



# British Thoracic Society Adult Asthma Audit 2010

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## Overview

The latest BTS audit covers the period between 1st September 2010 and 31st October 2010.

It samples a smaller number of units in the UK compared to the 2009 audit (87 compared to 110) and includes data on 1,932 individual management episodes.

The audit focuses on admission to hospital, management in hospital and discharge arrangements as in previous years, and accordingly allows comparison and identification of any substantial change in the deficiencies which have been identified in previous years.

## Admission

The 2010 audit identified a striking female preponderance in admissions (69.3%), which has been seen in previous audits. Whilst this may reflect the fact that most cohorts of difficult to manage / severe asthma have a female preponderance, this may not be the entire explanation and this should be further explored.

Readmission rates are regarded as an important global indicator of good care, particularly in terms of ongoing management post discharge and whether subsequent exacerbations are managed more effectively. In the 2010 audit, the substantial majority of admissions (66.7%) had not been admitted in the

previous year, but disappointingly, 7.45% of all admissions had been admitted in the previous month (which is similar to figures in previous audits). Given asthma admission should be preventable, further scrutiny of the factors driving readmission is warranted.

## Assessment

Peak expiratory flow (PEF) is still the most easily available index of severity of airflow obstruction for acute attacks of asthma and should generally be performed in all circumstances.

Measurement and monitoring of this informs management decisions at several points in the patient pathway, and evidence of accurate recording is therefore an important quality marker. The 2010 audit found PEF data recorded in 87.4% of cases, which is identical to that in the 2009 audit and includes patients whose peak flow was too low to register. Previous audits have demonstrated similar problems with objective measurement of the severity of airflow obstruction. Importantly, only 39.2% of assessments had a post-bronchodilator peak flow, and given that the post-bronchodilator peak flow informs either potential discharge or the requirement of admission, this is of some concern. It should be noted however that this figure is an increase from the 2009 figure of 31.9%.

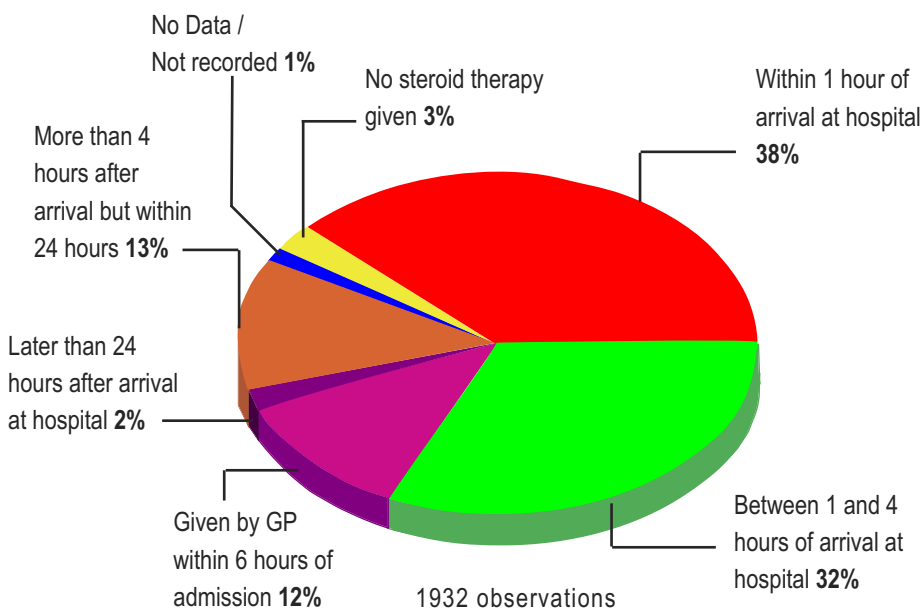
Oxygen saturation was recorded in 97.5% of assessments, and similarly high acquisition levels have been shown in other audits, undoubtedly reflecting the ease of measurement and the obvious value of saturation readings. In subjects with oxygen saturation below 92% on room air (19% of all assessments where oxygen saturation was measured), only 69% proceeded to blood gas measurement as recommended by BTS/SIGN Asthma Guidelines. Of note, 41% of assessments had blood gases performed and many of these were presumably in subjects with oxygen saturation above 92% and potentially not required. Hypercapnia was seen in 113 subjects, which is 14.1% of all subjects where a blood gas was performed.

## Treatment

Asthma is a steroid responsive condition and National and International Guidelines advise early treatment with systemic steroids (Figure 1). Only a minority of patients did not receive systemic steroids (3% of assessments) – it is not possible to gauge if patients refused steroids or there was some contra-indication to treatment in these cases. Half of patients had either received steroid treatment prior to arriving at hospital (12%) or were given steroids within an hour of arrival in hospital (38%) in line with current Guidelines. However, there

is clearly room for improvement here but it is not possible to identify from the Audit information what was the 'barrier' to rapid prescription (and presumably administration) of systemic steroids.

Figure 1. Assessment at admission: treatment with systemic steroids



In hospital peak flow monitoring was performed in 84.4% of cases which is similar to recent audits – it is not possible to comment on the cases where this was not performed and whether it related to issues such as specialty versus general ward admissions etc, however given the relatively high level of peak flow monitoring, this seems unlikely to be the sole explanation.

Only 176 (9% of total) patients were recorded as non-adherent with medication, which given the high prevalence of poor adherence data in subjects with difficult to control asthma and data from prescribing databases clearly associating poor adherence with hospital admission, means this is likely to be a significant underestimate. Hospital admission is an important opportunity to identify non-adherence with medication and action plans, and simply asking the patient is usually inadequate. Future asthma management guidelines should consider how best to identify and address non-adherence during a hospital attendance

Inhaler technique was reviewed in 47% of cases and as can be seen in figure 2, a significant proportion needed some form of correction. Preventer therapy was increased in 31.2% of

cases– again this change in therapy assumes that patients were adherent with their maintenance medication on admission, which is frequently not the case.

158 subjects were listed as a new diagnosis of asthma but surprisingly only 77.8% of subjects were started on inhaled steroids – future audits should inquire further analysis should be performed to try and identify why this did not occur.

**Review arrangements**

In terms of review after discharge, 68.8% of patients had a hospital review arranged within 4 weeks but only 37.4% were advised to attend their GP within 1 week. Importantly, only 39.8% were had their action plan reviewed or were provided with a written action plan. Given the strong evidence for written action plans, an opportunity is being missed to address this deficit.

Finally, a comment that whilst a National audit provides a broad overview, certain challenges will provide very specific difficulties for individual areas and will impact on individual hospitals. For example, one clinical site documented that 25 of their 34 patients (75%) recruited during the audit period were

smokers and 8 admitted to regularly using illicit drugs (7 cannabis smokers, 1 crack-cocaine smoker). Clearly such demographic factors will have a significant impact on many aspects of presentation and self-management.

**Summary**

The 2010 BTS audit has provided a useful snapshot of some aspects of care for acute asthma admissions in the UK. Unfortunately some of the deficiencies remain similar to the 2009 audit, suggesting that publishing and distribution of the 2009 audit has not delivered substantial changes in practice. Given that one purpose of audit is to try and identify deficiencies and address these, followed by repeat audit to demonstrate improvement, some thought should be given to how such audits are disseminated and actioned; perhaps targeting one specific deficiency with a dedicated strategy might be worth consideration.

The audit also poses some interesting and important questions, which cannot be addressed from the information provided in the audit. Again some thought should be given to addressing some of these questions either by further separate analysis or in future audits.

**Figure 2.** Discharge from hospital: Quality of review of inhaler technique

