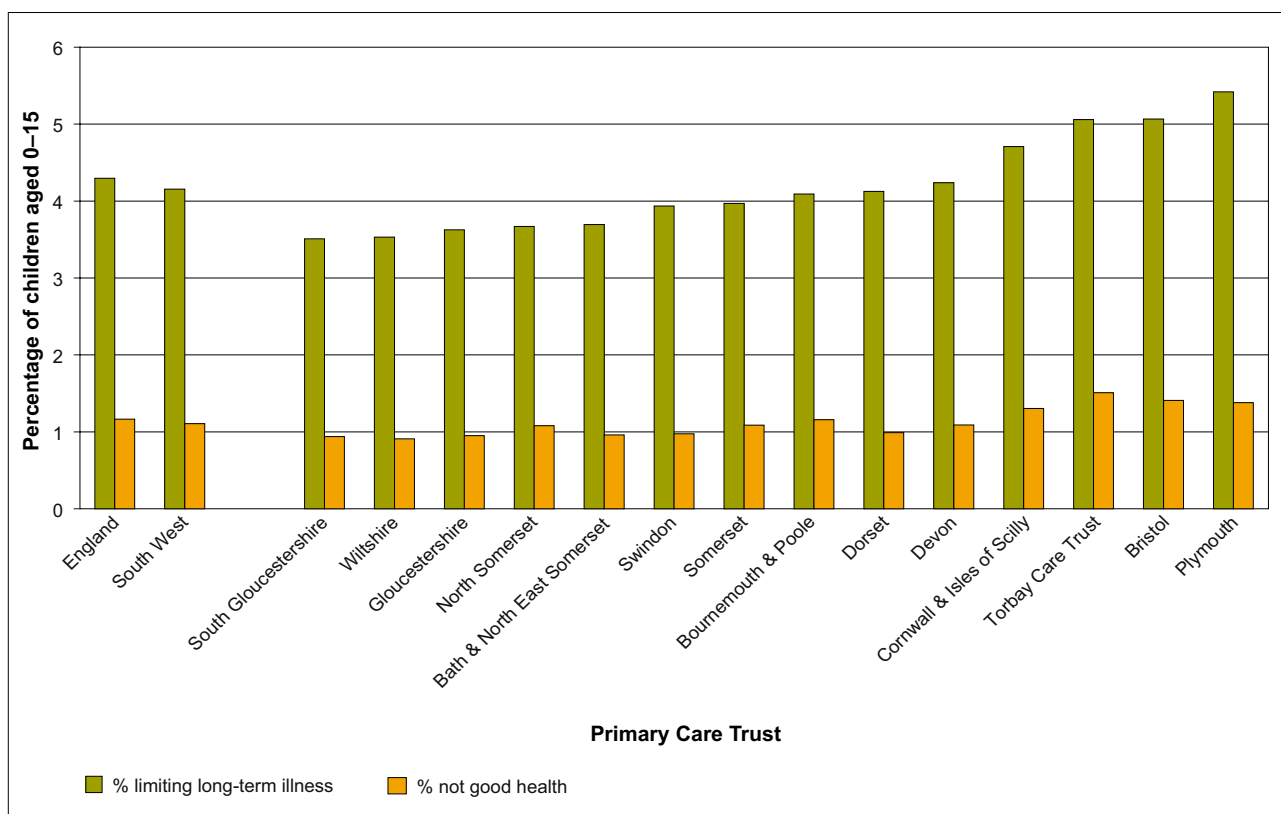
The percentage reporting ‘not good’ health was lower in the South West than in England as a whole for all age groups, including children. However, this masks within-region variations from 0.9% of children in Wiltshire Primary Care Trust to 1.5% in Torbay Care Trust (see Figure 30). Similarly, an analysis of responses by Local

Authority ranges from 0.7% in Cotswold to 1.5% in Torbay (see Figure 31). Percentages for the Isles of Scilly have been suppressed due to small numbers.

Self-reported limiting long-term illness (LLTI) among children, also plotted in Figures 30 and 31, is three to four times greater than ‘not good’ health. The prevalence of LLTI among children in the South West is below levels in England, but variations across the region remain. South Gloucestershire PCT has the lowest (3.5%) and Plymouth PCT having the highest (5.4%) levels. Rates for Local Authority Districts vary more widely, from 1.6% in the Isles of Scilly to 5.4% in Plymouth.

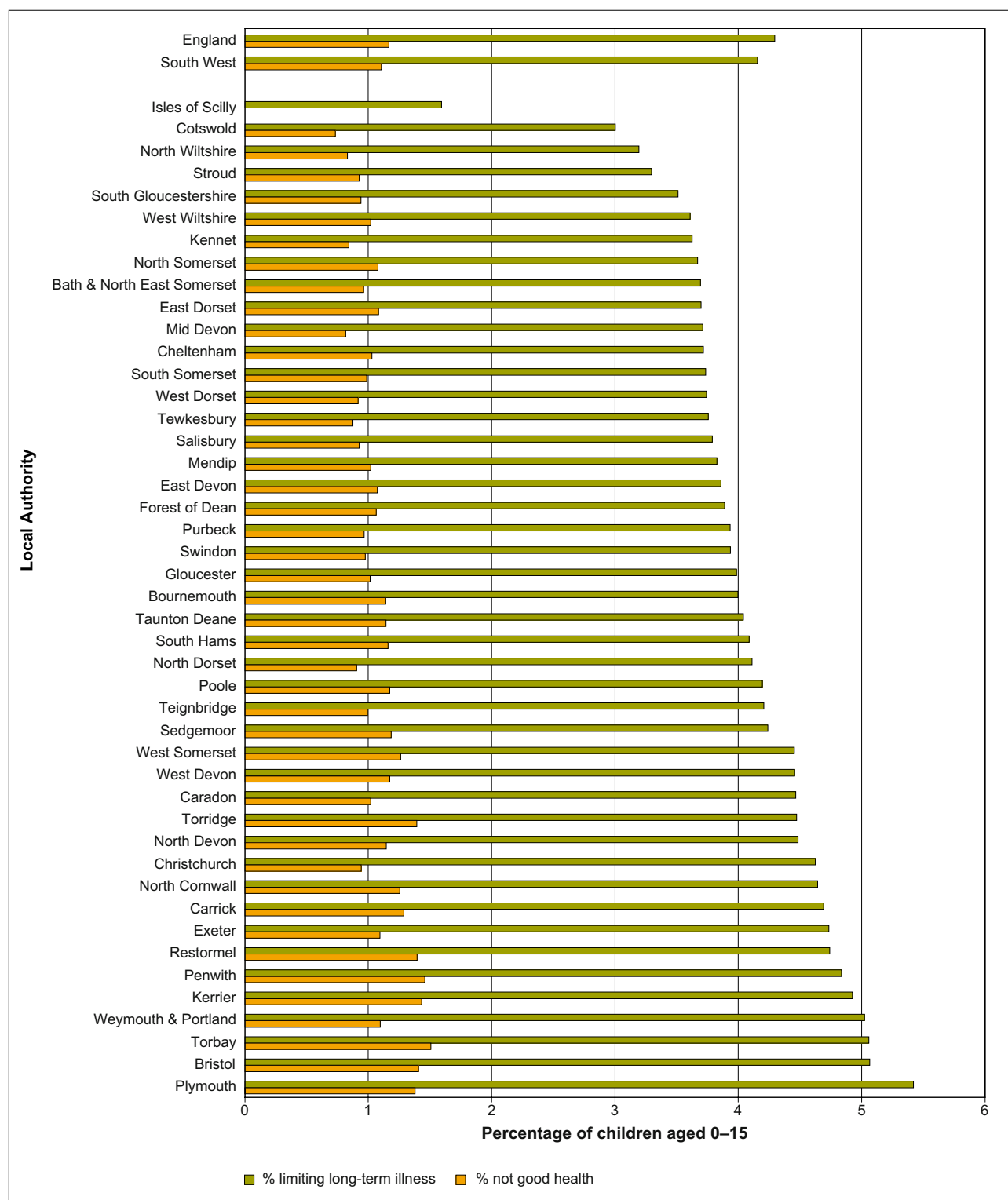
Rates of both of these measures of poor health rise steeply with age. In older age groups LLTI rates are highly predictive of mortality,³¹ but in younger age groups, for whom injuries and other external causes are major causes of death, the association is weak. Nevertheless, these measures are useful for planning services. Figure 32 shows that those in the most deprived quintile have statistically significantly higher rates of limiting long-term illness, while the link between ‘not good’ health and deprivation is less clear.

Figure 30: Percentage of children aged 0–15 with limiting long-term illness and ‘not good’ health by Primary Care Trust in the South West, 2001



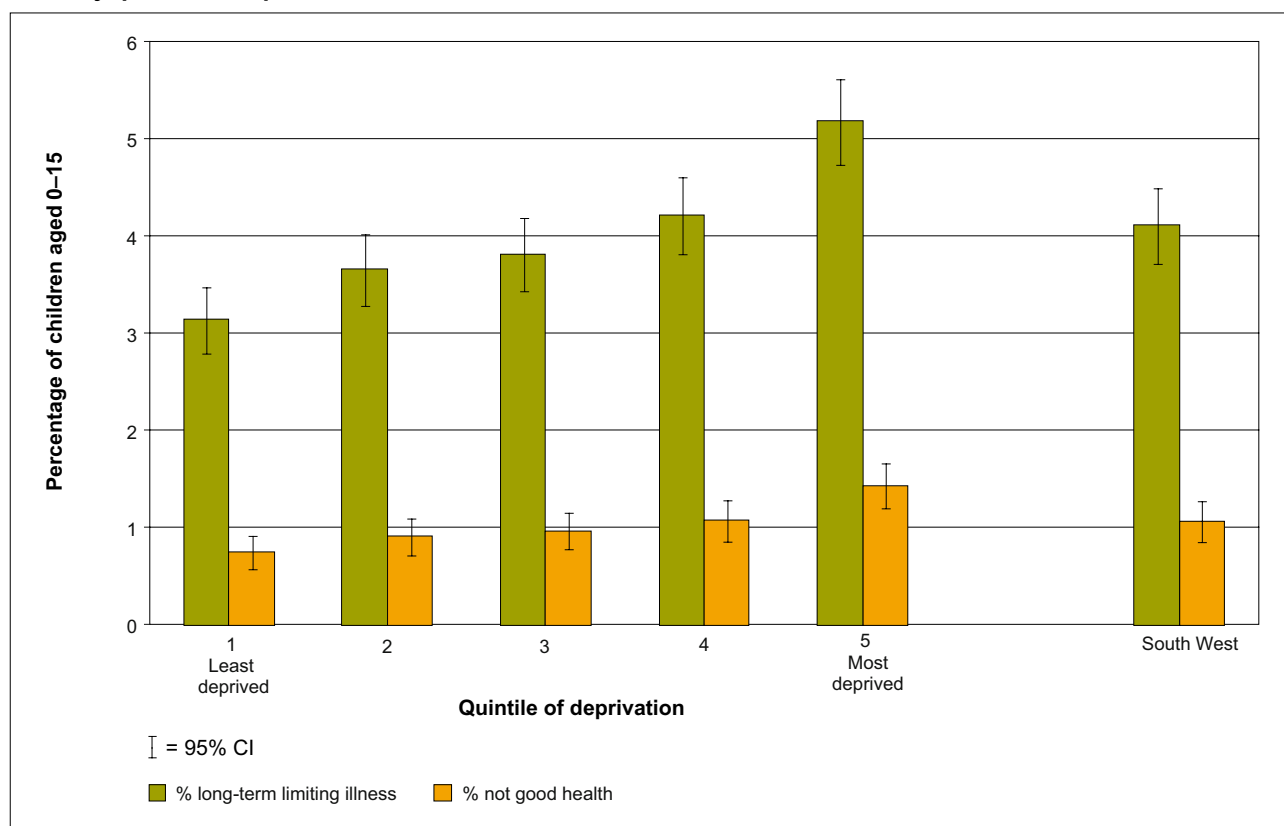
Source data: 2001 Census, Office for National Statistics

Figure 31: Percentage of children aged 0–15 with limiting long-term illness and ‘not good’ health by Local Authority in the South West, 2001



Source data: 2001 Census, Office for National Statistics

Figure 32: Percentage of children aged 0–15 with limiting long-term illness and 'not good' health in the South West, by quintile of deprivation, 2001



Source data: 2001 Census, Office for National Statistics and Index of Multiple Deprivation (2004)

5 Conclusions

5.1 Issues raised

Children in the South West region are, overall, healthier than their counterparts in other regions. However, many of the child deaths and much of the morbidity are potentially avoidable, suggesting that there is still considerable room for improvement.

In order to understand how best these improvements can be made, and which areas, causes and population groups should be prioritised, it is essential to understand variations by age group, sex, deprivation and geography. This bulletin has used readily available sources of information to highlight some of these areas. Findings of particular importance are:

- Infant mortality rates are generally low in the region compared to England. Latest estimates suggest that the inequalities target for the South West is tough but achievable by 2010. In addition, the region does not compare favourably to some of its European counterparts on child health indicators, highlighting the fact that there is more to be done. If infant mortality in the South West was at the level of the group with the lowest mortality, about 50 infant lives could be saved each year.
- Mortality rates in children aged 1–19 are generally lower than in the first year of life, but these still exhibit a steep socioeconomic gradient and a large proportion are potentially avoidable. The main causes of death vary by age and sex, but injuries, suicides and cancers are the biggest contributors, making up over 50% of all causes. Almost two-thirds of male deaths and half of female deaths are classified as potentially avoidable.
- There is also strong evidence of a steep socioeconomic gradient for child morbidity in the region.
- Hospital admission rates in the South West are higher than for England, and the causes of these admissions vary by age, sex and deprivation. In younger children (aged 0–4) acute respiratory infections predominate, while the most common causes in children aged 5–14 are injuries, especially in boys. The most common reason for admissions in the 15–19 age group is neoplasms and accidents for boys, and abdominal

pain, nausea and vomiting and abortive pregnancy for girls. Deliberate self harm features among the reasons for emergency admission of girls of 15–19. Generally, injuries, self-harm, abortive pregnancy and ear, nose and throat (ENT) conditions contribute most to childhood morbidity in the South West.

Below are examples of interventions that have been shown to be effective. Local practitioners and commissioners should consider these and other interventions to determine how best to tackle the health issues of their local child populations.

5.2 Interventions

5.2.1 Maintaining maternal health

5.2.1.1 *Early booking and good antenatal care (NI 126)*

The new National Indicator to increase the numbers of women booking for antenatal care before 12 weeks of pregnancy (NI 126) is being promoted as a proxy for effective antenatal care that will support early identification of risk factors with a potential impact on the outcome of the pregnancy. Targeted interventions can then mitigate the risks in order to reduce the numbers of low birth weight babies and minimise neonatal mortality and morbidity.

*Maternity Matters*⁴ provides a framework for commissioners to develop services that give the most vulnerable women access in the way that is most appropriate for them.

There is, additionally, a range of National Institute for Health and Clinical Excellence (NICE) guidance to support care of pregnant women, including:

- the revised guidance on antenatal care (CG62);³²
- antenatal care and diabetes (CG63);³³
- antenatal and postnatal mental health (CG45).³⁴

Guidance on the care of pregnant women with complex social factors is currently in development.

5.2.1.2 *Smoking cessation in pregnancy (NI 123)*

Smoking during pregnancy is a major predictor of low birth weight, which makes the greatest contribution to

the causes of infant mortality. Women who reduced their smoking by 50% or more had babies on average 92g heavier, whilst quitters' infants had birth weights on average 250g heavier.

From October to December 2006 in the South West, the number of mothers smoking at the date of delivery as a percentage of the total number of maternities was 15.9%, ranging from 10.4% in North Somerset to 24.6% in Plymouth. (Smoking status information was not collected for 2% of women.)

Current estimates suggest that if the smoking prevalence in manual groups was to fall from 26% to 15%, perinatal mortality should fall to 8.5 per 1,000 live births and the infant mortality gap could be reduced by 11%, from 1.9 to 1.7 per 1,000 live births. Targeted and effective smoking cessation programmes during pregnancy could therefore play a large part in reducing the overall inequalities in infant mortality.

5.2.1.3 Avoidance of passive smoking in children

For those mothers who have not been able to stop smoking in pregnancy, early support by healthcare professionals to promote the importance of a smoke-free environment for children can be significant in reducing the incidence of upper respiratory tract infections in young children and Sudden Infant Death Syndrome.

5.2.1.4 Folate and vitamin D intake during pregnancy

Folate (or folic acid) is needed by the body to make DNA, for the formation of new cells and the production of healthy red blood cells. An optimal intake of folate both prior to conception and during pregnancy is particularly important. Research has shown that women who increase their folate intake before pregnancy and during its early stages can help to reduce their risk of having a child with a neural tube defect (NTD) such as spina bifida. This is where the brain or spinal cord or their protective coverings fail to develop properly. It is therefore recommended that, to reduce the risk of NTDs in the unborn child, all women who could become pregnant take a 400mcg folic acid supplement daily prior to conception until the twelfth week of pregnancy.³⁵

5.2.1.5 Drug and alcohol misuse during pregnancy

A report on drug misuse and pregnancy in the Northern and Yorkshire Region³⁶ identified several effects on

pregnancy and maternal physical health associated with drug misuse, including:

- pre-term delivery;
- placental abruption;
- breech presentation;
- post-partum complications;
- sexually transmitted diseases and other infections;
- inadequate nutrition and anaemia;
- dental caries;
- more painful parturition and placental insufficiency leading to intrapartum hypoxia and foetal distress;
- maternal hypertension and pneumothorax (in the case of cocaine).

It also highlighted the likely detrimental effects on offspring, including impaired growth of the foetus and premature delivery resulting in low birth weight and increased perinatal mortality, and made a number of key recommendations, including improving information systems, monitoring performance of services against standards, and working with drug treatment agencies to develop appropriate services for pregnant drug misusers.

Latest guidance from the Government advises women not to drink and to avoid getting drunk while trying to conceive and during pregnancy. Drinking while pregnant may cause miscarriage but the level at which drinking becomes a danger is disputed; some suggest that risk of miscarriage is increased in women drinking 1–2 units of alcohol per day, while others report increased risks only at higher levels of consumption.³⁷ It is estimated that around 61% of women drink during pregnancy and of these 71% drink less than 1 unit of alcohol per week. Around 1% of pregnant women drink more than 14 units of alcohol per week.

Foetal Alcohol Syndrome is the name given to a group of characteristics reported in the babies of women with a clearly identifiable drinking problem. Symptoms include: growth deficiencies, central nervous system defects, lowered IQ and facial malformations. Experimental studies suggest that dose-response relationships between alcohol and brain function vary across the stages of pregnancy. Early heavy exposure poses the greatest risk but the mechanisms are poorly understood. Some of the

apparent effects of alcohol on child physical growth and development attenuate and disappear with age.

Between 2% and 30% of women drinking more than 56 units of alcohol per week may have babies with Foetal Alcohol Syndrome. The overall incidence in industrialised countries is estimated to lie between 0.4 and 2 per 1,000 live births, suggesting that England and Wales might expect between 240 and 1,190 such cases per year. There are around 52,000 live births each year in the South West, suggesting that there may be between 21 and 104 babies born with the syndrome in the region each year. There is no consensus on whether light drinking affects risk. Foetal Alcohol Syndrome is also related to socioeconomic status, maternal nutrition, obstetric history, maternal age, and possibly other confounding factors.³⁷

5.2.1.6 Maternal obesity

Obesity is linked to many serious health risks in both adults and children. These include Type 2 diabetes, cardiovascular problems, respiratory illnesses, joint and movement problems, psychological disorders, such as depression and low self-esteem, and lowered academic achievement.

These health risks may increase during pregnancy and can lead to, for example, gestational diabetes resulting in potential neonatal complications for the baby. Interventions aimed at supporting mothers to manage their weight have, therefore, both immediate and long-term health gains. This support can be offered individually by healthcare professionals, or as part of a woman's daily interactions with Children's Centres, Early Years settings and other community-based provision.

The recommendations in *Maternity Matters*⁴ provide direction to maternity services about more accessible ways of providing support to pregnant women that is universal and non-stigmatising, but identifies specific issues early and facilitates referral for targeted support. NICE guidance also exists to support evidence-based interventions, for example in *Maternal and Child Nutrition* (PH011).³⁸

5.2.2 Breastfeeding

Infants who are not breastfed are five times more likely to be admitted to hospital with infections in their first year of life.³⁹ Breastfeeding is much less prevalent amongst disadvantaged groups. In general, mothers who do not initiate breastfeeding tend to be younger, less educated and from lower income groups. There is also evidence that breastfeeding is protective against obesity in later life. Therefore, effective targeted breastfeeding initiation and

continuation initiatives could have considerable impact on infant and longer term health and have been built into the development of National Indicator 53, which measures the maintenance of breastfeeding at six weeks.

From October to December 2006 in the South West the number of mothers initiating breastfeeding within 48 hours of birth as a percentage of the total number of maternities was 74.0%, ranging from 59.9% in Plymouth to 83.1% in Bath and North East Somerset. Breastfeeding information was not collected for 2.8% of women.⁴⁰

The UNICEF Baby Friendly Initiative⁴¹ identifies a set of key factors both within hospital and community settings that support women to maintain breastfeeding wherever they are. Whilst it is not always possible for settings to be accredited 'Baby Friendly', the key success factor is consistent support that:

- has a clear organisational policy supported by training;
- has good information for women;
- helps to initiate immediate post-birth feeding;
- offers practical support at feed time, promotes demand feeding and no other food/fluids to be given;
- provides rooming-in (in hospital) and a welcoming atmosphere (in other settings);
- advises no teats or dummies to be given;
- develops support groups for women.

These factors can be incorporated into service specifications and operating protocols for a range of environments, both within and outside the NHS.

5.2.3 Avoiding obesity

Obesity is linked to many serious health risks in both children and adults as described in 5.2.1.6. Evidence suggests that obese children are likely to go on to become obese adults, with health problems escalating in seriousness with age. Without intervention, it is forecast that one in five children – around 100,000 children in the South West – will be obese by 2010.

The Body Mass index (BMI) is the common method of evaluating individuals to see if they are under or overweight. It involves comparing their weight to their height by dividing the weight measurement (expressed in kilograms) by the square of the height (expressed in metres). There is ongoing debate on the definition of

overweight and obesity in childhood. BMI is a measure of overweight and obesity in children, although it is liable to change substantially as the child is growing. The clinical definition of overweight and obesity in children is based on BMI percentile charts for boys and girls plotted at different ages from 2–16 years. The National Institute for Health and Clinical Excellence (NICE) recommends that tailored clinical intervention should be considered for children with a BMI at or above the 91st centile, depending on the needs of the individual child and family, and that an assessment of comorbidity should be considered for children with a BMI at or above the 98th centile.⁴²

The National Child Measurement Programme (NCMP) uses the British 1990 growth reference (UK90) for BMI and the 85th and 95th percentiles to define children as obese or overweight according to age and sex. This definition is commonly used in the UK for population monitoring.⁴³

Childhood obesity has attracted two National Indicators (55: Obesity in primary school age children in Reception and 56: Obesity in primary school age children in Year 6) and physical activity a further two (52: Take up of school lunches and 110: Young people's participation in positive activities), all with the aim of halting the year-on-year rise in obesity among children under 11 by 2010 in England. Data collection to monitor these targets at a local level is

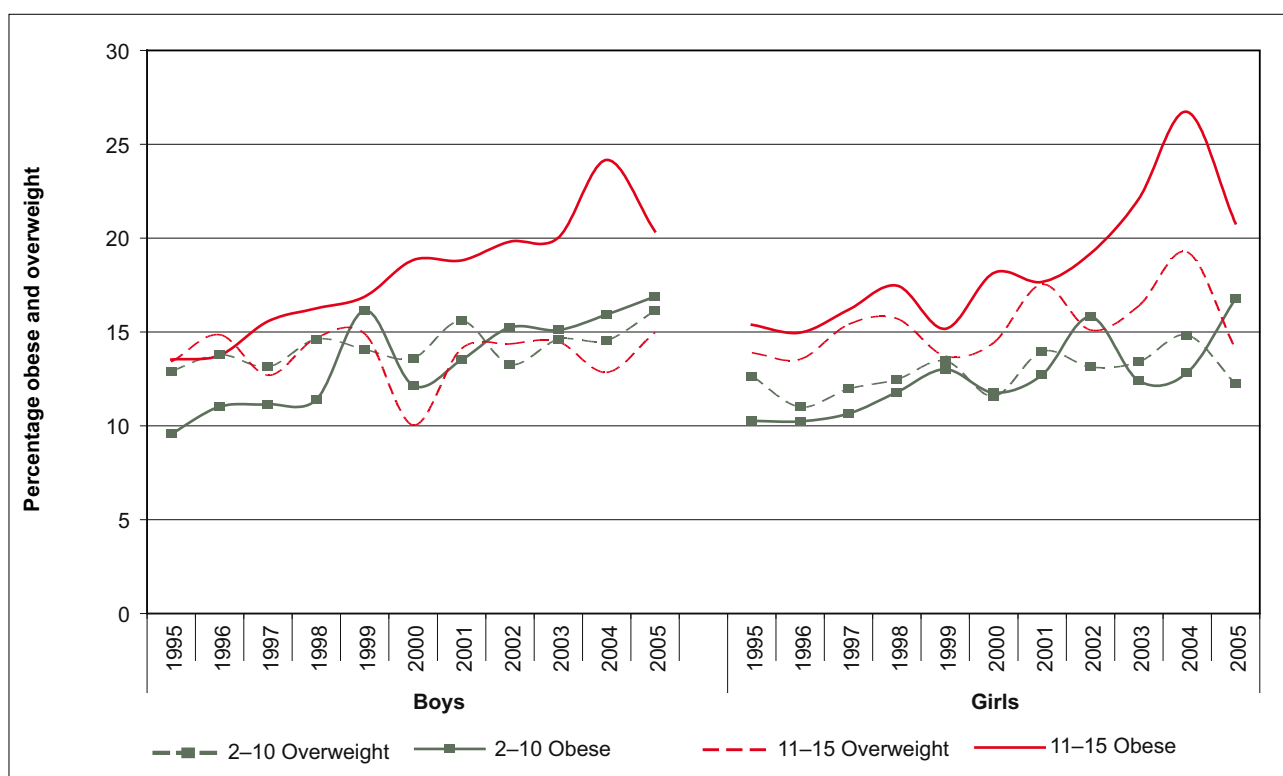
at a preliminary stage, but usable data should be available shortly. Figure 33 shows trends in obese and overweight in children in England.

The first report on NCMP data (collected in 2006/07) was published in summer 2008 by the Association of Public Health Observatories.⁴³ The South West Public Health Observatory will be producing a regional report using the same data set due to be published later this year.

The causes of obesity are multi-faceted. A number of related interventions are currently recommended:

- The Healthy Schools Programme, whereby schools adopt a 'whole community' approach to addressing a range of health issues, including healthy eating and physical activity.⁴⁴
- The National Child Measurement Programme sets out support that can be offered via a School Nursing Service to address childhood obesity.⁴⁵
- The NICE *Guidelines on Maternal and Child Nutrition (PH011)*³⁸ and *Physical Activity (PH002)*,⁴⁶ together with the forthcoming *Promoting Physical Activity in Children* all provide a framework to develop new approaches.

Figure 33: Obese and overweight children aged 2–15, by sex, England, 1995–2005



Source data: Health Survey for England (2005)

5.2.4 Emotional health and wellbeing

There is strong evidence that the positive emotional health and wellbeing of children is associated with their healthy development and subsequent life chances.⁴¹ Many agencies are working to improve emotional health outcomes for children and the work is now supported by National Indicators 50, 51, 58 and 69. It is not the intention to reflect the full range of interventions here, but a selection of approaches that are currently in use includes:

- anti-bullying strategies within schools;⁴⁷
- the emotional health and wellbeing aspects of Healthy School Status;⁴⁸
- the development in Bristol of a Schools Toolkit that identifies for each school community the most appropriate intervention at the earliest possible stage;⁴⁹
- the development across the South West of the Primary Mental Health Worker role;
- a three-year Targeted Mental Health in Schools project, funded by the Department for Children, Schools and Families, and being piloted in Cornwall, Gloucestershire and Swindon;⁵⁰
- the publication of recent *NICE Guidance: Depression in Children and Young People (CG28)*,⁵¹ *Social and Emotional Wellbeing in Primary Education (PH12)*,⁵² and *Promising Young People's Social and Emotional Wellbeing in Secondary Education (PH20)*.⁵³

5.2.5 Supporting parents

Government initiatives over the last ten years such as Sure Start, the Children's Fund, the development of Children's Centres and Extended Services around schools, as well as preventative work with young offenders, have all identified poor parenting as a key factor in maintaining health inequalities.

The pattern of support interventions has developed locally in an ad hoc manner and, in some areas, has resulted in incoherent and contradictory support – often directed towards the same vulnerable families. The distinction between universal, targeted and specialist interventions has not been well articulated in many service specifications, leading to confusion for practitioners. This situation is being remedied at a national policy level and recommendations include:

- the Child Health Promotion Programme⁵³ which provides a framework for early intervention and support. It draws on evidence-based parenting initiatives as part of a coherent local multi-agency strategy, and incorporates the recommendations from the review of health visiting, *Facing the Future*;⁵⁴
- the development of multi-agency locality teams within Children's Centres to offer accessible non-stigmatising services to vulnerable families;
- the appropriate use of specific interventions, e.g. The Family Nurse Partnership approach⁵⁵ focusing on first-time mothers under the age of 21, Family Interventions Projects, working with families at risk of Antisocial Behaviour Orders and removal of housing tenancy, and Parenting Orders as part of Youth Offending Team disposals.

Building confidence in parents has benefits not only for the health of the parents and that of their children, but also builds resilience factors in children that improve their subsequent life chances.

5.2.6 Self-harm prevention

The review of South West evidence indicates a group of issues related to risk-taking behaviour, largely within the 15–19 age group. These young people will naturally wish to experiment with growing independence as part of their personal development, but the following interventions can help to minimise the harm arising from that behaviour.

5.2.6.1 Suicides and self-harm

Many of the interventions described under the emotional health and wellbeing section (5.2.4) apply here. Key factors in young people accessing available support, however, have been identified through numerous consultation exercises within the South West⁵⁶ and include:

- services being available at times and locations where young people are as part of their normal daily activities;
- a very strong focus on concern for the young person's confidentiality.

5.2.7 Sexual health

Each local area has a Teenage Pregnancy Strategy⁵⁷ that is working to reduce teenage conceptions (NI 112). These strategies should address the 'deeper underlying causes' of early conception. They are multi-agency

and have accountabilities through the Children's Trust arrangements.

The delivery activities should include a range of group, one-to-one and peer-led sex and relationship education programmes. Examples of evidence-based programmes are cited in the national strategy document. These programmes also form one of the four success criteria for schools wishing to achieve Healthy School Status.

In order to be most helpful to young people, the strategies should encompass broader issues related to sexual health and link to the NICE Guidance: *Preventing Sexually Transmitted Infections and Reducing Under 18 Conceptions* (PH013).⁵⁸ Success in delivery of the strategy will then enable local areas to work towards reducing the prevalence of Chlamydia in under-25 year-olds (NI 113).

5.2.8 Drug and alcohol misuse in children and young people

Young people are at risk from experimentation with tobacco, drugs and alcohol.^{59,60} A recent survey⁶¹ has indicated that this is a growing problem, with a significant increase in potential long-term damage to health.

There are school-based interventions, again contributing to the achievement of Healthy School Status, such as 'Assist', which is a peer smoking cessation programme. Any delivery within schools is required to conform to Qualification and Curriculum Authority/Department for Children, Schools and Families guidance and is monitored by Ofsted. Additionally, NICE has developed guidelines for *School-based Interventions on Alcohol* (PH007)⁶² and *Preventing the uptake of smoking by children* (PH14)⁶³ in July 2008.

Clear links between Children's Trust arrangements and Young People's Commissioning Groups also support coherent planning at a local level to maximise the impact of delivering the interventions.

5.2.9 Accident prevention

Accidents and injuries have a significant impact in the South West across the 0–19 age range, although the type of accident tends to be related to the age of the child and linked to the types of daily activities undertaken by a child of that age, e.g. falls in the home for 0–4s and road-related injuries for older children.

Interventions are most effective when they take whole-community approaches and include factors such as

road safety, safety of play areas and community safety. *Better Safe than Sorry*⁶⁴ provides recommendations for preventing unintentional injury to children – activity that can be measured via National Indicators 48 and 70. Further advice is being developed by NICE in *Unintentional Injury in the Under 15s*.

As part of Local Authority School Travel Plans, Safer Routes to School initiatives⁶⁵ can be developed which not only take the road environment into consideration in order to reduce accidents, but also encourage a reduction in car use and increased active transport when going to school.

5.3 Monitoring and information sharing

Ongoing monitoring and sharing of information about mortality and morbidity is critical to efforts to improve child health and reduce deaths among the young. The South West Public Health Observatory has a key role to play as the organisation responsible for regional public health intelligence. The data sources used in this bulletin will be updated and made available via the SWPHO website (<http://www.swpho.nhs.uk>), as will new developments such as regional analysis of child height and weight measurements.

In addition, there is a diverse range of monitoring activity of health service standards for children's services in the South West. The NHS mechanisms include:

- the requirements of the current National Operating Framework and the associated Vital Signs reporting;
- NHS South West performance management arrangements relating to Primary Care Trusts, including, specifically, the self-assessment rating for progress towards implementation of the National Service Framework for Children, Young People and Maternity;
- monitoring by Primary Care Trusts of the services commissioned from providers;
- Care Quality Commission reviews.

Multi-agency mechanisms add a layer of complexity:

Local activity

- Development and review of Children and Young People's Plans.

- The development in each area of the Local Area Agreement.
- The democratic challenge of elected members, with a specific focus through Local Authority Overview and Scrutiny Committees.
- The emerging role of Local Involvement Networks (LINKs) arrangements that offer user engagement in the development and review of services.

National Indicator data in a consistent, comparable form;

- **Vital Signs** (<http://nwww.unify.dh.nhs.uk/unify/interface/homepage.aspx>) – where NHS bodies will be able to access NHS-related performance indicators.

See also the data sources listed in the Appendix.

Regional/national support and challenge

- Monitoring by Government Offices of Local Area Agreements.
- Monitoring by the Department for Children, Schools and Families in the Government Offices of the performance of Children's Trusts and associated delivery.
- Inspections of Children's Services via Joint Area Review mechanisms, to be replaced by Comprehensive Area Assessments.

Together, these mechanisms provide a constant impetus to identify local priorities and to design services to meet the needs of the population most affected by health inequalities.

As mentioned earlier (see Section 2.2.2), for a reliable assessment of infant mortality at smaller levels of geography, it is necessary to look at trends over a longer period of time. This monitoring can most usefully be undertaken at local level, where information about the local context can be taken into account.

Available data that can be used to monitor progress include:

- **Floor Targets Interactive** (<http://www.fti.communities.gov.uk>) – allows users to find and analyse data that are used to measure the performance of different places with respect to key government targets;
- **Data Interchange Hub** (<http://www.hub.info4local.gov.uk>) – provides all of the

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Glossary

Age-standardisation: A straight comparison of crude rates between areas may present a misleading picture because of differences in the sex and age structure of the respective populations. The technique of standardisation is used to remedy this. In general, standardisation involves a comparison of the actual number of events occurring in an area with the aggregate number expected if the age/sex specific rates in the standard population were applied to the age/sex groups of the observed population. (See also Standardised Mortality Ratio).

Anoxia: A condition in which the tissues of the body receive inadequate amounts of oxygen.

Antepartum: Between 28 weeks gestation and birth.

Asphyxia: Suffocation.

Census Output Area (COA): These are the smallest geographic level at which results from the 2001 Census have been released. 2001 COAs were built from clusters of adjacent unit postcodes but as they reflected the characteristics of the actual Census data they could not be generated until after data processing. They were designed to have similar population sizes and be as socially homogenous as possible (based on tenure of household and dwelling type). They had approximately regular shapes and tended to be constrained by obvious boundaries such as major roads. The COAs were required to have a specified minimum size to ensure the confidentiality of data. See also: **Super Output Area**.

Comorbidity: The presence of coexisting or additional diseases with reference to an initial diagnosis or with reference to the index condition that is the subject of study.

Confidence interval: A range of values computed in such a way that it contains the true population value a high proportion of the time. The 95% confidence interval is constructed so that 95% of such intervals will contain the true value.

Congenital anomalies: Disorders present at birth whether inherited or caused by environmental factors.

Dependent children: A dependent child is a person aged 0–15 in a household (whether or not in a family) or aged 16–18 in full-time education and living in a family with his or her parent(s).

Deprivation quintile: A division of areas into fifths according to some measure of deprivation, and can be used to analyse variations in health between deprived and affluent sections of the population regardless of where they live. They can be of varying size, e.g. Health Authority or enumeration districts.

Immaturity: Premature or not fully developed.

Income Deprivation Affecting Children Index (IDACI): The percentage of children under 16 living in families in receipt of Income Support and Job Seekers Allowance or in families in receipt of Working Families Tax Credit/ Disabled Persons Tax Credit whose equivalised income is below 60% of median before housing costs.

International Classification of Diseases (ICD): The International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10) is a coding of diseases and signs, symptoms, abnormal findings, complaints, social circumstances and external causes of injury or diseases, as classified by the World Health Organization (WHO).

Indices of Deprivation 2004: Deprivation index at the small area level, created by the Department for Communities and Local Government (DCLG).

Intrapartum hypoxia: Reduction of oxygen supply to tissue during labour or delivery.

Morbidity: A description or measure of disease within a specified population.

Mortality: The number of deaths occurring in a given period in a specified population. It can be expressed as an absolute number of deaths per year or as a rate per 100,000 population per year.

Neoplasm: Any new and abnormal growth; a benign or malignant tumour.

Placental abruption: A third trimester complication that results from the haemorrhage and accumulation of blood between the placenta and the wall of the uterus. This inevitably interferes with foetal oxygenation and often results in the need for emergency cesarean section.

Pneumothorax: Any breach of the lung surface or chest wall that allows air to enter the pleural cavity, causing the lung to collapse.

Public Service Agreement (PSA): Sets out the key improvements that the public can expect from government expenditure. They are three-year agreements, negotiated between each of the main Departments and HM Treasury during the Spending Review process.

Quality Outcomes Framework (QOF): The annual reward and incentive programme detailing GP practice achievement results.

Stillbirth: Death of a baby after 24 weeks of pregnancy but before birth. To be termed stillbirth the baby will either have died in the womb, which is termed intra-uterine death, or during labour, which is termed intra-partum death; but in either case the baby will not have breathed or shown any actual signs of life after delivery.

Super Output Area: (Lower) Super Output Areas (SOAs) were a new geography used for the 2001 Census designed to improve the reporting of small area statistics. This is the smallest geography at which data are presented. These LSOAs are designed to nest into three more tiers to allow a constant presentation of data at different geographical sizes. Until now the standard unit for presenting local statistical information has been the electoral ward/division. This has drawbacks though:

- Electoral wards/divisions vary greatly in size, from fewer than 100 residents to more than 30,000. This is not ideal for nationwide comparisons, and also means that data which can safely be released for larger wards may not be released for smaller wards due to disclosure requirements (i.e. the need to protect the confidentiality of individuals).
- Electoral wards/divisions are subject to regular boundary changes. This creates problems when trying to compare datasets over time

It was therefore decided to develop a range of areas that would be of consistent size and whose boundaries would not change. These would be built from groups of 2001 Census Output Areas (COAs) and would be known as Super Output Areas (SOAs). See also: **Census Output Area**.

Appendix 1: Data sources

Key

O: the indicator is made available online on a routine basis at this geographical level or can be constructed from data sources available online.

R: the indicator or contributing data for this geographical level can be obtained on request but is not routinely made available online.

Table A1: Infant and child mortality: rates and causes

Data source	Description	Source of data
Rate of stillbirths	Numerator: Number of stillbirths Denominator: Number of live births and stillbirths	O: Stillbirth rates at Local Authority and PCT level published annually: <ul style="list-style-type: none"> • www.nchod.nhs.uk (public site with data suppression) • www.nchod.nhs.uk (NHS users only, no data suppression) R: Individual-level data from the Office for National Statistics about registrations of live and still births, including age of mother and demographic information (and potential to link to area variables such as deprivation) are held by the South West Public Health Observatory and PCTs. Release of summarised data subject to confidentiality restrictions.
Rate of infant mortality	Numerator: Number of deaths under 1 year Denominator: Number of live births	O: Infant mortality rates at Local Authority and PCT level published annually: <ul style="list-style-type: none"> • www.nchod.nhs.uk (public site with data suppression) • www.nchod.nhs.uk (NHS users only, no data suppression) R: Individual-level data from the Office for National Statistics about birth and death registrations, including age, sex, cause of death and demographic information (including link to area variables such as deprivation) is held by the South West Public Health Observatory and PCTs. Release of summarised data subject to confidentiality restrictions.
Rate of child mortality	Numerator: Deaths from all causes among people aged 1–19 Denominator: Population estimates	O: Child death rates for ages 1–4, 5–14 and <15 at Local Authority and PCT level published annually: <ul style="list-style-type: none"> • www.nchod.nhs.uk (public site with data suppression) • www.nchod.nhs.uk (NHS users only, no data suppression) R: Individual-level data from the Office for National Statistics about death registrations, including age, sex, cause of death and demographic information (including link to area variables such as deprivation) is held by the South West Public Health Observatory and PCTs. Release of summarised data subject to confidentiality restrictions.
Causes of infant and child deaths	Number and percentage of deaths classified by underlying cause of death	O: National data showing breakdown by cause of death published annually by the Office for National Statistics. Includes breakdown by age groups <1, 1–4 5–9, 10–14, 15–19 Available from www.statistics.gov.uk – Table DH3 R: Individual-level data from the Office for National Statistics about death registrations, including age, sex, cause of death and demographic information (including link to area variables such as deprivation) is held by the South West Public Health Observatory and PCTs. Release of summarised data subject to confidentiality restrictions.

Low birth weight

Indicator	Description	Source of data
Low birth weight	Numerator: Number of babies born with a low (under 2,500g) or very low (under 1,500g) birth weight	<p>O: Proportion of babies born with low birth weight at Local Authority and PCT level published annually:</p> <ul style="list-style-type: none"> • www.nchod.nhs.uk (public site with data suppression) • www.nchod.nhs.uk (NHS users only, no data suppression) <p>R: Individual-level data from the Office for National Statistics about births, (including birth weight) is held by the South West Public Health Observatory and PCTs. Release of summarised data subject to confidentiality restrictions.</p>

Primary care attendances

Indicator	Description	Source of data
Attendance of infants and children at GP practices	Average number of GP visits per year by age group	<p>O: National data available from the General Household Survey – www.statistics.gov.uk/lib2001/index.html</p> <p>Can estimate local numbers by applying the national averages to the local population.</p> <p>A report commissioned by The Information Centre on behalf of the Office for National Statistics and Department of Health also estimates primary care consultations by age group, using data from a sample of practices: http://www.ic.nhs.uk/statistics-and-data-collections/primary-care/general-practice/trends-in-consultation-rates-in-general-practice-1995--2006</p>

Use of NHS Direct

Indicator	Description	Source of data
Calls to NHS Direct related to child illnesses	Symptoms of children recorded for calls to NHS Direct	<p>O: Information about the ten most common symptoms on which advice is sought from NHS Direct in England, 1999: www.statistics.gov.uk/StatBase/xsdataset.asp?vlnk=673&More=Y</p> <p>No data available for smaller geographic areas.</p>

Hospital admissions

Indicator	Description	Source of data
Hospital admissions data	Numerator: Number of hospital admissions for children admitted to hospital. Denominator: population estimates	<p>O: Child hospital admissions rates available at Local Authority and PCT level and published annually:</p> <p>(1) Hospital Episode Statistics (HES) key indicators: www.swpho.nhs.uk/resource/view.aspx?RID=17</p> <p>(2) National Centre for Health Outcomes Development – www.nchod.nhs.uk (public site with data suppression) or www.nchod.nhs.uk (NHS users only, no data suppression)</p> <p>Indicators available and source:</p> <ul style="list-style-type: none"> • All admissions <5, <16 (1) • Elective admissions <5, <16 (1) • Emergency admissions <5, <16 (1) • Emergency admissions for gastroenteritis, age <5 (1, 2) • Emergency admissions for lower respiratory tract infection, age <16 (2) • Emergency admissions for lower respiratory tract infection, age <5 (1) • Emergency admissions for injuries age <5 (1) <p>Admissions due to injury, age 0–17 is a Local Area Agreement National Indicator and data are available from http://www.swpho.nhs.uk/resource/browse.aspx?RID=41062</p> <p>Summary tables showing the number of admissions by age and primary diagnosis are available from www.hesonline.nhs.uk</p> <p>R: Individual-level data about hospital admissions, including age, sex, demographic details and diagnoses are held by the South West Public Health Observatory and PCTs. Release of summarised data subject to confidentiality restrictions.</p>
Attendances at A&E departments	Number of children attending A&E departments and recorded diagnosis reason for visit	<p>The analysis in this report is based on archived 2003/04 data from a selection of A&E departments.</p> <p>There are national plans to provide A&E data through the same HES mechanism as hospital admissions data from early 2009. SWPHO will have access to individual-level data on A&E attendances, including age, sex, demographic details, incident location (e.g. home), intent (e.g. accident), diagnosis and body part affected, treatment and outcome.</p>
Outpatient attendances	Number of children attending outpatient appointments and recorded reason for appointment	Hospital Episode Statistics (HES). Available from 2003/04 to 2006/07; 2 diagnosis fields, 12 procedure fields, age, sex and demographics.

Self-reported health status

Indicator	Description	Source of data
Self-reported health status	<p>Numerator: Number of children who reported (self or via parent) in the 2001 census:</p> <ul style="list-style-type: none"> • that their health is 'not good' <p>or</p> <ul style="list-style-type: none"> • that they have a limiting long-term illness (LLTI) <p>Denominator: Total number of children recorded in census</p>	O: Proportion of children reporting 'not good health' or LLTI at the 2001 census available for all geographic levels (including small areas) from www.nomisweb.co.uk (need to register to use website)

Child deprivation

Indicator	Description	Source of data
Income Deprivation Affecting Children (one of the sub-domains of the Indices of Deprivation)	The percentage of children under 16 living in families in receipt of Income Support and Job Seekers Allowance or in families in receipt of Working Families Tax Credit/Disabled Persons Tax Credit whose equivalised income is below 60% of median before housing costs.	O: The Indices of Deprivation, including the measure of income deprivation affecting children, were published in 2000, 2004 and 2007 and are computed at small geographic levels (super output area or ward, depending on release) and summarised at Local Authority level. The latest (2007) release available from: www.communities.gov.uk/communities/neighbourhoodrenewal/deprivation/deprivation07/

The following indicators about the health of children and young people are available through the SWPHO website:

Tool	Indicators
<p>Local Authority Health Profiles</p> <p>Snapshot of health for each local council in England using key health indicators.</p> <p>http://www.healthprofiles.info</p>	<ul style="list-style-type: none"> • Children in poverty • GCSE achievement • Smoking in pregnancy • Breast feeding initiation • Physically active children • Obese children • Children's tooth decay • Teenage pregnancy • Under 15s in 'not good health'
<p>Joint Strategic Needs Assessment Tool and data sets/Interactive mapping tool and data sets</p> <p>Interactive mapping tool and data sets to support Joint Strategic Needs Assessment. At local authority and county level.</p> <p>http://www.swpho.nhs.uk/default.aspx?RID=35084</p>	<ul style="list-style-type: none"> • Infant mortality rate • Rate of tooth decay in children • Teenage (<18) conception rates • Chlamydia Tests for persons 15-24 (*PCT) • Proportion of children classified as obese – reception year • Proportion of children classified as obese – year 6 • Admissions to hospital with injury (5–14) – Persons, males, females
<p>Healthy Schools Mapping tool</p> <p>Set of indicators about the health of children, which highlight inequalities and areas of need at County/UA/LA/ward levels. Designed to help schools and others identify and understand the health needs of their local children.</p> <p>http://www.swpho.nhs.uk/resource/view.aspx?RID=35469</p>	<ul style="list-style-type: none"> • Proportion of children who are overweight or obese • Physically active children • Lifestyle (smoking, drinking, drugs) reported in school surveys • Young people in drug treatment • Rate of offending for children aged 10 and over • Looked after children with a substance misuse problem • Proportion of 16–18 year olds not in employment or full-time education • Children whose first language is not English • Proportion of children travelling to school by car • Exclusions and absences from school • Rate of tooth decay • GCSE achievement • Children killed or seriously injured in road traffic collision
<p>National Childhood Measurement Programme in the South West</p> <p>Collection of data from the NCMP, including PCT and Local Authority values. Further analysis has been undertaken by the SWPHO.</p> <p>http://www.swpho.nhs.uk/resource/view.aspx?RID=41367</p>	<ul style="list-style-type: none"> • Link to NCMP online database • NCMP summary report • National Obesity Observatory analysis of national data • SWPHO analysis of South-West data presented in an interactive spreadsheet. Includes analysis by deprivation, sex, year and local authority.

Tool	Indicators
<p>Teenage Pregnancy Interactive Mapping Tool</p> <p>East Midlands Public Health Observatory has produced interactive maps of under 18 conception data, for all Local Authorities in England. The interactive mapping tool has been improved, allowing the user to view the data in a number of different ways, including Significance mapping, Funnel Plots and Area Profiles.</p> <p>http://www.empho.org.uk/datastore/maps/tpmaps.aspx</p>	<ul style="list-style-type: none"> • Significance of rate compared to England • Rate in local authority areas • Comparisons to deprivation and education data • Group by Region or ONS Comparator group

Websites	Features
<p>Child and Maternal Health Observatory</p> <p>Association of Public Health Observatories themed Observatory, managed by Yorkshire & Humber Health Observatory. Provides information and intelligence to improve decision-making for high quality, cost effective services. Supports policy makers, commissioners, managers, regulators, and other health stakeholders working on children's, young people's and maternal health.</p> <p>http://www.apho.org.uk/default.aspx?QN=CHIMAT_HOME</p>	<ul style="list-style-type: none"> • Knowledge hub • Tools and data – child health profiles, needs assessment and self-assessment tools • Data atlas • Children's services mapping
<p>Healthy Weight for Children Hub</p> <p>A new website to provide information about evidence-based practice and evaluation of interventions to promote healthy weight in children up to 18 years in the South West. Covering lifestyle, diet and physical activity issues. The aim of the hub is to: bring people together and enable discussion; share resources and experience; raise awareness; create a 'grass roots' network (as opposed to a top-down approach). The website is due to be launched in December 2008.</p> <p>http://www.healthyweight4children.org.uk</p>	<ul style="list-style-type: none"> • Database of child weight interventions in the South West • Networking area with notice board and discussion fora • Repository for related resources, including news and events, publications, data sets, tools, intervention-based resources, links to key sources of information and help etc. • Information for parents • Guidance on evaluation

Appendix 2: Data tables

Table A1: Underlying data for rate of stillbirths (per 1,000 births) in England and the English regions, 2002–05

	Number of stillbirths	Rate per 1,000 total births	95% CI	
			Lower	Upper
England	10,188	5.6	5.5	5.7
South West	736	4.7	4.4	5.0
East of England	934	4.8	4.5	5.2
South East	1,363	4.9	4.6	5.1
East Midlands	801	5.5	5.2	5.9
North East	478	5.7	5.2	6.3
North West	1,382	5.7	5.4	6.0
West Midlands	1,163	5.9	5.6	6.3
Yorkshire & the Humber	1,112	6.2	5.8	6.6
London	2,219	6.5	6.2	6.8

Source data: Clinical and Health Outcomes Knowledge Base, National Centre for Health Outcomes Development (NCHOD)

Table A2: Underlying data for stillbirths (per 1,000 births) by deprivation quintile in the South West, 2001–05

Quintile of deprivation	Births	Stillbirths	Stillbirths/1,000 births	95% CI	
				Lower	Upper
1 (least deprived)	46,700	191	4.1	3.5	4.7
2	45,527	189	4.2	3.6	4.7
3	47,486	196	4.1	3.6	4.7
4	51,088	236	4.6	4.0	5.2
5 (most deprived)	63,865	352	5.5	4.9	6.1
South West	254,666	1,164	4.6	4.3	4.8

Source data: Public Health Births Extract, Office for National Statistics

Table A3: Underlying data for infant mortality rates (deaths per 1,000 live births) in European and UK countries and the English regions, 2004

Infant deaths per 1,000 live births	2004	95% CI	
		Lower	Upper
Iceland	2.8		
Norway	3.3		
Finland	3.3		
Slovenia	3.7		
Czech republic	3.8		
Portugal	3.9		
South East	3.9	3.5	4.3
Spain	4.0		
France (2003)	4.0		
Greece	4.1		
Germany	4.1		
East of England	4.2	3.7	4.7
Switzerland	4.2		
EU members before May 2004	4.4		
Netherlands	4.4		
Austria	4.5		
South West	4.7	4.2	5.4
Ireland	4.9		
North East	4.9	4.1	5.8
United Kingdom	5.1		
England	5.1	4.9	5.2
East Midlands	5.1	4.5	5.8
London	5.2	4.8	5.6
North West	5.4	4.9	5.9
Yorkshire & the Humber	5.5	5.0	6.2
Croatia	6.1		
Estonia	6.4		
Hungary	6.6		
Slovakia	6.8		
Poland	6.8		
West Midlands	6.8	6.2	7.4
Lithuania	7.9		
Serbia	8.1		
EU members since 2004 or 2007 *	9.0		
Latvia	9.4		
Ukraine	9.4		

Note: * Accession countries of EU: 2004: Poland, Czech Republic Slovakia, Hungary Latvia, Lithuania, Estonia, Malta, Slovenia, Cyprus, 2007 Bulgaria, Romania; 2007: Bulgaria, Romania

Source data: Organisation for Economic Cooperation and Development (OECD) and Clinical and Health Outcomes Knowledge Base, National Centre for Health Outcomes Development (NCHOD)

Table A4: Underlying data for infant mortality rates (deaths per 1,000 live births) by Primary Care Trust in the South West, 2003–05

	Number of deaths	Deaths per 1,000 live births	95% CI	
			Lower	Upper
England	9,292	5.1	5.0	5.2
South West	691	4.4	4.1	4.8
Wiltshire	47	3.2	2.4	4.3
South Gloucestershire	30	3.4	2.4	4.9
Bath and North East Somerset	18	3.6	2.3	5.8
Bournemouth and Poole	38	4.1	3.0	5.6
Devon	82	4.1	3.3	5.1
Somerset	64	4.2	3.3	5.3
North Somerset	26	4.3	3.0	6.4
Dorset	44	4.3	3.2	5.8
Gloucestershire	84	4.7	3.8	5.8
Cornwall and Isles Of Scilly	70	4.9	3.9	6.2
Bristol	78	5.0	4.0	6.2
Torbay Care Trust	20	5.1	3.3	8.0
Plymouth	48	5.8	4.4	7.7
Swindon	42	5.8	4.3	7.9

Source data: Clinical and Health Outcomes Knowledge Base, National Centre for Health Outcomes Development (NCHOD)

Table A5: Underlying data for infant mortality rates (deaths per 1,000 live births) by Local Authority in the South West, 2003–05

	Number of deaths	Deaths per 1,000 live births	95% CI	
			Lower	Upper
England	9292	5.1	5.0	5.2
South West	691	4.4	4.1	4.8
Isles of Scilly CD	0	0.0	0.0	0.0
Teignbridge CD	6	1.8	0.8	4.0
East Devon CD	7	2.3	1.1	4.9
Purbeck CD	3	2.8	0.9	8.7
South Somerset CD	13	2.8	1.6	4.8
Kennet CD	7	2.8	1.3	5.9
West Wiltshire CD	12	3.0	1.7	5.2
Cotswold CD	7	3.1	1.5	6.5
Stroud CD	10	3.1	1.7	5.7
North Wiltshire CD	14	3.1	1.9	5.3
Restormel CD	10	3.3	1.8	6.2
South Gloucestershire UA	30	3.4	2.4	4.9
Poole UA	15	3.4	2.0	5.6
North Devon CD	9	3.4	1.7	6.4
Bath and North East Somerset UA	18	3.6	2.3	5.8
Torridge CD	6	3.6	1.6	8.1
Christchurch CD	4	3.6	1.3	9.4
Caradon CD	8	3.7	1.9	7.5
Penwith CD	6	3.8	1.7	8.4
West Dorset CD	9	3.8	2.0	7.3
Salisbury CD	14	3.8	2.3	6.5
Sedgemoor CD	13	4.0	2.4	7.0
Tewkesbury CD	10	4.2	2.2	7.7
North Somerset UA	26	4.3	3.0	6.4
Cheltenham CD	15	4.3	2.6	7.2
Bournemouth UA	23	4.7	3.1	7.1
Weymouth and Portland CD	9	4.8	2.5	9.1
Taunton Deane CD	16	4.8	3.0	7.8
Bristol UA	78	5.0	4.0	6.2
East Dorset CD	10	5.0	2.7	9.3
North Dorset CD	9	5.0	2.6	9.6
Torbay UA	20	5.1	3.3	8.0
Exeter CD	18	5.1	3.2	8.2
Mendip CD	17	5.1	3.2	8.1
Plymouth UA	48	5.8	4.4	7.7
Swindon UA	42	5.8	4.3	7.9
North Cornwall CD	13	5.8	3.3	9.9
South Hams CD	12	5.9	3.3	10.3
Forest of Dean CD	14	5.9	3.5	9.9
Kerrier CD	17	6.0	3.7	9.6
Mid Devon CD	14	6.0	3.6	10.2
West Somerset CD	5	6.2	2.6	14.9
Gloucester CD	28	6.5	4.5	9.3
Carrick CD	16	6.8	4.2	11.1
West Devon CD	10	7.8	4.2	14.5

Source data: Clinical and Health Outcomes Knowledge Base, National Centre for Health Outcomes Development (NCHOD)

Table A6: Underlying data for child mortality rates (deaths per 100,000 population) for children aged 0–15 by Primary Care Trust in the South West, 2003–05

	Deaths	Directly standardised death rate per 100,000	95% CI	
			Lower	Upper
England	13,020	52.0	51.1	52.9
South West	971	43.3	40.6	46.1
Wiltshire	72	33.8	26.0	41.6
Bath & North East Somerset	25	34.9	21.2	48.6
South Gloucestershire	44	35.6	25.1	46.2
Somerset	87	39.1	30.8	47.3
Devon	121	41.3	33.9	48.7
Dorset	67	42.7	32.3	53.0
North Somerset	38	43.8	29.8	57.7
Gloucestershire	117	44.8	36.7	53.0
Bournemouth & Poole	60	45.7	34.1	57.3
Torbay Care Trust	26	46.8	28.7	64.8
Cornwall & Isles of Scilly	104	48.6	39.2	58.1
Bristol	99	48.7	39.1	58.3
Swindon	49	50.2	36.2	64.2
Plymouth	62	54.2	40.7	67.6

Source data: Clinical and Health Outcomes Knowledge Base, National Centre for Health Outcomes Development (NCHOD)

Table A7: Underlying data for child mortality rates (deaths per 100,000 population) for children aged 0–15 by Local Authority in the South West, 2003–05

	Number of deaths	Directly standardised death rate	95% CI	
			Lower	Upper
England	13,020	52.0	51.1	52.9
South West	971	43.3	40.6	46.1
Isles of Scilly CD	0	0.0	0.0	0.0
East Devon CD	10	20.9	7.7	34.1
South Somerset CD	15	21.9	10.8	33.1
Cotswold CD	8	24.5	7.4	41.5
North Wiltshire CD	16	25.2	12.9	37.6
Teignbridge CD	14	26.3	12.3	40.3
Purbeck CD	5	30.1	3.2	56.9
West Wiltshire CD	18	30.6	16.4	44.7
Stroud CD	16	32.4	16.3	48.4
Penwith CD	8	32.6	9.7	55.4
Restormel CD	15	33.6	16.4	50.7
North Devon CD	13	33.9	15.4	52.4
Bath & North East Somerset UA	25	34.9	21.2	48.6
Torridge CD	9	35.2	11.9	58.5
South Gloucestershire UA	44	35.6	25.1	46.2
West Dorset CD	15	38.8	18.8	58.9
Poole UA	25	40.4	24.5	56.3
Salisbury CD	21	40.8	23.3	58.3
Christchurch CD	7	42.4	10.8	74.1
Weymouth & Portland CD	12	43.1	18.6	67.6
North Somerset UA	38	43.8	29.8	57.7
Kennet CD	17	44.2	23.1	65.3
Caradon CD	15	44.5	21.7	67.3
Cheltenham CD	22	44.9	26.1	63.7
Mendip CD	22	45.5	26.4	64.6
Taunton Deane CD	22	45.7	26.5	64.9
North Dorset CD	12	46.2	20.1	72.4
Torbay UA	26	46.8	28.7	64.8
Sedgemoor CD	22	47.2	27.4	67.0
West Somerset CD	6	48.7	9.4	88.0
Bristol UA	99	48.7	39.1	58.3
Forest of Dean CD	17	49.3	25.7	72.8
Tewkesbury CD	18	49.6	26.5	72.7
Swindon UA	49	50.2	36.2	64.2
Bournemouth UA	35	50.5	33.7	67.3
South Hams CD	16	50.8	25.5	76.0
Exeter CD	24	50.8	30.5	71.1
East Dorset CD	16	51.1	25.7	76.6
Plymouth UA	62	54.2	40.7	67.6
North Cornwall CD	19	56.4	30.9	81.9
Kerrier CD	25	59.4	36.0	82.8
Mid Devon CD	20	61.0	34.3	87.7
Gloucester CD	36	61.3	41.3	81.2
Carrick CD	22	62.6	36.2	88.9
West Devon CD	15	74.3	36.2	112.4

Source data: Clinical and Health Outcomes Knowledge Base, National Centre for Health Outcomes Development (NCHOD)

Table A8: Underlying data for age-standardised rate of hospital admissions for children aged 0–19 (per 100,000 population) in the South West, by Primary Care Trust, 2004/05

	Males			Females		
	ASR	95% CI		ASR	95% CI	
		Lower	Upper		Lower	Upper
England	12,762	12,736	12,787	13,215	13,188	13,241
South West	15,383	15,296	15,470	15,756	15,664	15,848
Dorset	10,859	10,574	11,143	11,005	10,708	11,302
South Gloucestershire	12,689	12,330	13,047	11,381	11,025	11,737
Wiltshire	13,402	13,131	13,674	13,172	12,893	13,452
Swindon	12,989	12,574	13,404	14,035	13,590	14,480
North Somerset	13,636	13,213	14,060	14,289	13,836	14,742
Somerset	14,684	14,422	14,947	15,215	14,936	15,494
Bath & North East Somerset	15,450	14,985	15,916	14,813	14,335	15,291
Gloucestershire	15,137	14,892	15,383	15,587	15,325	15,849
Devon	16,836	16,585	17,088	16,283	16,027	16,539
Bristol	15,952	15,637	16,268	17,706	17,369	18,044
Bournemouth & Poole	17,785	17,398	18,172	17,614	17,214	18,013
Plymouth	17,646	17,248	18,044	19,292	18,864	19,720
Torbay Care Trust	16,429	15,865	16,993	21,124	20,469	21,779
Cornwall & Isles of Scilly	19,424	19,131	19,717	19,856	19,543	20,168

Source data: Hospital Episode Statistics, The Information Centre

Table A9: Underlying data for age-standardised rate of emergency hospital admissions for children aged 0–19 (per 100,000 population) in the South West, by Primary Care Trust, 2004/05

	Males			Females		
	ASR	95% CI		ASR	95% CI	
		Lower	Upper		Lower	Upper
England	6,629	6,610	6,648	5,915	5,897	5,934
South West	6,528	6,466	6,590	5,806	5,745	5,866
North Somerset	4,888	4,614	5,161	4,358	4,089	4,628
South Gloucestershire	5,409	5,163	5,655	4,581	4,345	4,816
Devon	5,879	5,719	6,040	5,000	4,847	5,153
Wiltshire	5,752	5,563	5,941	5,214	5,028	5,400
Dorset	5,926	5,708	6,144	5,210	4,997	5,423
Torbay Care Trust	5,657	5,291	6,035	5,533	5,155	5,910
Bristol	5,890	5,680	6,100	5,423	5,218	5,627
Gloucestershire	6,479	6,300	6,658	5,233	5,066	5,401
Somerset	6,279	6,090	6,469	5,578	5,394	5,763
Bath & North East Somerset	6,629	6,289	6,969	6,172	5,833	6,510
Swindon	6,577	6,274	6,879	6,638	6,321	6,956
Cornwall & Isles of Scilly	8,279	8,062	8,497	7,362	7,148	7,577
Bournemouth & Poole	9,154	8,850	9,458	7,642	7,355	7,929
Plymouth	8,582	8,270	8,893	8,701	8,380	9,023

Source data: Hospital Episode Statistics, The Information Centre

Table A10: Underlying data for age-standardised rate (per 100,000 population) of emergency hospital admissions via GP for children aged 0–19 in the South West, by Primary Care Trust, 2004/05

	Males			Females		
	ASR	95% CI		ASR	95% CI	
		Lower	Upper		Lower	Upper
England	3,745	3,730	3,759	3,256	3,242	3,270
South West	2,903	2,861	2,945	2,443	2,403	2,483
Gloucestershire	2,436	2,323	2,549	1,855	1,753	1,957
North Somerset	2,458	2,260	2,657	2,028	1,841	2,216
Dorset	2,465	2,322	2,608	2,055	1,919	2,191
South Gloucestershire	2,690	2,513	2,867	1,947	1,791	2,104
Devon	2,603	2,495	2,712	2,097	1,996	2,197
Somerset	2,647	2,521	2,773	2,320	2,199	2,442
Wiltshire	2,638	2,507	2,770	2,347	2,219	2,475
Cornwall & Isles of Scilly	2,849	2,716	2,982	2,319	2,194	2,443
Swindon	3,041	2,828	3,254	3,130	2,906	3,353
Bath & North East Somerset	3,209	2,967	3,451	3,066	2,825	3,306
Torbay Care Trust	3,225	2,944	3,506	3,236	2,944	3,527
Plymouth	3,567	3,358	3,776	3,106	2,906	3,306
Bournemouth & Poole	4,054	3,842	4,266	3,207	3,015	3,400
Bristol	4,010	3,834	4,186	3,352	3,188	3,516

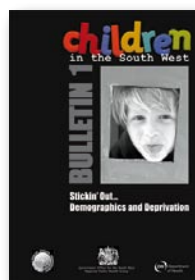
Source data: Hospital Episode Statistics, The Information Centre

Table A11: Underlying data for age-standardised rate (per 100,000 population) of emergency hospital admissions via Accident and Emergency departments for children aged 0–19 in the South West, by Primary Care Trust, 2004/05

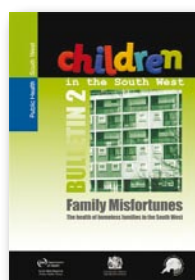
	Males			Females		
	ASR	95% CI		ASR	95% CI	
		Lower	Upper		Lower	Upper
England	1,704	1,694	1,714	1,608	1,598	1,618
South West	2,592	2,551	2,632	2,465	2,425	2,505
North Somerset	589	491	688	598	495	700
Bristol	885	801	968	1,033	943	1,123
Dorset	1,524	1,408	1,640	1,475	1,358	1,592
South Gloucestershire	1,636	1,498	1,775	1,669	1,524	1,813
Torbay Care Trust	1,908	1,689	2,127	1,839	1,615	2,063
Wiltshire	2,196	2,076	2,315	2,129	2,008	2,250
Swindon	2,398	2,211	2,585	2,390	2,196	2,585
Bath and North East Somerset	2,500	2,283	2,717	2,302	2,086	2,518
Somerset	2,639	2,512	2,766	2,396	2,272	2,520
Devon	2,683	2,572	2,795	2,420	2,311	2,528
Gloucestershire	3,045	2,919	3,171	2,633	2,512	2,754
Bournemouth and Poole	4,310	4,093	4,526	3,837	3,627	4,047
Plymouth	3,822	3,605	4,038	4,446	4,209	4,683
Cornwall and Isles of Scilly	4,430	4,266	4,594	4,200	4,034	4,365

Source data: Hospital Episode Statistics, The Information Centre

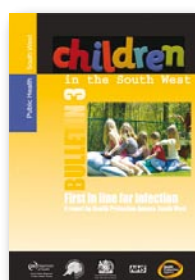
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