

4.1.16 Childhood Hospital Admissions

Context

Hospital admissions for children aged up to 18 years are rising nationally despite reductions in serious morbidity and mortality; this is thought to be due to a number of reasons, including;

- Increased survival of children with complex conditions such as malignant neoplasms and congenital anomalies
- Increased survival of premature infants
- Increased parental anxiety about episodes of ill health
- Lower thresholds of admission and investigation due to concerns over litigation (Saxena 2009).

In Bradford & Airedale emergency admissions continue to be more common than elective admissions, with children aged 0 -4 years having by far the highest rates of emergency admissions. Admission rates have been rising in the 0 -4 age band since 2007/8, but in 2012/13 fell from 151.3 per 1,000 population to 131.6/1,000. This was largely responsible for a fall in overall emergency admissions in 2012/13 from 79.4 to 70.2 / 1,000 population.

Nationally, short stay admissions for children aged under ten years with minor illnesses increased between 1997 and 2006, a rise not accounted for by a reduction in long – stay admissions (Saxena 2009) Children from more deprived or marginalised communities tend to have higher use of accident and emergency, which suggests that these groups may have difficulties accessing primary care (Stewart et al 1998). However, the fall in emergency admissions for 0-4 year olds was seen across all quintiles of deprivation.

The leading causes of emergency admissions were acute respiratory and non-specific viral infections, traumatic events such as fractures and head injuries in older age groups, and acute appendicitis. In the 15-19 year old age band pregnancy-related admissions and self harm were also significant causes of emergency admissions.

Elective admission rates were decreasing until 2010/11 but have been increasing in all age bands since, with rates reaching their highest in 2012/13 (49.4 per 1,000 population).

The leading causes of elective admissions in early childhood are related to ENT procedures, dental caries or thalassaemia. In older age groups a significant proportion of elective admissions are also related to pregnancy, with medical abortion being the leading cause of elective admission for 15-19 year olds.

National and local targets

- NHS Outcomes Framework 2014/15 3.4: Emergency admissions of children due to lower respiratory tract infections
- Hospital admissions caused by unintentional and deliberate injuries in children and young people aged 0-14 and 15-24 years (Public Health Outcomes Framework 2013-16)
- Tooth decay in children aged 5 (Public Health Outcomes Framework 2013-16)

Relevant strategies and local documents

- Health Equity Audit of Children and Young People in Bradford District 2009
- Bradford Children and Young Peoples Plan (2011 – 14)
- Children and Young People's Health and Lifestyle Survey 2013 (BMDC)
- Bradford District Children's Needs Analysis 2010 – 2011
- Achieving Equity and Excellence for Children 2010 (DoH).
- NHS Outcomes Framework 2014 - 2015

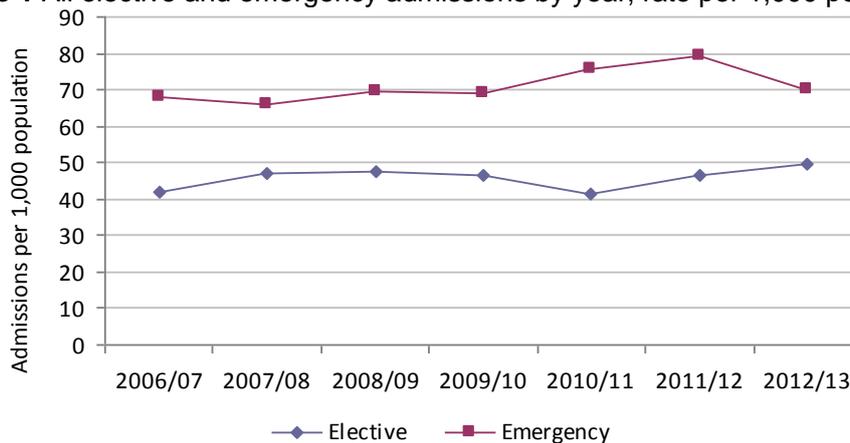
What do the data tell us?

Emergency and elective admissions summary

Emergency admissions continue to be higher than elective admissions. Rates of emergency admissions rose between 2009/10 and 2011/12, but fell in 2012/13 from 79.4 to 70.2 / 1,000 population.

Elective admission rates were decreasing until 2010/11 but have been increasing in all age bands since, with rates at their highest in 2012/13 (49.4 per 1,000 population).

Figure 1 All elective and emergency admissions by year, rate per 1,000 population

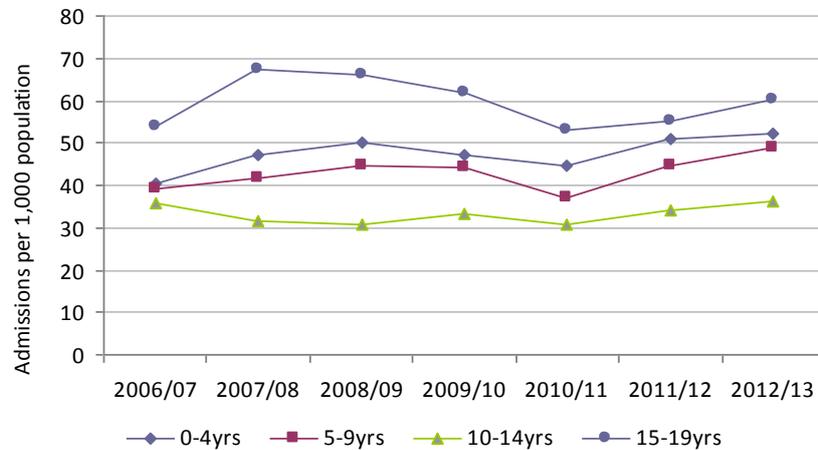


Source: Bradford Public Health Analysis Team, City of Bradford Metropolitan District Council

Elective admissions:

Elective admissions fell in all age groups between 2009/10 and 2010/11, but have then risen in all age groups for the last two years. The highest rates of admission are in the 15 – 19 year old and 0 – 4 year old age bands.

Figure 2 Elective Hospital Admissions by age band and year

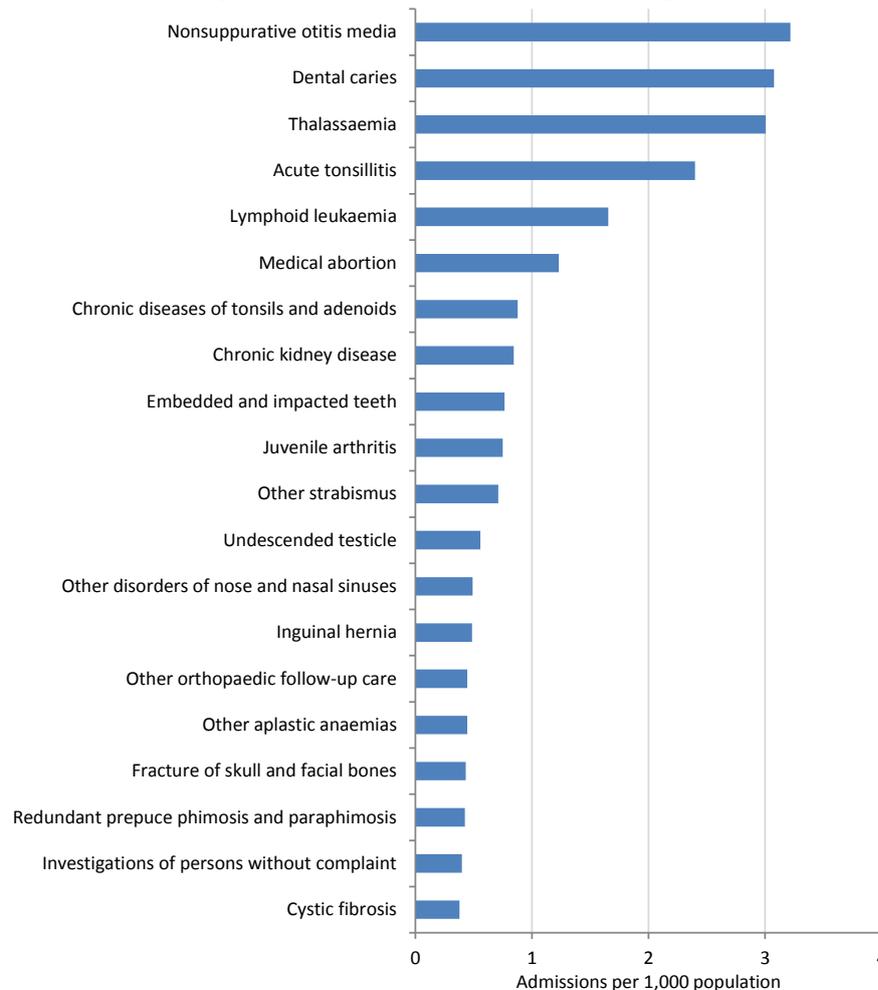


Source: Bradford Public Health Analysis Team, City of Bradford Metropolitan District Council

The leading overall causes of elective admission in all age bands are ENT procedures (otitis media and tonsillitis), treatment for thalassaemia, and dental caries. Medical abortion is the leading cause of admission in 15 – 19 year olds.

Lymphoid leukaemia also accounts for a significant number of overall elective admissions. This figure, along with the high numbers of admissions for thalassaemia, is likely to reflect comparatively smaller numbers of children requiring multiple admissions for treatment such as blood transfusion or chemotherapy.

Figure 3 shows rates for all those under 19 years by cause with a further breakdown by age in **table 1**

Figure 3 Elective Hospital Admissions, Age All <19 years: Top 20 Primary Diagnoses 2012/13

Source: Public Health Analysis Team, City of Bradford Metropolitan District Council

Table 1 below shows the top five leading causes of elective admission by age.

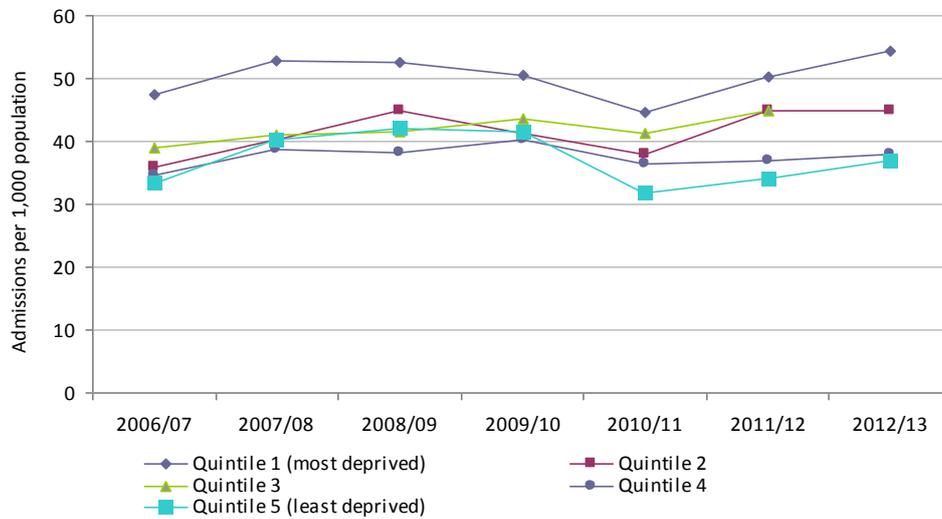
Table 1 : Elective Admissions primary diagnoses, males and females: Top 5 leading causes of admission as a % of total admissions by age 2012/13

	0-4yrs	5-9yrs	10-14yrs	15-19yrs	0-19yrs
1	Nonsuppurative otitis media (7.3%)	Nonsuppurative otitis media (15.0%)	Thalassaemia (9.6%)	Medical abortion (8.3%)	Nonsuppurative otitis media (24.1%)
2	Dental caries (6.8%)	Dental caries (11.8%)	Dental caries (5.2%)	Thalassaemia (6.3%)	Dental caries (23.0%)
3	Thalassaemia (5.3%)	Acute tonsillitis (7.5%)	Other aplastic anaemias (5.1%)	Lymphoid leukaemia (4.1%)	Thalassaemia (22.5%)
4	Acute tonsillitis (4.7%)	Thalassaemia (4.2%)	Acute tonsillitis (4.3%)	Acute tonsillitis (3.2%)	Acute tonsillitis (18.0%)
5	Lymphoid leukaemia (3.3%)	Chronic kidney disease (3.7%)	Embedded and impacted teeth (4.0%)	Embedded and impacted teeth (2.8%)	Lymphoid leukaemia (12.4%)
Total	27.3%	42.2%	28.1%	24.7%	27.0%

Admissions by quintile of deprivation

Elective admission rates in all quintiles have increased over the past two years, with a consistent gap between the most and least deprived quintiles. The rate of elective admissions is highest in the most deprived quintile.

Figure 4: Elective Hospital Admissions by Deprivation Quintile and Year, Age 0 - 19 years, rates per 1,000



Source: Public Health Analysis, City of Bradford Metropolitan District Council

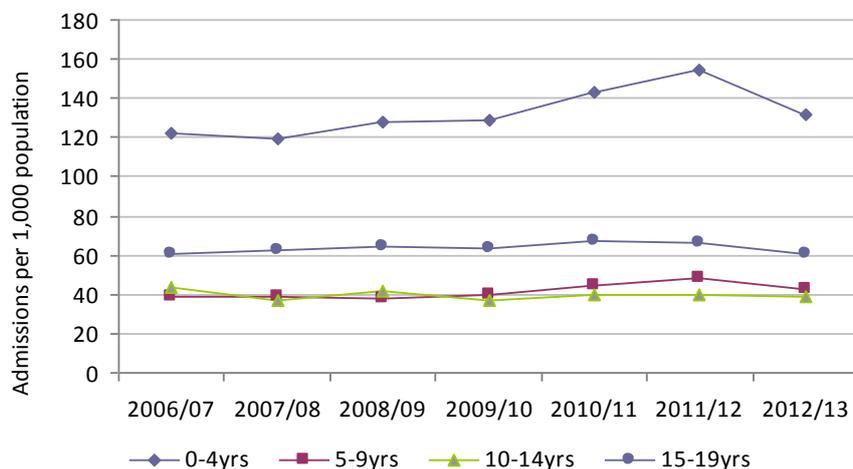
Emergency admissions

Overall children aged under four years have by far the highest rates of emergency admissions. Rates in most other age bands have remained comparatively static, with slight rises between 2009-11 counterbalanced by slight falls between 2011-13.

Emergency admissions in 0-4 year olds rose in 2010/11 and 2011/12, but then fell in 2012-13 from 154.3/1,000 to 131.6/1,000 population. This made a significant contribution to the overall fall in emergency admissions. There is no known change in data collection or analysis which would explain this change, and it is too early to say whether it is the start of a sustained drop in admissions or a chance variation.

It will be important to review the causes of this drop, and any change in practice that may have led to it. A positive explanation would be that initiatives to promote alternatives to A&E have been effective, in which case support of such initiatives should be continued.

Figure 5 Emergency Hospital Admissions by Age Group and Year, rates per 1,000 population

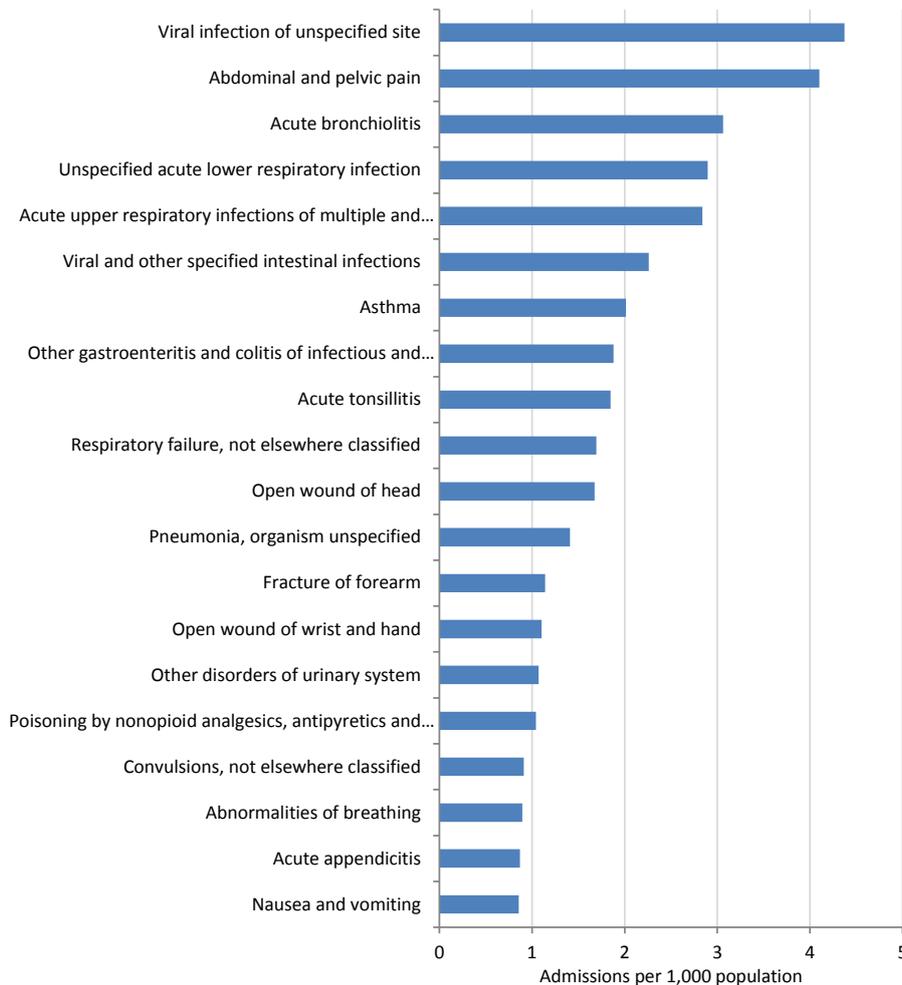


Source: Public Health Analysis Team, City of Bradford Metropolitan District Council

The leading causes of emergency admissions overall are unspecified viral infections, respiratory infections including pneumonia, lower respiratory tract infections and bronchiolitis, and abdominal/ pelvic pain. Emergency admissions for asthma also make a significant contribution: further discussion of asthma admissions can be found in the section on long-term conditions.

Figure 6 gives causes for all under 19 years, **Table 2** gives the top five leading causes by age.

Figure 6 Emergency Hospital Admissions, Age under 19, Top 20 Primary Diagnoses, 2012 – 13



Source: Public Health Analysis Team, City of Bradford Metropolitan District Council

The leading causes of emergency admission in 0-4 year olds were unspecified viral infections, and various respiratory causes including bronchiolitis, reflecting the usual profile of common acute illnesses in this age group. For all other age bands the leading causes were abdominal and pelvic pain (which may reflect suspected appendicitis), acute appendicitis and non-specific viral infections, alongside traumatic injuries such as wrist fractures and head injuries.

Asthma was also a leading cause of emergency admission: admission rates for asthma are discussed further in the long term conditions section of this JSNA.

In the 15-19 age group, pregnancy related causes become a significant leading cause of emergency admission, as does poisoning with non-opioid analgesics, antipyretics and antirheumatics, which is probably related to self-harm in this age group. Self-harm admissions are further discussed in the section on emotional wellbeing.

Table 2]: Emergency Admissions primary diagnoses, males and females, leading causes (% of total admissions) by age.

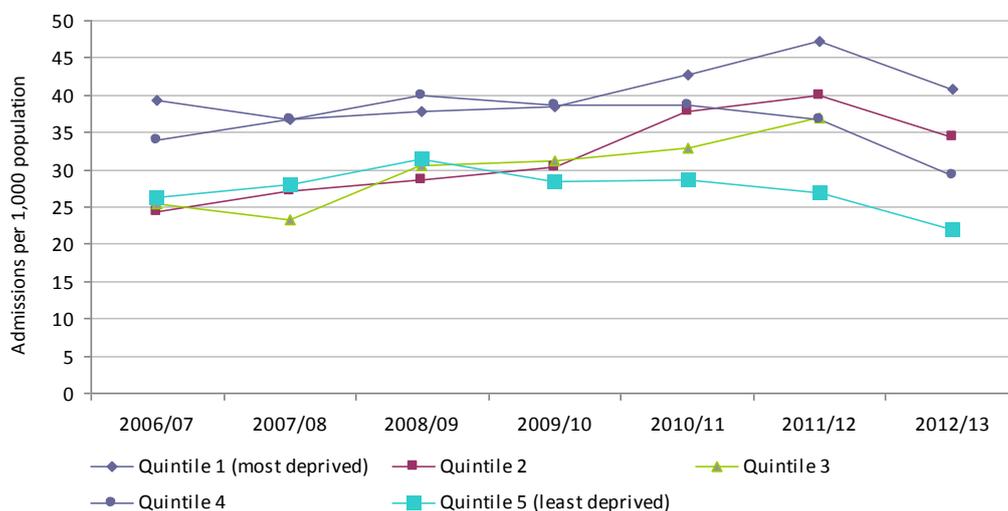
	0-4yrs	5-9yrs	10-14yrs	15-19yrs	0-19yrs
1	Viral infection of unspecified site (10.3%)	Abdominal and pelvic pain (7.6%)	Abdominal and pelvic pain (13.6%)	Abdominal and pelvic pain (13.0%)	Viral infection of unspecified site (6.2%)
2	Acute bronchiolitis (8.5%)	Asthma (6.9%)	Fracture of forearm (4.1%)	Poisoning by nonopioid analgesics, antipyretics and antirheumatics (5.6%)	Abdominal and pelvic pain (5.8%)
3	Acute upper respiratory infections of multiple and unspecified sites (7.1%)	Unspecified acute lower respiratory infection (5.0%)	Asthma (4.0%)	Haemorrhage in early pregnancy (2.7%)	Acute bronchiolitis (4.4%)
4	Unspecified acute lower respiratory infection (5.9%)	Open wound of head (4.4%)	Fracture at wrist and hand level (3.6%)	Acute appendicitis (2.3%)	Unspecified acute lower respiratory infection (4.1%)
5	Viral and other specified intestinal infections (5.0%)	Viral infection of unspecified site (4.3%)	Acute appendicitis (3.5%)	Open wound of wrist and hand (2.1%)	Acute upper respiratory infections of multiple and unspecified sites (4.0%)
Total	36.8%	28.1%	28.8%	25.8%	24.6%

Source: Public Health Analysis Team, City of Bradford Metropolitan District Council

Admissions by deprivation quintile

Emergency admissions are highest in the most deprived quintile of the population and lowest in the least deprived quintile. Between 2009/10 and 2011/12, admissions rose in the two most deprived and the middle quintile, but began to fall in quintiles 4 and 5 (least deprived). Between 2011/12 and 2012/13, emergency admissions fell in all quintiles of deprivation.

This more sustained fall in admissions in the least deprived quintiles may suggest a falling trend in emergency admissions.

Figure 7: Emergency admissions by quintile of deprivation, 2012-13

Future needs and gaps in provision

- Improve access to dental care and preventative treatment, and continue oral public health programmes, in order to reduce admissions for dental caries
- Continue addressing unintended teenage pregnancies in order to reduce the rate of admissions for terminations
- Work to improve management of children with asthma in order to avoid unnecessary emergency admissions (see long term conditions chapter)
- Continue to monitor apparent fall in emergency admissions in the 0-4 age band, establishing potential causes and supporting positive initiatives
- Improve data collection and analysis of admissions.

Summary of priorities

- Reduce admissions for dental caries through better access to care and continued oral public health programmes
- Further investigate apparent fall in emergency admissions in 0-4 age band
- Establish potential causes for high levels of emergency asthma admissions and work further to reduce avoidable admissions.