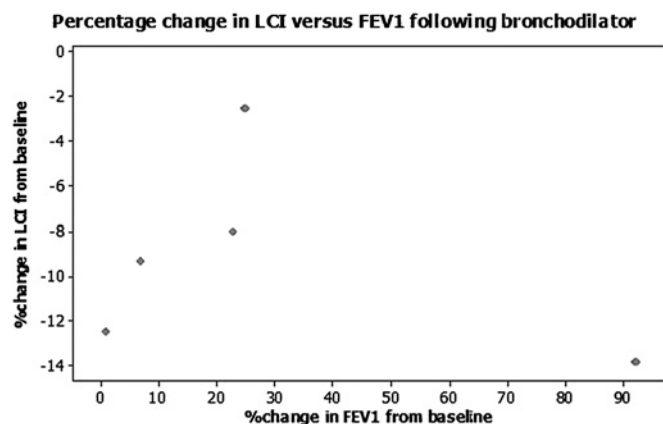


during acute exacerbation. We aimed to investigate LCI in asthmatic children requiring oral corticosteroids and admission to hospital.

Methods Children were recruited from acute medical wards. We tested children once they did not require oxygen or >2 hourly salbutamol. Admission details were extracted from medical notes. Multiple breath washout (MBW) was performed with sulphur hexafluoride and the Innocor photoacoustic gas analyser. Spirometry complied with ATS/ERS standards and was performed using the Easyone spirometer. MBW and spirometry were performed shortly before and 15 min after children's clinically prescribed salbutamol. Paired t tests and Pearson correlation coefficients were used in the analysis.

Results Nine children aged 6.4–13.6 years were recruited. Testing began on average 201 min after each child's last salbutamol. LCI was calculated for eight children, the ninth was excluded due to variable FRC. Pre bronchodilator mean (SD) LCI was 8.6 (1.8), but was only abnormal (≥ 7.4) in 5/8 children; following bronchodilator mean (SD) LCI was 8.1 (1.2). Mean (SD) FEV₁ z-score was -3.5 (1.6) and was abnormal (< -1.96) in 6/8 children; post bronchodilator FEV₁ z-score was -2.9 (1.4). Mean LCI correlated with FEV₁ z-score before and after bronchodilator ($r = -0.80$, $p = 0.017$ and $r = -0.76$, $p = 0.030$). In patients with abnormal LCI there was a significant improvement after salbutamol; with a mean difference of -0.918 , $p = 0.018$. In this group FEV₁ z-score improved by a mean of 0.802 , $p = 0.051$. Although overall both measures improved, the degrees of improvement in LCI and FEV₁ did not correlate ($r = -0.361$, $p = 0.550$). Two patients who both had abnormal pre bronchodilator LCI (mean 11.1) returned 8–10 weeks later, both had normal LCI (mean 6.9).

Conclusions LCI is abnormal in children during exacerbation of asthma. Abnormal LCI improves following bronchodilator, but changes do not correlate with changes in FEV₁. This suggests variable bronchodilator response throughout the airway. Recruitment for this study is ongoing.



Abstract P78 Figure 1 Post bronchodilator change in FEV₁ and LCI in five patients with abnormal LCI.

P79 DO CHILDREN DESCRIBE THE BENEFITS OF INHALED ASTHMA THERAPY IN THE SAME WAY AS ADULTS?

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Introduction Although it is well reported in adults, there is relatively little data on how children with asthma and their parents describe their attitudes to the disease, expectations of therapy and perception of treatment benefit. Our aim was to investigate this and determine

if they differed from reports by adults with asthma. We plan to use the results to refine patient reported outcome measures for children with asthma.

Methods We recruited families with an asthmatic child (4–11 years) who had recently been prescribed a change in treatment (starting inhaled corticosteroid monotherapy (ICS) or changing from ICS to inhaled corticosteroid/long acting β_2 agonist combination therapy (ICS/LABA). Semi-structured interviews were conducted with the parents and the children if aged 7–11 years. Transcripts were analysed using a combination of thematic and content analysis and recruitment discontinued in each group once data saturation was reached.

Results We undertook 41 interviews including 28 parents and 13 children. The numbers in each group can be seen in Abstract P79 table 1. All the children on ICS/LABA had been changed as their symptoms were not controlled on ICS monotherapy. The interviews highlighted the significant effects that paediatric asthma has on the whole family and the distress the symptoms cause to the child and their parents. Exacerbations led to frequent school absence and associated time off work for the parents. Both parents and children hoped that the new medication would lead to better symptom control, increased participation in physical activities and decreased visits to the GP or hospital. Positive effects of treatment change were identified, particularly in those changing from ICS to ICS/LABA. Benefits described included improvement in symptoms (especially cough and wheeze), increased participation in sport or play activities and reduced rescue medication use. These effects resulted in few visits to the GP/hospital and better attendance at school.

Abstract P79 Table 1 Number of patients in each group

	ICS	ICS/LABA
Children aged 7–11 years	6	7
Parents of children aged 7–11 years	6	7
Parents of children aged <7 years	8	7

Conclusions While asthma symptoms prevent adults and children from participating in different types of activities (eg, school not employment), children and their parents report the same concepts as adult patients with asthma.

P80 A QUALITATIVE EXPLORATION OF THE NEEDS AND COPING STRATEGIES OF PEOPLE WITH SEVERE ASTHMA

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Introduction and Objectives Many people with severe asthma experience frequent debilitating symptoms and treatment side effects, both of which can have a significant impact on their quality of life. While previous qualitative studies have investigated attitudes to healthcare usage among people with severe asthma symptoms, there is relatively little evidence about how people with ongoing severe asthma cope with its broader impact on their lives. This study sought to examine how people with severe asthma and their families view the impact of the condition and how this affects their approach to its management.

Methods Eight focus groups were held in five tertiary centres around the UK in 2010. Participants were grouped into young people with severe asthma (N=8), adults with severe asthma (N=26) and

parents of children with severe asthma (N=17). Discussion guides were initially structured around the revised health belief model (Rosenstock IM, Strecher VJ and Becker MH. Social Learning Theory and the Health Belief Model. *Health Educ Behav* 1988;**15**:175–183) which suggests that health behaviours are driven by perceptions in four areas: illness threat, costs and barriers to action, self-efficacy and value of reduced threat. A grounded theory approach was adopted, with concurrent data collection and analysis and adaptations made to the discussion guide in line with emerging themes (Charmaz K. *Constructing Grounded Theory*. London: Sage, 2006).

Results Many people felt relatively powerless to improve their ongoing health-related quality of life, because the perceived threats to it posed by their asthma were closely matched by perceived threats of treatment side-effects. Coping strategies to improve quality of life were therefore often targeted at social interactions, rather than improving asthma control. The revised health belief model appeared to be relevant to people affected by severe asthma.

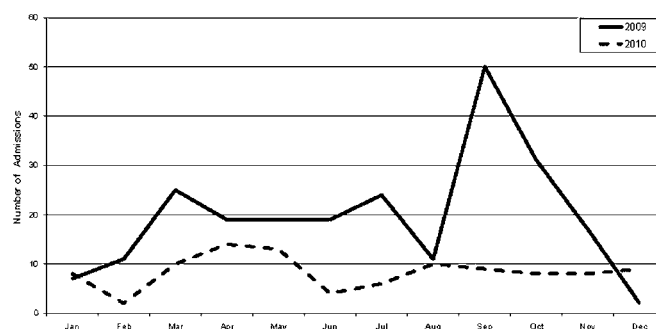
Conclusions Social support for people with severe asthma may facilitate improved quality of life and interventions that deliver this should be investigated.

P81 THE EFFICACY OF A NURSE LED, PRIMARY CARE, ACUTE ASTHMA SERVICE IN REDUCING SHORT STAY HOSPITAL ADMISSIONS

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Current interventions to decrease acute asthma admissions during childhood have achieved limited benefits. We hypothesised that a community asthma nurse service, providing rapid access consultations and an out of hours telephone service, might be an effective strategy in reducing potentially avoidable short stay hospital admissions (<24 h). We conducted a prospective observational study of the impact of such a service over a 1-year period (2010) using the previous 12 months as a historical control group (2009). There were 176 (64%) fewer short stay admissions during the intervention period compared with the previous year. The reduction in admissions resulted in gross savings to the NHS of approximately £125 000 based on the national payment by results tariff of £709 per asthma admission. There were 149 referrals to the asthma nurse service. 53% were self-referrals. 39 children with poorly controlled asthma were referred by the asthma nurse for hospital assessment. Of these 38 were subsequently admitted for in-patient treatment and 1 was discharged from the emergency department after 4 h. 21 children were judged to be relatively mild and would not have needed hospital admission if referred. 89 cases would either have been referred for hospital assessment or families would have self-referred to hospital if the service was not available. For this group it was judged by the attending nurse that their interventions had avoided hospital admission. The reduction in short stay admissions was impressive and greater than the number of patient episodes that were addressed by the service. We suspect that this was a knock on effect of good practices being repeated and disseminated within the community without necessarily re-engaging with the service. The number of non-elective short stay asthma admissions has continued to fall in 2011. From January to May 2011 there were just 29 short stay admissions which is 62% less than the 47 admissions during the same period in 2010. We suggest that this model of care is applicable to many other localities and could result in substantial cost savings to the NHS while providing appropriate care to patients in their homes.



Abstract P81 Figure 1 Number of non-elective asthma admissions with a length of stay <24 h by month.

P82 EPISODIC VIRAL WHEEZE AND MULTITRIGGER WHEEZE: ARE THEY REALLY DIFFERENT PHENOTYPES?

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Introduction Episodic viral wheeze (EVW) and multitrigger wheeze (MTW) are thought to be distinct recurrent wheezing phenotypes in preschool children. Here we tested the hypothesis that there are detectable physiological differences between children with EVW and MTW.

Methods Preschool children with and without a history of recurrent wheeze were recruited, those with symptoms were categorised as EVW or MTW. In a single assessment, the following were completed: questionnaire, respiratory resistance (Rint), bronchodilator response, nasal nitric oxide and skin prick reactivity. Exhaled breath condensate was collected and analysed for interleukin (IL) –10 concentration. A respiratory questionnaire was completed after 12 months.

Results There were 69 children recruited, mean age 3.8 years (range 2.1–5.3), of whom 34 had EVW, 19 had MTW and 16 were controls. Skin prick reactivity was determined in 57, Rint in 55, bronchodilator response in 43, nasal NO in 42, exhaled breath condensate in 24 and follow-up was achieved in 53 children. Compared with MTW, children with EVW had increased Rint (mean difference 0.21 kPa.s/L [95% CI 0.06 to 0.36]). Children with MTW were 4.0 times more likely [95% CI 1.1 to 14.7] to be atopic compared with those with EVW. Compared with controls, children with EVW and MTW had reduced IL-10 concentration in exhaled breath condensate (mean difference 1.35 pg/ml [95% CI 1.02 to 1.87]). After 12 months, wheeze had apparently resolved in 27% (12/44) children and of the 30 with ongoing wheeze, 27% (3/11) with MTW were categorised as EVW and 52% (10/19) with EVW had developed MTW.

Conclusions There are differences in lung function and atopy between children with EVW and MTW but with considerable overlap in values. The two phenotypes are not necessarily stable over time suggesting they are towards opposite ends of the same spectrum rather than different conditions.

P83 IS A SINGLE INTRAMUSCULAR DOSE OF TRIAMCINOLONE AND ACUTE BRONCHODILATOR SUFFICIENT TO DETERMINE OPTIMAL LUNG FUNCTION IN CHILDREN WITH SEVERE THERAPY RESISTANT ASTHMA?

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Background A small proportion of patients with long standing severe asthma develop irreversible airway obstruction (persistent