



International Primary Care Respiratory Group

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### Abstracts

#### ABS007: CLASSIFYING COPD EXACERBATIONS—A PATIENT PERSPECTIVE

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**Purpose:** Exacerbations are now an important clinical variable in the research and management of chronic obstructive pulmonary disease (COPD), with emphasis being on reductions in their incidence and impact on quality of life. The aim of this research was to explore the meaning of exacerbations of COPD from the viewpoint of those who had had such an experience—to hear the 'patient's voice'. **Methods:** Using principles from grounded theory we conducted semi-structured, in-depth interviews with 23 volunteers with a prior history of recent, recorded COPD exacerbations from Denmark, The Netherlands and the UK. Interviews were recorded locally and translated into English for analysis. Notable themes were identified for each informant and their occurrences compared. **Results:** Most of our recruits experienced frequent exacerbations (on average more than four per year) and yet did not afford exacerbations the same degree of prominence as healthcare professionals (HCPs). Accessing the patients' perspective of an exacerbation proved difficult. When asked directly why they had recently received treatment for their COPD, their answers appeared vague, there were no clearly distinguishable characteristics denoting 'bad days' from those requiring consultation with an HCP. Their answers centred around 'changing symptoms,' fitting with textbook descriptions of exacerbations. However, as the interviews were summarised, stories emerged which clearly depicted the events leading up to consultation. These stories fell into four categories: frightening changes (e.g. first experience of haemoptysis, or a terrifying episode of breathlessness), changes in sputum colour (e.g. green), gradual deterioration (e.g. account of deterioration over several weeks), and opportunistic diagnosis (e.g. whilst having blood pressure monitored, or during a routine review). **Conclusions:** These data provide a new way of thinking about exacerbations, offering a greater understanding and classification of the reasons underlying the decision of COPD patients to consult with HCPs. Piecing together patient accounts of the events around an exacerbation may provide better understanding of their reasons to consult. Exacerbations are of a many and varied nature, a characteristic often not reflected in research protocols. If these data

prove generalisable, they may provide an interesting way forward, not only in terms of classifying exacerbations, but also in beginning to understand why patients do or do not choose to consult. Such understanding will in turn aid our goal to reduce the incidence of exacerbations and thus their associated morbidity and mortality.

#### Acknowledgement

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#### ABS054: CREATING ACCESSIBLE PULMONARY REHABILITATION IN A RURAL AREA HEALTH SERVICE

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**Purpose:** The NSW Priority Health Care Program (PHCP) in Northern Rivers Area Health Service (NRAHS) identified the provision of pulmonary rehabilitation services as a key program deliverable. Pulmonary rehabilitation is accepted as best practice management of moderate to severe chronic obstructive pulmonary disease, yet this service has not been available to most eligible consumers, particularly those in rural and remote communities. The PEAK model was developed in an attempt to address the multiple barriers to the provision of pulmonary rehabilitation in rural and remote sites. **Method:** An innovative model was developed in NRAHS to maximise access to pulmonary rehabilitation programs for all residents within the rural health service. Three formats for service provision were developed, one being an optional intermittent site program. This intermittent format was offered to existing generalist staff at all smaller sites with portable equipment kits, standardised documentation and guidelines, \$2000 per program, in-servicing and clinical support. **Results:** To May 2003, 309 patients have completed the 8 week pulmonary rehabilitation program from 11 sites in NRAHS, with 51% having attended the intermittent programs in RMMA 4–7 area health facilities. General Practitioner support has been particularly strong in rural communities with up to 90% referring into rural programs. Outcome measures for quality of life and exercise capacity show that all three formats are clinically effective. Workplace impacts were assessed and reflect a culture shift regarding staff attitudes and ongoing service provision to chronic respiratory disease patients. **Conclusion:** Inequality of access to pulmonary reha-

bilitation for rural and remote residents has long been widely apparent. By identifying and addressing the local barriers, supporting and empowering the existing rural workforce and gaining GP and consumer support, it is possible to maximise access to comprehensive quality services for people with chronic respiratory disease residing in rural and remote settings.

#### **ABS060: SARS WAR—DEFENDING THE FRONTLINE, A SINGAPORE PERSPECTIVE**

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**Purpose:** The severe acute respiratory syndrome (SARS) epidemic in Singapore began on 1 March 2003 and ended three months later with 238 persons infected, 42% of them health-care workers (HCW) and 33 deaths. This paper chronicles the experience of setting up the rings of defence as the epidemic wore on. **Methods:** The strategy that evolved of detect, isolate and ring-fencing (DIR) the virus using 4 rings of defence against this hitherto unknown disease is described. The sources of this chronicle are from local and world-wide mass media and medical literature. **Results:** THE BORDER DEFENCE All local cases in the epidemic can be traced to just one of the 8 imported cases. The border is thus a defence ring. Thermal scanning and health declaration of passengers were implemented from April. A retrospective study however revealed that of about 443 thousands persons screened, 136 were sent for further screening but none was diagnosed as SARS. The enormous economic risk of even one in-bound SARS patient causing community spread is nevertheless justification enough. THE HOSPITAL DEFENCE. The learning curve of defending the hospitals was steep. In Tan Tock Seng Hospital (TTSH) where the first patients were warded, universal Personal Protection Equipment (PPE) of N95 masks, gloves, gowns and goggles (M3G) plus barrier nursing in single patient isolation rooms were instituted once it was clear that SARS was very infectious to both HCW and patients and can be lethal. These measures and strong clinical leadership to maintain staff discipline and morale stopped all nosocomial transmission by 5th April. However, it was not known then that signs of SARS may be masked in immuno-compromised patients. A few such patients (with the virus but not considered SARS suspects) discharged from TTSH were later admitted to other hospitals forming clusters of cases. This lesson learnt led to swift global implementation of strict same hospital re-admission policy, home quarantine orders (HQO) for 10 days for all discharged patients, no visitor rule, and mandatory PPE, temperature monitoring and restricted movements of every HCW. SARS suspect patients were immediately transferred to the SARS hospital, TTSH by special ambulances. THE COMMUNITY DEFENCE. Community defence initially emphasised knowledge of SARS and personal hygiene. A watershed event was the closure of a large wholesale food market on 20th April and deployment of the army to trace within 24 h more than 2000 people for HQO. Three days later, the Prime Minister invoked a total defence doctrine involving personal responsibility encompassing every sector of society to ensure that 'there are no holes in our ring-fence against SARS'. Community and civic organisations rallied. Twice daily temperature taking was implemented at schools and workplaces to detect fever as an early sign of SARS and also as a mass psychological defence exercise. A Courage Fund for public donation and a mass public campaign to appreciate (and not ostracise) HCW boosted morale. Intense efforts were made to ensure that the SARS messages of DIR reached groups at risk of being uninformed for example elderly illiterates. THE PRIMARY CARE DEFENCE. The primary care defence ring had the arduous tasks of detecting suspect SARS from other common flu-like febrile illnesses for immediate isolation in TTSH. A SARS workgroup set up by the College of Family Physicians was crucial in translating Ministry of Health (MOH) directives into practical measures. Such advisories were disseminated by print, e-mails and web-casting. The community outbreak in the wholesale market created fear of wider com-

munity spread. Contact with suspect SARS patients and travel history can no longer be relied upon. Amongst other measures, a telephone hotline manned by doctors was thus set up on 7 May to clarify diagnostic, PPE and HQO difficulties. **Conclusions:** The SARS virus spread by jet from Hong Kong incognito to Singapore and other affected countries. It spread to a few hospitals and into the community. This epidemic showed that erecting the four rings of defence to detect, isolate and ring-fence the virus, is crucial to rapidly contain outbreaks caused by SARS.

#### **ABS002: FEASIBILITY OF USING ROUTINE DATA TO IDENTIFY PATIENTS AND AS OUTCOME FOR A CLINICAL TRIAL: A RANDOMISED CONTROLLED TRIAL OF ASTHMA SELF-MANAGEMENT PLANS IN PRIMARY CARE**

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**Purpose:** A recent Health Technology Assessment (Williams et al. 2003) suggested that routinely captured clinical data has real potential to measure patient outcomes and to support assessment by RCTs. This prospective, cluster randomised trial was carried out to assess the feasibility and effectiveness of using routine, electronic patient data as the basis of a RCT of practice nurse training in the use of asthma action plans for adults receiving medication at Step 2 or above of the BTS guidelines. Are action, or self-management, plans for asthma effective across the broad spectrum of practices and patients in primary care in North East Scotland? **Methods:** Cluster sampling was by general practice (six control and six intervention). Patient-identifiable, electronically stored routine data were sought from all 12 practice administrative databases using diagnostic and/or prescription term searches. A randomly selected sub-sample of identified patients was asked to complete the Juniper Asthma Quality of Life and Asthma Control questionnaires at baseline and 6 months. Practice nurses in the intervention practices were trained in the use of asthma action plans. Training focused on "good practice" as per guideline recommendations and emphasised professional-patient partnership. Nurses in control practices continued their usual asthma care. Routine clinical data from the trial period was collected, including medication, unscheduled consultations, etc. Control and quality of life scores were collected in our subsample. **Results:** Of 4425 adult patients coded as having asthma, we identified 636 adult patients (17–55 years) with poorly controlled asthma at Step 2 and above of the BTS guidelines. Percentage of patients with poorly controlled asthma in individual practices varied widely, from 6 to 35%. Routine data was collected for these 636 patients and they were sent invitations for review. **Conclusions:** As found in other studies, we identified difficulties in identifying, extracting and accessing data, lack of uniformity in coding and missing data. It seems that routine data is lower quality than designed data but this is offset by economy, generalisability and large numbers of patients. We need to find ways of improving practice routine data such as aligning this with contracts or reimbursement requirements.

#### **ABS008: PREVALENCE OF ASTHMA SYMPTOMS AND SIGNS OF BRONCHIAL OBSTRUCTION IN NON-PARTICIPANTS OF AN EPIDEMIOLOGICAL STUDY OF CHILDREN WITH ASTHMA IN GENERAL PRACTICE**

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**Purpose:** In 2000, an epidemiological study: 'Almere Asthma Project' (AAP) was started to study three different strategies to improve implementation of a national guideline on the treatment of children with asthma. We aimed to evaluate asthma symptoms and lung function in non-participants of AAP in order to find out whether the reason for non-participation was lack of asthma symptoms. **Methods:** 100 randomly selected, non-participating children were asked to cooperate with a 30 min evaluation of asthma symptoms, medication usage and lung function. **Results:** 61 children were evaluated. Mean FEV1 was 88.7% (S.D. 12.6) of predicted. Eighteen children (30%) had an FEV1 <80% of predicted. Twelve children (20%) had a positive bronchodilator response >12%. Thirty-nine children (64%) mentioned symptoms of their asthma in the week before evaluation, varying from limitation of activities to awakening at night. Half of these children qualified their symptoms as mild and/or infrequent. There were no significant differences between symptomatic and asymptomatic ( $n = 22$ ) children in age, sex, lung function, allergy and duration of asthma. Twenty-four children (39%) used ICS of whom seven on a daily basis. **Conclusion:** In 2/3 of the children, mild or absent asthma symptoms were probably an important reason for non-participant. Nevertheless, we found lung function abnormalities in 25 children of whom nine were asymptomatic. The compliance with asthma therapy was low.

#### ABS009: THE EFFECT OF IMPLEMENTATION OF A GUIDELINE ON BRONCHIAL HYPERRESPONSIVENESS IN CHILDREN WITH ASTHMA IN GENERAL PRACTICE

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**Purpose:** In 2000, an epidemiological study: 'Almere Asthma Project' (AAP) was started to study three different strategies to improve implementation of a national guideline on the treatment of children with asthma. We aimed to evaluate whether introduction of these strategies affects severity of bronchial hyperresponsiveness in asthmatic children. **Methods:** 18 health care centres and their general practitioners were randomly allocated three study groups. All physicians received an up-date CPG, 2/3 received a single education session on asthma and 1/3 additionally received a report of lung function results of participating children with an individualised treatment advice based on the BHR result. We evaluated asthma symptoms, usage of medication and bronchial hyperresponsiveness (BHR) twice in 364 children with asthma (aged 7–17) prior to and one year after the implementation of the CPG. **Results:** Mean FEV1 was 96.6 % of predicted, while mean PD20 was 608 µg, and 47% had moderate to severe BHR (PD20 < 300 µg) at baseline. At the end of study mean FEV1 was 96.3% of predicted, and mean PD20 1366 µg. Within groups there was a significant improvement in PD20 in group A ( $P = 0.02$ ) and C ( $P < 0.0001$ ). The between group difference reached borderline significance ( $P = 0.09$ ). **Conclusion:** In this general practice based population almost half of the children showed moderately to severe BHR. There was an overall improvement of BHR after 1-year follow-up. There seems to be a superior effect of the strategy, which includes feedback of asthma parameters with an individualised treatment advice.

#### ABS015: ASTHMA RATES IN POPULATION SUB-GROUPS IN AUSTRALIAN GENERAL PRACTICE

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**Purpose:** International and Australian incidence and prevalence studies have provided evidence of health differences between population sub-groups. Issues of culture and ethnicity may present barriers to health care, and these issues are often compounded by socioeconomic factors. Asthma is the sixth most frequently managed problem in Australian general practice. This study examines the relative rates of asthma management for adults and children in sub-groups of the Australian general practice population between April 1998 and March 2003. The sub-groups examined are patients who identify themselves as Aboriginal or Torres Strait Islander (or both), patients from a non-English speaking background (NESB) and patients who hold a Commonwealth Government Health Care Card (HCC). **Methods:** Bettering the evaluation and care of health (BEACH) is a continuous national cross-sectional survey of general practice activity in Australia enrolling about 1000 randomly selected GPs per year. Information is collected about GP and patient characteristics, and morbidity and treatment for 100 consecutive encounters per GP. The sample used for this study is the 502,100 GP per patient encounters recorded by 5021 GPs over the first 5 years of BEACH. These data were analysed to examine the relative rates of asthma for the population sub-groups compared to the total general practice sample over the 5 years from April 1998 to March 2003. **Results:** Asthma in the total general practice sample was managed at a rate of 2.9 per 100 encounters (95%CI: 2.8–3.0). The rate of management for asthma in the Aboriginal & Torres Strait Islander subsample was significantly higher at 4.3 per 100 encounters (95%CI: 3.6–5.0), and significantly lower in the NESB subsample at 2.4 per 100 encounters (95%CI: 2.2–2.6). There was no significant difference in the rate of Health Care Card holders (3.1, 95%CI: 3.0–3.2) to that of the total sample. **Conclusions:** These data show evidence of differences in management rates of asthma between population sub-groups, and differences in rates for some of these groups compared to the larger general practice patient population. The reasons for these differences require further investigation.

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#### ABS016: CHANGES IN ASTHMA MANAGEMENT IN AUSTRALIAN GENERAL PRACTICE

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**Purpose:** Asthma is the sixth most frequently managed problem in Australian general practice. This study examines the prevalence and severity of asthma in adults and children presenting to general practice between March 1999 and October 2002, and the changes in relative rates of asthma management for adults and children between April 1998 and March 2003. **Methods:** BEACH is a continuous national cross-sectional survey of general practice activity in Australia enrolling about 1000

randomly selected GPs per year. Information is collected about GP and patient characteristics, and morbidity and treatment for 100 consecutive encounters per GP. SAND is a substudy undertaken over 5 week periods during the BEACH year gathering data about other morbidity which may not be managed at the patient encounter. Four SAND substudies examining asthma prevalence were undertaken over 4 years. The sample used for this study is the 502,100 GP/patient encounters recorded by 5021 GPs over the first 5 years of BEACH. The four SAND substudies included 15,536 patients from the total sample. In these substudies, GPs were asked to record patient asthma status and asthma severity based on National Asthma Council severity classes. **Results:** Prevalence results were similar ranging from 12.8 to 14.7% over the four separate SAND substudies. The prevalence in children was marginally higher than for adults in each of the substudies, although the difference did not reach statistical significance. Levels of severity were also similar for adults and children across the four substudies. The management rate for asthma has decreased significantly from 3.2 problems per 100 GP per patient encounters in 1998–1999 to 2.7 per 100 encounters in 2002–2003 ( $P < 0.0001$ ). This is an average annual reduction of 0.11 asthma problems per 100 encounters, equivalent to a decrease of around 14,300 asthma management encounters nationally over the 5 years. The main decrease occurred between 1999 and 2001, with rates levelling in the last 2 years. Prescriptions for bronchodilators decreased significantly from 3.7 per 100 encounters in 1998–1999 to 2.5 per 100 encounters in 2002–2003 ( $P < 0.0001$ ). The prescription rate for asthma preventives remained steady over the 5 years. **Conclusions:** While the prevalence of asthma among general practice patients has remained constant since 1999, the rate of asthma management has decreased. The increased availability of reliever medications over-the-counter (previously prescribed in some states) may be associated with this change. The introduction of the 3+ visit plan in 2001 coincided with the levelling off of management rates and is a possible cause, however its long term effect on management rates is yet to be determined.

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#### ABS001: COPD—CURRENT AND FUTURE MANAGEMENT

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Management of COPD has evolved rapidly in the last decade as a result of the growing awareness of the potential to alleviate symptoms and improve quality of life in this disease. Previous nihilism was based on a belief that disability due to severe airway obstruction could not be relieved and patients at the severe end of the COPD spectrum were poorly responsive to medication. This was partly due to a failure to recognise the importance of endpoints and outcomes other than standard measures of lung function. Functional outcomes such as walking distance, activities of daily living, exacerbations and quality of life are now regarded as critical for assessing the benefits of interventions in the management of COPD. Whilst prevention still has the greatest capacity to modify the natural history of this disease, early identification of the disease is a critical step in developing an appropriate management plan. Most patients are not diagnosed until they have developed significant exertional dyspnea, at which time the FEV1 is usually 50% predicted or less. There is an urgent need to enhance the early recognition of the disease by identifying those at risk, recognising

the cardinal symptoms and performing spirometry routinely in general practice. This will facilitate appropriate steps to help patients give up smoking and commence treatment. There is now good evidence that inhaled corticosteroids can improve quality-of-life, walking distance, symptoms and lung function in many patients with COPD, although the optimal dosing and best time of commencement is not yet fully understood. Long acting bronchodilators can reduce risk of hospital admission and improve symptom control. Studies of COPD mortality, exacerbations and hospital admissions on combination therapy are awaited. New, anti-inflammatory drugs will soon be available which may add value to current therapies. Pulmonary rehabilitation can achieve marked benefit in quality-of-life and exercise capacity, although its availability and options for long-term maintenance are still limited to major centres. GPs have a vital role in educating patients and helping them to develop self-management strategies. These need to be tailored to the individual patient, but can assist patients to commence antibiotics and oral steroids appropriately for exacerbations. At the end stage of the disease, non-invasive ventilation has improved the hospital management of respiratory failure but facilitating a good death and discussion of end-of-life issues with patients and their carers remains an under developed skill for many health professionals.

#### ABS021: ASTHMA OUTREACH PROGRAMS PROVIDED BY RURAL COMMUNITY PHARMACISTS: A FEASIBILITY STUDY

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**Purpose:** There are added challenges associated with asthma and its management in rural areas. Limited access to health care services and shortages in specialist services are shifting the burden more and more towards the primary sector. In the case of asthma, outreach programs have been shown to have beneficial effects in terms of reducing hospital admissions and emergency visits, and improved asthma outcomes. The aim of this study was to assess the feasibility and impact of two asthma outreach programs delivered by community pharmacists in a rural setting. **Methods:** Seven community pharmacists from Orange NSW, were trained to provide two asthma outreach programs, one targeting adolescents (Year 11 students from three local high schools), using the Adolescent Asthma Action (Triple A) program and a community based asthma information evening (public forum) for the wider community. Each program was evaluated by participants and attendees respectively. Data concerning patient initiated asthma-related information requests in the community pharmacies were documented at four different time points coinciding with aseline (prior to delivery of either outreach program), 1 week after the Triple A education and 1 and 2 weeks after the public forum. **Results:** There was a significant increase in the mean asthma knowledge scores of Year 11 students after Triple A training and ( $19 \pm 3$  versus  $23 \pm 3$  (mean  $\pm$  S.D.),  $n = 92$ ,  $F = 101.09$ ; d.f. = 1;  $P < 0.05$ ). There was a significant increase in the proportion of asthma-related pharmacy visits involving requests for information on asthma ( $\chi^2$  test for trend = 23.62; d.f. = 1) and on asthma devices ( $\chi^2$  test for trend = 23.62; d.f. = 1) at the four different time points. **Conclusions:** Community pharmacists can be providers of outreach health promotion programs, which can result in an increase in asthma knowledge and request for further asthma-related information. These programs also have the potential to raise community awareness of the pharmacist as a source of health information and advice. This pilot study indicates that outreach health promotion by community pharmacists is not only feasible and effective but also might easily be sustained in the future.

Smoking burden and prevalence (%) of daily use of medication by COPD stage according to the GOLD guidelines among all 10,941 subjects participating in the BONT study

COPD stage	N	Mean pack-years	Short-acting b2-agonists	Long-acting b2-agonists	Anticholinergics	Theophylline	ICS
1	530	11.2	11.3	1.9	0.9	1.3	17.1
2	1107	17.5	25.4	6.2	3.4	1.4	32.1
3	343	20.3	52.2	11.1	9.9	3.8	55.1
4	72	26.2	73.6	30.6	30.6	5.6	73.6

#### ABS039: USE OF MEDICATION IN COPD PATIENTS: THE BONT STUDY

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**Purpose:** Inhaled corticosteroid (ICS) is the corner stone treatment of bronchial asthma. The evidence for effect in chronic obstructive pulmonary disease (COPD), however, has been limited. Even though, studies have indicated that ICS is widely used even in this group of patients. We wanted to study the treatment regimens used in COPD patients in a population-based study. **Methods:** From 1995 to 1997 all inhabitants aged  $\geq 20$  years of the county of Nord-Trøndelag in Norway were invited to the Nord-Trøndelag Health Study (HUNT), totally 65,225 subjects participated (71%). The Bronchial Obstruction in Nord-Trøndelag Study (BONT) invited a 5% random sample ( $n = 2791$ ) and subjects reporting attacks of wheezing/breathlessness during the last 12 months or use of asthma medication ( $n = 8150$ ). Phase I consisted of flow volume spirometry and an interview focusing on respiratory symptoms and use of medication. **Results:** In the 5% random sample the prevalence of ex-smokers and current smokers were 20.1 and 31.0% in women and 31.0 and 29.5% in men. In women 6.6% had  $FEV_1/FVC < 0.70$  and 3.8% combined with  $FEV_1 < 80\%$  predicted. The corresponding figures in men were 13.4 and 7.4%. COPD stage 0, I, II, III, and IV were found in 6.1, 4.3, 4.7, 0.7 and 0.1%, respectively. **Conclusions:** The use of medication increased with the severity of disease. Even if some might have asthma and COPD, the use of ICS was high in 1995–1997 compared to the current GOLD guidelines recommending ICS only in subjects with stage III–IV with frequent exacerbations.

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#### ABS040: BRONCHODILATOR RESPONSE IN A POPULATION BASED STUDY

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**Purpose:** Bronchodilator response is widely used diagnosing bronchial obstructive diseases and when measuring maximal lung function. Different recommendations are given regarding how the response should be expressed and cut-off values for positive test. To decide cut-off values there is an urgent need of population based studies. **Methods:** From 1995 to 1997 all

inhabitants aged  $\geq 20$  years of the county of Nord-Trøndelag in Norway ( $N = 92,000$ ) were invited to the Nord-Trøndelag Health Study (HUNT). A 5% random sample ( $n = 2791$ ) performed flow volume spirometry, answered questionnaires and were interviewed. The 1/3 of the random sample, were invited to spirometry before and 30 min after inhalation of 1 mg terbutaline. Prediction equation developed for this population was used to estimate predicted  $FEV_1$ . **Results:** Totally 894 subjects performed reversibility test. The 367 subjects who reported no respiratory symptoms, had  $FEV_1/FVC > 0.70$  and  $FEV_1 > 80\%$  of predicted, were studied. Among these 212 were never-smokers, 83 ex-smokers, and 72 current smokers. Both when bronchodilator response was expressed in percent of the initial  $FEV_1$  and predicted  $FEV_1$ , the mean value and upper 95th percentile (U95P) among never-smokers were 3.3 and 12.6%, respectively. These figures were not significant different from those for ex-smokers (2.9 and 10.8%) and for current smokers (3.5 and 13.5%). Including all, the U95P was 12.4%. These figures were fairly stable across gender, age, height and pack-year group. **Conclusions:** A cut off of 15% has been used for positive reversibility test in Norway. Our results support a change to 12% as recommended by the American Thoracic Society.

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#### ABS056: COUGH AND BREATHLESSNESS IN CHILDREN

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Cough is one of the commonest symptoms in childhood and in most instances is due to an acute infection which subsides spontaneously in 7–10 days (i.e. acute viral bronchitis). There is general consensus that a 'chronic' cough be defined as cough persisting for 4–6 weeks. Infective causes of chronic cough include specific infections such as: Viral influenza, Pertussis (whooping cough), Mycoplasma pneumoniae, and rarely, Mycobacterium tuberculosis. Children with a chronic productive cough should be suspected of chronic suppurative lung disease (e.g., retained foreign body inhalation, bronchiectasis, Cystic Fibrosis). A classical cause of a chronic, bizarre cough in older children is psychogenic cough. Children with structural malformations of the major airways (e.g. primary or secondary tracheomalacia) will also have an unusual sounding, 'honking' cough. As distinct from adults, gastro-oesophageal reflux, post-nasal drip/chronic sinusitis, and chronic bronchitis are rare causes of cough in childhood. The combination of recurrent or persistent cough and breathlessness (usually with audible wheeze) is very common in childhood, and is generally due to asthma. Thus, while cough, wheeze, and breathlessness represent the classical triad of symptoms of childhood asthma, cough in the absence of wheeze and breathlessness is generally not due to asthma. In a substantial number of young children, bouts of 'cough alone' will be frequent, recurrent and disturbing for both the child and the parents (i.e. recurrent viral bronchitis). With acquisition of immunity to the common respiratory viruses with increasing age, the child will have progressively fewer bouts of 'cough alone', and the episodes will become

less troublesome. An important concept is the distinction between airways hyper-responsiveness (AHR) which equates with bronchoconstriction/asthma; and heightened cough receptor sensitivity (CRS) which equates with a predisposition to 'cough alone'—but not asthma. The pathways for bronchoconstriction and cough are quite separate, with different laboratory based provoking agents and different blocking agents. By far the most important distinguishing feature is the clinical *history* and *physical examination*. *In summary*: recurrent cough and breathlessness in children is due to asthma. 'Cough alone' is usually *not* due to asthma, but is more likely to be due to acute or recurrent viral bronchitis, although other less common conditions need to be considered. While the differentiation of asthma from viral bronchitis is clinical, simple lung function testing can detect reversible airflow obstruction in older (school age) children. If uncertain, a therapeutic trial of asthma medications may be appropriate. However, the possibility of a placebo effect, and the favourable natural history of recurrent viral bronchitis may falsely suggest a response to therapy. Thus, the trial should be of relatively short duration, with critical review of any response. Trials using progressively higher doses of inhaled corticosteroids are not indicated in the child with 'cough alone'.

#### **ABS053: A COLLABORATIVE APPROACH TO RURAL ASTHMA MANAGEMENT ACUTE AND COMMUNITY SECTORS WORKING TOGETHER**

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**Purpose:** As the hospital admission rate for asthma in our region is higher than expected, we aimed to develop a collaborative model of asthma management for patients at increased risk of poor outcomes from their disease. We looked for evidence that this model was effective in improving care delivery, and that patients involved were less likely to return to hospital. **Methods:** The main components of the model were: (1) Collaboration in planning and delivery. Key stakeholders involved were representatives from General Practice, Community Health, acute hospital and consumers. (2) Development of a GP and Practice Nurses *Respiratory Specialist Interest Group (SIG)* promoting implementation of best practice in the primary care setting, including national strategies such as the *Asthma 3+ Visit* plan. (3) Development of asthma education packages involving minimum competencies to be achieved by nursing staff from involved sectors. (4) Production of consistent health provider and consumer education packages, promoting a coherent message on patient education and self-management, health promotion and prevention. (5) Enhancement of existing Emergency Asthma Management (EAM) courses so these could be offered to schools, day-care centres, sporting bodies and employers of referred patients. (6) Development of a trajectory of care and referral between the acute and community sector that was bi-directional; acute and community service provision supporting one another. The bi-directional trajectory ensured that when a patient entered the acute health sector they would receive a minimum expected standard of education, and a referral to the community services asthma educator following discharge for ongoing education and support. **Results:** During the first 7 months, 13 EAM programs were conducted. 109 referrals from the acute sector to the community sector were generated compared to none in the preceding 12 months.

Eight-one of these referred patients (almost 75%) attended for further education. In contrast only 8% of patients in an unnamed metropolitan hospital attended for further asthma education (Department of Human Services, Working Party Report, 2003). Re-presentation to the emergency department during the course of the study period occurred in 2 of the 81 (2.5%) patients who participated fully in the program, compared to 3/28 (11%) that did not. Anecdotally, a number of patients and family members have reported improved adherence to self-management and improved levels of self-efficacy, providing areas for further study. **Conclusion:** We successfully implemented a model of care characterised by tight association between community and acute services and provision of consistent education and practices. The model was associated with increased fulfilled referrals from the acute to the community sector, and may reduce hospital re-presentation in this patient group.

#### **ABS025: ASTHMA AND ALLERGY PREVENTION AND CONTROL PROGRAM IN IRAN**

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**Introduction:** WHO believes that asthma is the most common chronic illness among children and, according to several scattered studies which have been conducted based on ISAAC questionnaire, about 10% of Iranian Children suffer from asthma symptoms. Considering these facts and by the suggestion of university professors "National Committee of Asthma and Allergy" has been established since 1999 composed of health program managers at Center for Disease Control (Ministry of Health and Medical Education) and a few of the well known allergologists, pulmonologists, otolaryngologist, and basic immunologists in order to make policy on asthma and other allergic diseases prevention and control. Up to now, many activities have been done at national level, and the most important of them is a research called "National Plan of Asthma Registry" which is used for registering of physician diagnosed patients based on history, physical examination and spirometry to obtain a model for integration of asthma prevention and control into national Primary Health Care system and detection of asthma risk factors, analyse its situation, and review its other epidemiologic aspects in Iran. Registration of prevalent cases have been finished (stage 1) and it has been shown that the frequency of asthma in children less than 15 years old was between 11 and 22% in total asthmatic patients who have been reviewed in that stage, and cough is one of the most prevalent symptoms and there are some other results. The circle and registration method is discussable which is nearly unique in the Eastern Mediterranean Region. Now, registration of incidence cases is in progress. **Other activities:** (1) To provide published educational material for physicians, nurses, patients, school hygienists, families and pregnant women. (2) To provide a research document bank on asthma. (3) To provide a list of useful drugs in controlling of asthma and make them available. (4) To Review on the law of establishing the asthma and allergy clinics, and its modification. (5) To hold World Asthma Day 2000/2001/2002/2003. (6) To determine research priorities on asthma and allergy. (7) To revise on re training program for physicians and including asthma in that program. (8) To hold seven regional asthma workshops for physicians through Iran. (9) To hold four regional asthma workshops for nurses through Iran. (10) To produce spacer and Peak Flow Meter in Iran. (11) To provide a video on asthma for public education. (12) To provide a research plan on adverse drug reactions in hospitalised patients and its conduction. **Conclusion:** Asthma is an important health item in Iran, we do our best to prevent and control of asthma and its integration into national Primary Health Care system.

**ABS010: WEB-BASED DISSEMINATION OF THE BRITISH ASTHMA GUIDELINE 2003**

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**Purpose:** The implementation of a guideline is only likely to be successful if it is accompanied by an active dissemination programme. To coincide with publication of the British Asthma Guideline in February 2003, the British Thoracic Society/Scottish Intercollegiate Guideline Network (BTS/SIGN) Executive set up a multi-disciplinary group charged with ensuring wide dissemination. **Methods:** An early decision was taken to focus on using the websites of the BTS and SIGN organisations to provide educational resources with the potential to reach a wide, and potentially international, audience. We identified the key messages for each section of the guideline and an experienced medical writer was commissioned to produce slides, case histories and posters to support both dissemination and implementation of the recommendations. We collected the download statistics for both web pages for 18 weeks, and conducted an on-line survey of those downloading from the web-pages during one week in April 2003. **Results:** A total of 135,710 copies of the guideline and 90,198 copies of the Quick Reference Guide were downloaded in the first 18 weeks after the launch in addition to 35,401 copies sent by post. Over the same time 18,400 sets of slides, 21,494 posters and 23,636 case histories were downloaded. 12% of the 258 responders to the on-line questionnaire were from outside the UK. The majority of resources downloaded were rated as useful or very useful and were to be used for teaching purposes (42.3%) or for reference (38%). **Conclusion:** Use of a web-base has facilitated both widespread national dissemination and international access to the resources. The act of downloading is an active process and is more likely to be a basis for successful implementation than the passive receipt of a mailing. In order to continue to provide current, evidence based recommendations for the management of asthma the BTS and SIGN have established a "Living Guideline" which will be updated annually on both websites. **Funding:** The guideline was funded by the British Thoracic Society/Scottish Intercollegiate Guideline Network (and National Asthma Campaign) Dissemination was supported by GlaxoSmithKline, AstraZeneca, 3M, MSD, Schering-Plough, Vitalograph, IVAX and Clement Clarke.

**ABS011: COMPARISON OF POSTAL VERSUS SUPERVISED ADMINISTRATION OF THE MINI ASTHMA QUALITY OF LIFE QUESTIONNAIRE**

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**Purpose:** The Mini Asthma Quality of Life Questionnaire (MiniAQLQ) is validated for self-completion under supervision, though there is increasing interest in postal administration. We compared the responses obtained by postal adminis-

tration of the MiniAQLQ with those obtained by supervised self-completion. **Methods:** 96 adults, recruited from the asthma register of a UK general practice, were sent the postal questionnaire with an instruction sheet a week before completing the questionnaire under supervision. Responses, for the 56 patients who stated that asthma-related quality of life had not changed between postal (P) and supervised (S) completions were compared using paired-sample *t*-tests, Pearson's correlation coefficient and intraclass correlation coefficient. **Results:** 94/96 (98%) postal questionnaires were returned of which 10 contained a completion error. 86/96 (90%) attended for supervised completion with no completion errors. Overall usable response rates were similar. (postal versus supervised: 84/96 versus 86/96,  $P = 0.65$ ). Overall mean scores (S.D.) were similar in the two groups P: 5.14 (1.42) versus S: 5.17 (1.39) mean difference  $-0.03$  (95%CI  $-0.14$  to  $0.08$ )  $P = 0.59$ . There was a high degree of correlation (Pearson's  $r = 0.96$   $P < 0.001$ ) and concordance (ICC =  $0.96$  (0.93 to 0.98)  $P < 0.001$ ). Similarly high levels of concordance were observed for each of the four domains. **Conclusion:** The concordance between postal and supervised administration of the MiniAQLQ is very high and users may confidently choose the mode of administration most appropriate to their needs.

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**ABS031: SYMPTOM-BASED QUESTIONS FOR IDENTIFYING COPD IN SMOKERS**

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**Purpose:** COPD often goes undiagnosed, leading to calls for more active case detection. In most primary care settings, spirometric screening of all smokers is not practical. We prospectively tested questions derived from literature review and an international Delphi panel that might help identify COPD among persons with a positive smoking history but no prior history of obstructive lung disease. **Methods:** We recruited current and former smokers aged 40 years and older, with no prior diagnoses nor medications consistent with obstructive lung disease, via random mailing to primary care practices in Aberdeen, UK and Denver, US. Participants completed a questionnaire covering demographics and symptoms and then underwent spirometry with reversibility testing. Airway obstruction was defined by post-bronchodilator FEV1/FVC  $< 0.70$ . We then examined the ability of individual items in a multivariate framework to correctly discriminate between persons with and without obstruction. **Results:** We analysed results from 542 subjects. From an original list of 51 items, 17 entered the final regression, of which eight showed statistically significant relationships with the study diagnosis. These included the following:

- age group (in years);
- pack-years smoked ("How many cigarettes do you currently smoke each day (if you are an ex-smoker, how many did you smoke each day)?" and "What is the total number of years you have smoked cigarettes?");
- body mass index (calculated from height and weight);
- weather affects cough ("Does the weather affect your cough?");

	Zones	Percent of risk group in zone (%)	Probability of having COPD (%)	Cases in zone per 100 person screened	Severity (GOLD stage, %)		
					I	II	III–IV
Case-finding (COPD prevalence = 18.9%)	1	30	37.0	11	44	41	15
	2	20	20.4	4	40	60	0
	3	50	7.3	4	67	33	0
Differential diagnosis(COPD prevalence = 39.3%)	1	30	77.8	23	26	45	29
	2	25	46.8	12	32	41	27
	3	45	17.7	8	64	36	0

- phlegm without a cold ("Do you ever cough up phlegm (sputum) from your chest when you do not have a cold?");
- phlegm in the morning ("Do you usually cough up phlegm (sputum) from your chest first thing in the morning?");
- wheeze frequency ("How frequently do you wheeze?"); and
- have had any allergies ("Do you have or have you had any allergies?").

This candidate questionnaire achieved sensitivities of 58.7–80.4% and specificities of 57.5–77.0%, depending on the scoring cutpoint used. Predictive values range from 30.3 to 37.0% for a positive test and 89.0–92.7% for a negative test. **Conclusions:** A symptom-based questionnaire can be used to identify persons likely to have COPD among smokers with no prior history of obstruction. When completed, this tool can help identify patients requiring spirometric follow-up.

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#### ABS032: SCORING SYSTEM FOR SYMPTOM-BASED DIAGNOSTIC QUESTIONNAIRES FOR COPD

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**Purpose:** In most primary care settings, spirometric screening of all patients at risk is not practical. We prospectively tested questions that might help identify COPD in two risk groups: (1) persons with a positive smoking history but no prior history of obstructive lung disease ("case-finding"), and (2) patients with prior evidence of obstructive lung disease ("differential diagnosis"). For the questionnaires thus developed, we present a scoring system for use in primary care. **Methods:** We recruited persons aged 40 years or older from primary care practices in Aberdeen, UK and Denver, US. Participants completed a questionnaire covering demographics and symptoms and then underwent spirometry with reversibility testing. Airway obstruction was defined by post-bronchodilator FEV1/FVC < 0.70. Using multivariate methods, we identified the best performing questions to correctly discriminate between persons with and without obstruction in each risk group. We independently developed scoring systems for each questionnaire. Individual question weights were based on relative risk ratios as determined by the final regression model with the greatest area under the receiver-operator curve. **Results:** For both case-finding and differential diagnosis scenarios, we created a scoring

system with two cutpoints intended to place subjects within one of three zones: persons with a high likelihood of having obstruction (high predictive value of a positive test); persons with a low likelihood of obstruction (high predictive value of a negative test); and an intermediate zone. Using these scoring systems, we achieved the following receiver-operator characteristics:

**Conclusions:** Questionnaires based on patient-reported information can be used to identify persons likely to have COPD among specific risk groups. This can be done with acceptable performance characteristics. The use of a simple scoring system makes these tools accessible in the primary care setting.

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#### ABS033: MONTELUKAST FOR INTERMITTENT ASTHMA IN CHILDREN REDUCES HEALTH RESOURCE USE AND PARENT REPORTED WORK AND SCHOOL LOSS. RESULTS OF THE PRE-EMPT STUDY

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**Purpose:** Intermittent asthma is the most common pattern of asthma in children and is responsible for the majority of health resource use in asthma and much parent and child time off work and school respectively. Montelukast has been developed as a preventative agent for the management of asthma and clinical trials have demonstrated that the benefits of Montelukast occur within 24h of initiating treatment. The aim of this study was to determine whether a short course of montelukast, introduced at the onset of an acute episode would reduce acute health care utilisation, symptom severity and parental and child time off work and school. **Method:** Children, aged 2–14 years, with intermittent asthma were enrolled in a randomised, double-blind, placebo-controlled study of a short course of either montelukast 4mg or 5mg depending on age. Treatment was initiated at the first signs of a viral URTI or asthma symptoms and continued for a minimum of 7 days or until symptoms had resolved for 48h. Children received the same medication for each subsequent episode (up to 5 episodes) that occurred within a 12-month study period. Two hundred and one children were enrolled and received study medication (97 montelukast, 104 placebo). **Results:** There were a total of 681 episodes treated (345 montelukast, 336 placebo) during the 12 month study period. Emergency department attendance



was reduced by 45.6% ( $P < 0.05$ ) and overall acute health care utilization by 28.5% ( $P < 0.01$ ). Duration of the episodes was not significantly reduced. Reported overall nights woken per episode were reduced by 9.4% ( $P < 0.05$ ), time of school by 36.6% and parental time off work by 33.5% ( $P < 0.01$  for both). Overall symptom scores within episodes were also significantly reduced ( $P < 0.05$ ). The results of this study demonstrate a short course of montelukast, introduced at the first signs of an asthma episode to be effective in reducing acute health care utilization, symptom severity, time off school and parental time off work in children with intermittent asthma.

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#### ABS034: COPD PATIENT MANAGEMENT: PERSPECTIVES FROM EUROPEAN HEALTHCARE PROFESSIONALS AND PATIENT GROUP REPRESENTATIVES

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**Purpose:** COPD is a major cause of death and disability throughout the world though it is often underdiagnosed, misdiagnosed or diagnosed late and under or inappropriately treated. COPD can have a seriously debilitating impact on a patient's quality of life and as such early diagnosis, optimum treatment and management for COPD patients is a key priority for healthcare professionals (HCPs) and patient groups. In order to provide COPD patients with the best care and support, HCPs and patient groups require shared understanding and good working relationships. The purpose of this research was to explore views on COPD patient management and identify how to unify the approach to COPD patient management. **Methods:** A group of 120 European HCPs (48%, 58) and COPD patient group representatives (52%, 62) participated in a survey using key pad technology to compare how HCPs and patient representatives viewed the management of COPD patients. Questions and responses were derived from previous patient based research. **Results:**

**Conclusions:** The results support a perceived low level of awareness of COPD amongst patients and a significant need for further information and awareness building to encourage earlier presentation and correct diagnosis. These results highlight the need for HCPs and patient groups to facilitate working relationships to share knowledge and expertise to improve COPD patient management.

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#### ABS036: IMPACT OF CONCOMITANT ALLERGIC RHINITIS ON ASTHMA-RELATED MEDICAL RESOURCE USE AMONG ADULTS WITH ASTHMA IN THE UNITED KINGDOM

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**Purpose:** The objective was to assess asthma-related hospitalisations, GP visits and drug cost among adult patients with asthma who did and did not have concomitant allergic rhinitis (AR). **Methods:** A 12-month retrospective analysis of the UK MediPlus database was conducted. Patients aged 16–55 years who had one or more asthma-related GP visits between 10/2000 and 9/2001 were included. AR was defined as any recorded AR diagnosis or AR-related drug treatment between 10/1998 and 9/2001. Multivariate logistic or linear regression was used to estimate the association between AR and resource use while controlling for patients' age, gender, oral steroid (OS) use and short-acting beta2-agonists (SABA) prescriptions during the previous 6 months. **Results:** Among 27,303 patients included, 4,611 (16.9%) had concomitant AR. Higher proportion of comorbid patients had prior OS use (6.9% versus 4.3%,  $P < 0.0001$ ), they were younger (33.2 years versus 33.9 years,  $P < 0.0001$ ) and had more prior SABA prescriptions (1.5 versus 1.2,  $P < 0.0001$ ) compared to patients with asthma alone. Proportion of women was similar (~55%). After controlling for covariates, AR was associated with more asthma-related GP visits (least-squares mean difference: 0.42, 95%CI: 0.42–0.43) and higher asthma-related drug cost (LS mean difference: £5.1, 95%CI: £5.0–£5.3). The likelihood of hospitalisation among patients with asthma and AR was higher (odds-ratio: 1.52, 95%CI: 1.03–2.24). **Conclusions:** Adult patients with asthma and concomitant AR experienced greater asthma-related medical resource use and cost compared to asthmatics without AR.

#### ABS037: THE BURDEN OF POORLY CONTROLLED ASTHMA FOR PATIENTS AND SOCIETY IN THE UK

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**Purpose:** Poorly controlled asthma has a poor prognosis and is a major burden to the health service. The current study was

Question	Response	HCP no. (%)	Pt. rep. no. (%)
Causes of underdiagnosis	Lack of awareness of COPD	25 (43)	35 (57)
	Confusion with asthma	12 (21)	6 (10)
Reason patients do not visit doctor earlier	Confusion of symptoms with ageing	17 (30)	18 (29)
	Concerns over smoking cessation	14 (30)	10 (16)
Future of COPD management	Positive	38 (66)	36 (59)
	Neutral	4 (7)	10 (16)
Patient support	Good	2 (4)	18 (30)
	Poor	28 (48)	20 (33)
Main provider of patient information	Doctor/specialist	48 (83)	48 (77)
	Patient group	4 (7)	11 (17)

	Mean cost (UK£)	Range (UK£)	95% CI (UK£)	AQLQ total	ASUI	EQ 5D
Controlled	272 (24)	9–3083	277–322	4.57 (0.93)	0.71 (0.20)	0.87 (0.21)
Poorly controlled	1296 (244)	54–18,185	882–1807	2.92 (1.09)	0.45 (0.20)	0.67 (0.26)

Means (standard deviation).

designed to determine the impact of poorly controlled asthma on patients' health related quality of life (HRQL) and the costs to society. **Methods:** Retrospective resource use and clinical data were collected from 316 asthma patients, recruited from four sites in the UK. A sub-sample ( $n = 89$ ) also completed a survey of health related quality of life (HRQL). All patients continued to receive their normal treatment. Poorly controlled asthma was defined as an oral steroid prescription or one or more asthma related hospital admissions and an unscheduled visit to A&E or a GP practice during the study. HRQL was measured using the mini Asthma Quality of Life Questionnaire (AQLQ), Asthma Symptom Utility Index (ASUI) and EQ-5D. **Results:** Poorly controlled asthma lead to much higher costs and significantly worse HRQL on all measures ( $P < 0.01$ ). Confidence intervals (CI) calculated with boot-strapping techniques.

**Conclusions:** Poorly controlled asthma is expensive to treat. It also exerts a significant burden on patients' HRQL affecting all four dimensions of the AQLQ. There is a substantial decrement in utility values on the ASUI and EQ 5D. If this difference was maintained for a year then it would equate to a 0.20 QALY difference. This difference is comparable to the degree of improvement in HRQL obtained in patients following knee replacement surgery where patients gain mobility with decreased pain. Better control of asthma may lead to a substantial QALY gain and be less costly than poorly controlled asthma.

#### **ABS058: FROM WHENCE IT CAME: COMMUNITY VS HOSPITAL CARE OF COMMUNITY ACQUIRED PNEUMONIA**

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**Purpose:** To determine whether community management of mild-moderate Community Acquired Pneumonia (CAP) is as safe, effective and acceptable as standard hospital management of CAP. **Methods:** Pegasus Health is a GP Independent Practitioners Association (IPA) whose membership includes the majority of Christchurch General Practitioners. They have a programme of Extended Care @ Home which covers a similar range of activities to the Australian Hospital in the Home project. These include extended home visits by GPs and nurses, an intravenous antibiotic service, and mobile diagnostic testing including pulse oximetry. Fifty consecutive patients fitting the inclusion criteria and requiring intravenous antibiotics for mild to moderately severe pneumonia (using the CURB-Age severity score) were initially assessed in the Emergency Department at Christchurch Hospital. After initial assessment, patients were randomised to receive either hospital treatment as usual or home treatment under the Extended Care programme. This was delivered by their own GP and the Extended Care staff who monitored their illness and administered IV antibiotics. Clinical, functional and economic outcome indicators were recorded together with patient and GP satisfaction. Patients were followed daily during the acute illness and contacted again at 2 and at 6 weeks after presentation. **Results:** A total of 49 patients were recruited

with 25 randomised to each study arm. The average age of patients was 50 years, the sex distribution was even and only 20 had never smoked. The median time to discharge for patients cared for by the Extended Care at Home service was 4 days (range 1–14), while the median time to discharge from the hospital was 2 days (range 0–10). Two patients were transferred to hospital from home care. At 2 weeks there was no statistically significant difference in the patient rated symptoms of fatigue, breathlessness, chest pain, diarrhoea, sputum production and loss of appetite. There was no difference between groups in either the physical or mental components of the SF12 at either 2 or 6 weeks. Hundred percent of patients in the home care arm reported that they were 'very happy' with their care. In the group allocated to hospital care 60% were very happy with their care and 32% quite happy. **Conclusions:** Mild to moderate severity CAP can be managed safely and effectively in the community. The time to discharge was slightly longer for patients cared for in the home and this was probably accounted for by the Extended Care guideline which requires patients to have been afebrile for 48 h before change to oral antibiotics (and discharge). A number of patients treated in hospital were discharged prior to this 48 h point. Management of uncomplicated illness progressed smoothly as did the referral for specialist care of those patients whose illness became complicated.

#### **ABS020: THE PHARMACY ASTHMA ACTION PLAN PROJECT—A COMMUNITY PHARMACY BASED PILOT AIMED AT OPTIMISING ASTHMA MANAGEMENT**

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**Purpose:** Community pharmacy provides a strategic venue for provision of asthma services due to the ease of access to the pharmacist, their therapeutic expertise, frequency of patient initiated contact for prescriptions and advice and demonstrated evidence of the benefit of such services in both Australia and overseas. The aim of this project was to develop and assess the feasibility of an asthma action plan program (AAPP), based on stakeholder feedback and consisting of a flexible individualised community pharmacy based service leading to self management by the person with asthma. **Methods:** The project was conducted in three stages. Stage 1 was mainly exploratory and investigated the perspective of various stakeholders. The feedback from stage 1 and action research methods were employed to design the asthma action plan program in Stage 2. Stage 3 used intervention research methods in a pre-test- post test pilot design to assess the feasibility and outcomes of the AAPP in terms of clinical and humanistic measures. **Results:** Officers from six Divisions of General Practice, nine GPs, five pharmacists and twelve patients with asthma were interviewed in Stage 1, these interviews revealed that asthma self management practices in patients or providers were not ideal, people with asthma had a need for more information and some were willing to or already practised elements of self management. Following consultation with six participating pharmacists, the process and protocols for the AAPP were designed. The six pharmacists recruited twenty two patients; and there was a 90% retention rate. Following the implementation of the AAPP, it was observed that there was a significant decrease in asthma severity based on the National Asthma Council guidelines scored between 1 and 3, from  $2.5 \pm 0.5$  to  $2.0 \pm 0.7$  ( $P < 0.013$ ). Seventy nine percent (15) of participating patients had their asthma re-

viewed by their physician and 58% (12) of the patients changed the way they used their asthma devices. Fifty eight percent (12) patients reported that they had an asthma action plan at the end of the program as compared to 32% at the beginning. There was a significant improvement in the knowledge of handling an attack between baseline and final visit ( $P = 0.03$ ). Sixty three percent of patients reported that they had achieved or worked towards the goals that they had set for themselves with respect to their asthma. **Conclusions:** The pharmacy asthma action plan project was found to be feasible and effective in terms of improving clinical and humanistic outcomes for people with asthma and should be tried on a larger scale.

The project was funded by a grant from the Pharmacy Guild of Australia.

#### **ABS029: CARING FOR PATIENTS WITH CHRONIC DISEASE ACROSS THE CONTINUUM OF TIME AND SPACE: A NEW MODEL**

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**Purpose:** The demand on health care providers by people with chronic diseases is increasingly recognised world-wide. A partnership of tertiary, primary and community health services in the western metropolitan regions of Melbourne have developed an innovative program to assist with the management of patients with chronic disease. Funded through the Department of Human Services Hospital Admission Risk Management Program, the Chronic Disease Management Program (CDMP) aims to reduce the inappropriate and avoidable use of emergency department and inpatient services through the promotion of self-management and improved access to services in the community. **Methods:** The first phase of the CDMP has targeted people with chronic obstructive airways disease and children with asthma who frequently attend the emergency department. Care Facilitators work with clients in hospital and in the community to enhance the care of people with chronic disease by creating a system that assists in integrating and co-ordinating care across the continuum, and enhancing ambulatory and community-based management. The care facilitators visit the patients whilst in hospital, in their homes, with their GP and at community health centres to provide a "patients first" approach to chronic disease management. The use of a hand held care plan and action plan provides patient specific information between all care providers. **Results:** While still early in its implementation, data suggests that the CDMP is having a favourable impact on self-management and more appropriate use of health services for the target groups. Once the care facilitators have educated patients and carers, they report they are using their action plan to manage increasing asthma/COPD symptoms with good outcomes. Evaluation outcomes suggest that the program has served to improve continuity of care and communication between health care providers and clients. **Conclusion:** Data to date suggests the model and tools employed by the CDMP have some success in preventing avoidable presentations to emergency department for the target groups. Participants in the program are exhibiting improved self management of their condition and are more effectively using available community services.

#### **ABS051: RECRUITMENT FOR ASTHMA EDUCATION INTERVENTION RCT IN GP SETTING: ISSUES AND BASELINE DATA**

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**Purpose:** To describe the GPs, patients and issues associated with recruitment for a RCT to evaluate the effectiveness of locally adapted paediatric asthma best practice guidelines (BPG) for GPs in the NW region of Melbourne. **Methods:** The project is collaboration between the University of Melbourne Department of General Practice, Northern and NW Melbourne Divisions of General Practice (DGP), Royal Australian College of General Practitioners (RACGP) and the Royal Children's Hospital (RCH). The RCH BPG and education package were adapted for this study. The RCT was conducted in 2001–2003. Following promotion through the Division and RACGP weekly Friday fax and e-mail circular, each GP on the DGP's membership list was sent a personalised invitation with a fax-back reply sheet, followed by a telephone reminder 1 week later. GPs, who accepted the invitations were sent the information sheet, consent form and GP questionnaires to measure GP's asthma knowledge, attitudes and practices, at baseline and after 6 months. Participating practices were randomised into three groups: (1) asthma education plus BPG group, (2) asthma BPG only group and (3) ear nose throat (ENT) education group. Clinics were assisted by the research team to search their practice computer database and identify patients aged 2–14 years, with a diagnosis of asthma or who used asthma medications in the past 12 months. Patients were sent an invitation, a consent form and a questionnaire for children and their parents. The questionnaire included items on quality of life, asthma action plans and knowledge, attendance at the emergency department (ED), admissions to hospital, unscheduled visits to GP and other patient outcome measures. **Baseline results:** 65 GPs (10% of members of two divisions of GP) from 32 practices completed the baseline questionnaire. About 60% of participating GPs were male and trained in Australia. One third of GPs don't use action plans for children and only 16% update the plans with more than half of their patients. Two-thirds (62%) are confident in managing acute asthma and only 26% are very confident in managing persistent asthma. Initially 1036 questionnaires were sent, 74 were search errors, 46 lived outside the study area, 41 moved address and 99 parents denied asthma in their children. The remaining 776 eligible guardians received the questionnaire. Of those 57% completed a self-administered questionnaire, 21% refused and 22% did not return the questionnaire despite five reminders. **Discussion:** The recruitment and retention of GPs and their asthma patients proved to be challenging. It is feasible to assist GPs to search their computer systems to identify eligible patients. GPs are willing to participate in research relevant to their day-to-day practice. They preferred to use their letter-heads to invite patients. Barriers to participation included lack of time and financial incentives for GPs, difficulty in getting practice commitment, privacy concerns and patient's language ability.

# **ABS052: PARENT'S USE AND ATTITUDES OF WRITTEN ASTHMA ACTION PLANS IN NW MELBOURNE**

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**Purpose:** Written asthma action plans (WAAP) have become a core component of evidence-based asthma management in Australia. We investigated ownership of action plans, utilization and attitudes of parents of children with asthma. **Methods:** 443 (57%) parents of children aged 2–14 years with asthma were identified from 32 GP clinics as part of a RCT in Melbourne's North West suburbs, and completed self-administered questionnaires. Follow-up in-depth interviews were conducted with 21 parents at their homes using semi-structured interviews and thematic analysis. **Results:** Only 29% of participants owned a WAAP, while 13% possessed verbal instructions, and 56% had no plan. Children whose action plan was developed by a GP were more likely to report being given verbal instructions ( $P = 0.001$ ), while plans developed by hospital or paediatricians were more likely to be written ( $P < 0.001$ ). Just over half of participants (59%) reported discussing their action plan the last time they visited their doctor for asthma. Determinants of WAAP ownership included waking nights ( $P = 0.02$ ), self-reported severity ( $P = 0.001$ ), and days lost ( $P = 0.04$ ). Children who had seen a GP in the last 3 months for asthma, or who had been to the ED or hospital were more likely to possess WAAP ( $P < 0.001$ ). Parents who were less satisfied with their child's asthma control were more likely to own a WAAP. Parents with any action plan found it useful and 82% reported using their action plan for management of an acute attack. However, parents with WAAP were more likely to adhere to their plans for an acute attack than parents with verbal instructions (OR = 4.5,  $P < 0.05$ ). Parents with WAAP were more knowledgeable about asthma ( $P = 0.002$ ), better able to recognise the difference between preventer and reliever medications ( $P = 0.01$ ), and better able to recognise an asthma attack ( $P = 0.006$ ). Participants with written instructions who used them were positive about the value of WAAPs. Parents who owned WAAPs, but did not use them reported they no longer needed them, as they "knew what to do". Parents without plans from a health professional typically wrote their own instructions for schools based on their understanding of what to do in case of an asthma exacerbation. **Conclusions:** This combined approach has enabled greater understanding of issues surrounding asthma action plans. Ownership of asthma action plans in this group was still too low, and some children with persistent asthma did not possess any action plan for their asthma. Importantly, parents with written instructions were more knowledgeable about asthma, and more likely to report following the action plan during an asthma attack. The beginning of the new school year is an opportunity to review and update asthma action plans.

# **ABS014: DIFFERENCE IN ASTHMA-RELATED MEDICAL RESOURCE USE AMONG CHILDREN WITH ASTHMA WITH OR WITHOUT CONCOMITANT ALLERGIC RHINITIS IN A UK PRIMARY CARE DATABASE**

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**Purpose:** The objective was to assess asthma-related hospitalizations, GP visits and drug cost among children with asthma who did and did not have concomitant allergic rhinitis (AR). **Methods:** A 12-month retrospective analysis of the UK MediPlus database was conducted. Patients aged 6–15 years who had one or more asthma-related GP visits between 10/2000 and 9/2001 were included. AR was defined as any recorded AR diagnosis or AR-related drug treatment between 10/1998 and 9/2001. Multivariate logistic or linear regression was used to estimate the association between concomitant AR and resource use while controlling for patients' age, gender, oral steroid (OS) use and short-acting beta<sub>2</sub>-agonists (SABA) prescriptions during the previous 6 months. **Results:** 9522 children with asthma were included and 1879 (19.7%) had concomitant AR. Proportion of girls (39.7–41.8%) and the use of OS (3.8–4.8%) was similar in both groups. Children with concomitant AR were older (10.8 versus 10.6 years,  $P = 0.0287$ ) and had more SABA prescriptions (1.0 versus 0.8,  $P < 0.0001$ ) during the 6 months prior to index date. After controlling for patient characteristics, AR was associated with significantly higher risk of asthma related hospitalization (odds ratio: 2.34, 95%CI: 1.41–3.91), more asthma-related GP visits (least-squares mean difference: 0.53, 95%CI: 0.52–0.54) and greater asthma-related drug cost (LS mean difference: 6.7, 95%CI: 6.5–7.0). **Conclusions:** Children with asthma and concomitant AR used more asthma-related medical resources compared to children with asthma alone.

# **ABS042: SYMPTOM-BASED QUESTIONS FOR DIFFERENTIATING COPD AND ASTHMA**

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**Purpose:** Many patients with evidence of obstructive lung disease carry an inaccurate diagnostic label, or none at all. In an effort to increase identification of those with potential COPD, we prospectively tested questions derived from literature and an international Delphi panel among persons with a prior history consistent with obstructive lung disease. **Methods:** We recruited current and former smokers aged 40 years or older with a medical history (diagnosis or medications) consistent with obstructive lung disease. Patients were recruited via random mailing to primary care practices in Aberdeen, UK and Denver, US. Participants completed a questionnaire covering demographics and symptoms and then underwent spirometry with reversibility testing. Airway obstruction was defined by post-bronchodilator FEV<sub>1</sub>/FVC < 0.70. We examined the ability of individual items in a multivariate framework to correctly discriminate between persons with and without obstruction. **Results:** We analysed results from 417 subjects. From an original list of 51 items, 19 entered the final regression, of which nine showed statistically significant relationships with obstruction. The best performing regression model included the following items:

- age group (in years);
- pack-years smoked ("How many cigarettes do you currently smoke each day (if you are an ex-smoker, how many did you smoke each day)?" and "what is the total number of years you have smoked cigarettes?");
- recent cough ("Have you coughed more in the past few years?");

- breathing-related work loss ("During the past 3 years have you had any breathing problems that have kept you off work, indoors, at home, or in bed?");
- hospitalization for breathing ("Have you ever been admitted to hospital with breathing problems?");
- recent breathlessness ("Have you been short of breath more often in the past few years?");
- quantity of phlegm ("On average, how much phlegm (sputum) do you cough up most days?");
- cold usually goes to chest ("If you get a cold, does it usually go to your chest?"); and
- treatment for breathing ("Are you taking any treatment to help your breathing?").

This candidate questionnaire achieves sensitivities of 53.8–82.1% and specificities of 63.78–88.2%, depending on the scoring cutpoint used. Predictive values range from 63.4 to 77.8% for a positive test and 71.4–82.3% for a negative test. **Conclusions:** A symptom-based questionnaire can be used to identify persons likely to have COPD among persons with a prior history of obstructive lung disease with acceptable sensitivity and specificity. Such a tool can help identify patients requiring spirometric follow-up.

Symptom-Based Questions For Differentiating COPD And Asthma

Supported by Boehringer Ingelheim GmbH and Pfizer Inc.

#### ABS041: THE DIAGNOSIS AND MANAGEMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) IN TWO TASMANIAN GENERAL PRACTICES

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**Purpose:** COPD is a leading cause of disability and death in Australia. Wide variation in prescribing for COPD patients has been noted. In view of the recent publication of Australian guidelines for COPD (COPDX), we investigated in depth the understandings and actions of general practitioners and patients regarding to the diagnosis and management of COPD. **Methods:** 46 patients were selected from practice prescribing or diagnostic databases. We used quantitative methods (spirometry, skin prick tests, anxiety/depression screening, quality of life and respiratory health questionnaires) and qualitative semi-structured in-depth interviews. General practice notes were reviewed. Focus groups and individual semi-structured interviews were held for GPs. **Results:** 38 patients (18 male, age 68 years  $\pm$  10.6) with a diagnosis recorded in their notes of COPD or emphysema completed all assessments. Classification of COPD by FEV1 showed 24% to be in the mild, 45% in the moderate and 32% in the severe category. Twenty eight stated their diagnosis to be emphysema, one COPD, four used imprecise symptomatic terms and five denied a diagnosis of COPD. Prior to diagnosis the length of smoking history was 39 years  $\pm$  11.9, 58% were still smoking at diagnosis despite half having quit advice recorded in their notes. Thirty six patients had notes available predating COPD diagnosis. Sixty nine percent had undergone multiple consultations for acute bronchitis/respiratory infections and 86% for dyspnoea. At diagnosis 53% saw a specialist and 72% had spirometry. Post diagnosis 19% had a steroid trial. Sixty four percent were treated with inhaled corticosteroids with half having the indication documented. Quality of life scores indicated severe impairment, especially for symptoms and activity. Significant psychological morbidity was present. Key findings from interviews (20 patients) indicated multiple health problems, economic worries and a low level of convergence with medical understanding of COPD and medication. Those who had attended pulmonary re-

habilitation were better informed and better adapted to their illness. GPs described individuality in diagnosis and management, underutilisation of spirometry, pessimism about their influence over outcomes or smoking behaviour, and being "time poor". **Conclusions:** COPD in general practice is diagnosed late in the illness in spite of previously recorded symptoms. GP adherence to the COPDX guidelines is low. Patients' knowledge about COPD is poor.

#### ABS022: CAP—A COMPREHENSIVE COMMUNITY APPROACH TO ASTHMA MANAGEMENT FOR CHILDREN AND FAMILIES PRESENTING AT THE ROYAL CHILDREN'S HOSPITAL

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**Purpose:** Asthma has found to be the most common reason for childhood hospital admission, a major cause of school absenteeism in children and is among the 10 most common reasons for GP consultations. The Community Asthma Project (CAP) aims to reduce the number of children aged 0–18 with asthma presenting at the Royal Children's Hospital Emergency Department (RCH) who live within the Melbourne, Moonee Valley and Hume catchments. CAP aims to improve collaboration between the community and acute settings, develop a program that offers best practice, education and support to enhance both the service provider and community knowledge of asthma management. **Methods:** CAP builds on the model of care developed with the RCH and the North Richmond Community Health Service via the Asthma Linking Project. It aims to improve health outcomes, self management and control of asthma within the community setting by the delivery of a culturally and linguistically appropriate asthma education/management and support program to children, their families and others involved with the child on a regular basis, this includes grandparents, schools, childcare & sporting organisations. Rather than just focus on disease management the project considers the social circumstances of the target group, for instance ethnicity, socioeconomic status, mental health and other family issues. The project provides facilitation of broader social support and linkages with other community service organisations, and supports GPs to better manage the treatment of children with asthma, while encouraging optimal communication and collaboration by enhancing coordination of care through asthma action plans and asthma 3+ visit plans. **Results:** CAP commenced receiving referrals in April 2003 in the first 6 months 155 clients were referred to the program, of these 129 have been received from the RCH, of these 15 different languages have been represented. CAP has promoted the project to the community through the local newspapers, newsletters, mailouts, fax broadcasts, presentations and distribution of promotional material. CAP believes that it has so far been successful in providing children and families an easily accessible & flexible program which delivers an assessment tool that encompasses a holistic approach to asthma management with the use of interpreters where necessary. **Conclusion:** The key feature of this model is that the project considers the social circumstances of the target group and provides support to the child and family to assist them in the self-management of the asthma within the community setting. The Community Asthma Project is an innovative project that has achieved many positive outcomes throughout its development and recent recruitment of clients.

The project is funded through the Department of Human Services as part of its Hospital Admission Risk Program (HARP).

# **ABS006: USING QUALITY MEASURES TO DIRECTLY IMPROVE ASTHMA CARE**

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**Purpose:** Measures to assess asthma care quality often include such non-specific items as the ratio of inhaled corticosteroid to short acting beta agonist prescriptions in a clinic population or the total number of emergency room visits made by people with asthma during the past year. These measures are difficult to translate into any clinical action. In addition, few of the measures consider patient preferences. **Methods:** Using data from a medical record review of over 15,000 visits for asthma of school aged children, specific data on the characteristics of asthma visits were compared to information from focus groups describing what patients and families say they want in an asthma visit and to the NIH asthma care guidelines. Specific elements of the visit that lead directly to treatment decisions (such as asthma severity) were identified. These elements were then translated into measures that could be assessed by medical records review and used to suggest very specific changes in asthma care or documentation of asthma care. **Results:** Of the 3645 children with at least two diagnoses of asthma during the 5–12 year period of follow up, 28.5% had one or more diagnoses of reactive airway disease or chronic asthmatic bronchitis after the first asthma diagnosis. Parents of children with asthma stated that having a clear and consistent diagnosis of asthma was very important to them. The basis for the initial diagnosis of asthma (response to therapy, pulmonary function tests with reversibility or recurrent symptoms in association with family history or triggers) could be found in less than 8% of medical records of school aged children with asthma. Both the NIH guidelines and parents of children with asthma state that the basis for diagnosis is important to appropriate selection of therapy. The symptom frequency and activity limitations necessary to establish a level of asthma severity with or without current medications was present in 18.5% of asthma visits reviewed. Night-time symptom frequency was less commonly reported than daytime symptom frequency (12.3 versus 21.7%). Asthma severity or response to asthma medications is the basis for selecting therapy or determining the adequacy of therapy according to all asthma care guidelines. Fewer than 21% of the medical records reported any asthma triggers other than exercise and less than 5% included any specific allergy evaluation. Parents state they need to know what to try to avoid and all asthma care guidelines call for identifying triggers that may be used for avoidance or anticipatory care. **Conclusion:** Each of the quality criteria addressed in this study: consistent labelling of "asthma", recording of symptoms and activity limitations (severity assessment), identification and recording of asthma triggers and the basis for the initial asthma diagnosis can be translated directly to practice changes.

# **ABS044: PATIENTS PREFER RESPIMAT® SOFT MIST™ INHALER TO HFA-MDI**

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**Purpose:** The primary objective of this randomised, open-label, two-period, crossover study was to investigate preference for inhaler device in patients with obstructive

airways disease after treatment with ipratropium bromide/fenoterol hydrobromide (IB/FEN; Berodual®) delivered via either Respimat® Soft Mist™ Inhaler (SMI) or HFA-MDI. **Methods:** After a 2-week run-in on IB/FEN via HFA-MDI at the same dosage taken pre-study ( $\geq 2$  actuations tid), adults with COPD, asthma, or mixed disease were randomised to receive IB/FEN 20/50 µg via Respimat® SMI or HFA-MDI for 7 weeks each in a crossover design. Patients were trained in inhaler use and given  $\leq 5$  attempts to demonstrate satisfactory technique. At the end of each treatment period, patients completed a 15-item satisfaction questionnaire and inhaler technique was re-tested. On study completion, patients were asked which inhaler they preferred and rated their willingness to continue using each inhaler on a scale from 0 to 100 (0 = 'not willing'; 100 = 'definitely willing'). Clinical outcomes were measured by daily diary card (evening peak expiratory flow, rescue medication use and day- and night-time symptom scores). **Results:** 245 patients (110 female) were randomised to treatment (COPD: 103 (mean age 61 years); asthma: 95 (mean age 49 years); mixed disease: 47 (mean age 52 years)). Of these, 224 patients completed both treatment periods (the full analysis set; COPD: 95; asthma 87; mixed disease: 42). Two hundred and one (90%) patients in the full analysis set expressed a preference for inhaler device; 16 (7%) had no preference and 7 (3%) did not answer the question. Of those patients expressing a preference, 162 (81%) preferred Respimat® SMI and 39 (19%) preferred HFA-MDI ( $P < 0.001$ ). Preference varied slightly depending on diagnosis, but was unaffected by age or by any co-existing condition that might adversely affect inhaler handling. Patients said they would rather continue using Respimat® SMI than HFA-MDI (median scores of 85 and 50, respectively; median difference = 30;  $P < 0.001$ ). Mean scores for 13 of the 15 items in the satisfaction questionnaire were higher for Respimat® SMI. Even though patients required more training attempts to use Respimat® SMI correctly, 217 (97%) were judged to have good technique with Respimat® SMI after 7 weeks' use, compared with 210 (94%) for HFA-MDI. For all clinical outcomes the differences between Respimat® SMI and HFA-MDI were not significant, but were consistently in favour of Respimat® SMI. **Conclusions:** A large majority of patients preferred Respimat® SMI to HFA-MDI. Patient preference for Respimat® SMI over HFA-MDI was supported by higher ratings of inhaler satisfaction and willingness to continue using the device.

# **ABS003: PATIENT SET TREATMENT GOALS: A TOOL TO MEASURE PATIENTS' PERCEPTIONS OF CHANGES IN ASTHMA OUTCOMES**

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**Purpose:** Changes in chronic disease activity and their impact, can be measured in terms of changes in lung function, symptom control and/or patient quality of life (QoL). We know from literature on QoL and other psychological factors associated with chronic disease management that control and QoL parameters differ between patients, no one criterion fits all patients. This aim of the Economic Assessment of Steroid Therapy in Asthma (EAST) study is to evaluate if patient set goals can be used to measure patients' perceptions of improvement, or change, in terms of asthma outcomes. **Methods:** In this prospective multi-centre, double blind trial 329 adults (16–70 years) with moderately severe, poorly controlled asthma from 20 UK primary care centres were randomised to receive either budesonide (500–1000 µg b.d.) or fluticasone propionate (FP) (250–500 µg b.d.), delivered by MDI, for 12 months. Medication dose could be altered if required for optimal management. Participants were asked to set three treatment goals (primary, secondary and tertiary) at baseline, which, if achieved, would

indicate that the intervention had been successful from which we planned to identify key themes. *Results:* 95% (314/329) of all participants were able to identify one specific goal, while 93% (306/314) of all participants could identify three goals. Keywords within goals identified six themes: Exacerbation, Lung Function, Medication, Symptoms, Activity, Trigger and Psychological. The four themes of Activity, Medication, Symptoms and Exacerbations represented 92.6% (291/314) of all primary goals. In contrast, only 6.1% (19/314) of patients set primary goals in the theme of lung function. 59.2% (186/314) of patients demonstrated a desire to 'Reduce activity limitation due to asthma'. 31.9% (100/314) of all patients who set goals identified a goal within this theme as their primary or only goal. The second most frequent theme for primary goals was 'Reducing/avoiding medication' which represented 24.2% (76/314) of patients expectations. 'Reducing asthma symptoms' and 'Reducing/avoiding exacerbations' each represented 22.6% (71/314) and 14% (44/314), respectively. 57% (76/134) patients on FP achieved or partially achieved all goals set compared with 42% (55/130) of budesonide patients. *Conclusions:* Currently, tools to measure QoL are not routinely used within primary care for a variety of reasons including lack of time, complexity and lack of individualisability for each patient. It may be that achievement of a personal treatment goal is a more practical measure of change in individual patients. Our results show that most patients are capable of setting at least one personal treatment goal. Patient set treatment goals may provide a quick, patient centred tool to measure patients' perceptions of changes in asthma outcomes that are important to them, which can be used in clinical settings.

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#### ABS004: PATIENT SET TREATMENT GOALS: A MORE SENSITIVE MEASURE OF CHANGE THAN STANDARD SYMPTOM QUESTIONS

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*Purpose:* Patient set goals are routinely used for measuring change in psychological symptoms. Their use encourages patient participation and involvement, which we know means patients are more likely to adhere to treatment plans. Can these also be used as a tool to measure and report change in asthma outcomes? The aim of the Asthma Management Options (AMO) study was to compare the use of patient set goals to the use of three clinician set questions, relating to frequency of patient reported asthma symptoms, reliever use and the activity limitation within the previous month. *Methods:* 83 patients (5–75 years) with uncontrolled asthma (based on B<sub>2</sub> agonist, dose of preventer, exacerbations and hospitalisations) were identified through audit of routine clinical data from four urban primary care practices within UK, and invited for review (baseline). Medication adjustment at baseline was in accordance with national guidelines, e.g. patients with activity-induced asthma were prescribed Montelukast ( $n = 48$ ). Participants were asked to set one treatment goal at baseline, something they would most like to improve about their asthma, from which we planned to identify key themes. Patients attended for two monthly follow-ups where medication was adjusted if required. A five-point Likert scale (5, not at all to 1, a great deal) was used to score change in

goal achievement and to each of the three questions at all three visits. *Results:* 85.5% of patients had data from two or three visits. This was analysed to assess level of achievement of the personal goals during the trial. Keywords within goals identified three themes: Medication, Symptoms and Activity. Of the Montelukast patients 70.5% demonstrated a desire to 'Reduce Symptoms' while 'Reducing Activity limitation' and 'Reducing Medication' represented 25.0 and 4.5%, respectively, of patient goals. Of the Other patients 88.2% demonstrated a desire to 'Reduce Symptoms' while 'Reducing Activity limitation' and 'Reducing Medication' represented 11.8 and 0%, respectively, of patient goals. Both groups reported an improvement in terms of achieving the goals they set themselves, frequency of symptoms, limitations in activity and reliever use. Improvements in activity and symptoms correlated with being better able to achieve one's goal. Our data indicates that patient goals are a more sensitive measure of change. *Conclusions:* Patient set goals appear to be a more sensitive measure of change in asthma outcomes than change in traditional questions measuring symptoms, activity and reliever use. This data indicates that patient set treatment goals may be an appropriate measurement of change in asthma outcomes. Further work is needed to assess if patients whose asthma control is measured against goals they have set themselves are more likely to adhere to treatment than those whose control is measured against clinician set outcomes.

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#### ABS005: THE GPIAG ASTHMA RESEARCH GROUP TEMPLATE; A DATA ENTRY TOOL FOR ROUTINE ASTHMA CARE AND RESEARCH?

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*Purpose:* Increasing emphasis is being placed on using routinely recorded data from clinical practice as outcomes in clinical studies, particularly "real-life" studies. However, research in Primary Care is as reliable as the data entered at the point of patient contact, which is often variable in quality. Practices are becoming increasingly "paper light" or "paper free" as clinical software programs become more sophisticated and able to cope with the demands of data collection set by national governments. The "REALL" study required an asthma template, which will run on the main UK clinical software systems, and allow the primary care practice to collect the data they need to meet the latest set of government targets. *Methods:* We identified four major clinical systems in the UK: EMIS, Vision, Torex and GPASS. We identified parameters needed in the template based on the current asthma guidelines, UK government requirements and ongoing research needs: (1) Method of diagnosis, (2) Health resource usage in previous 6 months, (3) Rhinitis history, (4) Asthma control over previous 7 days (using the Royal College of Physicians three questions graded 0–7 days), (5) Use of reliever inhalers in the previous 7 days, (6) Areas of asthma management included; (6a) Checking inhaler technique, and compliance, (6b) Giving a self management plan, (6c) Assessing smoking status and offering smoking cessation advice, (6d) Arranging review. In order to allow all of these "clinical concepts" to be stored and extracted from the computer systems, each parameter had to be Read coded (UK government endorsed coding system). *Results:* Several problems were encountered, examples included: (1) EMIS only ac-