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Admissions of inequality: emergency hospital use for children and young people

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This briefing looks at the relationship between deprivation and the use of emergency hospital care by children and young people in England (between 2005/6 and 2015/16). It aims to describe and highlight areas of inequality and to explore how they have changed over time. As well as looking at the overall patterns of emergency hospital use, we focus in particular on three common conditions – asthma, diabetes and epilepsy – where more timely and effective primary, community or outpatient care could prevent admissions.

We find that while there has been progress in reducing the rate of emergency admissions for the most deprived children, a stubborn gap remains between rich and poor: children and young people from the most deprived areas are consistently more likely both to go to A&E and to need emergency hospital treatment than children from the least deprived areas.

Encouragingly, in many areas the inequality gap is narrowing. This may be due, in part, to certain national policy initiatives and quality improvement work. However, the size and persistence of any gap is a matter of concern. Indeed, there are areas where the most deprived children are experiencing a higher rate of emergency admissions than they were a decade ago and where this inequality gap is growing.

Key findings

- In 2015/16 the most deprived children and young people overall were 58 per cent more likely to go to A&E than the least deprived. A&E attendances for the most deprived infants and pre-schoolers were over 50 per cent higher than the least deprived. For the most deprived teenagers they were nearly 70 per cent higher.
- While, overall, emergency (or unplanned) hospital admissions have increased slightly (by 9 per cent between 2005/6 and 2015/16), the gap between the most and least deprived groups has narrowed. Nonetheless, the most deprived children are still 55 per cent more likely to experience an unplanned hospital admission than the least deprived.
- Across the 10 most common conditions leading to an unplanned hospital admission, the rates were consistently highest among children and young people from the most deprived areas.
- Looking specifically at asthma, in 2005/6 school-aged children in the most deprived areas had about double the emergency admission rate of the least deprived (248 admissions per 100,000 population compared to 125). By 2015/16 this had grown to around two and a half times the rate of the least deprived (323 admissions per 100,000 population compared to 127).
- Unplanned admissions for diabetes (all types) have been stable or have decreased for younger children (0–14). However, when children transition into adult services, there has been a striking growth for all 20–24-year-olds (between 40 and 90 per cent across the different deprivation groups) and the inequality gap remains significant. The most deprived 20–24-year-olds were almost twice as likely to experience an unplanned admission in 2015/16 as the least deprived.
- Unplanned hospital admissions for epilepsy have reduced over time for all age groups and there has been most progress in reducing unplanned admissions for the most deprived groups.

- Evidence suggests the reasons behind these findings are complex and likely to be down to many different factors – from the relative health of the population to the availability of services outside hospital. However, the data highlight the importance of national policy initiatives in improving outcomes. For example:
 - The reduction in unplanned admissions for children with diabetes in the 0–14 age group coincided with the introduction of the National Paediatric Diabetes Audit and the best practice tariff
 - Similarly, the reduction in unplanned admissions overall for epilepsy coincided with initiatives such as Epilepsy 12 (the national clinical audit for paediatric epilepsy) and a new national best practice tariff.
- As well as the inevitable human cost, these inequalities also have a significant financial cost: if unplanned admissions among the whole population were brought down to the level of the least deprived, this would have led to a decrease of around 244,690 paediatric emergency hospital admissions in 2015/16, a potential saving of almost £245 million per year. This translates to a potential saving of £8.5 million for asthma, £3 million for diabetes and £3 million for epilepsy.
- Designing and implementing policies that help reduce deprivation and improve social determinants of health should remain the overall long-term objective for policymakers. In the short term, the inequality of health outcomes we describe in this briefing should be the basis for a renewed emphasis on health care policies that specifically engage and focus on deprived children and young people with ongoing health needs and their families.

Why study inequalities in emergency hospital admissions for children and young people?

Reducing health inequalities has been an explicit target for the NHS in England for almost two decades (Asaria and others, 2016; Department of Health, 2003). The Health and Social Care Act 2012 made reducing health inequalities in access and outcomes an explicit duty for the Secretary of State and Commissioners (UK Government, 2012). An evaluation of progress across the whole population using a selection of equity indicators found substantial reduction in socioeconomic inequalities in primary care access and quality,¹ but only modest progress² in reducing health care outcome inequalities between 2004/5 and 2011/12 (Asaria and others, 2016). The worsening rate of infant mortality for the poorest children in the context of its continued improvement for more advantaged groups is a matter of particular concern (Taylor-Robinson, 2017).

People living in areas with high deprivation use more emergency care in general, while there is little variation in the use of elective care. They also appear to attend A&E for less serious conditions (Cookson and others, 2016; McCormick and others, 2012). The current A&E 'crisis' is linked to health inequality – people living in more deprived areas use NHS services much more. Furthermore, nearly half of all emergency hospital admissions are linked to social inequality (Cookson and others, 2016), with people living in the most deprived areas undergoing nearly two and a half times as many preventable emergency hospitalisations as people in the least deprived areas. Many preventable emergencies, especially for ambulatory care-sensitive (ACS) conditions,³ could be reduced with more timely or appropriate intervention in the community, and they are therefore a source of unnecessary pressure and cost on the NHS (McCormick and others, 2012).

- 1 Measured by patients per full-time equivalent general practitioners and weighted average of 16 clinical process Quality Outcomes Framework indicators.
- 2 Measured by preventable hospitalisations and amenable mortality.
- 3 Ambulatory care-sensitive (ACS) conditions are acute and chronic conditions for which timely and effective self-care, primary and community care or outpatient care could reduce the incidence of the condition or prevent a proportion of hospital admissions (Blunt, 2013; Purdy and Griffin, 2008; Sanderson and Dixon, 2000).

Reducing inequalities in child health and early childhood experiences is also a matter of social justice (Heckman, 2011; Marmot, 2010). The recent Royal College of Paediatrics and Child Health *State of Child Health* report (2017) has highlighted concerns about inequalities in health outcomes by socioeconomic status⁴ among children and young people in the UK – particularly with child poverty projected to increase over the next five years.

While tackling the social determinants of poor health is key if we are to make long-term improvements in population health (World Health Organization, 2008), investments in prevention and early intervention services have been shown to be effective in improving many health outcomes in the short term. These include interventions focused on improving the mental health or quality of life of children living with long-term conditions (e.g. asthma), and on preventing obesity or tooth decay.

Unfortunately, such prevention and early intervention services are under increasing pressure as reactive emergency care is prioritised in the face of constrained resources. Emergency hospital admissions have increased over the last decade (Keeble and Kossarova, 2017) and many of these admissions, particularly for conditions such as asthma and epilepsy, could be prevented with appropriate and early access to high-quality child health and paediatrics services (Kossarova and others, 2016).

The disparities that exist in the way people use health services serve to highlight the large potential gains to be made by addressing these health inequalities. As we show in this briefing, reducing the rates of unplanned admissions overall to the level experienced by the least deprived groups would release a significant amount of financial and human resources to invest in prevention and early intervention services, and would support children and young people and their families to engage in and establish lifelong healthy behaviours.

4 Health inequalities are defined as differences in the health of individuals or groups, but the definition does not include any moral judgements on whether the observed differences are fair or just. Health inequity is a specific type of health inequality that denotes an unjust difference in health – so health differences that are preventable and unnecessary, with a moral judgement that the inequality is wrong (Arcaya and others, 2015).

The UK has the second-highest levels of economic inequality in the European Union (OECD, 2017), alongside equitable access to health care in a system with universal free access at point of delivery⁵ (Davis and others, 2014). Inequalities in unplanned health care activity in the UK may therefore also offer a proxy measure of the level of inequality in health status and health outcomes in children and young people, and may reflect the failure of other services to meet their needs.

Even in the absence of cost barriers and differences in need, there are many reasons why people may not be able to access appropriate care. Barriers to access include, for example, transport difficulties or inability to leave work to attend an appointment, which disproportionately affects families on lower incomes who may have more rigid working patterns and less awareness about service availability (Dixon-Woods and others, 2006).

This briefing highlights and describes areas of inequalities in emergency hospital care use for children and young people in England, particularly for chronic ACS conditions, and how they have changed over time.

5 Lowest prevalence of reported cost barriers to accessing care in 11 high-income countries.

Our approach

We used Hospital Episode Statistics (HES) for A&E attendances and emergency hospital admissions for children and young people, with deprivation quintiles derived from lower-layer super output areas (LSOAs) according to their registered address. Area-level deprivation was based on the 2015 Index of Multiple Deprivation (Department for Communities and Local Government, 2015). The analysis was carried out by age band (0–4, 5–9, 10–14, 15–19 and 20–24).

In particular, we looked at the following, by deprivation quintiles:

- Crude A&E attendance rates between 2010/11 and 2015/16, with a focus on the most recent year because the data did not achieve complete coverage prior to 2014/15 (NHS Digital, 2013; 2016)
- Crude emergency hospital admissions for 2005/6 and 2015/16
- Emergency hospital admissions by most common diagnosis for 2005/6 to 2015/16
- Emergency hospital admissions for three ACS conditions (asthma, diabetes and epilepsy).⁶

We now present our findings. Figures 1–5 illustrate some of the key trends. Figures 6–8 in the Appendix give a more comprehensive graphical overview of the data for the ACS conditions.

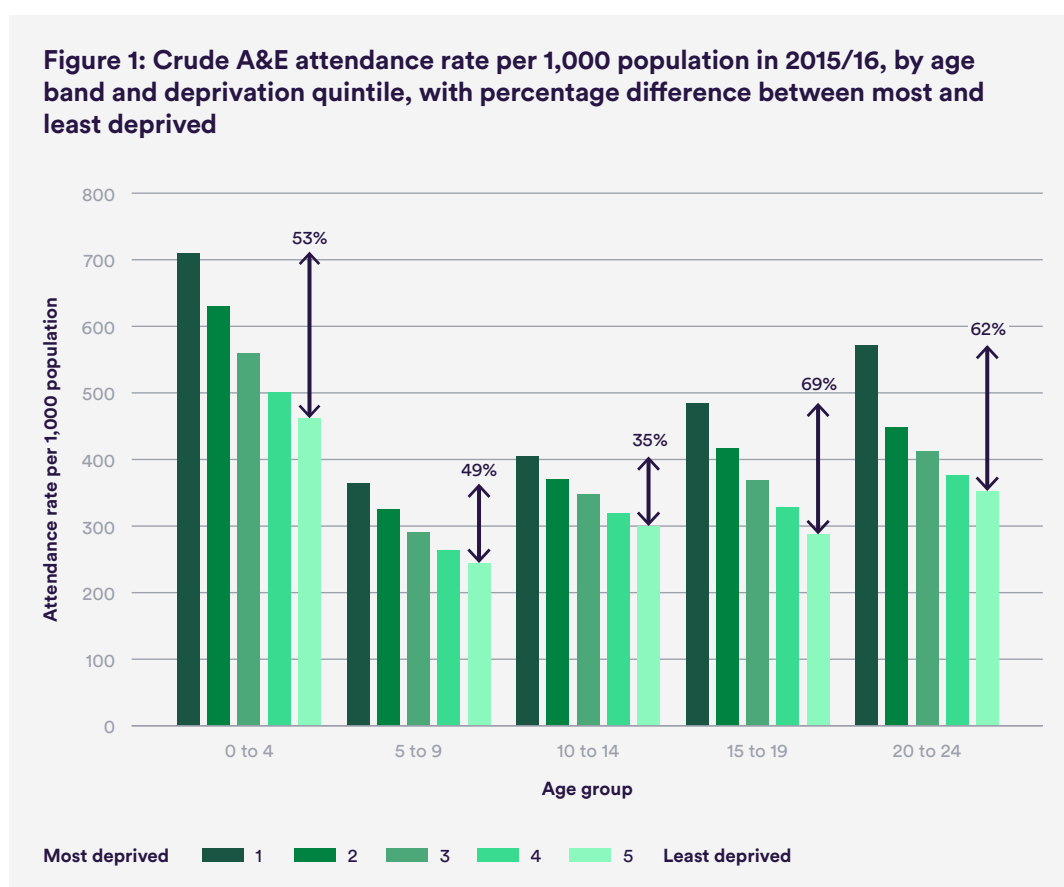
6 Asthma was defined using ICD10 codes J45 and J46. Diabetes includes both type 1 and type 2 and covers ICD10 codes E10 to E14. Epilepsy is defined as ICD10 codes G40 and G41.

Findings

Children and young people in the most deprived quintile are more likely to attend A&E than those in the least deprived quintile.

In 2015/16, the crude A&E attendance rate was highest in the most deprived quintile. Children and young people from the most deprived areas experienced 58 per cent more A&E attendances than those in the least deprived areas (514.6 per 1,000 compared to 325.6 per 1,000).

This trend is reflected across all age bands (see Figure 1). For example, for children under the age of 5 the attendance rate in the most deprived quintile was over 50 per cent higher than that of the least deprived quintile (709.0 compared to 461.9 per 1,000). For young people aged 20–24 the rate was over 60 per cent higher in the most deprived quintile (571.9 compared to 352.6 per 1,000, respectively). For adolescents aged 15–19 it was nearly 70 per cent higher (485.1 per 1,000 compared to 287.5 per 1,000).



Source: Hospital Episode Statistics, Office for National Statistics, Department for Communities and Local Government.

Emergency hospital admissions for the most deprived quintile have decreased across almost all age bands, but the inequality gap persists.

Overall, emergency admissions increased by 9 per cent between 2005/6 and 2015/16 for 0–24-year-olds (6,620 compared to 7,186 per 100,000). The smallest increase in emergency admissions was for the most deprived (0.1 per cent), while emergency admissions for the least deprived grew by 13.2 per cent. But while children and young people from the most deprived areas are consistently more likely to be admitted to hospital in an emergency, encouragingly the gap between the most and least deprived has narrowed over the period studied: in 2015/16 the most deprived were 55 per cent more likely to be hospitalised in an emergency, while in 2005/6 they were 76 per cent more likely.

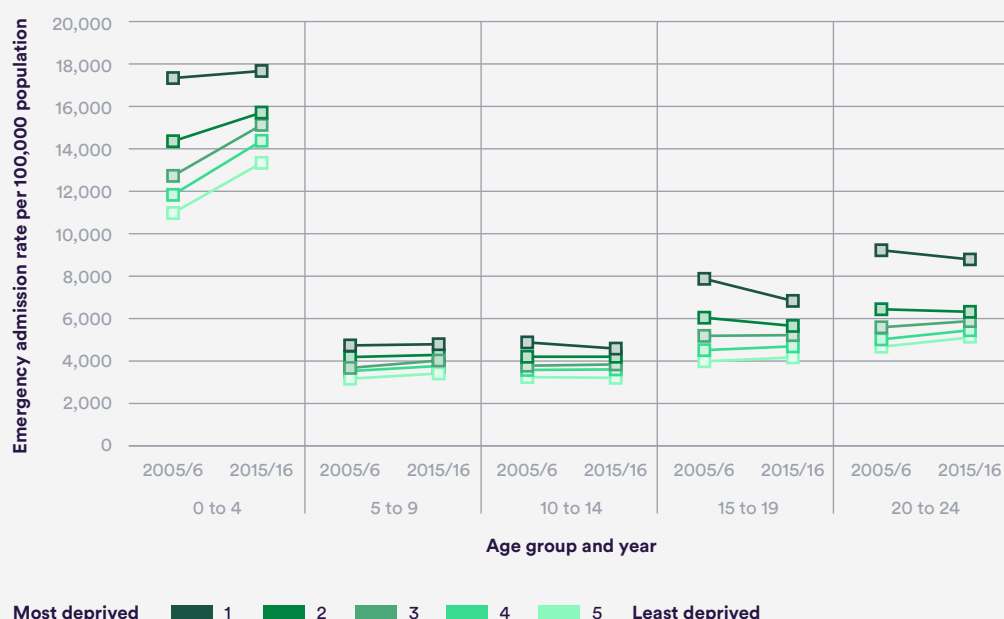
If the rate of emergency admissions was the same in all other deprivation quintiles as was the case for the least deprived, it would lead to a decrease of 244,690 paediatric emergency hospital admissions in 2015/16 – a potential saving of almost £245 million per year.⁷

By age band, the largest reductions in emergency admissions occurred for the most deprived young people aged 15–19 (absolute reduction of 1,041 emergency admissions per 100,000 and relative reduction of 13 per cent), 20–24 (absolute reduction of 433 emergency admissions per 100,000 and 5 per cent relative reduction) and 10–14 (absolute reduction of 291 emergency admissions per 100,000 and 6 per cent relative reduction) (see Figure 2). There were also reductions in emergency admissions for 15–19 and 20–24-year-olds in the second most deprived quintile. There has been an increase in emergency admissions across most other deprivation groups.

The largest relative improvement across the deprivation quintiles occurred for children aged 15–19. In 2005/6 the most deprived 15–19-year-olds had almost twice as many emergency admissions as the least deprived, while in 2015/16 the most deprived only had 64 per cent more emergency admissions.

7 Average costs using 2015/16 reference costs as follows: £1,000 per emergency admission.

Figure 2: Absolute differences in emergency hospital admissions for children and young people in England, in 2005/6 and 2015/16, by age band and deprivation quintile (1 = most deprived), crude rate per 100,000



Source: Hospital Episode Statistics, Office for National Statistics, Department for Communities and Local Government.

Emergency hospital admission rates for the most deprived children are consistently higher than for the least deprived children across all the most common primary diagnoses.

Across all the most common conditions that need inpatient treatment, children from more deprived areas are more likely be admitted to hospital than those in more affluent areas. The ratio of admission rates between the most and least deprived areas ranges from 1.4 to 2.2 (see Table 1). For example, for chronic lower respiratory diseases, the most deprived children have nearly two and a half times more emergency hospital admissions than children in the least deprived group.

Table 1. Emergency admission rate for children and young people in England in 2015/16, by most common diagnoses and deprivation quintile, crude rate per 100,000

Primary diagnosis	Deprivation quintile (1 = most deprived)					Ratio of most to least deprived
	1	2	3	4	5	
J00–J06: Acute upper respiratory infections (e.g. tonsillitis)	760.1	625.2	599.4	566.8	493.1	1.5
B25–B34: Other viral diseases (this covers the most common viral infections in children)	640.5	543.7	507.2	468.2	426.2	1.5
R10–R19: Symptoms and signs involving the digestive system and abdomen (e.g. abdominal pain/nausea/vomiting)	562.9	499.1	477.3	429.3	389.6	1.4
J20–J22: Other acute lower respiratory infections (e.g. bronchiolitis)	567.7	445.6	405.0	367.1	326.6	1.7
R50–R69: General symptoms and signs (e.g. febrile convulsion, fainting, headache, tiredness)	452.1	410.7	384.7	351.7	329.1	1.4
A00–A09: Intestinal infectious diseases (e.g. gastroenteritis)	338.4	280.5	251.7	233.3	197.3	1.7
T36–T50: Poisoning by drugs, medicaments and biological substances (e.g. paracetamol overdose)	332.0	275.1	250.9	223.6	191.8	1.7
S00–S09: Injuries to the head	289.9	230.7	219.5	208.5	199.7	1.5
R00–R09: Symptoms and signs involving the circulatory and respiratory systems (e.g. cough, wheeze, chest pain)	253.9	219.4	199.4	178.4	153.5	1.7
J40–J47: Chronic lower respiratory diseases (predominantly asthma)	255.6	192.3	160.7	139.5	114.3	2.2

Emergency admissions for asthma have declined for children under 5, across all quintiles of deprivation. However, emergency admissions for asthma have increased for school-aged children – and the inequality gap is rising.

Why is asthma important?

Key messages from the State of Child Health report

- Asthma is the most common long-term medical condition in the UK. One in 10 or 11 children and young people in the UK has asthma.
- The UK has one of the highest prevalence, emergency admission and death rates for childhood asthma in Europe.
- There is wide geographical variation in emergency asthma admission rates for children across the UK.
- Most emergency admissions are preventable, with high-quality management (including the use of asthma plans) and early intervention to address deterioration in control.

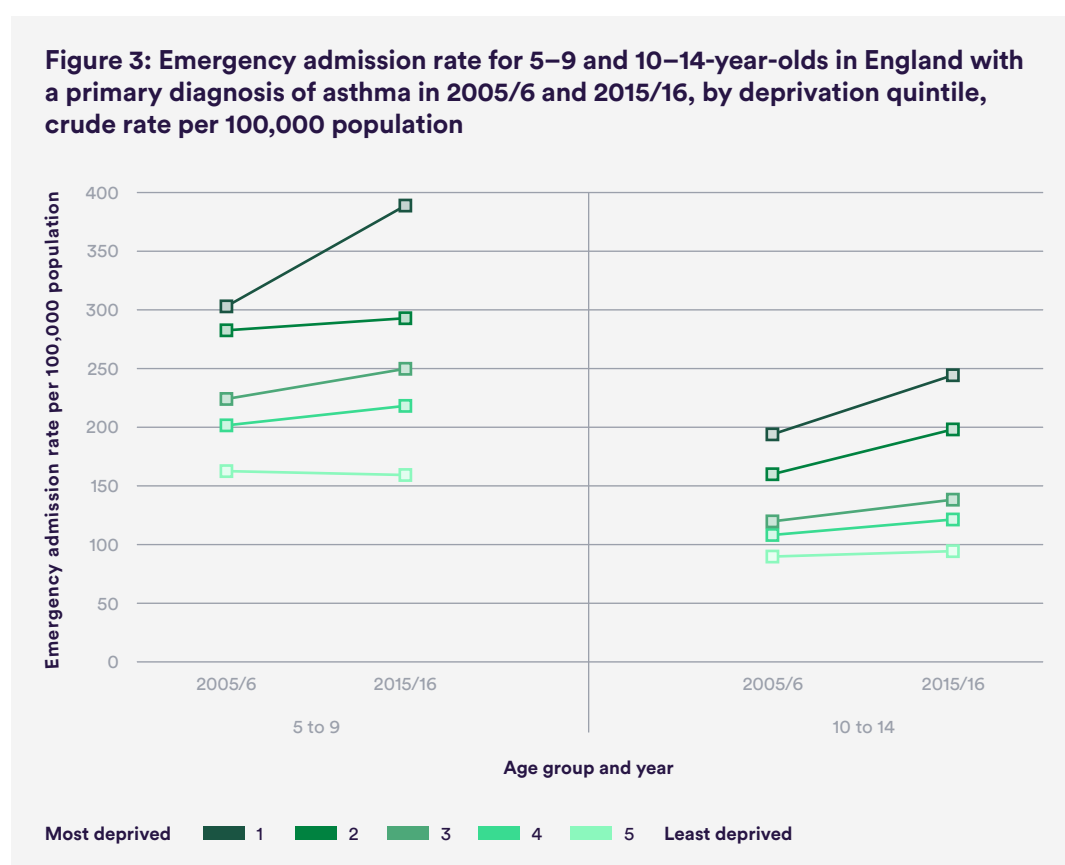
Royal College of Paediatrics and Child Health (2017)

Despite the overall numbers of children and young people being admitted to hospital in an emergency declining in the last decade, asthma continues to be among the top 10 causes of emergency hospital admission for children and young people (Keeble and Kossarova, 2017). There is conflicting literature on the relationship between deprivation and prevalence of childhood asthma, despite a clear relationship for specific risk factors such as lack of breastfeeding, smoking, poor quality housing, allergen exposure and environmental pollution, which are more commonly seen in less affluent populations (Hancox and others, 2004). Emergency hospital admissions, however, clearly demonstrate a relationship with lower socioeconomic status.

There has been a reduction in emergency hospital admissions for asthma for 0–4-year-olds across all the deprivation quintiles and for 20–24-year-olds in the most deprived quintiles. While admissions for 0–4-year-olds have reduced overall (which may in part reflect a shift in coding and diagnostic practices), the relationship with deprivation persists. More worryingly, among

school-aged children (5–14), the gap between the most and least deprived has increased (see Figure 3). In 2005/6 school-aged children in the most deprived quintile were around twice as likely to have an emergency admission as those in the least deprived quintile (247.9 compared to 124.7 per 100,000). This increases to around 2.5 times greater likelihood in 2015/16 (322.8 compared to 127.1 per 100,000).

Overall, emergency hospital admissions are highest for young children (0–4 and 5–9). This may be because exacerbations of asthma present more severely at a younger age and therefore they are more likely to require a hospitalisation than at older ages. It may also reflect the lack of objective tests for accurately diagnosing asthma among the younger age bands; improved self-care (or community care) in the older age bands; or the natural history of childhood asthma which shows a reduction in prevalence of asthma in late childhood and early adulthood.



Source: Hospital Episode Statistics, Office for National Statistics, Department for Communities and Local Government.

Bringing the number of emergency admissions for asthma for all groups down to the level experienced by the least deprived group could save the NHS around £8.5 million per year.⁸

The rate of emergency hospital admissions for type 1 diabetes is significantly higher for older children and young people. Among young adults (aged 15–19 and 20–24), emergency hospital admissions are increasing and the deprivation gradient is preserved. By contrast, there is no clear relationship with deprivation among young children (0–4 years and 5–9 years).

Why is diabetes important?

Key messages from the State of Child Health report

- Type 1 diabetes is an increasingly common childhood condition affecting rising numbers of children and young people in the UK.
- Poor management of the condition in childhood can have severe long-term health implications.
- There has been an increase in the proportion of children and young people in England and Wales with HbA1c levels below the target of 58mmol/mol since 2010–11.
- Children and young people from deprived or black and minority ethnicity backgrounds have poorer diabetes control.

Royal College of Paediatrics and Child Health (2017)

Overall, differences in diabetes control are associated with deprivation and ethnicity. Children and young people with diabetes living in more deprived areas have poorer outcomes (National Paediatric Diabetes Audit and Royal College of Paediatrics and Child Health, 2017).

⁸ Average costs using 2015/16 reference costs as follows: £800 per asthma emergency admission.

Overall, emergency admissions for diabetes increased between 2005/6 and 2015/16 (65.9 compared to 68.6 per 100,000). There was a 3 per cent decline in emergency admissions for the most deprived, from 86.3 to 84.0 emergency admissions per 100,000. However, there was an increase in emergency admissions for all other deprivation quintiles. The overall gap between the most and least deprived declined so that, in 2015/16, the most deprived were 60 per cent more likely to experience an emergency admission for diabetes, while in 2005/6, they were 70 per cent more likely.

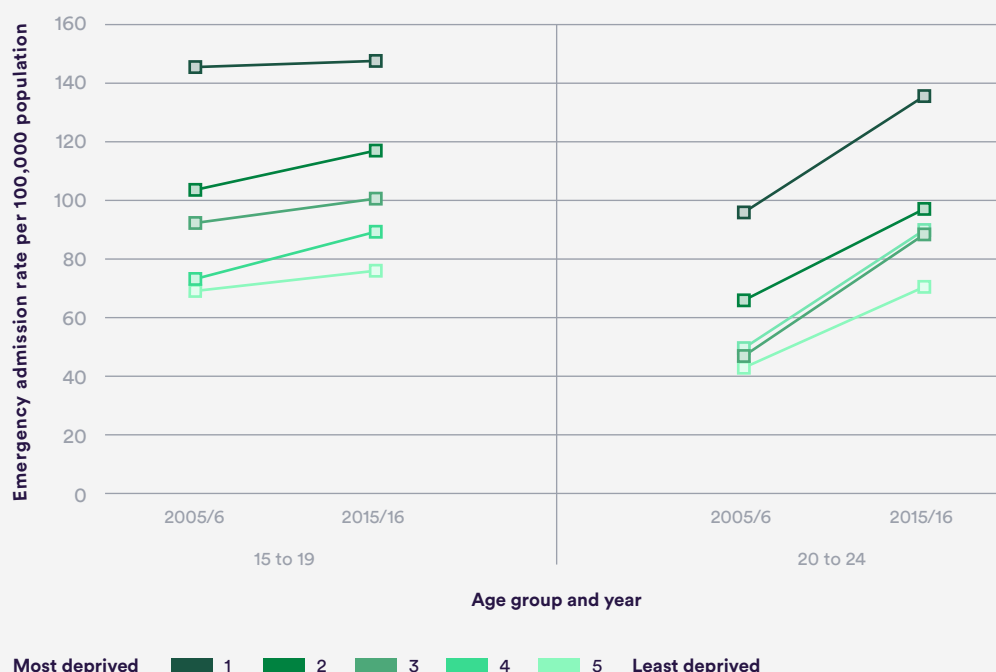
Unlike for asthma, there does not appear to be a clear relationship between emergency hospital admissions for diabetes and deprivation in young children (aged 0–4 and 5–9). The youngest children also have the lowest diabetes emergency hospital admission rates. There has been a decline in diabetes emergency hospital admissions for children aged 10–14 across all deprivation groups, although the most deprived still have the highest emergency admissions.

The trend changes entirely for the older age bands (illustrated by the 15–19 and 20–24 age bands) at an age where care for young people with diabetes transitions to adult services (see Figure 4). For these age groups, emergency hospital admissions have increased between the two time periods across all deprivation quintiles. For example, diabetes emergency admissions for 20–24-year-olds have increased by between 40 and 90 per cent across the deprivation quintiles. However, for this group the gap between the most and least deprived has declined, meaning that in 2015/16 the most deprived 20–24-year-olds were 92 per cent more likely to have an emergency admission, while in 2005/6 they were 124 per cent more likely.

Bringing the number of emergency admissions for diabetes for all groups down to the level experienced by the least deprived group could save the NHS around £3 million per year.⁹

9 Average costs using 2015/16 reference costs as follows: £1,250 per diabetes emergency admission.

Figure 4: Emergency admission rate for 15–19 and 20–24-year-olds in England in 2005/6 and 2015/16 with a primary diagnosis of diabetes, by deprivation quintile, crude rate per 100,000 population



Source: Hospital Episode Statistics, Office for National Statistics, Department for Communities and Local Government.

One explanation for these patterns may lie in the fact that the majority of first presentations of diabetes result in a hospital admission, which would be relatively independent of socioeconomic status, and admissions at the time of first diagnosis are likely to be over-represented in the younger age bands. The increase in emergency admissions for older age bands may also be explained by a higher prevalence of children and young people with type 1 and type 2 diabetes with increasing age; challenges in the management of the condition among young people; key processes of care leading to better outcomes still not being delivered to many young people (National Paediatric Diabetes Audit and Royal College of Paediatrics and Child Health, 2017; O'Neill, 2017); and challenges during the transition from paediatric to adult care services (Care Quality Commission, 2014). Among adolescents and young adults, however, the deprivation gradient observed for other long-term conditions is preserved, and persists over time.

This is consistent with international comparisons, not only for diabetes-related admissions (Maahs and others, 2015) but also all-cause admissions among children living with diabetes (Sayers and others, 2015). This may be a particularly important factor for diabetes care, given the heavy burden of education and health literacy that self-care in diabetes entails, not only to understand symptoms but also to appreciate the impact of ongoing care with long-term outcomes.

Rates of emergency hospital admissions for epilepsy are highest for children under the age of 5, then improve and are relatively stable for all older children. In contrast with asthma and diabetes, there has been a reduction in emergency hospital admissions for the most deprived quintile across all the age bands.

Why is epilepsy important?

Key messages from State of Child Health report

Epilepsies are a complex spectrum of conditions. Delivering high-quality diagnosis, treatment, and support can all be challenging. The 'Epilepsy 12' audit shows areas of progress across the UK, but also the need for continued improvement.

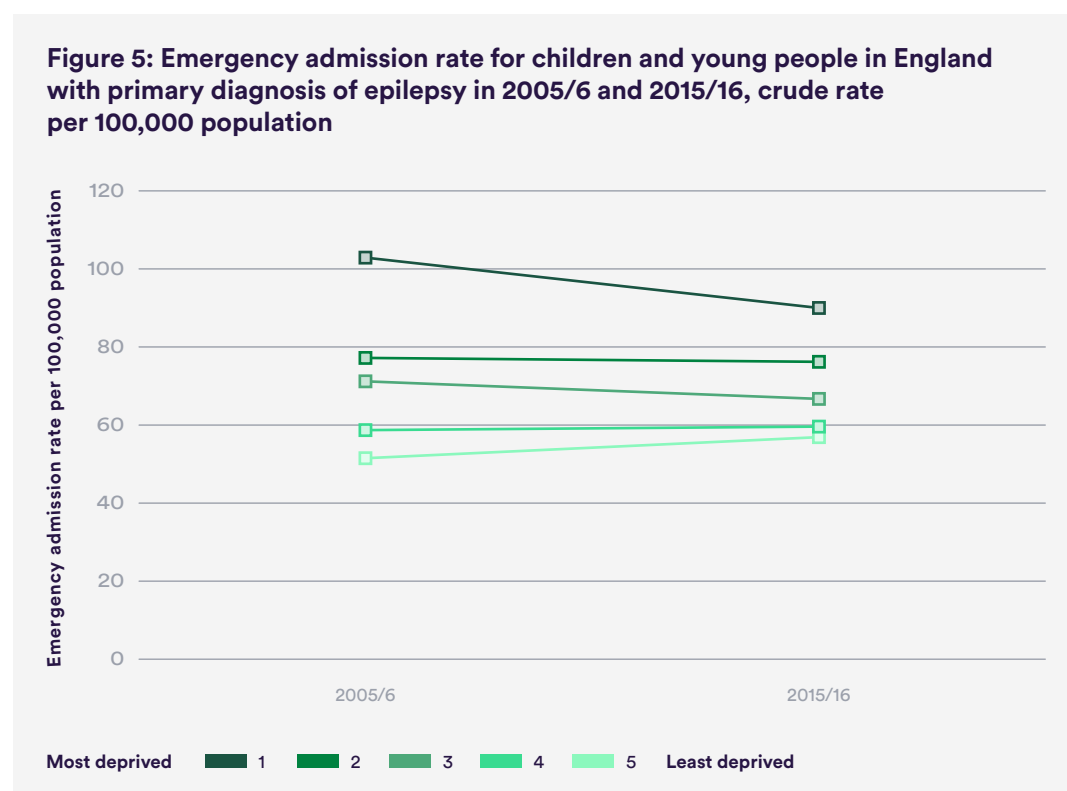
- There is wide geographical variation in emergency epilepsy admission rates for children across the UK.
- High-quality epilepsy care requires a holistic approach that includes psychological and practical support in addition to medical expertise, plus early recognition and support of additional needs (including mental health and special educational needs).

Royal College of Paediatrics and Child Health (2017)

Emergency hospital admissions for epilepsy have declined somewhat in the last decade, but it remains among the top 10 causes of emergency hospital admission for children and young people (Keeble and Kossarova, 2017). As Figure 5 shows, emergency admissions for epilepsy declined by nearly 4 per cent between 2005/6 and 2015/16 (73.9 reducing to 71.3 per 100,000). The more deprived quintiles all saw reductions in emergency admissions

for epilepsy, with the greatest reduction of 13 per cent occurring in the most deprived group (102.9 reducing to 90.0 per 100,000). There was a 10 per cent increase in emergency admissions for epilepsy for the least deprived group (51.5 increasing to 56.9 per 100,000).

Children under the age of 5 have the highest emergency admission rate for epilepsy, while the rates across the older age bands are lower, and generally quite similar across the age bands. There were reductions in emergency admissions for epilepsy across most age bands and deprivation quintiles between 2005/6 and 2015/16.



Source: Hospital Episode Statistics, Office for National Statistics, Department for Communities and Local Government.

The inequality gap between the most and least deprived persists, but it has narrowed over the period studied, meaning that in 2015/16 the most deprived were only 58 per cent more likely to have an emergency admission, while they were 100 per cent more likely to in 2005/6. This is driven primarily by the reduction in emergency hospital admissions in the most deprived quintile across all age bands – in stark contrast with the equivalent findings for asthma and diabetes. The gap between the most and least deprived has declined across all ages, with the largest reduction for 0–4 year olds: in 2015/16 the most deprived of this group were 30 per cent more likely to experience an emergency admission for epilepsy, while they were 84 per cent more likely to in 2005/6. This narrowing of the gap is partly due to an increase in emergency admissions for the least deprived alongside a decline for the most deprived.

Bringing the number of emergency admissions for epilepsy for all groups down to the level experienced by the least deprived group could save the NHS around £3 million per year.¹⁰

The overall decline in admissions observed over the past decade may in part be explained by the reduction in the incidence of epilepsy over the same period – which may itself be related to increasingly precise diagnoses (Meeraus and others, 2013). While the same relationship with socioeconomic status as among children admitted to hospital with asthma and diabetes can be seen, the degree of inequality appears to be reducing for epilepsy.

Care for children and young people with epilepsy has been given a renewed focus in the past decade, with initiatives such as the ‘Epilepsy 12’ national audit and the introduction of new national best practice tariffs. This may account for some of this improvement in overall admissions. These initiatives, which encourage and incentivise the provision of psychological support, child and family education in epilepsy management as well as medical care, may have had a disproportionately greater impact among less affluent children, where health literacy and engagement with health care may be particularly problematic.

¹⁰ Average costs using 2015/16 reference costs as follows: £1,200 per epilepsy emergency admission.

Conclusion

This briefing has examined how the pattern of emergency hospital admissions for children and young people has changed in the last decade. We focused on three chronic, ambulatory care-sensitive conditions (asthma, diabetes and epilepsy) where effective early intervention and treatment can reduce unnecessary emergency hospital admissions.

Here is a summary of our key findings:

- There has been some improvement, but across all three conditions the pattern of inequality in emergency hospital admissions persists over time (between 2005/6 and 2015/16). This reflects the relationship with deprivation that exists among overall hospital admissions in childhood.
- Trends in emergency hospital admissions for asthma are worrying for school-aged children, especially in light of existing evidence for improving asthma care (Asthma UK, 2014; Charnock, 2015; Healthy London Partnership, 2016; Paton, 2013; Whittamore, 2017).
- In diabetes, there is a concerning increase in emergency hospital admissions in young people aged 20–24 years. This trend is likely to be explained by fragmented and variable service quality at the critical juncture where care transitions from paediatric to adult services, and puts young people living with long-term conditions at risk of poorer control of disease and symptoms (Care Quality Commission, 2014; McDonagh and Viner, 2006).
- The success in reducing emergency admissions for diabetes among early adolescents (aged 10–14) and for epilepsy among the most deprived quintile should be a source of celebration and learning.

Deprivation is linked to higher incidence of poor health. Like A&E attendances, overall emergency hospital admissions are correlated with inequality. The effect of wider social determinants of health and deprivation on the wellbeing of children and young people is well established: poor-quality housing, exposure to air pollution, unhealthy lifestyle choices such as smoking, poor diet and nutritional status, as well as lower educational attainment and health literacy are all associated with the increased incidence and prevalence of illness.

While poorer health status among more deprived populations may explain some of these findings, disease prevalence is unlikely to be the sole explanation. Instead, the need for admission may also reflect less timely recognition of illness and inadequate community management of illness – factors which have their roots in both the quality and accessibility of services, as well as children and families’ ability to self-care and seek appropriate support. Deprived populations are less likely to access primary care: for instance, deprivation has been associated with a lower level of GP registration (particularly during adolescence) (Viner and Barker, 2005); greater difficulty in getting a GP appointment (Cecil and others, 2016); and poorer perception of the quality of primary care (Mercer and Watt, 2007).

There is some recent evidence, however, that primary care capacity (as measured by number of GPs per 10,000 practice population) has improved in the more deprived areas between 2004 and 2012 (Cecil, 2016). Furthermore, while A&E attendances are higher the closer people live to an A&E, this effect is more marked in deprived populations, with the most exaggerated effect among children, which may reflect families’ choice of access as much as need (Rudge and others, 2013). In this context, analysis of how other forms of urgent care use (e.g. urgent care centres, NHS 111) differs by deprivation would be important.

Children and young people are one of the most vulnerable groups in our society, and the most deprived of this group particularly so. The findings in this briefing suggest that health services continue to let them down. In many cases, the difference between their care and that of other children growing up in less deprived circumstances is more marked than ever. Designing and implementing policies that help to reduce economic and material deprivation and improve social determinants of health should remain the overall long-term objective. In the short term, this inequality in health outcomes should be the basis for a renewed emphasis on health care policies that engage and focus on these children and young people, and their families, with ongoing health needs who live in less fortunate circumstances.

Appendix

Figure 6: Emergency admission rate for children and young people in England with primary diagnosis of asthma in 2005/6 and 2015/16, crude rate per 100,000 by age band



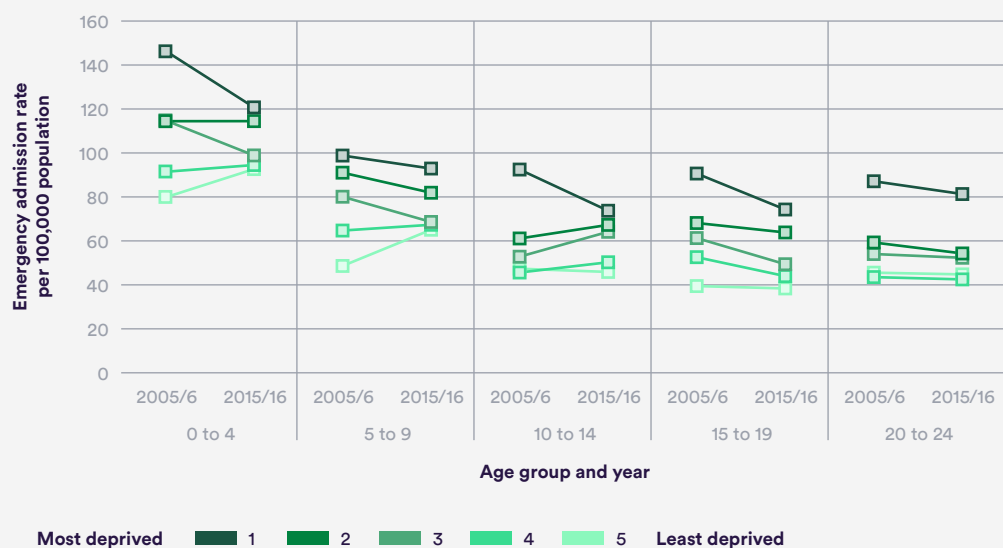
Source: Hospital Episode Statistics, Office for National Statistics, Department for Communities and Local Government.

Figure 7: Emergency admission rate for children and young people in England with primary diagnosis of diabetes in 2005/6 and 2015/16, crude rate per 100,000, by age band



Source: Hospital Episode Statistics, Office for National Statistics, Department for Communities and Local Government.

Figure 8: Emergency admission rate for children and young people resident in England with primary diagnosis of epilepsy in 2001/06 and 2015/16, crude rate per 100,000 population by age band



Source: Hospital Episode Statistics, Office for National Statistics, Department for Communities and Local Government.

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