British Thoracic Society Paediatric Asthma Audit Report 2010

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THE BTS PAEDIATRIC ASTHMA Audit collects data on every child over 1 year of age admitted to hospital with wheezing or asthma during the month of November. The data collected is grouped into 5 areas: basic demographic information such as age and sex; initial hospital assessment; initial hospital treatment; discharge treatment and asthma attack management planning; and plans for follow-up. These are generally process measures rather than true outcome measures. Asthma admissions are common in the winter months so the November audits provide a snapshot of hospital paediatric acute asthma care at one of the busiest times of year.

Readers of last year's report will know that the paediatric asthma audit started in 1998 [1]. Each year since, participating hospital units have been asked to complete a simple dataset based on the BTS/SIGN asthma guidelines. For the last two years, the paediatric asthma audit (along with the BTS audit of paediatric pneumonia) has been included on the list of National audits approved for inclusion in Department of Health (England) Quality Accounts. Quality accounts will be reports, published annually, about the quality of services provided by each NHS healthcare provider. The reports will be available to the public each June with the first statutory Quality Accounts due to be published first in June 2010 covering activity for 2009/10.

		Gender		
Country	Contributing Trusts	Female	Male	Total
England	81	708	1206	1914
Jersey and Guernsey	1	4	6	10
Northern Ireland	7	33	43	76
Scotland	7	51	85	136
Wales	1	9	19	28
Total	**97**	**805**	**1359**	**2164**

The inclusion of the paediatric asthma audit as one of the National audits has clearly stimulated interest. This year, 97 Trusts entered 2164 cases. This represented a substantial increase from the previous year (57 Trusts, 1543 cases). Although Quality Accounts only apply to England and Wales data continues to come from all other parts of the UK.

One continuing finding from the audit is that measurements of vital signs at presentation have remained stable. For example, the mean pulse, breathing rate and oxygen saturation at admission has changed little since the audit began suggesting that underlying the severity of asthma in children presenting to hospital has also remained similar.

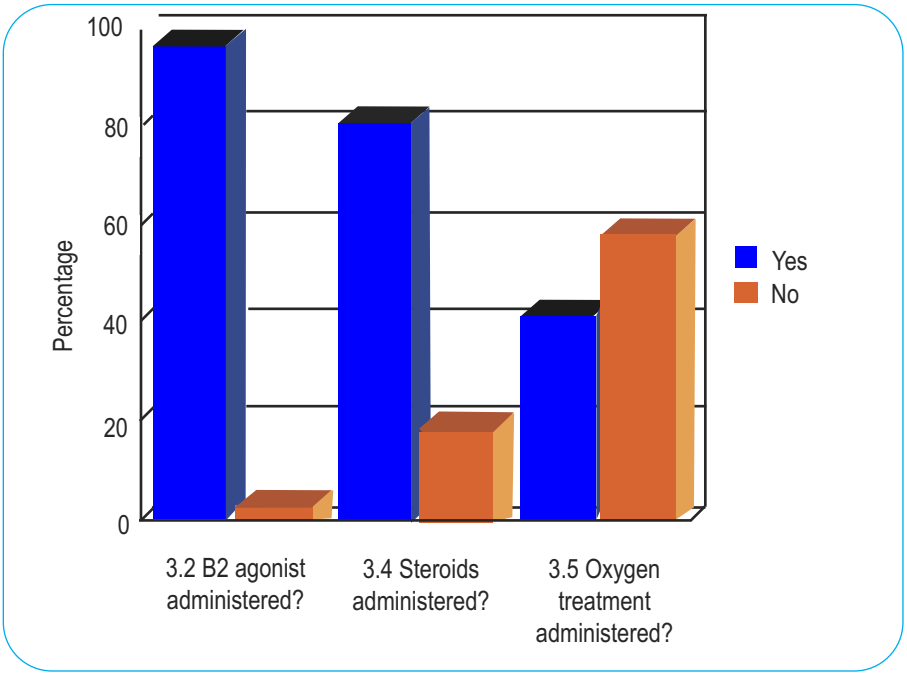
Essentially all children receive the initial treatments recommended in BTS/SIGN asthma guidelines [2]. So ninety seven percent received beta agonist bronchodilators with a third treated by nebulizer alone, a third by spacer alone, and a third treated a third by a combination of nebuliser and other devices. Half the children also received ipratropium. Eighty one percent received corticosteroids. (Figure 1).

For most children, the initial treatment is highly effective with short length stays of a day or less and only 3.7% admitted to PICU, or receiving second line treatment – around 3% received IV aminophylline, 3% IV Magnesium and 3% IV Salbutamol.

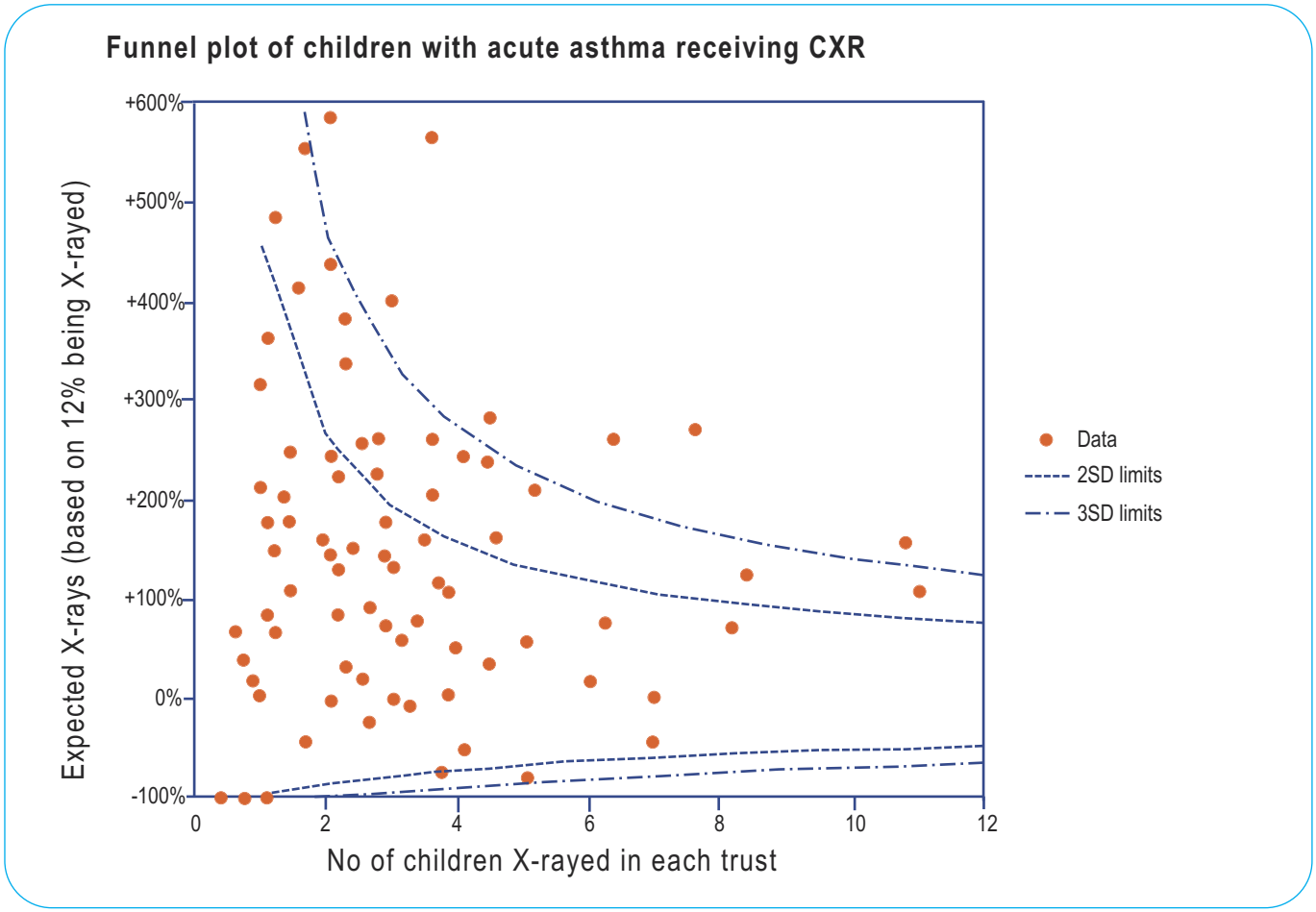
Although evidence suggests only 10-12% of children require a CXR, a relatively high number of children continue to be X-rayed (29%), and then given antibiotics (24%). However, the variation between trusts is striking - shown in the funnel plot below where the expected number of X-rays is based on an expected X-ray rate of 12%.

From the audit data, the area where care is least well done is around discharge planning. Published evidence suggests this is an important part of acute asthma management to address because good discharge planning and education can reduce the number of future asthma readmissions substantially. However, in the audit only 43% of children are recorded as having their device use checked and only 45% are recorded as being given a written discharge plan. The graph of the percentage of children in each unit recorded given (or given previously) a discharge plan illustrates the wide difference in performance between units.

Finally, the audit continues to highlight areas where research is needed. For example, the proportion of children under 5 years being admitted appears to be increasing compared with previous years data. Yet this is an area where the current evidence base is most deficient.



Age	1998	2005	2010
Under 5 yrs	61%	64%	71%
5 - 12 yrs	32%	31%	27%
>12 yrs	7%	5%	4%



Where next?

Planning is under way for the next audit in 2011. We will continue to make technical improvements to the electronic form especially around data validation during data entry. We will also have plans to improve the report.

However, the main challenge is now back to the individual units – how can you use the information to improve asthma care in your unit. From this year's evidence the biggest gains are likely to come from focusing on discharge planning.

Finally, I would again like to thank everyone at the BTS for their continuing hard work in bringing audit in respiratory medicine into the main stream. If you have comments or suggestions I would be very pleased to hear from you. (james.paton@glasgow.ac.uk).

1. BTS Audit Newsletter No 1, http://www.brit-thoracic.org.uk/audit-tools.aspx
2. BTS/SIGN British Guideline for the Management of Asthma, 2011